Supplemental Data Gap Investigation and Groundwater Monitoring Report

Organizational Maintenance Shop #28

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LIST OF ABBREVIATIONS AND ACRONYMS

µg/L	micrograms per liter
ADEM	Alabama Department of Environmental Management
AECOM	AECOM Technical Services, Inc.
AFB	Air Force Base
ALARNG	Alabama Army National Guard
ARBCA	Alabama Risk Based Corrective Action
ARNG	Army National Guard
BGS	Below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cis-1,2-DCE	cis-1,2-dichloroethene
COC	Chemical of Concern
CSM	conceptual site model
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DPT	Direct Push Technology
DVR	data validation report
EC	Electric Conductivity
ESS	Environmental Sequence Stratigraphy
FMS	Field Maintenance Shop
FS	Feasibility Study
GCAL	Gulf Coast Analytical Laboratories, Inc.
HPT	Hydraulic Profiling Tool
I-10	U.S. Interstate Highway 10
IDW	investigation-derived waste
K	hydraulic conductivity
LLMiP	Low level membrane interface probe
LOD	Limit of Detection
MAA	Mobile Airport Authority
MC	Methylene Chloride
MCL	Maximum Contaminant Level
mg/kg	Milligrams per kilogram
MHP	membrane interface probe with hydraulic profiling tool
MIP	Membrane interface probe
MNA	Monitored Natural Attenuation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MSL	Mean Sea Level
OMS	Organizational Maintenance Shop
PCE	Tetrachloroethene
PELA	P.E. LaMoreaux and Associates, Inc.
PID	Photo ionization detector
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RPD	Relative Percent Difference
RSL	Regional Screening Level
SAIC	Science Applications International Corporation
SSL	Soil screening level
TCE	Trichloroethene
TCL	Target compound list
UPF-QAPP	Uniform Federal Policy-Quality Assurance Project Plan
USGS	United States Geological Survey

LIST OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

UST	Underground Storage Tank
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOC	Volatile Organic Compound
XSD	halogen-specific detector

1.0 INTRODUCTION

This report presents the results of the supplemental data gap investigation activities and 2016 and 2017 groundwater well sampling events conducted at the Alabama Army National Guard (ALARNG) Organizational Maintenance Shop (OMS) #28 located at the former Brookley Air Force Base (AFB). AECOM Technical Services, Inc. (AECOM) was contracted by the U.S. Army Corps of Engineers (USACE), Mobile District under the Contract Number W90FYQ10D0010 Task Order CK02 to conduct the field investigations, groundwater monitoring, and reporting. The Defense Environmental Restoration Program (DERP) at ALARNG OMS #28 follows the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and National Contingency Plan processes, consistent with DERP guidance.

1.1 PURPOSE AND SCOPE OF WORK

The scope and objectives of the supplemental data gap investigation and groundwater well sampling activities were initially presented in a Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP) Work Plan prepared by AECOM and submitted to the Alabama Department of Environmental Management (ADEM) in January 2016. An addendum to the UFP-QAPP Work Plan, Appendix D, was submitted to ADEM in January 2018.

Based on the results of the Remedial Investigation (RI; Scientific Applications International Corporation [SAIC], May 2013), a Feasibility Study (FS) was developed to address soil and groundwater impacted with chlorinated volatile organic compounds (VOCs) (Leidos, February 2014). In order to perform the recommended alternative of the FS, biological/chemical reduction of groundwater with excavation of soil, the Site's conceptual site model (CSM) required further refinement. The objectives of this Supplemental Data Gap Investigation were to conduct an investigation to identify if other soil source areas were contributing to groundwater contamination and to improve the delineation of the known groundwater contaminant plume. Furthermore, locations for additional monitoring wells were to be proposed based on the improved delineation of the groundwater plume.

1.2 SITE LOCATION AND DESCRIPTION

OMS #28 is located in Mobile County approximately 3 miles south of downtown Mobile (**Figure 1-1**) at 1622 South Broad Street, between U.S. Interstate Highway 10 (I-10) and Mobile Bay (**Figure 1-2**). The property is relatively flat with an elevation of approximately 20 to 30 feet above mean sea level (msl). The OMS #28 site is bordered by undeveloped land and I-10 to the west; residential property to the north; the OMS #28 shop and Fort Floyd A. McCorkle Army National Guard (ARNG) facility building to the east; and commercial and industrial properties to the south (**Figure 1-3**). The vegetative cover consists of mainly oak trees, scrub, brush, and grasses. The nearest residential structure is approximately 150 feet north of the OMS #28 maintenance building.

OMS #28 is located in the northwest corner of the former Brookley AFB, which is now called the Brookley Aeroplex. The initial 1,000 acres of Brookley AFB were acquired by the Department of Defense (DoD) in 1938 with additional land acquisitions through 1955 for a total of 3,156 acres. Brookley AFB was operated by the Air Force as a general support and supply base until June 1969 when it was officially closed. The DoD returned Brookley AFB to the city of Mobile and the city created the Mobile Airport Authority (MAA) in 1972. Facilities at the Brookley Aeroplex include runways and maintenance areas for

aircraft, underground and aboveground fuel storage facilities, associated buildings, roads, housing, and landfills. No human consumption or agricultural wells are located within the boundaries of the Brookley Aeroplex. The Brookley Aeroplex is currently used as an industrial complex and airport by the MAA (SAIC, May 2013).

Currently, the Alabama Armory Commission owns the 5.9 acres of property on which OMS #28 is located, and ALARNG operates the Field Maintenance Shop (FMS) (formerly known as the OMS). The Alabama Armory Commission has owned this property since 1953 when the City of Mobile conveyed 25.66 acres to the Commission. In 2002, 6.43 acres west of the OMS #28 property reverted back to the City and the City subsequently conveyed the property to the MAA (SAIC, May 2013).

It should be noted that the ALARNG renamed OMS #28 to FMS #28 several years ago; however, the Site is referred to as OMS #28 in all previous ALARNG, ADEM, and USACE investigation reports; therefore, to avoid confusion, the Site is referred to herein as OMS #28. According to ALARNG personnel, Site operations have not significantly changed since conversion to FMS #28 (Louis Berger, August 2015).

1.3 SITE BACKGROUND AND HISTORY

The Site has undergone numerous development, redevelopment, and organizational periods since its initial development. The original/former OMS #28 building was constructed in the early 1950's and its former location is shown in Figure 1-3. The OMS #28 operations were transferred from the old/original building to the current OMS #28 building after it was constructed in 1978. The original/former OMS #28 building was used for storage from 1978 until demolition in 2001. Operations within OMS #29 were also transferred to the new OMS #28 building and the old OMS #29 building, constructed in the 1960's, was used for storage and eventually demolished. The OMS #28 building was expanded in 1994 to accommodate a greater volume of work. Currently, the OMS #28 building is used for vehicle staging, vehicle maintenance, and direct support for military police, medical, signal, communications, and field artillery units (Louis Berger, August 2015).

A wash pad in the far northwestern corner of the parking lot was used until 1978. The wash pad was constructed as a concrete slab with no drainage system in place. Military vehicles were routinely washed in this area and wash water was allowed to flow freely onto the ground.

Four underground storage tanks (USTs) were removed from three separate locations (Pit 1, Pit 2, and Pit 3) at the Site in October 1992. Upon removal of a single 2,000-gallon gas/diesel UST at Pit 2, petroleum-related soil and groundwater contamination was identified; however, a preliminary sampling effort was unable to determine the nature and extent of the contaminants. Additional investigation in December 1994 was reported to have completely delineated the extent of petroleum-related soil and groundwater contamination associated with Pit 2. Quarterly groundwater monitoring for petroleum-related contaminants began in 1995 and continued through 2004. Subsequently, analysis of quarterly groundwater sampling results indicated that petroleum contamination had migrated beyond the original monitoring well network installed during the initial 1994 groundwater investigation. As a result, further Site characterization was deemed necessary and was performed in 2004 and 2005. This supplemental work consisted of the installation of additional monitoring wells at the Site in an attempt to delineate petroleum contamination associated with Pit 2 (Louis Berger, August 2015). The relevant historical features are depicted on **Figure 1-3**.

In March 2005, trichloroethene (TCE) was detected at the Site for the first time in monitoring well MW-8. The presence of TCE in well MW-8 was determined to be unrelated to the petroleum tanks that were removed from the Site in 1992. The source of TCE was unknown; however, the limited extent suggests that it is potentially the result of a localized solvent spill (Aerostar, April 2007). In April 2007, TCE-contaminated soil was observed in discrete potential source areas within the TCE, and later tetrachloroethene (PCE), plume. Installation and sampling of additional monitoring wells was conducted in November 2008 in order to delineate the horizontal and vertical extents of TCE and PCE groundwater contamination at the Site (Louis Berger, August 2015).

Historically, TCE concentrations were documented as high as 11 micrograms per liter (µg/L) at off-site monitoring well MW-10 and 63 µg/L at MW-11 in 2006. These monitoring wells were installed northwest of the Site, on private residential property (Figure 1-3). Monitoring wells MW-10 and MW-11 were subsequently abandoned in 2008 at the property owner's request and have not been replaced (Louis Berger, August 2015). Based on contemporaneous analysis of the 2010 groundwater data, the groundwater flow direction did not appear to indicate that the plume was or would impact the residential properties to the north of the OMS #28 building. These residential properties were thought to be side and/or up gradient of the source area and groundwater flow direction.

Groundwater compliance monitoring was conducted at the Site in December 2008, May 2009, September 2009, March 2010, and September 2010 at monitoring wells MW-5, MW-6, MW-8, MW-9, MW-12, and OMS-28-1 through OMS-28-7. The monitoring effort was implemented to document and monitor groundwater conditions at the Site (Louis Berger, August 2015).

Based on the investigative work completed prior to this Supplemental Data Gap Investigation, the potential source area for the TCE plume was suspected to be the former washpad near monitoring well MW-8, which corresponds with the suspected area of residual soil contamination. PCE groundwater contamination was originally thought to be limited to the area surrounding monitoring well OMS-28-5, which is located within a densely wooded area west of the Site. It was noted during a site reconnaissance performed by Louis Berger in 2015 that in the 1960's and 1970's "Gunk" Energized Electric Motor Contact Cleaner was used as a cleaning agent. According to a retired ALARNG employee, "Gunk" was used during the same time as the wash pad; however, there is no official record of "Gunk" being used near the wash pad (Louis Berger, August 2015). According to Material Safety Data Sheets, "Gunk" cleaners may contain up to 90-100% PCE.

Initially, the OMS #28 chlorinated solvent plume was following a Resource Conservation and Recovery Act (RCRA) cleanup path due to the actions required following the discovery of TCE under the UST regulatory requirements. In September 2010, ALARNG submitted a request to ADEM to continue the activities at the Site under CERCLA. At the time, ALARNG was in the process of having an Alabama Risk Based Corrective Action (ARBCA) Report prepared (Aerostar, March 2011) and recommended using the existing data to develop an RI/FS. ADEM concurred with this approach in e-mail correspondence dated September 9, 2010 (ADEM, September 2010).

1.4 PREVIOUS INVESTIGATIONS

Previous environmental investigations at OMS #28 were conducted as part of the UST closure process. These original investigations centered on the contamination associated with the UST located at Pit 2.

The UST-related investigations that have been performed at OMS #28 were documented in the following reports:

- UST Closure Site Assessment Report, The Amory Commission of Alabama, OMS #28 and 29 – Pit #1, Pit #2 and Pit #3 (CWA Group, Inc., November 1992);
- Preliminary Investigation Report, OMS #28 Pit #2 (P.E. LaMoreaux and Associates, Inc.[PELA], December 1993);
- Underground Storage Tank Secondary Investigation Report, Alabama National Guard Armory, OMS#28 and 29 – Pit #2 (PELA, December 1994); and
- Secondary Investigation Addendum Report (Bechtel-S, August 2005).

ADEM determined that no further subsurface investigation was required for the UST located at Pit 2 (correspondence dated January 19, 2007, [ADEM, January 2007]).

This Data Gap Investigation addresses the chlorinated solvent groundwater plume. The details of the investigation of the TCE detection in well MW-8 in 2005 are documented in the following reports:

- TCE Comprehensive Investigation at the Organizational Maintenance Shop 28 (Aerostar, April 2007);
- Supplemental Comprehensive Investigation Report for the Alabama Army National Guard Organizational Maintenance Shop 28 (Aerostar, November 2008); and
- Supplemental Comprehensive Investigation Groundwater Monitoring Reports for OMS-28 (Aerostar, April 2009, August 2009, December 2009, June 2010, and January 2011).

The results of these TCE-related investigations were compiled into an RI without the collection of any additional field or sample data (SAIC, May 2013). The RI concluded that four VOCs (cis-1,2-dichloroethene [DCE], methylene chloride, PCE, and TCE) detected in site soils exceeded their respective soil screening levels (SSLs) for the protection of groundwater. Three areas of soil contamination were speculated to be acting as residual sources for TCE and PCE groundwater plumes (**Figure 1-4**). The largest area of soil contamination exceeding the protection of groundwater SSLs was identified in the vicinity of well MW-8, with a vertical extent of contamination throughout the unsaturated zone (ground surface to approximately 15 feet below ground surface [bgs]). Two smaller, isolated areas of soil contamination exceeding the protection of groundwater SSLs were located approximately 200 feet northwest of well MW-8 (around soil boring location B-17) and approximately 250 feet west of well MW-8 (around well MW-9), both on the MAA property.

The RI also reported a groundwater plume of TCE above the United States Environmental Protection Agency (USEPA) Drinking Water Maximum Contamination Limit (MCL; USEPA, March 2018) occurring across the Site and adjacent properties (**Figure 1-5**) within the shallow aquifer described as the water table. A smaller PCE plume was also reported within the larger TCE plume boundary occurring on the MAA property (**Figure 1-5**). The RI also noted that the horizontal extent of the TCE boundary in the area of the residential properties, as well as the vertical delineation of the groundwater plume, had not been fully investigated (SAIC, May 2013).

Based on the compilation of data reported in the RI, an FS was conducted, which recommended a biological/chemical reduction of groundwater and the excavation of soils at the Site. The selected alternative included the proposed injection of an engineered vegetable oil substrate package or other

carbon source for treatment of groundwater until the MCLs for TCE and PCE are achieved. To expedite the remedial timeframe following injection, this alternative also included the excavation of the residual soil mass that is acting as a continuing source for groundwater contamination and transportation of the resulting waste to a permitted municipal solid waste landfill for disposal (Leidos, February 2014).

2.0 CONCEPTUAL SITE MODEL

2.1 TOPOGRAPHY

Mobile is located within the Coastal Lowlands District areas and characterized by flat to gently undulating, locally swampy plains underlain by terrigenous deposits. They include the mainland plain, which is indented by many tidal streams and fringed by tidal marshes and barrier islands. The landward edge of the district is defined by the base of the Pamlico marine scarp at 25 to 30 feet of elevation. The barrier islands and tidal marshes in the area are undergoing continual modification by erosion and deposition (SAIC, May 2013). A topographic map of Mobile Bay is provided in **Figure 2-1**.

The Brookley Aeroplex is relatively flat with an elevation of 20 to 30 feet above MSL (Aerostar, March 2011). OMS #28 is located in the northeast corner of the Brookley Aeroplex where the elevations are closer to 30 feet above MSL (SAIC, May 2013). Large areas along the Mobile and Tensaw Rivers and along the coast are characterized by low-lying, swampy terrain and brackish water. The Brookley Aeroplex is included in this area (SAIC, May 2013).

2.2 LAND USE

The Brookley Aeroplex is located within Mobile County. Much of the land in Mobile County is used for industrial and agricultural purposes.

The current land use is based on a site reconnaissance performed by Louis Berger on March 31, 2015 and April 30, 2015 (Louis Berger, August 2015). The Site is developed with the OMS #28 building and several other smaller storage buildings. At the time of the reconnaissance, the ancillary storage buildings contained items such as miscellaneous wood items, fans, vehicle ramps, fire extinguishers, and miscellaneous metal. Each storage building is constructed as slab-on-grade. There was no staining or other evidence of release observed in these buildings. No operations, other than storage, are performed in these buildings. The majority of the Site is developed with concrete-paved driveways and vehicle storage areas. Some areas of the Site are unpaved and used for vehicle storage. Numerous military vehicles were stored at the Site at the time of the visit. Drip pans were present beneath nearly all of the vehicles (Louis Berger, August 2015).

The majority of the OMS #28 building consists of five vehicle bays (10 total work spaces) where routine maintenance on military vehicles is performed. The remainder of the building consists of office space and a break room. Servicing of military vehicles includes fluid changes and routine inspections to ensure safety and functionality. Waste oil generated in the work bays is deposited into one of two waste oil above-ground storage tanks along the north side of the building. Other waste vehicle fluids are containerized in 5- or 55-gallon drums and stored in a designated “Hazardous Materials Storage Area” or “Petroleum Products Storage Area” until pick-up and off-site disposal by an outside contractor on an as-needed basis. These storage areas appeared well maintained, clean, and were equipped with secondary containment systems for spills (Louis Berger, August 2015).

Two vehicle wash racks are present at the Site and are connected to a single oil/water separator. One wash rack is located north of the OMS #28 building and the other is located west of the building. According to onsite personnel, the northern wash rack is rarely used because the drain easily clogs. The western wash rack is equipped with a large hydraulic oil lift system capable of lifting large/heavy military

vehicles. A trench drain at this rack drains into an underground cistern where the oil and water mixture separates.

A concrete pad reported to measure approximately 50 feet wide by 50 feet long was observed in the wooded area approximately 50 feet west of the property line (fence line) of OMS #28 (**Figure 1-3**) during the 2015 reconnaissance by Louis Berger. The concrete pad comprised of six distinct and individual strips of concrete spaced a few inches apart. The concrete pad corresponds to the approximate former location of Mollison Hall, a recreational hall for soldiers, and is possibly a building foundation remnant.

2.3 SURFACE WATER HYDROLOGY

According to the Brookley AFB RI Report (Kevric, February 2004), the Brookley Aeroplex is part of the Mobile Bay Watershed. The fluvial drainage area of this watershed encompasses nearly two-thirds of the state of Alabama and crosses into Georgia, Mississippi, and Tennessee. According to the USEPA State Health Evaluation (USEPA, September 1999), this coastal lowlands aquifer system has an Index Watershed Indicator of "Less Serious Water Quality Problems (Low Vulnerability to Stressors such as Pollutant Loading)." Furthermore, ADEM's 2010 Alabama Unified Watershed Assessment classified parts of Mobile Bay as Category 1 – "waters that are attaining all applicable water quality standards" or Category 5 – "waters in which a pollutant has caused or is suspected of causing impairment" (ADEM, April 2010). The Category 1 classification was associated with Mobile County. The Baldwin County portion of Mobile Bay received the Category 5 classification (SAIC, May 2013).

Surface flow from storm water runoff across the Site varies due to surface grade, vegetation, and porous surface medium (SAIC, May 2013). During a site reconnaissance in 2015 of the wooded property west of the Site (MAA property), standing water and a drainage ditch, which ultimately flowed away from the Site to the west toward the railroad tracks, was observed. While standing water was observed in some areas, a strong flow was observed in the area of the railroad tracks. A small potential ditch was observed running west away from the former wash pad, ultimately connecting to the area of standing water. No pipes or drains were observed during the reconnaissance (Louis Berger, August 2015).

During the Supplemental Data Gap Investigation (2016-2017), no drainage ditch was observed on the MAA property as previously observed in 2015. Near well MW-9, standing water was observed following heavy rainfall. This area is lower in elevation than the surrounding area. There were no surface water bodies observed on the OMS #28, MAA, or nearby private properties during the 2016-2017 investigation activities.

2.4 PHYSIOGRAPHY

Mobile lies within the Coastal Plain physiographic province. It is further categorized within the East Gulf Coastal Plain within the Mississippi-Alabama continental shelf province. The Mississippi-Alabama continental shelf province encompasses the eastern Louisiana barrier islands and shelf, the Mississippi-Alabama barrier islands and shelf, Mississippi Sound, and Mobile Bay (Kindinger et al, 1994). This portion of the continental shelf is characterized by a complex network of paleovalleys that feed numerous deltas across the area (Greene, et al, 2007).

Mobile Bay is a fluvial valley incised during the Pleistocene and filled with deposits during the Holocene sea level rise, resulting in a low-energy, wave-dominated, microtidal estuary. The westward-prograding Holocene spit at the mouth of Mobile Bay has restricted the circulation of marine water and allowed the

valley to fill primarily with relatively thick lagoonal/estuarine deposits. At the northern end of the bay, delta-front deposits have encroached into the bay where the Mobile and Tombigbee Rivers have produced bay-head deltas. Mobile Bay is a highly complex environment with a mix of fluvial, estuarine, and marine sands (Kindinger et al, 1994).

Mobile and Baldwin counties comprise three physiographic districts: Southern Pine Hills, Alluvial-Deltaic Plain, and Coastal Lowlands (**Figure 2-2**) (Gillett, et al, February 2000). The city of Mobile is within the Alluvial-Deltaic Plain physiographic district. The Alluvial-Deltaic Plain physiographic district consists of alluvial and terrace deposits along the larger rivers such as the Mobile River (Gillett, et al, February 2000). The OMS #28 Site is within the Coastal Lowlands physiographic district near the border of the Alluvial-Deltaic Plain physiographic district. The Coastal Lowlands physiographic district is characterized by flat to gently undulating locally swampy plains underlain by deposits eroded from land (Gillett, et al, February 2000). Given the location of the OMS #28 Site, it is likely that there are characteristics of both physiographic districts.

2.5 REGIONAL STRATIGRAPHY

The geologic units exposed in Mobile County are of Tertiary to Quaternary age and consist chiefly of sand, gravel, silt, clay, and sandstone (Reed, July 1971). The Tertiary sedimentary deposits are generally unconsolidated. Alluvial, coastal, and terrace deposits of Quaternary age overlie Tertiary deposits in and adjacent to the flood plains of the larger streams and river and along the coastal areas of Mobile Bay (Gillett, et al, February 2000). **Figure 2-3** provides a geologic map of the area..

The source of recharge to the aquifers is through rainfall. The average annual rainfall in Mobile is 66 inches per year (U.S. Climate Data, August 2018).

Locally, there are two main aquifers are present in Mobile County, the Miocene-Pliocene aquifer and the Watercourse aquifer. The Miocene-Pliocene aquifer is of the Miocene and Pliocene series within the Tertiary period and is comprised of the Miocene series undifferentiated sediment and the Citronelle formation. The Watercourse aquifer is of the Pleistocene and Holocene series within the Quaternary period and is comprised on the high terrace deposits and the alluvium, coastal and low terrace deposits.

Regionally, the United States Geological Survey (USGS) has combined the Watercouse aquifer and the Miocene-Pliocene aquifer into one unit, the Sand and Gravel Surficial aquifer, as there is no confining unit that separates the two local aquifers (Miller, 1990). In general, the Sand and Gravel aquifer it is a thick sequence of coarse clastic rock that yields moderate volumes of water. The aquifer consists largely of interbedded layers of coarse sand and gravel that were deposited by streams. Thin clay beds in the Sand and Gravel aquifer locally create semi-confined conditions. The thickness in the Mobile Bay area is between 800 feet to greater than 1200 feet (Miller, 1990).

Water enters the Sand and Gravel aquifer as recharge from precipitation and moves generally downward, then either discharges to streams or moves coastward in the aquifer. Water movement in the upper zone of the aquifer is complex because this zone contains numerous discontinuous clay layers and some layers of iron oxide (hardpan). Because of the low permeability of the hardpan and the clay, and the confined conditions they produce, perched water table conditions, artesian conditions, and true water table conditions can all exist in one area (Miller, 1990).

The following describes in more detail the two local aquifers that comprise the Sand and Gravel aquifer.

Miocene-Pliocene aquifer

The Miocene-Pliocene aquifer consists of the Miocene series undifferentiated sediments and the Citronelle formation. The Miocene series undifferentiated sediments consist of clastic sedimentary deposits of marine and estuarine origin and represent a transition from the calcareous platform facies of Florida to the fluvial siliciclastic facies of Mississippi and subsiding Gulf basin. Sediments are somewhat wedge-shaped, thickening and dipping southwest toward the Gulf of Mexico (Gillett, et al, February 2000). They are primarily laminated to thinly bedded clays, sands, and sandy clays. The Miocene series undifferentiated sediments range in thickness from 400 feet in the northern part of the county to 3,400 feet in the southern part, and consist of laminated to massive marine and estuarine deposits (Reed, July 1971). In the Miocene series, the Pensacola Clay provides the base of the Miocene-Pliocene aquifer and separates it from the Floridan aquifer beneath (Gillett, et al, February 2000). Permeability of this confining unit is so small that practically no water passes across (Miller, 1990). The Miocene series undifferentiated sediments contain the deeper freshwater aquifers of the Mobile and Baldwin counties (Gillett et al, February 2000).

The Citronelle formation consist of non-fossiliferous, fine to very coarse quartz sand, sandy clay, and clayey gravel of non-marine origin (Reed, July 1971). In many areas, lenses of sandy clay and clayey sand range in thickness from 5 to 15 feet and are interbedded with gravelly sand (Gillett, et al, February 2000). Sediments near the base of the Citronelle formation have high clay content, indicating that they were deposited in an estuarine environment, whereas overlying sediments were deposited by sediment-laden streams (Isphording and Lamb, 1971). The Citronelle formation caps high hills and ridges and is relatively thin in the northern parts of the county, but has an estimated thickness of 200 feet at Dauphin Island in the southern part of the county (Reed, July 1971).

Groundwater flows through the sand and gravel beds of the Miocene-Pliocene aquifer that are irregular in thickness and of limited lateral extent. The clay intervals between the sand units are aquitards because the clays are not laterally extensive enough to prevent downward movement, but they do provide they do provide semi-confinement to many of the deeper sand and gravel intervals (Gillett, et al, February 2000).

Watercourse aquifer

The Watercourse aquifer is hydraulically connected to the Miocene-Pliocene aquifer. It is comprised of the high terrace deposits of the Pleistocene and the alluvium, coastal, and low terrace deposits of the Pleistocene and Holocene. The high terrace deposits unconformably overlie the Citronelle Formation in the northeastern part of Mobile County. The deposits consist chiefly of fine- to coarse-grained sand that is gravelly in some areas, and sandy clay (Reed, July 1971). The maximum thickness of the high terrace deposits is 40 feet; however, the deposits are more typically 15 to 20 feet in thickness (Reed, July 1971).

The alluvial, coastal, and low terrace deposits consists of partly carbonaceous, locally fossiliferous, interbedded very fine- to coarse-grained sand, gravel, and clay. The alluvial deposits generally are less than 70 feet thick, except in the Mobile River basin where they are as much as 150 feet thick (Reed, July 1971). The alluvial, coastal, and low terrace deposits represent a complex beach, dune, lagoonal, estuarine, and deltaic depositional environments (Gillett, et al, February 2000). These sand and gravel beds represent buried channel deposits which are surrounded by silt and clay sediments similar to those being deposited on the present flood plain of the river (Gillett, et al, February 2000).

The individual buried channels of the Watercourse aquifer may be directly connected to the present channels of the Mobile River. The length of individual sand and gravel beds probably ranges from a few hundred to a few thousand feet. The aquifer is hydraulically connected to the underlying Miocene-Pliocene aquifer. The sand and gravel beds in the watercourse aquifer and those in the shallow depths of the Miocene-Pliocene aquifer are hydraulically connected to the land surface; therefore, these aquifers are considered unconfined. Discontinuous lenses of clay retard the vertical movement of water, but do not completely separate the sand units; therefore, the Watercourse aquifer locally provides recharge for the underlying Miocene-Pliocene aquifer (Gillett, et al, February 2000).

2.6 SITE STRATIGRAPHY

AECOM reviewed the geologic data and regional literature at ALARNG OMS 28 in Mobile, Alabama and developed two representation Site-wide cross sections to support development of a site-specific CSM. The cross section locations are provided in **Figure 2-4** and the cross sections are presented in **Figures 2-5 and 2-6**. The cross sections provide geologic context for groundwater and analytical data, and can be used as the framework upon which new and existing datasets (groundwater, analytical chemistry, geophysical data, etc.) can be analyzed to better understand groundwater flow-paths, contaminant transport, and storage zones.

The cross sections were developed using Environmental Sequence Stratigraphy (ESS). ESS incorporates the petroleum industries best practices (sequence stratigraphy and facies analysis) to examine subsurface data within the context of depositional environments. Shown for each boring log in the cross sections is either a graphical grain-size log (a vertical series of colored blocks, which correspond to boring log lithology) or a continuous geophysical curve (which corresponds to a Membrane Interface Probe [MIP]/Hydraulic Profiling Tool [HPT] electrical conductivity log). These graphical representations of vertical grain-size distribution were the basis for the correlations between data points on the cross sections.

The color-coded blocks correspond to the graphic grain-size scale as shown in the cross sections' keys. The width of the block increases with relative grain-size. Block color indicates the textural classification of sediment (e.g. yellow for sand, green for silt, blue for clay) as written in the field notes of the core logging geologist (see the cross section keys for further definition).

MIP/HPT electrical conductivity logs are a common proxy for grain-size. They typically are used as a correlation aide because repetitive spatially extensive trends in grain-size are easily identified visually when curves are examined along a given section. The HPT measures the pressure required to inject a flow of water into the soil. Therefore, high measurements typically indicate clay layers while lower readings generally indicate coarser grain-sizes.

The previously established general hydrostratigraphy at ALARNG OMS 28 consists of an upper sandy unit (shallow aquifer) and a lower sandy unit (lower aquifer) separated by a thick clay confining unit (**Figure 2-7**). The RI Report states that the upper sandy unit extends from approximately 5 feet bgs to depths ranging from 16 feet to 35 feet bgs and consists of medium-grained sands, silty sands, and clayey sands (SAIC, May 2013). Below the upper sandy unit, a stiff gray clay (confining unit) was encountered, which extends to a depth between 70 feet and 84 feet bgs in borings across the Site. Beneath the confining unit, a course-grained sand was encountered to a depth of 90 feet bgs followed by clayey sand

to a depth of 104 ft bgs (SAIC, May 2013). Sandy clay and silty clay were encountered from a depth of 104 ft bgs to 120 ft bgs, the termination depth of the exploratory boring.

In contrast to the site stratigraphy presented in the RI Report (SAIC, May 2013), ESS correlation beneath the Site within the upper sandy unit (shallow aquifer) reveals that the sediment consists of several phases of Bayhead delta mouth-bar progradation/retrogradation that are represented by three depositional sequences. These sequences were most likely caused by small changes in water elevation throughout Mobile Bay through time. Maximum Flooding Surfaces (Red Markers on cross sections) represent periods of elevated water level and localized flooding (retrogradation). As the muddiest intervals in the system, these Maximum Flooding Surfaces generally act as confining beds. Conversely, Sequence Boundaries (Purple Markers on cross sections) represent surfaces of exposure/erosion due to significant drops in water elevation. As the sandiest intervals in the system, these deposits represent significant mouth-bar progradation and tend to be highly transmissive.

In addition to demonstrating that several phases of Bayhead delta mouth-bar progradation/retrogradation exist within the shallow aquifer, the ESS cross sections also exhibit significant heterogeneity within these deposits. The sand-bodies (yellow on the cross sections) are interlaminated with thin, continuous clays (grey on the cross sections) and they also dip in many different directions, the product of local subsidence. Not only does subsidence play a significant role in groundwater flow directions, but it may have also created transmissive pathways for shallow contaminants to migrate deeper (For example, see MHP-09 or MHP-05 from W-E section **Figure 2-6**).

During the course of the Supplemental Data Gap Investigation, the upper sandy unit (shallow aquifer) was subdivided into the Upper Surficial, Middle Surficial, and Lower Surficial based on the EES. A detailed discussion of the separation within the shallow aquifer is provided in Section 4.1.2.

One of the most important benefits of ESS is to develop and refine the CSM. ESS provides a predictive framework for hydrostratigraphic units, but regional and local differences in sediment supply, depositional environment, and sea level affect the development of the hydrogeologic framework. Sequence stratigraphy allows packages of coarser sediments to be bracketed in a predictable manner by confining units. Facies analysis, coupled with depositional models, allows for the prediction of the potential scale and connectivity of coarser aquifer material. Sequence stratigraphy and facies analysis provides a means of roughly predicting permeability, porosity, and conductivity from aquifers, though exact estimates can only be achieved through hydraulic testing. However, understanding the sequence stratigraphy and depositional facies is critical for understanding scale and connectivity of aquifers and their confining units and predicting their local distributions.

2.7 ECOLOGY

The Mobile-Tensaw River Delta is Alabama's largest wetland ecosystem and the OMS #28 Site falls within the south-west portion of the delta. Key habitats within the Mobile-Tensaw River Delta include freshwater wetlands, bogs, bottomland hardwoods, freshwater and hardwood swamps, maritime forests, mesic flood plains, pine savannas, riparian buffers, submerged seagrass beds, tidal brackish water marshes, and waterways (The Mobile Bay National Estuary Program, August 2013).

The ecological community at OMS #28 consists of a forested area with a canopy of mainly oak trees as well as smaller trees, shrubs, grasses, and forbs in the understory. The diversity of vegetation and

habitats in this terrestrial community is limited, and the community is fragmented and separated from other, larger habitat areas. As a result, this area likely provides habitat for a limited fauna of wildlife species that typically are common in close proximity to development and human activity. Mammals that may occur in this community include the gray squirrel, eastern cottontail, opossum, southeastern shrew, and cotton mouse. Birds likely to utilize these habitats include the American robin, brown thrasher, mockingbird, cardinal, and Carolina wren. Reptiles that may be present include the gray rat snake, southern fence lizard, and green anole. Amphibians potentially occurring in this community include the gray frog and southern toad. There are no surface waters or aquatic communities near the Site.

2.8 POTENTIAL SOURCE AREAS

Following the detection of TCE at well MW-8 in March 2005, a comprehensive investigation at OMS #28 was initiated to determine the source of TCE in the groundwater. The previous investigations identified two potential sources of TCE groundwater contamination, one on ALARNG property and one on MAA property. In addition, one potential source of PCE groundwater contamination was identified on MAA property based on soil samples collected from April 2006 through March 2007 (**Figure 1-4**).

The potential source of TCE in groundwater was identified on ALARNG property through soil sampling around well MW-8, where a number of surface and/or subsurface samples exceeded the protection of groundwater SSL for TCE at the time of the RI (**Figure 1-4**). The second potential source of TCE in groundwater was identified during the installation of well MW-9, where the surface soil sample exceeded the protection of groundwater SSL for TCE.

The potential source for PCE was identified during soil sample collection at soil boring location B-17. In both the B-17 surface soil sample and the B-17 subsurface soil sample (8 to 10 feet bgs), PCE was detected above its protection of groundwater SSL.

3.0 GROUNDWATER MONITORING EVENTS

Groundwater monitoring completed for the data gap investigation occurred during two sampling events. The first sampling event occurred in January 2016 and the second in May 2017. Groundwater monitoring activities for these two events were completed in accordance with the UFP-QAPP (AECOM, January 2016) on groundwater well sampling. Only minor deviations from the QAPP were necessary due to Site conditions and they are described along with the investigation activities in the sections below.

3.1 GROUNDWATER MONITORING EVENT – JANUARY 2016

The January 2016 groundwater monitoring event was conducted from January 19 through 21 by AECOM field staff. Groundwater sampling locations are shown on **Figure 3-1**. Other activities completed during this sampling event included brush clearing for well and property access, well condition assessments, and the re-development of select wells prior to sampling activities.

3.1.1 Vegetation Clearing

Heavy brush was cleared to allow access to each monitoring well location and to clear room to conduct the field investigation activities for soil and groundwater, including limited clearing around wells to gain access for sampling. The fence line around the OMS #28 and the MAA property where the investigation took place was also cleared. Approximately 1.95 acres were cleared. A skid-steer with forestry mulcher was used to remove the vegetation. Grasses and soft vegetation were flattened and woody vegetation, such as trees and shrubs, were shredded or chipped and spread onsite. The large permanent trees were not cleared.

3.1.2 Well Condition Assessment

During the January 2016 groundwater sampling event, the field team recorded the physical condition of each well on Well Maintenance Forms. The completed Well Maintenance Forms and photographs of each well are provided in **Appendix A** (**A1**). A summary of the well condition assessment is provided as **Table 3-1**. In general, wells were found without well tags and several wells did not have protective metals casings around the PVC stickup casing; however, most wells were usable and able to be sampled. Two wells were found damaged, MW-8 and OMS-28-6. These wells were found buried under approximately one- to two feet of crusher run. Employees at the OMS #28 facility helped to uncover the wells with an excavator. After excavation, monitoring well MW-8 was found with the casing bent below the ground surface. The well was able to be sampled; however, depth to water could not be accurately measured. Well OMS-28-6 was found destroyed after being uncovered by the excavator. PVC with a slip cap was found loosely in the ground were the OMS-28-6 once was, surrounded by the remaining grout column. The PVC was lifted out of the hole and the hole was measured to approximately 9-feet bgs.

3.1.3 Well Development

In accordance with the UFP-QAPP (AECOM, January 2016), monitoring wells MW-8, OMS-28-6, OMS-28-7, OMS-28-1, and MW-12 were measured for total depth prior to initiating sampling activities to determine if there was sediment in the bottom of the wells that needed to be removed. All wells were found with no excessive sediment in the bottom with the exception of well MW-8, which was found buried under one- to two-feet of crusher run. To remove the sediment, well MW-8 was redeveloped by pumping and surging the well as much as possible. This had to be completed using a peristaltic pump since MW-8

had a bent casing. The redevelopment of MW-8 was continued until the turbidity of the water was below 10 NTUs. Following this process, the rate of pumping was reduced to that of low-flow groundwater sampling. During development, field parameters (water temperature, pH, oxidation-reduction parameter, specific conductivity, and turbidity) were measured until stability was achieved. The well development log for well MW-8 is provided in **Appendix A (A2)**. No other wells were in need of re-development.

3.1.4 Water Level Event

Ten monitoring wells were gauged on January 19, 2016, to assess static groundwater elevations and determine groundwater flow directions. Well OMS-28-6 was not gauged because it was found destroyed (see Section 3.1.2) and well MW-8 was gauged only during groundwater sampling to calculate well volume. Monitoring well MW-8 was found with a bent casing; therefore, the groundwater elevation cannot be accurately calculated because the top of casing elevation is no longer valid. The remaining water levels were collected in accordance with the UFP-QAPP (AECOM, January 2016). Depth to water and calculated groundwater elevations are reported in **Table 3-2**.

In January 2016, the groundwater elevation in the shallow aquifer ranged from 20.61 feet above mean seal level (msl) at well MW-12 to 24.72 feet above msl at well MW-9. Groundwater elevation in the deep zone screened below a confining clay unit was 4.17 feet above msl at well OMS-28-1 and 2.09 feet above msl at well OMS-28-4. In general, these groundwater elevations were consistent with previous gauging events.

A groundwater elevation map of the shallow aquifer is depicted on **Figure 3-2** based on the January 2016 water elevations of the eight gauged wells screened in the shallow zone. Based on the groundwater elevation contours and apparent flow directions, there appears to be a local trough feature running north-south between well OMS-28-5 and area west of well OMS-28-7, with groundwater converging from each side before flowing northward.

3.1.5 Analytical Results

During the January 2016 groundwater monitoring event, 11 of the planned 12 wells were sampled to evaluate concentrations of chlorinated solvents. All wells associated with Site OMS #28 were sampled with the exception of well OMS-28-6. As discussed in Section 3.1.2 Well Condition Assessment, well OMS-28-6 could not be sampled because it was found buried under crusher run and destroyed. Well MW-8 was also found under the crusher run with a bent casing; however, tubing could be inserted for sampling. The monitoring wells were purged and sampled in accordance with the UFP-QAPP (AECOM, January 2016).

Field parameters were measured during purging, and groundwater samples were analyzed for VOCs by USEPA Method 8260B by Gulf Coast Analytical Laboratories (GCAL). The field parameters are provided on the groundwater sampling logs provided in **Appendix A (A3)**. A summary of the groundwater analytical results for the January 2016 sampling event is presented in **Table 3-3**. The laboratory data packages are presented in **Appendix B (B1** and **B2)**. The limited data validation report (DVR) for the January 2016 sampling event is provided in **Appendix C (C1)**.

Data were compared to the USEPA MCLs (USEPA, March 2018). If there was not a MCL, the USEPA Regional Screening Level (RSL) for tap water, based on a risk of 10^{-6} for carcinogens and HQ of 0.1 for noncarcinogens (USEPA, May 2018), was used. Exceedances of chemicals of concern (COCs; i.e., PCE

and TCE) and their daughter products (i.e., cis-1,2-DCE and vinyl chloride) in groundwater are discussed below.

PCE

In the shallow aquifer, PCE exceeded its MCL in the sample from one well, OMS-28-5 (**Table 3-3; Figure 3-1**). Historically, PCE has only been detected above the MCL at this well (**Table 3-4**). PCE was not detected above the limit of detection (LOD) in any other sample from the shallow aquifer wells. In the deep aquifer zone, PCE was detected at a low, estimated concentration in well OMS-28-4 during the January 2016 sampling event (**Table 3-3; Figure 3-1**). Historically, PCE has not been detected at this location above the LOD (**Table 3-4**). PCE was not detected at or above the LOD in the other deep aquifer zone well (OMS-28-1) during the January 2016 sampling event (**Table 3-3**).

TCE

In the shallow aquifer, TCE concentrations exceeded the MCL in samples from monitoring wells MW-8, OMS-28-3, and OMS-28-5 (**Table 3-3; Figure 3-1**). Historically, TCE has exceeded its MCL in samples from these wells only (**Table 3-4**). Well MW-8 initially had the highest concentration of TCE; however, based on the January 2016 results, the highest concentration of TCE is currently in well OMS-28-5. The increase in concentration at well OMS-28-5 may be from PCE degradation at well OMS-28-5, from downgradient flow from wells MW-8 and OMS-28-3, which are upgradient of well OMS-28-5, or from a combination of both (**Figure 3-1**). In the deep aquifer zone, TCE was not detected at or above the LOD during the January 2016 sampling event (**Table 3-3**).

Cis-1,2-DCE

Cis-1,2-DCE is a degradation product of TCE and, ultimately, PCE. It is being monitored to determine if degradation is occurring in the groundwater environment. During the January 2016 sampling event, cis-1,2-DCE concentrations did not exceeded the MCL in any samples from the shallow aquifer unit (**Table 3-3; Figure 3-1**). In the two wells where concentrations of cis-1,2-DCE were detected (OMS-28-3 and OMS-28-5), TCE was also detected, (**Table 3-4**). In the deep aquifer zone, cis-1,2-DCE was not detected during the January 2016 sampling event (**Table 3-3**).

Vinyl Chloride

Vinyl chloride is a daughter product of cis-1,2-DCE in the chlorinated degradation chain of PCE and TCE. During the January 2016 sampling event, vinyl chloride was not detected at a concentration greater than the LOD in any of the shallow or deep aquifer zone wells sampled (**Table 3-3; Figure 3-1**). Historically, vinyl chloride concentrations have not been detected at the sample quantitation limit or have been below the MCL in all shallow and deep aquifer zone monitoring wells (**Table 3-4**).

3.1.6 Data Quality

In accordance with the UFP-QAPP Amendment (AECOM, January 2016), GCAL in Baton Rouge, Louisiana conducted the chemical analyses for groundwater samples. AECOM performed intra-organizational quality control (QC) checks of field and laboratory procedures used in collecting and analyzing the data. The QC checks verified the data collected were of appropriate quality for the intended data use. No QC excursions were encountered during the validation of this data set (see **Appendix C-1**).

One field duplicate sample was collected to determine the precision of the analytical method. The relative percent difference (RPD) was calculated where detections occurred without data flags. All RPD results for the duplicate sample calculations were below the maximum acceptable level of 35 percent for VOCs. The results of the RPD calculations are provided in the data validation report provided in **Appendix C** (**C1**).

Trip blanks were also used for all sample shipments during the monitoring event. A trip blank is associated with each day's shipment of VOCs, with one trip blank per cooler containing VOCs samples. A trip blank is used to assess the possibility of cross contamination of VOCs during shipment. Two trip blanks were used during the sampling event. The trip blank samples were free of target analyte contamination (**Appendix C1**).

One matrix spike/matrix spike duplicate (MS/MSD) sample was collected during the January 2016 sampling event. The MS/MSD sample is used to document the bias of a method due to sample matrix. The performance of the MS/MSD is evaluated against the QC acceptable limits for the purposes of data validation only. If either the MS or the MSD were outside the QC acceptance limits, the analytes in all related samples would be qualified with a data flag. During the January 2016 sampling event, no sample results were qualified with MS or MSD data flags.

3.2 GROUNDWATER MONIORING RESULTS – MAY 2017

The May 2017 groundwater monitoring event was conducted from May 1 through 5 by AECOM field staff. Groundwater sampling locations are shown on **Figure 3-1**. In addition to the well sampling event, a water level event was also conducted to support calculation of groundwater elevations and flow directions.

3.2.1 Water Level Event

Ten monitoring wells were gauged on May 1, 2017, to assess static groundwater elevations and determine groundwater flow directions. Well OMS-28-6 was not gauged because it was found destroyed (see Section 3.1.2) and well MW-8 was gauged only during groundwater sampling to calculate well volume. Well MW-8 was found with a bent casing; therefore, the groundwater elevation cannot be calculated because the top of casing elevation is no longer valid. The remaining water levels were collected in accordance with the UFP-QAPP (AECOM, January 2016). Depth to water and calculated groundwater elevations are reported in **Table 3-2**.

Groundwater elevation in the shallow aquifer ranged from 20.06 feet above msl at well OMS-28-5 to 24.25 feet above msl at well MW-9. Groundwater elevation in the deep zone screened below a confining clay unit was 3.83 feet above msl at well OMS-28-1 and 1.73 feet above msl at well OMS-28-4. In general, these groundwater elevations were consistent with previous gauging events.

A groundwater elevation map of the shallow aquifer is depicted on **Figure 3-3** based on the May 2017 water elevations of the eight gauged wells screened in the shallow aquifer. The apparent groundwater flow directions are similar to the January 2016 flow directions. The flow pattern at the Site appears to be dominated by a local trough feature running north-south between well OMS-28-5 and area west of well OMS-28-7 with groundwater flow converging from each side before turning northward.

3.2.2 Analytical Results

During the May 2017 groundwater monitoring event, 11 of the planned 12 wells were sampled to evaluate concentrations of chlorinated solvents. All wells associated with Site OMS #28 were sampled with the exception of well OMS-28-6. As discussed in Section 3.1.2, well OMS-28-6 could not be sampled because it was found destroyed. Well MW-8 was also found under the crusher run with a bent casing; however, tubing could be inserted for sampling. The monitoring wells were purged and sampled in accordance with the UFP-QAPP (AECOM, January 2016).

Field parameters were measured during purging, and groundwater samples were analyzed for VOCs by USEPA Method 8260B by GCAL. The field parameters are provided on the groundwater sampling log provided in **Appendix A (A4)**. A summary of the groundwater analytical results for the May 2017 sampling event is presented in **Table 3-3**. The laboratory data package is presented in **Appendix B (B3)** and the limited DVR for the May 2017 sampling event is provided in **Appendix C (C2)**.

Data were compared to the USEPA MCLs (USEPA, March 2018). If there was not a MCL, the USEPA RSL for tap water (USEPA, May 2018), which is based on a risk of 10^{-6} for carcinogens and HQ of 0.1 for noncarcinogens, was used. Exceedances of Site COCs and their daughter products in groundwater are discussed below.

PCE

In the shallow aquifer, PCE exceeded its MCL in one sample from well OMS-28-5 (**Table 3-3; Figure 3-1**). Historically, PCE has only been detected above the MCL at this well (**Table 3-4**). PCE was not detected above the LOD in any other sample from monitoring wells screened in the shallow aquifer. In the deep aquifer zone, PCE was not detected during the May 2017 sampling event (**Table 3-3; Figure 3-1**). Historically, PCE has not been detected above the MCL in any deep aquifer zone monitoring well (**Table 3-4**).

TCE

In the shallow aquifer, detected concentrations of TCE exceeded the MCL in samples from monitoring wells OMS-28-3 and OMS-28-5 (**Table 3-3; Figure 3-1**). Historically, TCE has exceeded its MCL in samples from wells MW-8, OMS-28-3, and OMS-28-5 only (**Table 3-4**). In May 2017, the TCE concentration in the sample from MW-8 was a low, estimated concentration below the MCL. Well MW-8 initially had the highest concentration of TCE; however, based on the May 2017 results, the highest concentration of TCE is currently at well OMS-28-5. The increase in concentration at well OMS-28-5 may be the result of PCE degradation at OMS-28-5, from downgradient flow from wells MW-8 and OMS-28-3, which are upgradient of well OMS-28-5, or from a combination of both (**Figure 3-1**). In the deep aquifer zone, TCE was not detected during the May 2017 sampling event (**Table 3-3**).

Cis-1,2-DCE

Cis-1,2-DCE is a degradation product of TCE and, ultimately, PCE. It is being monitored to determine if degradation is occurring in the groundwater environment. During the May 2017 sampling event, the cis-1,2-DCE concentration in one sample from well OMS-28-5 in the shallow aquifer zone exceeded its MCL (**Table 3-3; Figure 3-1**). Cis-1,2-DCE was detected in only one other shallow well in May 2017, OMS-28-3. At both wells where cis-1,2-DCE was detected, TCE was also detected (**Table 3-4**). In the deep

aquifer zone, cis-1,2-DCE was not detected in any samples collected during the May 2017 sampling event (**Table 3-3**).

Vinyl Chloride

Vinyl chloride is a daughter product of cis-1,2-DCE in the chlorinated degradation chain of PCE and TCE. During the May 2017 sampling event, vinyl chloride was not detected at a concentration greater than the LOD in any of the shallow or deep aquifer zone monitoring wells sampled (**Table 3-3; Figure 3-1**). Historically, vinyl chloride concentrations have not been detected or have been below the MCL in both the shallow and deep aquifer zone monitoring wells (**Table 3-4**).

3.2.3 Data Quality

In accordance with the UFP-QAPP (AECOM, January 2016), GCAL in Baton Rouge, Louisiana conducted the chemical analyses for groundwater samples. AECOM performed intra-organizational QC checks of field and laboratory procedures used in collecting and analyzing the data. The QC checks verified the data collected were of appropriate quality for the intended data use. No QC excursions were encountered during the validation of this data set (see **Appendix C2**).

One field duplicate sample was collected to determine the precision of the analytical method. The RPD was calculated where detections occurred without data flags. All RPD results for the duplicate sample calculations were below the maximum acceptable level of 35 percent for VOCs. The results of the RPD calculations are provided in the DVR provided in **Appendix C** (**C2**). Note that well sampling during the May 2017 event occurred concurrently with discrete groundwater sampling (Section 4.0) during May and June 2017 and these data are also included in the DVR report.

Trip blanks were also used for all sample shipments during the monitoring event. A trip blank is associated with each day's shipment of VOCs, with one trip blank per cooler containing VOCs samples. A trip blank is used to assess the possibility of cross contamination of VOCs during shipment. One trip blank was used during the sampling event. The trip blank sample was free of target analyte contamination (**Appendix C2**).

One MS/MSD sample was collected during the May 2017 sampling event. The MS/MSD sample is used to document the bias of a method due to sample matrix. The performance of the MS/MSD is evaluated against the QC acceptable limits for the purposes of data validation only. If either the MS or the MSD were outside the QC acceptance limits, the analytes in all related samples would be qualified with a data flag. During the May 2017 sampling event, no sample results were qualified with MS or MSD data flags.

3.3 IDW MANAGEMENT

During the January 2016 sampling event, two drums of purge water were generated from groundwater sampling activities. During the May 2017 sampling event, seven drums of aqueous investigation-derived waste (IDW) were generated by a combination of purge water from groundwater sampling activities and purge and decontamination water from data gap investigation activities (see Section 4.0). The IDW was stored in 55-gallon drums. The drums were transported on August 8, 2017 by Horizon Environmental Services, LLC. Analytical data generated during the sampling events were submitted to Horizon Environmental Services, LLC and determined that the aqueous IDW was non-hazardous. Horizon

Environmental Services, LLC disposed of the nine aqueous drums of IDW as non-hazardous waste. The manifest is provided in **Appendix D** (**D1**).

4.0 DATA GAP INVESTIGATION

In 2014, the FS recommended the alternative Biological/Chemical Reduction of Groundwater with Excavation of Source Soils as the preferred alternative. This alternative includes the excavation of an area of soil (approximately 70 ft by 80 ft) surrounding monitoring wells OMS-28-6 and MW-8, as well as an area of soil (approximately 20 ft by 20 ft) surrounding borehole location B-17. The excavation depths are designed to extend vertically from the ground surface to the water table (approximately 15 ft bgs) (**Figure 1-4**). These areas were determined to exceed the protection of groundwater soil screening levels for PCE and/or TCE. This alternative also includes the treatment of groundwater with amendments to promote enhanced reductive dechlorination of Site-related chlorinated solvents.

As discussed in Section 1.1, the main purpose of this investigation was to refine the CSM within the shallow zone to aide in the design and implementation of the selected remedy. The objectives of this Supplemental Data Gap Investigation were to conduct an investigation to identify if other soil source areas were contributing to groundwater contamination and to improve the delineation of the known groundwater contaminant plume.

The investigation contained three parts to meet these objectives:

- Subsurface investigation using a MIP and HPT,
- Soil sampling via direct push technology (DPT), and
- Discrete groundwater sampling via DPT.

Figure 4-1 presents a location map of all data gap investigation sample locations.

4.1 MIP / HPT

The MIP and HPT work were conducted by Columbia Technologies between April 10 and 14, 2017. Multiple probes were used during the investigation. Boreholes were investigated using a MIP, HPT, and a combination of both tools in one probe (MHP). The locations of the MIP, HPT, MHP locations are provided on **Figure 4-1**.

4.1.1 Methods

Several probes or tools were used in the investigation: electrical conductivity (EC), MIP, HPT, photo ionization (PID), and halogen-specific detector (XSD). A description of each is provided as follows:

- The EC continuously measures soil electrical conductivity. In general lower conductivity values are characteristic of larger grain-size soil types, while higher conductivities are characteristic of finer sized particles, such as finer sand silts, and clays.
- MIP continuously measures total chemical detector response to VOCs verses depth. The MIP was used in saturated and unsaturated soils. At OMS #28, Low Level MIP (LLMIP) was used to increase the sensitivity of the MIP logging tool.
- HPT continuously measures the hydraulic conductivity of the soil by injecting the constant flow of water through a small stainless steel screen into the soil formation and measuring the hydraulic pressure at both the pump source and the injection port verses depth. The HPT software can also provide an estimate of hydraulic conductivity (K) to provide an interpretation of the hydraulic permeability of the formation.

- The PID consists of a special ultraviolet lamp that emits a response for chlorinated compounds containing double-bonded carbons such as TCE and PCE.
- The XSD consists of a ceramic probe, platinum wire (anode), and platinum bead (cathode) mounted inside a high-temperature reactor. The XSD is sensitive and provides a linear response to the quantity of halogen (e.g. TCE and PCE).

A DPT rig was used to carry the probes to the target depths. The top of the lower clay, initially estimated at 30-ft bgs, was the targeted termination depth for each point. Twenty (20) points were completed with MIP, HPT, or MHP. The total depths of the 20 points ranged from 32.7 ft bgs to 50.6 ft bgs (**Table 4-1**).

4.1.2 Findings

The results of the MIP/HPT investigation are presented in **Appendix E**. MIP locations were strategically placed to help determine if additional sources were present that were contributing to the groundwater plumes as understood prior to this investigation, and these locations are shown on **Figure 4-1**. Specifically, investigation borings were located in the vicinity of the former pollution control system and the former washpad, shown on Figure 1-3, and the proposed soil excavation area within the plume boundary near soil boring B-17 (**Figure 1-4**). Results of the MIP/HPT investigation related to the evaluation of potential source areas are as follows:

- Along the former pollution control system, responses from the XSD were minimal and nearly no different from background. A response in the PID was identified in the top 3-feet and between 7 to 10 feet at MIP-08 and MIP-09. At MIP-07, a PID response was also indicated from 3- to 8-feet bgs. With the lack of a corresponding XSD response in the associated logs, the PID response may indicate the presence of organic matter and not that of chlorinated solvents.
- At the former washpad and identified soil excavation area around well MW-8, responses from the XSD were identified between 15 and 21 feet. This depth range is below the water table and is indicative impacted groundwater rather than a possible additional source.
- Within the plume, specifically in the area of the known PCE plume from 2010 (soil boring B-17, **Figure 1-4**), a response from the XSD was noted from 15 to 18 feet bgs. This depth range is below the water table and is indicative of impacted groundwater rather than a possible additional source.

Additional locations, MIP-02 and MIP-03, were also investigated to determine if a source might be present near other wells that have shown high concentrations of TCE and/or PCE. At MIP-02, near well OMS-28-3, a response from the XSD between 13 and 15 feet bgs was recorded. This depth range is below the water table indicating impacted groundwater instead of a possible additional source in the soil contributing the groundwater contamination.

Location MIP-03 was east of MIP-04 and within the 2010 PCE plume footprint. Between 7 and 14 feet bgs, a response from the XSD was recorded. However, like at location MIP-02, this response was located within the smear zone and water table, indicating impacted groundwater instead of a possible additional source in the soil.

The HPT investigation results aided in the development of the ESS discussed in Section 2.6 and were used to help guide the selection of sample depths for the discrete groundwater sampling event, targeting sands within the shallow zone for groundwater sampling. HPT was utilized to record responses at 11

locations, in addition to the 9 MIP locations. Utilizing the HPT data, two coarse-grained zones were observed at most locations within the shallow upper sandy zone. In the EC log and corresponding HPT pressure average, a lower response indicates a coarser-grained material while a higher response indicates a finer-grained material. Two zones of coarse-grained material were routinely visible within the shallow upper sandy zone prior to reaching what was believed to be the thick clay confining unit identified in the cross section from the RI (SAIC, May 2013), which is included as **Figure 2-7**. The sand zones identified with the HPT are generally only a few feet thick and, in most cases, still contain fine-grained material. Utilizing the HPT data, the shallow aquifer zone could be divided into three zones:

- Upper surficial, extending from the water table, ranging in depth from approximately 6 to 13 feet bgs, and typically comprised of fine-grained material without any significant coarse-grained zones;
- Middle surficial, indicated by the first coarse-grained material zone, approximately 4-to 6-feet thick, and encountered between 12 and 26 feet bgs; and
- Lower surficial, which sits on the top of the thick clay confining unit identified during the RI that separates the Shallow aquifer from the Deep aquifer, indicated by the second coarse-grained material zone, approximately 3 to 5 feet thick, and encountered greater than 26 feet bgs.

Based on the EES discussed in Section 2.6, the zones of coarse material identified on the EC log are made up of thin, discontinues lenses of alternating sands and clay/silt material.

4.2 SOIL SAMPLING

Based on the results of the MIP investigation and results of previous soil sampling conducted in 2006 and 2007, additional soil samples were collected as part of the supplemental data gap investigation.

4.2.1 Methods

Continuous soil cores were collected via DPT in accordance with the UFP-QAPP (AECOM, January 2016). The soil was screened at 2-foot intervals with a PID. For each soil boring, samples were collected at three depths: surface soil (0-1 foot), upper subsurface soil (of the sample interval with the highest VOC concentration as identified with the MIP or PID), and a lower subsurface zone (1-foot above the soil/water interface). The soil/water interface was generally encountered between 4 to 7 feet bgs. Soil samples were collected at the bottom of each sample interval utilizing TerraCore® sampling sets to minimize the release of volatiles from the sample. The locations of the soil boring are presented in **Figure 4-1**.

The soil samples were analyzed for TCE and PCE via USEPA Method SW8260B by the on-site mobile laboratory, Columbia Technology, LLC. As a quality check, split samples were collected at a frequency of 10% of total soil samples and sent to an off-site fixed laboratory, GCAL, for analysis of a target compound list (TCL) of VOCs by USEPA Method SW8260B. Field duplicate samples (10% frequency), MS/MSD samples (5% frequency), and equipment blanks (% frequency) were also collected and were analyzed at the on-site mobile laboratory. Field duplicates and MS/MSD samples were collected for the off-site fixed laboratory at 10% and 5% frequency, respectively, of split samples.

Soil locations within the residential property (Parcel R022911360003106) were not originally planned as part of the initial soil sampling as described in the UFP-QAPP (AECOM, January 2016). These locations (i.e., SB23 through SB31) were added in the field based on the results of TCE and PCE at discrete groundwater sampling location OMS-28-GW22 (discussed in Section 4.3). The groundwater results of

PCE and TCE at this location indicated that a possible soil source might be present; therefore, additional soil samples were added to define the area. The discrete groundwater results are discussed in Section 4.3.

4.2.2 Results

Ninety-three (93) soil samples were collected and analyzed from 31 boring locations. Soil sampling logs are provided in **Appendix A** (**A5**). The on-site mobile laboratory analytical results are presented as **Table 4-2** and are screened against the residential soil screening level (SSL), industrial SSL, and the MCL-based protection of groundwater SSL from the USEPA RSL Table (USEPA, May 2018). A summary of the concentrations for detected VOCs in the split samples from the off-site fixed laboratory are presented in **Table 4-3** and are screened in the same manner as the results from the on-site mobile laboratory. **Figures 4-3 through 4-5** depict the results of soil samples that were analyzed by the mobile laboratory and exceed the soil screening criteria for TCE and/or PCE. The laboratory report for data analyzed by the mobile laboratory is included in **Appendix B** (**B6**) and the DVR is provided in **Appendix C** (**C2**).

Soil samples collected within the extent of the ALARNG facility's boundaries during the data gap investigation did not result in TCE or PCE concentrations above laboratory detection limits for any of the sample depths.

Surface Soil (0-1 foot)

Surface soil samples were collected from the bottom of the 0-1 foot interval. **Table 4-2** provides the analytical results from the on-site mobile laboratory for PCE and TCE and **Figure 4-3** shows the surface soil locations and PCE/TCE concentrations exceeding either the residential or the industrial RSLs for these locations.

On MAA Property, near the adjacent residential property (Parcel R022911360003106), two soil boring locations (OMS-28-SB18 and OMS-28-SB19) had detections of PCE above the MCL-based protection of groundwater SSL (0.0023 milligrams per kilogram [mg/kg]); however, TCE concentrations at these locations were below laboratory detection limits.

Soils samples collected from six soil boring locations (OMS-28-SB24, -SB25, -SB28, -SB29, -SB30, and -SB31) on the off-site residential property (Parcel R022911360003106) resulted in concentrations of PCE and/or TCE that exceeded screening criteria. One location, OMS-28-SB24, had a concentration of PCE exceeding the industrial RSL (39 mg/kg; USEPA, May 2018) and three locations (OMS-28-SB29, -SB30, and -SB31) had a concentration of PCE exceeding the residential RSL (8.1 mg/kg; USEPA, May 2018). Two locations (OMS-28SB25 and –SB28) had concentrations of PCE exceeding the MCL-based protection of groundwater SSL (0.0023 mg/kg; USEPA, May 2018). Soil samples from three locations within the residential property had concentrations of TCE above the MCL-based protection of groundwater SSL (0.0018 mg/kg; USEPA, May 2018), OMW-28-29, OMS-28-SB30 and OMS-28-SB31. Detected TCE and PCE concentrations were below laboratory detection limits or were low, estimated values below the screening levels in all other surface soil samples collected.

Upper Subsurface Soil (varying depths between 1.5 and 4 feet bgs)

The upper subsurface soil was selected based on one of three criteria. First, if a MIP result indicated a potential soil contamination, a sample was collected. Second, if no MIP result was present or a MIP

boring was not collected near the soil boring location, the interval with the highest PID reading was selected. Third, if there was no MIP or PID response, the sample was collected half way between the ground surface and the water table. **Table 4-2** provides the analytical results from the on-site mobile laboratory for PCE and TCE and **Figure 4-4** shows the upper subsurface soil locations and PCE/TCE concentrations exceeding the residential RSLs and MCL-based protection of groundwater SSL for these locations. No samples had TCE or PCE concentrations exceeding the industrial RSLs.

On MAA Property, near the adjacent residential property (Parcel R022911360003106), one soil boring location, OMS-28-SB18, had a detection of PCE above the MCL-based protection of groundwater SSL (0.0023 mg/kg); however, TCE was not detected at a concentration above the laboratory detection limit. This sample depth was selected based on the highest PID result.

Soils samples collected from five soil boring locations (OMS-28-SB24, -SB28, -SB29, -SB30, and -SB31) on the off-site residential property (Parcel R022911360003106) had detected concentrations of PCE and/or TCE that exceeded the residential RSL or MCL-based protection of groundwater SSL (USEPA, May 2018). One location, OMS-28-SB24, had a concentration of PCE exceeding the residential RSL (8.1 mg/kg; USEPA, May 2018). The other four locations (OMS-28-SB28, -SB29, -SB30, and –SB31) had concentrations of TCE and PCE exceeding their respective MCL-based protection of groundwater SSL (USEPA, May 2018). Detected TCE and PCE concentrations were below the laboratory detection limits or were at low, estimated concentrations below screening values for all other upper subsurface soil samples.

Lower Subsurface Soil (1-foot above the water table)

The deepest subsurface soil samples were collected 1-foot above the water table at each sample location. The water table was either determined by the depth of water at nearby wells or based on visual inspection of the soil core. **Table 4-2** provides the analytical results from the on-site mobile laboratory for PCE and TCE and **Figure 4-5** shows the lower subsurface soil locations and PCE/TCE concentrations exceeding the MCL-based protection of groundwater SSL for these locations. No lower subsurface soil samples had detected concentrations of TCE or PCE that exceeded the residential or industrial RSLs.

On MAA Property, near the adjacent residential property (Parcel R022911360003106), one soil boring location, OMS-28-SB19, had a detected concentration of PCE and TCE above their respective MCL-based protection of groundwater SSL (0.0023 mg/kg and 0.0018 mg/kg, respectively). The surface soil concentration of PCE at soil boring OMS-28-SB19 also had a detected concentration of PCE that exceeded the MCL-based protection of groundwater SSL; however, TCE concentrations were not detected above the laboratory detection limits in the surface soil and upper subsurface soil samples from this location.

Soils samples collected from seven soil boring locations (OMS-28-SB24, -SB25, -SB27, -SB28, -SB29, -SB30, and -SB31) on the off-site residential property (Parcel R022911360003106) exhibited exceedances of PCE above the MCL-based protection of groundwater SSL. TCE and PCE concentrations at all other lower surficial soil sample locations were below the laboratory detection limit or were at low, estimated concentrations below the screening criteria.

Split Samples

Soil split sample results, which were analyzed for TCL VOCs, detected methylene chloride (MC) above its MCL-based protection of groundwater SSL (0.0013 mg/kg) in six soil samples (**Table 4-5**). These results did not exceed the residential or industrial SSLs for MC (35 mg/kg and 320 mg/kg, respectively). Soil split sample results for soil boring OMS-28-SB-24, at all three depth intervals (1, 3, and 5-feet bgs, respectively), reported a PCE concentration that exceeded either the industrial or the residential RSL. At the 5-foot depth, the concentration of PCE exceeded the residential RSL (8.1 mg/kg) and at the 1-foot and 3-foot depths, the PCE concentrations exceeded the industrial RSL (39 mg/kg). The PCE results in these 3 split samples are higher than the corresponding concentrations resulting from the samples analyzed by the on-site mobile laboratory.

4.2.3 Data Quality

On-site analysis was performed by the mobile laboratory operated by Columbia Technologies and off-site analysis was performed by the fixed laboratory operated by GCAL in accordance with the UFP-QAPP (AECOM, January 2016). AECOM performed intra-organizational QC checks of field and laboratory procedures used in collecting and analyzing the data. The QC checks verified the data collected were of appropriate quality for the intended data use. No QC excursions were encountered during the validation of this data set.

4.2.3.1 Mobile Laboratory

Data validation was performed on soil samples, field duplicates, and MS/MSD samples as part of the field activities conducted in May 2017. The validation was performed in accordance with the UFP QAPP (AECOM, January 2016).

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness were determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted in the DVR in **Appendix C** (**C2**).

While the data validation concluded that the data are suitable for their intended use, the laboratory reported LOD for PCE (0.002 mg/kg) and TCE (0.002 mg/kg) exceeded the most stringent soil screening criteria, the MCL-based protection of groundwater SSL (0.0023 mg/kg and 0.0018 mg/kg, respectively). However, based on the LOD achieved by the soil split samples analyzed at the off-site laboratory (GCAL) and the intended use of the soil data screening/delineation purposes, the detection limits do not appear to affect the data interpretations.

4.2.3.2 Off-Site Laboratory

Data validation was performed on soil samples, field duplicates samples, and MS/MSD samples as part of the field activities conducted in May 2017. The validation was performed in accordance with the UFP QAPP (AECOM, January 2016).

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness have been determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted in the DVR in **Appendix C** (**C3**).

Similar to the on-site laboratory results, the laboratory LOD for several analytes exceeded the MCL-based protection of groundwater SSL in result from split samples sent to the off-site fixed laboratory. However, based on the intended use of the data for screening and delineating potential residual source areas, the LODs do not appear to affect the data interpretations.

4.2.4 Summary

Ninety-three (93) soil samples were collected from 31 locations and analyzed by the on-site mobile laboratory for PCE and TCE. Split samples were collected from 10% of the total samples and analyzed for TCL VOCs by an off-site fixed laboratory. The purposes of the soil sampling were to refine the previous delineation of potential soil excavation areas and to characterize potential new sources identified from the MIP investigation portion of the field activities. A summary of the results of the soil sampling activities conducted as part of the data gap investigation include:

- Soils sampled within the extent of the ALARNG facility's boundaries did not exhibit TCE or PCE results above laboratory LODs.
- Two soil sample locations within the MAA property boundary (OMS-28-SB18 and –SB19) contained PCE and/or TCE above the MCL-based protection of groundwater SSL in samples from one or more depth intervals; however, neither the residential nor the industrial RSLs were exceeded.
- On the residential property (Parcel R022911360003106) adjacent to the MAA property, seven of the eight locations had detected concentrations from one or more sample depths, which exceeded the residential RSL, the industrial RSL, or the MCL-based protection of groundwater SSL for PCE and/or TCE.
- The industrial RSL was exceeded at one location, OMS-28-SB24 (1-foot bgs) on the residential property (Parcel R022911360003106) adjacent to the MAA property.
- The residential RSL was exceeded in four samples, OMS-28-SB24 (3-feet bgs), OMS-28-SB29 (1-foot bgs), OMS-28-SB30 (1-foot bgs), and OMS-28-SB31 (1-foot bgs), on the residential property (Parcel R022911360003106) adjacent to the MAA property.
- The origin for the source of PCE in soil is unknown since there is no record of ALARNG using PCE at the OMS #28 facility. However, the old ruins of a small shack were found within 15 feet of soil sample OMS-28-SB24, which had the highest concentrations of PCE in the surface and subsurface samples.

4.3 DISCRETE GROUNDWATER SAMPLING

As discussed in Section 2.6, the surficial aquifer at the site was divided into the upper surficial (water table), middle surficial, and lower surficial to define the shallow surficial aquifer vertically. In previous investigations, groundwater samples have only been collected from the upper/middle surficial aquifer zone. Since chlorinated VOCs tend to migrate vertically, a full vertical profile was warranted. Furthermore, the HPT data identified two sandy zone separated by a clay/silt zone that could act as a semi-confining layer.

4.3.1 Methods

Discrete groundwater sampling conducted using a DPT drill rig equipped with a discrete groundwater sampling tool. Locations were selected based on the results of the HPT/MIP investigation, results of the

soil investigation, monitoring well analytical data results, and discrete groundwater analytical results provided by the on-site mobile lab during the investigation. The groundwater sampling tool was pushed to the bottom of a 4-foot discrete depth interval and then the sampling tool's screen was opened. Tubing was passed through the hollow center of the drill rods, and collection of a groundwater grab sample was attempted using a peristaltic pump.

Collected groundwater samples were hand delivered to the on-site mobile laboratory, Columbia Technologies, which analyzed the samples for TCE and PCE via USEPA Method SW8260B. As a quality check, split samples were collected at a frequency of 10% of total groundwater samples and sent to an off-site fixed laboratory, GCAL, for analysis of TCL VOCs, except for vinyl chloride (VC), by USEPA Method SW8260B. Samples for VC were shipped to ALS Laboratory for analysis by USEPA Method 8260SIM. Field duplicate samples were collected at a 10% frequency and MS/MSD samples were collected at a 5% frequency.

In January/February 2018, a second mobilization occurred to extend the investigation to the west, south, and northeast (AECOM, January 2018). During this second discrete groundwater sampling mobilization, groundwater samples were shipped to GCAL for analysis for analysis of PCE, TCE, and cis-1,2-DCE by USEPA Method SW8260B, and samples for VC were shipped to Katahdin Analytical for analysis by USEPA Method 8260SIM .

4.3.2 Results

Two hundred and twenty-six (226) discrete groundwater samples were collected from 87 boring locations between May 2017 and January/February 2018. The locations of the discrete groundwater boring locations are presented in **Figure 4-1**. The mobile laboratory analytical results from May 2017 are presented as **Table 4-4** and are screened against USEPA MCLs (USEPA, March 2018). The summary results of VOC detections in the split samples analyzed by the fixed laboratory from May 2017 are presented in **Table 4-5** and are screened against the USEPA MCLs (USEPA, March 2018) and the Tapwater RSL values (USEPA, May 2018) for compounds with no listed MCL. The analytical results from January/February 2018 from the fixed laboratory are presented in **Table 4-6**. Discrete groundwater sampling logs are presented in **Appendix A** (**A6**). Laboratory reports are presented in **Appendix B** (**B4 - B17**) and the DVRs are provided in **Appendix C** (**C3** and **C4**). The following section will discuss the results of the discrete groundwater results in each of the three surficial aquifer zones

4.3.2.1 Upper Surficial Aquifer

In the Upper Surficial aquifer, two distinct plumes are present; one in the motor pool area of the ALARNG property east of the former wash pad and a second plume along the northwest portion of the MAA property and adjacent residential property (Parcel R022911360003106). **Figure 4-6** provides the approximate horizontal extent of TCE and PCE concentrations exceeding the MCLs (5 µg/L for both) in the Upper Surficial.

In the Upper Surficial aquifer, the groundwater within the ALARNG property had detected TCE concentrations exceeding the MCL (5 µg/L), with low and trace concentrations of cis-1,2-DCE and vinyl chloride. No PCE was detected within this plume. The highest concentration of TCE in the Upper Surficial aquifer within the ALARNG property was at GW32 (140 µg/L). The most norther portion of the

ALARNG TCE plume is in the area where surface soil samples had TCE in exceedance of the residential RSL and MCL-based protection of groundwater SSL (USEPA, May 2018).

In the Upper Surficial aquifer, the groundwater along the northwest portion of the MAA property and adjacent residential property (Parcel R022911360003106) had concentrations of PCE and TCE in exceedance of their respective MCLs (5 µg/L for both), with low and trace concentrations of cis-1,2-DCE and vinyl chloride. The highest concentration of PCE in MAA/residential groundwater was at GW22 (40,000 µg/L) while the highest concentration of TCE was at GW21 (510 µg/L). These plumes are within the area where soil sample results exceeded the residential and industrial RSLs and MCL-based protection of groundwater SSLs (USEPA, May 2018) for both TCE and PCE.

4.3.2.2 **Middle Surficial Aquifer**

The two TCE plumes from the Upper Surficial aquifer become one as TCE migrates vertically. Based on the CSM, there is no semi-confining unit separating the Upper and Middle Surficial aquifer zones; therefore, migration between the units is not impaired. The PCE plume from the Upper Surficial aquifer along the northwest portion of the MAA property and adjacent residential property (Parcel R022911360003106) has migrated vertically; however, the approximate horizontal extent in the Middle Surficial aquifer is similar the Upper Surficial aquifer. **Figure 4-7** provides the approximate horizontal extent of TCE and PCE concentrations exceeding the MCLs in the Middle Surficial aquifer.

The highest concentration of TCE in the Middle Surficial aquifer was at GW07 (310 µg/L), north of the area where soil samples had TCE in exceedance of the residential RSL and MCL-based protection of groundwater SSL (USEPA, May 2018). The highest concentration of PCE in the Middle Surficial aquifer was at GW40 (1,500 µg/L), west of the area where soil samples had PCE in exceedance of the residential and industrial RSL and MCL-based protection of groundwater SSL (USEPA, May 2018).

4.3.2.3 **Lower Surficial Aquifer**

In the Lower Surficial aquifer, TCE and PCE were found to exceed their MCLs (5 µg/L) in isolated locations and not in a continuous plume. **Figure 4-8** provides the approximate horizontal extent of TCE and PCE concentrations exceeding the MCLs in the Lower Surficial aquifer.

The isolated locations of TCE were located outside the footprint of the Middle Surficial aquifer TCE plume and ranged in concentration from 5.22 µg/L at GW89 located on the ALARNG property to 71.2 µg/L at GW08 located on the MAA property. PCE concentrations exceeding the MCL in the Lower Surficial Aquifer where identified at one location, GW22 (77 µg/L). This location was along the northwest portion of the MAA property and adjacent residential property (Parcel R022911360003106). This location is directly beneath the area where groundwater exceeded the MCL for PCE at greater concentrations. In addition, this location also had soil concentration exceeding residential and industrial RSLs and MCL-based protection of groundwater SSL (USEPA, May 2018).

4.3.3 Data Quality

On-site analysis was performed by the mobile laboratory operated by Columbia Technologies and off-site analysis was performed by the fixed laboratories operated by GCAL, ALS, and Katahdin in accordance with the UFP-QAPP (AECOM, January 2016, December 2017). AECOM performed intra-organizational QC checks of field and laboratory procedures used in collecting and analyzing the data. The QC checks

verified the data collected were of appropriate quality for the intended data use. No QC excursions were encountered during the validation of this data set.

4.3.3.1 **Mobile Laboratory**

Data validation was performed on groundwater samples, field duplicates, and MS/MSD samples as part of the field activities conducted in May 2017. The validation was performed in accordance with the UFP QAPP (AECOM, January 2016).

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness were determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted in the DVR in **Appendix C** (**C2**).

The overall data assessment determined that the field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness were acceptable based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted in the DVRs.

4.3.3.2 **Off-Site Laboratory**

Data validation was performed on groundwater samples, field duplicates samples, and MS/MSD samples as part of the field activities conducted in May 2017 and January/February 2018. The validation was performed in accordance with the UFP QAPP (AECOM, January 2016, December 2017).

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness have been determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted in the DVR in **Appendix C** (**C3, and C4**).

The overall data assessment determined that the field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness were acceptable based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted in the DVRs.

4.3.4 Summary

Discrete groundwater samples were collected from the Upper, Middle, and Lower Surficial aquifer to profile the TCE and PCE vertically in the groundwater for the purposes of refining the CSM and collecting data to support implementation of the remedy. Two hundred and twenty-six (226) discrete groundwater samples were collected from 87 boring locations between May 2017 and February 2018. A summary of the results of the discrete groundwater sampling activities conducted as part of the data gap investigation include:

- An additional soil source of groundwater contamination was identified along the northwest boundary of the MAA property and the adjacent residential property (Parcel R022911360003106).
- TCE in the groundwater consists of two distinct plumes in the Upper Surficial aquifer that merge into one plume as the TCE migrates vertically to the Middle Surficial aquifer.

- Concentrations of TCE exceeding screening criteria were detected in the groundwater of the Lower Surficial aquifer. It is suspected that the semi-confining layer identified through HPT and the ESS prevents the TCE groundwater plume in the Middle Surficial aquifer from migrating into the Lower Surficial aquifer and that the isolated locations of breakthrough may be from connectivity of sand lenses within the fine-grained material comprising the semi-confining layer.
- There is uncertainty whether the TCE in the groundwater from the newly identified source along the northwest boundary of the MAA property and the adjacent residential property (Parcel R022911360003106) is from in-place degradation of the PCE also identified there, or is a primary constituent as with the plume identified within the ALARNG property.
- PCE in groundwater was only identified in the northern portion of the MAA property and the adjacent residential property (Parcel R022911360003106).

4.4 IDW MANAGEMENT

During the May 2017 discrete groundwater sampling event, seven drums of purge and decontamination water were generated in combination with the purge and decontamination water from the groundwater well sampling (Section 3.0). The IDW was stored in 55-gallon drums. The drums were transported on August 8, 2017 by Horizon Environmental Services, LLC. Analytical data generated during the sampling events were submitted to Horizon Environmental Services, LLC and determined that the aqueous IDW was non-hazardous. Horizon Environmental Services, LLC disposed of the nine aqueous drums of IDW as non-hazardous waste. The manifest is provided in **Appendix D** (**D1**). In addition to the aqueous IDW drums, one soil IDW drum was generated from soil sampling. That drum was transported on August 8, 2017 with the aqueous drums by Horizon Environmental Services, LLC. Analytical data generated during the soil sampling event were submitted to Horizon Environmental Services, LLC and determined that the soil IDW was non-hazardous. Horizon Environmental Services, LLC disposed of the one soil drum of IDW as non-hazardous waste. The manifest is provided in **Appendix D** (**D1**).

During the January/February 2018 sampling event, two drums of purge and decontamination water and one drum of soil were generated as part of the expanded discrete groundwater sampling event. The IDW was stored in 55-gallon drums. The drums were transported on September 6, 2018 by A&D Environmental. Analytical data generated during the sampling events were submitted to A&D Environmental and determined that the IDW was non-hazardous. A&D Environmental disposed of the two aqueous drums of IDW and one soil drum of IDW as non-hazardous waste. The manifest is provided in **Appendix D** (**D2**).

5.0 CONCLUSIONS

This section presents a summary of conclusions from the two groundwater sampling events conducted in January 2016 and May 2017, and a summary of conclusions from the Data Gap Investigation performed from May 2017 through February 2018.

5.1 JANUARY 2016 AND MAY 2017 GROUNDWATER WELL SAMPLING

During the January 2016 and May 2017 groundwater sampling of the wells, 11 wells were sampled for TCL VOCs. During both events, PCE was found to exceeded its MCL in only one well, OMS-28-5. During the January 2016 groundwater sampling event, three wells (MW-8, OMS-28-3, and OMS 28 5) had exceedances of TCE above its MCL. However, during the May 2017 groundwater sampling event, concentrations of TCE at well MW-8 fell below the MCL. This well is located within the area where soils were found to have exceeded the MCL-based protection of groundwater SSL.

Concentrations of TCE and PCE degradation product, cis-1,2-DCE, were detected in two wells during both sampling events, OMS-28-3 and OMS-28-5. Both wells are located within the TCE plume and well OMS-28-5 is located within the PCE plume. Concentrations of cis-1,2-DCE exceeded the MCL at well OMS-28-5 during the May 2017 sampling event. Concentrations of degradation product vinyl chloride were not detected above the LOD in either of the sampling events.

5.2 MIP / HPT

The MIP locations were planned based on the initial CSM presented in the RI (SAIC, May 2013) and historical knowledge of features that may have been potential sources of groundwater contamination, such as the former pollution control system. MIP borings were drilled within the area where the PCE plume was originally estimated to be located. No significant responses were identified within the MIP logs that would indicate a soil source for groundwater.

The HPT/EC investigation results aided in the development of the ESS, discussed in Section 2.6, and were used to help guide the selection of sample depths for the discrete groundwater sampling event to target sand zones. This data helped to determine the Upper, Middle and Lower Surficial Aquifer zones.

5.3 SOIL

Ninety-three (93) soil samples were collected and analyzed for PCE and TCE from 31 boring locations. The purpose of the soil sampling was to refine the previous delineation of potential soil excavation areas and to characterize possible new sources potentially identified from the MIP investigation portion of the field activities.

Soil samples were collected around the perimeter of an area on the ALARNG property identified in the RI (SAIC, May 2013) as the exceedance of the SSL (**Figure 1-4**). The surface and subsurface soil samples collected as part of the Data Gap Investigation within the ALARNG property did not exceed LODs for TCE and PCE. Several soil samples collected as part of historical sampling events did exceed the MCL-based protection of groundwater SSL for TCE; however, the depths of these samples exceeded the current depth to groundwater.

Samples collected along the former pollution control system did not exceed LODs for TCE and PCE.

Soil samples were also collected around location B-13 located at well MW-9. This soil boring and samples were collected at the time of the installation of well MW-9 and the surface soil sample at this location exceeded the MCL-based protection of groundwater SSL for TCE (USEPA, May 2018). The surface and subsurface soil samples collected at this location as part of the Data Gap Investigation did not exceed LODs for TCE and PCE. Further, the groundwater concentration for TCE at this location does not exceed the MCL for TCE or the laboratory LOD.

A new source area was identified along the northwest portion of the MAA property and adjacent residential property (Parcel R022911360003106). The origin for the source of PCE is unknown since there is no record of ALARNG using PCE at the OMS #28 facility. However, the old ruins of a small shack were found within 15 feet of soil sample SB24, which had the highest concentration of PCE in the surface and subsurface samples. PCE concentrations in surface soils from this area exceeded either the residential or industrial RSL or the MCL-based protection of groundwater SSL (USEPA, May 2018). Subsurface soil exceeded either the residential RSL or the MCL-based protection of groundwater SSL (USEPA, May 2018).

5.4 GROUNDWATER

Discrete groundwater samples were collected from the Upper, Middle, and Lower Surficial aquifer to profile the TCE and PCE vertically in the groundwater for the purposes of refining the CSM and implementation of the remedy. Two hundred and twenty-six (226) discrete groundwater samples were collected from 87 boring locations between May 2017 and January/February 2018. Figure 5-1 shows the approximate extent of the PCE and TCE impacts in the Upper/Middle Surficial aquifer and the Lower Surficial aquifer based on data collected during this Supplemental Data Gap Investigation.

TCE in the groundwater consists of two distinct plumes in the Upper Surficial aquifer merging into one plume the Middle Surficial aquifer as the TCE migrates vertically. One distinct groundwater plume of TCE in the Upper Surficial aquifer was contained within ALARNG property in the motor pool area near the soil samples, which exceeded the MCL-based protection of groundwater SSL. The second distinct plume of TCE was along the northwest boundary of the MAA property and the adjacent residential property (Parcel R022911360003106). TCE was found in the Lower Surficial aquifer in isolated locations, outside of the footprint of the TCE plume/plumes in the Upper and Lower Surficial aquifers. It is suspected that the TCE migrated downward via sand lenses within the semi-confining unit separating the Middle Surficial from the Lower Surficial aquifer.

PCE in the groundwater was not found on the ALARNG property. PCE only exceeded its MCL along the northwest boundary of the MAA property and the adjacent residential property (Parcel R022911360003106) where the soil contained PCE concentration exceeding the industrial and residential RSLs and the MCL-based protection of groundwater SSL. Concentrations of PCE in exceedance of the MCLs in the Upper and Middle Surficial aquifer zones have a similar areal extent. Groundwater concentrations exceeding the MCL for PCE in the Lower Surficial aquifer were only detected at one location along the northwest boundary of the MAA property and the adjacent residential property (Parcel R022911360003106) where the soil exceeded the industrial and residential RSL and the MCL-based protection of groundwater SSL.

5.5 CONCLUSIONS

The objectives of the Supplemental Data Gap Investigation, performed from May 2017 through February 2018, have been achieved. The soil sources areas and groundwater contaminate plumes have been sufficiently delineated to proceed to the design phase of the remedial alternative.

6.0 REFERENCES

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Tables

Table 3-1
Monitoring Well Assessment
Alabama Army National Guard, OMS #28
Mobile, Alabama

Well ID	Easting	Northing	Vault Diameter (inches)	Well Diameter (inches)	Well Completion	Well Casing Material	Depth of Well (ft btoc)	Screened Interval (ft btoc)	Top of Casing Elevation (ft amsl)	Date of Assement	Overall Condition	Repairs Needed
Shallow Wells												
MW-5	1790925.1	238317.482	8	2	Flush mount	PVC	12.6	3.3-13.3	28.14	1/19/2016	Usable	Requires a new well cap, lock, well tag
MW-6	1790945.2	238362.424	8	2	Flush mount	PVC	12.7	2.3-12.3	28.15	1/19/2016	Usable	Requires well tag
MW-8	1790877.45	238419.941	NA	2	Stick-up	PVC	15.2	4.8-14.8	28.24	1/19/2016	Damaged	Well casing found bent. Repairs required: replacement of casing and addition of stickup surface completion with well tag
MW-9	1790634.58	238462.418	NA	2	Stick-up	PVC	17.4	7.4-17.4	27.45	1/19/2016	Usable	Requires protective metal casing and well tag
MW-12	1790622.62	238697.808	8	2	Flush mount	PVC	15.6	5.6-15.6	25.94	1/19/2016	Usable	Requires a new well cap, lock, bolts, and well tag
OMS-28-2	1790880.39	238675.566	NA	2	Stick-up	PVC	20.0	10-20	30.88	1/19/2016	Usable	Needs well tag
OMS-28-3	1790893.73	238475.448	NA	2	Stick-up	PVC	20.0	10-20	30.70	1/19/2016	Usable	Requires protective metal casing and well tag
OMS-28-5	1790751.66	238550.751	NA	2	Stick-up	PVC	20.0	10-20	30.12	1/19/2016	Usable	Requires protective metal casing and well tag
OMS-28-7	1790807.51	238390.129	8	2	Flush mount	PVC	20.0	10-20	27.56	1/19/2016	Usable	Requires a lock and well tag
Deep Wells												
OMS-28-1	1790616.34	238705.65	8	2	Flush mount	PVC	80.0	70-80	26.26	1/19/2016	Usable	Requires a new well cap, lock, and well tag
OMS-28-4	1790804.86	238529.358	NA	2	Stick-up	PVC	76.0	66-76	27.99	1/19/2016	Usable	Requires protective metal casing and well tag
OMS-28-6	1790865.9	238421.601	NA	NA	NA	PVC	76.0	66-76	30.31	1/19/2016	Unusable	Well found destroyed. Hole in ground (assumed to be grout column) and filled in with soil to approimately 9-feet bgs. Abandon remaining 9-feet in accordinance with ADEM regulations.

Definitions:
ft btoc - feet below top of casing
ft amsl - feet above mean sea level

Table 3-2
Historical Groudwater Elevations
Alabama Army National Guard, OMS #28
Mobile, Alabama

Well ID	Depth of Well (ft btoc)	Screened Interval (ft btoc)	Top of Casing Elevation (ft amsl)	Date	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
Shallow Wells						
MW-5	12.6	3.3-13.3	28.14	10/13/2005	5.10	23.04
				4/18/2006	6.60	21.54
				10/18/2006	6.60	21.54
				11/22/2006	6.31	21.83
				7/1/2008	6.47	21.67
				8/25/2008	3.35	24.79
				12/10/2008	6.15	21.99
				5/8/2009	5.83	22.31
				11/24/2009	4.40	23.74
				3/18/2010	4.72	23.42
				9/8/2010	4.36	23.78
				1/19/2016	4.08	24.06
				5/1/2017	5.29	22.85
MW-6	12.7	2.3-12.3	28.15	10/13/2005	5.22	22.93
				4/18/2006	6.76	21.39
				10/18/2006	6.70	21.45
				11/22/2006	6.33	21.82
				7/1/2008	5.84	22.31
				8/25/2008	Inaccessible	
				12/10/2008	6.19	21.96
				5/8/2009	5.77	22.38
				11/24/2009	4.40	23.75
				3/18/2010	3.66	24.49
				9/8/2010	5.35	22.80
				1/19/2016	3.85	24.30
				5/1/2017	5.40	22.75
MW-8*	15.2	4.8-14.8	28.24	10/13/2005	5.84	22.40
				4/18/2006	7.20	21.04
				10/18/2006	6.80	21.44
				11/22/2006	6.58	21.66
				7/1/2008	6.20	22.04
				8/25/2008	3.35	24.89
				12/10/2008	6.67	21.57
				5/8/2009	6.52	21.72
				11/24/2009	5.05	23.19
				3/18/2010	4.51	23.73
				9/8/2010	5.10	23.14
MW-9	17.4	7.4-17.4	27.45	11/22/2006	6.86	20.59
				7/1/2008	7.40	20.05
				8/25/2008	3.41	24.04
				12/10/2008	7.81	19.64
				5/8/2009	7.46	19.99
				11/24/2009	4.96	22.49
				3/18/2010	5.09	22.36
				9/8/2010	5.96	21.49
				1/19/2016	2.73	24.72
				5/1/2017	3.20	24.25

Table 3-2
Historical Groudwater Elevations
Alabama Army National Guard, OMS #28
Mobile, Alabama

Well ID	Depth of Well (ft btoc)	Screened Interval (ft btoc)	Top of Casing Elevation (ft amsl)	Date	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
Shallow Wells						
MW-12	15.6	5.6-15.6	25.94	11/22/2006	5.90	20.04
				7/1/2008	6.20	19.74
				8/25/2008	3.88	22.06
				12/10/2008	6.52	19.42
				5/8/2009	6.25	19.69
				11/24/2009	5.30	20.64
				3/18/2010	5.80	20.14
				9/8/2010	4.96	20.98
				1/19/2016	5.33	20.61
				5/1/2017	4.97	20.97
OMS-28-2	20.0	10-20	30.88	7/1/2008	12.91	17.97
				8/25/2008	8.31	22.57
				12/10/2008	13.55	17.33
				5/8/2009	12.56	18.32
				11/24/2009	10.87	20.01
				3/18/2010	10.49	20.39
				9/8/2010	11.39	19.49
				1/19/2016	9.94	20.94
				5/1/2017	10.59	20.29
OMS-28-3	20.0	10-20	30.70	7/1/2008	9.05	21.65
				8/25/2008	7.78	22.92
				12/10/2008	9.60	21.10
				5/8/2009	9.32	21.38
				11/24/2009	8.43	22.27
				3/18/2010	7.85	22.85
				9/8/2010	8.38	22.32
				1/19/2016	6.05	24.65
				5/1/2017	7.92	22.78
OMS-28-5	20.0	10-20	30.12	7/1/2008	11.90	18.22
				8/25/2008	8.79	21.33
				12/10/2008	12.44	17.68
				5/8/2009	11.60	18.52
				11/24/2009	9.62	20.50
				3/18/2010	9.12	21.00
				9/8/2010	10.75	19.37
				1/19/2016	8.84	21.28
				5/1/2017	10.06	20.06
OMS-28-7	20.0	10-20	27.56	7/1/2008	9.21	18.35
				8/25/2008	5.82	21.74
				12/10/2008	9.89	17.67
				5/8/2009	9.18	18.38
				11/24/2009	6.90	20.66
				3/18/2010	6.32	21.24
				9/8/2010	8.21	19.35
				1/19/2016	6.14	21.42
				5/1/2017	7.44	20.12

Table 3-2
Historical Groudwater Elevations
Alabama Army National Guard, OMS #28
Mobile, Alabama

Well ID	Depth of Well (ft btoc)	Screened Interval (ft btoc)	Top of Casing Elevation (ft amsl)	Date	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
Deep Wells						
OMS-28-1	80.0	70-80	26.26	7/1/2008	22.86	3.40
				7/8/2008	22.90	3.36
				8/25/2008	22.45	3.81
				12/10/2008	23.29	2.97
				5/8/2009	22.10	4.16
				11/24/2009	22.00	4.26
				3/18/2010	21.30	4.96
				9/8/2010	22.16	4.10
				1/19/2016	22.09	4.17
				5/1/2017	22.43	3.83
OMS-28-4	76.0	66-76	27.99	7/8/2008	26.85	1.14
				8/25/2008	28.89	-0.90
				12/10/2008	27.19	0.80
				5/8/2009	26.02	1.97
				11/24/2009	25.91	2.08
				3/18/2010	25.21	2.78
				9/8/2010	26.03	1.96
				1/19/2016	25.90	2.09
				5/1/2017	26.26	1.73
OMS-28-6	76.0	66-76	30.31	7/8/2008	26.70	3.61
				8/25/2008	25.51	4.80
				12/10/2008	27.07	3.24
				5/8/2009	26.08	4.23
				11/24/2009	25.67	4.64
				3/18/2010	25.21	5.10
				9/8/2010	26.10	4.21
				1/19/2016	Found Destroyed	

Notes:
All measurements in feet
* - Casing at MW-8 was discovered damaged/bent during 2016 event . Therefore, the TOC elevation is no longer valid.

Definitions:
ft btoc - feet below top of casing
ft amsl - feet above mean sea level
TOC - top of casing

Table 3-3
Analytical Results in Groundwater - 2016-2017
Alabama Army National Guard, OMS #28
Mobile, Alabama

Aquifer	Screening Criteria [1]		Shallow Aquifer					
Sample ID			MW-5		MW-6		MW-8	
Sample Date			1/20/2016	5/1/2017	1/20/2016	5/1/2017	1/22/2016	5/1/2017
TCL Volatile Organic Compounds Method SW8260B (µg/L)								
1,1-Dichloroethane	2.8	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethene	7	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,1-Trichloroethane	200	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-Trichloroethane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2,2-Tetrachloroethane	0.076	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-trichloro-1,2,2-trifluoroethane	1,000	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,3-Trichlorobenzene	0.7	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,4-Trichlorobenzene	70	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichlorobenzene	600	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloroethane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloropropane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromoethane	0.05	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,3-Dichlorobenzene	NS		< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromo-3-chloropropane	0.2	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,4-Dichlorobenzene	75	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Butanone	560	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Hexanone	3.8	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
4-Methyl-2-pentanone	630	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Acetone	1,400	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Benzene	0.46	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromochloromethane	8.3	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromodichloromethane	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromoform	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromomethane	0.75	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Carbon disulfide	81	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Carbon tetrachloride	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chlorobenzene	100	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroethane	2,100	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroform	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloromethane	19	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,2-Dichloroethene	70	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,3-Dichloropropene	0.47	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cyclohexane	1,300	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Dibromochloromethane	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Dichlorodifluoromethane	20	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Ethylbenzene	700	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Isopropylbenzene	45	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylacetate	2,000	RSL	< 2 (U)	< 2 (U)	< 2 (U)	< 2 (U)	< 2 (U)	< 2 (U)
methylcyclohexane	NS		< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methyl tert-butyl ether	14	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylene chloride	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Styrene	100	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Tetrachloroethene	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Toluene	1,000	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,2-Dichloroethene	36	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,3-Dichloropropene	0.47	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichloroethene	5	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	**7.8**	**0.373 J**
Trichlorofluoromethane	520	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Vinyl chloride	2	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Xylenes (total)	10,000	MCL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)

Table 3-3
Analytical Results in Groundwater - 2016-2017
Alabama Army National Guard, OMS #28
Mobile, Alabama

Aquifer	Screening Criteria [1]		Shallow Aquifer					
Sample ID			MW-9		MW-12		OMS-28-2	
Sample Date			1/20/2016	5/5/2017	1/21/2016	5/1/2017	1/19/2016	5/5/2017
TCL Volatile Organic Compounds Method SW8260B (µg								
1,1-Dichloroethane	2.8	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethene	7	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,1-Trichloroethane	200	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-Trichloroethane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2,2-Tetrachloroethane	0.076	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-trichloro-1,2,2-trifluoroethane	1,000	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,3-Trichlorobenzene	0.7	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,4-Trichlorobenzene	70	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichlorobenzene	600	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloroethane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloropropane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromoethane	0.05	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,3-Dichlorobenzene	NS		< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromo-3-chloropropane	0.2	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,4-Dichlorobenzene	75	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Butanone	560	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Hexanone	3.8	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
4-Methyl-2-pentanone	630	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Acetone	1,400	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Benzene	0.46	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromochloromethane	8.3	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromodichloromethane	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromoform	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromomethane	0.75	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Carbon disulfide	81	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Carbon tetrachloride	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chlorobenzene	100	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroethane	2,100	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroform	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloromethane	19	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,2-Dichloroethene	70	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,3-Dichloropropene	0.47	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cyclohexane	1,300	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Dibromochloromethane	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Dichlorodifluoromethane	20	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Ethylbenzene	700	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Isopropylbenzene	45	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylacetate	2,000	RSL	< 2 (U)	< 2 (U)	< 2 (U)	< 2 (U)	< 2 (U)	< 2 (U)
methylcyclohexane	NS		< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methyl tert-butyl ether	14	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylene chloride	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	**0.709 J**	< 0.5 (U)
Styrene	100	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Tetrachloroethene	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Toluene	1,000	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,2-Dichloroethene	36	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,3-Dichloropropene	0.47	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichloroethene	5	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichlorofluoromethane	520	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Vinyl chloride	2	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Xylenes (total)	10,000	MCL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)

Table 3-3
Analytical Results in Groundwater - 2016-2017
Alabama Army National Guard, OMS #28
Mobile, Alabama

Aquifer	Screening Criteria [1]		Shallow Aquifer					
Sample ID			OMS-28-3		OMS-28-5		OMS-28-7	
Sample Date			1/21/2016	5/1/2017	1/20/2016	5/5/2017	1/20/2016	5/1/2017
TCL Volatile Organic Compounds Method SW8260B (µg								
1,1-Dichloroethane	2.8	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethene	7	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	**1.29 J**	< 0.5 (U)	< 0.5 (U)
1,1,1-Trichloroethane	200	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-Trichloroethane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2,2-Tetrachloroethane	0.076	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-trichloro-1,2,2-trifluoroethane	1,000	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,2,3-Trichlorobenzene	0.7	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,2,4-Trichlorobenzene	70	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichlorobenzene	600	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloroethane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloropropane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromoethane	0.05	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,3-Dichlorobenzene	NS		< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromo-3-chloropropane	0.2	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
1,4-Dichlorobenzene	75	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
2-Butanone	560	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
2-Hexanone	3.8	RSL	< 1 (U)	< 1 (U)	< 5 (U)	< 2 (U)	< 1 (U)	< 1 (U)
4-Methyl-2-pentanone	630	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Acetone	1,400	RSL	< 1 (U)	< 1 (U)	< 5 (U)	< 2 (U)	< 1 (U)	< 1 (U)
Benzene	0.46	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Bromochloromethane	8.3	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Bromodichloromethane	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Bromoform	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Bromomethane	0.75	RSL	< 1 (U)	< 1 (U)	< 5 (U)	< 2 (U)	< 1 (U)	< 1 (U)
Carbon disulfide	81	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Carbon tetrachloride	5	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Chlorobenzene	100	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Chloroethane	2,100	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Chloroform	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Chloromethane	19	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,2-Dichloroethene	70	MCL	**1.59**	**1.26**	**27.8**	**103**	< 0.5 (U)	< 0.5 (U)
cis-1,3-Dichloropropene	0.47	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
cyclohexane	1,300	RSL	< 1 (U)	< 1 (U)	< 5 (U)	< 2 (U)	< 1 (U)	< 1 (U)
Dibromochloromethane	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Dichlorodifluoromethane	20	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Ethylbenzene	700	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Isopropylbenzene	45	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Methylacetate	2,000	RSL	< 2 (U)	< 2 (U)	< 10 (U)	< 4 (U)	< 2 (U)	< 2 (U)
methylcyclohexane	NS		< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Methyl tert-butyl ether	14	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Methylene chloride	5	MCL	**0.527 J**	< 0.5 (U)	< 2.5 (U)	< 1 (U)	**0.771 J**	< 0.5 (U)
Styrene	100	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Tetrachloroethene	5	MCL	< 0.5 (U)	< 0.5 (U)	**455**	**154**	< 0.5 (U)	< 0.5 (U)
Toluene	1,000	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,2-Dichloroethene	36	RSL	< 0.5 (U)	< 0.5 (U)	**10.3**	**31.6**	< 0.5 (U)	< 0.5 (U)
trans-1,3-Dichloropropene	0.47	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Trichloroethene	5	RSL	**8.92**	**9.6**	**200**	**246**	< 0.5 (U)	< 0.5 (U)
Trichlorofluoromethane	520	RSL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1 (U)	< 0.5 (U)	< 0.5 (U)
Vinyl chloride	2	MCL	< 0.5 (U)	< 0.5 (U)	< 2.5 (U)	< 1(U)	< 0.5 (U)	< 0.5 (U)
Xylenes (total)	10,000	MCL	< 1 (U)	< 1 (U)	< 5 (U)	< 2 (U)	< 1 (U)	< 1 (U)

Table 3-3
Analytical Results in Groundwater - 2016-2017
Alabama Army National Guard, OMS #28
Mobile, Alabama

Aquifer	Screening Criteria [1]		Deep Aquifer			
Sample ID			OMS-28-1		OMS-28-4	
Sample Date			1/21/2016	5/1/2017	1/20/2016	5/5/2017
TCL Volatile Organic Compounds Method SW8260B (µg						
1,1-Dichloroethane	2.8	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethene	7	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,1-Trichloroethane	200	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-Trichloroethane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2,2-Tetrachloroethane	0.076	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-trichloro-1,2,2-trifluoroethane	1,000	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,3-Trichlorobenzene	0.7	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,4-Trichlorobenzene	70	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichlorobenzene	600	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloroethane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloropropane	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromoethane	0.05	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,3-Dichlorobenzene	NS		< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromo-3-chloropropane	0.2	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,4-Dichlorobenzene	75	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Butanone	560	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Hexanone	3.8	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
4-Methyl-2-pentanone	630	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Acetone	1,400	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Benzene	0.46	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromochloromethane	8.3	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromodichloromethane	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromoform	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromomethane	0.75	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Carbon disulfide	81	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Carbon tetrachloride	5	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chlorobenzene	100	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroethane	2,100	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroform	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloromethane	19	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,2-Dichloroethene	70	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,3-Dichloropropene	0.47	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cyclohexane	1,300	RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Dibromochloromethane	80	MCL*	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Dichlorodifluoromethane	20	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Ethylbenzene	700	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Isopropylbenzene	45	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylacetate	2,000	RSL	< 2 (U)	< 2 (U)	< 2 (U)	< 2 (U)
methylcyclohexane	NS		< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methyl tert-butyl ether	14	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylene chloride	5	MCL	**0.504 J**	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Styrene	100	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Tetrachloroethene	5	MCL	< 0.5 (U)	< 0.5 (U)	**0.88 J**	< 0.5 (U)
Toluene	1,000	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,2-Dichloroethene	36	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,3-Dichloropropene	0.47	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichloroethene	5	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichlorofluoromethane	520	RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Vinyl chloride	2	MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Xylenes (total)	10,000	MCL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)

Table 3-3
Analytical Results in Groundwater - 2016-2017
Alabama Army National Guard, OMS #28
Mobile, Alabama

Notes:

Screening criteria is the USEPA Maximum Contaminant Limit (MCL). Since no MCL is provided for trans-1,2-dichloroethene, the USEPA Tapwater Risk Screening Level (RSL) based on a risk of E-06 for carcinogens and HQ of 0.1 for non-carcinogens (USEPA, May 2018) is used.

MCL* - The individual trihalomethanes (bromodichloromethane; bromoform; dibromochloromethane, and chloroform) all have the MCL of 80 µg/L listed. However, 80 µg/L is the MCL for Total Trihalomethanes.
Bold result indicates the analyte was detected.
Shading indicates the screening value is exceeded.

Data Qualifiers:
< = the numeric value resented is the sample specific detection limit.
U = The analytie was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was analzed for, but was not detected. The repoerted quantitation limit is approximate and may be inaccurate or imprecise.

Definitions:
µg/L = micrograms per Liter (parts per billion (ppb))
USEPA - United States Environmental Protection Agency

Table 3-4
Groundwater Historical COC Concentrations
Alabama Army National Guard, OMS #28
Mobile, Alabama

Well ID	Depth of Well (ft btoc)	Screened Interval (ft btoc)	Date	PCE	TCE	cis-1,2-DCE	Vinyl Chloride
Maximum Contaminant Level				5	5	70	2
Shallow Wells							
MW-5	12.6	3.3-13.3	10/18/2006	NA	0.27 U	NA	NA
			7/1/2008	0.2 U	0.164 U	0.0745 U	0.0538 U
			12/11/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/18/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			9/7/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			1/20/2016	0.5 U	0.5 U	0.5 U	0.5 U
			5/1/2017	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	12.7	2.3-12.3	10/18/2006	NA	0.27 U	NA	NA
			7/1/2008	0.2 U	0.164 U	0.0745 U	0.0538 U
			12/11/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/18/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			9/7/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			1/20/2016	0.5 U	0.5 U	0.5 U	0.5 U
			5/1/2017	0.5 U	0.5 U	0.5 U	0.5 U
MW-8	15.2	4.8-14.8	3/__/05	NA	**480**	NA	NA
			4/18/2006	NA	**97.9**	NA	NA
			10/18/2006	NA	**83 J**	**NA**	NA
			7/1/2008	0.2 U	**133**	**3.97 J**	0.0538 U
			12/11/2008	0.153 U	**46**	**3.24 J**	0.155 U
			5/8/2009	0.0998 U	**18**	**0.812 J**	0.0767 U
			9/24/2009	0.0998 U	**8.41**	0.103 U	0.0767 U
			3/19/2010	0.121 U	**41**	**2.07 J**	0.093 U
			9/8/2010	0.121 U	**13**	0.0613 U	0.093 U
			1/22/2016	0.5 U	**7.8**	0.5 U	0.5 U
			5/1/2017	0.5 U	**0.373 J**	0.5 U	0.5 U
MW-9	17.4	7.4-17.4	11/22/2006	0.072 U	0.024 U	0.051 U	0.052 U
			7/1/2008	0.2 U	0.164 U	0.0745 U	0.0538 U
			12/10/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/18/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			9/8/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			1/20/2016	0.5 U	0.5 U	0.5 U	0.5 U
			5/5/2017	0.5 U	0.5 U	0.5 U	0.5 U
MW-10	17.6	7.6 - 17.6	11/22/2006	**4.9**	**11**	**5.8**	**1.5**
				Abandoned at request of property owner			
MW-11	16.6	6.6 - 16.6	11/22/2006	0.072 U	**63**	0.051 U	0.052 U
				Abandoned at request of property owner			
MW-12	15.6	5.6-15.6	11/22/2006	0.072 U	0.024 U	0.051 U	0.052 U
			7/1/2008	0.2 U	0.164 U	0.0745 U	0.0538 U
			12/10/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/18/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			9/7/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			1/21/2016	0.5 U	0.5 U	0.5 U	0.5 U
			5/1/2017	0.5 U	0.5 U	0.5 U	0.5 U

Table 3-4
Groundwater Historical COC Concentrations
Alabama Army National Guard, OMS #28
Mobile, Alabama

Well ID	Depth of Well (ft btoc)	Screened Interval (ft btoc)	Date	PCE	TCE	cis-1,2-DCE	Vinyl Chloride
Maximum Contaminant Level				5	5	70	2
Shallow Wells							
OMS-28-2	20.0	10-20	7/1/2008	0.2 U	0.164 U	0.0745 U	0.0538 U
			12/10/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/18/2010	0.121 U	**2 J**	0.0613 U	0.093 U
			9/7/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			1/19/2016	0.5 U	0.5 U	0.5 U	0.5 U
			5/5/2017	0.5 U	0.5 U	0.5 U	0.5 U
OMS-28-3	20.0	10-20	7/1/2008	0.2 U	**80**	**6.26**	0.0538 U
			12/11/2008	0.153 U	**94**	**9.34**	0.155 U
			5/8/2009	0.0998 U	**29**	**9.55**	0.0767 U
			9/24/2009	0.0998 U	**15.29**	0.103 U	0.0767 U
			3/19/2010	0.121 U	**12**	**1.37 J**	0.093 U
			9/8/2010	0.121 U	**149**	**9.43**	0.093 U
			1/21/2016	0.5 U	**8.92**	**1.59**	0.5 U
			5/1/2017	0.5 U	**9.6**	**1.26**	0.5 U
OMS-28-5	20.0	10-20	7/1/2008	**130**	**39**	**12**	0.0538 U
			12/11/2008	**9.2**	**14**	**8.7**	0.155 U
			5/8/2009	**234**	**162**	**20**	0.0767 U
			9/24/2009	**8.02**	**11**	**9.12**	0.0767 U
			3/19/2010	**81**	**51**	**6.3**	0.093 U
			9/8/2010	**33**	**19**	**8.69**	0.093 U
			1/20/2016	**455**	**200**	**27.8**	2.5 U
			5/5/2017	**154**	**246**	**103**	1 U
OMS-28-7	20.0	10-20	7/1/2008	0.2 U	**1.73 J**	0.0745 U	0.0538 U
			12/10/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	**0.684 J**	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/18/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			9/8/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			1/20/2016	0.5 U	0.5 U	0.5 U	0.5 U
			5/1/2017	0.5 U	0.5 U	0.5 U	0.5 U
Deep Wells							
OMS-28-1	80.0	70-80	7/8/2008	0.2 U	0.164 U	0.0745 U	0.0538 U
			12/11/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/18/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			9/7/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			1/20/2016	0.5 U	0.5 U	0.5 U	0.5 U
			5/1/2017	0.5 U	0.5 U	0.5 U	0.5 U
OMS-28-4	76.0	66-76	7/8/2008	0.2 U	0.164 U	0.0745 U	0.0538 U
			12/10/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/19/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			9/8/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			1/20/2016	**0.88 J**	0.5 U	0.5 U	0.5 U
			5/5/2017	0.5 U	0.5 U	0.5 U	0.5 U

Table 3-4
Groundwater Historical COC Concentrations
Alabama Army National Guard, OMS #28
Mobile, Alabama

Well ID	Depth of Well (ft btoc)	Screened Interval (ft btoc)	Date	PCE	TCE	cis-1,2-DCE	Vinyl Chloride
Maximum Contaminant Level				5	5	70	2
Deep Wells							
OMS-28-6	76.0	66-76	7/8/2008	0.2 U	0.164 U	0.0745 U	0.0538 U
			12/10/2008	0.153 U	0.118 U	0.162 U	0.155 U
			5/8/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			9/24/2009	0.0998 U	0.0974 U	0.103 U	0.0767 U
			3/18/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
			9/8/2010	0.121 U	0.0618 U	0.0613 U	0.093 U
				Destroyed			

Definitions:
µg/L = micrograms per Liter (parts per billion (ppb))
ft btoc = feet below top of casing
NA = Not Analyzed

Notes:
All concentrations in µg/L
Bold result indicates the analyte was detected.
Shading indicates the screening value is exceeded.

Data Qualifiers:
U = The analytie was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 4-1
MIP and HPT Locations and Depths
Alabama Army National Guard, OMS #28
Mobile, Alabama

Location ID	Northing	Easting	Total Depth (ft bgs)
MIP			
MHP-01	238411.98	1790876.98	36.8
MHP-02	238478.39	1790878.93	34.6
MIP-03	238532.69	1790744.10	39.8
MIP-04	238544.27	1790703.18	50.6
MHP-05	238441.02	1790823.61	34.6
MIP-06	238421.92	1790810.45	34.6
MIP-07	238441.32	1790804.02	32.7
MHP-08	238457.72	1790778.19	32.8
MIP-09	238476.42	1790746.20	38.6
HPT			
HPT04	238409.10	1790824.08	36.8
HPT06	238528.10	1790830.72	36.8
HPT07	238409.87	1790762.73	34.7
HPT09	238527.74	1790778.21	36.8
HPT10	238470.49	1790714.35	36.8
HPT11	238533.51	1790714.26	38.7
HPT12	238574.26	1790714.08	38.7
HPT13	238536.90	1790659.59	40.8
HPT14	238582.27	1790659.34	40.9
HPT15	238562.98	1790803.31	38.8
HPT16	238523.48	1790887.51	37.6

Notes:
All MIP locations also included HPT logs
MIP and HPT data collected between April 10 and 14, 2017.

Definitions:
ft bgs = feet below ground surface
MIP = membrane interface probe
HPT = hydraulic profiling tool

Table 4-2
Soil Analytical Results - Mobile Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

	Analytes		PCE	TCE
Soil Screening Criteria	Residential SSL		8.1	0.41
	Industrial SSL		39	1.9
	MCL-Based Protection of Groundwater SSL		0.0023	0.0018
Boring Location	Sample Date	Sample Depth (feet)		
OMS-28-SB01	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	2	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
OMS-28-SB02	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB03	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB04	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	2	< 0.002 (U)	< 0.002 (U)
	5/8/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB05	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	2	< 0.002 (U)	< 0.002 (U)
	5/8/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB06	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	6	< 0.002 (U)	< 0.002 (U)
OMS-28-SB07	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	6	< 0.002 (U)	< 0.002 (U)
OMS-28-SB08	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	6	< 0.002 (U)	< 0.002 (U)
OMS-28-SB09	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	2	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
OMS-28-SB10	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	2	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
OMS-28-SB11	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	4	< 0.002 (U)	< 0.002 (U)
	5/8/2017	6	< 0.002 (U)	< 0.002 (U)
OMS-28-SB12	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB13	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB14	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB15	5/8/2017	1	< 0.002 (U)	< 0.002 (U)
	5/8/2017	3	< 0.002 (U)	< 0.002 (U)
	5/8/2017	5	< 0.002 (U)	< 0.002 (U)

Table 4-2
Soil Analytical Results - Mobile Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

		Analytes	PCE	TCE
Soil Screening Criteria	Residential SSL		8.1	0.41
	Industrial SSL		39	1.9
	MCL-Based Protection of Groundwater SSL		0.0023	0.0018
Boring Location	Sample Date	Sample Depth (feet)		
OMS-28-SB16	5/10/2017	1	< 0.002 (U)	< 0.002 (U)
	5/10/2017	2.5	< 0.002 (U)	< 0.002 (U)
	5/10/2017	4	< 0.002 (U)	< 0.002 (U)
OMS-28-SB17	5/10/2017	1	< 0.002 (U)	< 0.002 (U)
	5/10/2017	2.5	**0.0016 J**	< 0.002 (U)
	5/10/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB18	5/10/2017	1	**0.0329**	< 0.002 (U)
	5/10/2017	2.5	**0.0226**	< 0.002 (U)
	5/10/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB19	5/10/2017	1	**0.0568 J**	< 0.002 (U)
	5/10/2017	2.5	**0.0012 J**	< 0.002 (U)
	5/10/2017	5	**0.0264**	**0.0025**
OMS-28-SB20	5/10/2017	1	< 0.002 (U)	< 0.002 (U)
	5/10/2017	1.5	< 0.002 (U)	< 0.002 (U)
	5/10/2017	2	< 0.002 (U)	< 0.002 (U)
OMS-28-SB21	5/10/2017	1	< 0.002 (U)	< 0.002 (U)
	5/10/2017	1.5	< 0.002 (U)	< 0.002 (U)
	5/10/2017	2	< 0.002 (U)	< 0.002 (U)
OMS-28-SB22	5/10/2017	1	< 0.002 (U)	< 0.002 (U)
	5/10/2017	1.5	< 0.002 (U)	< 0.002 (U)
	5/10/2017	2	< 0.002 (U)	< 0.002 (U)
OMS-28-SB23	5/10/2017	1	< 0.002 (U)	< 0.002 (U)
	5/10/2017	1.5	< 0.002 (U)	< 0.002 (U)
	5/10/2017	2	< 0.002 (U)	< 0.002 (U)
OMS-28-SB24	5/10/2017	1	**180**	< 0.002 (U)
	5/10/2017	3	**23.1425**	< 0.002 (U)
	5/10/2017	5	**5.3593**	< 0.002 (U)
OMS-28-SB25	5/12/2017	1	**0.0211 J**	< 0.002 (U)
	5/12/2017	3	< 0.002 (U)	< 0.002 (U)
	5/12/2017	5	**0.0025**	< 0.002 (U)
OMS-28-SB26	5/12/2017	1	< 0.002 (U)	< 0.002 (U)
	5/12/2017	3	< 0.002 (U)	< 0.002 (U)
	5/12/2017	5	< 0.002 (U)	< 0.002 (U)
OMS-28-SB27	5/12/2017	1	**0.0012 J**	< 0.002 (U)
	5/12/2017	3	< 0.002 (U)	< 0.002 (U)
	5/12/2017	5	**0.0024**	< 0.002 (U)
OMS-28-SB28	5/16/2017	1	**5.8422**	< 0.002 (U)
	5/16/2017	3	**0.1491 J**	**0.0024**
	5/16/2017	5	**0.2377**	**0.0017**
OMS-28-SB29	5/16/2017	1	**16.3394**	**0.0137 J**
	5/16/2017	3	**0.1226**	**0.0086**
	5/16/2017	5	**0.088 J**	< 0.002 (UJ)
OMS-28-SB30	5/16/2017	1	**19.8493**	**0.0034 J**
	5/16/2017	3	**0.0533**	**0.0068**
	5/16/2017	5	**0.0459**	< 0.002 (U)

Table 4-2
Soil Analytical Results - Mobile Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

			Analytes	PCE	TCE
Soil Screening Criteria			**Residential SSL**	**8.1**	**0.41**
			Industrial SSL	**39**	**1.9**
			MCL-Based Protection of Groundwater SSL	**0.0023**	**0.0018**
Boring Location	**Sample Date**	**Sample Depth (feet)**			
OMS-28-SB31	5/16/2017	1		**8.9034**	**0.0093 J**
	5/16/2017	3		**0.0423**	**0.0051**
	5/16/2017	5		**0.0887**	< 0.002 (U)

Notes:

Soil samples were analyzed utilizing a DOD certified mobile laboratory for TCE and PCE by Method 8260B.

Results are reported in mg/kg.

Soil Screening Criteria is based on the USEPA Regional Screening Level (RSL) Table for Residential, Industrial, and MCL-based Protection of Groundwater Soil Screening Levels (SSLs), based on a risk of 1E-06 for carcinogens and HQ 0.1 for noncarcinogens (USEPA, May 2018).

Bold results indicates the analyte was detected.

Shading indicates the respective screening value is exceeded.

Data Qualifiers:

< - the numeric value presented is the sample specific detection limit

U - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ -The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Definitions:

mg/kg - milligrams per kilogram

DOD - Department of Defense

MCL - Maximum Contaminant Level

PCE - Tetrachloroethene

SSL - Soil Screening Level

TCE - Trichloroethene

USEPA - United States Environmental Protection Agency

Table 4-3
Soil Split Samples Summary of Detections - Fixed Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

	Detected Analytes		2-Butanone	4-Methyl-2-pentanone	Acetone	Benzene	Cyclohexane	Methyl-cyclohexane	Methylene chloride	Styrene	PCE	Toluene	Xylenes (total)
Soil Screening Criteria	Residential		2,700	3,300	6,100	1.2	650	NS	35	600	8.1	490	58
	Industrial		19,000	14,000	67,000	5.1	2,700	NS	320	3,500	39	4,700	250
	MCL-Based Protection of Groundwater SSL		0.12*	0.14*	0.29*	0.0026	1.3*	NS	0.0013	0.11	0.0023	0.69	9.9
Boring ID	Sample Date	Sample Depth (feet)											
OMS-28-SB01	5/8/2017	2	< 0.00143 U	< 0.000358 U	**0.00980 J**	< 0.000358 U	< 0.000358 U	< 0.000358 U	**0.0113**	< 0.000358 U	< 0.000715 U	< 0.000358 U	< 0.00107 U
OMS-28-SB04	5/8/2017	1	< 0.00158 U	< 0.000395 U	**0.00437 J**	**0.000499 J**	**0.000698 J**	**0.00143 J**	**0.00314 J**	< 0.000395 U	< 0.00079 U	**0.00137 J**	**0.000862 J**
OMS-28-SB11	5/8/2017	6	< 0.00201 U	< 0.000502 U	< 0.00201 U	< 0.000502 U	< 0.000502 U	< 0.000502 U	**0.00909 J**	< 0.000502 U	< 0.001 U	< 0.000502 U	< 0.00151 U
OMS-28-SB14	5/8/2017	1	**0.00403 J**	**0.00139 J**	**0.083**	< 0.000443 U	< 0.000443 U	< 0.000443 U	**0.00192 J**	< 0.000443 U	< 0.000886 U	< 0.000443 U	< 0.00133 U
OMS-28-SB16	5/10/2017	4	< 0.00181 U	< 0.000453 U	< 0.00181 U	< 0.000453 U	< 0.000453 U	< 0.000453 U	**0.00273 J**	< 0.000453 U	< 0.000906 U	< 0.000453 U	< 0.00136 U
OMS-28-SB22	5/10/2017	2	< 0.00187 U	< 0.000468 U	**0.00616 J**	< 0.000468 U	< 0.000468 U	< 0.000468 U	**0.00418 J**	< 0.000468 U	< 0.000936 U	< 0.000468 U	< 0.0014 U
OMS-28-SB24	5/10/2017	1	< 12.3 U	< 3.07 U	< 12.3 U	< 3.07 U	< 3.07 U	< 3.07 U	< 12.3 U	< 3.07 U	**329**	< 3.07 U	< 9.22 U
OMS-28-SB24	5/10/2017	3	< 1.86 U	< 0.464 U	< 1.86 U	< 0.464 U	< 0.464 U	< 0.464 U	< 1.86 U	< 0.464 U	**53.7**	< 0.464 U	< 1.39 U
OMS-28-SB24	5/10/2017	5	< 0.92 U	< 0.23 U	< 0.92 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.92 U	< 0.23 U	**24.4**	< 0.23 U	< 0.69 U

Notes:

Soil samples were analyzed in the field by GCAL Laboratory for a target compound list (TCL) of Volatile Organic Compounds via Method SW8260B. Only detected analytes are shown.

Results are reported in mg/kg.

Soil Screening Criteria is based on the USEPA Regional Screening Level (RSL) Table for Residential, Industrial, and MCL-based Protection of Groundwater Soil Screening Levels (SSLs), based on a risk of 1E-06 for carcinogens and HQ 0.1 for noncarcinogens (USEPA, May 2018).

Bold results indicates the analyte was detected.

Shading indicates the respective screening value is exceeded.

Data Qualifiers:

< - the numeric value presented is the sample specific detection limit

U - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J - The result is an estimated quality. The associated numerical value is the approximate concentration of the analyte in the sample.

Definitions:

mg/kg - miligrams per kilogram

MCL - Maximum Contaminant Level

NS - No Standard

PCE - Tetrachloroethene

SSL - Soil Screening Level

TCE - Trichloroethene

USEPA - Environmental Protection Agency

* - indicates, the analyte is a noncarcinogen and the risk-based SSL is used as no MCL-Based Protection of Groundwater SSL is available.

Table 4-4
Discrete Groundwater Results, May 2017 - Mobile Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

				Chemicals of Concern	PCE	TCE
Groundwater Screening Criteria	**Maximum Contaminant Levels**				**5**	**5**
Boring Location	**Sample Depth (ft bgs)**	**Sample Zone**	**Sample Date**			
OMS-28-GW01	6-10	Upper Surficial	5/2/2017		< 1 (U)	**82.16**
	15-19	Middle Surficial	5/2/2017		< 1 (U)	**38**
	28-32	Lower Surficial	5/2/2017		< 1 (U)	< 1 (U)
OMS-28-GW02	8-12	Upper Surficial	5/3/2017		< 1 (U)	**0.63 J**
	15-19	Middle Surficial	5/3/2017		< 1 (U)	< 1 (U)
	27-31	Lower Surficial	5/3/2017		< 1 (U)	< 1 (U)
OMS-28-GW03	8-12	Upper Surficial	5/4/2017		< 1 (U)	< 1 (U)
	16-20	Middle Surficial	5/4/2017		< 1 (U)	< 1 (U)
	30-34	Lower Surficial	5/4/2017		< 1 (U)	< 1 (U)
OMS-28-GW04	6-10	Upper Surficial	5/3/2017		< 1 (U)	**1.37**
	13-17	Middle Surficial	5/3/2017		< 1 (U)	< 1 (U)
	27-31	Lower Surficial	5/3/2017		< 1 (U)	< 1 (U)
OMS-28-GW05	7-11	Upper Surficial	5/2/2017		< 1 (U)	**16.1**
	15-19	Middle Surficial	5/2/2017		< 1 (U)	**3.14**
	29-33	Lower Surficial	5/2/2017		< 1 (U)	< 1 (U)
OMS-28-GW06	7-11	Upper Surficial	5/17/2017		< 1 (U)	**0.63 J**
	13-17	Middle Surficial	5/17/2017		< 1 (U)	**65.95**
	28-32	Lower Surficial	5/17/2017		< 1 (U)	< 1 (U)
OMS-28-GW07	7-11	Upper Surficial	5/19/2017		< 1 (U)	< 1 (U)
	14-18	Middle Surficial	5/19/2017		< 1 (U)	**310**
	27-31	Lower Surficial	5/19/2017		< 1 (U)	< 1 (U)
OMS-28-GW08	6-10	Upper Surficial	5/3/2017		< 1 (U)	< 1 (U)
	13-17	Middle Surficial	5/3/2017		< 1 (U)	< 1 (U)
	27-31	Lower Surficial	5/3/2017		< 1 (U)	**71.17**
OMS-28-GW09	6-10	Upper Surficial	5/3/2017		< 1 (U)	< 1 (U)
	12-16	Middle Surficial	5/3/2017		< 1 (U)	< 1 (U)
	29-33	Lower Surficial	5/3/2017		< 1 (U)	< 1 (U)
OMS-28-GW10	6-10	Upper Surficial	5/9/2017		< 1 (U)	< 1 (U)
	12-16	Middle Surficial	5/9/2017		< 1 (U)	**68.9**
	29-33	Lower Surficial	5/9/2017		< 1 (U)	< 1 (U)
OMS-28-GW11	7-11	Upper Surficial	5/13/2017		< 1 (U)	< 1 (U)
	15-19	Middle Surficial	5/13/2017		< 1 (U)	**24.3**
	26-30	Lower Surficial	5/13/2017		< 1 (U)	< 1 (U)
OMS-28-GW12	8-12	Upper Surficial	5/19/2017		< 1 (U)	< 1 (U)
	14-18	Middle Surficial	5/19/2017		< 1 (U)	**23.67**
	28-32	Lower Surficial	5/19/2017		< 1 (U)	< 1 (U)
OMS-28-GW13	8-12	Upper Surficial	5/9/2017		< 1 (U)	**1.5**
	14-18	Middle Surficial	5/9/2017		< 1 (U)	**37.2**
	28-32	Lower Surficial	5/9/2017		< 1 (U)	< 1 (U)
OMS-28-GW14	7-11	Upper Surficial	5/13/2017		< 1 (U)	< 1 (U)
	16-20	Middle Surficial	5/13/2017		< 1 (U)	**3.6**
	26-30	Lower Surficial	5/13/2017		< 1 (U)	< 1 (U)
OMS-28-GW15	8-12	Upper Surficial	5/5/2017		< 1 (U)	**2.77**
	15-19	Middle Surficial	5/5/2017		< 1 (U)	**7.11**
	26-30	Lower Surficial	5/5/2017		< 1 (U)	< 1 (U)

Table 4-4
Discrete Groundwater Results, May 2017 - Mobile Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

			Chemicals of Concern	PCE	TCE
Groundwater Screening Criteria	**Maximum Contaminant Levels**			**5**	**5**
Boring Location	**Sample Depth (ft bgs)**	**Sample Zone**	**Sample Date**		
OMS-28-GW16	8-12	Upper Surficial	5/4/2017	< 1 (U)	**0.52 J**
	15-19	Middle Surficial	5/4/2017	< 1 (U)	**5.95**
	26-30	Lower Surficial	5/4/2017	< 1 (U)	< 1 (U)
OMS-28-GW17	8-12	Upper Surficial	5/4/2017	< 1 (U)	**1.59**
	15-19	Middle Surficial	5/4/2017	< 1 (U)	**6.7**
	24-28	Lower Surficial	5/4/2017	< 1 (U)	< 1 (U)
OMS-28-GW18	8-12	Upper Surficial	5/5/2017	< 1 (U)	**1.55**
	14-18	Middle Surficial	5/5/2017	< 1 (U)	**2.7**
	26-30	Lower Surficial	5/5/2017	< 1 (U)	< 1 (U)
OMS-28-GW19	8-12	Upper Surficial	5/9/2017	**2.2**	**3.3**
	15-19	Middle Surficial	5/9/2017	**95.7**	**38.7**
	26-30	Lower Surficial	5/9/2017	< 1 (U)	< 1 (U)
OMS-28-GW20	8-12	Upper Surficial	5/4/2017	**12.71**	**16.09**
	15-19	Middle Surficial	5/4/2017	< 1 (U)	< 1 (U)
	24-28	Lower Surficial	5/4/2017	< 1 (U)	< 1 (U)
OMS-28-GW21	8-12	Upper Surficial	5/5/2017	**460**	**510**
	14-18	Middle Surficial	5/5/2017	**11.85**	**230**
	26-30	Lower Surficial	5/5/2017	< 1 (U)	< 1 (U)
OMS-28-GW22	7-11	Upper Surficial	5/9/2017	**40,000**	< 1 (U)
	16-20	Middle Surficial	5/9/2017	**74.3**	**0.82 J**
	24-28	Lower Surficial	5/9/2017	**77**	**0.92 J**
OMS-28-GW23	8-12	Upper Surficial	5/10/2017	**0.72 J**	**0.63 J**
	16-20	Middle Surficial	5/10/2017	< 1 (U)	< 1 (U)
	24-28	Lower Surficial	5/10/2017	< 1 (U)	< 1 (U)
OMS-28-GW24	8-12	Upper Surficial	5/12/2017	**38.1**	**13.5**
	15-19	Middle Surficial	5/9/2017	**100**	**35.9**
	26-30	Lower Surficial	5/9/2017	**1.2**	< 1 (U)
OMS-28-GW25	8-12	Upper Surficial	5/16/2017	< 1 (U)	< 1 (U)
	15-19	Middle Surficial	5/9/2017	**1.4**	**0.8 J**
	24-28	Lower Surficial	5/9/2017	< 1 (U)	**0.89 J**
OMS-28-GW26	27-31	Lower Surficial	5/9/2017	< 1 (U)	< 1 (U)
OMS-28-GW30	6-11	Upper Surficial	5/4/2017	< 1 (U)	< 1 (U)
	16-20	Middle Surficial	5/4/2017	< 1 (U)	< 1 (U)
	29-33	Lower Surficial	5/4/2017	< 1 (U)	< 1 (U)
OMS-28-GW31	8-12	Upper Surficial	5/2/2017	< 1 (U)	< 1 (U)
	15-19	Middle Surficial	5/2/2017	< 1 (U)	< 1 (U)
	27-31	Lower Surficial	5/2/2017	< 1 (U)	**13.35**
OMS-28-GW32	8-12	Upper Surficial	5/2/2017	< 1 (U)	**140**
	15-19	Middle Surficial	5/2/2017	< 1 (U)	**6.26**
	27-31	Lower Surficial	5/2/2017	< 1 (U)	**15.6**
OMS-28-GW33	8-12	Upper Surficial	5/2/2017	< 1 (U)	< 1 (U)
	15-19	Middle Surficial	5/2/2017	< 1 (U)	**38.21**
	29-33	Lower Surficial	5/2/2017	< 1 (U)	< 1 (U)
OMS-28-GW34	15-19	Middle Surficial	5/17/2017	< 1 (U)	**2.56**
	28-32	Lower Surficial	5/17/2017	< 1 (U)	< 1 (U)

Table 4-4
Discrete Groundwater Results, May 2017 - Mobile Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

			Chemicals of Concern	PCE	TCE
Groundwater Screening Criteria	**Maximum Contaminant Levels**			**5**	**5**
Boring Location	**Sample Depth (ft bgs)**	**Sample Zone**	**Sample Date**		
OMS-28-GW36	8-12	Upper Surficial	5/11/2017	< 1 (U)	< 1 (U)
	14-18	Middle Surficial	5/11/2017	< 1 (U)	< 1 (U)
	25-29	Lower Surficial	5/11/2017	< 1 (U)	< 1 (U)
OMS-28-GW37	8-12	Upper Surficial	5/11/2017	< 1 (U)	< 1 (U)
	15-19	Middle Surficial	5/11/2017	< 1 (U)	< 1 (U)
	24-28	Lower Surficial	5/11/2017	< 1 (U)	< 1 (U)
OMS-28-GW38	8-12	Upper Surficial	5/11/2017	**59.7**	**11.8**
	14-18	Middle Surficial	5/11/2017	**14.2**	**1.5**
	26-30	Lower Surficial	5/11/2017	< 1 (U)	< 1 (U)
OMS-28-GW39	9-13	Upper Surficial	5/10/2017	**1,000**	**15**
	16-20	Middle Surficial	5/10/2017	**120**	**5.9**
	24-28	Lower Surficial	5/10/2017	< 1 (U)	< 1 (U)
OMS-28-GW40	9-13	Upper Surficial	5/11/2017	**1,800**	**35**
	16-20	Middle Surficial	5/11/2017	**1,500**	**46**
	24-28	Lower Surficial	5/11/2017	< 1 (U)	< 1 (U)
OMS-28-GW41	8-12	Upper Surficial	5/11/2017	**31.5**	**6.5**
	16-20	Middle Surficial	5/11/2017	**0.61 J**	< 1 (U)
	24-28	Lower Surficial	5/11/2017	< 1 (U)	< 1 (U)
OMS-28-GW42	8-12	Upper Surficial	5/10/2017	**3.6**	**1.7**
	16-20	Middle Surficial	5/10/2017	**1.6**	**1.8**
	24-28	Lower Surficial	5/10/2017	**1.3**	< 1 (U)
OMS-28-GW43	8-12	Upper Surficial	5/12/2017	**0.56 J**	< 1 (U)
	16-20	Middle Surficial	5/12/2017	< 1 (U)	< 1 (U)
	24-28	Lower Surficial	5/12/2017	< 1 (U)	**10**
OMS-28-GW44	24-28	Lower Surficial	5/16/2017	< 1 (U)	**4.43**
OMS-28-GW45	14-18	Middle Surficial	5/12/2017	< 1 (U)	**1**
	28-32	Lower Surficial	5/12/2017	< 1 (U)	**0.62 J**
OMS-28-GW46	12-16	Middle Surficial	5/12/2017	< 1 (U)	**8.1**
	29-33	Lower Surficial	5/12/2017	< 1 (U)	**1.3**
OMS-28-GW47	15-19	Middle Surficial	5/17/2017	< 1 (U)	**3.32**
	28-32	Lower Surficial	5/17/2017	< 1 (U)	< 1 (U)
OMS-28-GW49	8-12	Upper Surficial	5/15/2017	< 1 (U)	< 1 (U)
	14-18	Middle Surficial	5/15/2017	< 1 (U)	< 1 (U)
	26-30	Lower Surficial	5/15/2017	< 1 (U)	< 1 (U)
OMS-28-GW50	9-13	Upper Surficial	5/15/2017	< 1 (U)	< 1 (U)
	14-18	Middle Surficial	5/15/2017	< 1 (U)	< 1 (U)
	26-30	Lower Surficial	5/15/2017	< 1 (U)	< 1 (U)
OMS-28-GW51	26-30	Lower Surficial	5/13/2017	< 1 (U)	< 1 (U)
OMS-28-GW52	15-19	Middle Surficial	5/15/2017	< 1 (U)	< 1 (U)
	27-31	Lower Surficial	5/13/2017	< 1 (U)	< 1 (U)
OMS-28-GW53	8-12	Upper Surficial	5/13/2017	< 1 (U)	**21.4**
	15-19	Middle Surficial	5/13/2017	< 1 (U)	**31.3**
	27-31	Lower Surficial	5/13/2017	< 1 (U)	< 1 (U)

Table 4-4
Discrete Groundwater Results, May 2017 - Mobile Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

			Chemicals of Concern	PCE	TCE
Groundwater Screening Criteria	**Maximum Contaminant Levels**			**5**	**5**
Boring Location	**Sample Depth (ft bgs)**	**Sample Zone**	**Sample Date**		
OMS-28-GW54	8-12	Upper Surficial	5/13/2017	< 1 (U)	< 1 (U)
	15-19	Middle Surficial	5/13/2017	< 1 (U)	**7.5**
	28-32	Lower Surficial	5/13/2017	< 1 (U)	< 1 (U)
OMS-28-GW55	8-12	Upper Surficial	5/13/2017	< 1 (U)	**0.65 J**
	15-19	Middle Surficial	5/13/2017	< 1 (U)	**2.9**
	28-32	Lower Surficial	5/13/2017	< 1 (U)	< 1 (U)
OMS-28-GW56	14-18	Middle Surficial	5/15/2017	< 1 (U)	< 1 (U)
	27-31	Lower Surficial	5/15/2017	< 1 (U)	< 1 (U)
OMS-28-GW57	8-12	Upper Surficial	5/17/2017	< 1 (U)	< 1 (U)
	12-16	Middle Surficial	5/12/2017	< 1 (U)	< 1 (U)
	29-33	Lower Surficial	5/12/2017	< 1 (U)	< 1 (U)
OMS-28-GW58	8-12	Upper Surficial	5/15/2017	< 1 (U)	**5.34**
	15-19	Middle Surficial	5/15/2017	< 1 (U)	**48.02**
	27-31	Lower Surficial	5/15/2017	< 1 (U)	< 1 (U)
OMS-28-GW59	8-12	Upper Surficial	5/16/2017	**1.86**	< 1 (U)
	14-18	Middle Surficial	5/16/2017	< 1 (U)	< 1 (U)
	26-30	Lower Surficial	5/16/2017	< 1 (U)	< 1 (U)
OMS-28-GW60	29-33	Lower Surficial	5/16/2017	< 1 (U)	< 1 (U)
OMS-28-GW61	8-12	Upper Surficial	5/17/2017	< 1 (U)	< 1 (U)
	15-19	Middle Surficial	5/17/2017	< 1 (U)	**2.01**
	27-31	Lower Surficial	5/17/2017	< 1 (U)	< 1 (U)
OMS-28-GW62	8-12	Upper Surficial	5/16/2017	< 1 (U)	**3.47**
	15-19	Middle Surficial	5/16/2017	< 1 (U)	**20.45**
	26-30	Lower Surficial	5/16/2017	< 1 (U)	< 1 (U)
OMS-28-GW63	8-12	Upper Surficial	5/17/2017	< 1 (U)	< 1 (U)
	15-19	Middle Surficial	5/17/2017	< 1 (U)	**2.41**
	26-30	Lower Surficial	5/17/2017	< 1 (U)	< 1 (U)
OMS-28-GW64	12-16	Middle Surficial	5/17/2017	< 1 (U)	< 1 (U)
	29-33	Lower Surficial	5/17/2017	< 1 (U)	**27.1**
OMS-28-GW65	8-12	Upper Surficial	5/17/2017	**37.71**	**5.49**
	15-19	Middle Surficial	5/17/2017	**30.75**	**2.02**
	25-29	Lower Surficial	5/17/2017	< 1 (U)	< 1 (U)
OMS-28-GW66	22-26	Middle Surficial	5/18/2017	< 1 (U)	< 1 (U)
	45-49	Lower Surficial	5/18/2017	< 1 (U)	< 1 (U)
OMS-28-GW67	22-26	Middle Surficial	5/18/2017	< 1 (U)	**0.91 J**
	48-52	Lower Surficial	5/18/2017	< 1 (U)	< 1 (U)
OMS-28-GW68	22-26	Middle Surficial	5/18/2017	< 1 (U)	< 1 (U)
	53-57	Lower Surficial	5/18/2017	< 1 (U)	< 1 (U)
OMS-28-GW69	22-26	Middle Surficial	5/18/2017	< 1 (U)	< 1 (U)
	45-49	Lower Surficial	5/19/2017	< 1 (U)	< 1 (U)
OMS-28-GW71	15-19	Middle Surficial	5/19/2017	< 1 (U)	**4.7**
	29-33	Lower Surficial	5/19/2017	< 1 (U)	< 1 (U)

Table 4-4
Discrete Groundwater Results, May 2017 - Mobile Laboratory
Alabama Army National Guard, OMS #28
Mobile, Alabama

			Chemicals of Concern	PCE	TCE
Groundwater Screening Criteria	**Maximum Contaminant Levels**			**5**	**5**
Boring Location	**Sample Depth (ft bgs)**	**Sample Zone**	**Sample Date**		
OMS-28-GW72	29-33	Lower Surficial	5/19/2017	< 1 (U)	< 1 (U)

Notes:
Groundwater samples were analyzed in the field by Columbia Technology's mobile laboratory for TCE and PCE via Method SW8260B.
The Screening Criteria is based on the USEPA Maximum Contamination Limit (MCL).
Results are reported in (µg/L).
Bold results indicates the analyte was detected.
Shading indicates the screening value was exceeded.
Sample Depth is reported as feet below ground surface (ft bgs).

Data Qualifiers:
< - the numeric value presented is the sample specific detection limit.
U - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Definitions:
µg/L - microgram per liter
TCE - Trichloroethene
PCE - Tetrachloroethene
USEPA - United States Environmental Protection Agency

Table 4-5
Groundwater Split Samples Summary Results - May 2017
Alabama Army National Guard, OSM # 28
Mobile, Alabama

Sample ID	Screening Criteria	OMS-28-GW02	OMS-28-GW03	OMS-28-GW06	OMS-28-GW11
Sample Depth		15-19	30-34	7-11	7-11
Sample Date		5/3/2017	5/4/2017	5/17/2017	5/13/2017
TCL Volatile Organic Compounds Method SW8260B (µg/L)					
1,1,1-Trichloroethane	200 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2,2-Tetrachloroethane	0.076 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-trichloro-1,2,2-trifluoroethane	1,000 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-Trichloroethane	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethane	2.8 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (UJ)	< 0.5 (UJ)
1,1-Dichloroethene	7 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,3-Trichlorobenzene	0.7 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,4-Trichlorobenzene	70 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromo-3-chloropropane	0.02 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromoethane	0.05 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichlorobenzene	60 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloroethane	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloropropane	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,3-Dichlorobenzene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,4-Dichlorobenzene	75 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Butanone	560 RSL	**3.87 J**	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Hexanone	3.8 RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
4-Methyl-2-pentanone	630 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Acetone	1,400 RSL	**12.2**	< 1 (U)	< 1 (UJ)	< 1 (UJ)
Benzene	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromochloromethane	8.3 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromodichloromethane	80 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromoform	80 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromomethane	0.75 RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Carbon disulfide	81 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	**0.666 J**
Carbon tetrachloride	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chlorobenzene	100 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroethane	2,100 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroform	80 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloromethane	19 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,2-Dichloroethene	70 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,3-Dichloropropene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cyclohexane	1,300 RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Dibromochloromethane	80 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Dichlorodifluoromethane	20 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Ethylbenzene	700 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Isopropylbenzene	45 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	**0.374 J**
Methyl tert-butyl ether	14 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (UJ)	< 0.5 (UJ)
Methylacetate	2,000 RSL	< 2 (U)	< 2 (U)	< 2 (UJ)	< 2 (UJ)
methylcyclohexane	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylene chloride	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (UJ)	< 0.5 (UJ)
Styrene	100 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Tetrachloroethene	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Toluene	1,000 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,2-Dichloroethene	100 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (UJ)	< 0.5 (UJ)
trans-1,3-Dichloropropene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichloroethene	5 MCL	< 0.5 (U)	< 0.5 (U)	**1.07**	< 0.5 (U)
Trichlorofluoromethane	520 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Xylenes (total)	10,000 MCL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Vinyl Chloride SW8260 SIM (µg/L)					
Vinyl chloride	2 MCL	**0.011 J**	< 0.015 (U)	< 0.015 (U)	< 0.015 (U)

Table 4-5
Groundwater Split Samples Summary Results - May 2017
Alabama Army National Guard, OSM # 28
Mobile, Alabama

Sample ID	Screening Criteria	OMS-28-GW12	OMS-28-GW13	OMS-28-GW20	OMS-28-GW23
Sample Depth		8-12	28-32	8-12	8-12
Sample Date		5/19/2017	5/9/2017	5/5/2017	5/10/2017
TCL Volatile Organic Compounds Method SW8260B (µg/L)					
1,1,1-Trichloroethane	200 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2,2-Tetrachloroethane	0.076 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-trichloro-1,2,2-trifluoroethane	1,000 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-Trichloroethane	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethane	2.8 RSL	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethene	7 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,3-Trichlorobenzene	0.7 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,4-Trichlorobenzene	70 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromo-3-chloropropane	0.02 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromoethane	0.05 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichlorobenzene	60 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloroethane	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloropropane	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,3-Dichlorobenzene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,4-Dichlorobenzene	75 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Butanone	560 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Hexanone	3.8 RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
4-Methyl-2-pentanone	630 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Acetone	1,400 RSL	< 1 (UJ)	< 1 (U)	< 1 (U)	< 1 (U)
Benzene	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromochloromethane	8.3 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromodichloromethane	80 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromoform	80 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromomethane	0.75 RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Carbon disulfide	81 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Carbon tetrachloride	5 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chlorobenzene	100 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroethane	2,100 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroform	80 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloromethane	19 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,2-Dichloroethene	70 MCL	< 0.5 (U)	< 0.5 (U)	**0.927 J**	< 0.5 (U)
cis-1,3-Dichloropropene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cyclohexane	1,300 RSL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Dibromochloromethane	80 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Dichlorodifluoromethane	20 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Ethylbenzene	700 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Isopropylbenzene	45 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methyl tert-butyl ether	14 RSL	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylacetate	2,000 RSL	< 2 (UJ)	< 2 (U)	< 2 (U)	< 2 (U)
methylcyclohexane	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylene chloride	5 MCL	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Styrene	100 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Tetrachloroethene	5 MCL	< 0.5 (U)	< 0.5 (U)	**25.7**	**0.863 J**
Toluene	1,000 MCL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,2-Dichloroethene	100 MCL	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,3-Dichloropropene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichloroethene	5 MCL	< 0.5 (U)	< 0.5 (U)	**32.5**	**0.751 J**
Trichlorofluoromethane	520 RSL	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Xylenes (total)	10,000 MCL	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Vinyl Chloride SW8260 SIM (µg/L)					
Vinyl chloride	2 MCL	NA	< 0.015 (U)	**0.024**	< 0.015 (U)

Table 4-5
Groundwater Split Samples Summary Results - May 2017
Alabama Army National Guard, OSM # 28
Mobile, Alabama

Sample ID	Screening Criteria	OMS-28-GW32	OMS-28-GW34	OMS-28-GW38	OMS-28-GW41
Sample Depth		8-12	27-31	26-30	16-20
Sample Date		5/2/2017	5/17/2017	5/11/2017	5/11/2017
TCL Volatile Organic Compounds Method SW8260B (µg/L)					
1,1,1-Trichloroethane	200 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2,2-Tetrachloroethane	0.076 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-trichloro-1,2,2-trifluoroethane	1,000 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-Trichloroethane	5 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethane	2.8 RSL	< 1 (U)	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethene	7 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,3-Trichlorobenzene	0.7 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,4-Trichlorobenzene	70 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromo-3-chloropropane	0.02 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromoethane	0.05 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichlorobenzene	60 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloroethane	5 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloropropane	5 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,3-Dichlorobenzene	NS	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,4-Dichlorobenzene	75 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Butanone	560 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Hexanone	3.8 RSL	< 2 (U)	< 1 (U)	< 1 (U)	< 1 (U)
4-Methyl-2-pentanone	630 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Acetone	1,400 RSL	< 2 (U)	< 1 (UJ)	< 1 (U)	< 1 (U)
Benzene	5 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromochloromethane	8.3 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromodichloromethane	80 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromoform	80 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromomethane	0.75 RSL	< 2 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Carbon disulfide	81 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Carbon tetrachloride	5 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chlorobenzene	100 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroethane	2,100 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroform	80 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloromethane	19 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,2-Dichloroethene	70 MCL	**3.71**	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,3-Dichloropropene	NS	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cyclohexane	1,300 RSL	< 2 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Dibromochloromethane	80 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Dichlorodifluoromethane	20 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Ethylbenzene	700 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Isopropylbenzene	45 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methyl tert-butyl ether	14 RSL	< 1 (U)	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (U)
Methylacetate	2,000 RSL	< 4 (U)	< 2 (UJ)	< 2 (U)	< 2 (U)
methylcyclohexane	NS	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylene chloride	5 MCL	< 1 (U)	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (U)
Styrene	100 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Tetrachloroethene	5 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Toluene	1,000 MCL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,2-Dichloroethene	100 MCL	< 1 (U)	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (U)
trans-1,3-Dichloropropene	NS	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichloroethene	5 MCL	**268**	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichlorofluoromethane	520 RSL	< 1 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Xylenes (total)	10,000 MCL	< 2 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Vinyl Chloride SW8260 SIM (µg/L)					
Vinyl chloride	2 MCL	**0.022**	< 0.015 (U)	< 0.015 (U)	**0.0063**

Table 4-5
Groundwater Split Samples Summary Results - May 2017
Alabama Army National Guard, OSM # 28
Mobile, Alabama

Sample ID	Screening Criteria	OMS-28-GW49	OMS-28-GW57	OMS-28-GW58	OMS-28-GW62
Sample Depth		8-12	12-16	27-31	15-19
Sample Date		5/15/2017	5/12/2017	5/15/2017	5/16/2017
TCL Volatile Organic Compounds Method SW8260B (µg/L)					
1,1,1-Trichloroethane	200[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2,2-Tetrachloroethane	0.076[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-trichloro-1,2,2-trifluoroethane	1,000[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1,2-Trichloroethane	5[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,1-Dichloroethane	2.8[RSL]	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (UJ)	< 0.5 (UJ)
1,1-Dichloroethene	7[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,3-Trichlorobenzene	0.7[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2,4-Trichlorobenzene	70[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromo-3-chloropropane	0.02[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dibromoethane	0.05[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichlorobenzene	60[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloroethane	5[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,2-Dichloropropane	5[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,3-Dichlorobenzene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
1,4-Dichlorobenzene	75[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Butanone	560[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
2-Hexanone	3.8[RSL]	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
4-Methyl-2-pentanone	630[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Acetone	1,400[RSL]	< 1 (UJ)	< 1 (U)	< 1 (UJ)	**5.05 J**
Benzene	5[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromochloromethane	8.3[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromodichloromethane	80[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromoform	80[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Bromomethane	0.75[RSL]	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Carbon disulfide	81[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Carbon tetrachloride	5[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chlorobenzene	100[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroethane	2,100[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloroform	80[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Chloromethane	19[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cis-1,2-Dichloroethene	70[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	**3.41**
cis-1,3-Dichloropropene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
cyclohexane	1,300[RSL]	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Dibromochloromethane	80[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Dichlorodifluoromethane	20[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Ethylbenzene	700[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Isopropylbenzene	45[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methyl tert-butyl ether	14[RSL]	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (UJ)	< 0.5 (UJ)
Methylacetate	2,000[RSL]	< 2 (UJ)	< 2 (U)	< 2 (UJ)	< 2 (UJ)
methylcyclohexane	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Methylene chloride	5[MCL]	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (UJ)	< 0.5 (UJ)
Styrene	100[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Tetrachloroethene	5[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Toluene	1,000[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
trans-1,2-Dichloroethene	100[MCL]	< 0.5 (UJ)	< 0.5 (U)	< 0.5 (UJ)	< 0.5 (UJ)
trans-1,3-Dichloropropene	NS	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Trichloroethene	5[MCL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	**45.1**
Trichlorofluoromethane	520[RSL]	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)	< 0.5 (U)
Xylenes (total)	10,000[MCL]	< 1 (U)	< 1 (U)	< 1 (U)	< 1 (U)
Vinyl Chloride SW8260 SIM (µg/L)					
Vinyl chloride	2[MCL]	< 0.015 (U)	< 0.015 (U)	< 0.015 (U)	**0.008 J**

Table 4-5
Groundwater Split Samples Summary Results - May 2017
Alabama Army National Guard, OSM # 28
Mobile, Alabama

Notes:

Groundwater samples were analyzed by GCAL for TCL VOCs by Method 8260B except vinyl chloride.
Vinyl chloride anlayzed by ALS Environmental by Method 8260SIM.

Results are reported in µg/L.

The screening criteria is based on the USEPA Maximum Contamination Limit (MCL). If MCLs are not avaiable, the Tap Water regional screening level (RSL) was used.

Bold indicates analyte concentration detected above the limit of detection (LOD).

Shading indicates the analyte was detected in exceedance of its respective screening value.

Data Qualifiers:

J - Estimated value detected below the limit of detection.

U - Indicates not detected at the limit of detection indicated.

Definitions:

µg/L - micrograms per liter

ft bgs - feet below ground surface

LOD - Limit of Detection

RSL - regional screening level

MCL - maximum contamination limit

Table 4-6
Groundwater Summary Results, January/Februrary 2018
Alabama Army National Guard, OMS #28
Mobile, Alabama

Sample ID	MCL	OMS-28-GW73	OMS-28-GW73	OMS-28-GW74	OMS-28-GW74	OMS-28-GW75	OMS-28-GW76	OMS-28-GW76
Sample Depth		12-16	29-33	11-15	29-33	25-29	9-13	16-20
Sample Date		1/29/2018	1/29/2018	1/30/2018	1/30/2018	1/30/2018	1/31/2018	1/31/2018
Select Volatile Organic Compounds Method SW8260B (µg/L)								
cis-1,2-Dichloroethene	70	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Tetrachloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Trichloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	**9.02**	< 0.500 (U)	< 0.500 (U)
Vinyl Chloride SW8260 SIM (µg/L)								
Vinyl Chloride	2	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)

Sample ID	MCL	OMS-28-GW76	OMS-28-GW77	OMS-28-GW77	OMS-28-GW77	OMS-28-GW78	OMS-28-GW78	OMS-28-GW78
Sample Depth		24-28	8-12	16-20	23-27	8-12	16-20	23-27
Sample Date		1/31/2018	2/1/2018	2/1/2018	2/2/2018	1/31/2018	1/31/2018	2/1/2018
Select Volatile Organic Compounds Method SW8260B (µg/L)								
cis-1,2-Dichloroethene	70	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Tetrachloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Trichloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Vinyl Chloride SW8260 SIM (µg/L)								
Vinyl Chloride	2	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)

Sample ID	MCL	OMS-28-GW79	OMS-28-GW79	OMS-28-GW79	OMS-28-GW80	OMS-28-GW80	OMS-28-GW80	OMS-28-GW81
Sample Depth		7-11	13-17	23-27	7-11	13-17	23-27	14-18
Sample Date		2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/2/2018	2/2/2018	1/30/2018
Select Volatile Organic Compounds Method SW8260B (µg/L)								
cis-1,2-Dichloroethene	70	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	**1.29**
Tetrachloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Trichloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	**11.1**
Vinyl Chloride SW8260 SIM (µg/L)								
Vinyl Chloride	2	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)

Table 4-6
Groundwater Summary Results, January/Februrary 2018
Alabama Army National Guard, OMS #28
Mobile, Alabama

Sample ID	MCL	OMS-28-GW81	OMS-28-GW82	OMS-28-GW82	OMS-28-GW83	OMS-28-GW83	OMS-28-GW83	OMS-28-GW84
Sample Depth		24-28	15-19	27-31	8-12	12-16	27-31	8-12
Sample Date		1/31/2018	2/2/2018	2/2/2018	2/2/2018	2/2/2018	2/2/2018	2/5/2018
Select Volatile Organic Compounds Method SW8260B (µg/L)								
cis-1,2-Dichloroethene	70	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	**1.28**	< 0.500 (U)	< 0.500 (U)
Tetrachloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Trichloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	**3.59**	**51.3**	**0.644 J**	< 0.500 (U)
Vinyl Chloride SW8260 SIM (µg/L)								
Vinyl Chloride	2	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)

Sample ID	MCL	OMS-28-GW84	OMS-28-GW84	OMS-28-GW85	OMS-28-GW85	OMS-28-GW85	OMS-28-GW86	OMS-28-GW86
Sample Depth		13-17	27-31	9-13	15-19	27-31	8-12	12-16
Sample Date		2/5/2018	2/5/2018	2/2/2018	2/2/2018	2/2/2018	2/3/2018	2/3/2018
Select Volatile Organic Compounds Method SW8260B (µg/L)								
cis-1,2-Dichloroethene	70	< 0.500 (U)	< 0.500 (U)	**0.521 J**	**7.56**	< 0.500 (U)	**2.9**	**4.34**
Tetrachloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 1.00 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Trichloroethene	5	< 0.500 (U)	< 0.500 (U)	**17.1**	**291**	< 0.500 (U)	**42.4**	**131**
Vinyl Chloride SW8260 SIM (µg/L)								
Vinyl Chloride	2	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	**0.028 J**	< 0.050 (U)	< 0.050 (U)	**0.034 J**

Sample ID	MCL	OMS-28-GW86	OMS-28-GW87	OMS-28-GW88	OMS-28-GW88	OMS-28-GW88	OMS-28-GW89	OMS-28-GW90
Sample Depth		27-31	27-31	8-12	13-17	27-31	27-31	29-33
Sample Date		2/3/2018	2/3/2018	2/5/2018	2/5/2018	2/5/2018	1/30/2018	2/5/2018
Select Volatile Organic Compounds Method SW8260B (µg/L)								
cis-1,2-Dichloroethene	70	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	**1.03**	< 0.500 (U)
Tetrachloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Trichloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	**0.894 J**	**5.22**	**1.28**
Vinyl Chloride SW8260 SIM (µg/L)								
Vinyl Chloride	2	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)

Table 4-6
Groundwater Summary Results, January/Februrary 2018
Alabama Army National Guard, OMS #28
Mobile, Alabama

Sample ID	MCL	OMS-28-GW91	OMS-28-GW92	OMS-28-GW92	OMS-28-GW92	OMS-28-GW93	OMS-28-GW93	OMS-28-GW93
Sample Depth		**29-33**	**8-12**	**12-16**	**29-33**	**8-12**	**12-16**	**29-33**
Sample Date		**2/6/2018**	**2/6/2018**	**2/6/2018**	**2/6/2018**	**2/6/2018**	**2/6/2018**	**2/6/2018**
Select Volatile Organic Compounds Method SW8260B (µg/L)								
cis-1,2-Dichloroethene	70	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Tetrachloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)
Trichloroethene	5	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	< 0.500 (U)	**0.584 J**
Vinyl Chloride SW8260 SIM (µg/L)								
Vinyl Chloride	2	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)	< 0.050 (U)

Notes:
µg/L - micrograms per liter.
MCL - Maximum Contaminant Level
Bold indicates analyte concentration detected above the LOD.
Yellow shading and bold indicate analyte concentration detected above the PAL.
Sample depth in feet below ground surface

Data Qualifiers:
J - Estimated value detected below the limit of detection.
U - Indicates not detected at the limit of detection indicated.

Figures

0 20,000 40,000 Feet

1 inch = 20,000 feet

N W E S

AECOM

10 Patewood Drive, Building 6, Suite 500
Greenville, SC 29615
T: (864) 234-3000 F: (864)234-3069

Satellite Map

Supplementary Data Gap Investigation
and Groundwater Monitoring Report

Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	8/14/2018	**Figure 1-1**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_08_09\Figure 1-1_Satellite Map.mxd

Vicinity Map

Legend

- County
- Waterbodies

0 300 600 1,200 Feet

1 inch = 600 feet

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Facility Location Map

Supplementary Data Gap Investigation
and Groundwater Monitoring Report

Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	8/9/2018	**Figure 1-2**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_08_09\Figure 1-2_Facility Location Map.mxd

Site Location

Legend

- Shallow Monitoring Well Location
- Deep Monitoring Well Location
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Fenceline
- Parcel Boundary

Note:
Wells MW-10 and MW-11 were abandoned in 2008 at the property owner's request and have not been replaced.

0 75 150 300 Feet

1 inch = 150 feet

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Facility Site Location Map

Supplementary Data Gap Investigation
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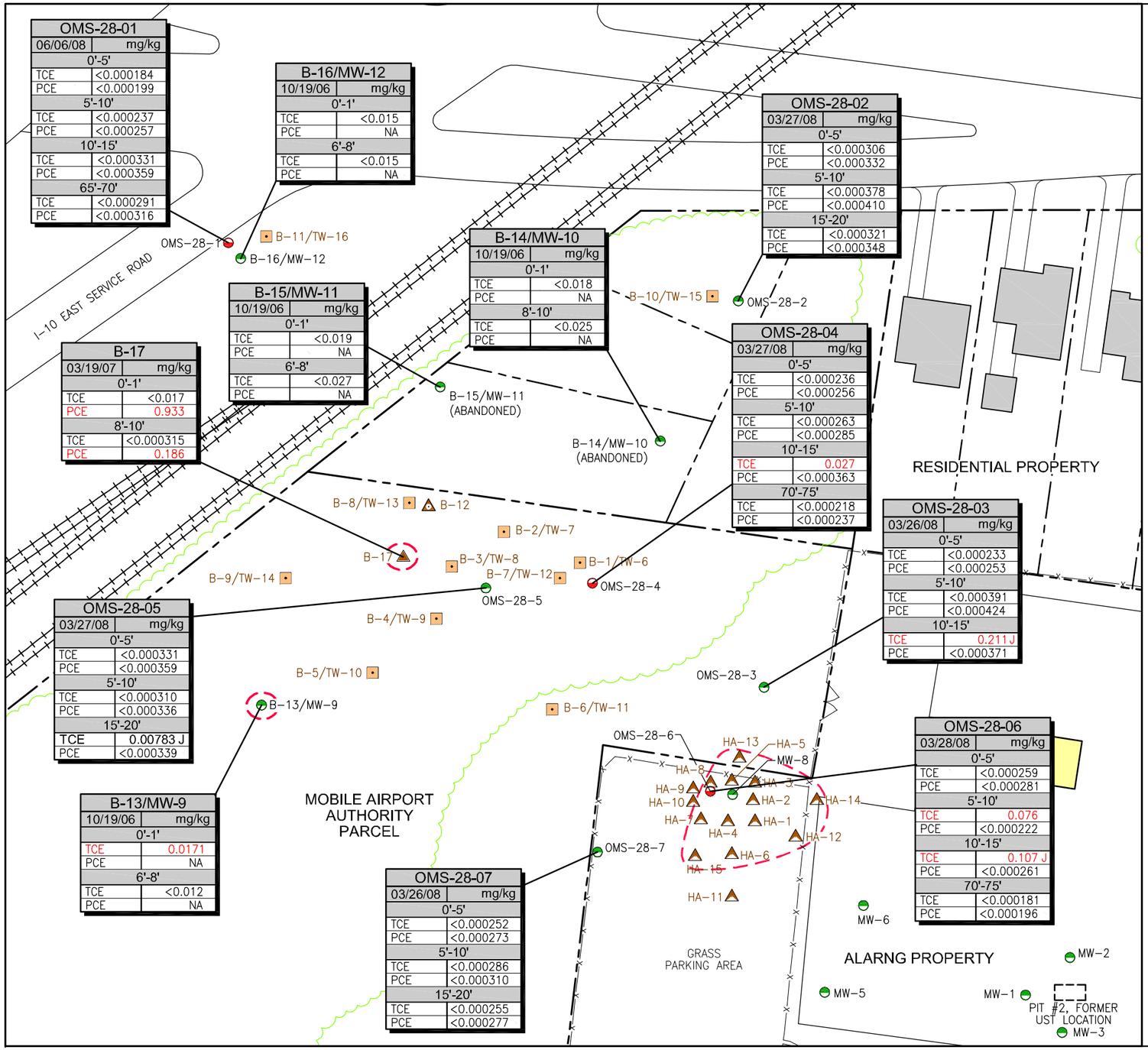
Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	8/9/2018	**Figure 1-3**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_08_09\Figure 1-3_Facility Site Location Map.mxd



HA-1	
04/19/06	mg/kg
0'-1'	
TCE	0.00311 J
PCE	0.00121 J
6'-8'	
TCE	0.017
PCE	0.000822 J

HA-8	
04/19/06	mg/kg
0'-1'	
TCE	0.00286 J
PCE	<0.00266
8'-10'	
TCE	<0.00998
PCE	<0.011

HA-2	
04/19/06	mg/kg
0'-1'	
TCE	0.241 J
PCE	<0.011
8'-10'	
TCE	0.027
PCE	<0.000191

HA-9	
04/19/06	mg/kg
0'-1'	
TCE	<0.000359
PCE	<0.000389
8'-10'	
TCE	<0.012
PCE	<0.013

HA-3	
04/19/06	mg/kg
0'-1'	
TCE	0.019 J
PCE	<0.000476
8'-10'	
TCE	0.00353 J
PCE	<0.000137

HA-10	
04/19/06	mg/kg
0'-1'	
TCE	<0.000267
PCE	0.00154 J
8'-10'	
TCE	<0.000146
PCE	<0.000159

HA-4	
04/19/06	mg/kg
0'-1'	
TCE	<0.000249
PCE	<0.000271
7'-9'	
TCE	<0.000211
PCE	<0.000229

HA-11	
05/11/06	mg/kg
0'-1'	
NOT SAMPLED	
8'-10'	
TCE	<0.000169
PCE	<0.000184

HA-5	
04/19/06	mg/kg
0'-1'	
TCE	<0.000429
PCE	0.00252 J
7'-9'	
TCE	<0.00944
PCE	<0.010

HA-12	
05/11/06	mg/kg
0'-1'	
NOT SAMPLED	
8'-10'	
TCE	0.00353 J
PCE	0.00191 J

HA-6	
04/19/06	mg/kg
0'-1'	
TCE	<0.000207
PCE	<0.000225
8'-10'	
TCE	0.15
PCE	<0.000203

HA-13	
05/11/06	mg/kg
0'-1'	
NOT SAMPLED	
8'-10'	
TCE	<0.000451
PCE	0.00505 J

HA-7	
04/19/06	mg/kg
0'-1'	
TCE	<0.000437
PCE	0.00253 J
8'-10'	
TCE	0.069 J
PCE	<0.00711

HA-14	
03/19/07	mg/kg
0'-1'	
TCE	0.017
PCE	<0.000243
8'-10'	
TCE	0.00962
PCE	<0.000332

HA-15	
03/19/07	mg/kg
0'-1'	
TCE	0.586
PCE	<0.015
8'-10'	
TCE	0.132 J
PCE	<0.000326

LEGEND:

- RESIDENTIAL BUILDING
- COMMERCIAL BUILDING
- ASPHALT ROAD
- RAILROAD TRACKS
- CHAIN LINK FENCE
- PROPERTY BOUNDARY
- TREE LINE
- SOIL BORING (2006–2007)
- TEMPORARY WELL (2006–2007)
- HAND AUGER BORING (2006–2007)
- FLUTE LINER BORING (2006)
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- XXXX CONTAMINATION EXCEEDING SSL
- CONTAMINATION EXCEEDING RSL
- EXCEEDS SSL

NOTES:

1. HISTORICAL LOCATIONS DIGITIZED FROM BASE MAP PROVIDED BY AEROSTAR ENVIRONMENTAL SERVICES INC. (AEROSTAR 2007).
2. MONITORING WELL LOCATIONS DATA PROVIDED BY AEROSTAR ENVIRONMENTAL SERVICES INC. (AEROSTAR 2008).
3. EPA RSLs DATED MAY 2012 ARE BEING USED IN LIEU OF AL PSVs PUBLISHED IN THE ALABAMA RISK–BASED CORRECTIVE ACTION GUIDANCE MANUAL (2008) AS PER APRIL 2, 2012 EMAIL CORRESPONDENCE BETWEEN ADEM AND ALARNG.

	PROTECTION OF GROUNDWATER SSL (mg/Kg)	RESIDENTIAL SOIL EPA RSL (mg/Kg)
TCE	0.0018	0.91
PCE	0.0023	22

ALABAMA STATE PLANE
NAD 83 WEST ZONE

0 30 60 120

SCALE: 1" = 60'

AECOM

FIGURE 1-4
DISTRIBUTION OF COCs IN SOIL

OMS #28
ALABAMA ARMY NATIONAL GUARD
MOBILE, ALABAMA

Source:
SAIC, 2013, *RI Report for the ALARNG OMS #28*

OMS-28-1 (Deep Well)	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
JUL-08	<0.200	<0.164	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	<0.097	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	<0.062	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

TW-16	µg/L
05/11/06	
PCE	<0.227
TCE	<0.270
DCE	<0.163
VC	<0.089

MW-12	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
NOV-06	<0.072	<0.024		
JUL-08	<0.200	<0.164	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	<0.097	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	<0.062	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

MW-11	PCE µg/L	TCE µg/L	CCE µg/L	VC µg/L
NOV-06	<0.072	6.3	<0.051	<0.052
WELL ABANDONED AT PRIVATE PROPERTY OWNER REQUEST IN 2008				

TW-15	µg/L
05/11/06	
PCE	<0.227
TCE	<0.270
DCE	<0.163
VC	<0.089

OMS-28-02	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
JUL-08	<0.200	<0.164	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	<0.097	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	2 J	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

MW-10	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
NOV-06	4.9	11	5.8	1.5
WELL ABANDONED AT PRIVATE PROPERTY OWNER REQUEST IN 2008				

OMS-28-05	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
JUL-08	130	39	12	<0.054
DEC-08	9.2	14	8.7	<0.155
MAY-09	234	162	20	<0.077
SEP-09	8.02	11	9.12	<0.077
MAR-10	81	51	6.3	<0.093
SEP-10	33	19	8.69	<0.093

TW-13	µg/L
04/18/06	
PCE	NA
TCE	145
DCE	NA
VC	NA

TW-8	µg/L
04/18/06	
PCE	NA
TCE	130
DCE	NA
VC	NA

TW-7	µg/L
04/18/06	
PCE	NA
TCE	19.7
DCE	NA
VC	NA

TW-12	µg/L
04/18/06	
PCE	NA
TCE	<0.270
DCE	NA
VC	NA

TW-6	µg/L
04/18/06	
PCE	NA
TCE	16.5
DCE	NA
VC	NA

OMS-28-4 (Deep Well)	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
JUL-08	<0.200	<0.164	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	<0.097	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	<0.062	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

TW-9	µg/L
04/18/06	
PCE	NA
TCE	<0.270
DCE	NA
VC	NA

TW-1	µg/L
02/21/06	
PCE	<0.072
TCE	<0.024
DCE	<0.051
VC	<0.062

OMS-28-03	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
JUL-08	<0.200	80	6.26	<0.054
DEC-08	<0.153	94	9.34	<0.155
MAY-09	<0.099	29	9.55	<0.077
SEP-09	<0.099	15.29	<0.103	<0.077
MAR-10	<0.121	12	1.37 J	<0.093
SEP-10	<0.121	149	9.43	<0.093

TW-14	µg/L
05/11/06	
PCE	<0.227
TCE	<0.270
DCE	<0.163
VC	<0.089

TW-4	µg/L
02/21/06	
PCE	<0.072
TCE	1.86
DCE	1.50
VC	<0.062

TW-11	µg/L
04/18/06	
PCE	NA
TCE	6.74
DCE	NA
VC	NA

PZ-2	µg/L
02/21/06	
PCE	<0.072
TCE	<0.024
DCE	<0.051
VC	<0.062

OMS-28-6 (Deep Well)	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
JUL-08	<0.200	<0.164	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	<0.097	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	<0.062	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

MW-9	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
NOV-06	<0.072	<0.024	<0.051	<0.052
JUL-08	<0.200	<0.164	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	<0.097	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	<0.062	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

TW-10	µg/L
04/18/06	
PCE	NA
TCE	<0.270
DCE	NA
VC	NA

OMS-28-07	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
JUL-08	<0.200	1.73 J	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	0.684 J	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	<0.062	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

MW-8	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
MAR-05	<6.3	460	11	<6.3
APR-06	NA	97.9	NA	NA
OCT-06	NA	83	NA	NA
JUL-08	<0.200	133	3.397 J	<0.054
DEC-08	<0.153	46	3.24 J	<0.155
MAY-09	<0.099	18	0.812 J	<0.077
SEP-09	<0.099	8.41	<0.103	<0.077
MAR-10	<0.121	41	2.07 J	<0.093
SEP-10	<0.121	13	<0.061	<0.093

PZ-1	µg/L
02/21/06	
PCE	<0.029
TCE	<0.096
DCE	<0.204
VC	<0.062

TW-3	µg/L
02/21/06	
PCE	<0.072
TCE	<0.024
DCE	<0.051
VC	<0.062

TW-5	µg/L
02/21/06	
PCE	<0.072
TCE	<0.024
DCE	<0.051
VC	<0.062

MW-5	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
MAR-05	<0.250	<0.250	<0.250	<0.250
OCT-06	NA	<0.270	NA	NA
JUL-08	<0.200	<0.164	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	<0.097	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	<0.062	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

MW-6	PCE µg/L	TCE µg/L	DCE µg/L	VC µg/L
MAR-05	<0.630	<0.630	<0.630	<0.270
OCT-06	NA	<0.270	NA	NA
JUL-08	<0.200	<0.164	<0.074	<0.054
DEC-08	<0.153	<0.118	<0.162	<0.155
MAY-09	<0.099	<0.097	<0.103	<0.077
SEP-09	<0.099	<0.097	<0.103	<0.077
MAR-10	<0.121	<0.062	<0.061	<0.093
SEP-10	<0.121	<0.062	<0.061	<0.093

OMS-28-1, B-11/TW-16, B-16/MW-12, SERVICE, B-15/MW-11 (ABANDONED), B-10/TW-15, OMS-28-2, B-14/MW-10 (ABANDONED), B-8/TW-13, PCE <5 µg/L, B-2/TW-7, B-3/TW-8, B-7/TW-12, B-1/TW-6, OMS-28-4, OMS-28-5, B-9/TW-14, B-4/TW-9, TW-4, TW-1, OMS-28-3, PZ-2, B-5/TW-10, B-13/MW-9, B-6/TW-11, OMS-28-6, MW-8, OMS-28-6, OMS-28-7, PZ-1, TW-3, TCE <5 µg/L, MW-6, MW-2, GRASS PARKING AREA, TW-5, TW-2, MW-5, MW-1, PIT #2, FORMER UST LOCATION, DRIVEWAY, GRASS AREA

LEGEND:

- RESIDENTIAL BUILDING
- COMMERCIAL BUILDING
- ASPHALT ROAD
- RAILROAD TRACKS
- CHAIN LINK FENCE
- PROPERTY BOUNDARY
- TREE LINE
- TEMPORARY WELL (2006-2007)
- ABANDONED TEMPORARY WELL (2005)
- ABANDONED PIEZOMETER (2006)
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- TCE PLUME BOUNDARY
- PCE PLUME BOUNDARY
- 0.44 CONTAMINATION EXCEEDING RSL
- CONTAMINATION EXCEEDING MCL

NOTES:

1. HISTORICAL LOCATIONS DIGITIZED FROM BASE MAP PROVIDED BY AEROSTAR ENVIRONMENTAL SERVICES INC. (AEROSTAR 2007).
2. MONITORING WELL LOCATIONS PROVIDED BY AEROSTAR ENVIRONMENTAL SERVICES INC. (AEROSTAR 2008).
3. MW-1, MW-2, MW-3 HAVE NOT BEEN ANALYZED FOR FULL SUITE VOCs, ONLY BTEX UNDER THE UST PROGRAM.
4. OTHER VOCs WERE DETECTED SPORADICALLY.
5. DASHED LINE OF TCE PLUME BOUNDARY IS BASED ON PRIMARILY 2006 DATA AND DOES NOT ACCOUNT FOR BIODEGRADATION TAKING PLACE.

	EPA TAPWATER RSL µg/L	MCL µg/L
TRICHLOROETHENE (TCE)	0.44 (c)	5
TETRACHLOROETHENE (PCE)	9.7 (c)	5
cis-1,2-DICHLOROETHENE (DCE)	2.8 (n)	70
VINYL CHLORIDE (VC)	0.015 (c)	2

(c) INDICATES RISK = 1 E-06 FOR CARCINOGEN
(n) INDICATES HQ = 0.1 FOR NONCARCINOGEN

ALABAMA STATE PLANE NAD 83 WEST ZONE

0 20 40 80
SCALE: 1" = 40'

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FIGURE 1-5
GROUNDWATER QUALITY MAP (CHLORINATED SOLVENTS)

OMS #28
ALABAMA ARMY NATIONAL GUARD
MOBILE, ALABAMA

Source:
SAIC, 2013, *RI Report for the ALARNG OMS #28*

OMS #28

Vicinity Map

Legend

0 10,000 20,000 40,000 Feet

1 inch = 20,000 feet

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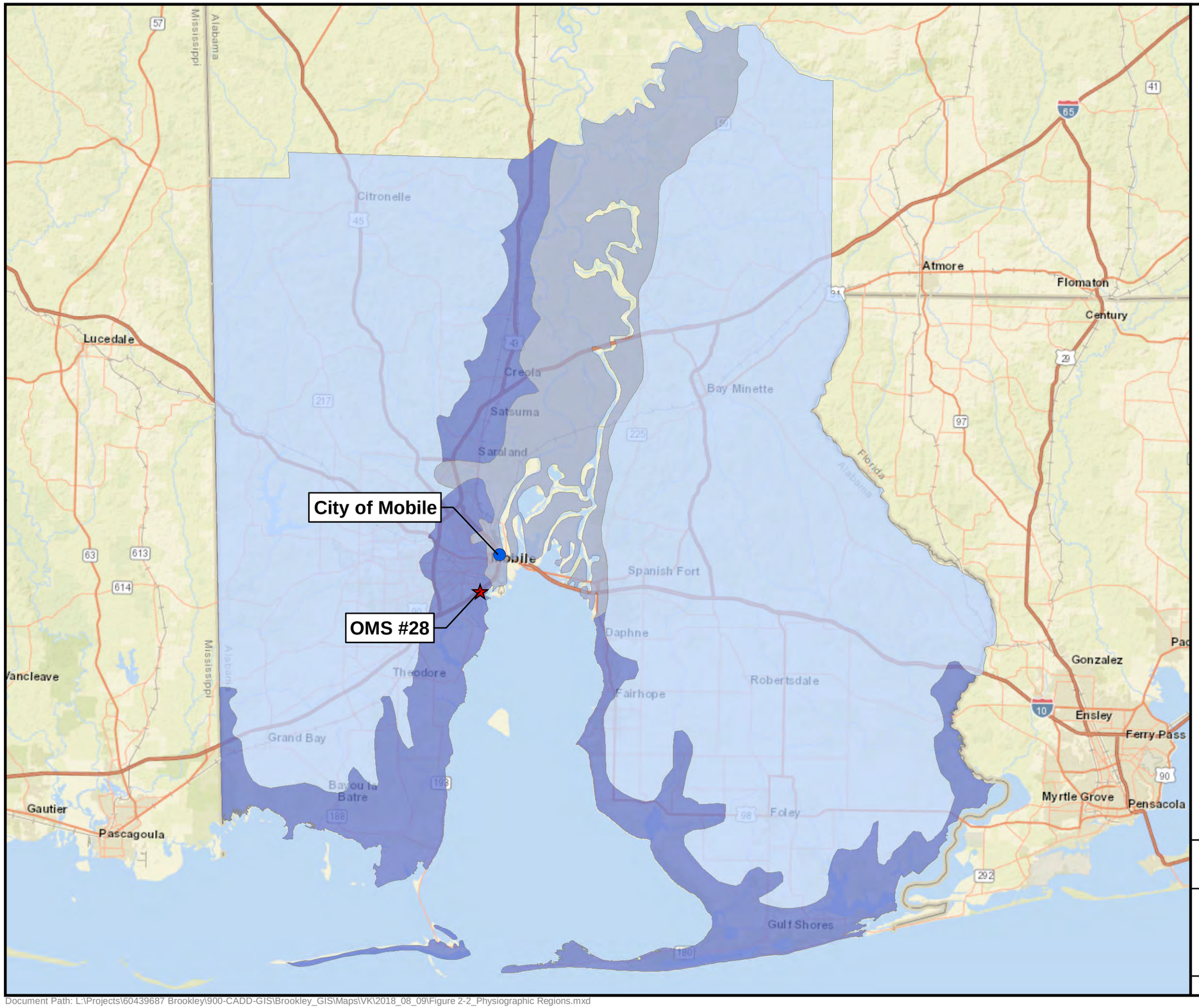
Topographic Map

Supplementary Data Gap Investigation
and Groundwater Monitoring Report
Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	8/13/2018	**Figure 2-1**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_08_09\Figure 2-1_Topo Map.mxd



Vicinity Map

Legend

- Southern Pine Hills
- Alluvial - Deltaic Plain
- Coastal Lowlands

0 20,000 40,000 80,000 Feet

1 inch = 40,000 feet

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Physiographic Regions

Supplementary Data Gap Investigation
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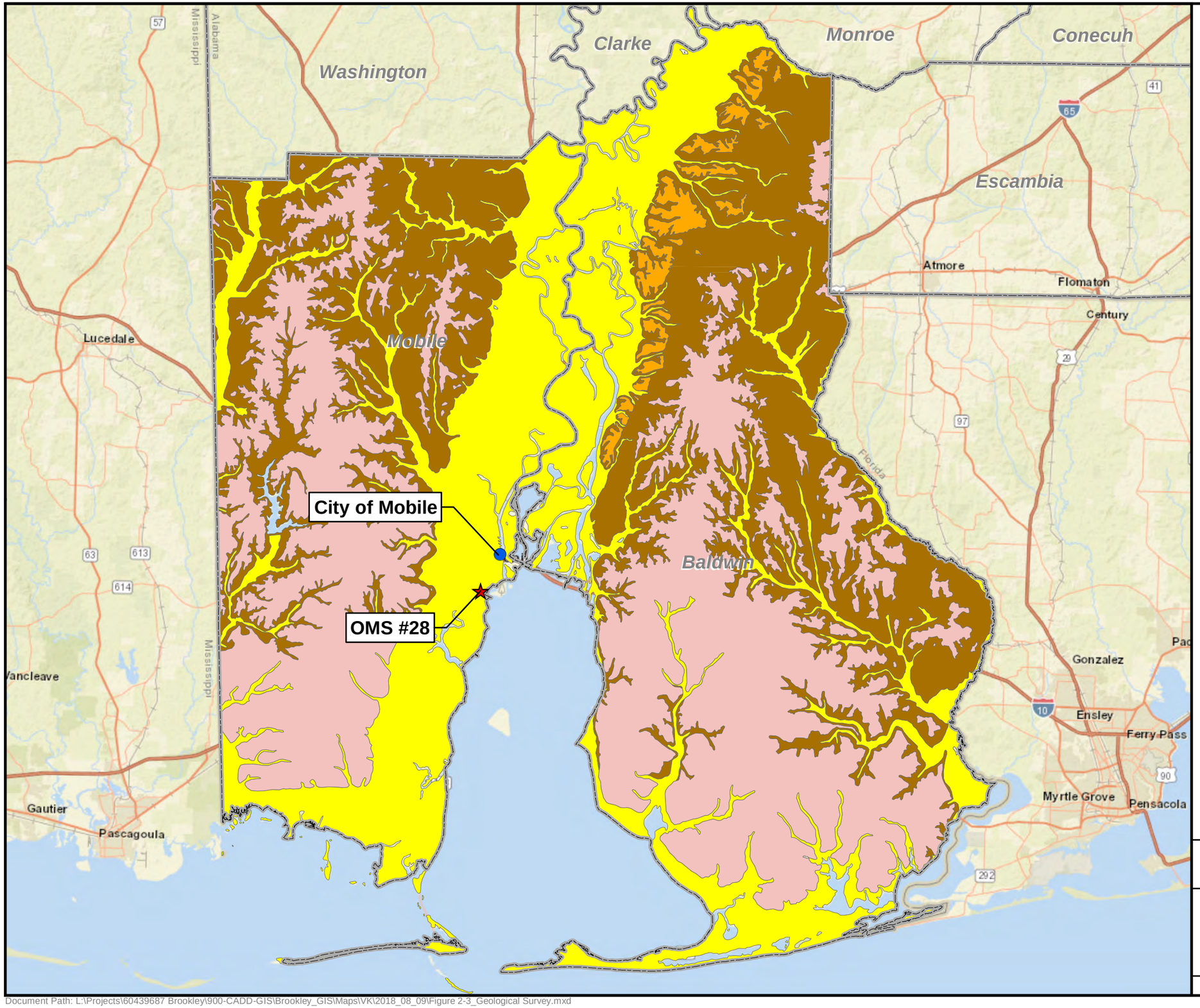
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	8/14/2018	**Figure 2-2**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_08_09\Figure 2-2_Physiographic Regions.mxd



Vicinity Map

Legend

- Alluvial, coastal, and low terrace deposits
- Citronelle formation
- High terrace deposits
- Miocene Series undifferentiated

0 20,000 40,000 80,000 Feet

1 inch = 40,000 feet

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Geological Survey Map

Supplementary Data Gap Investigation
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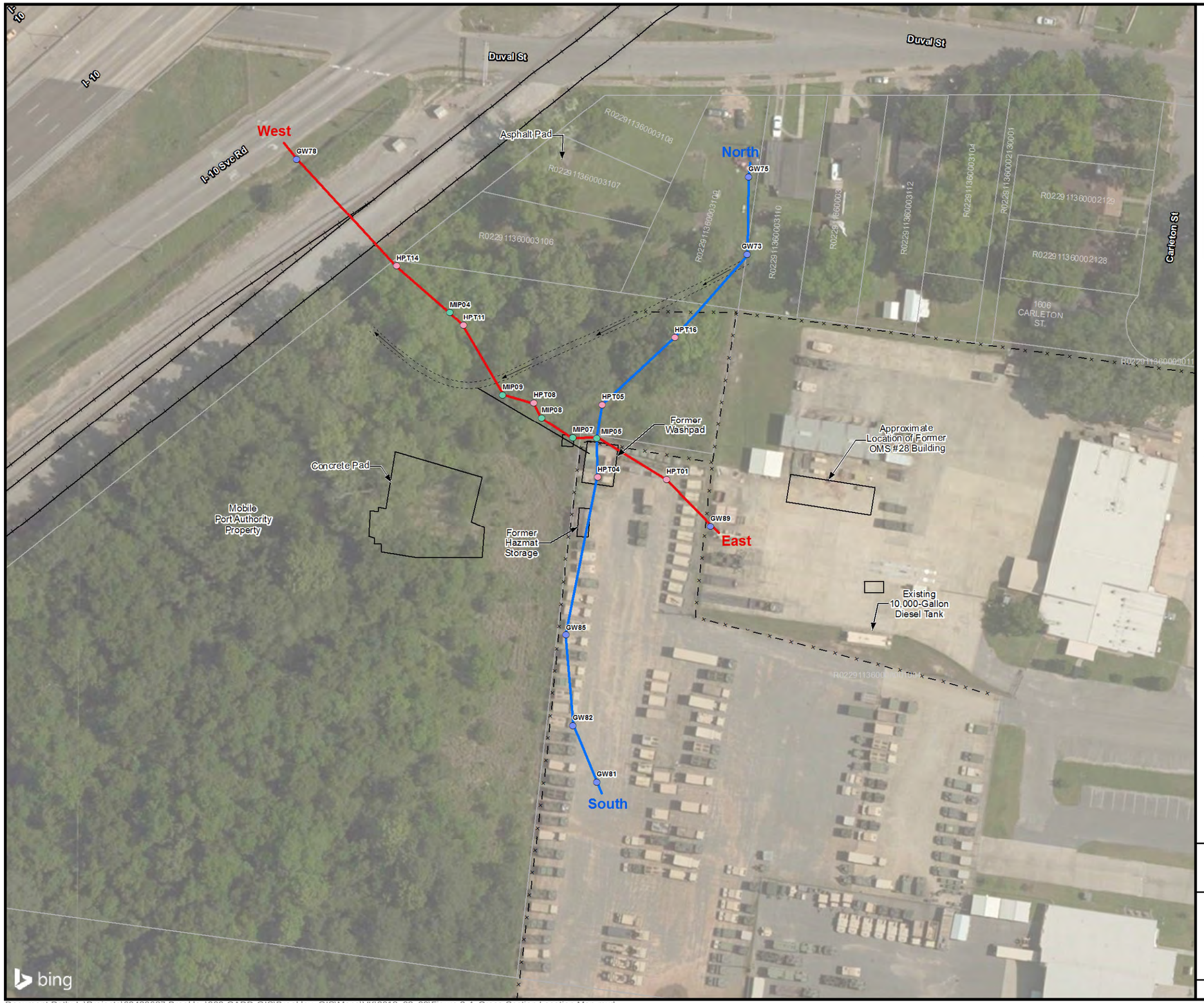
PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	8/14/2018	**Figure 2-3**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_08_09\Figure 2-3_Geological Survey.mxd



Site Location

Legend

- Shallow Monitoring Well Location
- Deep Monitoring Well Location
- Groundwater Sample Location
- HPT Location
- MIP Location
- Soil Boring Location
- Fenceline
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Parcel Boundary

0 40 80 160 Feet

1 inch = 80 feet

N W E S

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Cross-Section Location Map

Supplementary Data Gap Investigation
and Groundwater Monitoring Report
Army National Guard OMS #28
Mobile, Alabama

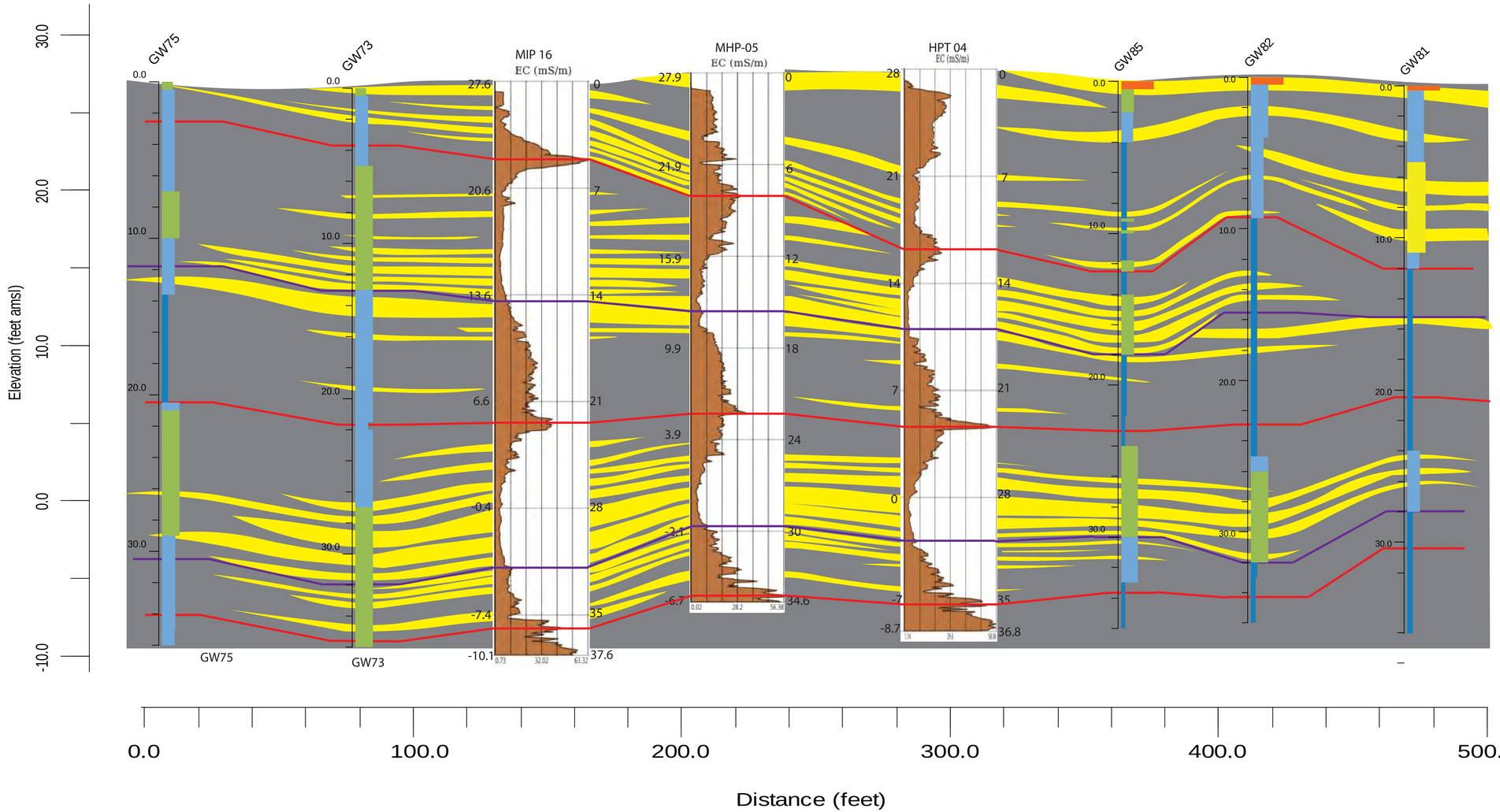
PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	8/14/2018	**Figure 2-4**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_08_09\Figure 2-4_Cross-Section Location Map.mxd

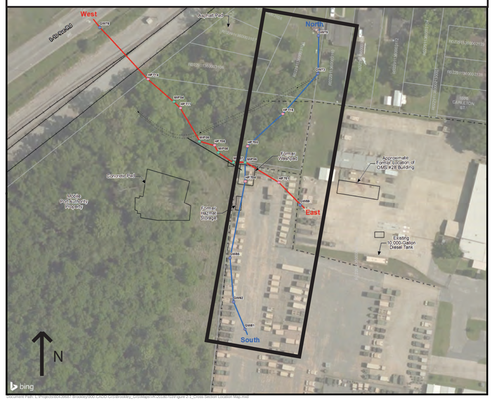
North-South

North

South



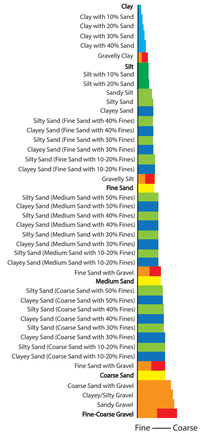
Cross Section Location



Legend

- Maximum Flooding Surface
- Sequence Boundary
- Mouth Bar Sands
- Tidal Clay

Grain Size Log



Notes:

GW75 - Discrete groundwater sampling location 75

MIP 16 - Membrane Interface Probe push location 16

HPT 04 - Hydraulic Profiling Tool push location 04

MHP-05 - Dual MIP/HPT push location 05

EC - Electrical conductivity

mS/m - miliSiemens per meter

amsl - above mean sea level

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North - South Cross Section

Supplementary Data Gap Investigation
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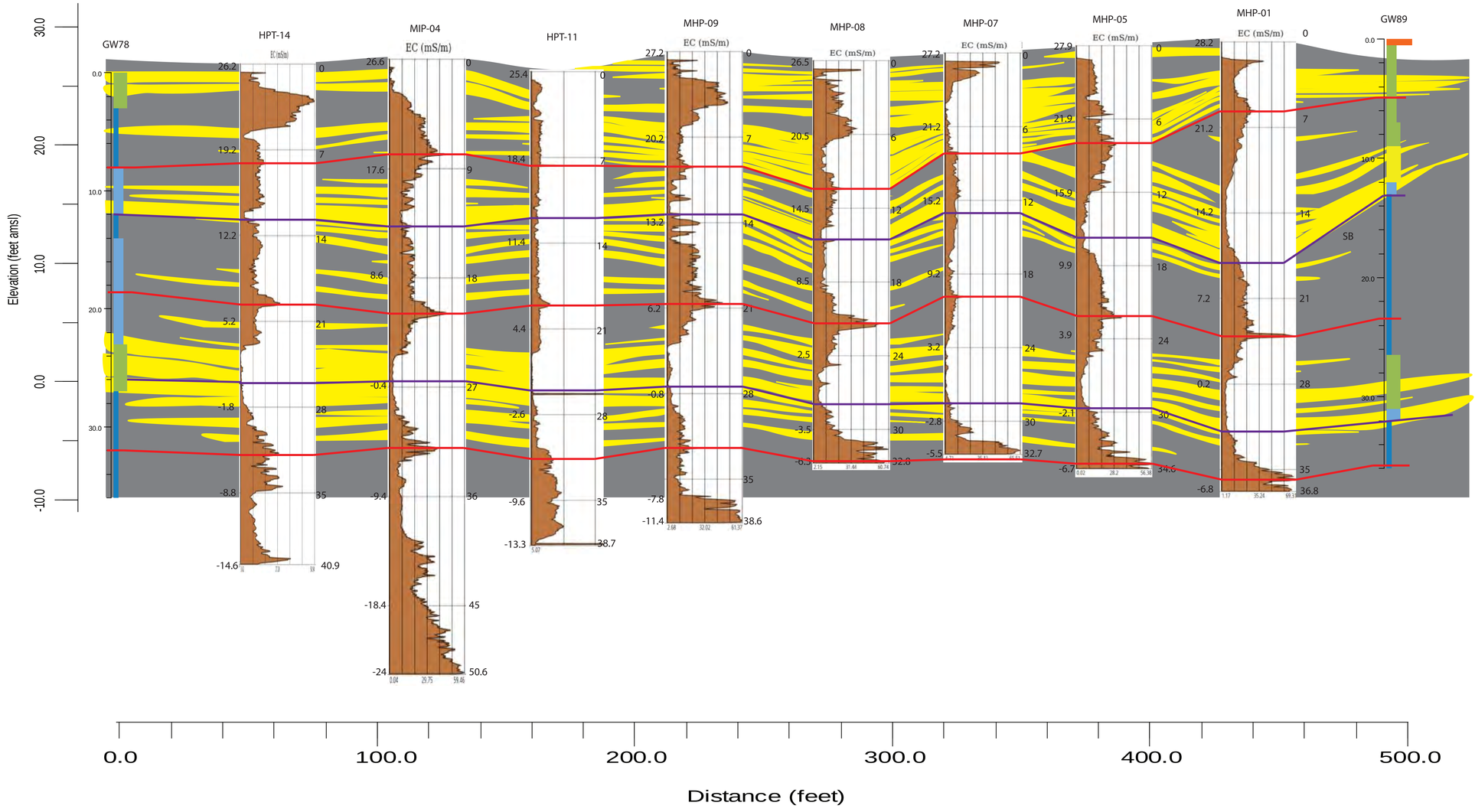
Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	RCS	7/5/2018	**Figure 2-5**

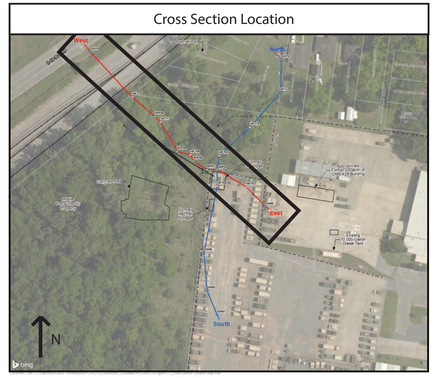
W-E Section

West

East



Cross Section Location



Legend

- Maximum Flooding Surface
- Sequence Boundary
- Mouth Bar Sands
- Tidal Clay

Notes:

GW89 - Discrete groundwater sampling location 89

MIP-04 - Membrane Interface Probe push location 04

HPT-11 - Hydraulic Profiling Tool push location 11

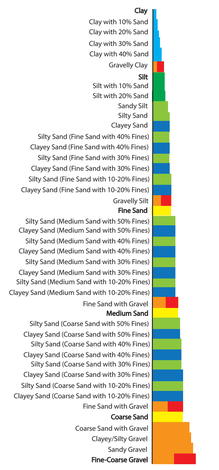
MHP-05 - Dual MIP/HPT push location 05

EC - Electrical conductivity

mS/m - miliSiemens per meter

amsl - above mean sea level

Grain Size Log



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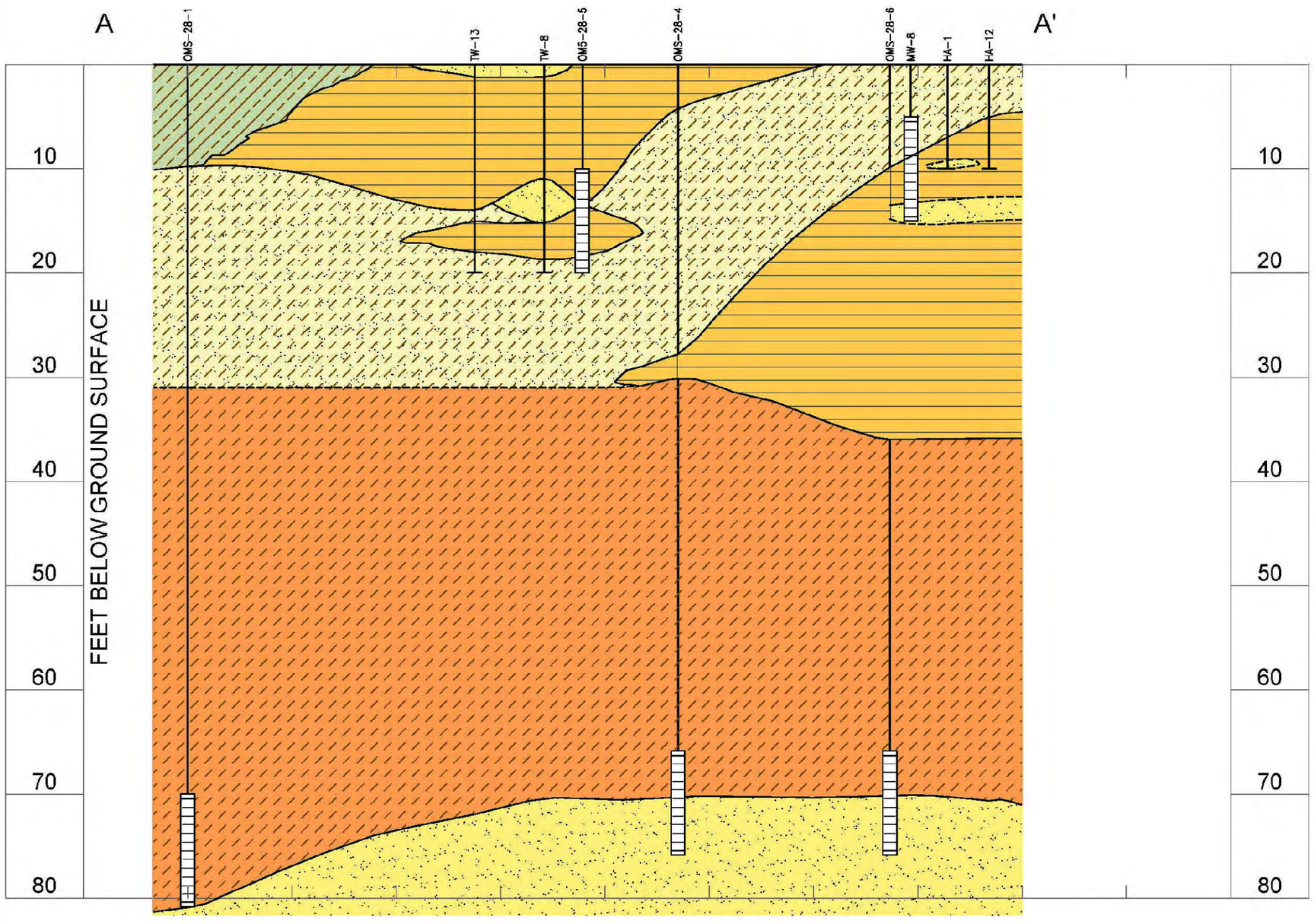
West - East Cross Section

Supplmentary Data Gap Investigation
and Groundwater Monitoring Report

Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	RCS	7/5/2018	**Figure 2-6**



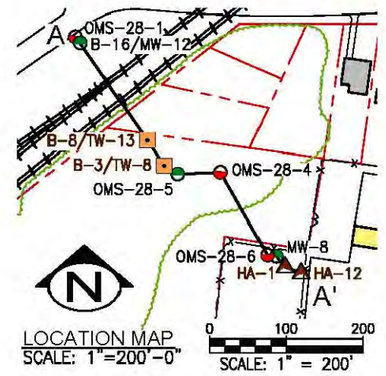
Legend

- TOP OF WELL CASING
- GROUND SURFACE
- GEOLOGIC CONTACT
- INFERRED GEOLOGIC CONTACT
- SCREENED INTERVAL
- TOTAL BORING DEPTH
- CLAY
- SANDY CLAY TO SILTY CLAY TO CLAY
- SILTY CLAY TO SILTY LOAM
- CLAYEY SAND
- SAND

1. CLAYEY SAND AND SANDY CLAY MAY HAVE BEEN USED INTERCHANGEABLY IN BORING LOGS. NO INFORMATION WAS PROVIDED ON PERCENT SAND OR CLAY CONTENT. THEREFORE, THE LAYER IDENTIFIED AS CLAYEY SAND HAS THE POTENTIAL OF BEING CLOSER TO A SANDY CLAY.

0 2 4 6 8 10 20
VERTICAL SCALE: 1" = 10'

0 30 60 120
HORIZONTAL SCALE: 1" = 60'
VERTICAL EXAGGERATION = 6X



Source: SAIC, 2013, RI Report for the ALARNG OMS #28.

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Remedial Investigation Cross-Section

Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	9/25/2018	**Figure 2-7-7**

OMS-28-1	2016	2017
PCE	0.5 U	0.5 U
TCE	0.5 U	0.5 U
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

MW-12	2016	2017
PCE	0.5 U	0.5 U
TCE	0.5 U	0.5 U
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

OMS-28-2	2016	2017
PCE	0.5 U	0.5 U
TCE	0.5 U	0.5 U
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

OMS-28-5	2016	2017
PCE	455	154
TCE	200	246
cis-1,2-DCE	27.8	103
VC	2.5 U	1 U

OMS-28-4	2016	2017
PCE	0.88 J	0.5 U
TCE	0.5 U	0.5 U
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

OMS-28-3	2016	2017
PCE	0.5 U	0.5 U
TCE	8.92	9.6
cis-1,2-DCE	1.59	1.26
VC	0.5 U	0.5 U

MW-9	2016	2017
PCE	0.5 U	0.5 U
TCE	0.5 U	0.5 U
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

MW-8	2016	2017
PCE	0.5 U	0.5 U
TCE	7.8	0.373 J
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

OMS-28-7	2016	2017
PCE	0.5 U	0.5 U
TCE	0.5 U	0.5 U
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

MW-6	2016	2017
PCE	0.5 U	0.5 U
TCE	0.5 U	0.5 U
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

MW-5	2016	2017
PCE	0.5 U	0.5 U
TCE	0.5 U	0.5 U
cis-1,2-DCE	0.5 U	0.5 U
VC	0.5 U	0.5 U

I-10 Svc Rd

R022911360003108

R022911360003107

R022911360003106

R022911360003109

R022911360003110

R022911360003112

R022911360008001001

Former Pollution Control System

Concrete Pad

OMS-28-6 (Destroyed)

Former Washpad

Former Hazmat Storage

Approximate Former Location of OMS #28 Building

Pit #2 Former UST Location

Existing 10,000-Gallon Diesel Tank

Mobile Port Authority Property

bing

Site Location

Legend

- Shallow Monitoring Well
- Deep Monitoring Well
- OMS 28 Phase 2-3 GW Elev Arrows May-17
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Fenceline
- Parcel Boundary

Notes:
1. Concentrations in micrograms per liter (µg/L).
2. Samples collected in January 2016 and May 2017.
3. Only chemicals of concern (COCs) and chlorinated degradation products shown.
4. Red values indication concentration exceeded the screening criteria.
5. PCE - Tetrachloroethene
6. TCE - Trichloroethene
7. DCE - Dichloroethene
8. VC - Vinyl Chloride
9. MCL - Maximum Contaminant Limit
10. J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
11. Please see table 3-4 for historical groundwater results.

COC	Screening Value	Source
PCE	5	MCL
TCE	5	MCL
cis-1,2-DCE	70	MCL
VC	2	MCL

0 25 50 100 Feet

1 inch = 50 feet

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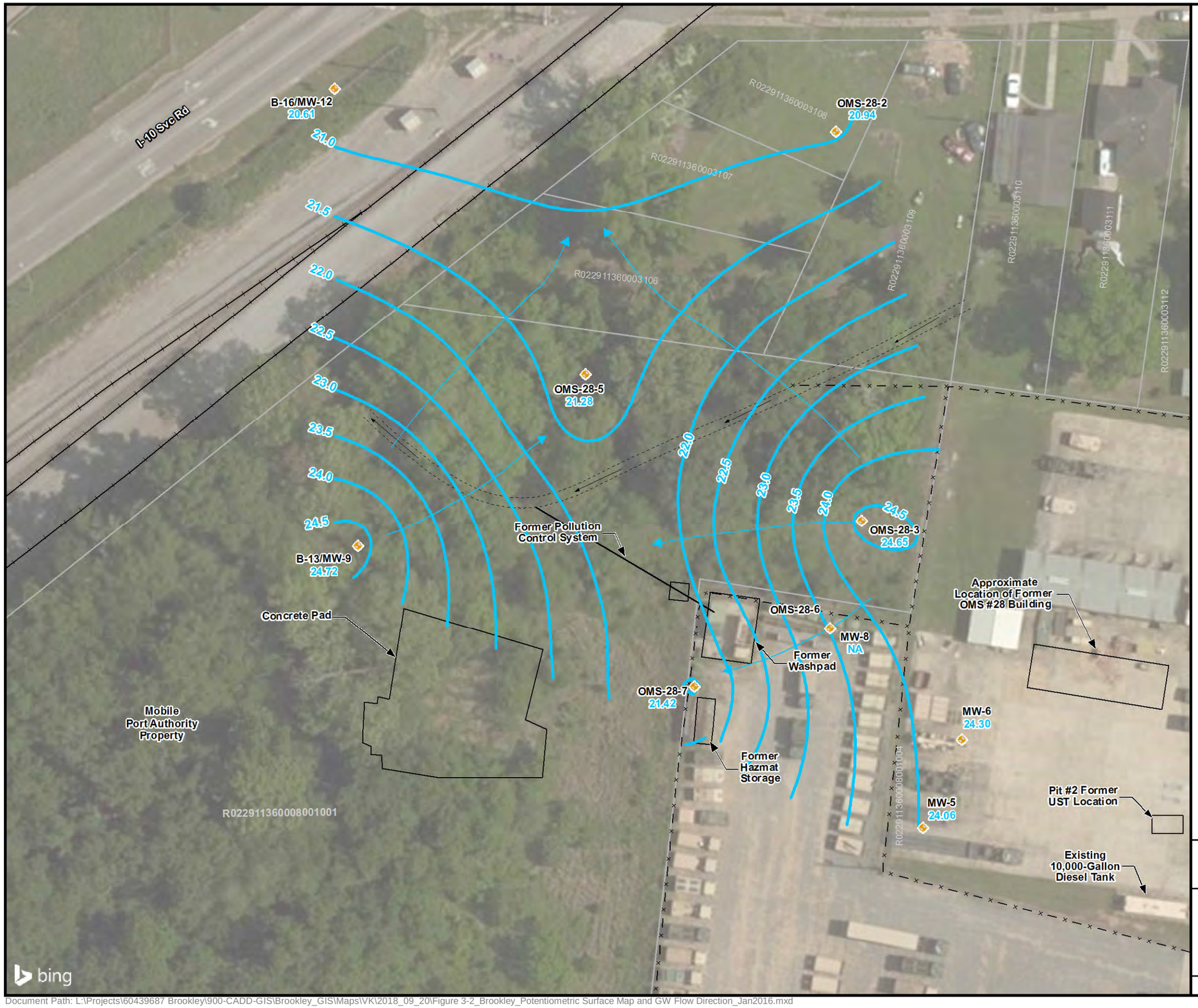
2016-2017 Groundwater Well COC Concentrations

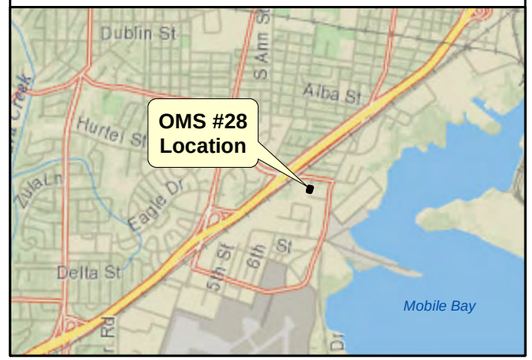
Supplementary Data Gap Investigation and Groundwater Monitoring Report
Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	11/26/2018	**Figure 3-1**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_08_24\Figure 3-1_Brookley_2016-2017 Groundwater Well COC Concentrations RJS.mxd



Site Location



Legend

- Shallow Monitoring Well
- 21.42 Groundwater Elevation - January 2016
- Apparent Groundwater Flow Direction - January 2016
- Groundwater Elevation Contour - January 2016
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Fenceline
- Parcel Boundary

Notes:
1. Water levels collected on January 19, 2016.
2. Contour interval 0.5 feet.
3. Only shallow wells included in contours.
4. Well MW-8 has been damaged. Water level unable to be used.
5. NA - Accurate groundwater elevation is not available.
6. Groundwater elevations referenced to feet above mean sea level, North American Vertical Datum 1929.

0 25 50 100 Feet

1 inch = 50 feet

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Groundwater Elevation and Flow Direction January 2016

Supplementary Data Gap Investigation and Groundwater Monitoring Report
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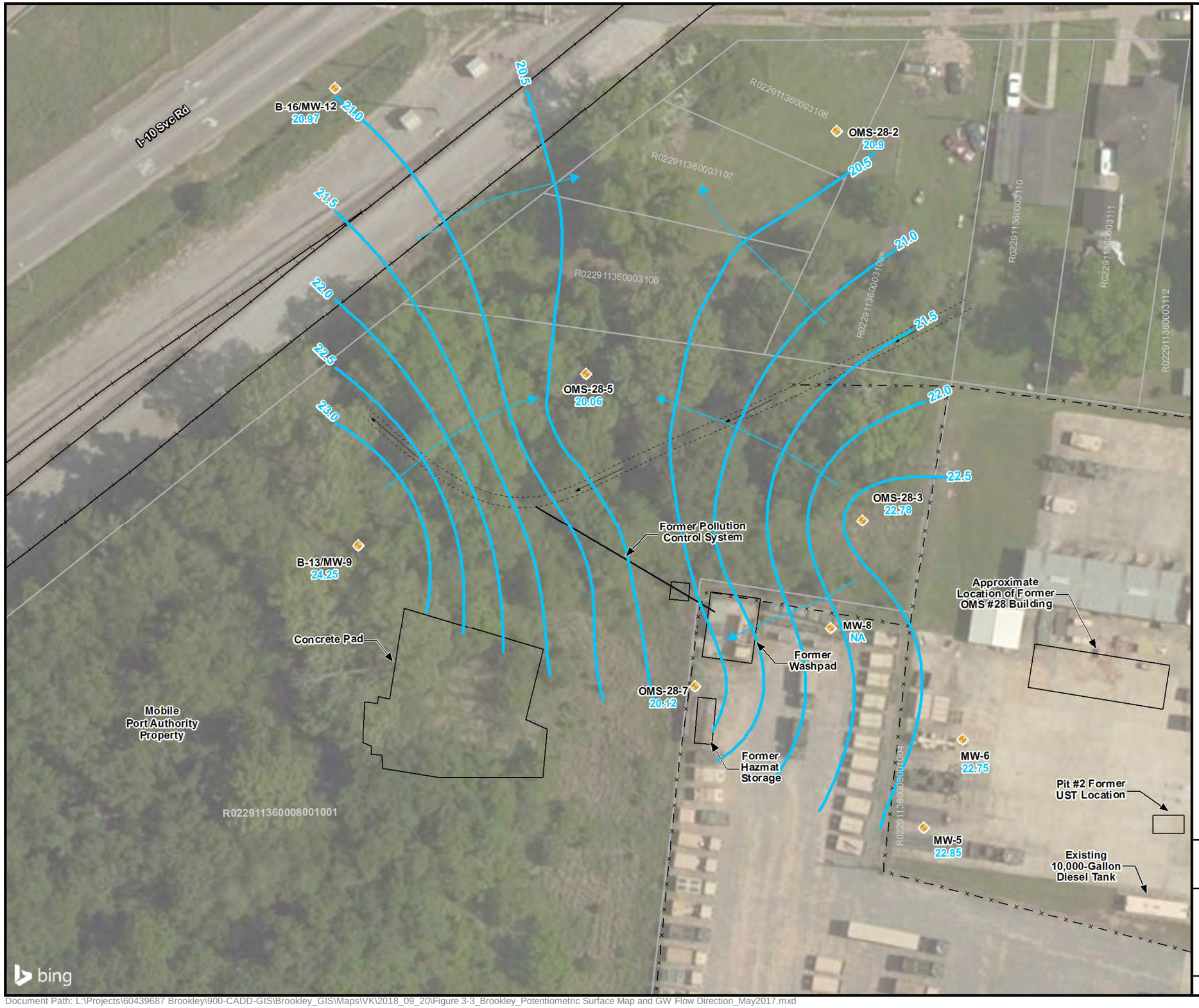
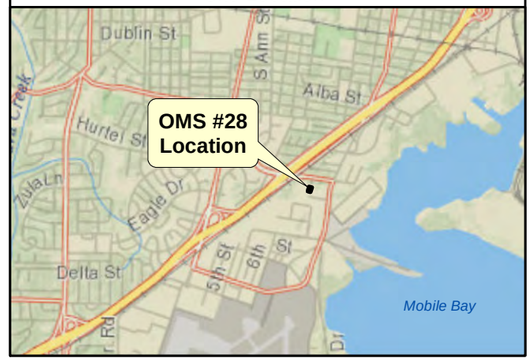
PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	10/1/2018	**Figure 3-2**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 3-2_Brookley_Potentiometric Surface Map and GW Flow Direction_Jan2016.mxd



Site Location



Legend

- Shallow Monitoring Well
- 21.42 Groundwater Elevation - May 2017
- Groundwater Elevation Contour - May 2017
- Apparent Groundwater Flow Direction - May 2017
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Fenceline
- Parcel Boundary

Notes:
1. Water levels collected on May 1, 2017.
2. Contour interval 0.5 feet.
3. Only shallow wells included in contours.
4. Well MW-8 has been damaged. Water level unable to be used.
5. NA - Accurate groundwater elevation is not available.
6. Groundwater elevations referenced to feet above mean sea level, North American Vertical Datum 1929.

0 25 50 100 Feet

1 inch = 50 feet

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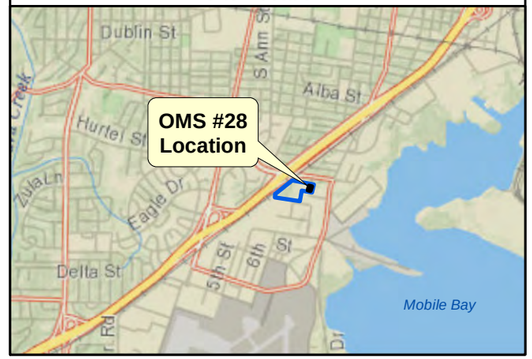
Groundwater Elevation and Flow Direction May 2017

Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	10/1/2018	**Figure 3-3**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 3-3_Brookley_Potentiometric Surface Map and GW Flow Direction_May2017.mxd

Site Location



Legend

- Shallow Monitoring Well Location
- Deep Monitoring Well Location
- Discrete Groundwater Sample Location
- HPT Location
- MIP Location
- Soil Boring Location
- Fenceline
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Parcel Boundary

0 40 80 160 Feet

1 inch = 80 feet

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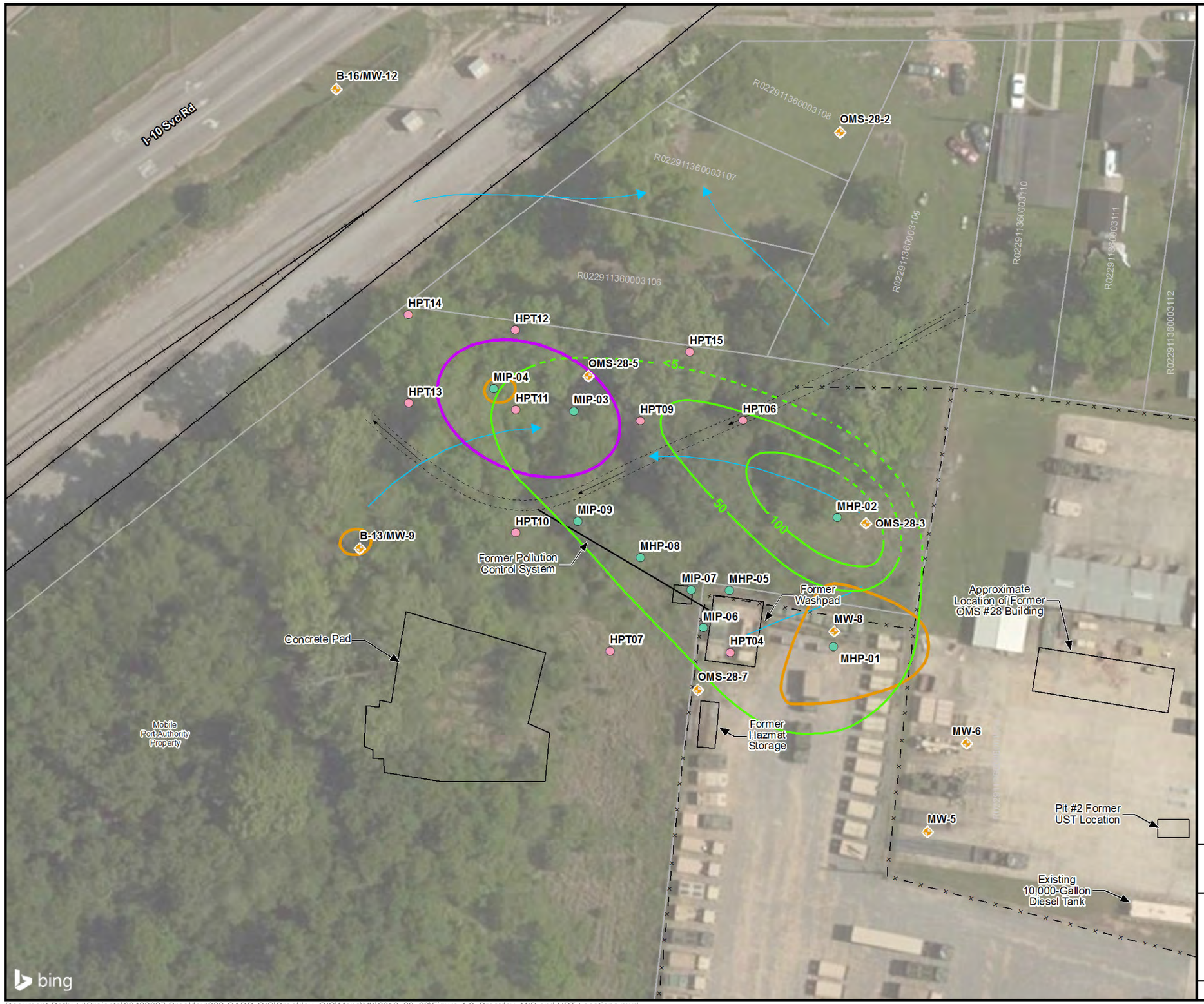
Supplemental Data Gap Investigation Sample Location Map

Supplementary Data Gap Investigation and Groundwater Monitoring Report
Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	9/25/2018	**Figure 4-1**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_07_03\Figure 4-1_Discrete GW Sample_MWs_SBs_MIP_HPT.mxd



Site Location

Legend

- HTP Location
- MIP Location
- Shallow Monitoring Well Location
- Fenceline
- Railroad
- OMS 28 Phase 2-3 GW Elev Arrows May-
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Parcel Boundary
- TCE Isopleth (in µg/L, Dashed Where Inferred; September 2010, Remedial Investigation, SAIC, 2013)
- Soil Area Exceeding Groundwater SSL (Remedial Investigation, SAIC, May 2013)
- PCE Isopleth (5 µg/L; September 2010, Remedial Investigation, SAIC, May 2013)

Notes
MIP - Membrane Interface Probe
HPT - Hydraulic Profile Tool
MHP - Membrane Interface Probe Combine with Hydraulic Profile Tool
The individual logs of the MIP and HPT are provided in Appendix D.

0 25 50 100 Feet

1 inch = 50 feet

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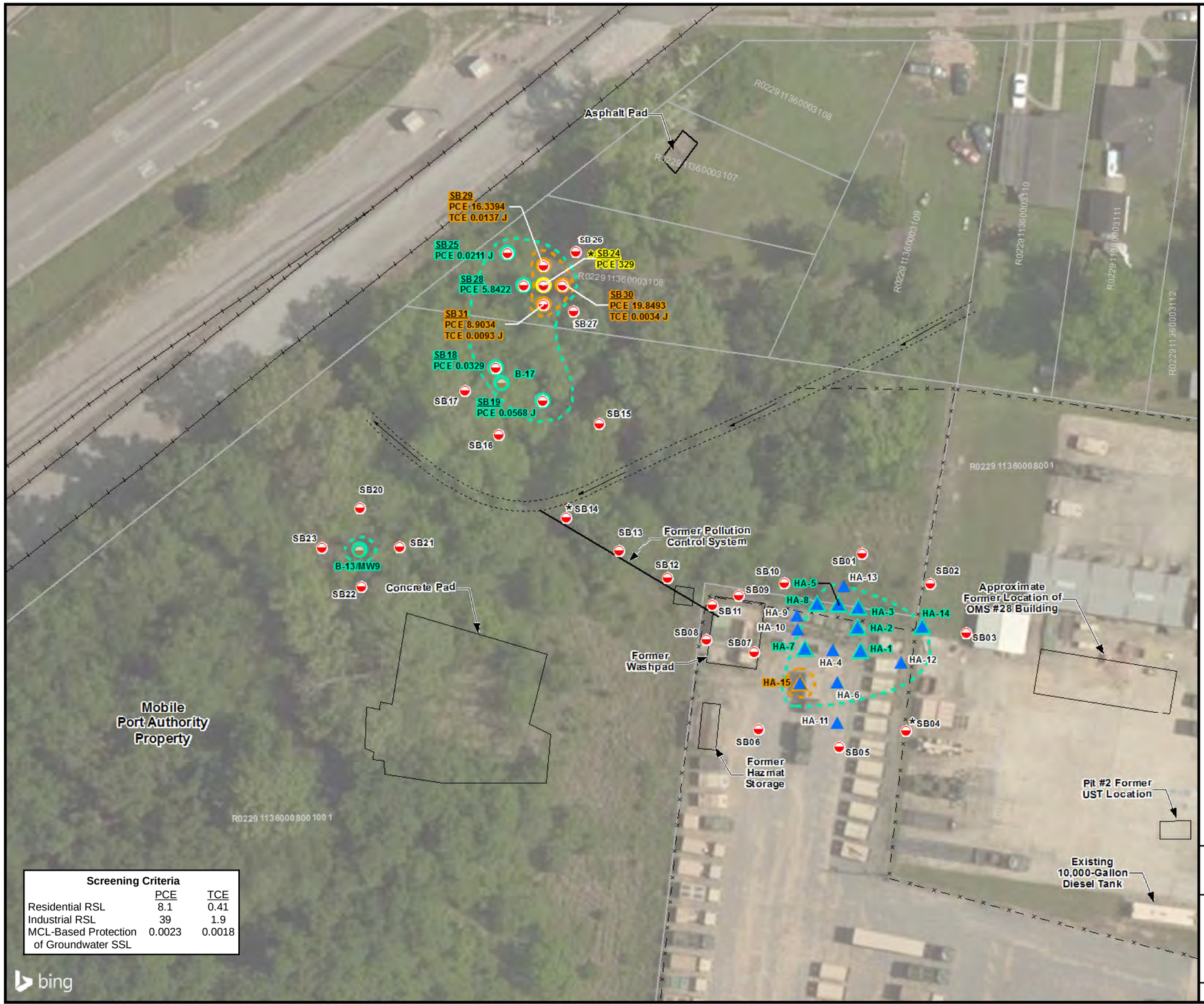
MIP and HPT Locations

Supplementary Data Gap Investigation and Groundwater Monitoring Report
Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	10/1/2018	**Figure 4-2**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 4-2_Brookley_MIP and HPT Locations.mxd



Screening Criteria

	PCE	TCE
Residential RSL	8.1	0.41
Industrial RSL	39	1.9
MCL-Based Protection of Groundwater SSL	0.0023	0.0018

Site Location

Legend

- Hand Auger Samples Collected in
- Soil Boring Samples Collected in 2006/2007
- Soil Sample Locations Collected in 2017
- TCE and/or PCE Exceed MCL- Based Protection of Groundwater SSL
- TCE and/or PCE Exceed Residential RSL
- TCE and/or PCE Exceed Industrial RSL
- Approximate soil area exceeding MCL - Based on Protection of Groundwater SSL
- Approximate soil area exceeding Residential and/or Industrial RSL
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Fenceline
- Parcel Boundary

Notes:
1 - Soil Samples collected between May 8-16, 2017.
2 - Analytical results from mobile lab used unless split with fixed lab. Fixed lab samples denoted with "*".
3 - Soil concentrations in milligrams per kilogram.
4 - All samples collected from bottom of 0-1 ft interval and analyzed by Method 8260.
5 - Residential and Industrial RSLs are based on risk of 1E-06 forcarcinogens.
6 - No highlighting of symbol indicates TCE and PCE did not exceed any RSLs or SSL.
7 - If TCE/PCE not listed, they did not exceed any of the screening criteria. Analytical results for samples collected in 2017 can be found on Tables 4-2 and 4-3.
8 - Analytical results for samples collected in 2006/2007 can be found in the TCE Comprehensive Investigation Report (Aerostar, April 2007).

J - The result of an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
RSL - Regional Screening Criteria (USEPA, May 2018)
SSL - Soil Screening Level (USEPA, May 2018)

0 25 50 100 Feet

1 inch = 50 feet

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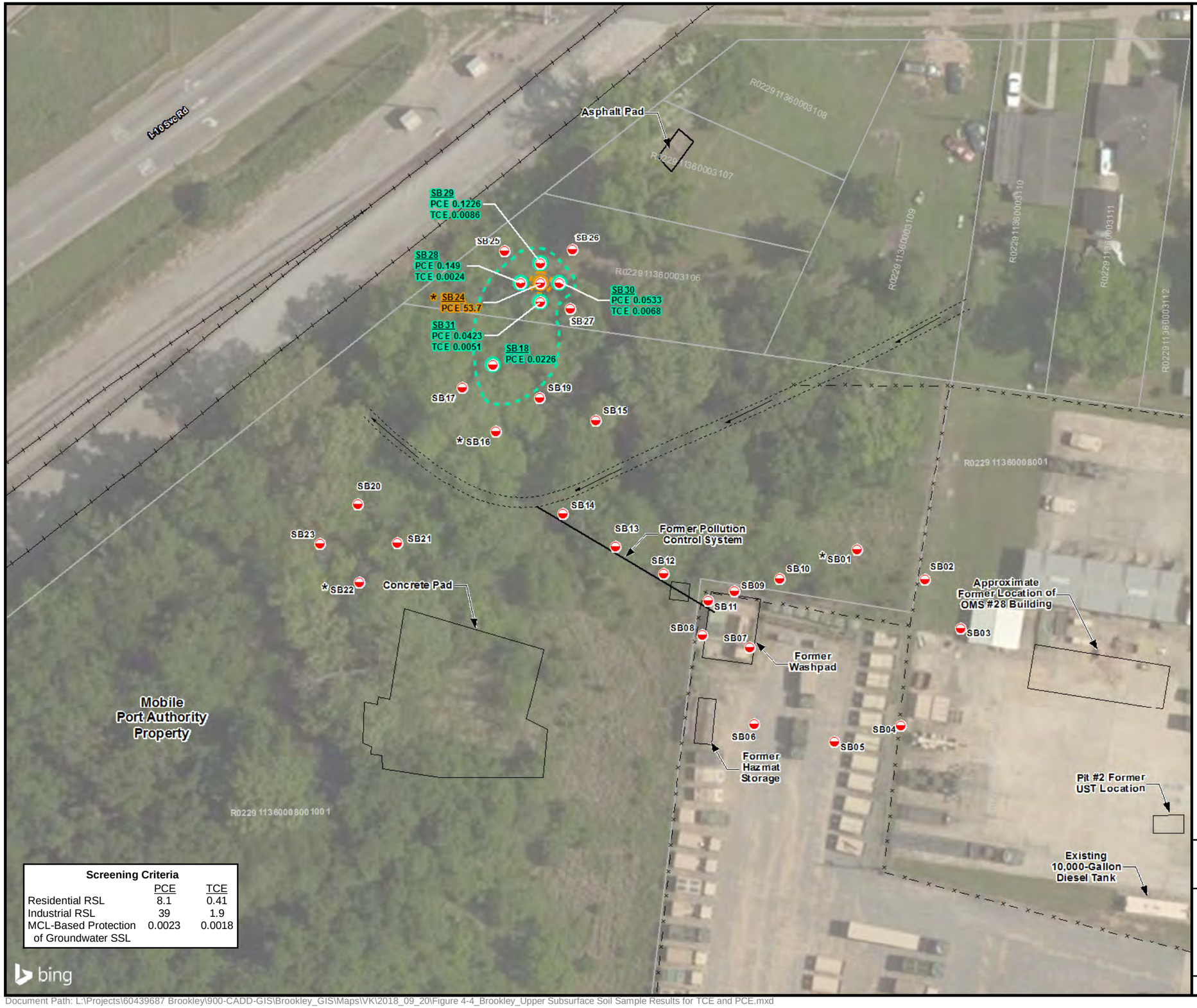
Surface Soil Sample Results - TCE and PCE (0 - 1 FT BLS)

Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	11/16/2018	**Figure 4-3**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 4-3_Brookley_Surface Soil Sample Results TCE and PCE - May 2017.mxd



Screening Criteria

	PCE	TCE
Residential RSL	8.1	0.41
Industrial RSL	39	1.9
MCL-Based Protection of Groundwater SSL	0.0023	0.0018

Site Location

Legend

- Soil Sample Locations
- TCE and PCE Exceeded Residential RSL
- TCE and PCE Exceeded MCL-Based Protection of Groundwater SSL
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Fenceline
- Approximate soil area exceeding MCL - Based on Protection of Groundwater SSL
- Approximate soil area exceeding Residential RSL
- Parcel Boundary

Notes:
1 - Soil Samples collected between May 8-16, 2017.
2 - Analytical results from mobile lab used unless split with fixed lab. Fixed lab samples denoted with "*".
3 - Soil concentrations in milligrams per kilogram.
4 - Only soil results from depths between 1.5 and 4 ft bgs are shown Interval selected based on PID or MIP result. If no response from either PID or MIP, the sample was collected from the midpoint between the surface sample and the top of water table sample.
5 - Residential and Industrial RSLs are based on risk of 1E-06 for carcinogens.
6 - No highlighting of symbol indicates TCE and PCE did not exceed any RSLs or SSL.
7 - If TCE/PCE not listed, they did not exceed any of the screening criteria. Analytical results for samples collected in 2017 can be found on Tables 4-2 and 4-3.
8 - If TCE or PCE not listed, it didn't exceed any of the screening criteria.
9 - Samples from previous investigations are not within this depth interval.

J - The result of an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
RSL - Regional Screening Criteria (USEPA, May 2018)
SSL - Soil Screening Level (USEPA, May 2018)

0 25 50 100 Feet

1 inch = 50 feet

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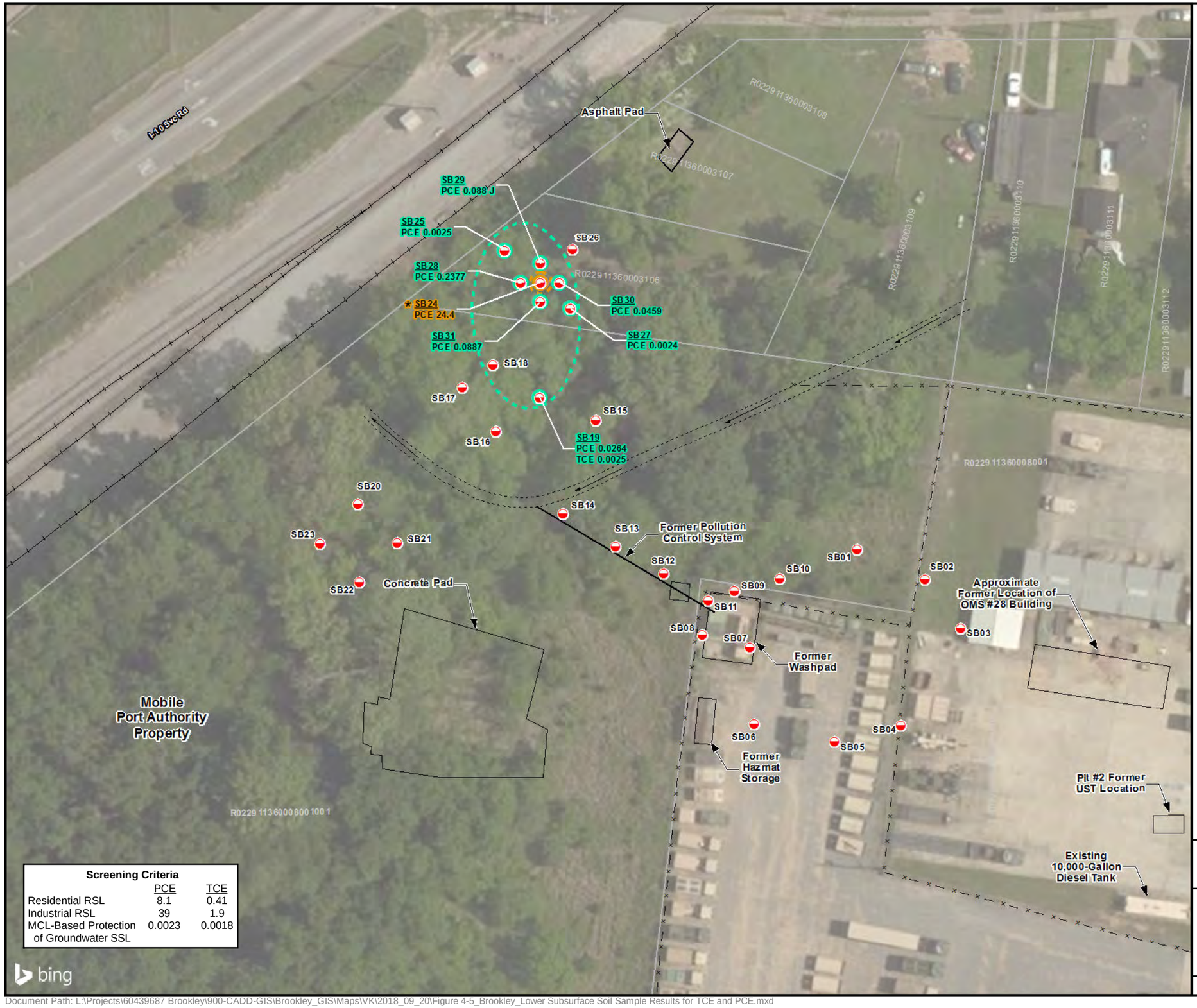
Upper Subsurface Soil Sample Results for TCE and PCE (1.5 - 4 FT BGS)

Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	11/16/2018	**Figure 4-4**



Screening Criteria	PCE	TCE
Residential RSL	8.1	0.41
Industrial RSL	39	1.9
MCL-Based Protection of Groundwater SSL	0.0023	0.0018

Site Location

Legend

- Soil Sample Locations
- TCE and PCE Exceeded Residential RSL
- TCE and PCE Exceed MCL - Based Protection of Groundwater SSL
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Fenceline
- Parcel Boundary
- Approximate soil area exceeding MCL - Based on Protection of Groundwater SSL
- Approximate soil area exceeding Residential and/or Industrial RSL

Notes:
1 - Soil Samples collected between May 8-16, 2017.
2 - Analytical results from mobile lab used unless split with fixed lab. Fixed lab samples denoted with "*".
3 - Soil concentrations in milligrams per kilogram.
4 - Only soil results from 1-ft above water table depth varying between 2 and 6 ft bgs are shown.
5 - Residential and Industrial RSLs are based on risk of 1E-06 for carcinogens.
6 - No highlighting of symbol indicates TCE and PCE did not exceed the residential or industrial RSLs or SSL.
7 - If TCE/PCE not listed, they did not exceed any of the screening criteria. Analytical results for samples collected in 2017 can be found on Tables 4-2 and 4-3.
8 - Samples from previous investigations collected at depths were below the current (May 2017) water table.

J - The result of an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
RSL - Regional Screening Criteria (USEPA, May 2018)
SSL - Soil Screening Level (USEPA, May 2018)

0 25 50 100 Feet

1 inch = 50 feet

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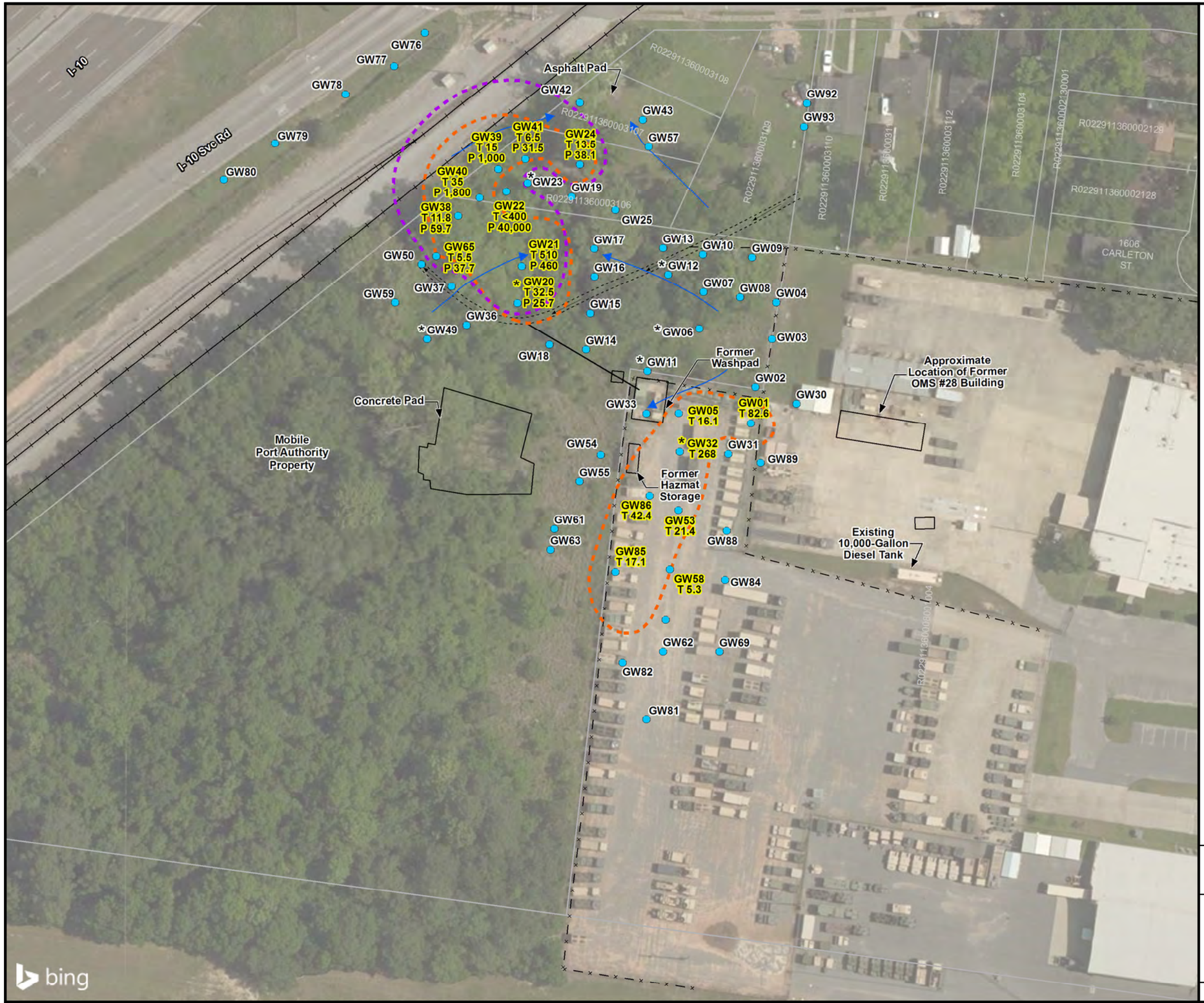
Lower Subsurface Soil Sample Results for TCE and PCE (1ft above water table)

Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	11/16/2018	**Figure 4-5**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 4-5_Brookley_Lower Subsurface Soil Sample Results for TCE and PCE.mxd



Site Location

Legend

- Discrete Groundwater Sample Locations
- Apparent Groundwater Flow Direction - May 2017
- Fenceline
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Approximate extent of TCE Exceedance of the MCL (5 µg/L)
- Approximate extent of PCE Exceedance of the MCL (5 µg/L)
- Parcel Boundary
- Indicates PCE and/or TCE were detected above its respective MCL.

Notes:
1. Discrete groundwater investigation conducted in May 2017 (GW-01 through GW-72) and January/February 2018 (GW-73 through GW-93).
2. The laboratory analytical results from the mobile lab are used for the May 2017 results unless a split sample with the fixed lab is available. The fixed lab results are used for the January/February 2018 samples.
3. Only groundwater results from discrete depths between 6 and 13 ft bgs are shown.
4. No highlighting of symbol indicates TCE and PCE did not exceed their respective MCLs. See Table 4-4 for analytical data.
5. If the TCE or PCE value is not listed, it did not exceed its respective screening criteria.
6. Analytical results for samples collected in 2017 can be found on Table 4-2.

FT BGS= Feet below ground surface
MCL = Maximum Contamination Limit (USEPA, April 2012)
T - Trichloroethene (TCE)
P - Tetrachloroethene (PCE)
*- Indicates a split sample was collected and analyzed by the fixed lab.

0 40 80 160 Feet

1 inch = 80 feet

N W E S

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Discrete Groundwater Sampling Results for PCE & TCE - Upper Surficial (6 - 13 FT BGS)

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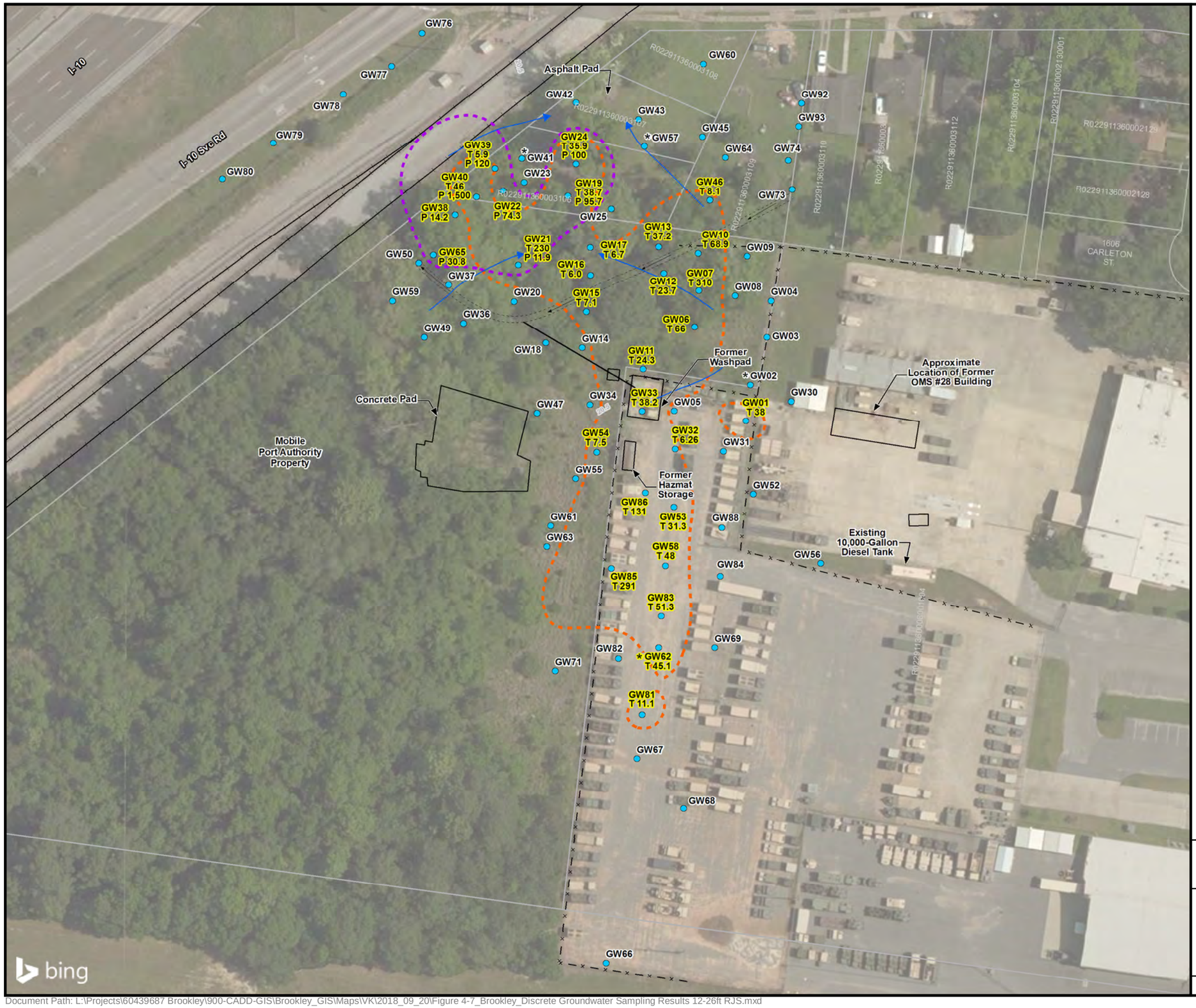
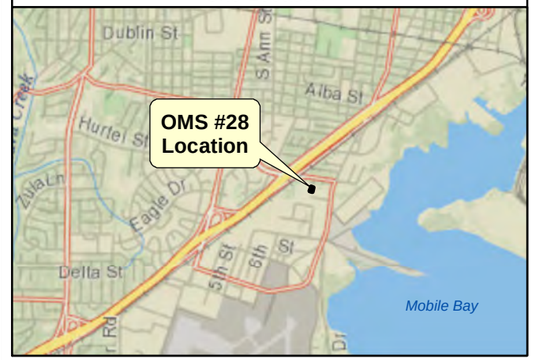
PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	11/19/2018	**Figure 4-6**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 4-6_Brookley_Discrete Groundwater Sampling Results 6-13ft RJS.mxd



Site Location



Legend

- Discrete Groundwater Sample Locations
- Apparent Groundwater Flow Direction - May 2017
- Fenceline
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Approximate extent of TCE Exceedance of the MCL (5 µg/L)
- Approximate extent of PCE Exceedance of the MCL (5 µg/L)
- Parcel Boundary
- Indicates TCE and/or PCE were detected above their respective MCL.

Notes:
1. Discrete groundwater investigation conducted in May 2017 (GW-01 through GW-72) and January/February 2018 (GW-73 through GW-93).
2. The laboratory analytical results from the mobile lab are used for the May 2017 results unless a split sample with the fixed lab is available.
The fixed lab results are used for the January/February 2018 samples.
3. Only groundwater results from discrete depths between 12 and 26 ft bgs are shown.
4. No highlighting of symbol indicates TCE and PCE did not exceed their respective MCLs. See Table 4-4 for analytical data.
5. If the TCE or PCE value is not listed, it did not exceed its respective screening criteria.
6. Analytical results for samples collected in 2017 can be found on Table 4-2.

FT BGS= Feet below ground surface
MCL = Maximum Contamination Limit (USEPA, April 2012)
T - Trichloroethene (TCE)
P - Tetrachloroethene (PCE)
* - Indicates a split sample was collected and analyzed by the fixed lab.

0 40 80 160 Feet

1 inch = 80 feet

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Discrete Groundwater Sampling Results for PCE & TCE - Middle Surficial (12 - 26 FT BGS)

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PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	11/19/2018	**Figure 4-7**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 4-7_Brookley_Discrete Groundwater Sampling Results 12-26ft RJS.mxd

Site Location

Legend

- Groundwater Sample Locations
- Apparent Groundwater Flow Direction - May 2017
- Fenceline
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Approximate extent of PCE Exceedance of the MCL (5 µg/L)
- Approximate extent of TCE Exceedance of the MCL (5 µg/L)
- Parcel Boundary
- Indicates TCE and/or PCE were detected above their respective MCL.

Notes:
1. Discrete groundwater investigation conducted in May 2017 (GW-01 through GW-72) and January/February 2018 (GW-73 through GW-93).
2. The laboratory analytical results from the mobile lab are used for the May 2017 results unless a split sample with the fixed lab is available.
The fixed lab results are used for the January/February 2018 samples.
3. Only groundwater results from discrete depths deeper than 26 bgs are shown.
4. No highlighting of symbol indicates TCE and PCE did not exceed their respective MCLs. See Table 4-4 for analytical data.
5. If the TCE or PCE value is not listed, it did not exceed its respective screening criteria.
6. Analytical results for samples collected in 2017 can be found on Table 4-2.
FT BGS= Feet below ground surface
MCL = Maximum Contamination Limit (USEPA, April 2012)
T - Trichloroethene (TCE)
P - Tetrachloroethene (PCE)
* - Indicates a split sample was collected and analyzed by the fixed lab.

0 40 80 160 Feet

1 inch = 80 feet

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Discrete Groundwater Sampling Results for PCE & TCE - Lower Surficial (Deeper Than 26 FT BGS)

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PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	11/26/2018	**Figure 4-8**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 4-8_Brookley_Discrete Groundwater Sampling Results Deeper than 26ft RJS.mxd

Site Location

Legend

- Surficial Monitoring Well Locations
- Deep Monitoring Well Locations
- Discrete Groundwater Sample Locations
- Approximate Extent of PCE and TCE Exceedance of the MCL (5 µg/L) in the Lower Surficial
- Approximate Extent of PCE and TCE Exceedance of the MCL (5 µg/L) in the Upper/Middle Surficial
- Apparent Groundwater Flow Direction - May 2017
- Fenceline
- Railroad
- Approximate Ditch Orientation
- Approximate Ditch Orientation Flow Direction
- Parcel Boundary

0 40 80 160 Feet

1 inch = 80 feet

N W E S

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Approximate Extent of PCE and TCE in the Surficial Aquifer

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PROJECT NO.	DRAWN BY:	DATE:	
60439687	TEG	12/26/2018	**Figure 5-1**

Document Path: L:\Projects\60439687 Brookley\900-CADD-GIS\Brookley_GIS\Maps\VK\2018_09_20\Figure 5-1_Brookley_Approx_Extent_PCE_TCE_in_Surfical Aquifer.mxd

Appendices

Appendix A
Field Forms

Appendix A1
Well Maintenance Forms and Photo Log

AECOM

Well Maintenance Form

Date: 1-19-2016

Recorded By: Randy Morgan

Well ID: OMS-28-7 **Well Identification:** none

Well Pad: good 3X3 in gravel lot

Vault Type: ☒ Flush Mount ☐ Stick-Up Description:

Brand: Pemco Size: ☒ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☒ Two ☐ Three ☐ Four ☐ NA

Bolt Size: ☒ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition: good

Gasket: ☒ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior: good

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☐ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☒ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☐ Yes ☒ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: yes due to female threaded PVC TOC

OTHER Environmental Concerns?

Comments: new lock on well

Well ID: MW-5 **Well Identification:** none

Well Pad: no - In cement parking ~~lot~~ lot

Vault Type: ☒ Flush Mount ☐ Stick-Up Description:

Brand: Brainard - Kilman Size: ☒ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☐ Two ☒ Three ☐ Four ☐ NA

Bolt Size: ☒ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: (No bolts) Bolt Tab Condition: good

Gasket: ☒ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good (2" Coupling) Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☐ Yes ☒ No Well Plug Type: ☒ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☐ Good ☐ Poor/Usable ☒ Needs Replacement Lock Present: ☐ Yes ☒ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: yes due to 2" Coupling at TOC

OTHER Environmental Concerns?

Comments: New well cap and lock

Well ID: MW-6 **Well Identification:** none

Well Pad: (no) In cement parking lot

Vault Type: ☒ Flush Mount ☐ Stick-Up Description:

Brand: Morrison Size: ☒ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☒ Two ☐ Three ☐ Four ☐ NA

Bolt Size: ☐ 9/16 ☐ 5/8 ☒ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition: good

Gasket: ☒ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior: good

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☒ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☐ Yes ☒ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: No

OTHER Environmental Concerns?

Comments: new lock installed on well

AECOM

Well Maintenance Form

Date: 1-19-2016

Recorded By: Randy Marg

Well ID: OMS-28-1 **Well Identification:** none

Well Pad: good

Vault Type: ☒ Flush Mount ☐ Stick-Up Description: in grass onside of the exit ramp

Brand: Pemco Size: ☒ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☒ Two ☐ Three ☐ Four ☐ NA

Bolt Size: ☒ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition:

Gasket: ☒ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☐ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☐ Yes ☒ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: NO

OTHER Environmental Concerns?

Comments: replace cap / lock

Well ID: MW-12 **Well Identification:** sketched in cement pad

Well Pad: good

Vault Type: ☒ Flush Mount ☐ Stick-Up Description: in grass onside of exit ramp

Brand: Morrison Size: ☒ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☒ Two ☐ Three ☐ Four ☐ NA

Bolt Size: ☒ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition: good - stripped

Gasket: ☒ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior: good

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☒ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☐ Yes ☒ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: NO

OTHER Environmental Concerns?

Comments: replaced cap / lock

Well ID: OMS-28-2 **Well Identification:** none

Well Pad: good

Vault Type: ☐ Flush Mount ☒ Stick-Up Description:

Brand: Size: ☐ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☐ Two ☐ Three ☐ Four ☐ NA

Bolt Size: ☐ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition:

Gasket: ☐ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☐ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☐ Yes ☒ No Condition: ☐ Good ☐ Poor – New lock installed

Does this well require a low profile, schedule 80 or other special plug? Describe: NO

OTHER Environmental Concerns?

Comments: install new lock

AECOM

Well Maintenance Form

Date: 1-19-2016

Recorded By: Randy Mary

Well ID: OMS-28-3 Well Identification: marked on casing w/ magic marker

Well Pad: good

Vault Type: ☐ Flush Mount ☒ Stick-Up Description:

Brand: Size: ☐ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☐Two ☐Three ☐Four ☐NA

Bolt Size: ☐ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition:

Gasket: ☐ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☒ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☒ Yes ☐ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: No No key - replace w/ new lock

OTHER Environmental Concerns?

Comments: new lock installed

Well ID: MW-9 Well Identification: none

Well Pad: covered by mud

Vault Type: ☐ Flush Mount ☒ Stick-Up Description:

Brand: Size: ☐ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☐Two ☐Three ☐Four ☐NA

Bolt Size: ☐ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition:

Gasket: ☐ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☒ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☐ Yes ☒ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: No [illegible] - placed new lock on well

OTHER Environmental Concerns?

Comments:

Well ID: OMS-28-5 Well Identification: marked on casing w/ magic marker

Well Pad: good

Vault Type: ☐ Flush Mount ☒ Stick-Up Description:

Brand: Size: ☐ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☐Two ☐Three ☐Four ☐NA

Bolt Size: ☐ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition:

Gasket: ☐ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☒ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☒ Yes ☒ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: No No key - replaced lock

OTHER Environmental Concerns?

Comments:

AECOM

Well Maintenance Form

Date: 1-19-2016

Recorded By: Randy Morse

Well ID: OMS-28-4 **Well Identification:** marked on casing w/ magic marker

Well Pad: good

Vault Type: ☐ Flush Mount ☒ Stick-Up Description:

Brand: Size: ☐ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☐Two ☐Three ☐Four ☐NA

Bolt Size: ☐ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition:

Gasket: ☐ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: good - (not level) Measuring Point: ☐ Good ☐ Needs Recut ☒ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☒ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☒ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☒ Yes ☐ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: No key - replaced w/ new lock

OTHER Environmental Concerns?

Comments:

Well ID: MW-8 **Well Identification:** none

Well Pad: gone

Vault Type: ☐ Flush Mount ☒ Stick-Up Description: in gravel parking lot

Brand: Size: ☐ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☐Two ☐Three ☐Four ☐NA

Bolt Size: ☐ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition:

Gasket: ☐ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☒ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☒ PVC ☐ Stainless Steel ☐ Other damaged bent

Condition of the Top of Casing: good Measuring Point: ☒ Good ☐ Needs Recut ☐ None

Well Plug Vented?: ☒ Yes ☐ No Well Plug Type: ☐ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☐ Good ☐ Poor/Usable ☒ Needs Replacement Lock Present: ☐ Yes ☒ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe: no

OTHER Environmental Concerns?

Comments: new well cap / new lock

Well ID: OMS-28-6 **Well Identification:**

Well Pad:

Vault Type: ☐ Flush Mount ☐ Stick-Up Description:

Brand: Size: ☐ 8-Inch ☐ 12-Inch ☐ Other: Bolts: ☐Two ☐Three ☐Four ☐NA

Bolt Size: ☐ 9/16 ☐ 5/8 ☐ 1/2 ☐ 3/4 ☐ Other: Bolt Tab Condition:

Gasket: ☐ Good ☐ Poor/Usable ☐ Missing Condition of Vault Interior:

Well Size: ☐ 2-Inch ☐ 4-Inch ☐ Other: Well Casing: ☐ PVC ☐ Stainless Steel ☐ Other

Condition of the Top of Casing: Measuring Point: ☐ Good ☐ Needs Recut ☐ None

Well Plug Vented?: ☐ Yes ☐ No Well Plug Type: ☐ Compression ☐ Slip Cap ☐ Other:

Well plug Condition: ☐ Good ☐ Poor/Usable ☐ Needs Replacement Lock Present: ☐ Yes ☐ No Condition: ☐ Good ☐ Poor

Does this well require a low profile, schedule 80 or other special plug? Describe:

OTHER Environmental Concerns?

Comments: Gone - empty hole in the ground No well

Well Condition Photo Log
Alabama Army National Guard, OMS #28
Mobile, Alabama

Photo 1 of 12 – Clearing of the Site near the fence with the MAA property.

Photo 2 of 12 – General site conditions on MAA property after clearing.

Well Condition Photo Log
Alabama Army National Guard, OMS #28
Mobile, Alabama

Photo 3 of 12 – Condition of well MW-6.

Photo 4 of 12 – Condition of well MW-8 with no well completion and bent casing.

Well Condition Photo Log
Alabama Army National Guard, OMS #28
Mobile, Alabama

Photo 5 of 12 – Condition of well MW-9.

Photo 6 of 12 – Condition of well OMS-28-1.

Well Condition Photo Log
Alabama Army National Guard, OMS #28
Mobile, Alabama

Photo 7 of 12 – Condition of well OMS-28-2

Photo 8 of 12 – Condition of well OMS-28-3.

Well Condition Photo Log
Alabama Army National Guard, OMS #28
Mobile, Alabama

Photo 9 of 12 – Condition of well OMS-28-4.

Photo 10 of 12– Condition of well OMS-28-5

Well Condition Photo Log
Alabama Army National Guard, OMS #28
Mobile, Alabama

Photo 11 of 12 - Borehole where OMS-28-6 once existed.

Photo 12 of 12 – Condition of well OMS-28-7

MW-5

MW-6

MW-8

MW-9

MW-9

MW-12

OMS-28-1

OMS-28-2

OMS-28-3

OMS-28-4

OMS-28-5

OMS-28-6

OMS-28-6

OMS-28-7

Appendix A2
Well Development Logs

AECOM

Monitoring Well Development Log

Page ____ of ____

Date Started (yr/mo/day) 2016-1-21 Date Completed (yr/mo/day) 2016-1-21

Field Personnel Randy Morgan

Site Name ALARNG OMS #28

AECOM Job # 60439687

Well ID # MW-8

____ Upgradient ____ Downgradient

Weather Conditions overcast / cloudy

Air Temperature 58 °F

Total Well Depth (TWD) = 13.86 (15.20) 1/100 ft

Depth to Ground Water (DGW) = 4.83 @ 0710 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 9.03 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 1.47 gallons

5 Casing Volumes = 7.35 gallons

Method of Well Development peristaltic pump + dye to well damaged - (bent)

Total Volume of Water Removed ____ gallons

Date/Time 1-21-16	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	~~Eh~~ ORP	Specific Conductivity (mS/cm)	Turbidity/Color	Sand Content (%)	Remarks
0733		2.0	19.46	5.29	269.4	0.402	>1000 Brn	1%	Surged
0750		4.0	19.32	5.46	169.7	0.382	>1000 Brn	0% silt	Surged
0928	0.22	15.5	19.34	6.06	212.7	0.375	32.94 slight	0%	
0939	0.22	18.0	19.57	6.14	140.9	0.372	8.73 clear	0%	
0950	0.22	20.5	19.60	6.11	134.3	0.366	5.82 clear	0%	
1001	0.22	23.0	19.65	6.08	130.8	0.361	6.64 clear	0%	
1006	0.040	23.4	19.57	6.15	128.2	0.367	5.33 clear	0%	
1011	0.040	23.8	19.66	6.14	126.4	0.366	8.55 clear	0%	
1017	0.040	24.2	19.74	6.14	124.9	0.366	7.77 clear	0%	

COMMENTS/OBSERVATIONS: ____

Appendix A3
Groundwater Monitoring Well Sampling Logs - January 2016

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr)	Jan 20, 2016
Field Personnel	Randy Morgan
Site Name	ALARNG OMS #28
AECOM Job #	60439687
Sample ID*	MW-5
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source	
Weather Conditions	partly cloudy
Air Temperature	60 ° F
Total Well Depth (TWD) =	12.65 1/100 ft
Depth to Ground Water (DGW) =	4.03 @ 1313 1/100 ft
Length of Water Column (LWC) = TWD - DGW =	8.62 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 =	1.40 gal
3 Casing Volumes =	4.21 gal = Standard Evacuation Volume
Method of Sample Evacuation	Peristaltic Pump
Method of Sample Collection	Peristaltic Pump / Reverse flow
Total Volume of Water Removed	3.0 gal

Casing Diameter	2 inches
Casing Material	
Measuring Point Elevation	1/100 ft
Height of Riser (above land surface)	1/100 ft
Land Surface Elevation	1/100 ft
Screened Interval	3.3 - 13.3 1/100 ft
Dedicated Pump or Bailer	YES ____ NO X Type ____
Steel Guard Pipe Around Casing	YES X NO ____
Locking Cap	YES X NO ____
Protective Post/Abutment	YES ____ NO X
Well Integrity Satisfactory	YES X NO ____
Yield	LOW ____ MODERATE ____ HIGH X
Comments/Observations	
Sample Time:	1400
Sample Analytes: VOC'S	tubing inlet @ 4.0' off bottom
	Fe= 0.14

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC, for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC.

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft).

FIELD ANALYSES

	Initial										
VOLUME PURGED (gallons)		1.40	1.80	2.20	2.60	3.0					
TIME (Military)	1319	1337	1342	1347	1352	1357					
Water Level (ft BTOC)	4.38	4.54	4.62	4.64	4.68	4.70					
pH (S.U.)	4.46	4.38	4.34	4.30	4.25	4.22					
Sp. Cond. (mS/cm)	0.254	0.250	0.249	0.248	0.249	0.249					
Water Temp. (°C)	20.03	20.40	20.30	20.29	20.34	20.23					
Turbidity (NTUs)	11.78	3.14	1.61	0.58	0.24	0.29					
DO - (mg/L)	2.58	1.99	1.71	1.53	1.31	1.23					
Salinity (ppt)	0.12	0.12	0.12	0.12	0.12	0.12					
ORP (mV)	186.0	139.9	136.3	133.3	129.5	128.2					

COMMENTS/OBSERVATIONS: Replaced well cap / new lock / bolts 300 ml per minute

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr)	Jan 20 2016	Casing Diameter	2 inches
Field Personnel	Randy Morgan	Casing Material	
Site Name	ALARNG OMS #28	Measuring Point Elevation	1/100 ft
AECOM Job #	60439687	Height of Riser (above land surface)	1/100 ft
Sample ID*	MW-6	Land Surface Elevation	1/100 ft
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source		Screened Interval	2.3 - 12.3 1/100 ft
Weather Conditions	partly Sunny	Dedicated Pump or Bailer	YES ____ NO X Type ____
Air Temperature	63 °F	Steel Guard Pipe Around Casing	YES X NO ____
Total Well Depth (TWD) =	12.7 1/100 ft	Locking Cap	YES X NO ____
Depth to Ground Water (DGW) =	3.80 @ 1419 1/100 ft	Protective Post/Abutment	YES ____ NO X
Length of Water Column (LWC) = TWD - DGW =	8.90 1/100 ft	Well Integrity Satisfactory	YES X NO ____
1 Casing Volume (OCV)* = LWC x 0.163 =	1.45 gal	Yield	LOW ____ MODERATE ____ HIGH X
3 Casing Volumes =	4.35 gal = Standard Evacuation Volume	Comments/Observations	
Method of Sample Evacuation	Peristaltic Pump	Sample Time:	1505
Method of Sample Collection	Peristaltic Pump / Reverse flow	Sample Analytes: VOC'S	Tubing Inlet set 4' off bottom
Total Volume of Water Removed	3.05 gal		Fe = 0.01

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC; for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC.

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft).

FIELD ANALYSES

	Initial										
VOLUME PURGED (gallons)		1.45	1.85	2.25	2.65	3.05					
TIME (Military)	1425	1443	1448	1453	1458	1503					
Water Level (ft BTOC)	4.06	4.52	4.58	4.61	4.63	4.65					
pH (S.U.)	6.16	6.32	6.32	6.31	6.29	6.23					
Sp. Cond. (mS/cm)	0.421	0.420	0.416	0.415	0.411	0.401					
Water Temp. (°C)	20.67	20.44	20.53	20.71	20.82	21.00					
Turbidity (NTUs)	8.03	2.05	0.19	0.52	0.00	0.00					
DO - (mg/L)	4.98	5.05	4.83	4.65	4.50	4.41					
Salinity (ppt)	0.20	0.20	0.20	0.20	0.20	0.19					
ORP (mV)	142.0	105.4	102.6	101.6	100.5	96.8					

COMMENTS/OBSERVATIONS: 300 ml/s per minute New lock

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Page ____ of ____

Date (mo/day/yr)	Jan 22, 2016
Field Personnel	Randy Morgan
Site Name	ALARNG OMS #28
AECOM Job #	60439687
Sample ID*	MW-8
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source	
Weather Conditions	overcast / mist rain
Air Temperature	49 °F
Total Well Depth (TWD) =	~~15.2~~ 14.41 1/100 ft
Depth to Ground Water (DGW) =	4.18 @ 0708 1/100 ft
Length of Water Column (LWC) = TWD - DGW =	10.23 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 =	1.66 gal
3 Casing Volumes =	5.00 gal = Standard Evacuation Volume
Method of Sample Evacuation	Peristaltic Pump
Method of Sample Collection	Peristaltic Pump / Reverse flow
Total Volume of Water Removed	3.2 gal

Casing Diameter	2 inches
Casing Material	
Measuring Point Elevation	1/100 ft
Height of Riser (above land surface)	1/100 ft
Land Surface Elevation	1/100 ft
Screened Interval	4.8 - 14.8 1/100 ft
Dedicated Pump or Bailer	YES ____ NO X Type ____
Steel Guard Pipe Around Casing	YES ____ NO X
Locking Cap	YES X NO ____
Protective Post/Abutment	YES ____ NO X
Well Integrity Satisfactory	YES ____ NO X damage - useable
Yield	LOW ____ MODERATE ____ HIGH X
Comments/Observations	
Sample Time	0803
Sample Analytes	VOC'S tubing inlet set at
	Fe: 0.16

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC, for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC.

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft).

FIELD ANALYSES

	Initial										
VOLUME PURGED (gallons)		1.66	2.0	2.4	2.8	3.2					
TIME (Military)	0720	0740	0745	0750	0755	0800					
Water Level (ft BTOC)	4.30	4.38	4.38	4.38	4.38	4.38					
pH (S.U.)	4.46	5.60	5.71	5.74	5.76	5.77					
Sp. Cond. (mS/cm)	0.352	0.352	0.353	0.355	0.357	0.360					
Water Temp. (°C)	16.80	16.95	16.91	16.90	16.72	16.79					
Turbidity (NTUs)	4.01	2.10	2.42	2.05	0.95	0.90					
DO - (mg/L)	1.58	1.79	2.14	2.04	1.97	1.82					
Salinity (ppt)	0.17	0.17	0.17	0.17	0.17	0.17					
ORP (mV)	237.5	164.5	158.7	156.5	154.4	153.7					

COMMENTS/OBSERVATIONS 300mls per minute

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr)	Jan 20, 2016
Field Personnel	Randy Morgan
Site Name	ALARNG OMS #28
AECOM Job #	60439687
Sample ID*	MW-9
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source	
Weather Conditions	mostly cloudy / light rain
Air Temperature	48 °F
Total Well Depth (TWD) =	~~17.4~~ 20.31 1/100 ft
Depth to Ground Water (DGW) =	2.73 1/100 ft
Length of Water Column (LWC) = TWD - DGW =	17.58 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 =	2.86 gal
3 Casing Volumes =	8.59 gal = Standard Evacuation Volume
Method of Sample Evacuation	Peristaltic Pump
Method of Sample Collection	Peristaltic Pump / Reverse flow
Total Volume of Water Removed	4.0 gal

Casing Diameter	2 inches
Casing Material	
Measuring Point Elevation	1/100 ft
Height of Riser (above land surface)	1/100 ft
Land Surface Elevation	1/100 ft
Screened Interval	7.4 - 17.4 1/100 ft
Dedicated Pump or Bailer	YES ____ NO X Type ____
Steel Guard Pipe Around Casing	YES X NO ____
Locking Cap	YES X NO ____
Protective Post/Abutment	YES ____ NO X
Well Integrity Satisfactory	YES X NO ____
Yield	LOW ____ MODERATE X HIGH X
Comments/Observations	
Sample Time	0823
Sample Analytes	VOC'S
Fe = < 3.30 tubing inlet 5' off bottom	

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC, for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft)

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.40	2.80	3.20	3.60	4.0
TIME (Military)	0730	0735	0740	0745	0750	0755	0800	0805	0810	0815	0820
Water Level (ft BTOC)	3.60	3.79	3.83	3.86	3.88	3.91	3.92	3.94	3.96	3.98	3.98
pH (S.U.)	5.02	5.76	6.03	6.09	6.10	6.09	6.10	6.15	6.16	6.16	6.18
Sp. Cond. (mS/cm)	0.143	0.144	0.144	0.144	0.144	0.144	0.145	0.145	0.145	0.145	0.145
Water Temp. (°C)	14.65	15.07	15.34	15.32	15.25	15.34	15.61	15.76	15.73	15.47	15.89
Turbidity (NTUs) milky	115.5	31.20	34.83	42.43	21.80	12.84	13.19	11.11	8.43	7.70	8.31
DO - (mg/L)	8.30	1.63	1.38	1.43	1.57	1.605	1.64	1.60	1.58	1.52	0.07
Salinity (ppt)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
ORP (mV)	76.1	35.6	18.8	14.2	12.4	11.4	9.3	7.7	5.8	3.9	2.5

COMMENTS/OBSERVATIONS 300 mls per minute

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr)	Jan 21, 2016
Field Personnel	Randy Morgan
Site Name	ALARNG OMS #28
AECOM Job #	60439687
Sample ID*	MW-12
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source	
Weather Conditions	Cloudy
Air Temperature	63 °F
Total Well Depth (TWD) =	~~15.6~~ 16.69 1/100 ft
Depth to Ground Water (DGW) =	5.40 @ 1325 1/100 ft
Length of Water Column (LWC) = TWD - DGW =	11.29 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 =	1.84 gal
3 Casing Volumes =	5.52 gal = Standard Evacuation Volume
Method of Sample Evacuation	Peristaltic Pump
Method of Sample Collection	Peristaltic Pump / Reverse flow
Total Volume of Water Removed	7.20 gal

Casing Diameter	2 inches
Casing Material	
Measuring Point Elevation	1/100 ft
Height of Riser (above land surface)	1/100 ft
Land Surface Elevation	1/100 ft
Screened Interval	5.6 - 15.6 1/100 ft
Dedicated Pump or Bailer	YES ____ NO X Type ____
Steel Guard Pipe Around Casing	YES X NO ____
Locking Cap	YES X NO ____
Protective Post/Abutment	YES ____ NO X
Well Integrity Satisfactory	YES X NO ____
Yield	LOW X MODERATE ____ HIGH ____
Comments/Observations	
Sample Time:	1403
Sample Analytes: VOC's	tubing inlet set 5' off bottom
	Fe=7 3.30 mg/L

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC; for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC.

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft).

FIELD ANALYSES

	Initial	.40	.80	1.20	1.60	2.0	2.4	2.8	3.20	3.60	4.0
VOLUME PURGED (gallons)											
TIME (Military)	1230	1235	1240	1245	1250	1255	1300	1305	1310	1315	1320
Water Level (ft BTOC)	6.11	6.28	6.48	6.69	6.88	6.98	7.09	7.20	7.29	7.38	7.45
pH (S.U.)	6.09	6.16	6.18	6.17	6.17	6.17	6.18	6.17	6.16	6.16	6.16
Sp. Cond. (mS/cm)	0.503	0.504	0.504	0.505	0.506	0.506	0.506	0.505	0.504	0.502	0.498
Water Temp. (°C)	21.25	21.28	21.24	21.43	21.58	21.62	21.65	21.66	21.63	21.70	21.76
Turbidity (NTUs) orange (Iron)	114.3	135.8	155.9	143.6	123.2	110.1	93.53	74.97	57.14	45.71	38.31
DO - (mg/L)	0.53	0.58	1.11	0.90	0.71	0.69	0.62	0.35	0.24	0.20	0.19
Salinity (ppt)	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.24	0.24
ORP (mV)	-13.3	-22.4	-27.0	-29.2	-31.1	-31.4	-32.1	-30.6	-29.8	-29.4	-29.2

COMMENTS/OBSERVATIONS 300 ml minute

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr): Jan 21, 2016
Field Personnel: Randy Morgan
Site Name: ALARNG OMS #28
AECOM Job #: 60439687
Sample ID*: OMS ~~OSM~~-28-1
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source
Weather Conditions: Cloudy
Air Temperature: 66 °F
Total Well Depth (TWD) = ~~80.00~~ 79.84 1/100 ft
Depth to Ground Water (DGW) = 21.97 @ 1419 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 57.87 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 = 9.43 gal
3 Casing Volumes = 28.29 gal = Standard Evacuation Volume
Method of Sample Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / Reverse flow
Total Volume of Water Removed: 3.0 gal

Casing Diameter: 2 inches
Casing Material:
Measuring Point Elevation: 1/100 ft
Height of Riser (above land surface): 1/100 ft
Land Surface Elevation: 1/100 ft
Screened Interval: 70.00 - 80.00 1/100 ft
Dedicated Pump or Bailer: YES ____ NO X Type ____
Steel Guard Pipe Around Casing: YES X NO ____
Locking Cap: YES X NO ____
Protective Post/Abutment: YES ____ NO X
Well Integrity Satisfactory: YES X NO ____
Yield: LOW ____ MODERATE ____ HIGH X
Comments/Observations
Sample Time: 1500
Sample Analytes: VOC'S Tubing inlet set 5' off bottom
Fe - 23.30 mg/L

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC; for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC
Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft)

FIELD ANALYSES

	Initial	.80	1.20	1.60	2.00	2.40	3.00				
VOLUME PURGED (gallons)											
TIME (Military)	1423	1423	1438	1443	1448	1453	1458				
Water Level (ft BTOC)	22.00	22.00	22.00	22.00	22.00	22.00	22.00				
pH (S.U.)	6.24	6.18	6.15	6.16	6.14	6.14	6.14				
Sp. Cond. (mS/cm)	0.167	0.159	0.157	0.156	0.156	0.155	0.153				
Water Temp. (°C)	23.18	23.22	23.27	23.30	23.24	23.21	23.16				
Turbidity (NTUs)	22.90	8.23	5.49	4.22	3.38	4.81	3.22				
DO - (mg/L)	1.24	0.33	0.23	0.20	0.19	0.18	0.18				
Salinity (ppt)	0.08	0.07	0.07	0.07	0.07	0.07	0.07				
ORP (mV)	-26.4	-29.0	-27.1	-27.7	-25.9	-26.1	-25.8				

COMMENTS/OBSERVATIONS: 300 mls per minute

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr)	Jan 19, 2016
Field Personnel	Randy Morgan
Site Name	ALARNG OMS #28
AECOM Job #	60439687
Sample ID*	OMS ~~OSM~~-28-2
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source	
Weather Conditions	Clear / sunny
Air Temperature	54 ° F
Total Well Depth (TWD) =	~~28.00~~ 23.44 1/100 ft
Depth to Ground Water (DGW) =	9.88 1/100 ft
Length of Water Column (LWC) = TWD - DGW =	13.56 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 =	2.21 gal
3 Casing Volumes =	6.63 gal = Standard Evacuation Volume
Method of Sample Evacuation	Peristaltic Pump
Method of Sample Collection	Peristaltic Pump / Reverse flow
Total Volume of Water Removed	3.20 gal

Casing Diameter	2 inches
Casing Material	PVC
Measuring Point Elevation	1/100 ft
Height of Riser (above land surface)	1/100 ft
Land Surface Elevation	1/100 ft
Screened Interval	10.00 - 20.00 1/100 ft
Dedicated Pump or Bailer	YES ____ NO X Type ____
Steel Guard Pipe Around Casing	YES X NO ____
Locking Cap	YES X NO ____
Protective Post/Abutment	YES ____ NO X
Well Integrity Satisfactory	YES X NO ____
Yield	LOW ____ MODERATE ____ HIGH X
Comments/Observations	
Sample Time: 1543	Fe = 0.06
Sample Analytes: VOC'S	
Tubing inlet set at 15' off bottom	

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC, for a 2 inch well is 0.163 X LWC; for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC.

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft).

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.40	2.8	3.20		
TIME (Military)	1500	1505	1510	1515	1520	1525	1530	1535	1540		
Water Level (ft BTOC)	10.02	10.00	10.00	10.01	10.02	10.03	10.04	10.04	10.04		
pH (S.U.)	5.85	6.00	5.99	5.98	5.98	5.97	5.96	5.93	5.92		
Sp. Cond. (mS/cm)	0.197	0.196	0.195	0.195	0.194	0.195	0.194	0.194	0.194		
Water Temp. (°C)	18.72	19.11	19.19	19.35	19.49	19.65	19.56	19.52	19.58		
Turbidity (NTUs)	35.05	24.10	14.20	9.28	6.78	6.14	4.17	3.54	3.38		
DO - (mg/L)	5.20	4.69	4.84	4.91	5.58	5.82	6.12	6.24	6.27		
Salinity (ppt)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		
ORP (mV)	156.0	131.4	128.9	126.6	125.7	125.0	125.0	125.7	126.4		

COMMENTS/OBSERVATIONS: 300 mls per minute

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr): 1-21-2016
Field Personnel: Randy Morgan
Site Name: ALARNG OMS #28
AECOM Job #: 60439687
Sample ID*: OMS ~~OSM~~-28-3
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source
Weather Conditions: cloudy
Air Temperature: 60 °F
Total Well Depth (TWD) = ~~28.00~~ 24.07 1/100 ft
Depth to Ground Water (DGW) = 6.27 @ 1040 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 17.8 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 = 2.90 gal
3 Casing Volumes = 8.70 gal = Standard Evacuation Volume
Method of Sample Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / Reverse flow
Total Volume of Water Removed: 2.80 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: ____ 1/100 ft
Height of Riser (above land surface): ____ 1/100 ft
Land Surface Elevation: ____ 1/100 ft
Screened Interval: 10.00 - 20.00 1/100 ft
Dedicated Pump or Bailer: YES ____ NO X Type ____
Steel Guard Pipe Around Casing: YES ____ NO X
Locking Cap: YES X NO ____
Protective Post/Abutment: YES ____ NO X
Well Integrity Satisfactory: YES X NO ____
Yield: LOW ____ MODERATE ____ HIGH ____
Comments/Observations
Sample Time: 1125
Sample Analytes: VOC's also duplicate
Fe= 0.05

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC, for a 2 inch well is 0.163 X LWC, for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC
Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft)

FIELD ANALYSES

	Initial	.40	.80	1.20	1.60	2.0	2.40	2.80			
VOLUME PURGED (gallons)											
TIME (Military)	1048	1053	1058	1103	1108	1113	1118	1123			
Water Level (ft BTOC)	7.03	7.38	7.52	7.58	7.65	7.61	7.56	7.53			
pH (S.U.)	5.56	5.42	5.35	5.31	5.28	5.28	5.26	5.26			
Sp. Cond. (mS/cm)	0.237	0.236	0.234	0.232	0.231	0.231	0.230	0.230			
Water Temp. (°C)	19.33	19.25	19.29	19.30	19.39	19.39	19.46	19.52			
Turbidity (NTUs)	2.89	1.56	0.65	1.41	0.03	0.27	0.00	0.01			
DO - (mg/L)	3.21	2.99	2.90	2.19	1.93	2.10	1.86	1.79			
Salinity (ppt)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
ORP (mV)	206.8	183.7	171.8	163.3	157.2	156.7	149.8	147.9			

COMMENTS/OBSERVATIONS: 300 ml minute

Environmental Audit:
PRIVILEGED AND CONFIDENTIAL DOCUMENT

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name: AL ARNG OMS #28	Date (mo/day/yr): Jan 20, 2016
AECOM Job #: 60439687	Field Personnel: Randy Morgan
Sample ID*: OMS-28-5	Comments/Observations:

FIELD ANALYSES

VOLUME PURGED (gallons)	4.4	4.8	5.2	5.6	6.0	6.4					
TIME (Military)	1013	1018	1023	1028	1033	1038					
Water Level (ft BTOC)	9.25	9.25	9.27	9.29	9.29	9.29					
pH (S.U.)	5.10	5.09	5.09	5.08	5.08	5.08					
Sp. Cond. (mS/cm)	0.585	0.584	0.585	0.585	0.586	0.587					
Water Temp. (°C)	19.21	19.05	18.93	18.96	19.00	18.99					
Turbidity (NTUs)	15.00	14.43	10.84	9.63	8.51	7.27					
DO - (mg/L)	0.25	0.24	0.22	0.23	0.21	0.21					
Salinity (ppt)	0.28	0.28	0.28	0.29	0.29	0.29					
ORP (mV)	29.8	30.1	29.9	29.9	30.2	30.6					

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr): Jan 20, 2016
Field Personnel: Randy Morgan
Site Name: ALARNG OMS #28
AECOM Job #: 60439687
Sample ID*: OMS ~~OBM~~-28-4
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source
Weather Conditions: Cloudy
Air Temperature: ____ °F
Total Well Depth (TWD) = Time 1100 ~~26.00~~ 78.75 1/100 ft
Depth to Ground Water (DGW) = 25.99 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 52.76 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 = 8.60 gal
3 Casing Volumes = 25.79 gal = Standard Evacuation Volume
Method of Sample Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / Reverse flow
Total Volume of Water Removed: 2.8 gal

Casing Diameter: 2 inches
Casing Material: ____
Measuring Point Elevation: ____ 1/100 ft
Height of Riser (above land surface): ____ 1/100 ft
Land Surface Elevation: ____ 1/100 ft
Screened Interval: 66.00 - 76.00 1/100 ft
Dedicated Pump or Bailer: YES ____ NO X Type ____
Steel Guard Pipe Around Casing: YES ____ NO X
Locking Cap: YES X NO ____
Protective Post/Abutment: YES ____ NO X
Well Integrity Satisfactory: YES X NO ____
Yield: LOW ____ MODERATE ____ HIGH X
Comments/Observations
Sample Time: 1140
Sample Analytes: VOC'S Tubing in set on 5' off bottom
Fe = 3.30 mg/L

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC, for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC.

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft).

FIELD ANALYSES

	Initial	(Time 1108) .40	.80	1.20	1.60	2.0	2.4	2.8			
VOLUME PURGED (gallons)											
TIME (Military)	1103	~~1108~~	1113	1118	1123	1128	1133	1138			
Water Level (ft BTOC)	26.31	26.26	26.26	26.26	26.27	26.28	26.28	26.28			
pH (S.U.)	5.90	6.00	5.99	6.06	6.04	6.06	6.09	6.07			
Sp. Cond. (mS/cm)	0.156	0.152	0.152	0.152	0.152	0.152	0.152	0.151			
Water Temp. (°C)	19.39	19.52	19.55	19.62	19.72	19.69	19.74	19.80			
Turbidity (NTUs)	20.71	8.64	5.63	4.79	3.66	2.72	3.88	3.90			
DO - (mg/L)	1.24	0.62	0.57	0.44	0.35	0.34	0.31	0.32			
Salinity (ppt)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07			
ORP (mV)	-12.3	-25.8	-26.4	-28.4	-27.1	-28.6	-31.4	-29.2			

COMMENTS/OBSERVATIONS: 300 ml per minute, replaced lock

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr)	Jan 20 2016
Field Personnel	Randy Morgan
Site Name	ALARNG OMS #28
AECOM Job #	60439687
Sample ID*	OMS ~~OBM~~-28-5
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source	
Weather Conditions	Mostly Cloudy
Air Temperature	50 °F
Total Well Depth (TWD) =	~~20.00~~ 23.73 1/100 ft
Depth to Ground Water (DGW) =	8.85 1/100 ft
Length of Water Column (LWC) = TWD - DGW =	14.88 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 =	2.42 gal
3 Casing Volumes =	7.27 gal = Standard Evacuation Volume
Method of Sample Evacuation	Peristaltic Pump
Method of Sample Collection	Peristaltic Pump / Reverse flow
Total Volume of Water Removed	6.4 gal

Casing Diameter	2 inches
Casing Material	
Measuring Point Elevation	1/100 ft
Height of Riser (above land surface)	1/100 ft
Land Surface Elevation	1/100 ft
Screened Interval	10.00 - 20.00 1/100 ft
Dedicated Pump or Bailer	YES ____ NO X Type ____
Steel Guard Pipe Around Casing	YES ____ NO X
Locking Cap	YES X NO ____
Protective Post/Abutment	YES ____ NO X
Well Integrity Satisfactory	YES X NO ____
Yield	LOW ____ MODERATE ____ HIGH X
Comments/Observations	
Sample Time:	1040
Sample Analytes: VOC'S	Tubing inlet set ~ 5' off bottom
Fe =	3.30 mg/L

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC; for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft)

FIELD ANALYSES

	Initial	.40	.80	1.20	1.60	2.0	2.40	2.80	3.20	3.60	4.0
VOLUME PURGED (gallons)											
TIME (Military)	0918	0923	0928	0933	0938	0943	0948	0953	0958	1003	1008
Water Level (ft BTOC)	9.20	9.24	9.25	9.26	9.23	9.22	9.22	9.24	9.24	9.24	9.25
pH (S.U.)	4.51	5.16	5.15	5.14	5.13	5.12	5.11	5.10	5.10	5.10	5.11
Sp. Cond. (mS/cm)	0.582	0.593	0.593	0.590	0.590	0.588	0.584	0.587	0.585	0.586	0.585
Water Temp. (°C)	17.77	18.73	18.86	18.66	18.59	18.40	18.42	18.40	18.54	18.91	19.17
Turbidity (NTUs) orange	107.0	91.93	86.30	62.26	63.47	51.30	40.01	32.36	25.76	28.24	19.89
DO - (mg/L)	1.75	3.26	2.93	2.40	1.53	0.81	0.60	0.39	0.33	0.31	0.29
Salinity (ppt)	0.28	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.28	0.29	0.28
ORP (mV)	112.7	49.3	40.6	32.9	31.0	30.1	29.4	29.0	29.1	29.6	30.1

COMMENTS/OBSERVATIONS: 300 ml/minute replaced lock

Destroyed

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Page ____ of ____

Date (mo/day/yr) _____

Field Personnel Randy Morgan

Site Name ALARNG OMS #28

AECOM Job # 60439687

Sample ID* OMS ~~OSM~~-28-6

_____ Upgradient _____ Downgradient _____ Sidegradient _____ Source

Weather Conditions _____

Air Temperature _____ ° F

Total Well Depth (TWD) = 76.00 1/100 ft

Depth to Ground Water (DGW) = _____ 1/100 ft

Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft

1 Casing Volume (OCV)* = LWC x 0.163 = _____ gal

3 Casing Volumes = _____ gal = Standard Evacuation Volume

Method of Sample Evacuation Peristaltic Pump

Method of Sample Collection Peristaltic Pump / Reverse flow

Total Volume of Water Removed _____ gal

Casing Diameter 2 inches

Casing Material _____

Measuring Point Elevation _____ 1/100 ft

Height of Riser (above land surface) _____ 1/100 ft

Land Surface Elevation _____ 1/100 ft

Screened Interval 66.00 - 76.00 1/100 ft

Dedicated Pump or Bailer YES _____ NO _____ Type _____

Steel Guard Pipe Around Casing YES _____ NO _____

Locking Cap YES _____ NO _____

Protective Post/Abutment YES _____ NO _____

Well Integrity Satisfactory YES _____ NO _____

Yield LOW _____ MODERATE _____ HIGH _____

Comments/Observations

Sample Time: _____

Sample Analytes: VOC'S

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC; for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC.

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft).

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial										
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr): Jan 20, 2016
Field Personnel: Randy Morgan
Site Name: ALARNG OMS #28
AECOM Job #: 60439687
Sample ID*: OMS~~OSM~~-28-7
____ Upgradient ____ Downgradient ____ Sidegradient ____ Source
Weather Conditions: Cloudy
Air Temperature: 63 °F
Total Well Depth (TWD) = 20.30 1/100 ft
Depth to Ground Water (DGW) = 6.22 @ 15.35 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 14.08 1/100 ft
1 Casing Volume (OCV)* = LWC x 0.163 = 2.29 gal
3 Casing Volumes = 6.88 gal = Standard Evacuation Volume
Method of Sample Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / Reverse flow
Total Volume of Water Removed: 2.8 gal

Casing Diameter: 2 inches
Casing Material:
Measuring Point Elevation: 1/100 ft
Height of Riser (above land surface): 1/100 ft
Land Surface Elevation: 1/100 ft
Screened Interval: 10.00 - 20.00 1/100 ft
Dedicated Pump or Bailer: YES ____ NO X Type ____
Steel Guard Pipe Around Casing: YES X NO ____
Locking Cap: YES X NO ____
Protective Post/Abutment: YES ____ NO X
Well Integrity Satisfactory: YES X NO ____
Yield: LOW ____ MODERATE ____ HIGH X
Comments/Observations
Sample Time: 1623
Sample Analytes: VOC'S MS/MSD q/so
Fe = 0.0 mg/L

* - One casing volume (gallons) for a 0.5 inch well is 0.0102XLWC; for a 2 inch well is 0.163 X LWC; for a 4 inch well is 0.652 X LWC and for a 6 inch well is 1.468 X LWC

Volume (in gallons) = $\pi r^2 h$ (7.48), where r is the radius (ft) and h is the height (ft).

FIELD ANALYSES

	Initial										
VOLUME PURGED (gallons)		1.80	1.20	1.60	2.0	2.4	2.8				
TIME (Military)	1545	1555	1600	1605	1610	1615	1620				
Water Level (ft BTOC)	6.32	6.32	6.33	6.34	6.34	6.34	6.34				
pH (S.U.)	5.97	5.83	5.81	5.80	5.82	5.80	5.78				
Sp. Cond. (mS/cm)	0.324	0.324	0.323	0.322	0.321	0.320	0.320				
Water Temp. (°C)	19.03	19.97	20.09	20.27	20.19	20.09	20.18				
Turbidity (NTUs)	28.03	9.14	4.93	3.19	2.79	2.34	1.21				
DO - (mg/L)	4.25	4.10	4.15	4.08	4.08	4.16	4.26				
Salinity (ppt)	0.16	0.15	0.15	0.15	0.15	0.15	0.15				
ORP (mV)	174.8	136.6	132.7	130.4	125.2	124.5	125.0				

COMMENTS/OBSERVATIONS: 300 ml per minute new lock

Environmental Audit:
PRIVILEGED AND CONFIDENTIAL DOCUMENT

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ALARNG OMS #28
AECOM Job #	60439687
Sample ID*	MW-12

Date (mo/day/yr)	Jan 21, 2016
Field Personnel	Randy Morgan
Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)	4.4	4.8	5.20	5.60	6.0	6.4	6.80	7.20			
TIME (Military)	1325	1330	1335	1340	1345	1350	1355	1400			
Water Level (ft BTOC)	7.49	7.53	7.59	7.63	7.67	7.70	7.72	7.74			
pH (S.U.)	6.15	6.15	6.12	6.12	6.11	6.10	6.07	6.07			
Sp. Cond. (mS/cm)	0.496	0.494	0.489	0.487	0.482	0.481	0.474	0.472			
Water Temp. (°C)	21.77	21.64	21.71	21.57	21.67	21.62	21.44	21.52			
Turbidity (NTUs)	32.03	27.41	22.10	16.84	11.35	9.13	7.61	5.67			
DO - (mg/L)	0.18	0.18	0.16	0.16	0.15	0.15	0.15	0.15			
Salinity (ppt)	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.23			
ORP (mV)	-28.3	-27.7	-25.4	-24.7	-23.0	-22.6	-21.4	-20.2			

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

Appendix A4
Groundwater Monitoring Well Sampling Logs - May 2017

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 1, 2017
Field Personnel: Randy Morgan
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: MW-5
X Upgradient ____ Downgradient
Weather Conditions: Clear / Sunny
Air Temperature: 78 °F
Total Depth (TWD) Below Top of Casing = 12.65 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 5.26 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 7.39 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 1.20 gal
3 Casing Volumes = 3.61 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / Reverse flow
Total Volume of Water Removed: 2.4 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): 1/100 ft
Land Surface Elevation: 1/100 ft
Screened Interval (below land surface): 3.3 – 13.3 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	VOC's (8260B)	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.4	
TIME (Military)	1243	1248	1253	1258	1303	1308	1313	
Depth to Groundwater Below Top of Casing (ft)	5.60	5.83	5.98	6.12	6.21	6.23	6.27	
Drawdown (ft)								
pH (S.U.)	4.20	4.04	4.04	4.08	4.00	4.02	4.00	
Salinity (ppt)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Sp. Cond. (mS/cm)	0.215	0.214	0.215	0.217	0.220	0.221	0.222	
Turbidity (NTUs)	6.49	2.16	2.45	1.59	1.82	1.81	2.03	
Dissolved Oxygen (mg/L)	1.15	0.64	0.75	0.93	0.85	0.78	0.65	
Water Temperature (°C)	26.37	26.13	26.11	26.00	25.89	25.92	25.93	
ORP (mV)	310.9	352.1	368.7	375.4	386.5	388.9	394.8	

Physical appearance at start: Color Clear; Odor None
Physical appearance at sampling: Color Clear; Odor None
Sheen/Free Product: No
Sheen/Free Product: No

COMMENTS/OBSERVATIONS: TD after sampling: 12.78 Sample time: 1315
Fe = 0.40

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	
AECOM Job #	60439687	Field Personnel	
Sample ID*	MW-5	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

_____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 6, 2017
Field Personnel: Randy Morgan
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: MW-6
X Upgradient ____ Downgradient
Weather Conditions: clear / sunny
Air Temperature: 78 °F
Total Depth (TWD) Below Top of Casing = 12.7 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 5.40 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 7.30 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 1.19 gal
3 Casing Volumes = 3.56 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / Reverse flow
Total Volume of Water Removed: 3.60 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): 1/100 ft
Land Surface Elevation: 1/100 ft
Screened Interval (below land surface): 2.3 – 12.3 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	VOCs (8260B)	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.4	3.20
TIME (Military)	1338	1343	1348	1353	1358	1403	1408	1413
Depth to Groundwater Below Top of Casing (ft)	5.63	6.03	6.18	6.33	6.43	6.47	6.52	6.53
Drawdown (ft)								
pH (S.U.)	6.05	6.15	6.18	5.99	5.84	5.70	5.54	5.48
Salinity (ppt)	0.18	0.19	0.19	0.16	0.15	0.13	0.12	0.12
Sp. Cond. (mS/cm)	0.375	0.407	0.408	0.345	0.309	0.285	0.261	0.255
Turbidity (NTUs)	2.84	3.32	2.27	2.10	1.98	1.96	1.74	2.31
Dissolved Oxygen (mg/L)	2.93	2.98	2.99	2.60	2.29	2.08	1.73	1.53
Water Temperature (°C)	25.30	25.01	25.03	25.04	24.85	24.93	24.74	24.69
ORP (mV)	288.2	277.1	267.9	261.0	259.5	260.2	261.9	261.9

Physical appearance at start: Color clear; Odor None; Sheen/Free Product None
Physical appearance at sampling: Color clear; Odor None; Sheen/Free Product None

COMMENTS/OBSERVATIONS: TD after sampling: 12.78 Sample time: 1420
Fe: 0.11 mg/L

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ARNG OMS 28 Phase 2
AECOM Job #	60439687
Sample ID*	MW-6

Date (mo/day/yr)	May 1, 2017
Field Personnel	Randy Morgan
Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)	3.60										
TIME (Military)	1418										
Water Level (ft BTOC)											
pH (S.U.)	5.44										
Sp. Cond. (mS/cm)	0.249										
Water Temp. (°C)	24.66										
Turbidity (NTUs)	1.39										
DO - (mg/L)	1.32										
Salinity (ppt)	0.12										
ORP (mV)	261.1										

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 1, 2019
Field Personnel:
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: MW-8
___ Upgradient ___ Downgradient X Source
Weather Conditions: clear/sunny
Air Temperature: ° F
Total Depth (TWD) Below Top of Casing = 14.41 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 6.15 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 8.26 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 1.34 gal
3 Casing Volumes = 4.03 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump/reverse flow
Total Volume of Water Removed: 2.8 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): 1/100 ft
Land Surface Elevation: 1/100 ft
Screened Interval (below land surface): 4.8 – 14.8 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	VOC's (8260B)	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.4	2.8
TIME (Military)	1148	1153	1158	1203	1208	1213	1218	1223
Depth to Groundwater Below Top of Casing (ft)	6.32	6.37	6.39	6.38	6.39	6.38	6.38	6.38
Drawdown (ft)	0							
pH (S.U.)	6.70	6.66	6.63	6.60	6.57	6.52	6.48	6.45
Salinity (ppt)	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07
Sp. Cond. (mS/cm)	0.133	0.129	0.130	0.132	0.138	0.147	0.153	0.160
Turbidity (NTUs)	43.82	33.76	22.38	19.81	19.18	19.14	18.97	19.10
Dissolved Oxygen (mg/L)	5.43	5.08	4.69	4.63	4.47	4.28	4.09	4.02
Water Temperature (°C)	23.45	23.56	23.67	23.69	23.82	23.94	23.94	23.99
ORP (mV)	166.5	169.6	171.1	171.7	172.3	172.4	172.6	173.0

Physical appearance at start: Color clear; Odor None; Sheen/Free Product N/A
Physical appearance at sampling: Color clear; Odor None; Sheen/Free Product N/A

COMMENTS/OBSERVATIONS: TD after sampling: 14.38 Sample time: 1225
Fe = 0.15

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	
AECOM Job #	60439687	Field Personnel	
Sample ID*	MW-8	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

_____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 5, 2017
Field Personnel: Randy Marga
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: MW-9
Upgradient ____ X ____ Downgradient
Weather Conditions: Mostly Cloudy
Air Temperature: ____ °F

Total Depth (TWD) Below Top of Casing = 20.31 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 3.80 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 16.51 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 2.69 gal
3 Casing Volumes = 8.07 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump/reverse flow
Total Volume of Water Removed: 2.4 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): ____ 1/100 ft
Land Surface Elevation: ____ 1/100 ft
Screened Interval (below land surface): 7.4 - 17.4 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	VOCs	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	initial	.40	.80	1.20	1.60	2.0	2.40	
TIME (Military)	1200	1205	1210	1215	1220	1225	1230	
Depth to Groundwater Below Top of Casing (ft)	4.95	5.33	5.58	5.44	5.44	5.44	5.44	
Drawdown (ft)								
pH (S.U.)	4.76	4.73	4.74	4.72	4.70	4.69	4.68	
Salinity (ppt)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Sp. Cond. (mS/cm)	0.107	0.107	0.111	0.112	0.113	0.114	0.114	
Turbidity (NTUs)	1164	53.00	12.67	8.74	7.61	6.72	6.28	
Dissolved Oxygen (mg/L)	0.68	0.30	0.22	0.21	0.21	0.19	0.18	
Water Temperature (°C)	19.86	19.94	19.97	19.88	19.88	20.04	20.28	
ORP (mV)	184.1	178.4	97.9	89.4	83.4	80.3	78.0	

Physical appearance at start: Color Slight; Odor None
Sheen/Free Product: None
Physical appearance at sampling: Color Clear; Odor none
Sheen/Free Product: none

COMMENTS/OBSERVATIONS: TD after Sampling: 20.31
Sample time: 1235
Fe = [redacted] 1.71 mg/L

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	
AECOM Job #	60439687	Field Personnel	
Sample ID*	MW-9	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 4, 2017
Field Personnel: Randy Murga
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: MW-12
Upgradient ___ X Downgradient
Weather Conditions: Clear/Sunny
Air Temperature: 78 ° F
Total Depth (TWD) Below Top of Casing = 16.69 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 4.80 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 11.89 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 1.93 gal
3 Casing Volumes = 5.81 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump/reverse flow
Total Volume of Water Removed: ___ gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): ___ 1/100 ft
Land Surface Elevation: ___ 1/100 ft
Screened Interval (below land surface): 5.6 - 15.6 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	VOC's (8260B)	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.4	2.8
TIME (Military)	1700	1705	1710	1715	1720	1725	1730	1735
Depth to Groundwater Below Top of Casing (ft)	5.63	6.06	6.46	6.66	6.88	7.01	7.11	7.11
Drawdown (ft)								
pH (S.U.)	6.25	6.26	6.24	6.18	6.17	6.17	6.17	6.15
Salinity (ppt)	0.22	0.23	0.22	0.22	0.22	0.22	0.22	0.22
Sp. Cond. (mS/cm)	0.468	0.469	0.467	0.465	0.460	0.455	0.451	0.440
Turbidity (NTUs)	73.55	112.8	103.2	84.39	66.82	60.12	55.61	46.48
Dissolved Oxygen (mg/L)	0.57	0.35	0.32	0.24	0.23	0.23	0.34	0.26
Water Temperature (°C)	23.87	23.58	23.33	23.33	23.26	23.23	23.15	23.20
ORP (mV)	-56.1	-58.8	-56.3	-56.7	-57.0	-56.9	-50.1	-50.5

Physical appearance at start: Color Lt orange - (iron); Odor none; Sheen/Free Product None
Physical appearance at sampling: Color Clear; Odor none; Sheen/Free Product None

COMMENTS/OBSERVATIONS: TD after Sampling: 16.70; Sampling Time: 1757
Fe - Exceeds 5.30 mg/l diluted 1ml Sample 24ml DI x 100 factor

Fe = 171 mg/L

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	May 1, 2017
AECOM Job #	60439687	Field Personnel	Kayla Morgan
Sample ID*	MW-12	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)	3.20	3.60	4.00	4.40						
TIME (Military)	1740	1745	1750	1755						
Water Level (ft BTOC)	7.11	7.11	7.11	7.11						
pH (S.U.)	6.14	6.14	6.12	6.10						
Sp. Cond. (mS/cm)	0.445	0.444	0.440	0.436						
Water Temp. (°C)	23.05	23.03	23.18	23.13						
Turbidity (NTUs)	34.11	26.12	24.88	24.13						
DO - (mg/L)	0.22	0.24	0.22	0.24						
Salinity (ppt)	0.21	0.21	0.21	0.21						
ORP (mV)	-52.4	-52.4	51.8	-50.6						

FIELD ANALYSES

VOLUME PURGED (gallons)										
TIME (Military)										
Water Level (ft BTOC)										
pH (S.U.)										
Sp. Cond. (mS/cm)										
Water Temp. (°C)										
Turbidity (NTUs)										
DO - (mg/L)										
Salinity (ppt)										
ORP (mV)										

COMMENTS/OBSERVATIONS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 1, 2017
Field Personnel: Randy Morgan
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: OMS-28-1
Upgradient ___ X ___ Downgradient
Weather Conditions: Clear / sunny
Air Temperature: ___ ° F

Total Depth (TWD) Below Top of Casing = 79.84 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 22.44 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 57.40 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 9.35 gal
3 Casing Volumes = 28.06 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / reverse flow
Total Volume of Water Removed: 4.0 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): ___ 1/100 ft
Land Surface Elevation: ___ 1/100 ft
Screened Interval (below land surface): 70.0 - 80.0 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	VOC's (8260B)	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.4	2.8
TIME (Military)	1548	1553	1558	1603	1608	1613	1618	1623
Depth to Groundwater Below Top of Casing (ft)	22.47	22.46	22.45	22.45	22.45	22.45	22.45	22.45
Drawdown (ft)								
pH (S.U.)	6.17	6.13	6.07	5.99	5.94	5.89	5.96	6.05
Salinity (ppt)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Sp. Cond. (mS/cm)	0.132	0.130	0.129	0.129	0.129	0.129	0.129	0.129
Turbidity (NTUs)	126.3	95.37	76.44	67.61	49.97	38.46	29.93	27.65
Dissolved Oxygen (mg/L)	0.76	0.46	0.35	0.34	0.30	0.30	0.29	0.47
Water Temperature (°C)	25.01	24.87	24.79	24.80	24.77	24.84	24.86	24.86
ORP (mV)	-17.8	-24.4	-31.1	-33.8	-32.7	-32.0	-30.9	-23.4

Physical appearance at start — Color: orange (iron) — Odor: none
Physical appearance at sampling — Color: clear — Odor: none
Sheen/Free Product: none
Sheen/Free Product: none

COMMENTS/OBSERVATIONS: TD after sampling = 79.83
Sampling time = 1640
Fe = ~~exceeds 3.30~~ diluted ~~10 ml sample + 15 ml DI = 1.01 x 25 = 2.52 mg/L~~ Fe = 24 mg/L 1 ml of sample 24 ml DI x 100 factor

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	May 1, 2017
AECOM Job #	60439687	Field Personnel	Roddy Morgan
Sample ID*	OMS-28-1	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)	3.20	3.60	4.0								
TIME (Military)	1628	1633	1638								
Water Level (ft BTOC)	22.45	22.45	22.45								
pH (S.U.)	5.99	5.95	6.00								
Sp. Cond. (mS/cm)	0.129	0.129	0.128								
Water Temp. (°C)	24.75	24.82	24.75								
Turbidity (NTUs)	28.13	27.96	28.17								
DO - (mg/L)	0.34	0.31	0.29								
Salinity (ppt)	0.06	0.06	0.06								
ORP (mV)	-27.9	-29.4	-31.1								

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 5, 2017
Field Personnel: Randy, Mary
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: OMS-28-2
Upgradient ___ X ___ Downgradient
Weather Conditions: Mostly Sunny
Air Temperature: ____ ° F

Total Depth (TWD) Below Top of Casing = 23.44 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 7.90 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 15.54 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 2.53 gal
3 Casing Volumes = 7.59 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / reverse flow
Total Volume of Water Removed: 2.40 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): ____ 1/100 ft
Land Surface Elevation: ____ 1/100 ft
Screened Interval (below land surface): 10 - 20 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	VOCs	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	0	.40	.80	1.20	1.60	2.0	2.40	
TIME (Military)	1628	1633	1638	1643	1648	1653	1658	
Depth to Groundwater Below Top of Casing (ft)	8.11	8.12	8.13	8.14	8.15	8.15	8.15	
Drawdown (ft)								
pH (S.U.)	4.57	4.52	4.55	4.56	4.55	4.54	4.54	
Salinity (ppt)	0.10	0.10	0.09	0.09	0.10	0.09	0.09	
Sp. Cond. (mS/cm)	0.204	0.202	0.199	0.201	0.202	0.201	0.200	
Turbidity (NTUs)	67.05	42.30	24.83	15.95	7.67	6.19	4.82	
Dissolved Oxygen (mg/L)	6.75	6.66	6.55	6.52	6.56	6.51	6.50	
Water Temperature (°C)	22.03	21.90	21.84	21.76	21.77	21.73	21.71	
ORP (mV)	134.9	157.4	173.1	179.5	182.0	186.3	188.5	

Physical appearance at start: Color Clear; Odor none
Sheen/Free Product: none
Physical appearance at sampling: Color Clear; Odor none
Sheen/Free Product: none

COMMENTS/OBSERVATIONS: TD after sampling = 23.44; Sampling time = 1700
Fe: 0.05

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Page ____ of ____

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	
AECOM Job #	60439687	Field Personnel	
Sample ID*	OMS-28-2	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) 5-6-17
Field Personnel Rocky Morgan
Site Name ARNG OMS 28 Phase 2
AECOM Job # 60439687
Well ID # OMS-28-3
___ Upgradient ___ Downgradient X Source
Weather Conditions Clear / Sunny
Air Temperature 80 °F
Total Depth (TWD) Below Top of Casing = 24.07 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 7.82 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 16.25 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 2.64 gal
3 Casing Volumes = 7.94 gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump / reverse flow
Total Volume of Water Removed 2.0 gal

Casing Diameter 2 inches
Casing Material PVC
Measuring Point Elevation TOC 1/100 ft
Height of Riser (above land surface) ___ 1/100 ft
Land Surface Elevation ___ 1/100 ft
Screened Interval (below land surface) 10 - 20 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40-ml glass	VOCs (8260B)	9	HCL	MS/MSD

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0		
TIME (Military)	1445	1450	1455	1500	1505	1510		
Depth to Groundwater Below Top of Casing (ft)	8.93	9.69	9.69	9.69	9.70	9.70		
Drawdown (ft)								
pH (S.U.)	5.49	5.41	5.38	5.38	5.41	5.40		
Salinity (ppt)	0.10	0.10	0.10	0.10	0.10	0.10		
Sp. Cond. (mS/cm)	0.211	0.207	0.204	0.209	0.210	0.209		
Turbidity (NTUs)	5.39	4.94	3.09	2.51	3.20	2.82		
Dissolved Oxygen (mg/L)	0.78	0.51	0.47	0.51	0.57	0.59		
Water Temperature (°C)	23.10	22.37	22.52	22.43	22.25	22.36		
ORP (mV)	257.9	265.4	263.3	260.8	256.6	254.8		

Physical appearance at start Color Clear
Odor None
Sheen/Free Product None

Physical appearance at sampling Color Clear
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS TD after sampling: 24.10 sampling time = 1513
Fe: 0.68

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	
AECOM Job #	60439687	Field Personnel	
Sample ID*	OMS-28-3	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 5, 2017
Field Personnel: Randy Muraga
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: OMS-28-4
Upgradient ____ X Downgradient
Weather Conditions: Mostly Cloudy
Air Temperature: ____ °F

Total Depth (TWD) Below Top of Casing = 78.75 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 26.18 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 52.57 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 8.56 gal
3 Casing Volumes = 25.70 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump / reverse flow
Total Volume of Water Removed: 2.40 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): ____ 1/100 ft
Land Surface Elevation: ____ 1/100 ft
Screened Interval (below land surface): 66 - 76 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	VOCs	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	initial	.40	.80	1.20	1.60	2.0	2.40	
TIME (Military)	1440	1445	1450	1455	1500	1505	1510	
Depth to Groundwater Below Top of Casing (ft)	26.64	26.63	26.64	26.64	26.65	26.66	26.66	
Drawdown (ft)								
pH (S.U.)	4.80	4.79	4.78	4.78	4.78	4.77	4.74	
Salinity (ppt)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
Sp. Cond. (mS/cm)	0.135	0.134	0.135	0.135	0.135	0.135	0.135	
Turbidity (NTUs)	14.58	8.31	4.93	5.09	4.65	3.69	4.12	
Dissolved Oxygen (mg/L)	0.77	0.57	0.33	0.27	0.23	0.21	0.20	
Water Temperature (°C)	20.31	20.36	20.45	20.53	20.57	20.72	20.79	
ORP (mV)	-41.5	-45.1	-54.6	-56.1	-61.3	-62.7	-62.3	

Physical appearance at start — Color: slight
Odor: none
Sheen/Free Product: none

Physical appearance at sampling — Color: ____
Odor: none
Sheen/Free Product: none

COMMENTS/OBSERVATIONS: TD after sampling: 78.78 Sampling time: 1515
~~Fe 3.12~~

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Page ____ of ____

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	
AECOM Job #	60439687	Field Personnel	
Sample ID*	OMS-28-4	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

_____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 5, 2017
Field Personnel Randy Mary
Site Name ARNG OMS 28 Phase 2
AECOM Job # 60439687
Well ID # OMS-28-5
___ Upgradient X Downgradient
Weather Conditions Mostly Cloudy
Air Temperature ___ °F
Total Depth (TWD) Below Top of Casing = 23.73 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 7.87 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 15.86 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 2.58 gal
3 Casing Volumes = 7.75 gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump / reverse flow
Total Volume of Water Removed 5.20 gal

Casing Diameter 2 inches
Casing Material PVC
Measuring Point Elevation TOC 1/100 ft
Height of Riser (above land surface) ___ 1/100 ft
Land Surface Elevation ___ 1/100 ft
Screened Interval (below land surface) 10-20 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	VOC's	3	HCL	
40 ml glass	VOCs	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.4	2.8
TIME (Military)	12.58	1303	1308	1313	1318	1323	1328	1333
Depth to Groundwater Below Top of Casing (ft)	8.18	8.19	8.16	8.16	8.16	8.16	8.16	8.16
Drawdown (ft)								
pH (S.U.)	4.84	4.85	4.86	4.86	4.85	4.84	4.81	4.81
Salinity (ppt)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Sp. Cond. (mS/cm)	0.781	0.783	0.782	0.780	0.780	0.781	0.777	0.776
Turbidity (NTUs) (Iron orange)	241.8	114.6	72.41	45.11	36.52	28.4	24.13	21.16
Dissolved Oxygen (mg/L)	0.62	0.30	0.22	0.23	0.20	0.18	0.17	0.17
Water Temperature (°C)	19.83	19.83	19.81	19.82	19.87	19.86	19.75	19.71
ORP (mV)	94.4	93.5	88.4	91.3	90.4	90.0	90.5	88.7

Physical appearance at start Color orange
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ___
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS TD after sampling = 23.73
Sampling time = 1408
Fe: Exceeds 3.30 ~~diluted w/ 10 ml sample / 15ml DI x 25 = 142 mg/L x 25 = 3.55~~ Fe

* Fe [redacted] 11.3 mg/L

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	ARNG OMS 28 Phase 2	Date (mo/day/yr)	May 5, 2017
AECOM Job #	60439687	Field Personnel	Kristy Morgan
Sample ID*	OMS-28-5	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)	3.20	3.60	4.0	4.40	4.80	5.20					
TIME (Military)	1338	1343	1348	1353	1358	1403					
Water Level (ft BTOC)	8.16	8.16	8.16	8.16	8.16	8.16					
pH (S.U.)	4.79	4.78	4.78	4.76	4.75	4.74					
Sp. Cond. (mS/cm)	0.773	0.768	0.765	0.762	0.761	0.757					
Water Temp. (°C)	19.36	19.48	19.56	19.48	19.66	19.67					
Turbidity (NTUs)	22.11	21.30	20.22	18.25	19.12	18.55					
DO - (mg/L)	0.58	0.25	0.22	0.19	0.18	0.17					
Salinity (ppt)	0.38	0.38	0.38	0.37	0.37	0.37					
ORP (mV)	90.8	92.2	93.8	96.4	99.9	99.2					

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr): May 1, 2017
Field Personnel: Randy Morgo
Site Name: ARNG OMS 28 Phase 2
AECOM Job #: 60439687
Well ID #: OMS-28-7
___ Upgradient ___ Downgradient X source
Weather Conditions: mostly sunny
Air Temperature: ___ °F
Total Depth (TWD) Below Top of Casing = 20.30 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 7.36 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 12.94 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = 2.10 gal
3 Casing Volumes = 6.32 gal
Method of Well Evacuation: Peristaltic Pump
Method of Sample Collection: Peristaltic Pump/reverse flow
Total Volume of Water Removed: 2.5 gal

Casing Diameter: 2 inches
Casing Material: PVC
Measuring Point Elevation: TOC 1/100 ft
Height of Riser (above land surface): ___ 1/100 ft
Land Surface Elevation: ___ 1/100 ft
Screened Interval (below land surface): 10 - 20 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml/glass	VOC's (8260B)	3	HCL	

FIELD ANALYSES

VOLUME PURGED (gallons)	initial	.40	.80	1.20	1.60	2.0		
TIME (Military)	1100	1105	1110	1115	1120	1125		
Depth to Groundwater Below Top of Casing (ft)	7.45	7.45	7.45	7.45	7.45	7.45		
Drawdown (ft)								
pH (S.U.)	6.11	6.03	6.01	5.98	5.97	5.96		
Salinity (ppt)	0.14 ~~5.76~~	0.13	0.13	0.13	0.13	0.13		
Sp. Cond. (mS/cm)	0.286	0.279	0.281	0.278	0.275	0.275		
Turbidity (NTUs)	54.10	31.14	8.98	5.24	3.77	3.63		
Dissolved Oxygen (mg/L)	4.90	4.42	4.46	4.36	4.29	4.31		
Water Temperature (°C)	22.34	22.31	22.26	22.29	22.28	22.29		
ORP (mV)	204.0	200.0	199.0	200.9	202.3	203.0		

Physical appearance at start: Color clear; Odor None; Sheen/Free Product None
Physical appearance at sampling: Color clear; Odor None; Sheen/Free Product None

COMMENTS/OBSERVATIONS: TP after sampling = 20:34 Sampling time: 1127
Fe = 0.59

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Page ____ of ____

Site Name	ARNG OMS 28 Phase 2
AECOM Job #	60439687
Sample ID*	OMS-28-7

Date (mo/day/yr)
Field Personnel
Comments/Observations:

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

FIELD ANALYSES

VOLUME PURGED (gallons)											
TIME (Military)											
Water Level (ft BTOC)											
pH (S.U.)											
Sp. Cond. (mS/cm)											
Water Temp. (°C)											
Turbidity (NTUs)											
DO - (mg/L)											
Salinity (ppt)											
ORP (mV)											

COMMENTS/OBSERVATIONS _____

_____

Appendix A5
Soil Sampling Logs

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlas

Borehole ID: SB04

Total Depth to Bottom of Borehole (feet): 36' ft

Depth of Sample Collection: 0-1

Sample ID: oms-28-SB04-1

Method of Sample Collection
- [x] Discrete primary
- [x] Encore/TerraCore split
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260)
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [x] Fixed Lab: GCAL
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [x] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [x] Split

Notes/Comments/Additional Info:

primary and dup to Columbia Tech (TCE+PCE 8260B)
Split (-s) to GCAL (VOCs 8260B)
36 ft drilled for lithology

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlas

Borehole ID: SB04

Total Depth to Bottom of Borehole (feet): 36 ft

Depth of Sample Collection: 2 ft

Sample ID: OMS-28-SB04-2

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) PCE&TCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab: Columbia Tech
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

36 ft drilled for lithology

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kardas

Borehole ID: SB04

Total Depth to Bottom of Borehole (feet): 36'

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB04-5

Method of Sample Collection
- ☒ Discrete
- ○ Encore/TerraCore
- ○ Composite

Construction Method
- ☒ DPT
- ○ Hand Auger
- ○ Other (Specify):

Analysis Performed:
- ☒ VOCs (8260) TCE & PCE
- ○ SVOCs (8270)
- ○ Metals (6020)
- ○ Other (Specify)

Laboratory
- ○ Fixed Lab:
- ☒ Mobile Lab: Columbia Tech

Quality Control Samples:
- ○ Duplicate
- ○ MS/MSD
- ○ Equipment Blank
- ○ Split

Notes/Comments/Additional Info:

36 ft drilled for lithology

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dana Henry
Vasi Kourlis

Borehole ID: SB05

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 1-ft

Sample ID:

Method of Sample Collection
- ⊗ Discrete
- ○ Encore/TerraCore
- ○ Composite

Construction Method
- ⊗ DPT
- ○ Hand Auger
- ○ Other (Specify):

Analysis Performed:
- ⊗ VOCs (8260) TCE & PCE
- ○ SVOCs (8270)
- ○ Metals (6020)
- ○ Other (Specify)

Laboratory
- ○ Fixed Lab:
- ⊗ Mobile Lab: Columbia Tech

Quality Control Samples:
- ○ Duplicate
- ○ MS/MSD
- ○ Equipment Blank
- ○ Split

Notes/Comments/Additional Info:

Result ND for TCE + PCE

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dana Henry
Vasi Karlas

Borehole ID: SB05

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 2-4

Sample ID: OMS-28-SB05-2

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) PCE+TCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dana Henry
Vasi Kourlas

Borehole ID: SB05

Total Depth to Bottom of Borehole (feet): 5-ft

Depth of Sample Collection: 5-ft

Sample ID: OMS-28-SB05-5

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE & PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel: Randy Morgan, Vasi Kavalas, Dana Henry

Borehole ID: SB06

Total Depth to Bottom of Borehole (feet): 6-ft

Depth of Sample Collection: 1-ft

Sample ID: OMS-28-SB06-1

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE & PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlas

Borehole ID: SB06

Total Depth to Bottom of Borehole (feet): 6-ft

Depth of Sample Collection: 3-ft

Sample ID: OMS-28-SB06-3

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) PCE+TCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dana Henry
Vasi Kourlas

Borehole ID: SB06

Total Depth to Bottom of Borehole (feet): 6-ft

Depth of Sample Collection: 6-ft

Sample ID: OMS-28-SB06-6

Method of Sample Collection
- (⊘) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (⊗) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (⊘) VOCs (8260) PCE+TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (⊘) Mobile Lab: Columbia Tech

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel: Randy Morgan, Dana Henry, Vasi Kavlas

Borehole ID: SB07

Total Depth to Bottom of Borehole (feet): 6-ft

Depth of Sample Collection: 1-ft

Sample ID: OMS-28-SB07-1

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE & PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Pam Henry
Vasi Kartas

Borehole ID: SB07

Total Depth to Bottom of Borehole (feet): 6-ft

Depth of Sample Collection: 3-ft

Sample ID: OMS-28-SB07-3

Method of Sample Collection
- (X) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (X) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (X) VOCs (8260) TCE + PCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (X) Mobile Lab: Columbia Tech

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Karlas

Borehole ID: SB07

Total Depth to Bottom of Borehole (feet): 6-ft

Depth of Sample Collection: 6-ft

Sample ID: oms-28-SB07-6

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE & PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kavlas

Borehole ID: SB03

Total Depth to Bottom of Borehole (feet): 5'

Depth of Sample Collection: 1-ft

Sample ID: OMS-28-SB03-1

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE + PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlas

Borehole ID: SB03

Total Depth to Bottom of Borehole (feet): 5-ft

Depth of Sample Collection: 3-ft

Sample ID: OMS-28-SB03-3

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE+PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

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Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Karlas

Borehole ID: SB03

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB03-5

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE & PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

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Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Karmas

Borehole ID: SB02

Total Depth to Bottom of Borehole (feet): 8-ft

Depth of Sample Collection: 1-ft

Sample ID: OMS-28-SB02-1

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE+PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Randy Morgan
Dan Henry
Vasi Kourtas

Borehole ID: SB02

Total Depth to Bottom of Borehole (feet): 8-ft

Depth of Sample Collection: 3-ft

Sample ID: OMS-28-SB02-3

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE+PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Vasi Kaurlas
Randy Morgan
Dunn Henry

Borehole ID: SB02

Total Depth to Bottom of Borehole (feet): 8-ft

Depth of Sample Collection: 5-ft

Sample ID: OMS-28-SB02-5

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) TCE + PCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 9/8/17

Field Personnel:
Randy Morgan
Dana Henry
Vasi Kardas

Borehole ID: SB01

Total Depth to Bottom of Borehole (feet): 35-ft

Depth of Sample Collection: 1-ft

Sample ID: OMS-28-SB01-1

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260) PCE+TCE
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [ ] Fixed Lab:
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [ ] Duplicate
- [x] MS/MSD
- [ ] Equipment Blank
- [ ] Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel: Randy Morgan, Dunn Henry, Vasi Kourlas

Borehole ID: SB01

Total Depth to Bottom of Borehole (feet): 35-ft

Depth of Sample Collection: 2-ft

Sample ID: oms-28-SB01-2

Method of Sample Collection
- [x] Discrete
- [ ] Encore/TerraCore
- [ ] Composite

Construction Method
- [x] DPT
- [ ] Hand Auger
- [ ] Other (Specify):

Analysis Performed:
- [x] VOCs (8260)
- [ ] SVOCs (8270)
- [ ] Metals (6020)
- [ ] Other (Specify)

Laboratory
- [x] Fixed Lab: GCAL
- [x] Mobile Lab: Columbia Tech

Quality Control Samples:
- [x] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank
- [x] Split

Notes/Comments/Additional Info:

oms-28-SB01-2-a dup to Columbia Tech

oms-28-SB01-2-s split to GCAL

water ~ 3.5 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel:
Dunn Henry
Vasi Kourlas
Randy Morgan

Borehole ID: SB01

Total Depth to Bottom of Borehole (feet): 35-ft

Depth of Sample Collection: 3-ft

Sample ID: oms-28-SB01-3

Method of Sample Collection
- ☒ Discrete
- ○ Encore/TerraCore
- ○ Composite

Construction Method
- ☒ DPT
- ○ Hand Auger
- ○ Other (Specify):

Analysis Performed:
- ☒ VOCs (8260) TCE + PCE
- ○ SVOCs (8270)
- ○ Metals (6020)
- ○ Other (Specify)

Laboratory
- ○ Fixed Lab:
- ☒ Mobile Lab: Columbia Tech

Quality Control Samples:
- ○ Duplicate
- ○ MS/MSD
- ○ Equipment Blank
- ○ Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/17

Field Personnel: Randy Morgan, Dunn Henry, Vasi Kaurlas

Borehole ID: SB10

Total Depth to Bottom of Borehole (feet): 5-ft

Depth of Sample Collection: 1-ft

Sample ID: Oms-28-SB10-1

Method of Sample Collection
- ☒ Discrete
- ○ Encore/TerraCore
- ○ Composite

Construction Method
- ☒ DPT
- ○ Hand Auger
- ○ Other (Specify):

Analysis Performed:
- ☒ VOCs (8260) PCE+TCE
- ○ SVOCs (8270)
- ○ Metals (6020)
- ○ Other (Specify)

Laboratory
- ○ Fixed Lab:
- ☒ Mobile Lab: Columbia Tech

Quality Control Samples:
- ○ Duplicate
- ○ MS/MSD
- ○ Equipment Blank
- ○ Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB 10

Total Depth to Bottom of Borehole (feet): 5-ft

Depth of Sample Collection: 2 ft

Sample ID: OMS-28-SB10-2

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB-10

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 3ft

Sample ID: OMS-28-SB10-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB-11

Total Depth to Bottom of Borehole (feet): 7 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB11-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB11

Total Depth to Bottom of Borehole (feet): 7ft

Depth of Sample Collection: 4 ft

Sample ID: OMS-28-SB11-4

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

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Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB11

Total Depth to Bottom of Borehole (feet): 7 ft

Depth of Sample Collection: 6 ft

Sample ID: OMS-28-SB11-6

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB12

Total Depth to Bottom of Borehole (feet): 6 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB12-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB12

Total Depth to Bottom of Borehole (feet): 6 ft

Depth of Sample Collection: 3 ft

Sample ID: OMS-28-SB12-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB12

Total Depth to Bottom of Borehole (feet): 6 ft

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB12-6

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5/8/2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB13

Total Depth to Bottom of Borehole (feet): 32

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB13-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

Lithologic boring to 32 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB13

Total Depth to Bottom of Borehole (feet): 32 ft

Depth of Sample Collection: 3ft

Sample ID: OMS-28-SB13-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

Lithologic boring to 32 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB13

Total Depth to Bottom of Borehole (feet): 32 ft

Depth of Sample Collection: 5ft

Sample ID: OMS-28-SB13-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

Lithologic boring to 32 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlas

Borehole ID: SB14

Total Depth to Bottom of Borehole (feet): 6 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB14-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- (●) Duplicate CT
- ( ) MS/MSD
- ( ) Equipment Blank
- (●) Split GCAL

Notes/Comments/Additional Info:

OMS-28-SB14-1-a dup to Columbia Technologies
OMS-28-SB14-1-S Split to GCAL

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB14

Total Depth to Bottom of Borehole (feet): 6 ft

Depth of Sample Collection: 3 ft

Sample ID: OMS-28-SB14-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- (●) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

OMS-28-SB14-3-MS/MSD to Columbia Technologies

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB14

Total Depth to Bottom of Borehole (feet): 6ft

Depth of Sample Collection: 5ft

Sample ID: OMS-28-SB14-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB15

Total Depth to Bottom of Borehole (feet): 40 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB15-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

Lithologic boring to 40 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB15

Total Depth to Bottom of Borehole (feet): 40 ft

Depth of Sample Collection: 3

Sample ID: OMS-28-SB15-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

Lithologic boring to 40 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-8-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB15

Total Depth to Bottom of Borehole (feet): 40 ft

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB15-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

Lithologic boring to 40 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-2017

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB16

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB16-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- (●) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

OMS-28-SB16-1-a Duplicate to Columbia Technologies

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel: Randy Morgan, Dunn Henry, Vasi Kourlos

Borehole ID: SB16

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 2.5ft

Sample ID: OMS-28-SB16-2.5

Method of Sample Collection

- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method

- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:

- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory

- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:

- ( ) Duplicate
- (●) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

OMS-28-SB16-2.5-MS/MSD to Columbia Technologies

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel: Randy Morgan, Dunn Henry, Vasi Kourlos

Borehole ID: SB16

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 4 ft

Sample ID: OMS-28-SB16-4

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- (●) Split

Notes/Comments/Additional Info:

OMS-28-SB16-4-S split to GCAL

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB17

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB17-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB17

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 2.5 ft

Sample ID: OMS-28-SB17-2.5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB17

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 5ft

Sample ID: OMS-28-SB17-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB18

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB18-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB18

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 2.5 ft

Sample ID: OMS-28-SB18-2.5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB18

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB18-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB19

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 1ft

Sample ID: OMS-28-SB19-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB19

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 2.5 ft

Sample ID: OMS-28-SB19-2.5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel: Randy Morgan, Dunn Henry, Vasi Kourlos

Borehole ID: SB19

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 5ft

Sample ID:

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

OMS-28-SB19-5-a duplicate to Columbia Technologies

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB 20

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB20-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB20

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 1.5

Sample ID: OMS-28-SB20-1.5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB20

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 2 ft

Sample ID: OMS-28-SB20-2

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-12

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB21

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 1ft

Sample ID: OMS-28-SB21-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB21

Total Depth to Bottom of Borehole (feet): 4ft

Depth of Sample Collection: 1.5 ft

Sample ID: OMS-28-SB21-1.5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-2017

Field Personnel: Randy Morgan, Dunn Henry, Vasi Kourlos

Borehole ID: SB21

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 2 ft

Sample ID: OMS-28-SB21-2

Method of Sample Collection

- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method

- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:

- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory

- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:

- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB22

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB 22-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- (●) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

OMS-28-SB 22-1 - a duplicate to Columbia Technologies

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-2019

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: ~~OM~~ SB22

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 1-5 ft

Sample ID: OMS-28-SB22-1.5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- (●) Split

Notes/Comments/Additional Info:

OMS-28-SB22-1.5-S Split to GCAL

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB22

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 2 ft

Sample ID: OMS-28-SB22-2

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB23

Total Depth to Bottom of Borehole (feet): 4ft

Depth of Sample Collection: 1ft

Sample ID: OMS-28-SB23-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB23

Total Depth to Bottom of Borehole (feet): 4 ft

Depth of Sample Collection: 1.5 ft

Sample ID: OMS-28-SB23-1.5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel: Randy Morgan, Dunn Henry, Vasi Kourlos

Borehole ID: SB23

Total Depth to Bottom of Borehole (feet): 4ft

Depth of Sample Collection: 2ft

Sample ID: OMS-28-SB23-2

Method of Sample Collection

- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method

- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:

- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory

- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:

- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB24

Total Depth to Bottom of Borehole (feet): 28ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB24-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- (●) Split

Notes/Comments/Additional Info:

OMS-28-SB24-1-S Split to GCAL
Lithologic boring to 28 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB24

Total Depth to Bottom of Borehole (feet): 28 ft

Depth of Sample Collection: 3 ft

Sample ID: OMS-28-SB24-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- (●) Split

Notes/Comments/Additional Info:

OMS-28-SB24-3-S Split to GCAL
Lithologic boring to 28 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-10-17

Field Personnel:
Randy Morgan
Dunn Henry
Vasi Kourlos

Borehole ID: SB24

Total Depth to Bottom of Borehole (feet): 28 ft

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB24-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- ( ) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- (●) Split

Notes/Comments/Additional Info:

OMS-28-SB24-5-S split to CCAL
Lithologic boring to 28 ft

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-2017

Field Personnel: Randy Mosyan, Dunn Henry

Borehole ID: SB25

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 1ft

Sample ID: OMS-28-SB25-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- (●) Split

Notes/Comments/Additional Info:

~~OMS-28-SB2~~ RM

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-17

Field Personnel: Randy Morgan, Dustin Henry

Borehole ID: SB25

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 3ft

Sample ID: OMS-28-SB25-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-2017

Field Personnel:
Randy Morgan
Dustin Henry

Borehole ID: SB25

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 5ft

Sample ID: OMS-28-SB25-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-17

Field Personnel: Randy Mosyan, Dustin Henry

Borehole ID: SB 26

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB26-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-17

Field Personnel: Randy Mosyan, Dustin Henry

Borehole ID: SB26

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 3ft

Sample ID: OMS-28-SB26-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-17

Field Personnel: Randy Morgan, Dustin Henry

Borehole ID: SB26

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB26-5

Method of Sample Collection

- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method

- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:

- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory

- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:

- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-2017

Field Personnel: Randy Mosyan, Dustin Henry

Borehole ID: SB27

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB27-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- (●) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

OMS-28-SB27-1-a Duplicate to Columbia Tech

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-17

Field Personnel: Randy Morgan, Dustin Henry

Borehole ID: SB27

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 3 ft

Sample ID: OMS-28-SB27-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- (●) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

OMS-28-SB27-3-MS/MSD to Columbia Technologies

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-12-2017

Field Personnel: Randy Mosyan, Dustin Henry

Borehole ID: SB27

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 5ft

Sample ID: OMS-28-SB27-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-17

Field Personnel: Randy Morgan, Dustin Henry

Borehole ID: SB28

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 1ft

Sample ID: OMS-28-SB28-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-17

Field Personnel: Randy Mosyan, Dustin Henry

Borehole ID: SB28

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 3 ft

Sample ID: OMS-28-SB28-3

Method of Sample Collection

- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method

- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:

- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory

- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:

- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-2017

Field Personnel:
Randy Morgan
Dustin Henry

Borehole ID: SB 28

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB 28-5

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-2017

Field Personnel: Randy Mosyan, Dustin Henry

Borehole ID: SB29

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB29-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-2017

Field Personnel: Randy Mostyn, Dustin Henry

Borehole ID: SB29

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 3 ft

Sample ID: OMS-28-SB29-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-17

Field Personnel: Randy Morgan, Dustin Henry

Borehole ID: SB29

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 3 ft

Sample ID: OMS-28-SB29-3

Method of Sample Collection

- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method

- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:

- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory

- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:

- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-2017

Field Personnel:
Randy Morgan
Dustin Henry

Borehole ID: SB 30

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 1 ft

Sample ID: OMS-28-SB30-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-17

Field Personnel: Randy Mosyan, Dustin Henry

Borehole ID: SB30

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 3ft

Sample ID: OMS-28-SB30-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-2017

Field Personnel: Randy Morgan, Dustin Henry

Borehole ID: SB30

Total Depth to Bottom of Borehole (feet): 5 ft

Depth of Sample Collection: 5 ft

Sample ID: OMS-28-SB30-5

Method of Sample Collection

- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method

- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:

- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory

- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:

- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-2017

Field Personnel: Randy Morgan, Dustin Henry

Borehole ID: SB31

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 1ft

Sample ID: OMS-28-SB31-1

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-2017

Field Personnel: Randy Mosyan, Dustin Henry

Borehole ID: SB31

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 3ft

Sample ID: OMS-28-SB31-3

Method of Sample Collection
- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method
- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:
- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory
- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:
- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

AECOM

Field Data Log for Soil Boring

Project Name: ANGR OMS 28 Phase 2 Data Gap Invest

Project Number: 60439687 Task 2.3

Client: USACE Mobile

Project Location: Mobile AL

Date: 5-16-2017

Field Personnel: Randy Morgan, Dustin Henry

Borehole ID: SB31

Total Depth to Bottom of Borehole (feet): 5ft

Depth of Sample Collection: 5ft

Sample ID: OMS-28-SB31-5

Method of Sample Collection

- (●) Discrete
- ( ) Encore/TerraCore
- ( ) Composite

Construction Method

- (●) DPT
- ( ) Hand Auger
- ( ) Other (Specify):

Analysis Performed:

- (●) VOCs (8260) PCE/TCE
- ( ) SVOCs (8270)
- ( ) Metals (6020)
- ( ) Other (Specify)

Laboratory

- ( ) Fixed Lab:
- (●) Mobile Lab: Columbia Technologies

Quality Control Samples:

- ( ) Duplicate
- ( ) MS/MSD
- ( ) Equipment Blank
- ( ) Split

Notes/Comments/Additional Info:

Appendix A6
Discrete Groundwater Sampling Logs

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 2, 2017
Field Personnel
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW01
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ° F
Total Depth (TWD) Below Top of Casing = 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 1/100 ft
1 Casing Volume (OCV) = LWC x ~~0.163~~ = gal
3 Casing Volumes = gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection
Total Volume of Water Removed gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	VOC's ACE + TCE	2	HCL	

6-10 ~~5~~-19 28-32 **FIELD ANALYSES**

VOLUME PURGED (gallons)							
TIME (Military) Sample time	0850	~~1~~ 0955	1020				
Depth to Groundwater Below Top of Casing (ft)		Insufficient					
Drawdown (ft)		Volume					
pH (S.U.)	5.69	to	5.60				
Salinity (ppt)	0.21	get	0.05				
Sp. Cond. (mS/cm)	0.431	parameters	0.109				
Turbidity (NTUs)	546.6		>1100 Grey				
Dissolved Oxygen (mg/L)	1.94		0.71				
Water Temperature (°C)	25.05		27.88				
ORP (mV)	73.8		-57.5				

Physical appearance at start Color Tan/Tan/Grey
Odor None
Sheen/Free Product none

Physical appearance at sampling Color Tan/Tan/
Odor None
Sheen/Free Product none

COMMENTS/OBSERVATIONS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 3, 2017
Field Personnel R Moreyda
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW02 -
___ Upgradient ___ Downgradient
Weather Conditions clear / sunny
Air Temperature 78 ° F
Total Depth (TWD) Below Top of Casing = 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = gal
3 Casing Volumes = gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE / TCE	2	HCL	
40 ml glass	VC 8260 SIM	3	HCL	Split ALS
40 ml glass	VOCs 8260B	3	HCL	Split GCAL
40 ml glass	PCE / TCE	2	HCL	Dup

8-12 15-19 27-31 FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	0935	1000	1430				
Depth to Groundwater Below Top of Casing (ft)		Insufficient water for Parameters					
Drawdown (ft)							
pH (S.U.)	6.09		6.06				
Salinity (ppt)	0.11		0.05				
Sp. Cond. (mS/cm)	0.243		0.111				
Turbidity (NTUs)	71100 Tan		>1100 Grey				
Dissolved Oxygen (mg/L)	1.49		1.09				
Water Temperature (°C)	23.80		24.17				
ORP (mV)	-28.1		-58.2				

Physical appearance at start Color Tan / Grey
Odor none
Sheen/Free Product none

Physical appearance at sampling Color Tan / Grey
Odor None
Sheen/Free Product none

COMMENTS/OBSERVATIONS OSM-28-GW02-14-S @ 1000 GCAL
OSM-28-GW02-14-S @ 1000 ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 4, 2017
Field Personnel Randy Mazza
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW03
___ Upgradient ___ Downgradient
Weather Conditions overcast
Air Temperature ___ ° F
Total Depth (TWD) Below Top of Casing = ___ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ___ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ___ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ___ gal
3 Casing Volumes = ___ gal
Method of Well Evacuation ___
Method of Sample Collection ___
Total Volume of Water Removed ___ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ___ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE ITCE	2	HCL	
40ml glass	VC 8260 Sim	3	HCL	Split
40ml glass	VOCs 8260B	3	HCL	Split

6-12 12-20 3034

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	0915	0940	1030				
Depth to Groundwater Below Top of Casing (ft)		Insufficient water to Collect Parameters	Failed to Record Readings				
Drawdown (ft)							
pH (S.U.)	6.09						
Salinity (ppt)	0.11						
Sp. Cond. (mS/cm)	0.276						
Turbidity (NTUs)	>1100 TOO	>1100 TOO	>1100 Grey				
Dissolved Oxygen (mg/L)							
Water Temperature (°C)	22.39						
ORP (mV)	110.8						

Physical appearance at start Color ___ Odor none Sheen/Free Product none

Physical appearance at sampling Color ___ Odor none Sheen/Free Product none

COMMENTS/OBSERVATIONS OMS-28-GW03-34-S GCAL @ 1030
OMS-28-GW03-34-S ALS @ 1030

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 3, 2017
Field Personnel R Morgan D. Henry
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW04-
___ Upgradient ___ Downgradient
Weather Conditions clear / sunny
Air Temperature ___ ° F
Total Depth (TWD) Below Top of Casing = ___ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ___ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ___ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ___ gal
3 Casing Volumes = ___ gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed ___ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ___ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE / TCE	2	HCL	

FIELD ANALYSES

	6-10	13-17	27-31					
VOLUME PURGED (gallons)								
TIME (Military)	0250	0825	0900					
Depth to Groundwater Below Top of Casing (ft)		Insufficient water for parameters						
Drawdown (ft)								
pH (S.U.)	5.80		6.04					
Salinity (ppt)	0.06		0.04					
Sp. Cond. (mS/cm)	0.119		0.092					
Turbidity (NTUs)	147.5 Tan	LT Tan	>1100 Grey					
Dissolved Oxygen (mg/L)	4.44		0.74					
Water Temperature (°C)	22.69		24.59					
ORP (mV)	89.2		12.7					

Physical appearance at start Color Tan / LT Tan / Grey
Odor none
Sheen/Free Product none

Physical appearance at sampling Color Tan / LT Tan / Grey
Odor ___
Sheen/Free Product none

COMMENTS/OBSERVATIONS ___

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 3 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW05
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE + TCE	2	HCL	

FIELD ANALYSES

	T-11	15-19	29-33					
VOLUME PURGED (gallons)								
TIME (Military)	1120	1200	1235					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.36	Last effluent	4.19					
Salinity (ppt)	0.13	water to	0.04					
Sp. Cond. (mS/cm)	0.275	collect	0.097					
Turbidity (NTUs)	>1100	parameters	>1100 Grey					
Dissolved Oxygen (mg/L)	5.22		0.49					
Water Temperature (°C)	27.96		27.80					
ORP (mV)	255.6		101.8					

Physical appearance at start Color Tan / Grey
Odor none
Sheen/Free Product none

Physical appearance at sampling Color Tan / Grey
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 17, 2017
Field Personnel Randy Mulyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW06
_____ Upgradient _____ Downgradient
Weather Conditions Mostly Cloudy
Air Temperature _____ ° F
Total Depth (TWD) Below Top of Casing = _____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = _____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = _____ gal
3 Casing Volumes = _____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed _____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) _____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

splits (MS/MSD) ALS 7-11 13-17 Dup 2832

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1600	1615	1645				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.10	5.43	5.92				
Salinity (ppt)	0.03	0.06	0.04				
Sp. Cond. (mS/cm)	0.077	0.120	0.096				
Turbidity (NTUs)	789.7 orange	708.3 Grey	>1100 Grey				
Dissolved Oxygen (mg/L)	5.23	5.96	2.56				
Water Temperature (°C)	24.66	27.32	24.91				
ORP (mV)	191.6	126.8	43.4				

Physical appearance at start Color none
Odor none
Sheen/Free Product none

Physical appearance at sampling Color none
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 19 2017
Field Personnel Randy Mutyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW07
____ Upgradient ____ Downgradient
Weather Conditions Partly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

	7-11	14-18	22-31 Dup					
VOLUME PURGED (gallons)								
TIME (Military)	0945	1000	1020					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.30	4.71	5.57					
Salinity (ppt)	0.17 ~~0.17~~	0.08	0.05					
Sp. Cond. (mS/cm)	0.349	0.776	0.106					
Turbidity (NTUs)	7/100 Tan	796.4 Tan	7/100 Grey					
Dissolved Oxygen (mg/L)	2.91	4.49	0.81					
Water Temperature (°C)	23.21	22.73	24.40					
ORP (mV)	81.3	142.3	7.8					

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 3, 2017
Field Personnel R Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW08-
___ Upgradient ___ Downgradient
Weather Conditions overcast
Air Temperature 84 °F
Total Depth (TWD) Below Top of Casing = 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = gal
3 Casing Volumes = gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE / TCE	2	HCL	
40 ml glass	PCE / TCE	2	HCL	MS/MSD

6-10 13-17 27-31

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1145	1210	1515				
Depth to Groundwater Below Top of Casing (ft)		Insufficient water for parameters					
Drawdown (ft)							
pH (S.U.)	6.29		5.73				
Salinity (ppt)	0.08		0.04				
Sp. Cond. (mS/cm)	0.179		0.096				
Turbidity (NTUs)	>1100 Tan	Lt Tan	>1100 Grey				
Dissolved Oxygen (mg/L)	5.15		1.00				
Water Temperature (°C)	23.61		22.88				
ORP (mV)	35.3		40.5				

Physical appearance at start Color Tan/Lt Tan/Grey
Odor None
Sheen/Free Product None

Physical appearance at sampling Color Tan/Lt Tan/Grey
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS OMS-28-GW08-10-MS/MSD

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 3 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW09-
___ Upgradient ___ Downgradient
Weather Conditions overcast
Air Temperature ___ ° F
Total Depth (TWD) Below Top of Casing = ___ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ___ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ___ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ___ gal
3 Casing Volumes = ___ gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed ___ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ___ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	HCL	

FIELD ANALYSES

	6-10	12-16	27-33				
VOLUME PURGED (gallons)							
TIME (Military)	1250	1315	1605				
Depth to Groundwater Below Top of Casing (ft)		Insufficient water to collect parameters					
Drawdown (ft)							
pH (S.U.)	5.84		5.62				
Salinity (ppt)	0.13		0.04				
Sp. Cond. (mS/cm)	0.267		0.097				
Turbidity (NTUs)	>1100 Tan	Tan	>1100 Gry				
Dissolved Oxygen (mg/L)	3.40		1.78				
Water Temperature (°C)	23.12		22.14				
ORP (mV)	73.8		7.4				

Physical appearance at start Color Tan/Tan
Odor none
Sheen/Free Product none

Physical appearance at sampling Color Tan/Tan
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ___

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 9, 2017
Field Personnel Rebecca Moyer
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW10-
____ Upgradient ____ Downgradient
Weather Conditions clear / sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/B
Method of Sample Collection P/B
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml	PCE/TCE	2	None	

6-10 12-16 2933

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	0845	0905	0930				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	4.44	4.24	5.41				
Salinity (ppt)	0.13	0.07	0.04				
Sp. Cond. (mS/cm)	0.281	0.152	0.094				
Turbidity (NTUs)	>1100 Tan	>1100 orange	>1100 Grey				
Dissolved Oxygen (mg/L)	6.45	1.68	2.27				
Water Temperature (°C)	22.67	20.99	22.57				
ORP (mV)	169.7	183.4	65.6				

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 23, 2017
Field Personnel Randy Monya
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW11
____ Upgradient ____ Downgradient
Weather Conditions mostly cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	none	

7-11 SPNTS 15-19 dup CT 26-30 MS/MSD

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1150	1215	1245					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.40	5.42	5.46					
Salinity (ppt)	0.05	0.07	0.07					
Sp. Cond. (mS/cm)	0.103	0.144	0.085					
Turbidity (NTUs)	189.3 clear	>1100 orange	>1100 Gray					
Dissolved Oxygen (mg/L)	3.08	4.04	5.23					
Water Temperature (°C)	23.48	23.79	25.37					
ORP (mV)	32.8	39.6	78.4					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS OMS-28-GW11-11-S BCAL
OMS-28-GW11-11-S ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 18, 2017
Field Personnel Randy Mutyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW12
____ Upgradient ____ Downgradient
Weather Conditions Partly Cloudy
Air Temperature ____ °F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ~~SPAT + Dup~~ MS/MSD ~~REMOVED~~

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

8-12 14-18 28-32

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	0825	0845	0910				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.96	4.67	5.47				
Salinity (ppt)	0.20	0.16	0.05				
Sp. Cond. (mS/cm)	0.408	0.342	0.101				
Turbidity (NTUs) Tan	72.94	>1100 orange	>1100 Grey				
Dissolved Oxygen (mg/L)	3.81	1.83	2.14				
Water Temperature (°C)	22.52	22.91	24.12				
ORP (mV)	162.8	46.2	22.8				

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 9, 2016
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW13
____ Upgradient ____ Downgradient
Weather Conditions clear/sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml/glass	PCE/TCE	2	None	

FIELD ANALYSES

	8-12	14-18	28-32					
VOLUME PURGED (gallons)								
TIME (Military)	1000	1015	1045					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.27	4.82	5.37					
Salinity (ppt)	0.38	0.13	0.04					
Sp. Cond. (mS/cm)	0.778	0.282	0.093					
Turbidity (NTUs)	>1100 Tan	>1100 Orange	>1100 Grey					
Dissolved Oxygen (mg/L)	4.66	2.10	3.29					
Water Temperature (°C)	22.32	22.52	23.62					
ORP (mV)	164.2	107.3	70.3					

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS OMS-28-GW13-32-S @ QCQL @ 1045
OMS-28-GW13-32-S ALS @ 1045

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 13 2017
Field Personnel Randy Mary
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW14
____ Upgradient ____ Downgradient
Weather Conditions Mostly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PP
Method of Sample Collection PP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

FIELD ANALYSES

	7-11	16-20	26-30					
VOLUME PURGED (gallons)								
TIME (Military)	1038	1050	1115					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.72	5.60	5.70					
Salinity (ppt)	0.10	0.09	0.04					
Sp. Cond. (mS/cm)	0.202	0.190	0.080					
Turbidity (NTUs)	325.4 Tan	579.4 Grey	7100 Grey					
Dissolved Oxygen (mg/L)	5.02	3.52	3.61					
Water Temperature (°C)	22.87	22.19	23.05					
ORP (mV)	127.7	59.5	77.8					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 5, 2017
Field Personnel Randy Moya
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW15
____ Upgradient ____ Downgradient
Weather Conditions Clear Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PLP
Method of Sample Collection PLP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
Hamb glass	PCE/TCE	2	none	

8-12 15-19 26-30

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0930	0940	1005					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.20	5.27	5.20					
Salinity (ppt) 0.07	~~0.157~~	0.10	0.04					
Sp. Cond. (mS/cm)	0.157	0.205	0.089					
Turbidity (NTUs)	>1100 Tan	>1100 Tan	>1100 Grey					
Dissolved Oxygen (mg/L)	0.23	1.69	1.21					
Water Temperature (°C)	19.35	19.66	19.86					
ORP (mV)	33.8	-25.9	13.0					

Physical appearance at start Color /
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 4, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW16-
____ Upgradient ____ Downgradient
Weather Conditions mostly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml Glass	PCE/TCE	2	None	

FIELD ANALYSES

	8-12	15-19	26-30					
VOLUME PURGED (gallons)								
TIME (Military)	1345	1400	1420					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.75	5.26	5.18					
Salinity (ppt)	0.036	0.09	0.04					
Sp. Cond. (mS/cm)	0.736	0.195	0.087					
Turbidity (NTUs)	>1100 Tan	>1100 Tan	>1100 Grey					
Dissolved Oxygen (mg/L)	3.95	1.52	0.28					
Water Temperature (°C)	23.23	22.96	21.86					
ORP (mV)	11.5	-8.4	-28.8					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 4, 2017
Field Personnel Randy Mayer
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW17-~~00~~
____ Upgradient ____ Downgradient
Weather Conditions Mostly Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 mL/Jars	ACETCE	2	None	

8-12 15-19 24-28 24-28

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1505	1530	1550				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	4.37	5.06	4.96				
Salinity (ppt)	0.10	0.09	0.04				
Sp. Cond. (mS/cm)	0.221	0.186	0.078				
Turbidity (NTUs)	>1100 Tan	>1100 Orange/Tan	1100 Grey				
Dissolved Oxygen (mg/L)	2.12	1.52	1.19				
Water Temperature (°C)	20.88	20.86	20.85				
ORP (mV)	146.2	-4.8	64.0				

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 5, 2017
Field Personnel Randy Mong
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW18-
Upgradient / Downgradient
Weather Conditions Mostly Cloudy
Air Temperature ° F
Total Depth (TWD) Below Top of Casing = 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = gal
3 Casing Volumes = gal
Method of Well Evacuation PP
Method of Sample Collection PP
Total Volume of Water Removed gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	None	
40 ml glass	PCE/TCE	2	none	Dup
40 ml glass	VC 8260 Sim	3	HCL	Split
40 ml glass	VOCs	3	HCL	Split

FIELD ANALYSES

	8-12	14-18	26-30					
VOLUME PURGED (gallons)								
TIME (Military)	1035	1045	1120					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.42	5.10	5.19					
Salinity (ppt)	0.18	0.09	0.04					
Sp. Cond. (mS/cm)	0.383	0.197	0.090					
Turbidity (NTUs)	71100 Tan	260.3 Lt Tan	71100 Grey					
Dissolved Oxygen (mg/L)	2.54	1.87	2.55					
Water Temperature (°C)	20.21	19.60	19.05					
ORP (mV)	-3.9	42.7	25.3					

Physical appearance at start — Color
Odor none
Sheen/Free Product none

Physical appearance at sampling — Color
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS
OMS-28-GW18-18-S @ 1045 GCAL
OMS-28-GW18-18-S @ 1045 ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 9 2017
Field Personnel Randy Morey
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW19
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml/glass	ICE/ICE	2	None	+Dup

8-12 15-19 26-30

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1125	1140	1210				
Depth to Groundwater Below Top of Casing (ft)	MS/MSD	Dup					
Drawdown (ft)							
pH (S.U.)	4.98	4.99	5.73				
Salinity (ppt)	0.13	0.13	0.04				
Sp. Cond. (mS/cm)	0.266	0.325	0.083				
Turbidity (NTUs)	>1,100 Tan	386.1 Lt Grey	>1,100 Grey				
Dissolved Oxygen (mg/L)	4.10	2.65	3.39				
Water Temperature (°C)	22.92	23.92	23.89				
ORP (mV)	141.3	106.5	60.5				

Physical appearance at start Color none
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS OMS-28-GW19-19-a 1140

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 4, 2017
Field Personnel Randy Mogg
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW20-
Upgradient Downgradient
Weather Conditions Mostly Cloudy
Air Temperature °F
Total Depth (TWD) Below Top of Casing = 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = gal
3 Casing Volumes = gal
Method of Well Evacuation PP
Method of Sample Collection PP
Total Volume of Water Removed gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	None	
40 ml glass	PCE / TCE	2	none	Dup
40ml glass	VOCs	3	HCL	Split
40 ml glass	VC	3	HCL	Split

FIELD ANALYSES

	8-12	15-19	24-28					
VOLUME PURGED (gallons)								
TIME (Military)	1615	1645	1700					
Depth to Groundwater Below Top of Casing (ft)	Insufficient water for Parameters	Failed to Collect water						
Drawdown (ft)								
pH (S.U.)			4.73					
Salinity (ppt)			0.03					
Sp. Cond. (mS/cm)			0.073					
Turbidity (NTUs)	>1100 Tan	>1100 Grey	>1100 Grey					
Dissolved Oxygen (mg/L)			0.28					
Water Temperature (°C)			22.50					
ORP (mV)			152.3					

Physical appearance at start Color
Odor none
Sheen/Free Product none

Physical appearance at sampling Color
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS
OMS-28-GW20-12-9 GCAL @ 1615
OMS-28-GW20-12-S ALS @ 1615
OMS-28-GW20-19-MS/MSD

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) 5-25-17
Field Personnel Randy Murga
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW21
____ Upgradient ____ Downgradient
Weather Conditions clear/sunny
Air Temperature 58 ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	ACE/TCE	2	None	

FIELD ANALYSES

	7-11	14-18	26-30					
VOLUME PURGED (gallons)								
TIME (Military)	0820	0840	0900					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.94	4.66	5.04					
Salinity (ppt)	0.18	0.08	0.03					
Sp. Cond. (mS/cm)	0.370	0.169	0.070					
Turbidity (NTUs)	71100 Tan	71100 Tan	71100 Grey					
Dissolved Oxygen (mg/L)	4.82	3.60	1.09					
Water Temperature (°C)	18.75	18.95	19.82					
ORP (mV)	203.4	21.1	-12.1					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 9, 2017
Field Personnel Randy Mary
Site Name ARNG OMS 28 Phase 2 GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW22
____ Upgradient ____ Downgradient
Weather Conditions clear/sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE/TCE	2	none	

FIELD ANALYSES

	7-11	16-20	24-28					
VOLUME PURGED (gallons)								
TIME (Military)	1315	1345	1715					
Depth to Groundwater Below Top of Casing (ft)	Insufficient							
Drawdown (ft)								
pH (S.U.)	No Value for Parameter	5.78	5.02					
Salinity (ppt)		0.04	0.04					
Sp. Cond. (mS/cm)		0.080	0.079					
Turbidity (NTUs)	TNTC	7/100 Grey	7/100 Grey					
Dissolved Oxygen (mg/L)		5.23	5.70					
Water Temperature (°C)		28.61	26.53					
ORP (mV)		112.3	163.0					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 9, 2017
Field Personnel Randy Mayer
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS28-GW24
____ Upgradient ____ Downgradient
Weather Conditions clear / sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	TCE/PCE	2	none	

15-19 26-30

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1455	1525						
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.84	5.69						
Salinity (ppt)	0.16	0.04						
Sp. Cond. (mS/cm)	0.342	0.084						
Turbidity (NTUs) 24 hrs	70.61	2100 Grey						
Dissolved Oxygen (mg/L)	3.21	2.70						
Water Temperature (°C)	24.37	25.80						
ORP (mV)	126.3	58.3						

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 12 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW24-[illegible]
____ Upgradient ____ Downgradient
Weather Conditions Clear/Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
Homlgless	ACE TCE	2	none	

8-12

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0808							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.50							
Salinity (ppt)	0.18							
Sp. Cond. (mS/cm)	0.379							
Turbidity (NTUs) Tan	66.93 clear							
Dissolved Oxygen (mg/L)	3.20							
Water Temperature (°C)	22.45							
ORP (mV)	129.3							

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 9, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW25
____ Upgradient ____ Downgradient
Weather Conditions Clear Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed 24-28 gal
15-19 ~~20-30~~

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	None	

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1545	1605						
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.00	5.02						
Salinity (ppt)	0.06	0.06						
Sp. Cond. (mS/cm)	0.144	0.127						
Turbidity (NTUs)	>1100 Orange	>1100 Grey						
Dissolved Oxygen (mg/L)	4.76	5.74						
Water Temperature (°C)	23.23	26.96						
ORP (mV)	142.8	163.2						

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 16 2017
Field Personnel Randy Mulyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW25
____ Upgradient ____ Downgradient
Weather Conditions clear / sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

8-12

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0830							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.12							
Salinity (ppt)	0.06							
Sp. Cond. (mS/cm)	0.135							
Turbidity (NTUs)	589.5 Tan							
Dissolved Oxygen (mg/L)	6.10							
Water Temperature (°C)	22.97							
ORP (mV)	81.4							

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 9, 2017
Field Personnel Randy Mory
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW26-
____ Upgradient ____ Downgradient
Weather Conditions clear / sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	3	none	

27-31

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0805							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.72							
Salinity (ppt)	0.04							
Sp. Cond. (mS/cm)	0.088							
Turbidity (NTUs)	>1100 Grey							
Dissolved Oxygen (mg/L)	0.80							
Water Temperature (°C)	22.46							
ORP (mV)	44.6							

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 10, 2017
Field Personnel Randy Diorio
Site Name ARNG OMS 28 Phase 2 GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW28
____ Upgradient ____ Downgradient
Weather Conditions Clear Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE / TCE	2	None	

FIELD ANALYSES

	8-12	16-20	24-28				
VOLUME PURGED (gallons)							
TIME (Military)	1205	1250	1315				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	4.95	5.49	5.29				
Salinity (ppt)	0.09	0.05	0.03				
Sp. Cond. (mS/cm)	0.191	0.104	0.075				
Turbidity (NTUs)	829.9 Tan	>1100 Grey	>1100 Grey				
Dissolved Oxygen (mg/L)	2.00	5.41	1.32				
Water Temperature (°C)	22.81	23.56	24.32				
ORP (mV)	198.3	58.8	70.7				

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 4, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW30-
___ Upgradient ___ Downgradient
Weather Conditions overcast
Air Temperature ___ °F
Total Depth (TWD) Below Top of Casing = ___ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ___ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ___ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ___ gal
3 Casing Volumes = ___ gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed ___ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ___ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	HCL	

FIELD ANALYSES

	7-11	16-20	29-33				
VOLUME PURGED (gallons)							
TIME (Military)	1110	1145	1245				
Depth to Groundwater Below Top of Casing (ft)		Insufficient water for Parameters					
Drawdown (ft)							
pH (S.U.)	4.33		5.47				
Salinity (ppt)	0.10		0.05				
Sp. Cond. (mS/cm)	0.204		0.106				
Turbidity (NTUs)	>1100 Tan		>Grey/1100				
Dissolved Oxygen (mg/L)	1.32		3.35				
Water Temperature (°C)	23.49		24.10				
ORP (mV)	123.4		47.1				

Physical appearance at start Color ___
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ___
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ___

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 2 2017
Field Personnel Rondy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW31-
___ Upgradient ___ Downgradient
Weather Conditions clear / sunny
Air Temperature ___ ° F
Total Depth (TWD) Below Top of Casing = ___ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ___ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ___ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ___ gal
3 Casing Volumes = ___ gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed ___ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ___ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	HCL	

FIELD ANALYSES

	8-12	15-19	27-31					
VOLUME PURGED (gallons)								
TIME (Military)	1605	1635	1710					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)		Insufficient						
pH (S.U.)	4.21		3.80					
Salinity (ppt)	0.07	Volume	0.05					
Sp. Cond. (mS/cm)	0.157	for	0.104					
Turbidity (NTUs)	>1100 Tan	Lt Tan	>1100 Grey					
Dissolved Oxygen (mg/L)	1.97	parameters	1.38					
Water Temperature (°C)	24.76		25.86					
ORP (mV)	140.1		253.7					

Physical appearance at start Color Tan/Grey Odor None Sheen/Free Product None

Physical appearance at sampling Color Tan/Grey Odor None Sheen/Free Product None

COMMENTS/OBSERVATIONS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 2, 2017
Field Personnel Randy Mboya
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW32-
___ Upgradient ___ Downgradient
Weather Conditions clear / sunny
Air Temperature ___ ° F
Total Depth (TWD) Below Top of Casing = ___ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ___ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ___ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ___ gal
3 Casing Volumes = ___ gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed ___ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ___ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	HCL	

FIELD ANALYSES

	8-12	15-19	~~27-31~~ (1.25)					
VOLUME PURGED (gallons)								
TIME (Military)	1430	1450	1543					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.) 4.09	~~2.91~~	5.23	5.66					
Salinity (ppt)	0.07	0.07	0.04					
Sp. Cond. (mS/cm)	0.146	0.161	0.094					
Turbidity (NTUs)	>1100 Tan	263.6 / Lt Tan	>1100 Grey					
Dissolved Oxygen (mg/L)	2.75	6.01	6.66					
Water Temperature (°C)	27.02	28.84	25.93					
ORP (mV) 239.1	~~324~~	73.2	50.7					

Physical appearance at start Color Tan / Lt Tan / Grey
Odor none
Sheen/Free Product none

Physical appearance at sampling Color Tan / Lt Tan / Grey
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS GCAL - OMS-28-GW32-12-S @ 1420
ALS OMS-28-GW32-12-S @ 1430

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 2, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW-33-
___ Upgradient ___ Downgradient
Weather Conditions clear/sunny
Air Temperature ___ ° F
Total Depth (TWD) Below Top of Casing = ___ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ___ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ___ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ___ gal
3 Casing Volumes = ___ gal
Method of Well Evacuation peristaltic pump
Method of Sample Collection peristaltic pump
Total Volume of Water Removed ___ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ___ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE + TCE	2	HCL	

8-12 15-19 ~~20~~ 29.33

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1300	1320	1355					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.29	-5.31*	4.01					
Salinity (ppt)	0.08	0.06	0.05					
Sp. Cond. (mS/cm)	0.171	0.129	0.110					
Turbidity (NTUs)	>1100 Tan	>1100 orange	>1100 Grey					
Dissolved Oxygen (mg/L)	2.90	1.71	1.42					
Water Temperature (°C)	27.86	24.45	26.73					
ORP (mV)	87.2	711.6*	96.1					

Physical appearance at start Color Tan/orange/Grey
Odor none
Sheen/Free Product none

Physical appearance at sampling Color Tan/orange/Grey
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS * in direct sunlight (too hot)

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 2017
Field Personnel Randy Mutyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW34
____ Upgradient ____ Downgradient
Weather Conditions mostly sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	~~DUP~~

FIELD ANALYSES

VOLUME PURGED (gallons)		15-19	~~28-32~~ 27-31					
TIME (Military)	1010	1100						
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.98	5.83						
Salinity (ppt)	0.12	0.04						
Sp. Cond. (mS/cm)	0.249	0.089						
Turbidity (NTUs)	>1100 Orange	>1100 Grey						
Dissolved Oxygen (mg/L)	5.58	~~2.32~~						
Water Temperature (°C)	25.23	24.17						
ORP (mV)	31.0	63.9						

Physical appearance at start Color none
Odor none
Sheen/Free Product OMS-28 GW34-31-S GCAL
Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS OMS-28-GW34-31-S ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 11, 2017
Field Personnel Rocky Nagra
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW36
____ Upgradient ____ Downgradient
Weather Conditions Mostly Cloudy
Air Temperature ____ °F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	RCE/TCE	2	None	

	8-12	14-18	25-29					FIELD ANALYSES
VOLUME PURGED (gallons)								
TIME (Military)	1145	1210	1235					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.89	5.35	5.27					
Salinity (ppt)	0.04	0.03	0.03					
Sp. Cond. (mS/cm)	0.093	0.058	0.060					
Turbidity (NTUs)	94.53 Tan	>1100 Grey	>1100 Grey					
Dissolved Oxygen (mg/L)	4.64	6.26	2.57					
Water Temperature (°C)	22.74	25.09	23.20					
ORP (mV)	160.3	118.2	56.9					

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 16 2017
Field Personnel Randy Monge
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW37
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE/TCE	2	none	

FIELD ANALYSES

	6-12	15-19	24-28					
VOLUME PURGED (gallons)								
TIME (Military)	1020	1040	1110					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.74	5.04	5.20					
Salinity (ppt)	0.04	0.02	0.03					
Sp. Cond. (mS/cm)	0.092	0.056	0.059					
Turbidity (NTUs)	71100 Orange	6411.6 Grey	71100 Grey					
Dissolved Oxygen (mg/L)	5.61	0.65	4.57					
Water Temperature (°C)	23.02	25.94	24.04					
ORP (mV)	98.5	150.3	91.1					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 11, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW38-
____ Upgradient ____ Downgradient
Weather Conditions clear / sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE/TCE	2	none	Dup

8-12 - Dup 14-18 26-30

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0825	0905	0940					
Depth to Groundwater Below Top of Casing (ft)			1					
Drawdown (ft)								
pH (S.U.)	5.05	5.21	5.06					
Salinity (ppt)	0.11	0.08	0.03					
Sp. Cond. (mS/cm)	0.226	0.177	0.061					
Turbidity (NTUs)	2046 Tan	195.3 Tan	301.4 Gry					
Dissolved Oxygen (mg/L)	6.87	6.36	3.15					
Water Temperature (°C)	24.76	25.14	23.22					
ORP (mV)	230.6	157.3	56.2					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS OMS-28-GW38-30-S 0940 GCAL
OMS-28-GW38-30-S 0940 ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 10, 2017
Field Personnel Randy Murzyn
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW39
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml gloss	PCE/TCE	2	None	

FIELD ANALYSES

	9-13	16-20	24-28					
VOLUME PURGED (gallons)								
TIME (Military)	1540	1610	1630					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.64	5.04	4.28					
Salinity (ppt)	0.06	0.03	0.03					
Sp. Cond. (mS/cm)	0.124	0.069	0.075					
Turbidity (NTUs)	508.3 Tan	2100 Grey	2100 Grey					
Dissolved Oxygen (mg/L)	3.07	5.41	1.78					
Water Temperature (°C)	24.65	24.37	24.73					
ORP (mV)	207.4	121.5	95.6					

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 11, 2017
Field Personnel Randy Monya
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW40
____ Upgradient ____ Downgradient
Weather Conditions Mostly cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE/TCE	2	None	

FIELD ANALYSES

	9-13	16-20	24-28					
VOLUME PURGED (gallons)								
TIME (Military)	1340	1400	1420					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.59	4.74	4.89					
Salinity (ppt)	0.06	0.04	0.03					
Sp. Cond. (mS/cm)	0.120	0.098	0.075					
Turbidity (NTUs)	71100 orange	71100 Grey	71100 Grey					
Dissolved Oxygen (mg/L)	5.61	5.43	4.43					
Water Temperature (°C)	23.80	24.70	24.70					
ORP (mV)	208.2	189.1	78.1					

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 16 2017
Field Personnel Randy Mary
Site Name ARNG OMS 28 Phase 2 GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW41
____ Upgradient ____ Downgradient
Weather Conditions Mostly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Bailer
Method of Sample Collection Bailer
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE / TCE	3	None	MS/MSD
40 ml glass	PCE / TCE	2	None	Dup

8-12 MS/MSD 16-20 SPRT 24-28 Dup

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1505	1530	1635				
Depth to Groundwater Below Top of Casing (ft)		Insufficient Volume for parameters					
Drawdown (ft)							
pH (S.U.)	4.87		5.28				
Salinity (ppt)	0.05		0.03				
Sp. Cond. (mS/cm)	0.110		0.074				
Turbidity (NTUs)	44.30 clear	71100 Grey	71100 Grey				
Dissolved Oxygen (mg/L)	7.65		3.06				
Water Temperature (°C)	26.75		25.24				
ORP (mV)	176.9		81.7				

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS OMS-28-GW41-20-S GCAL
OMS-28-GW41-20-S ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 10, 2017
Field Personnel Randy Munger
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW42
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE / TCE	2	None	

8-12 16-20 24-28

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1355	1415	1445				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.21	5.37	5.94				
Salinity (ppt)	0.12	0.08	0.08				
Sp. Cond. (mS/cm)	0.253	0.165	0.169				
Turbidity (NTUs)	613.5 Tan	>1100 Grey	>1100 Grey				
Dissolved Oxygen (mg/L)	1.51	2.91	5.96				
Water Temperature (°C)	24.29	27.26	28.65				
ORP (mV)	107.0	74.9	23.8				

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 12, 2011
Field Personnel Randy Morya
Site Name ARNG OMS 28 Phase 2 GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS28-GW43
____ Upgradient ____ Downgradient
Weather Conditions overcast
Air Temperature ____ °F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE TCE	2	none	

FIELD ANALYSES

	8-12	16-20	24-28				
VOLUME PURGED (gallons)							
TIME (Military)	0850	0905	0925				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.54	5.32	7.96				
Salinity (ppt)	0.06	0.06	0.08				
Sp. Cond. (mS/cm)	0.138	0.128	0.180				
Turbidity (NTUs)	323.3 Tan	>1100 Orange	63.4 Grey				
Dissolved Oxygen (mg/L)	3.39	4.30	2.60				
Water Temperature (°C)	23.59	23.24	23.31				
ORP (mV)	139.5	153.9	179.6				

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 16, 2017
Field Personnel Randy McKyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW44
_____ Upgradient _____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature _____ ° F
Total Depth (TWD) Below Top of Casing = _____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = _____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = _____ gal
3 Casing Volumes = _____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed _____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) _____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

24-28

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0905							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.11							
Salinity (ppt)	0.08							
Sp. Cond. (mS/cm)	0.180							
Turbidity (NTUs)	236 / Grey							
Dissolved Oxygen (mg/L)	4.29							
Water Temperature (°C)	25.36							
ORP (mV)	70.3							

Physical appearance at start Color _____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color _____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 12, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW45
____ Upgradient ____ Downgradient
Weather Conditions Mostly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

14-18 28-32

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0950	1015						
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	4.63	5.47						
Salinity (ppt)	0.05	0.07						
Sp. Cond. (mS/cm)	0.115	0.145						
Turbidity (NTUs)	449.4 Tan	71100 Gray						
Dissolved Oxygen (mg/L)	1.75	3.85						
Water Temperature (°C)	22.68	24.21						
ORP (mV)	163.8	78.2						

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 12, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW46
____ Upgradient ____ Downgradient
Weather Conditions overcast
Air Temperature ____ °F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE TCE	2	none	

12-16 28.33 DUP

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1045	1105						
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)	a							
pH (S.U.)	4.92	5.15						
Salinity (ppt)	0.07	0.08						
Sp. Cond. (mS/cm)	0.150	0.161						
Turbidity (NTUs)	2/100 orange	7/100 Grey						
Dissolved Oxygen (mg/L)	1.88	2.81						
Water Temperature (°C)	21.41	23.75						
ORP (mV)	141.8	54.1						

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS [illegible]

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 17 2017
Field Personnel Randy Mutyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW47
____ Upgradient ____ Downgradient
Weather Conditions Clear/Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

	15-19	28-32					
VOLUME PURGED (gallons)							
TIME (Military)	1440	1505					
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.38	5.98					
Salinity (ppt)	0.04	0.04					
Sp. Cond. (mS/cm)	0.083	0.098					
Turbidity (NTUs)	618.0 Grey	>1100 Grey					
Dissolved Oxygen (mg/L)	4.76	4.13					
Water Temperature (°C)	24.68	25.52					
ORP (mV)	124.2	116.0					

Physical appearance at start Color ____ Odor None Sheen/Free Product None

Physical appearance at sampling Color ____ Odor None Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 15, 2017
Field Personnel Randy Mutyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW49
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	Dup + MS/MSD

30
18'

Split 8-12 · MS/MSD 14-18 · Dup 26-30

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1445	1515	1600				
Depth to Groundwater Below Top of Casing (ft)		Insufficient Volume for Parameters	Insufficient Volume for Parameters				
Drawdown (ft)							
pH (S.U.)	4.79						
Salinity (ppt)	0.04						
Sp. Cond. (mS/cm)	0.043						
Turbidity (NTUs)	7100 Ton	7581 Grey	7110 Grey				
Dissolved Oxygen (mg/L)	6.21						
Water Temperature (°C)	25.61						
ORP (mV)	221.6						

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS OMS-28-GW49-12-S GCAL
OMS-28-GW49-12-S ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 15, 2017
Field Personnel Randy Mulyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW50
____ Upgradient ____ Downgradient
Weather Conditions Clear / sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

~~8-12~~ 9-13 14-18 26-30

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1255	1320	1400				
Depth to Groundwater Below Top of Casing (ft)			Insufficient Volume for Parameters				
Drawdown (ft)							
pH (S.U.)	5.13	4.79					
Salinity (ppt)	0.04	0.04					
Sp. Cond. (mS/cm)	0.097	0.083					
Turbidity (NTUs)	275.8 Tan	>1100 Grey	>1100 Grey				
Dissolved Oxygen (mg/L)	5.45	6.94					
Water Temperature (°C)	25.33	24.21					
ORP (mV)	171.2	221.7					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 3, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW51-

____ Upgradient ____ Downgradient

Weather Conditions Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed 26.30 gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1600							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.68							
Salinity (ppt)	0.03							
Sp. Cond. (mS/cm)	0.074							
Turbidity (NTUs)	>1100 Grey							
Dissolved Oxygen (mg/L)	4.50							
Water Temperature (°C)	23.89							
ORP (mV)	67.4							

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 15, 2017
Field Personnel Randy McLyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW52
____ Upgradient ____ Downgradient
Weather Conditions Clear/ sunny
Air Temperature ____ °F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

15-19

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1135							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.73							
Salinity (ppt)	0.04							
Sp. Cond. (mS/cm)	0.086							
Turbidity (NTUs)	453.5 Gray							
Dissolved Oxygen (mg/L)	5.72							
Water Temperature (°C)	28.94							
ORP (mV)	176.6							

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 23, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW52-
____ Upgradient ____ Downgradient
Weather Conditions Clear Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PIP
Method of Sample Collection PIP
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE TCE	2	None	

28-31

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0800							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	6.04							
Salinity (ppt)	0.05							
Sp. Cond. (mS/cm)	0.109							
Turbidity (NTUs)	71100 Grey							
Dissolved Oxygen (mg/L)	2.11							
Water Temperature (°C)	24.03							
ORP (mV)	21.7							

Physical appearance at start Color ____ Odor None Sheen/Free Product None

Physical appearance at sampling Color ____ Odor None Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 17, 2017
Field Personnel Randy Marya
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW53
_____ Upgradient _____ Downgradient
Weather Conditions Overcast
Air Temperature _____ ° F
Total Depth (TWD) Below Top of Casing = _____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = _____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = _____ gal
3 Casing Volumes = _____ gal
Method of Well Evacuation PP
Method of Sample Collection PP
Total Volume of Water Removed _____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) _____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	None	

8-12 15-19 27-31

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	0843	0905	0935				
Depth to Groundwater Below Top of Casing (ft)		Insufficient Volume					
Drawdown (ft)							
pH (S.U.)	4.83	NS Reagents	5.90				
Salinity (ppt)	0.07		0.04				
Sp. Cond. (mS/cm)	0.150		0.093				
Turbidity (NTUs)	869.7	389.1	>1100 Grey				
Dissolved Oxygen (mg/L)	5.73		0.74				
Water Temperature (°C)	24.31		27.17				
ORP (mV)	182.4		63.9				

Physical appearance at start Color _____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color _____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 13, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW54
____ Upgradient ____ Downgradient
Weather Conditions Partly Cloudy
Air Temperature ____ °F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	None	

8-12 1519 28-32

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1320	1333	1405				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.78	5.84	5.96				
Salinity (ppt)	0.08	0.07	0.07				
Sp. Cond. (mS/cm)	0.169	0.144	0.083				
Turbidity (NTUs)	>1100 Tan	>1100 orange	>1100 Grey				
Dissolved Oxygen (mg/L)	3.59	2.72	4.78				
Water Temperature (°C)	23.84	23.46	25.28				
ORP (mV)	52.5	48.4	39.0				

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 23, 2017
Field Personnel Randy Morgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW55
____ Upgradient ____ Downgradient
Weather Conditions Partly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation PP
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40 ml glass	PCE/TCE	2	none	

8-12 15-19 28-32 FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1438	1455	1515				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.38	5.61	5.84				
Salinity (ppt)	0.04	0.06	0.04				
Sp. Cond. (mS/cm)	0.090	0.134	0.084				
Turbidity (NTUs)	>1100 tan	>1100 orange	>1100 Grey				
Dissolved Oxygen (mg/L)	3.23	4.33	5.68				
Water Temperature (°C)	24.29	25.45	25.50				
ORP (mV)	134.1	71.8	46.9				

Physical appearance at start Color ____
Odor none
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 15 2017
Field Personnel Randy Mutyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW56
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature _____ ° F
Total Depth (TWD) Below Top of Casing = _____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = _____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = _____ gal
3 Casing Volumes = _____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed _____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) _____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

	1810	2831						
VOLUME PURGED (gallons)								
TIME (Military)	1015	1045						
Depth to Groundwater Below Top of Casing (ft)		Insufficient Volume for Parameter						
Drawdown (ft)								
pH (S.U.)	5.64							
Salinity (ppt)	0.03							
Sp. Cond. (mS/cm)	0.068							
Turbidity (NTUs)	286.4 Grey	7100 Grey						
Dissolved Oxygen (mg/L)	5.15							
Water Temperature (°C)	27.63							
ORP (mV)	93.0							

Physical appearance at start Color _____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color _____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 17, 2017
Field Personnel Randy Mulyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW57
____ Upgradient ____ Downgradient
Weather Conditions Partly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

8-12

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1410							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.76							
Salinity (ppt)	0.09							
Sp. Cond. (mS/cm)	0.185							
Turbidity (NTUs) Ton -	(of 93 clear							
Dissolved Oxygen (mg/L)	4.86							
Water Temperature (°C)	23.30							
ORP (mV)	108.5							

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 12 2017
Field Personnel
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW57
____ Upgradient ____ Downgradient
Weather Conditions overcast
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation P/P
Method of Sample Collection P/P
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE/TCE	2	none	

12-16 29.33

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1145	1230					
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.13	5.26					
Salinity (ppt)	0.06	0.06					
Sp. Cond. (mS/cm)	0.127	0.136					
Turbidity (NTUs)	>1100 Orange	>1100 Grey					
Dissolved Oxygen (mg/L)	2.57	2.75					
Water Temperature (°C)	23.26	22.99					
ORP (mV)	99.2	107.8					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS OMS-28-GW57-16-S
OMS-28-GW57-16-S-A > ECAL

OMS-28-GW57-16-S
OMS-28-GW57-16-S-A > ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 15 2017
Field Personnel Randy Mulyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW58
____ Upgradient ____ Downgradient
Weather Conditions Partly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	Dup

FIELD ANALYSES

	Dup 8-12	15-19	Split 27-31					
VOLUME PURGED (gallons)								
TIME (Military)	0800	0823	0850					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.27	5.63	5.56					
Salinity (ppt)	0.07	0.06	0.04					
Sp. Cond. (mS/cm)	0.144	0.130	0.091					
Turbidity (NTUs)	5284 / Tan	333.0 Tan	7/100 Grey					
Dissolved Oxygen (mg/L)	4.85	5.73	2.18					
Water Temperature (°C)	25.09	25.77	24.82					
ORP (mV)	89.4	66.5	83.2					

Physical appearance at start Color ____
Odor none
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS OMS-28-GW58-31-S GCHAL
OMS-28-GW58-31-S ALS

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 16 2017
Field Personnel Randy McLean
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW59
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

	610	14-18	26-30					
VOLUME PURGED (gallons)								
TIME (Military)	1135	1200	1245					
Depth to Groundwater Below Top of Casing (ft)		Insufficient water for parameters	Insufficient water for Parameters					
Drawdown (ft)								
pH (S.U.)	8.43							
Salinity (ppt)	0.11							
Sp. Cond. (mS/cm)	0.234							
Turbidity (NTUs)	809.9 Grey	289.6 TAN	71100 Grey					
Dissolved Oxygen (mg/L)	5.90							
Water Temperature (°C)	26.42							
ORP (mV)	17.0							

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 16 2017
Field Personnel Randy McKeon
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW60
____ Upgradient ____ Downgradient
Weather Conditions Clear/Sunny
Air Temperature ____ °F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

12-16 29-33

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0940	1015						
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.96	5.81						
Salinity (ppt)	0.07	0.08						
Sp. Cond. (mS/cm)	0.143	0.182						
Turbidity (NTUs)	375.9 orange	705.8 Grey						
Dissolved Oxygen (mg/L)	4.81	4.48						
Water Temperature (°C)	25.53	25.94						
ORP (mV)	28.2	31.0						

Physical appearance at start Color ____ Odor ____
Sheen/Free Product ____
Physical appearance at sampling Color ____ Odor ____
Sheen/Free Product ____

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 17, 2017
Field Personnel Randy McKyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW61
_____ Upgradient _____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature _____ ° F
Total Depth (TWD) Below Top of Casing = _____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = _____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = _____ gal
3 Casing Volumes = _____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed _____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) _____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

	8-12	15-19	27-31					
VOLUME PURGED (gallons)								
TIME (Military)	0845	0910	0935					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.17	5.68	5.90					
Salinity (ppt)	0.05	0.10	0.07					
Sp. Cond. (mS/cm)	0.115	0.220	0.087					
Turbidity (NTUs)	>1100 Tan	478.2 orange	71100 Grey					
Dissolved Oxygen (mg/L)	6.37	3.55	3.76					
Water Temperature (°C)	25.53	23.68	25.56					
ORP (mV)	180.6	61.2	70.3					

Physical appearance at start Color _____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color _____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 16 2017
Field Personnel Randy Mulyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW02
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

dup 8-12 split 15-19 26-30

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1400	1430	1605					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)	(5.08)	Insufficient Water for Parameters	5.62					
pH (S.U.)	5.08		5.62					
Salinity (ppt)	0.06		0.06					
Sp. Cond. (mS/cm)	0.139		0.136					
Turbidity (NTUs)	71100 Tan	29.3 Clear	>1100 Grey					
Dissolved Oxygen (mg/L)	2.66		3.66					
Water Temperature (°C)	29.28		26.84					
ORP (mV)	144.6		56.3					

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 17 2017
Field Personnel Randy McKeon
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW63
_____ Upgradient _____ Downgradient
Weather Conditions clear / sunny
Air Temperature _____ ° F
Total Depth (TWD) Below Top of Casing = _____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = _____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = _____ gal
3 Casing Volumes = _____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed _____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) _____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

8-12 15-19 26-30 FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	0735	0750	0810					
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.71	5.49	5.94					
Salinity (ppt)	0.07	0.06	0.04					
Sp. Cond. (mS/cm)	0.160	0.137	0.087					
Turbidity (NTUs)	198.1 Tan	552.6 orange	711.00 Grey					
Dissolved Oxygen (mg/L)	4.44	4.72	2.22					
Water Temperature (°C)	22.49	23.41	24.61					
ORP (mV)	165.6	124.3	65.1					

Physical appearance at start Color _____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color _____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 2017
Field Personnel Randy McLean
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW64
____ Upgradient ____ Downgradient
Weather Conditions Partly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

12-16 29.33

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1315	1340						
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.12	5.64						
Salinity (ppt)	0.05	0.09						
Sp. Cond. (mS/cm)	0.111	0.203						
Turbidity (NTUs)	430.8 TNTC	7/100 Grey						
Dissolved Oxygen (mg/L)	6.30	0.05						
Water Temperature (°C)	26.68	26.89						
ORP (mV)	140.3	4.9						

Physical appearance at start Color ____ Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____ Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 2017
Field Personnel Randy McKyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW65
____ Upgradient ____ Downgradient
Weather Conditions Clear / Sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

(Dup 9-12) (MS/MSD 15-19) 2529

FIELD ANALYSES

VOLUME PURGED (gallons)							
TIME (Military)	1155	1215	1240				
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)	4.45	4.80	4.97				
pH (S.U.)	0.17	0.08	0.03				
Salinity (ppt)	0.359	0.176	0.066				
Sp. Cond. (mS/cm)	71100 Tan	71100 Tan	71100 Grey				
Turbidity (NTUs)	4.31	6.05	3.25				
Dissolved Oxygen (mg/L)	25.36	25.13	23.87				
Water Temperature (°C)	208.5	182.0	112.9				
ORP (mV)							

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 18, 2017
Field Personnel Randy Mulyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW46
____ Upgradient ____ Downgradient
Weather Conditions partly cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ~~22-26~~ ~~29-33~~ 18-19 20-30 gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

VOLUME PURGED (gallons)	22-26	45-49						
TIME (Military)	0938	1100						
Depth to Groundwater Below Top of Casing (ft)	Insufficient volume for Parameters	Insufficient water for Parameters						
Drawdown (ft)								
pH (S.U.)								
Salinity (ppt)								
Sp. Cond. (mS/cm)								
Turbidity (NTUs)	71100 Grey	71100 Grey						
Dissolved Oxygen (mg/L)								
Water Temperature (°C)								
ORP (mV)								

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 18, 2017
Field Personnel Randy Mutyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW67
Upgradient Downgradient
Weather Conditions partly Cloudy
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed 22-26 ~~48~~ 48-52 gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	none	

FIELD ANALYSES

VOLUME PURGED (gallons)		~~48~~ 39.43						
TIME (Military)	1250	1400						
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	6.57	6.19						
Salinity (ppt)	0.05	0.05						
Sp. Cond. (mS/cm)	0.107	0.112						
Turbidity (NTUs)	7/100 Grey	75.23 Grey						
Dissolved Oxygen (mg/L)	4.21	4.70						
Water Temperature (°C)	29.19	28.21						
ORP (mV)	5.8	-33.0						

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 18 2017
Field Personnel Randy McLyan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW68
____ Upgradient ____ Downgradient
Weather Conditions ____
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

~~VOLUME PURGED (gallons)~~	15~~19~~ 22-26	20~~30~~ 49-53						
TIME (Military)	1750	1620						
Depth to Groundwater Below Top of Casing (ft)		Insufficient Volume for analysis						
Drawdown (ft)								
pH (S.U.)	6.11							
Salinity (ppt)	0.07							
Sp. Cond. (mS/cm)	0.084							
Turbidity (NTUs)	>1100 Grey	>1100 Grey						
Dissolved Oxygen (mg/L)	0.27							
Water Temperature (°C)	27.95							
ORP (mV)	-4.2							

Physical appearance at start Color ____
Odor none
Sheen/Free Product none

Physical appearance at sampling Color ____
Odor none
Sheen/Free Product none

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 18, 2017 / May 19, 2017
Field Personnel Randy McLean
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW69
____ Upgradient ____ Downgradient
Weather Conditions Mostly Cloudy
Air Temperature _____ ° F
Total Depth (TWD) Below Top of Casing = _____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = _____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = _____ gal
3 Casing Volumes = _____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed _____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) _____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

	Date 5-18-17	5-19-17						
VOLUME PURGED (gallons)	~~1.5~~ 22-26	~~2.0~~ 45-49						
TIME (Military)	1710	0730						
Depth to Groundwater Below Top of Casing (ft)		Insufficient volume for parameters						
Drawdown (ft)								
pH (S.U.)	5.76							
Salinity (ppt)	0.05							
Sp. Cond. (mS/cm)	0.116							
Turbidity (NTUs)	>1100 Grey	>1100 Grey						
Dissolved Oxygen (mg/L)	1.84							
Water Temperature (°C)	25.67							
ORP (mV)	57.2							

Physical appearance at start Color _____
Odor none
Sheen/Free Product None

Physical appearance at sampling Color _____
Odor none
Sheen/Free Product None

COMMENTS/OBSERVATIONS _____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 19 2017
Field Personnel Randy Mulgan
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW01
____ Upgradient ____ Downgradient
Weather Conditions Clear / sunny
Air Temperature ____ ° F
Total Depth (TWD) Below Top of Casing = ____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = ____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = ____ gal
3 Casing Volumes = ____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed ____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) ____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

FIELD ANALYSES

VOLUME PURGED (gallons)	15-19	26-30					
TIME (Military)	1145	1240					
Depth to Groundwater Below Top of Casing (ft)							
Drawdown (ft)							
pH (S.U.)	5.12	5.86					
Salinity (ppt)	0.06	0.06					
Sp. Cond. (mS/cm)	0.129	0.122					
Turbidity (NTUs)	1100-701	>1100 Grey					
Dissolved Oxygen (mg/L)	3.15	2.73					
Water Temperature (°C)	25.00	25.11					
ORP (mV)	12.1	-66.9					

Physical appearance at start Color ____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color ____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS ____

GROUNDWATER SAMPLING LOG

Date (mo/day/yr) May 19 2017
Field Personnel Randy McKeon
Site Name ARNG OMS 28 Phase 2 - GW Grab Sampling
AECOM Job # 60439687
Well ID # OMS-28-GW72
_____ Upgradient _____ Downgradient
Weather Conditions Clear/Sunny
Air Temperature _____ ° F
Total Depth (TWD) Below Top of Casing = _____ 1/100 ft
Depth to Groundwater (DGW) Below Top of Casing = _____ 1/100 ft
Length of Water Column (LWC) = TWD - DGW = _____ 1/100 ft
1 Casing Volume (OCV) = LWC x 0.163 = _____ gal
3 Casing Volumes = _____ gal
Method of Well Evacuation Peristaltic Pump
Method of Sample Collection Peristaltic Pump
Total Volume of Water Removed _____ gal

Casing Diameter N/A inches
Casing Material N/A
Measuring Point Elevation N/A 1/100 ft
Height of Riser (above land surface) N/A 1/100 ft
Land Surface Elevation N/A 1/100 ft
Screened Interval (below land surface) _____ 1/100 ft

Container	Analysis (Method)	# Bottles	Preservative	Dup - MS/MSD
40ml glass	PCE / TCE	2	None	

29.33

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)	1110							
Depth to Groundwater Below Top of Casing (ft)								
Drawdown (ft)								
pH (S.U.)	5.69							
Salinity (ppt)	0.06							
Sp. Cond. (mS/cm)	0.135							
Turbidity (NTUs)	>1100 Grey							
Dissolved Oxygen (mg/L)	1.57							
Water Temperature (°C)	27.20							
ORP (mV)	-8.4							

Physical appearance at start Color _____
Odor None
Sheen/Free Product None

Physical appearance at sampling Color _____
Odor None
Sheen/Free Product None

COMMENTS/OBSERVATIONS _____

Appendix B
Laboratory Reports

(Provided on CD)

B1 GCAL Report 216012310 dated January 28, 2016

B2 GCAL Report 216012515 dated February 4, 2016

B3 GCAL Report 217050803 dated May 22, 2017

B4 Columbia Technologies, LLC Laboratory Report dated August 14, 2017

B5 GCAL Report 217051316 dated May 28, 2017

B6 GCAL Report 21705110 dated May 22, 2017

B7 GCAL Report 217052202 dated May 26, 2017

B8 GCAL Report 217051044 dated June 1, 2017

B9 GCAL Report 217053112 dated June 2, 2017

B10 GCAL Report 217053111 dated June 8, 2017

B11 GCAL Report 217053113 dated June 8, 2017

B12 GCAL Report 218013015 dated February 6, 2018

B13 GCAL Report 218013129 dated February 6, 2018

B14 GCAL Report 218013130 dated February 9, 2018

B15 GCAL Report 218013133 dated February 6, 2018

B16 GCAL Report 218020203 dated February 10, 2018

B17 GCAL Report 218020242 dated February 19, 2018

B18 GCAL Report 218020614 dated February 19, 2018

B19 GCAL Report 218020615 dated February 19, 2018

B20 GCAL Report 218020702 dated February 20, 2018

B21 GCAL Report 218020725 dated February 19, 2018

Appendix B1
GCAL Report 216012310 dated January 28, 2016

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 01/28/2016

GCAL Report 216012310

Project Greenville OMS 60439678

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____

Authorized Signature
GCAL Report 216012310

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 216012310

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

No anomalies were found for the analyzed sample(s).

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21601231001	MW-8	Water	01/22/2016 08:03	01/23/2016 10:25
21601231002	MW-8-c	Water	01/22/2016 08:03	01/23/2016 10:25

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21601231001	MW-8	W	EPA 8260B DOD Water
21601231002	MW-8-c	W	EPA 8260B DOD Water

Manual Integrations

No Manual Integrations Performed By GCAL.

Summary of Compounds Detected

MW-8				
	Collect Date	01/22/2016 08:03	**GCAL ID**	21601231001
	Receive Date	01/23/2016 10:25	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	7.80	0.200	0.500	1.00	ug/L

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310	Client Sample ID:	MW-8
Collect Date:	01/22/16 Time: 0803	GCAL Sample ID:	21601231001
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2160125/b4232
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: DTB	Analytical Batch:	577621
Analysis Date:	01/25/16 Time: 1251	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310			Client Sample ID:	MW-8
Collect Date:	01/22/16	Time:	0803	GCAL Sample ID:	21601231001
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160125/b4232
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	DTB	Analytical Batch:	577621
Analysis Date:	01/25/16	Time:	1251	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	7.80		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160125.s.b/b4232.d
Lab Smp Id: 21601231001
Inj Date : 25-JAN-2016 12:51
Operator : DTB Inst ID: msv13.i
Smp Info : 21601231001*
Misc Info : MSV~35290~*1*DTB
Comment :
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Meth Date : 25-Jan-2016 18:51 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.874	5.870	(0.885)	233201	57.0426	57.0	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.376	(0.961)	127533	53.5838	53.6	
* 53 FLUOROBENZENE	96	6.638	6.638	(1.000)	797337	50.0000		
56 Trichloroethene	130	6.792	6.788	(1.023)	34607	7.79522	7.80	
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	764496	53.2394	53.2	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	315549	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	283893	53.6848	53.7	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	327843	50.0000		
124 Naphthalene	128	12.149	12.145	(1.149)	20557	3.66420	3.66	

Data File: /var/chem/msv13.i/2160125.s.b/b4232.d

Date : 25-JAN-2016 12:51

Client ID:

Instrument: msv13.i

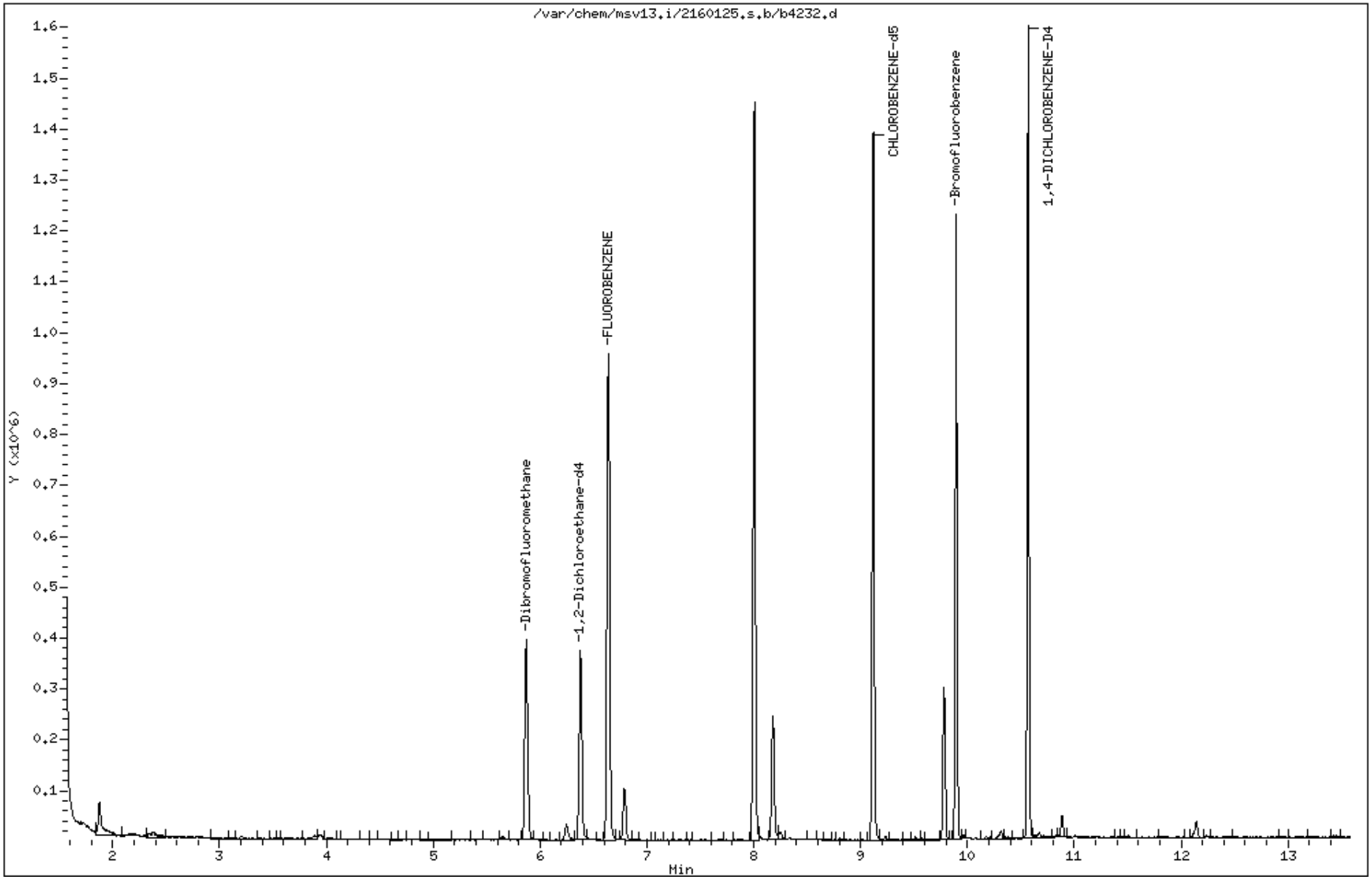
Sample Info: 21601231001*

Purge Volume: 5.0

Operator: DTB

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2160125.s.b/b4232.d

Date : 25-JAN-2016 12:51

Client ID:

Instrument: msv13.i

Sample Info: 21601231001*

Purge Volume: 5.0

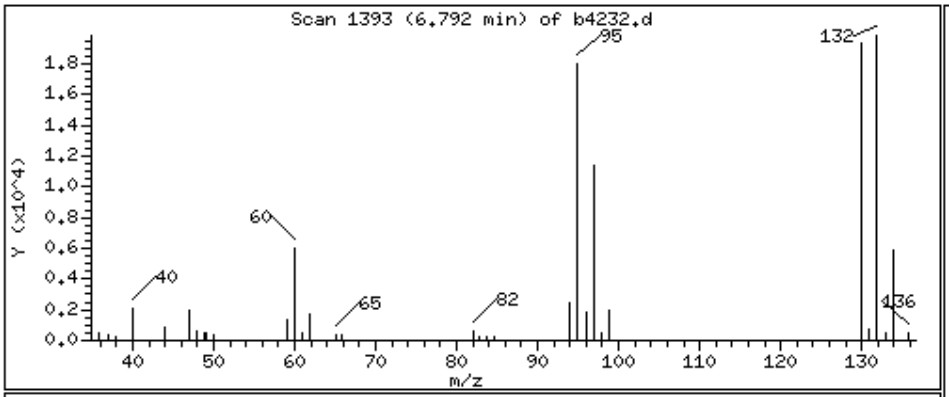
Operator: DTB

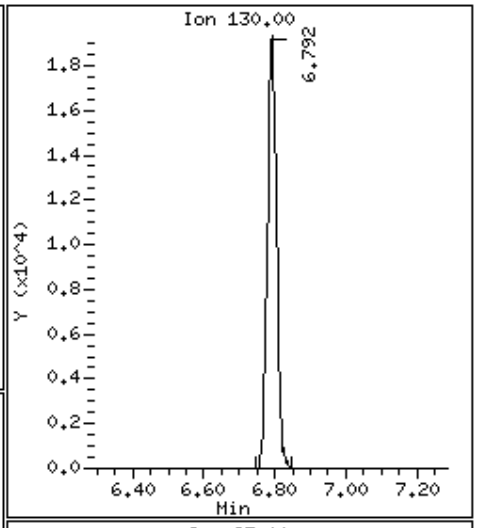
Column phase: RTX-VMS-30M

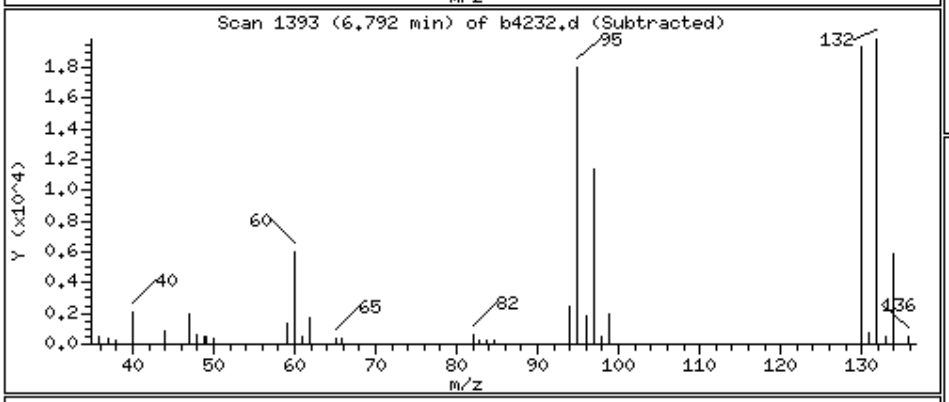
Column diameter: 0.25

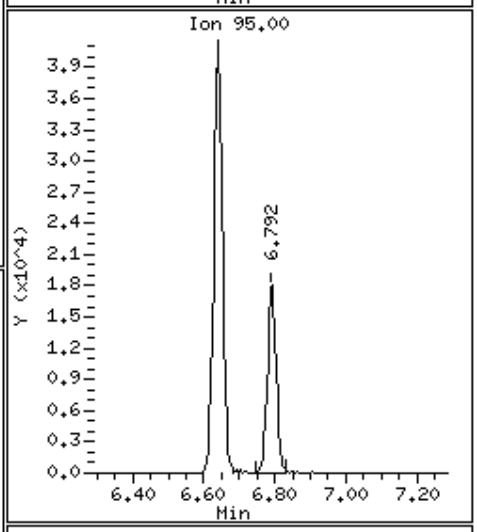
56 Trichloroethene

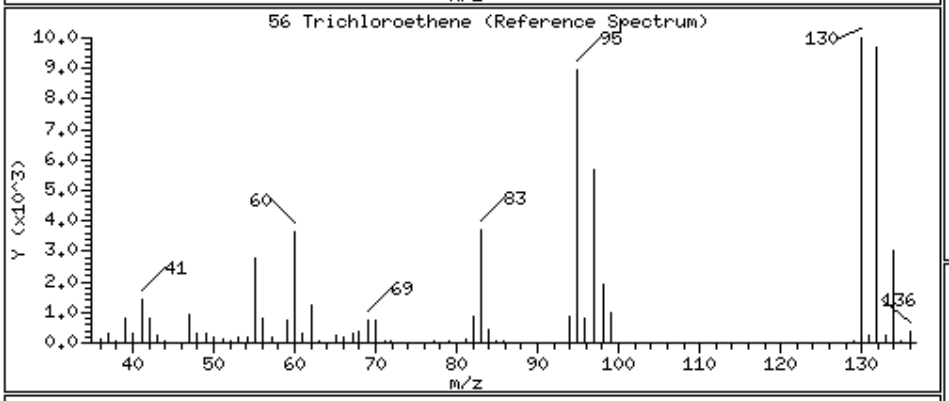
Concentration: 7.80 ug/L

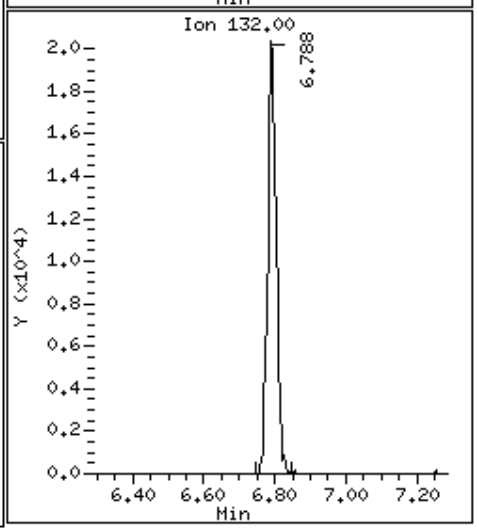


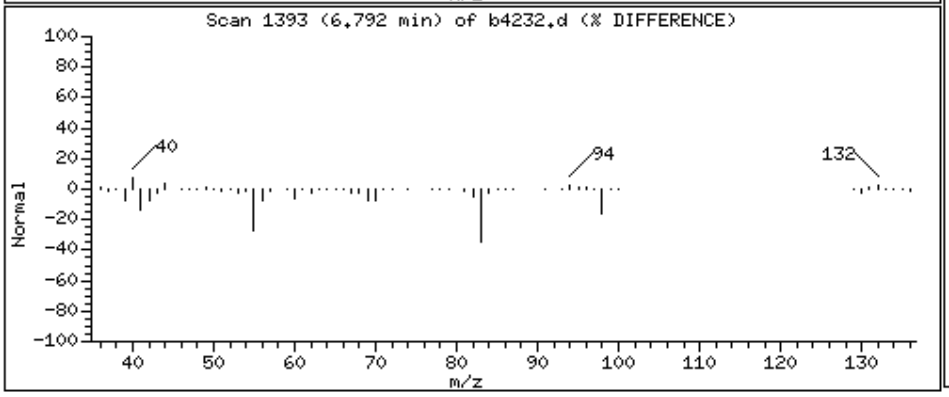












Data File: /var/chem/msv13.i/2160125.s.b/b4232.d

Date : 25-JAN-2016 12:51

Client ID:

Instrument: msv13.i

Sample Info: 21601231001*

Purge Volume: 5.0

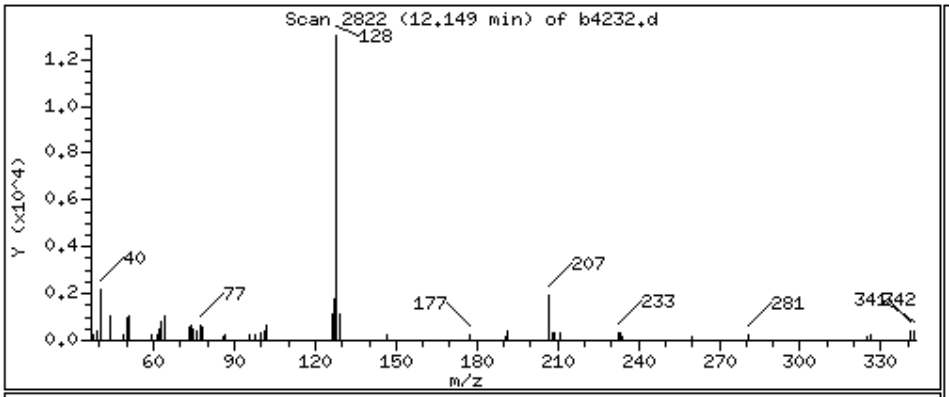
Operator: DTB

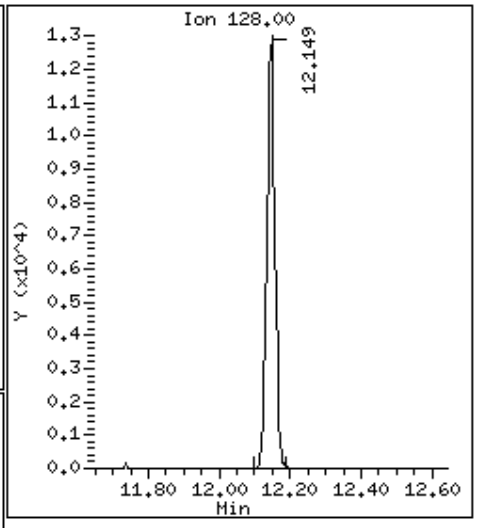
Column phase: RTX-VMS-30M

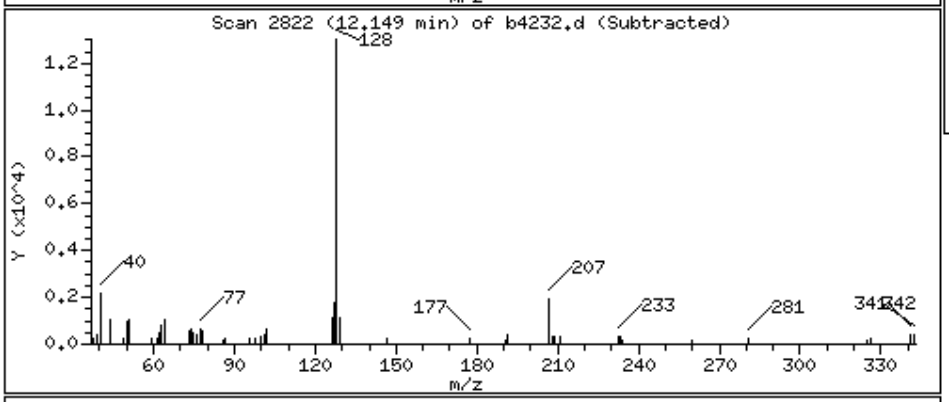
Column diameter: 0.25

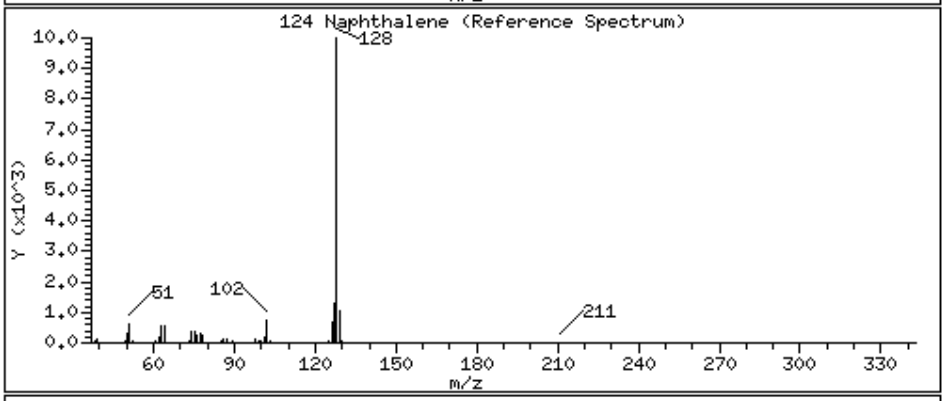
124 Naphthalene

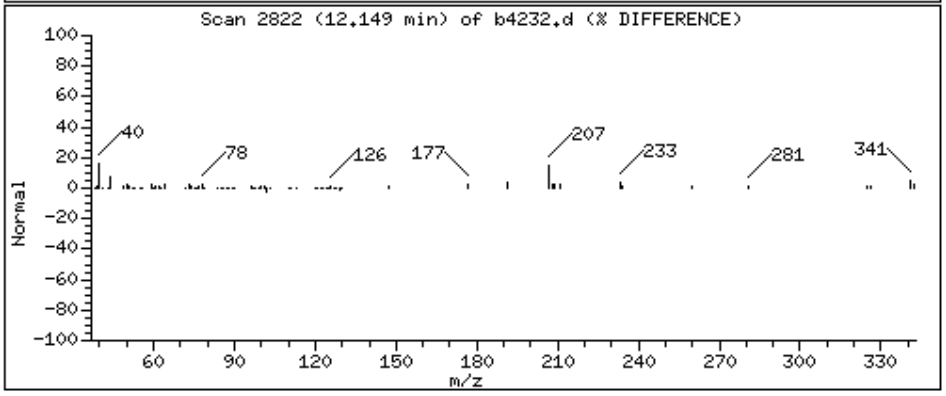
Concentration: 3.66 ug/L





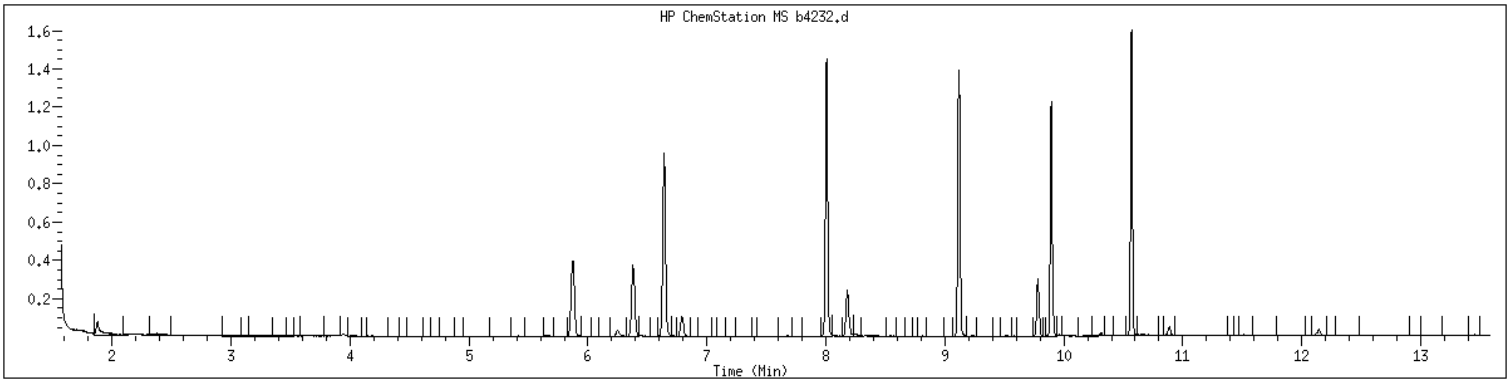






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601231001 SampleType : SAMPLE
Injection Date: 01/25/2016 12:51 Instrument : msv13.i
Operator : DTB
Sample Info : 21601231001*
Misc Info : MSV~35290~*1*DTB
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310	Client Sample ID:	MW-8-c
Collect Date:	01/22/16 Time: 0803	GCAL Sample ID:	21601231002
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2160125/b4233
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: DTB	Analytical Batch:	577621
Analysis Date:	01/25/16 Time: 1312	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310			Client Sample ID:	MW-8-c
Collect Date:	01/22/16	Time:	0803	GCAL Sample ID:	21601231002
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160125/b4233
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	DTB	Analytical Batch:	577621
Analysis Date:	01/25/16	Time:	1312	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160125.s.b/b4233.d
Lab Smp Id: 21601231002
Inj Date : 25-JAN-2016 13:12
Operator : DTB Inst ID: msv13.i
Smp Info : 21601231002*
Misc Info : MSV~35290~*1*DTB
Comment :
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Meth Date : 25-Jan-2016 18:51 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.870	5.870	(0.884)	219407	53.4576	53.5	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.376	(0.961)	128380	53.7277	53.7	
* 53 FLUOROBENZENE	96	6.638	6.638	(1.000)	800483	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	765241	52.7397	52.7	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	318849	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	263879	49.3837	49.4	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	315792	50.0000		

Data File: /var/chem/msv13.i/2160125.s.b/b4233.d

Date : 25-JAN-2016 13:12

Client ID:

Instrument: msv13.i

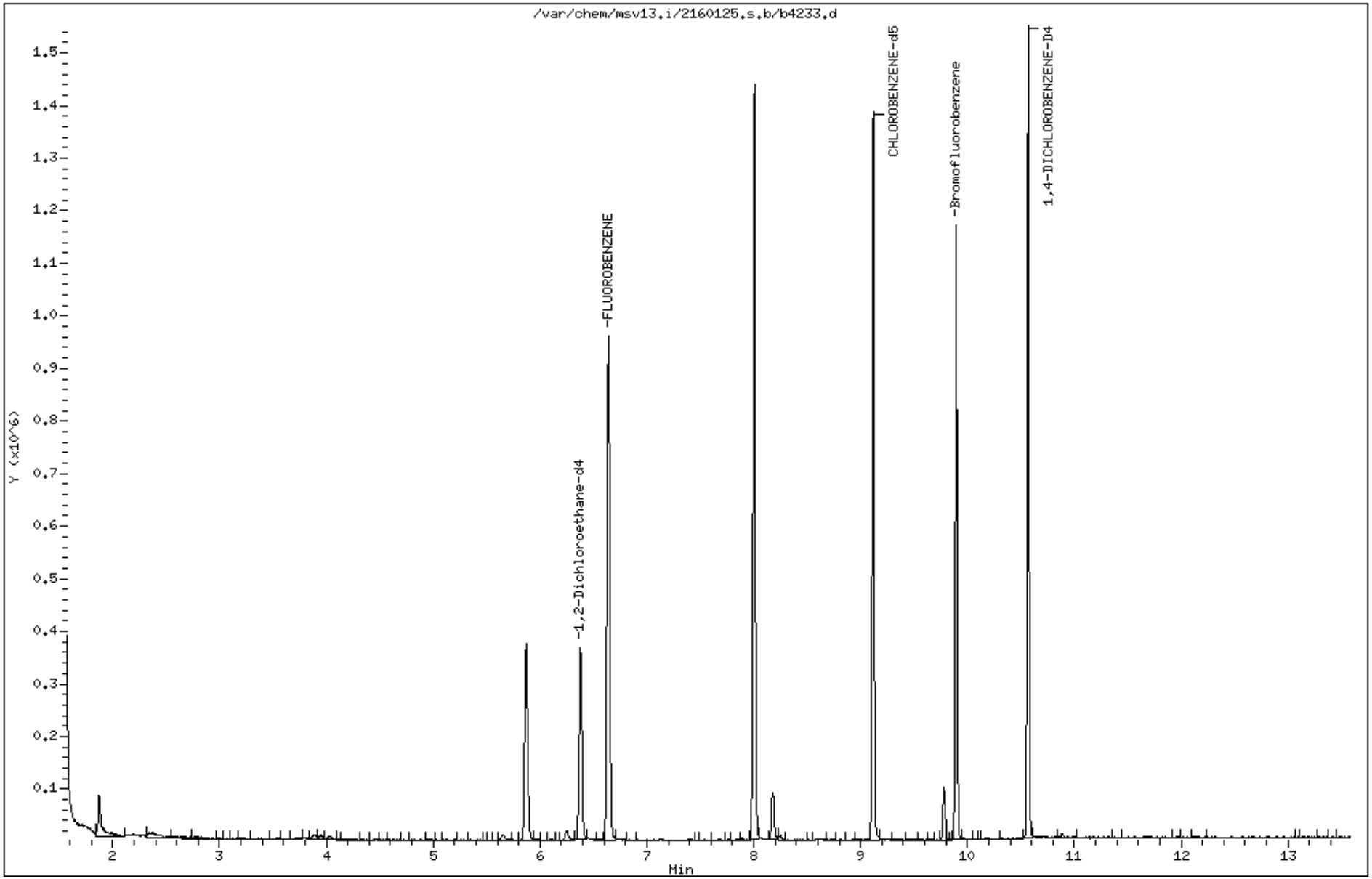
Sample Info: 21601231002*

Purge Volume: 5.0

Operator: DTB

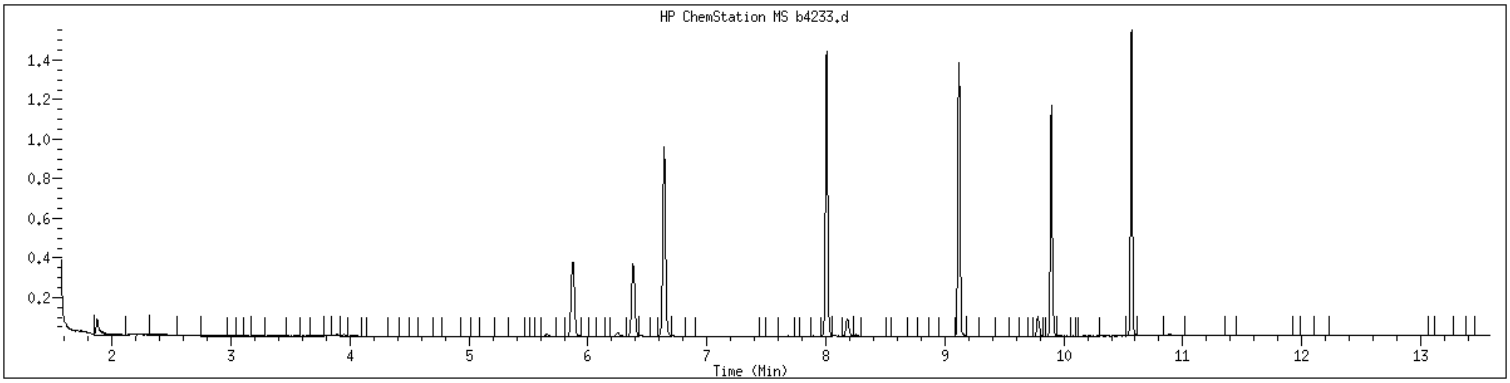
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601231002 SampleType : SAMPLE
Injection Date: 01/25/2016 13:12 Instrument : msv13.i
Operator : DTB
Sample Info : 21601231002*
Misc Info : MSV~35290~*1*DTB
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310			Client Sample ID:	MB1532493
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532493
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160125/b4229
Injection Vol.:	1.0	(µL)		GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	DTB	Analytical Batch:	577621
Analysis Date:	01/25/16	Time:	1039	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310			Client Sample ID:	MB1532493
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532493
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160125/b4229
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	DTB	Analytical Batch:	577621
Analysis Date:	01/25/16	Time:	1039	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160125.s.b/b4229.d
Lab Smp Id: 1532493 Client Smp ID: MB
Inj Date : 25-JAN-2016 10:39
Operator : DTB Inst ID: msv13.i
Smp Info : 1532493*MB
Misc Info : MSV~35290~*1*DTB
Comment :
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Meth Date : 25-Jan-2016 18:51 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.870	5.870	(0.884)	218713	53.4693	53.5	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.376	(0.961)	128084	53.7857	53.8	
* 53 FLUOROBENZENE	96	6.638	6.638	(1.000)	797776	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	757582	52.9230	52.9	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	314565	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	255321	48.4328	48.4	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	311889	50.0000		

Data File: /var/chem/msv13.i/2160125.s.b/b4229.d

Page 1

Date : 25-JAN-2016 10:39

Client ID: MB

Instrument: msv13.i

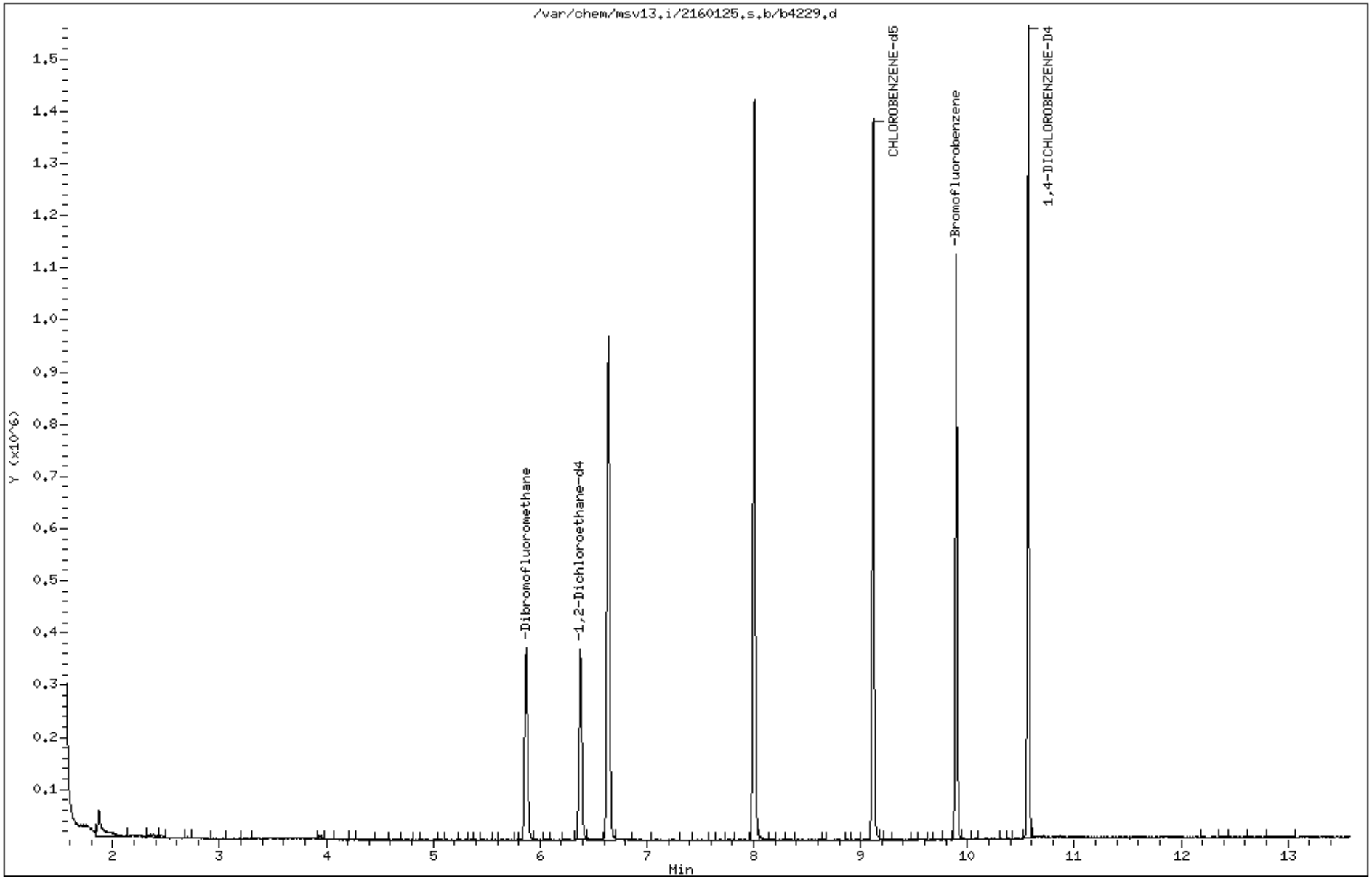
Sample Info: 1532493*MB

Purge Volume: 5.0

Operator: DTB

Column phase: RTX-VMS-30M

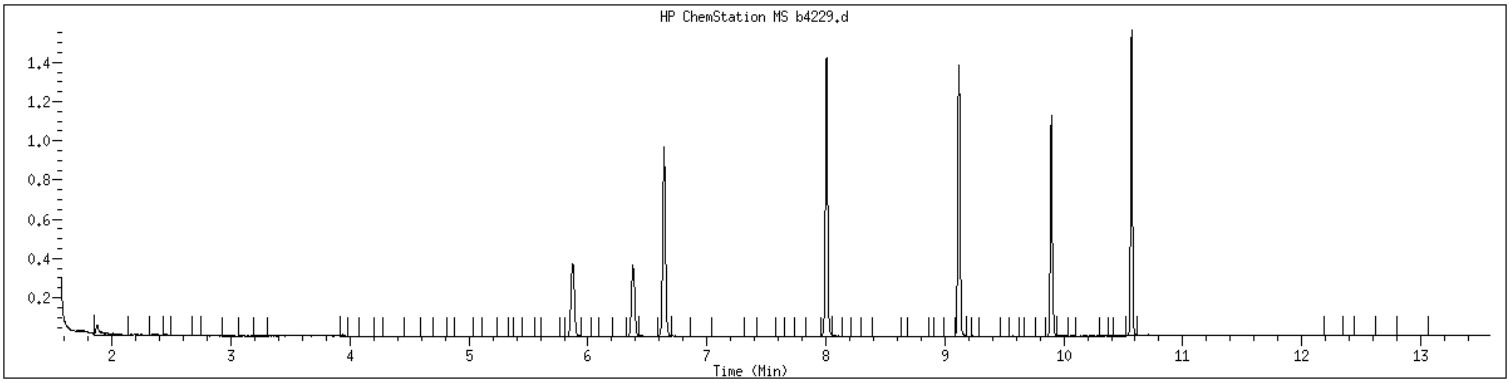
Column diameter: 0.25



Report Date: 01/25/2016 18:52

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1532493 SampleType : SAMPLE
Injection Date: 01/25/2016 10:39 Instrument : msv13.i
Operator : DTB
Sample Info : 1532493*MB
Misc Info : MSV~35290~*1*DTB
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310	Client Sample ID:	LCS1532494
Collect Date:	NA Time: NA	GCAL Sample ID:	1532494
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2160125/b4225L
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: DTB	Analytical Batch:	577621
Analysis Date:	01/25/16 Time: 0912	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	51.7		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	48.6		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	49.0		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	53.7		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	53.0		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	53.4		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	51.6		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	44.3		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	48.7		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	51.6		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	50.3		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	51.3		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	51.6		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	50.1		0.200	0.500	1.00
78-93-3	2-Butanone	46.7		0.200	0.500	5.00
591-78-6	2-Hexanone	41.5		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	46.3		0.200	0.500	5.00
67-64-1	Acetone	48.0		0.500	1.00	5.00
71-43-2	Benzene	52.9		0.200	0.500	1.00
74-97-5	Bromochloromethane	51.7		0.200	0.500	1.00
75-27-4	Bromodichloromethane	52.4		0.200	0.500	1.00
75-25-2	Bromoform	48.1		0.250	0.500	1.00
74-83-9	Bromomethane	43.1		0.500	1.00	1.00
75-15-0	Carbon disulfide	55.5		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	53.5		0.250	0.500	1.00
108-90-7	Chlorobenzene	50.8		0.200	0.500	1.00
75-00-3	Chloroethane	57.7		0.250	0.500	1.00
67-66-3	Chloroform	51.9		0.200	0.500	1.00
74-87-3	Chloromethane	42.1		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	49.1		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	50.1		0.200	0.500	1.00
110-82-7	Cyclohexane	47.7		0.500	1.00	2.00
124-48-1	Dibromochloromethane	49.3		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	46.8		0.200	0.500	1.00
100-41-4	Ethylbenzene	54.3		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	49.5		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310			Client Sample ID:	LCS1532494
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532494
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160125/b4225L
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	DTB	Analytical Batch:	577621
Analysis Date:	01/25/16	Time:	0912	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	45.8		1.00	2.00	5.00
108-87-2	Methylcyclohexane	55.6		0.200	0.500	1.00
75-09-2	Methylene chloride	55.6		0.200	0.500	5.00
100-42-5	Styrene	49.9		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	54.1		0.200	0.500	1.00
127-18-4	Tetrachloroethene	52.2		0.200	0.500	1.00
108-88-3	Toluene	50.5		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	51.7		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	51.8		0.200	0.500	1.00
79-01-6	Trichloroethene	55.2		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	55.6		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	56.4		0.200	0.500	1.00
75-01-4	Vinyl chloride	42.9		0.200	0.500	1.00
1330-20-7	Xylene (total)	152		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160125.s.b/b4225L.d
Lab Smp Id: 1532494 Client Smp ID: LCS
Inj Date : 25-JAN-2016 09:12
Operator : DTB Inst ID: msv13.i
Smp Info : 1532494*LCS
Misc Info : MSV~35290~*1*DTB
Comment :
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Meth Date : 25-Jan-2016 18:51 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.713	1.713	(0.258)	192371	46.7643	46.8	
2 Chloromethane ++	50	1.911	1.911	(0.288)	227997	42.1060	42.1	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	205650	42.8538	42.9	
6 Bromomethane	94	2.335	2.335	(0.352)	118256	43.1236	43.1	
7 Chloroethane	64	2.474	2.474	(0.373)	143790	57.7342	57.7	
8 Trichlorofluoromethane	101	2.627	2.627	(0.396)	291335	55.6414	55.6	
10 1,1-Dichloroethene +	96	3.212	3.212	(0.484)	167342	53.0180	53.0	
11 Carbon Disulfide	76	3.238	3.238	(0.488)	594662	55.5045	55.5	
12 1,1,2Trichlotrifluoroethane	101	3.265	3.265	(0.492)	187301	56.4143	56.4	
13 Methyl Iodide	142	3.381	3.381	(0.509)	36936	46.1729	46.2	
14 Acrolein	56	3.647	3.647	(0.549)	93012	254.099	254	
16 Methylene Chloride	49	3.943	3.943	(0.594)	306075	55.5850	55.6	
17 Acetone	43	4.022	4.022	(0.606)	155946	48.0405	48.0	
18 trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	281733	51.6638	51.7	

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/L)	SIMILARITY
	19	Methyl Acetate	43	4.172	4.172	(0.628)	211067	45.7732	45.8	8569
	20	Hexane	57	4.232	4.232	(0.637)	291468	47.5304	47.5	9195(M1)
	21	MTBE	73	4.281	4.281	(0.645)	615192	54.0727	54.1	9200
	26	1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	415112	53.6688	53.7	
	27	Acrylonitrile	53	4.910	4.910	(0.740)	494430	288.523	289	
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	161861	46.3929	46.4	
	29	cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	264100	49.1377	49.1	
M	75	Total 1,2-Dichloroethene	61				545833	100.801	101	
	30	2,2-Dichloropropane	77	5.521	5.521	(0.832)	302247	51.8636	51.9	
	32	Cyclohexane	56	5.608	5.608	(0.845)	359358	47.6635	47.7	8567
	34	Bromochloromethane	128	5.611	5.611	(0.845)	129305	51.6773	51.7	
	35	Chloroform +	83	5.690	5.690	(0.857)	385984	51.9163	51.9	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	299886	53.5247	53.5	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	234204	50.9356	50.9	6986
	41	1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	325208	51.7141	51.7	
	44	2-Butanone	43	6.001	6.001	(0.904)	149136	46.7411	46.7	
	43	1,1-Dichloropropene	75	6.009	6.009	(0.905)	257992	53.0305	53.0	
	46	Benzene	78	6.245	6.245	(0.941)	894310	52.8985	52.9	
$	50	1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	136786	51.0988	51.1	
	51	1,2-Dichloroethane	62	6.440	6.440	(0.970)	291936	50.2653	50.3	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	896776	50.0000		
	55	Methyl Cyclohexane	83	6.777	6.777	(1.021)	380860	55.5924	55.6	9547
	56	Trichloroethene	130	6.788	6.788	(1.023)	275858	55.2469	55.2	
	57	Dibromomethane	93	7.174	7.174	(1.081)	135884	49.2315	49.2	
	59	1,2-Dichloropropane +	63	7.268	7.268	(1.095)	223438	51.3496	51.3	
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	308280	52.4429	52.4	
	65	1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	323025	50.9919	51.0	9745
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	343855	50.0609	50.1	
$	68	Toluene-d8	98	8.003	8.003	(0.878)	925056	49.1503	49.2	
	69	Toluene +	91	8.044	8.044	(0.882)	1055877	50.5328	50.5	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	244885	52.2396	52.2	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.914)	246046	46.3013	46.3	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	346522	51.7913	51.8	
M	82	1-3 Dichloropropene total	100				690377	101.852	102	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	232714	49.0069	49.0	
	78	Dibromochloromethane	129	8.603	8.603	(0.944)	269832	49.3495	49.3	
	79	1,3-Dichloropropane	76	8.670	8.670	(0.951)	370610	49.0711	49.1	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	221366	48.6950	48.7	
	83	2-Hexanone	43	8.918	8.918	(0.978)	198345	41.4986	41.5	
	86	1-Chlorohexane	91	9.101	9.101	(0.998)	301604	50.2443	50.2	9493
*	84	CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	413587	50.0000		
	85	Chlorobenzene ++	112	9.127	9.127	(1.001)	788030	50.8146	50.8	
	87	Ethylbenzene +	106	9.139	9.139	(1.002)	396140	54.2950	54.3	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	261526	49.8156	49.8	
	89	p,m-Xylene	106	9.232	9.232	(1.013)	989390	103.004	103	
	90	o-Xylene	106	9.517	9.517	(1.044)	429904	48.8369	48.8	
M	121	TOTAL XYLENE	106				1419294	151.841	152	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	766274	49.8923	49.9	
	92 Bromoform ++	173	9.574	9.574	(1.050)	227819	48.0523	48.1	
	93 Isopropylbenzene	105	9.709	9.709	(1.065)	1171383	49.5152	49.5	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	336322	48.5235	48.5	
	96 Bromobenzene	77	9.963	9.963	(0.943)	543703	46.3006	46.3	
	97 n-Propylbenzene	91	9.963	9.963	(0.943)	1403785	52.3240	52.3	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	338849	48.5636	48.6	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	968516	51.6168	51.6	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	1036085	51.8224	51.8	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	400318	46.9356	46.9	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	75246	45.0474	45.0	
	104 4-Chlorotoluene	91	10.170	10.170	(0.962)	875883	51.4066	51.4	
	105 tert-butylbenzene	91	10.275	10.275	(0.972)	523984	55.1249	55.1	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	991879	51.8705	51.9	
	108 sec-Butylbenzene	105	10.380	10.380	(0.982)	1311839	50.4828	50.5	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	1104845	50.0943	50.1	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	689050	51.6294	51.6	
*	114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	458158	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	707136	50.1288	50.1	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	862708	48.3367	48.3	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	651526	51.5655	51.6	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	78166	44.3118	44.3	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	224348	55.9400	55.9	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	416726	51.5706	51.6	
	124 Naphthalene	128	12.145	12.145	(1.149)	839337	45.4357	45.4	
	125 1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	437550	53.4134	53.4	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.

Data File: /var/chem/msv13.i/2160125.s.b/b4225L.d

Date : 25-JAN-2016 09:12

Client ID: LCS

Instrument: msv13.i

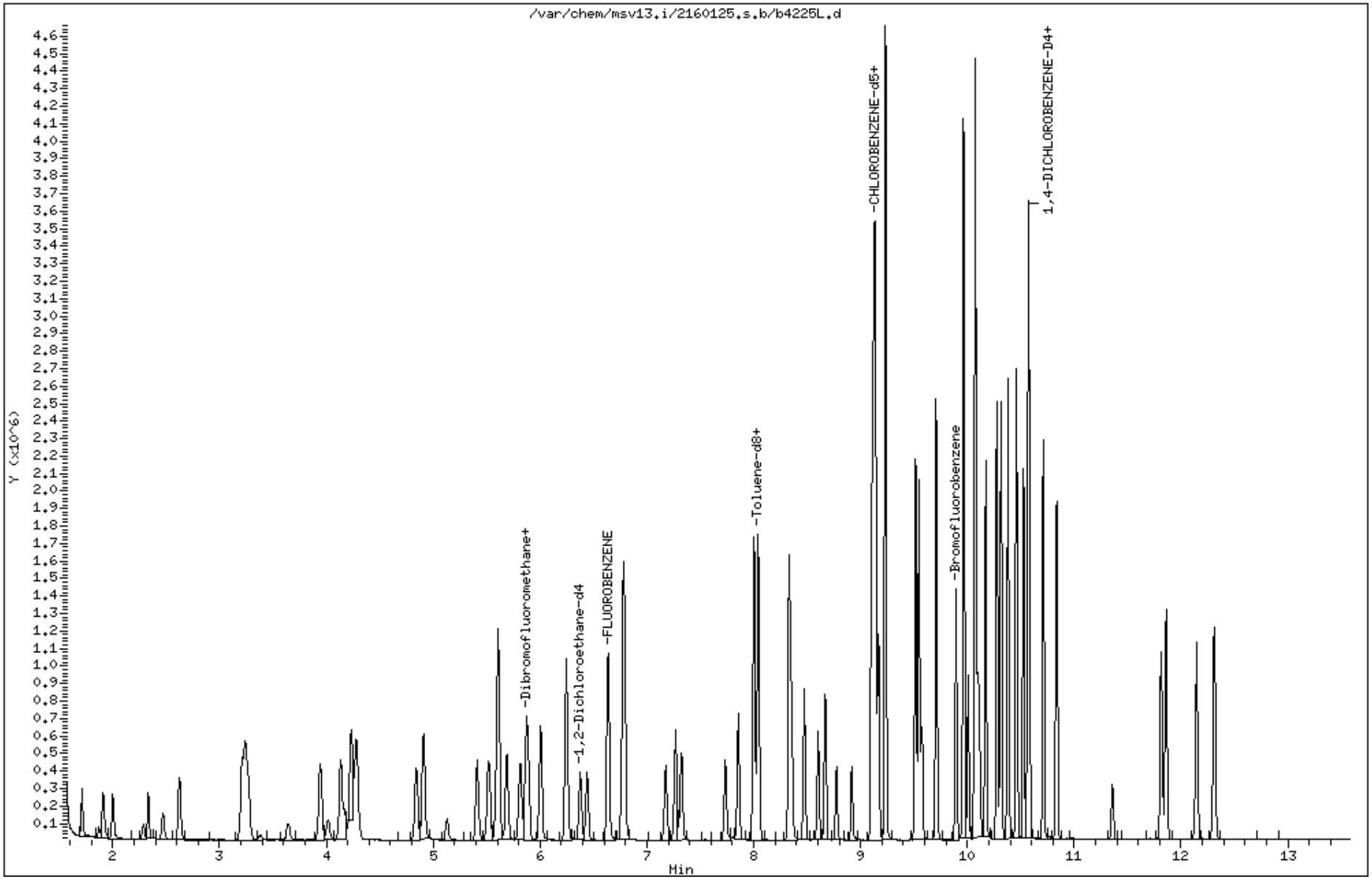
Sample Info: 1532494*LCS

Purge Volume: 5.0

Operator: DTB

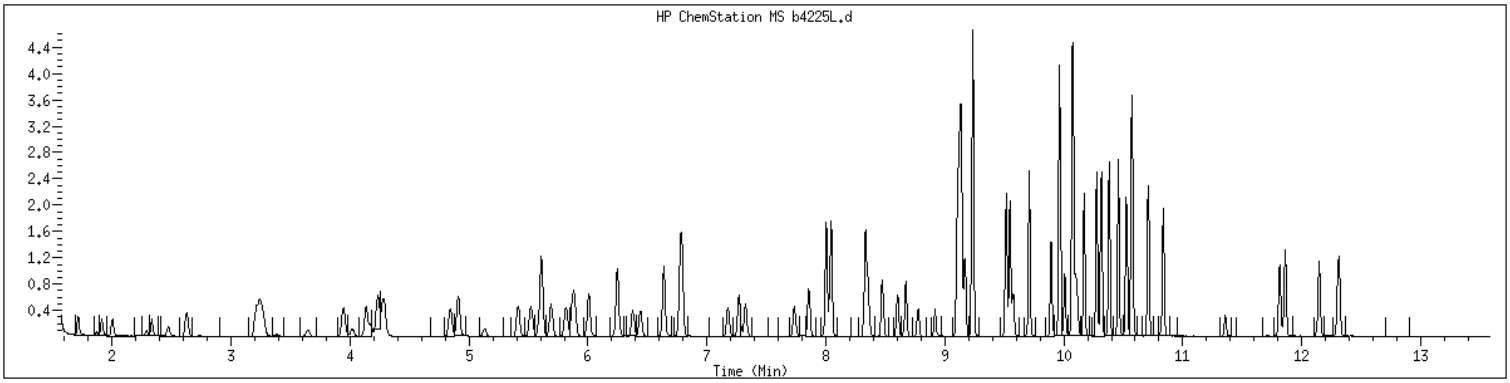
Column phase: RTX-VMS-30M

Column diameter: 0.25



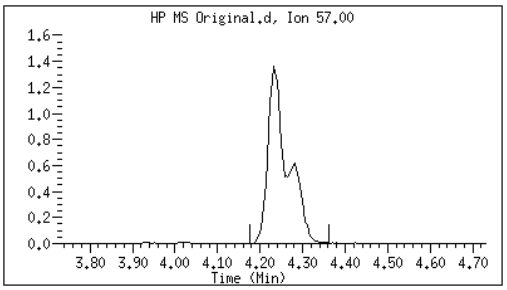
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1532494 SampleType : LCS
Injection Date: 01/25/2016 09:12 Instrument : msv13.i
Operator : DTB
Sample Info : 1532494*LCS
Misc Info : MSV~35290~*1*DTB
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



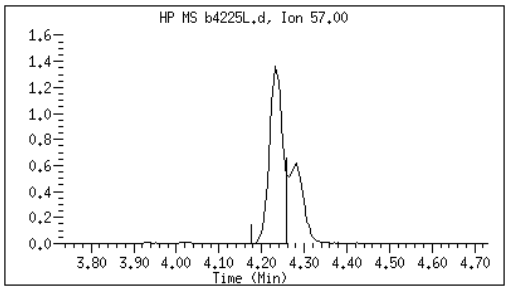
Original Final

20 Hexane CAS#: 110-54-3 Reason: M1



Electronic Signature Applied

User: dtb
Date: 01/25/2016 09:34



M1 - Target system did not integrate

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310			Client Sample ID:	LCSD1532495
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532495
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160125/b4226
Injection Vol.:	1.0	(µL)		GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	DTB	Analytical Batch:	577621
Analysis Date:	01/25/16	Time:	0934	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	49.9		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	50.6		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	48.5		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	47.9		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	56.9		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	54.3		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	51.6		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	47.9		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	49.5		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	50.8		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	49.1		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	50.8		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	50.4		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	48.6		0.200	0.500	1.00
78-93-3	2-Butanone	50.3		0.200	0.500	5.00
591-78-6	2-Hexanone	45.6		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	51.3		0.200	0.500	5.00
67-64-1	Acetone	45.3		0.500	1.00	5.00
71-43-2	Benzene	51.1		0.200	0.500	1.00
74-97-5	Bromochloromethane	49.8		0.200	0.500	1.00
75-27-4	Bromodichloromethane	50.7		0.200	0.500	1.00
75-25-2	Bromoform	49.7		0.250	0.500	1.00
74-83-9	Bromomethane	43.7		0.500	1.00	1.00
75-15-0	Carbon disulfide	56.3		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	51.5		0.250	0.500	1.00
108-90-7	Chlorobenzene	49.8		0.200	0.500	1.00
75-00-3	Chloroethane	57.8		0.250	0.500	1.00
67-66-3	Chloroform	49.9		0.200	0.500	1.00
74-87-3	Chloromethane	41.7		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	48.1		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	49.5		0.200	0.500	1.00
110-82-7	Cyclohexane	45.8		0.500	1.00	2.00
124-48-1	Dibromochloromethane	49.6		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	42.6		0.200	0.500	1.00
100-41-4	Ethylbenzene	52.9		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	48.7		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012310			Client Sample ID:	LCSD1532495
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532495
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160125/b4226
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	DTB	Analytical Batch:	577621
Analysis Date:	01/25/16	Time:	0934	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	45.0		1.00	2.00	5.00
108-87-2	Methylcyclohexane	52.4		0.200	0.500	1.00
75-09-2	Methylene chloride	49.1		0.200	0.500	5.00
100-42-5	Styrene	49.6		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	52.2		0.200	0.500	1.00
127-18-4	Tetrachloroethene	49.4		0.200	0.500	1.00
108-88-3	Toluene	49.8		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	47.7		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	50.3		0.200	0.500	1.00
79-01-6	Trichloroethene	52.9		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	53.9		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	56.6		0.200	0.500	1.00
75-01-4	Vinyl chloride	42.7		0.200	0.500	1.00
1330-20-7	Xylene (total)	148		0.400	1.00	3.00

GCAL, Inc.

Data file : /var/chem/msv13.i/2160125.s.b/b4226.d
Lab Smp Id: 1532495 Client Smp ID: LCSD
Inj Date : 25-JAN-2016 09:34
Operator : DTB Inst ID: msv13.i
Smp Info : 1532495*LCSD
Misc Info : MSV~35290~*1*DTB
Comment :
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Meth Date : 25-Jan-2016 18:51 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.713	1.713	(0.258)	179407	42.6405	42.6	
2 Chloromethane ++	50	1.911	1.911	(0.288)	230952	41.6703	41.7	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	209537	42.6903	42.7	
6 Bromomethane	94	2.335	2.335	(0.352)	122570	43.7197	43.7	
7 Chloroethane	64	2.474	2.474	(0.373)	147179	57.7788	57.8	
8 Trichlorofluoromethane	101	2.627	2.627	(0.396)	288588	53.8880	53.9	
10 1,1-Dichloroethene +	96	3.212	3.212	(0.484)	183609	56.8749	56.9	
11 Carbon Disulfide	76	3.242	3.238	(0.488)	616288	56.2522	56.3	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.265	(0.492)	192321	56.6349	56.6	
13 Methyl Iodide	142	3.388	3.381	(0.510)	43774	52.0291	52.0	
14 Acrolein	56	3.643	3.647	(0.549)	105029	280.531	281	
16 Methylene Chloride	49	3.943	3.943	(0.594)	277206	49.1398	49.1	
17 Acetone	43	4.018	4.022	(0.605)	150359	45.2867	45.3	
18 trans-1,2-Dichloroethene	61	4.138	4.134	(0.623)	266029	47.6964	47.7	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.172	4.172	(0.628)	212047	44.9605	45.0	8666
	20 Hexane	57	4.236	4.232	(0.638)	283676	45.3272	45.3	9332
	21 MTBE	73	4.280	4.281	(0.645)	607027	52.1655	52.2	9433
	26 1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	378576	47.8539	47.9	
	27 Acrylonitrile	53	4.910	4.910	(0.740)	494728	282.260	282	
	28 Vinyl Acetate	43	5.131	5.131	(0.773)	174448	48.7116	48.7	
	29 cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	264557	48.1253	48.1	
M	75 Total 1,2-Dichloroethene	61				530586	95.8217	95.8	
	30 2,2-Dichloropropane	77	5.521	5.521	(0.832)	299665	50.2741	50.3	
	32 Cyclohexane	56	5.608	5.608	(0.845)	352887	45.8300	45.8	8713
	34 Bromochloromethane	128	5.611	5.611	(0.845)	127502	49.8207	49.8	
	35 Chloroform +	83	5.690	5.690	(0.857)	379484	49.9040	49.9	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	294982	51.4756	51.5	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	237130	50.4222	50.4	6954
	41 1,1,1-Trichloroethane	97	5.892	5.889	(0.888)	320866	49.8861	49.9	
	44 2-Butanone	43	6.001	6.001	(0.904)	164135	50.2951	50.3	
	43 1,1-Dichloropropene	75	6.009	6.009	(0.905)	255732	51.3940	51.4	
	46 Benzene	78	6.249	6.245	(0.941)	883090	51.0703	51.1	
$	50 1,2-Dichloroethane-d4	67	6.380	6.376	(0.961)	138040	50.4176	50.4	
	51 1,2-Dichloroethane	62	6.440	6.440	(0.970)	291748	49.1130	49.1	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	917225	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.777	(1.021)	366849	52.3535	52.4	9082
	56 Trichloroethene	130	6.792	6.788	(1.023)	270259	52.9188	52.9	
	57 Dibromomethane	93	7.178	7.174	(1.081)	138466	49.0485	49.0	
	59 1,2-Dichloropropane +	63	7.272	7.268	(1.095)	226096	50.8020	50.8	
	60 Bromodichloromethane	83	7.328	7.324	(1.104)	304978	50.7245	50.7	
	65 1-Bromo-2-chloroethane	63	7.737	7.733	(1.165)	333580	51.4841	51.5	9728
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	347526	49.4914	49.5	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	932873	49.4935	49.5	
	69 Toluene +	91	8.044	8.044	(0.882)	1042606	49.8250	49.8	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	231965	49.4114	49.4	
	73 4-methyl-2-pentanone	43	8.333	8.329	(0.914)	273154	51.3277	51.3	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	344223	50.3246	50.3	
M	82 1-3 Dichloropropene total	100				691749	99.8159	99.8	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	230546	48.4797	48.5	
	78 Dibromochloromethane	129	8.603	8.603	(0.944)	271454	49.5739	49.6	
	79 1,3-Dichloropropane	76	8.670	8.670	(0.951)	372932	49.3066	49.3	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	225477	49.5272	49.5	
	83 2-Hexanone	43	8.918	8.918	(0.978)	219378	45.6093	45.6	
	86 1-Chlorohexane	91	9.101	9.101	(0.998)	307348	51.0902	51.1	9459
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	414190	50.0000		
	85 Chlorobenzene ++	112	9.131	9.127	(1.002)	773679	49.8165	49.8	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	386341	52.8749	52.9	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	260495	49.5470	49.5	
	89 p,m-Xylene	106	9.236	9.232	(1.013)	960727	99.9265	99.9	
	90 o-Xylene	106	9.514	9.517	(1.044)	425411	48.2791	48.3	
M	121 TOTAL XYLENE	106				1386138	148.206	148	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	763241	49.6340	49.6	
	92 Bromoform ++	173	9.574	9.574	(1.050)	235772	49.6573	49.7	
	93 Isopropylbenzene	105	9.709	9.709	(1.065)	1151949	48.6584	48.7	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	346531	49.9236	49.9	
	96 Bromobenzene	77	9.963	9.963	(0.943)	540521	46.2163	46.2	
	97 n-Propylbenzene	91	9.963	9.963	(0.943)	1367314	51.1713	51.2	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	351209	50.6414	50.6	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	954879	51.0965	51.1	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	1012153	50.8641	50.9	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	400971	47.2028	47.2	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	79388	47.7199	47.7	
	104 4-Chlorotoluene	91	10.173	10.170	(0.963)	865005	50.9741	51.0	
	105 tert-butylbenzene	91	10.275	10.275	(0.972)	509155	53.7821	53.8	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	981074	51.5347	51.5	
	108 sec-Butylbenzene	105	10.380	10.380	(0.982)	1275626	49.3197	49.3	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	1079980	49.2160	49.2	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	670349	50.4319	50.4	
*	114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	456307	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	682478	48.5771	48.6	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	834737	47.0476	47.0	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	639537	50.8220	50.8	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	84079	47.8572	47.9	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	218871	54.7602	54.8	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	415004	51.5658	51.6	
	124 Naphthalene	128	12.145	12.145	(1.149)	903294	48.9203	48.9	
	125 1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	442772	54.2701	54.3	

Data File: /var/chem/msv13.i/2160125.s.b/b4226.d

Date : 25-JAN-2016 09:34

Client ID: LCSD

Instrument: msv13.i

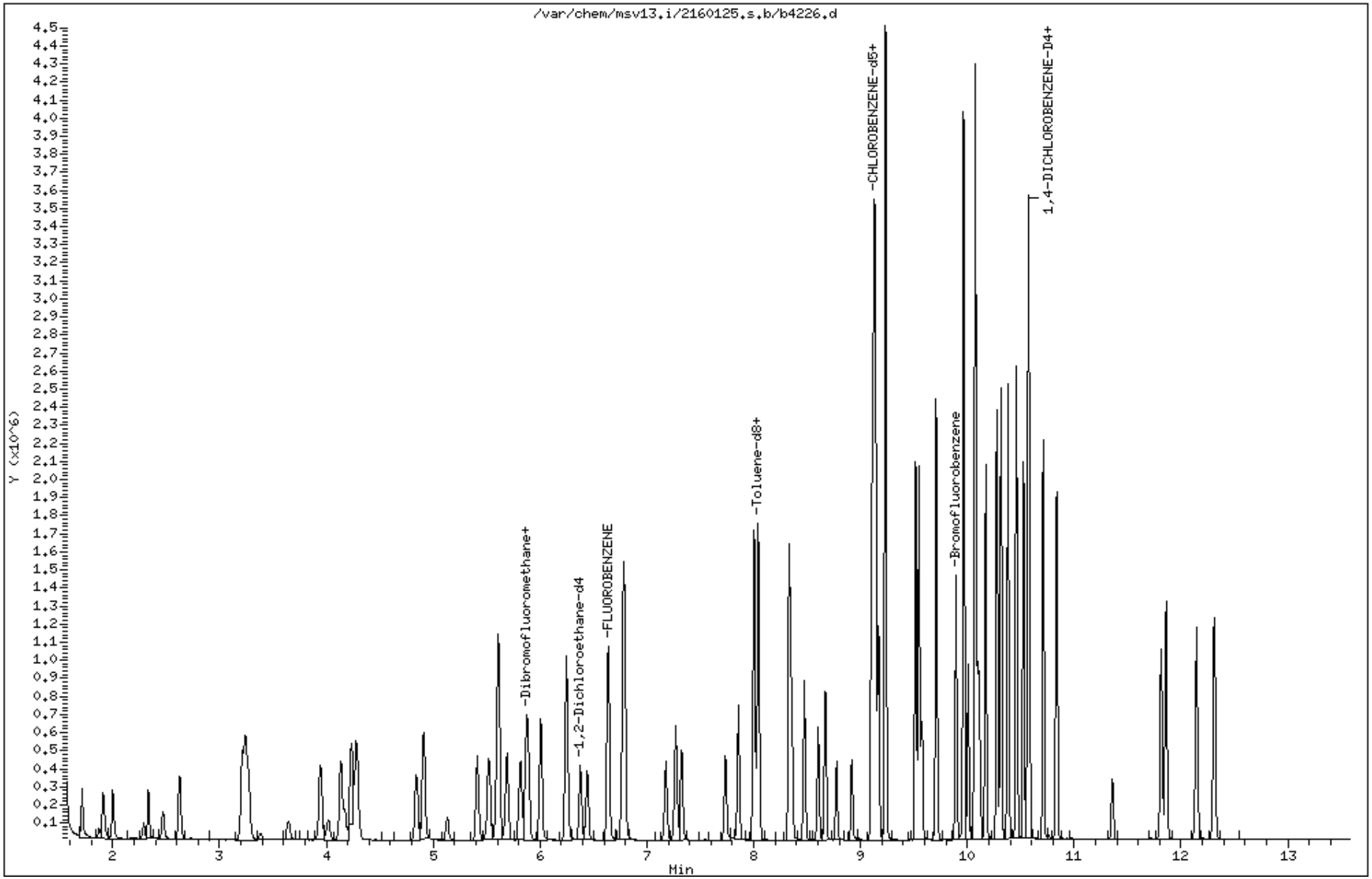
Sample Info: 1532495xLCSD

Purge Volume: 5.0

Operator: DTB

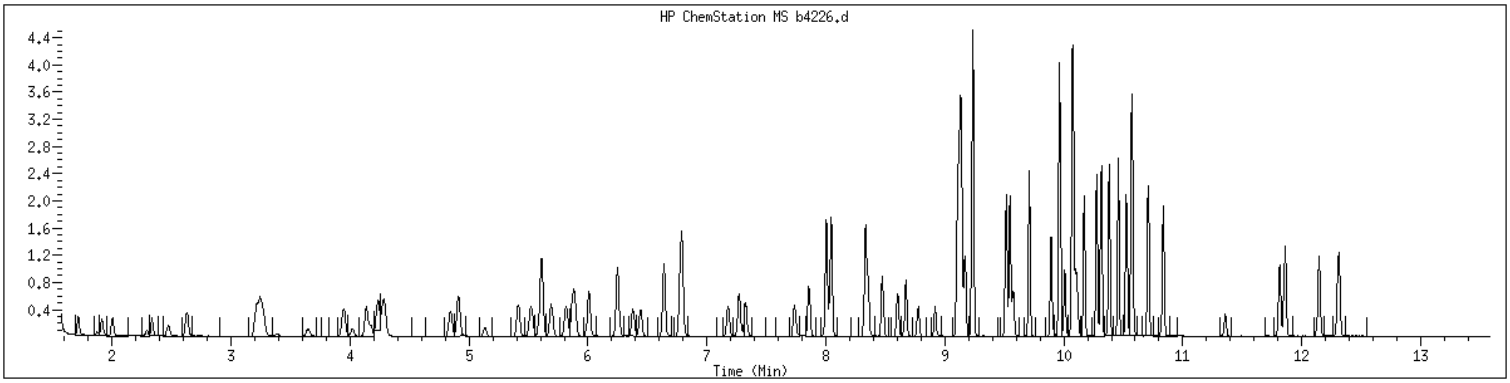
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1532495 SampleType : LCS
Injection Date: 01/25/2016 09:34 Instrument : msv13.i
Operator : DTB
Sample Info : 1532495*LCSD
Misc Info : MSV~35290~*1*DTB
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 216012310 Analytical Method: EPA 8260B

	Client Sample ID	GCAL Sample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1.	MW-8	21601231001	107		114		106		107		0
2.	MW-8-c	21601231002	99		107		105		107		0
3.	MB1532493	1532493	97		107		106		108		0
4.	LCS1532494	1532494	97		102		98		102		0
5.	LCSD1532495	1532495	100		101		99		101		0

		QC LIMITS	
SMC 1	4-Bromofluorobenzene	85 - 114	# Column to be used to flag recovery values
SMC 2	Dibromofluoromethane	80 - 119	* Values outside of QC limits
SMC 3	Toluene-d8	89 - 112	
SMC 4	1,2-Dichloroethane-d4	81 - 118	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 216012310

Analytical Method: EPA 8260B Analytical Batch: 577621

GCAL QC ID: 1532494

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	51.7	103		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	48.6	97		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	49	98		80 - 119
1,1-Dichloroethane	ug/L	50	0	53.7	107		77 - 125
1,1-Dichloroethene	ug/L	50	0	53	106		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	53.4	107		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	51.6	103		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	44.3	89		62 - 128
1,2-Dibromoethane	ug/L	50	0	48.7	97		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	51.6	103		80 - 119
1,2-Dichloroethane	ug/L	50	0	50.3	101		73 - 128
1,2-Dichloropropane	ug/L	50	0	51.3	103		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	51.6	103		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	50.1	100		79 - 118
2-Butanone	ug/L	50	0	46.7	93		56 - 143
2-Hexanone	ug/L	50	0	41.5	83		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	46.3	93		67 - 130
Acetone	ug/L	50	0	48	96		39 - 160
Benzene	ug/L	50	0	52.9	106		79 - 120
Bromochloromethane	ug/L	50	0	51.7	103		78 - 123
Bromodichloromethane	ug/L	50	0	52.4	105		79 - 125
Bromoform	ug/L	50	0	48.1	96		66 - 130
Bromomethane	ug/L	50	0	43.1	86		53 - 141
Carbon disulfide	ug/L	50	0	55.5	111		64 - 133
Carbon tetrachloride	ug/L	50	0	53.5	107		72 - 136
Chlorobenzene	ug/L	50	0	50.8	102		82 - 118
Chloroethane	ug/L	50	0	57.7	115		60 - 138
Chloroform	ug/L	50	0	51.9	104		79 - 124
Chloromethane	ug/L	50	0	42.1	84		50 - 139
Cyclohexane	ug/L	50	0	47.7	95		71 - 130
Dibromochloromethane	ug/L	50	0	49.3	99		74 - 126
Dichlorodifluoromethane	ug/L	50	0	46.8	94		32 - 152
Ethylbenzene	ug/L	50	0	54.3	109		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	49.5	99		72 - 131
Methyl Acetate	ug/L	50	0	45.8	92		56 - 136
Methylcyclohexane	ug/L	50	0	55.6	111		72 - 132
Methylene chloride	ug/L	50	0	55.6	111		74 - 124
Styrene	ug/L	50	0	49.9	100		78 - 123
Tetrachloroethene	ug/L	50	0	52.2	104		74 - 129

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 216012310

Analytical Method: EPA 8260B Analytical Batch: 577621

Toluene	ug/L	50	0	50.5	101		80	-	121
Trichloroethene	ug/L	50	0	55.2	110		79	-	123
Trichlorofluoromethane	ug/L	50	0	55.6	111		65	-	141
Trichlorotrifluoroethane	ug/L	50	0	56.4	113		70	-	136
Vinyl chloride	ug/L	50	0	42.9	86		58	-	137
Xylene (total)	ug/L	150	0	152	101		79	-	121
cis-1,2-Dichloroethene	ug/L	50	0	49.1	98		78	-	123
cis-1,3-Dichloropropene	ug/L	50	0	50.1	100		75	-	124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	54.1	108		71	-	124
trans-1,2-Dichloroethene	ug/L	50	0	51.7	103		75	-	124
trans-1,3-Dichloropropene	ug/L	50	0	51.8	104		73	-	127

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 216012310

Analytical Method: EPA 8260B

Analytical Batch: 577621

GCAL QC ID: 1532495

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/L	50	49.9	100		4		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	50.6	101		4		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	48.5	97		1		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	47.9	96		11		77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	56.9	114		7		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	54.3	109		2		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	51.6	103		0		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	47.9	96		8		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	49.5	99		2		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	50.8	102		2		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	49.1	98		2		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	50.8	102		1		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	50.4	101		2		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	48.6	97		3		79 - 118	0 - 20
2-Butanone	ug/L	50	50.3	101		7		56 - 143	0 - 20
2-Hexanone	ug/L	50	45.6	91		9		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	51.3	103		10		67 - 130	0 - 20
Acetone	ug/L	50	45.3	91		6		39 - 160	0 - 20
Benzene	ug/L	50	51.1	102		3		79 - 120	0 - 20
Bromochloromethane	ug/L	50	49.8	100		4		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	50.7	101		3		79 - 125	0 - 20
Bromoform	ug/L	50	49.7	99		3		66 - 130	0 - 20
Bromomethane	ug/L	50	43.7	87		1		53 - 141	0 - 20
Carbon disulfide	ug/L	50	56.3	113		1		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	51.5	103		4		72 - 136	0 - 20
Chlorobenzene	ug/L	50	49.8	100		2		82 - 118	0 - 20
Chloroethane	ug/L	50	57.8	116		.2		60 - 138	0 - 20
Chloroform	ug/L	50	49.9	100		4		79 - 124	0 - 20
Chloromethane	ug/L	50	41.7	83		1		50 - 139	0 - 20
Cyclohexane	ug/L	50	45.8	92		4		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	49.6	99		.6		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	42.6	85		9		32 - 152	0 - 20
Ethylbenzene	ug/L	50	52.9	106		3		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	48.7	97		2		72 - 131	0 - 20
Methyl Acetate	ug/L	50	45	90		2		56 - 136	0 - 20
Methylcyclohexane	ug/L	50	52.4	105		6		72 - 132	0 - 20
Methylene chloride	ug/L	50	49.1	98		12		74 - 124	0 - 20
Styrene	ug/L	50	49.6	99		.6		78 - 123	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 216012310

Analytical Method: EPA 8260B Analytical Batch: 577621

Tetrachloroethene	ug/L	50	49.4	99		6		74 - 129	0 - 20
Toluene	ug/L	50	49.8	100		1		80 - 121	0 - 20
Trichloroethene	ug/L	50	52.9	106		4		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	53.9	108		3		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	56.6	113		.4		70 - 136	0 - 20
Vinyl chloride	ug/L	50	42.7	85		.5		58 - 137	0 - 20
Xylene (total)	ug/L	150	148	99		3		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	48.1	96		2		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	49.5	99		1		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	52.2	104		4		71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	47.7	95		8		75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	50.3	101		3		73 - 127	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	216012310	Method Blank ID:	1532493
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2160125/b4229
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: DTB	Analytical Batch:	577621
Analysis Date:	01/25/16 Time: 1039	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS1532494	1532494	2160125/b4225L	01/25/16	0912
2.	LCSD1532495	1532495	2160125/b4226	01/25/16	0934
3.	MW-8	21601231001	2160125/b4232	01/25/16	1251
4.	MW-8-c	21601231002	2160125/b4233	01/25/16	1312

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	216012310	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160118p/b3941
Analyst:	JCK	Analytical Batch:	577166
Analysis Date:	01/18/16 Time: 1403	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*
50	15.0 - 40.0% of mass 95	16.89 ( )
75	30.0 - 60.0% of mass 95	45.41 ( )
95	Base Peak, 100% relative abundance	100 ( )
96	5.0 -9.0% of mass 95	6.21 ( )
173	Less than 2.0% of mass 174	1.2 (1.22) 1
174	50.0 - 120.0% of mass 95	99.12 ( )
175	5.0 - 9.0% of mass 174	7.17 (7.24) 1
176	95.0 - 101.0% of mass 174	98.42 (99.3) 1
177	5.0 - 9.0% of mass 176	6.18 (6.28) 2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2160118p/b3942	01/18/16	1507
2 .	V13STD005	1204	2160118p/b3943	01/18/16	1528
3 .	V13STD010	1205	2160118p/b3944	01/18/16	1549
4 .	V13STD020	1206	2160118p/b3945	01/18/16	1609
5 .	V13STD050	1207	2160118p/b3946	01/18/16	1630
6 .	V13STD100	1208	2160118p/b3947	01/18/16	1659
7 .	V13STD200	1209	2160118p/b3948	01/18/16	1720
8 .	ICV050	1600	2160118p/b3951	01/18/16	1822

FORM V VOA

Data File: /var/chem/msv13.i/2160118p.s.b/b3941.d

Page 1

Date : 18-JAN-2016 14:03

Client ID: V13BFB

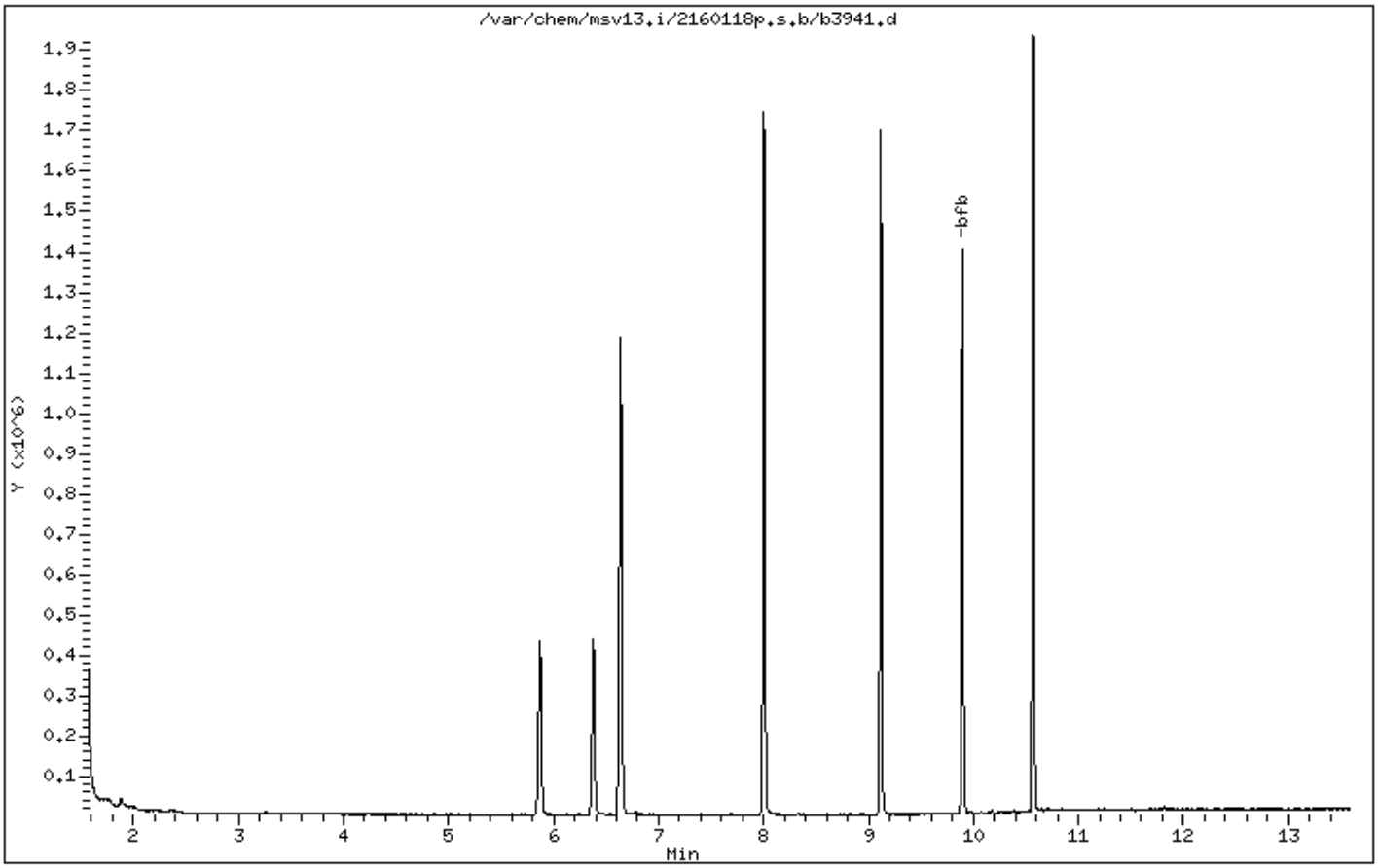
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2160118p.s.b/b3941.d

Date : 18-JAN-2016 14:03

Client ID: V13BFB

Instrument: msv13.i

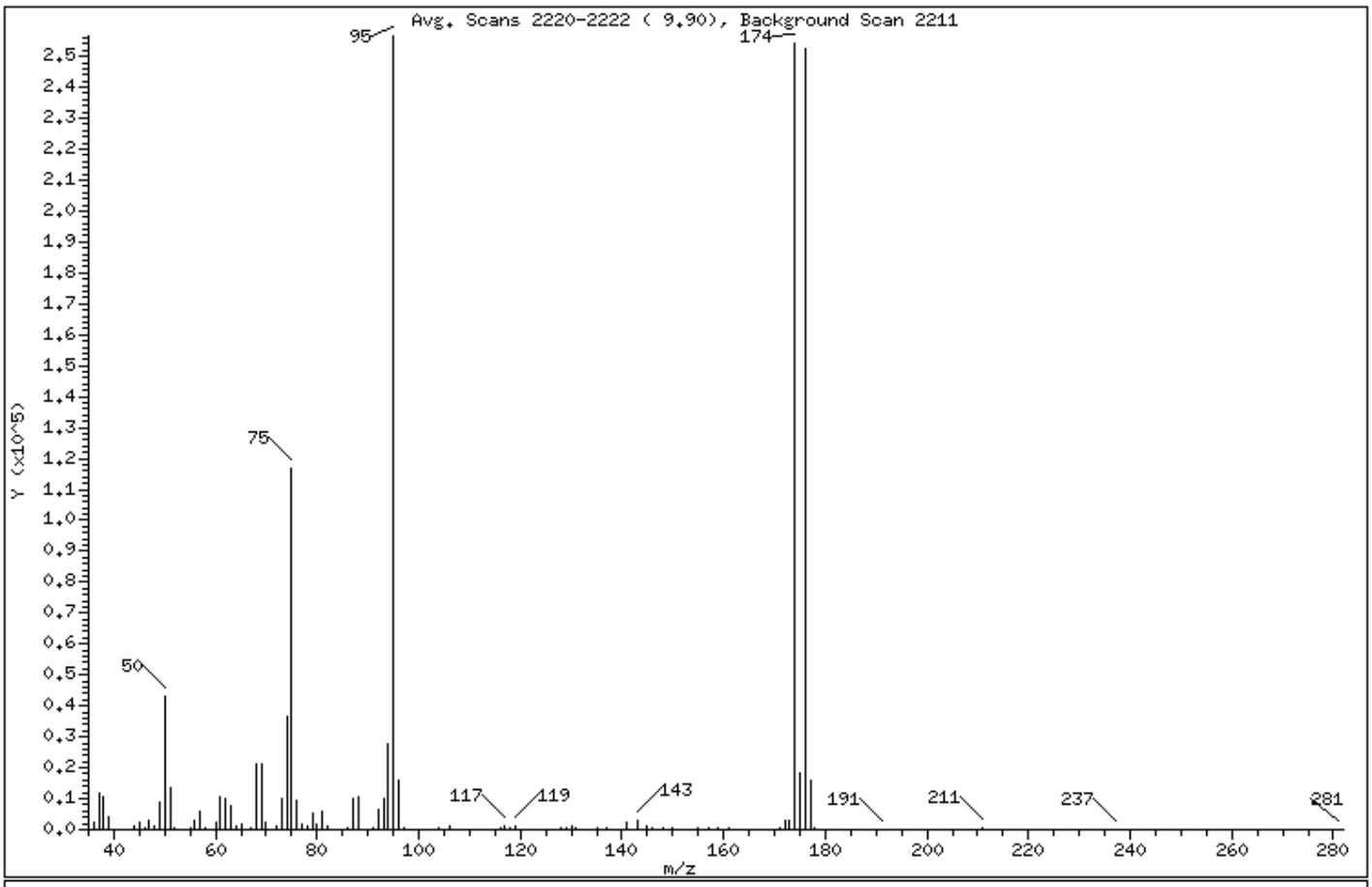
Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.89
75	30.00 - 60.00% of mass 95	45.41
96	5.00 - 9.00% of mass 95	6.21
173	Less than 2.00% of mass 174	1.21 (1.22)
174	50.00 - 120.00% of mass 95	99.12
175	5.00 - 9.00% of mass 174	7.18 (7.24)
176	95.00 - 101.00% of mass 174	98.43 (99.30)
177	5.00 - 9.00% of mass 176	6.18 (6.28)

Date : 18-JAN-2016 14:03

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b3941.d
Spectrum: Avg. Scans 2220-2222 (9.90), Background Scan 2211
Location of Maximum: 95.00
Number of points: 111

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	2457	68.00	21352	106.00	893	149.00	237
37.00	11586	69.00	21464	107.00	65	150.00	343
38.00	10610	70.00	2133	108.00	158	152.00	104
39.00	4226	72.00	1273	111.00	182	153.00	196
41.00	122	73.00	9745	112.00	122	154.00	174
44.00	1125	74.00	36704	113.00	52	155.00	775
45.00	2178	75.00	116504	115.00	218	156.00	140
46.00	331	76.00	9481	116.00	728	157.00	622
47.00	3172	77.00	1859	117.00	1459	159.00	471
48.00	1349	78.00	979	118.00	666	161.00	319
49.00	8947	79.00	5585	119.00	1221	171.00	659
50.00	43344	80.00	1953	124.00	56	172.00	3064
51.00	13668	81.00	5696	125.00	122	173.00	3114
52.00	633	82.00	1114	128.00	802	174.00	254272
53.00	274	83.00	91	129.00	337	175.00	18408
54.00	148	86.00	458	130.00	942	176.00	252544
55.00	548	87.00	10287	131.00	471	177.00	15859
56.00	2879	88.00	10408	135.00	368	178.00	448
57.00	5914	91.00	849	137.00	444	191.00	121
58.00	300	92.00	6362	140.00	180	192.00	121
60.00	2134	93.00	10039	141.00	2359	208.00	202
61.00	10328	94.00	27640	142.00	227	209.00	58
62.00	10318	95.00	256576	143.00	3022	211.00	350
63.00	7958	96.00	15924	144.00	234	215.00	70
64.00	1431	97.00	536	145.00	1146	233.00	50
65.00	1583	103.00	55	146.00	450	237.00	58
66.00	265	104.00	683	147.00	191	281.00	226
67.00	785	105.00	288	148.00	582		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	216012310	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160125/b4224
Analyst:	DTB	Analytical Batch:	577621
Analysis Date:	01/25/16 Time: 0820	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	16.52	(	)	
75	30.0 - 60.0% of mass 95	43.27	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	7.02	(	)	
173	Less than 2.0% of mass 174	1.69	(1.67	)	1
174	50.0 - 120.0% of mass 95	101.5	(	)	
175	5.0 - 9.0% of mass 174	7.63	(7.52	)	1
176	95.0 - 101.0% of mass 174	97.36	(95.86	)	1
177	5.0 - 9.0% of mass 176	6.11	(6.28	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2160125/b4225	01/25/16	0912
2 .	LCS1532494	1532494	2160125/b4225L	01/25/16	0912
3 .	LCSD1532495	1532495	2160125/b4226	01/25/16	0934
4 .	MB1532493	1532493	2160125/b4229	01/25/16	1039
5 .	MW-8	21601231001	2160125/b4232	01/25/16	1251
6 .	MW-8-c	21601231002	2160125/b4233	01/25/16	1312
7 .	V13STD050	1440	2160125/b4237	01/25/16	1517

FORM V VOA

Data File: /var/chem/msv13.i/2160125.s.b/b4224.d

Date : 25-JAN-2016 08:20

Client ID: V13BFB

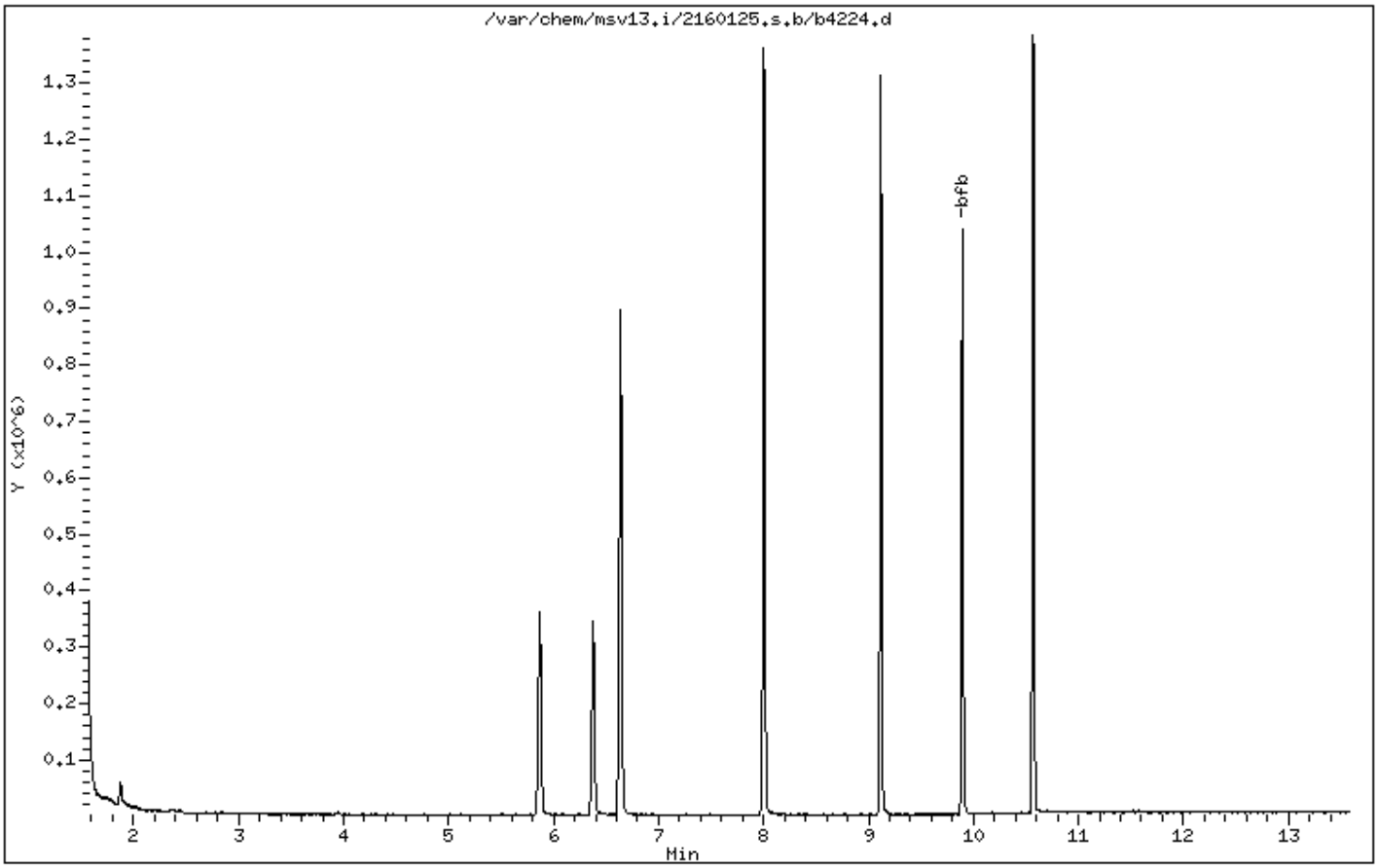
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: DTB

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2160125.s.b/b4224.d

Date : 25-JAN-2016 08:20

Client ID: V13BFB

Instrument: msv13.i

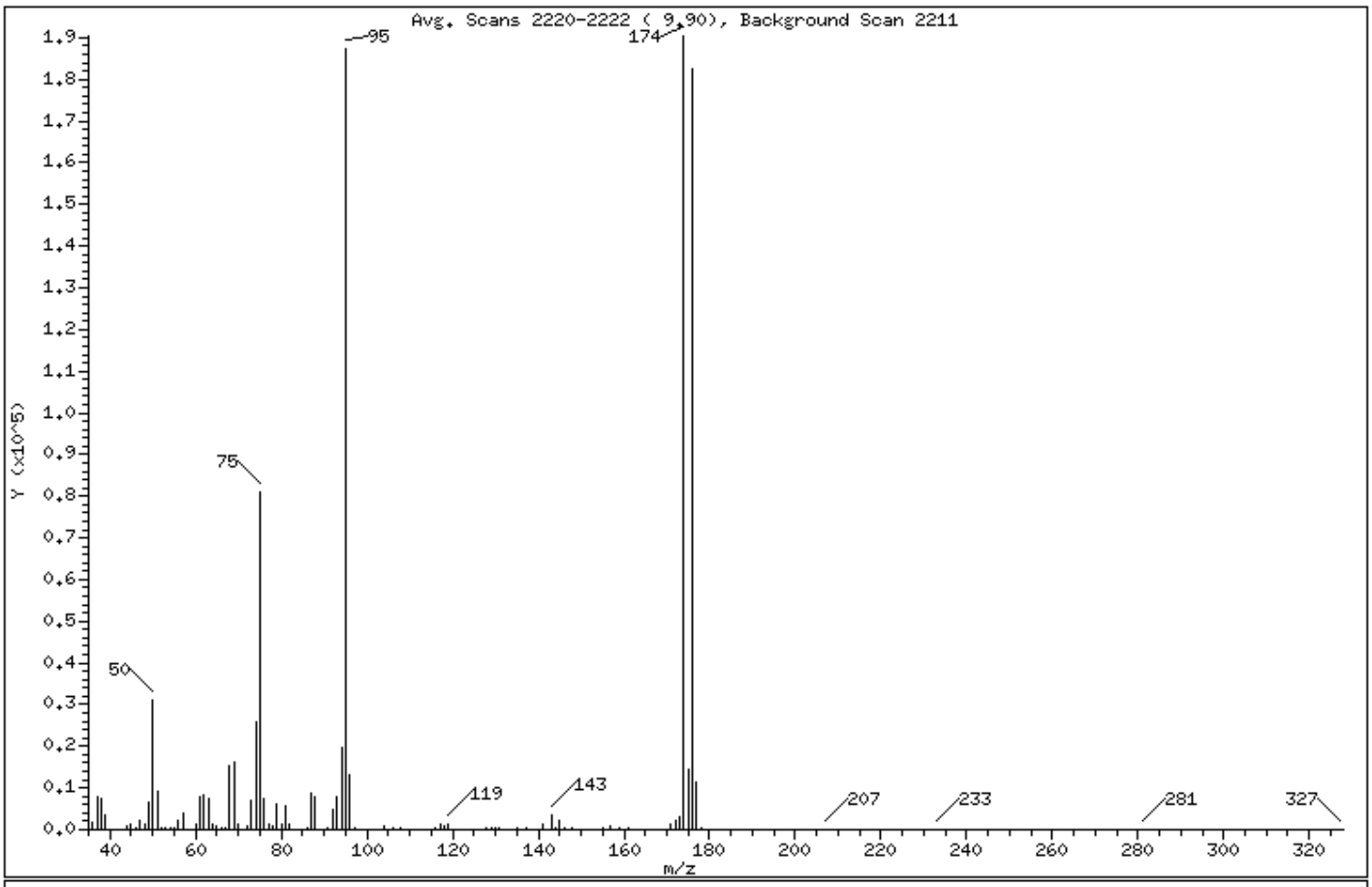
Sample Info: 1000*V13BFB

Operator: DTB

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.52
75	30.00 - 60.00% of mass 95	43.27
96	5.00 - 9.00% of mass 95	7.02
173	Less than 2.00% of mass 174	1.69 (1.67)
174	50.00 - 120.00% of mass 95	101.57
175	5.00 - 9.00% of mass 174	7.64 (7.52)
176	95.00 - 101.00% of mass 174	97.36 (95.86)
177	5.00 - 9.00% of mass 176	6.11 (6.28)

Date : 25-JAN-2016 08:20

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: DTB

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b4224.d
Spectrum: Avg. Scans 2220-2222 (9.90), Background Scan 2211
Location of Maximum: 174.00
Number of points: 105

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1739	67.00	303	105.00	189	147.00	180
37.00	7800	68.00	15277	106.00	577	148.00	326
38.00	7286	69.00	16345	107.00	182	150.00	55
39.00	3408	70.00	1109	108.00	369	152.00	55
40.00	108	72.00	694	111.00	149	153.00	135
41.00	81	73.00	7102	112.00	157	154.00	110
44.00	705	74.00	25960	115.00	156	155.00	629
45.00	1359	75.00	81128	116.00	554	156.00	108
46.00	275	76.00	7282	117.00	1342	157.00	657
47.00	2237	77.00	1158	118.00	698	159.00	238
48.00	1319	78.00	677	119.00	1360	161.00	255
49.00	6487	79.00	6009	124.00	54	171.00	1173
50.00	30968	80.00	1151	126.00	61	172.00	1993
51.00	9259	81.00	5748	128.00	625	173.00	3173
52.00	641	82.00	1104	129.00	377	174.00	190400
53.00	246	83.00	111	130.00	614	175.00	14323
54.00	351	86.00	345	131.00	238	176.00	182528
55.00	566	87.00	8821	133.00	61	177.00	11459
56.00	2052	88.00	7860	135.00	279	178.00	335
57.00	4032	91.00	494	137.00	298	207.00	215
60.00	1519	92.00	4779	140.00	54	208.00	57
61.00	7670	93.00	7945	141.00	1359	233.00	100
62.00	8207	94.00	19624	142.00	199	281.00	64
63.00	7230	95.00	187456	143.00	3556	327.00	57
64.00	1481	96.00	13158	144.00	254		
65.00	909	97.00	431	145.00	2117		
66.00	276	104.00	674	146.00	356		

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2160118p/b3942D ~ 1	
Report No:	216012310			Instrument ID:	MSV13	1204 ~ 2160118p/b3943D ~ 5	1205 ~ 2160118p/b3944D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2160118p/b3945D ~ 20	1207 ~ 2160118p/b3946D ~ 50	
Calib. Date 1:	01/18/16	Time 1:	1507	Analytical Batch:	577166	1208 ~ 2160118p/b3947D ~ 100	1209 ~ 2160118p/b3948D ~ 200	
Calib. Date 2:	01/18/16	Time 2:	1720	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.784	0.608	0.596	0.612	0.627	0.627	0.588	0.635			10.65	A
1,1,1-Trichloroethane			0.385	0.337	0.333	0.343	0.360	0.360	0.336	0.351			5.407	A
1,1,2,2-Tetrachloroethane			8363	34436	73852	152550	422944	809073	1630478	0.724	-0.050		0.998	L
1,1,2-Trichloroethane			0.673	0.551	0.548	0.555	0.574	0.570	0.546	0.574			7.851	A
1,1-Dichloroethane			0.483	0.407	0.406	0.422	0.442	0.445	0.414	0.431			6.371	A
1,1-Dichloroethene			0.199	0.175	0.166	0.161	0.174	0.186	0.172	0.176			7.237	A
1,1-Dichloropropene			0.253	0.225	0.227	0.260	0.305	0.322	0.306	0.271			14.61	A
1,2,3-Trichlorobenzene			0.919	0.803	0.925	0.858	0.861	0.977	0.915	0.894			6.377	A
1,2,3-Trichloropropane			1.112	0.844	1.040	0.870	0.938	0.872	0.839	0.931			11.42	A
1,2,4-Trichlorobenzene			0.909	0.806	0.850	0.804	0.851	1.030	0.923	0.882			9.038	A
1,2,4-Trimethylbenzene			9650	51755	107169	300179	1043150	2338448	4901112	2.218	0.061		0.999	L
1,2-Dibromo-3-chloropropane			0.228	0.167	0.178	0.182	0.202	0.196	0.195	0.193			10.26	A
1,2-Dibromoethane			0.599	0.505	0.525	0.534	0.565	0.570	0.550	0.550			5.683	A
1,2-Dichlorobenzene			1.505	1.323	1.282	1.330	1.375	1.462	1.374	1.379			5.738	A
1,2-Dichloroethane			0.364	0.311	0.311	0.317	0.329	0.329	0.304	0.324			6.206	A
1,2-Dichloroethane-d4			0.153	0.154	0.151	0.150	0.147	0.145	0.144	0.149			2.655	A
1,2-Dichloroethene (total)			0.329	0.271	0.273	0.279	0.318	0.331	0.313	0.302			8.809	A
1,2-Dichloropropane			0.259	0.223	0.222	0.230	0.254	0.262	0.248	0.243			7.075	A
1,3,5-Trimethylbenzene			10600	57246	137811	339939	1128089	2448478	4992513	2.258	0.035		0.999	L
1,3-Dichlorobenzene			1.560	1.430	1.362	1.386	1.495	1.530	1.432	1.456			5.086	A
1,3-Dichloropropane			0.956	0.839	0.852	0.889	0.960	0.969	0.926	0.913			5.833	A
1,3-Dichloropropylene			11339	54730	120772	266481	816478	1724037	3569844	0.389	0.058		0.999	L
1,4-Dichlorobenzene			1.821	1.547	1.448	1.438	1.536	1.552	1.435	1.539			8.754	A
1-Bromo-2-Chloroethane			0.365	0.318	0.324	0.347	0.375	0.381	0.362	0.353			6.953	A
1-Chlorohexane			4849	19187	44542	105309	335727	742948	1498808	0.757	0.042		0.998	L

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, Q - Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2160118p/b3942D ~ 1	
Report No:	216012310		Instrument ID:	MSV13	1204 ~ 2160118p/b3943D ~ 5	1205 ~ 2160118p/b3944D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2160118p/b3945D ~ 20	1207 ~ 2160118p/b3946D ~ 50	
Calib. Date 1:	01/18/16	Time 1: 1507	Analytical Batch:	577166	1208 ~ 2160118p/b3947D ~ 100	1209 ~ 2160118p/b3948D ~ 200	
Calib. Date 2:	01/18/16	Time 2: 1720	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
2,2-Dichloropropane			0.360	0.297	0.303	0.312	0.332	0.346	0.324	0.325			7.038	A
2-Butanone			0.161	0.160	0.164	0.178	0.203	0.189	0.191	0.178			9.461	A
2-Chlorotoluene			2.103	1.815	2.111	1.933	2.129	2.175	2.068	2.048			6.232	A
2-Hexanone			3065	16123	37612	86905	289189	557144	1222184	0.609	0.043		0.999	L
4-Bromofluorobenzene			0.815	0.837	0.844	0.849	0.831	0.843	0.847	0.838			1.415	A
4-Chlorotoluene			1.764	1.665	1.927	1.761	1.964	2.025	1.910	1.859			7.005	A
4-Isopropyltoluene			10705	57367	121322	361812	1212871	2733327	5608700	2.545	0.054		0.998	L
4-Methyl-2-pentanone			0.621	0.542	0.549	0.623	0.737	0.710	0.716	0.642			12.49	A
Acetone			0.230	0.177	0.179	0.174	0.179	0.168	0.160	0.181			12.45	A
Acrolein			0.020	0.020	0.021	0.019	0.021	0.021	0.020	0.020			4.395	A
Acrylonitrile			0.074	0.090	0.096	0.097	0.106	0.101	0.103	0.096			11.22	A
Benzene			0.941	0.819	0.865	0.931	1.016	1.038	0.989	0.943			8.437	A
Bromobenzene			1.631	1.264	1.320	1.145	1.229	1.218	1.163	1.282			12.87	A
Bromochloromethane			0.162	0.132	0.134	0.140	0.142	0.141	0.125	0.140			8.403	A
Bromodichloromethane			0.382	0.297	0.306	0.319	0.334	0.338	0.317	0.328			8.579	A
Bromoform			0.732	0.529	0.531	0.542	0.580	0.558	0.540	0.573			12.59	A
Bromomethane			4559	15462	32754	67312	169769	332319	688886	0.148	-0.029		0.999	L
Carbon disulfide			16646	59647	119502	233824	647001	1390970	2693175	0.588	-0.018		0.997	L
Carbon tetrachloride			0.348	0.289	0.292	0.306	0.324	0.324	0.304	0.312			6.610	A
Chlorobenzene			2.172	1.836	1.778	1.798	1.873	1.888	1.779	1.875			7.367	A
Chloroethane			4329	14122	30011	59161	160313	307305	625409	0.135	-0.035		0.999	L
Chloroform			0.480	0.390	0.398	0.406	0.419	0.420	0.388	0.415			7.648	A
Chloromethane			10000	31533	65076	129328	348381	691948	1283336	0.281	-0.064		0.994	L
Cyclohexane			5820	26432	60102	147394	454514	974644	1991249	0.436	0.034		0.998	L
Dibromochloromethane			0.741	0.633	0.624	0.626	0.678	0.674	0.651	0.661			6.241	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, Q - Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2160118p/b3942D ~ 1	
Report No:	216012310		Instrument ID:	MSV13	1204 ~ 2160118p/b3943D ~ 5	1205 ~ 2160118p/b3944D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2160118p/b3945D ~ 20	1207 ~ 2160118p/b3946D ~ 50	
Calib. Date 1:	01/18/16	Time 1: 1507	Analytical Batch:	577166	1208 ~ 2160118p/b3947D ~ 100	1209 ~ 2160118p/b3948D ~ 200	
Calib. Date 2:	01/18/16	Time 2: 1720	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Dibromofluoromethane			0.266	0.262	0.259	0.257	0.254	0.249	0.247	0.256			2.686	A
Dibromomethane			0.173	0.145	0.151	0.147	0.158	0.156	0.147	0.154			6.348	A
Dichlorodifluoromethane			0.271	0.218	0.223	0.228	0.231	0.226	0.208	0.229			8.734	A
Ethylbenzene			0.886	0.776	0.821	0.884	0.943	0.957	0.907	0.882			7.306	A
Hexachlorobutadiene			4903	20853	40126	87876	211708	511330	935693	0.424	-0.035		0.993	L
Isopropylbenzene (Cumene)			14744	75624	185115	434460	1338866	2871091	5927415	2.979	0.040		0.999	L
Methyl Acetate			0.332	0.230	0.247	0.240	0.264	0.250	0.237	0.257			13.46	A
Methyl iodide			322	1668	3586	8829	38800	122400	397300	20.2	0.134	-26.192	0.994	Q
Methylcyclohexane			0.371	0.313	0.328	0.369	0.421	0.449	0.424	0.382			13.42	A
Methylene chloride			11258	36262	71555	119513	304516	713409	1395321	0.303	-0.014		0.997	L
Naphthalene			8657	50077	131358	340972	966332	2304512	4679299	2.118	0.044		0.998	L
Styrene			9046	46018	113128	276875	873102	1873452	3852583	1.940	0.043		0.999	L
Tetrachloroethene			0.694	0.512	0.517	0.540	0.574	0.583	0.548	0.567			10.94	A
Toluene			2.797	2.370	2.349	2.446	2.578	2.625	2.517	2.526			6.225	A
Toluene-d8			2.360	2.270	2.247	2.275	2.273	2.245	2.257	2.275			1.716	A
Trichloroethene			0.295	0.247	0.263	0.273	0.299	0.296	0.277	0.278			7.038	A
Trichlorofluoromethane			0.343	0.281	0.278	0.297	0.287	0.294	0.264	0.292			8.602	A
Trichlorotrifluoroethane			0.212	0.182	0.176	0.176	0.185	0.196	0.168	0.185			8.030	A
Vinyl acetate			2778	14224	32135	66763	188331	439503	963724	0.209	0.065		0.998	L
Vinyl chloride			0.297	0.252	0.249	0.257	0.282	0.282	0.255	0.268			6.987	A
Xylene (total)			20800	100523	231999	530968	1612135	3410418	6902101	1.157	0.072		0.999	L
cis-1,2-Dichloroethene			0.322	0.261	0.263	0.287	0.319	0.332	0.315	0.300			9.792	A
cis-1,3-Dichloropropene			5659	26932	58299	128661	405668	878101	1828120	0.399	0.040		0.999	L
m,p-Xylene			14322	70941	164777	375780	1109426	2334074	4701572	1.181	0.034		0.999	L
n-Butylbenzene			11845	49239	102214	279855	949005	2227434	4585441	2.081	0.062		0.998	L

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, Q - Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2160118p/b3942D ~ 1	
Report No:	216012310		Instrument ID:	MSV13	1204 ~ 2160118p/b3943D ~ 5	1205 ~ 2160118p/b3944D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2160118p/b3945D ~ 20	1207 ~ 2160118p/b3946D ~ 50	
Calib. Date 1:	01/18/16	Time 1: 1507	Analytical Batch:	577166	1208 ~ 2160118p/b3947D ~ 100	1209 ~ 2160118p/b3948D ~ 200	
Calib. Date 2:	01/18/16	Time 2: 1720	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
n-Hexane			5705	25278	51275	107805	354936	812698	1622799	0.357	0.041		0.997	L
n-Propylbenzene			2.961	2.474	2.956	2.740	3.055	3.211	3.099	2.928			8.472	A
o-Xylene			6478	29582	67222	155188	502709	1076344	2200529	1.108	0.039		0.999	L
sec-Butylbenzene			15282	84739	177306	471922	1461065	3184458	6446625	2.912	0.027		0.998	L
tert-Butyl methyl ether (MTBE)			0.536	0.544	0.586	0.602	0.722	0.742	0.709	0.634			13.85	A
tert-Butylbenzene			0.939	0.856	0.977	1.009	1.152	1.198	1.130	1.037			12.10	A
trans-1,2-Dichloroethene			0.336	0.281	0.283	0.272	0.317	0.329	0.310	0.304			8.385	A
trans-1,3-Dichloropropene			5680	27798	62473	137820	410810	845936	1741724	0.379	0.017		0.999	L
trans-1,4-Dichloro-2-butene			0.202	0.162	0.197	0.176	0.188	0.182	0.171	0.182			7.838	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, Q - Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3942D.d
Lab Smp Id: 1203 Client Smp ID: V13STD001
Inj Date : 18-JAN-2016 15:07
Operator : JCK Inst ID: msv13.i
Smp Info : 1203*V13STD001
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 15:07 Cal File: b3942D.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	5379	1.00000	1.18	
2 Chloromethane ++	50	1.911	1.911	(0.288)	10000	1.00000		(M2)
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	5878	1.00000	1.11	
6 Bromomethane	94	2.339	2.339	(0.352)	4559	1.00000	0.0992	
7 Chloroethane	64	2.470	2.470	(0.372)	4329	1.00000		
8 Trichlorofluoromethane	101	2.627	2.627	(0.396)	6801	1.00000	1.18	
10 1,1-Dichloroethene +	96	3.208	3.208	(0.483)	3939	1.00000	1.13	
11 Carbon Disulfide	76	3.238	3.238	(0.488)	16646	1.00000	0.548	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	4207	1.00000	1.15	
13 Methyl Iodide	142	3.373	3.373	(0.508)	322	1.00000	7.03	(M2)
14 Acrolein	56	3.651	3.651	(0.550)	2016	5.00000	4.98	
16 Methylene Chloride	49	3.943	3.943	(0.594)	11258	1.00000	1.17	
17 Acetone	43	4.022	4.022	(0.606)	4552	1.00000	1.27	
18 trans-1,2-Dichloroethene	61	4.142	4.142	(0.624)	6658	1.00000	1.10	

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19	Methyl Acetate	43	4.175	4.175	(0.629)	6577	1.00000	1.29	6828
	20	Hexane	57	4.232	4.232	(0.637)	5705	1.00000	2.85	7405
	21	MTBE	73	4.280	4.280	(0.645)	10618	1.00000	0.845	6762
	26	1,1-Dichloroethane ++	63	4.835	4.835	(0.728)	9563	1.00000	1.12	
	27	Acrylonitrile	53	4.914	4.914	(0.740)	7362	5.00000	3.89	
	28	Vinyl Acetate	43	5.128	5.128	(0.772)	2778	1.00000	3.91	(M1)
	29	cis-1,2-Dichloroethene	61	5.409	5.409	(0.815)	6373	1.00000	1.07	
M	75	Total 1,2-Dichloroethene	61				13031	2.00000	2.18	
	30	2,2-Dichloropropane	77	5.521	5.521	(0.832)	7135	1.00000	1.11	
	32	Cyclohexane	56	5.604	5.604	(0.844)	5820	1.00000	2.39	6849
	34	Bromochloromethane	128	5.604	5.604	(0.844)	3211	1.00000	1.16	
	35	Chloroform +	83	5.686	5.686	(0.857)	9521	1.00000	1.16	
	36	Carbon Tetrachloride	117	5.814	5.814	(0.876)	6887	1.00000	1.11	
$	40	Dibromofluoromethane	111	5.866	5.866	(0.884)	263485	50.0000	51.9	6956
	41	1,1,1-Trichloroethane	97	5.877	5.877	(0.885)	7631	1.00000	1.10	
	44	2-Butanone	43	6.001	6.001	(0.904)	3197	1.00000	0.907	
	43	1,1-Dichloropropene	75	6.008	6.008	(0.905)	5018	1.00000	0.933	
	46	Benzene	78	6.245	6.245	(0.941)	18642	1.00000	0.998	
$	50	1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	151588	50.0000	51.2	
	51	1,2-Dichloroethane	62	6.440	6.440	(0.970)	7217	1.00000	1.12	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	990934	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	7352	1.00000	0.971	8450
	56	Trichloroethene	130	6.788	6.788	(1.023)	5846	1.00000	1.06	
	57	Dibromomethane	93	7.171	7.171	(1.080)	3432	1.00000	1.13	
	59	1,2-Dichloropropane +	63	7.264	7.264	(1.094)	5134	1.00000	1.07	
	60	Bromodichloromethane	83	7.328	7.328	(1.104)	7580	1.00000	1.17	
	65	1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	7238	1.00000	1.03	8820
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	5659	1.00000	2.74	
$	68	Toluene-d8	98	8.003	8.003	(0.878)	938681	50.0000	51.9	
	69	Toluene +	91	8.044	8.044	(0.882)	22258	1.00000	1.11	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	5522	1.00000	1.22	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.914)	4941	1.00000	0.967	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	5680	1.00000	1.59	
M	82	1-3 Dichloropropene total	100				11339	2.00000	4.32	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	5357	1.00000	1.17	
	78	Dibromochloromethane	129	8.599	8.599	(0.943)	5892	1.00000	1.12	
	79	1,3-Dichloropropane	76	8.670	8.670	(0.951)	7603	1.00000	1.05	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	4763	1.00000	1.09	
	83	2-Hexanone	43	8.917	8.917	(0.978)	3065	1.00000	2.77	
	86	1-Chlorohexane	91	9.101	9.101	(0.998)	4849	1.00000	2.88	3070
*	84	CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	397825	50.0000		
	85	Chlorobenzene ++	112	9.127	9.127	(1.001)	17282	1.00000	1.16	
	87	Ethylbenzene +	106	9.142	9.142	(1.003)	7046	1.00000	1.00	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	6241	1.00000	1.24	
	89	p,m-Xylene	106	9.232	9.232	(1.013)	14322	2.00000	3.24	
	90	o-Xylene	106	9.513	9.513	(1.044)	6478	1.00000	2.67	
M	121	TOTAL XYLENE	106				20800	3.00000	5.91	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.543	9.543	(1.047)	9046	1.00000	2.73	
92	Bromoform ++	173	9.573	9.573	(1.050)	5824	1.00000	1.28	
93	Isopropylbenzene	105	9.708	9.708	(1.065)	14744	1.00000	2.60	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.086)	324113	50.0000	48.6	
96	Bromobenzene	77	9.963	9.963	(0.943)	12213	1.00000	1.27	
97	n-Propylbenzene	91	9.967	9.967	(0.943)	22170	1.00000	1.01	
98	1,1,2,2-Tetrachloroethane++	83	10.012	10.012	(0.947)	8363	1.00000		
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	15748	1.00000	1.03	
102	1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	10600	1.00000	2.37	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	8325	1.00000	1.19	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	1510	1.00000	1.11	
104	4-Chlorotoluene	91	10.173	10.173	(0.963)	13209	1.00000	0.949	
105	tert-butylbenzene	91	10.278	10.278	(0.973)	7030	1.00000	0.905	
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	9650	1.00000	3.65	
108	sec-Butylbenzene	105	10.383	10.383	(0.983)	15282	1.00000	2.03	
110	p-Isopropyltoluene	119	10.458	10.458	(0.990)	10705	1.00000	3.28	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	11682	1.00000	1.07	
* 114	1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	374404	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	13635	1.00000	1.18	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	11845	1.00000	3.86	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	11267	1.00000	1.09	
119	1,2-Dibromo-3-Chloropropane	157	11.361	11.361	(1.075)	1705	1.00000	1.18	
120	Hexachlorobutadiene	225	11.815	11.815	(1.118)	4903	1.00000		
122	1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	6809	1.00000	1.03	
124	Naphthalene	128	12.145	12.145	(1.149)	8657	1.00000	2.73	
125	1,2,3-Trichlorobenzene	180	12.314	12.314	(1.165)	6878	1.00000	1.03	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3942D.d

Date : 18-JAN-2016 15:07

Client ID: V13STD001

Instrument: msv13.i

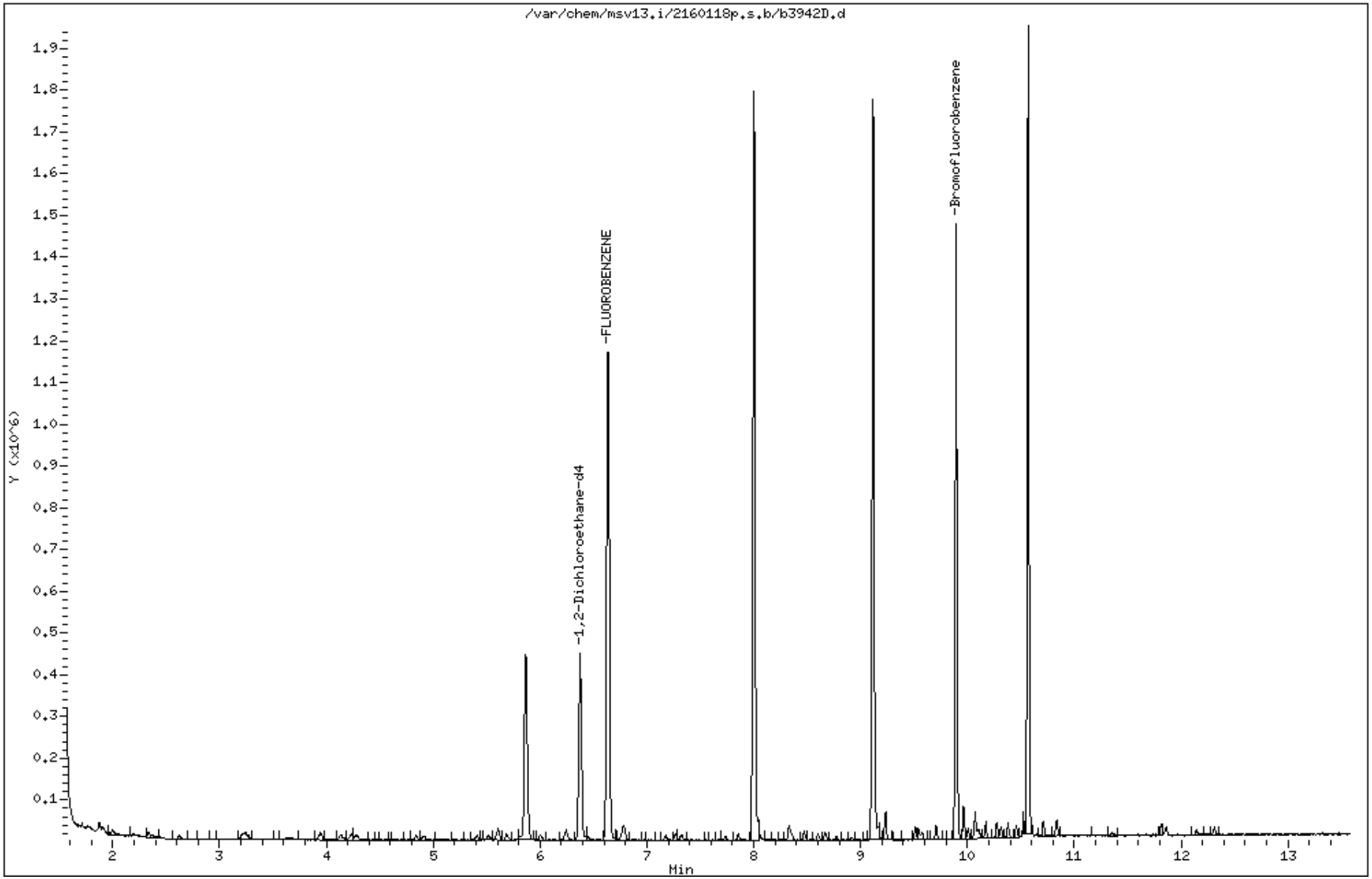
Sample Info: 1203*V13STD001

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

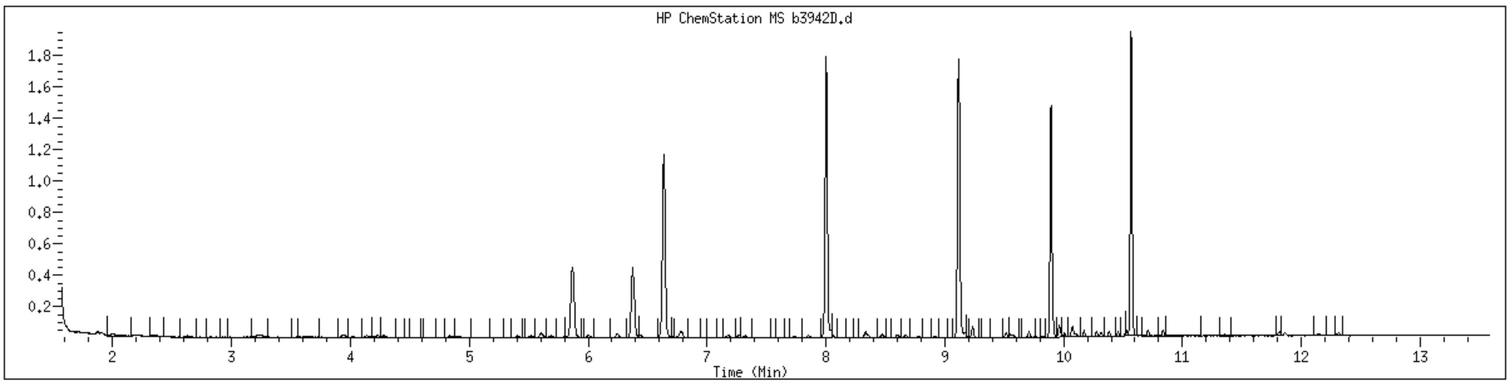
Column diameter: 0.25



Data file : /var/chem/msv13.i/2160118p.s.b/b3942D.d Page: 1
Report Date: 01/19/2016 18:53

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1203 SampleType : CALIB_3
Injection Date: 01/18/2016 15:07 Instrument : msv13.i
Operator : JCK
Sample Info : 1203*V13STD001
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



Original Final

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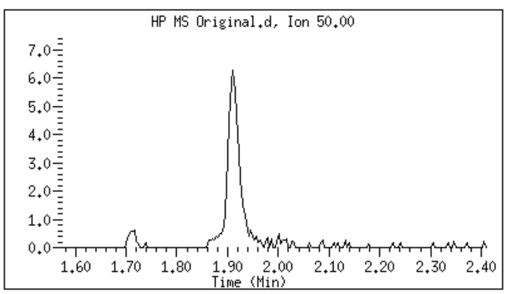
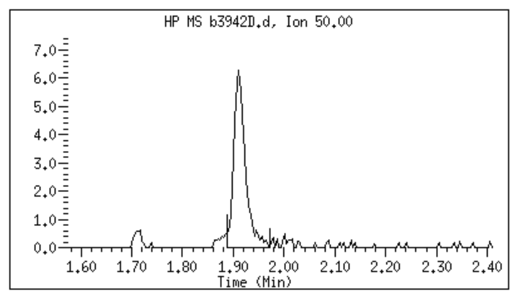
2 Chloromethane ++ CAS#: 74-87-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 17:44



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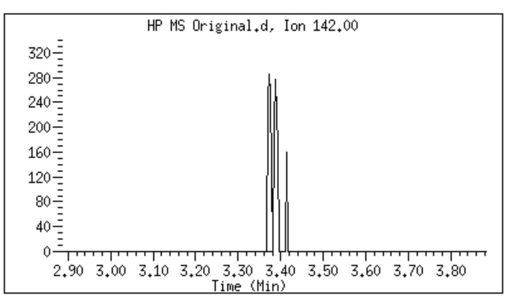
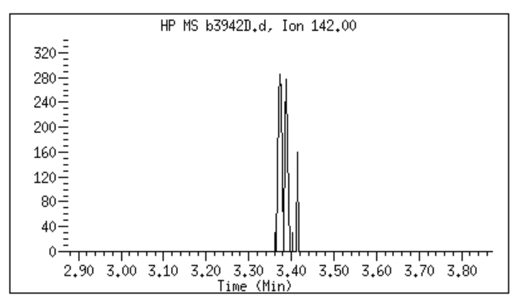
13 Methyl Iodide CAS#: 74-88-4 Reason: M2



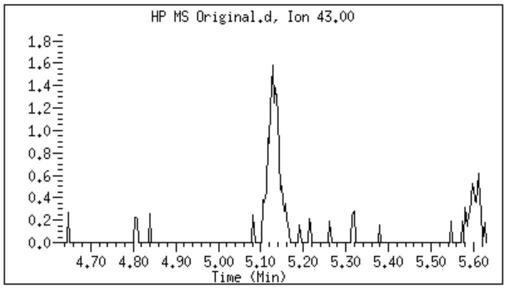
Electronic Signature Applied

User: jck2
Date: 01/18/2016 15:45



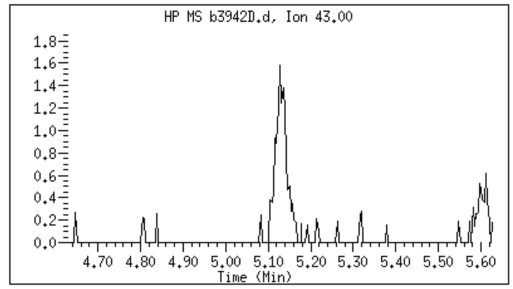
Original	Final

28 Vinyl Acetate CAS#: 108-05-4 Reason: M1



Electronic Signature Applied

User: jck2
Date: 01/18/2016 15:45



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3943D.d
Lab Smp Id: 1204 Client Smp ID: V13STD005
Inj Date : 18-JAN-2016 15:28
Operator : JCK Inst ID: msv13.i
Smp Info : 1204*V13STD005
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 15:28 Cal File: b3943D.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	21512	5.00000	4.75	
2 Chloromethane ++	50	1.915	1.915	(0.288)	31533	5.00000	2.51	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	24879	5.00000	4.71	
6 Bromomethane	94	2.335	2.335	(0.352)	15462	5.00000	3.83	
7 Chloroethane	64	2.481	2.481	(0.374)	14122	5.00000	3.54	
8 Trichlorofluoromethane	101	2.631	2.631	(0.396)	27788	5.00000	4.82	
10 1,1-Dichloroethene +	96	3.216	3.216	(0.484)	17296	5.00000	4.97	
11 Carbon Disulfide	76	3.238	3.238	(0.488)	59647	5.00000	4.25	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	17984	5.00000	4.92	
13 Methyl Iodide	142	3.396	3.396	(0.512)	1668	5.00000	8.40	
14 Acrolein	56	3.651	3.651	(0.550)	10051	25.0000	24.9	
16 Methylene Chloride	49	3.947	3.947	(0.595)	36262	5.00000	5.35	
17 Acetone	43	4.018	4.018	(0.605)	17537	5.00000	4.90	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	27735	5.00000	4.62	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.176	4.176	(0.629)	22765	5.00000	4.48	7813
	20 Hexane	57	4.235	4.235	(0.638)	25278	5.00000	5.62	8352
	21 MTBE	73	4.288	4.288	(0.646)	53725	5.00000	4.29	8435
	26 1,1-Dichloroethane ++	63	4.847	4.847	(0.730)	40204	5.00000	4.72	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	44595	25.0000	23.6	
	28 Vinyl Acetate	43	5.131	5.131	(0.773)	14224	5.00000	6.68	
	29 cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	25745	5.00000	4.35	
M	75 Total 1,2-Dichloroethene	61				53480	10.0000	8.96	
	30 2,2-Dichloropropane	77	5.521	5.521	(0.832)	29366	5.00000	4.57	
	32 Cyclohexane	56	5.604	5.604	(0.844)	26432	5.00000	4.78	8006
	34 Bromochloromethane	128	5.619	5.619	(0.846)	13018	5.00000	4.72	
	35 Chloroform +	83	5.694	5.694	(0.858)	38509	5.00000	4.70	
	36 Carbon Tetrachloride	117	5.814	5.814	(0.876)	28604	5.00000	4.63	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	259115	50.0000	51.1	6969
	41 1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	33272	5.00000	4.80	
	44 2-Butanone	43	6.009	6.009	(0.905)	15765	5.00000	4.48	
	43 1,1-Dichloropropene	75	6.012	6.012	(0.906)	22216	5.00000	4.14	
	46 Benzene	78	6.249	6.249	(0.941)	80939	5.00000	4.35	
$	50 1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	152527	50.0000	51.7	
	51 1,2-Dichloroethane	62	6.440	6.440	(0.970)	30734	5.00000	4.80	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	988110	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	30890	5.00000	4.09	8602
	56 Trichloroethene	130	6.792	6.792	(1.023)	24371	5.00000	4.43	
	57 Dibromomethane	93	7.178	7.178	(1.081)	14366	5.00000	4.72	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	21987	5.00000	4.59	
	60 Bromodichloromethane	83	7.324	7.324	(1.103)	29392	5.00000	4.54	
	65 1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	31425	5.00000	4.50	9557
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	26932	5.00000	5.44	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	947954	50.0000	49.9	
	69 Toluene +	91	8.040	8.040	(0.882)	98996	5.00000	4.69	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	21365	5.00000	4.51	
	73 4-methyl-2-pentanone	43	8.333	8.333	(0.914)	22618	5.00000	4.22	
	74 trans-1,3-Dichloropropene	75	8.359	8.359	(1.259)	27798	5.00000	4.54	
M	82 1-3 Dichloropropene total	100				54730	10.0000	9.98	0
	76 1,1,2-Trichloroethane	97	8.471	8.471	(0.929)	23027	5.00000	4.80	
	78 Dibromochloromethane	129	8.606	8.606	(0.944)	26448	5.00000	4.79	
	79 1,3-Dichloropropane	76	8.670	8.670	(0.951)	35053	5.00000	4.60	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	21099	5.00000	4.60	
	83 2-Hexanone	43	8.918	8.918	(0.978)	16123	5.00000	5.30	
	86 1-Chlorohexane	91	9.101	9.101	(0.998)	19187	5.00000	5.11	5005
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	417636	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.002)	76667	5.00000	4.90	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	32409	5.00000	4.40	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	25392	5.00000	4.79	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	70941	10.0000	8.91	
	90 o-Xylene	106	9.514	9.514	(1.044)	29582	5.00000	5.13	
M	121 TOTAL XYLENE	106				100523	15.0000	14.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	46018	5.00000	4.98	
92	Bromoform ++	173	9.577	9.577	(1.051)	22108	5.00000	4.62	
93	Isopropylbenzene	105	9.709	9.709	(1.065)	75624	5.00000	5.02	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.086)	349552	50.0000	49.9	
96	Bromobenzene	77	9.967	9.967	(0.943)	53441	5.00000	4.93	
97	n-Propylbenzene	91	9.967	9.967	(0.943)	104585	5.00000	4.22	
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	34436	5.00000	3.11	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	76730	5.00000	4.43	
102	1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	57246	5.00000	4.74	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	35666	5.00000	4.53	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	6831	5.00000	4.43	
104	4-Chlorotoluene	91	10.173	10.173	(0.963)	70403	5.00000	4.48	
105	tert-butylbenzene	91	10.275	10.275	(0.972)	36200	5.00000	4.13	
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	51755	5.00000	5.83	
108	sec-Butylbenzene	105	10.380	10.380	(0.982)	84739	5.00000	4.77	
110	p-Isopropyltoluene	119	10.458	10.458	(0.990)	57367	5.00000	5.39	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	60456	5.00000	4.91	
* 114	1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	422796	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	65399	5.00000	5.02	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	49239	5.00000	5.90	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	55950	5.00000	4.80	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	7043	5.00000	4.33	
120	Hexachlorobutadiene	225	11.815	11.815	(1.118)	20853	5.00000	4.07	
122	1,2,4-Trichlorobenzene	180	11.856	11.856	(1.122)	34079	5.00000	4.57	
124	Naphthalene	128	12.149	12.149	(1.150)	50077	5.00000	4.98	
125	1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	33968	5.00000	4.49	

Data File: /var/chem/msv13.i/2160118p.s.b/b3943D.d

Date : 18-JAN-2016 15:28

Client ID: V13STD005

Instrument: msv13.i

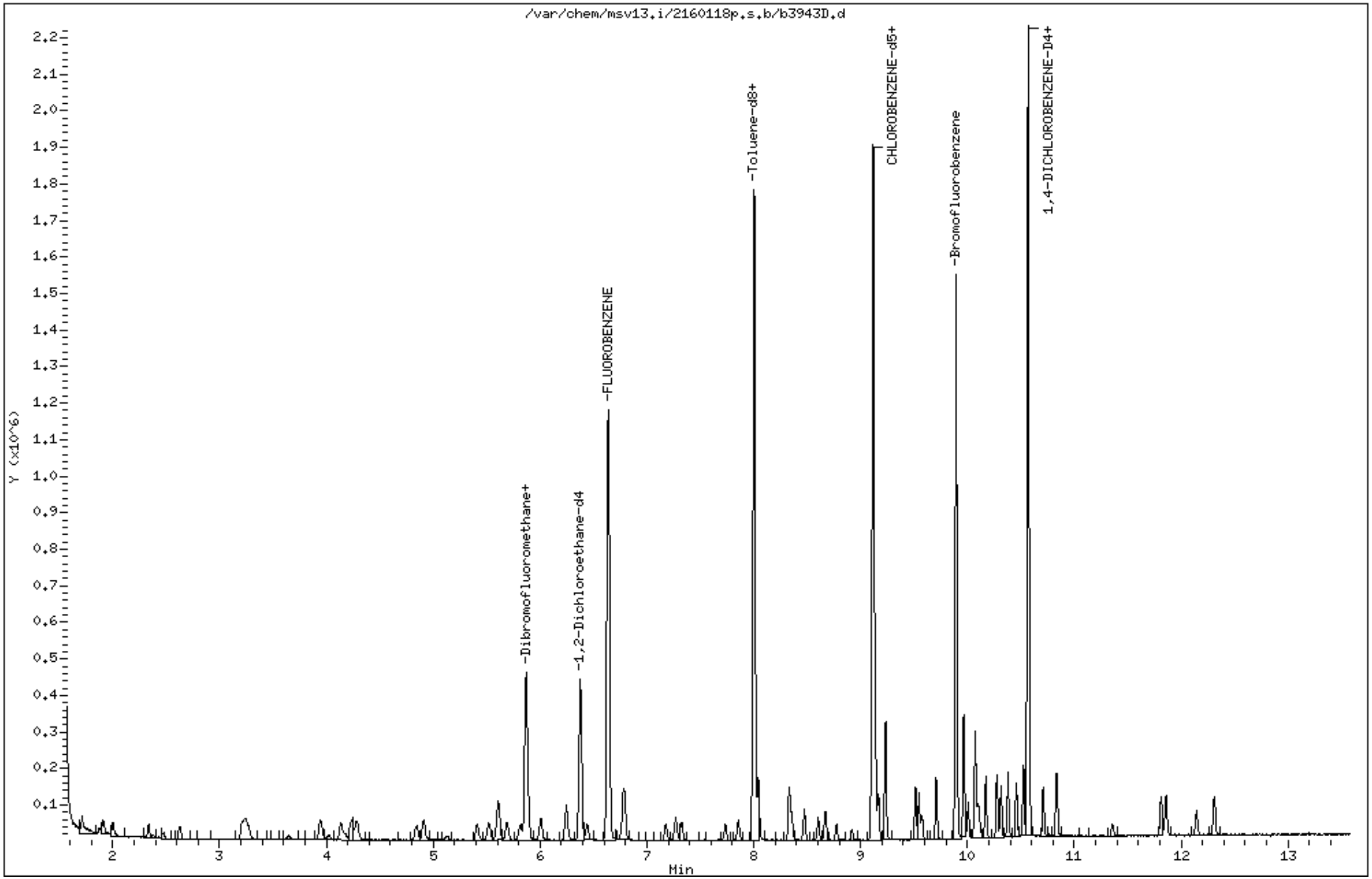
Sample Info: 1204*V13STD005

Purge Volume: 5.0

Operator: JCK

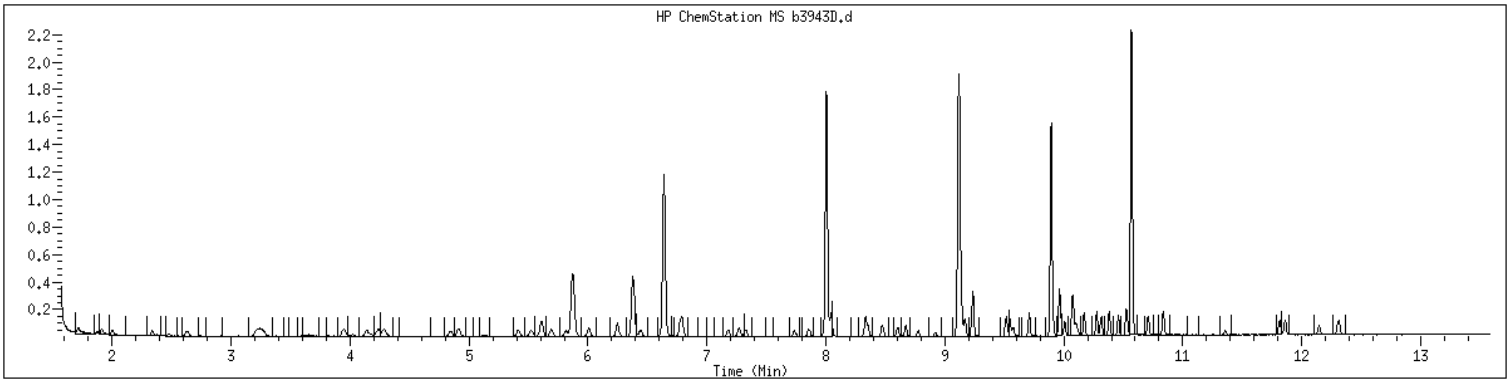
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1204 SampleType : CALIB_4
Injection Date: 01/18/2016 15:28 Instrument : msv13.i
Operator : JCK
Sample Info : 1204*V13STD005
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3944D.d
Lab Smp Id: 1205 Client Smp ID: V13STD010
Inj Date : 18-JAN-2016 15:49
Operator : JCK Inst ID: msv13.i
Smp Info : 1205*V13STD010
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 15:49 Cal File: b3944D.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.713	1.713	(0.258)	45511	10.0000	9.73	
2	Chloromethane ++	50	1.911	1.911	(0.288)	65076	10.0000	8.19	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	50811	10.0000	9.31	
6	Bromomethane	94	2.339	2.339	(0.352)	32754	10.0000	9.40	
7	Chloroethane	64	2.477	2.477	(0.373)	30011	10.0000	9.15	
8	Trichlorofluoromethane	101	2.631	2.631	(0.396)	56668	10.0000	9.52	
10	1,1-Dichloroethene +	96	3.212	3.212	(0.484)	33763	10.0000	9.41	
11	Carbon Disulfide	76	3.242	3.242	(0.488)	119502	10.0000	9.08	
12	1,1,2Trichlotrifluoroethane	101	3.264	3.264	(0.492)	35907	10.0000	9.51	
13	Methyl Iodide	142	3.384	3.384	(0.510)	3586	10.0000	10.2	(M2)
14	Acrolein	56	3.643	3.643	(0.549)	21199	50.0000	50.9	
16	Methylene Chloride	49	3.943	3.943	(0.594)	71555	10.0000	10.9	
17	Acetone	43	4.022	4.022	(0.606)	36535	10.0000	9.90	
18	trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	57776	10.0000	9.32	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.172	4.172	(0.628)	50447	10.0000	9.62	8460
	20 Hexane	57	4.235	4.235	(0.638)	51275	10.0000	9.08	8743
	21 MTBE	73	4.288	4.288	(0.646)	119460	10.0000	9.23	8919
	26 1,1-Dichloroethane ++	63	4.846	4.846	(0.730)	82898	10.0000	9.42	
	27 Acrylonitrile	53	4.910	4.910	(0.740)	98377	50.0000	50.5	
	28 Vinyl Acetate	43	5.131	5.131	(0.773)	32135	10.0000	10.8	
	29 cis-1,2-Dichloroethene	61	5.412	5.412	(0.815)	53616	10.0000	8.77	
M	75 Total 1,2-Dichloroethene	61				111392	20.0000	18.1	
	30 2,2-Dichloropropane	77	5.521	5.521	(0.832)	61825	10.0000	9.33	
	32 Cyclohexane	56	5.604	5.604	(0.844)	60102	10.0000	8.47	8368
	34 Bromochloromethane	128	5.615	5.615	(0.846)	27427	10.0000	9.64	
	35 Chloroform +	83	5.694	5.694	(0.858)	81211	10.0000	9.60	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	59564	10.0000	9.35	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	264439	50.0000	50.6	6947
	41 1,1,1-Trichloroethane	97	5.888	5.888	(0.887)	67890	10.0000	9.49	
	44 2-Butanone	43	6.005	6.005	(0.905)	33537	10.0000	9.24	
	43 1,1-Dichloropropene	75	6.005	6.005	(0.905)	46399	10.0000	8.39	
	46 Benzene	78	6.248	6.248	(0.941)	176452	10.0000	9.18	
$	50 1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	153838	50.0000	50.5	
	51 1,2-Dichloroethane	62	6.443	6.443	(0.971)	63534	10.0000	9.62	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	1019873	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	66915	10.0000	8.59	8726
	56 Trichloroethene	130	6.792	6.792	(1.023)	53561	10.0000	9.43	
	57 Dibromomethane	93	7.174	7.174	(1.081)	30878	10.0000	9.84	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	45382	10.0000	9.17	
	60 Bromodichloromethane	83	7.324	7.324	(1.103)	62394	10.0000	9.33	
	65 1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	66086	10.0000	9.17	9692
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	58299	10.0000	9.18	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	980881	50.0000	49.4	
	69 Toluene +	91	8.044	8.044	(0.882)	205038	10.0000	9.30	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	45140	10.0000	9.12	
	73 4-methyl-2-pentanone	43	8.333	8.333	(0.914)	47903	10.0000	8.54	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	62473	10.0000	8.91	
M	82 1-3 Dichloropropene total	100				120772	20.0000	18.1	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	47851	10.0000	9.55	
	78 Dibromochloromethane	129	8.603	8.603	(0.944)	54492	10.0000	9.44	
	79 1,3-Dichloropropane	76	8.670	8.670	(0.951)	74383	10.0000	9.33	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	45822	10.0000	9.55	
	83 2-Hexanone	43	8.917	8.917	(0.978)	37612	10.0000	9.21	
	86 1-Chlorohexane	91	9.105	9.105	(0.999)	44542	10.0000	8.82	4832
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	436503	50.0000		
	85 Chlorobenzene ++	112	9.127	9.127	(1.001)	155251	10.0000	9.49	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	71690	10.0000	9.31	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	52004	10.0000	9.39	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	164777	20.0000	17.7	
	90 o-Xylene	106	9.517	9.517	(1.044)	67222	10.0000	8.89	
M	121 TOTAL XYLENE	106				231999	30.0000	26.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	113128	10.0000	8.82	
92	Bromoform ++	173	9.573	9.573	(1.050)	46337	10.0000	9.26	
93	Isopropylbenzene	105	9.708	9.708	(1.065)	185115	10.0000	9.09	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.086)	368358	50.0000	50.4	
96	Bromobenzene	77	9.963	9.963	(0.943)	104722	10.0000	10.3	
97	n-Propylbenzene	91	9.967	9.967	(0.943)	234433	10.0000	10.1	
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	73852	10.0000	10.4	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	167438	10.0000	10.3	
102	1,3,5-Trimethylbenzene	105	10.079	10.079	(0.954)	137811	10.0000	9.44	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	82510	10.0000	11.2	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	15602	10.0000	10.8	
104	4-Chlorotoluene	91	10.173	10.173	(0.963)	152811	10.0000	10.4	
105	tert-butylbenzene	91	10.278	10.278	(0.973)	77502	10.0000	9.42	
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	107169	10.0000	9.17	
108	sec-Butylbenzene	105	10.383	10.383	(0.983)	177306	10.0000	9.00	
110	p-Isopropyltoluene	119	10.458	10.458	(0.990)	121322	10.0000	8.73	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	108024	10.0000	9.35	
* 114	1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	396524	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	114806	10.0000	9.40	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	102214	10.0000	9.29	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	101691	10.0000	9.30	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	14116	10.0000	9.25	
120	Hexachlorobutadiene	225	11.811	11.811	(1.118)	40126	10.0000	10.2	
122	1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	67445	10.0000	9.64	
124	Naphthalene	128	12.145	12.145	(1.149)	131358	10.0000	10.0	
125	1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	73325	10.0000	10.3	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3944D.d

Date : 18-JAN-2016 15:49

Client ID: V13STD010

Instrument: msv13.i

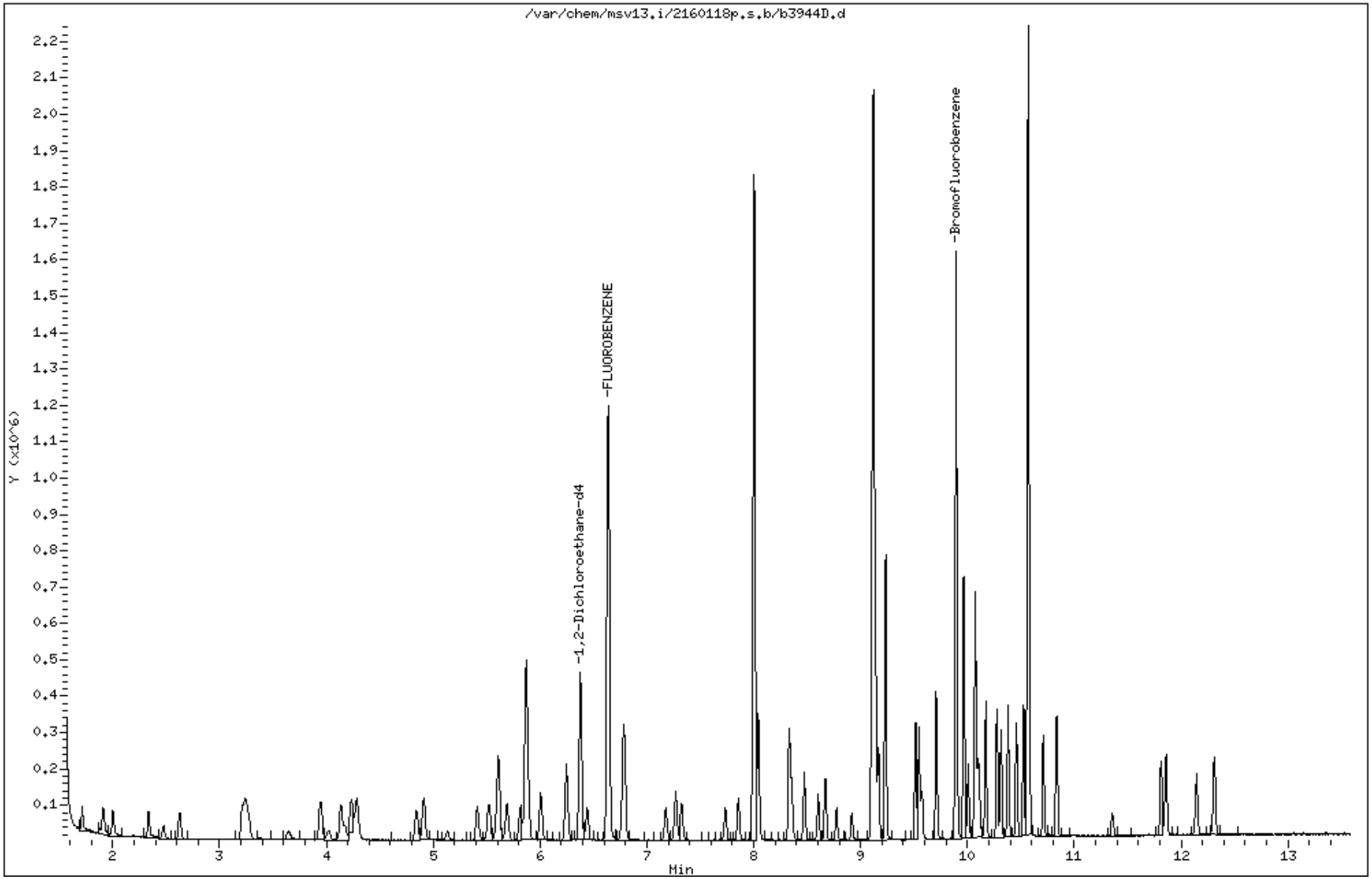
Sample Info: 1205*V13STD010

Purge Volume: 5.0

Operator: JCK

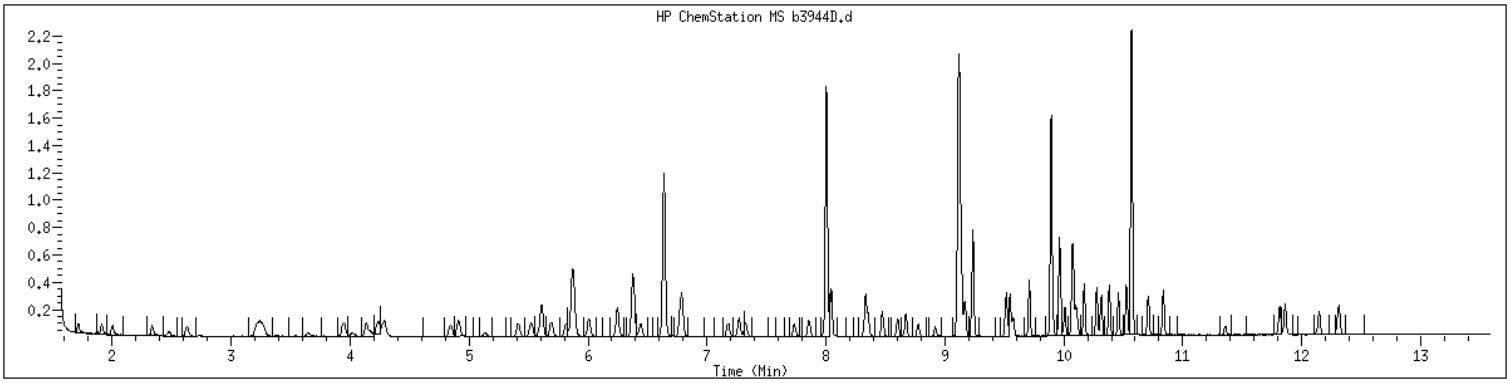
Column phase: RTX-VMS-30M

Column diameter: 0.25

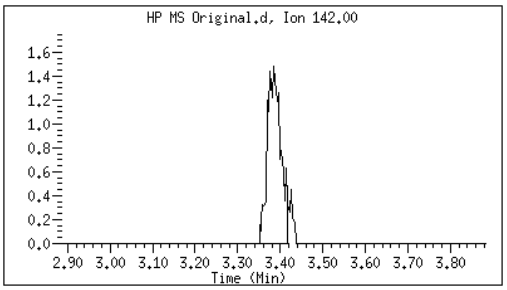


MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1205 SampleType : CALIB_5
Injection Date: 01/18/2016 15:49 Instrument : msv13.i
Operator : JCK
Sample Info : 1205*V13STD010
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE

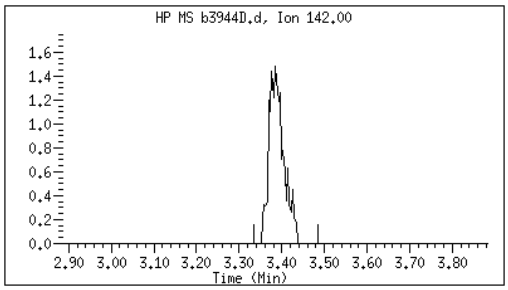


Original		Final
13 Methyl Iodide	CAS#: 74-88-4	Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 16:10



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3945D.d
Lab Smp Id: 1206 Client Smp ID: V13STD020
Inj Date : 18-JAN-2016 16:09
Operator : JCK Inst ID: msv13.i
Smp Info : 1206*V13STD020
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 16:09 Cal File: b3945D.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.716	1.716	(0.259)	94224	20.0000	19.8	
2	Chloromethane ++	50	1.911	1.911	(0.288)	129328	20.0000	19.1	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	106234	20.0000	19.2	
6	Bromomethane	94	2.339	2.339	(0.352)	67312	20.0000	20.5	
7	Chloroethane	64	2.477	2.477	(0.373)	59161	20.0000	19.4	
8	Trichlorofluoromethane	101	2.631	2.631	(0.396)	122994	20.0000	20.4	
10	1,1-Dichloroethene +	96	3.216	3.216	(0.484)	66483	20.0000	18.3	
11	Carbon Disulfide	76	3.242	3.242	(0.488)	233824	20.0000	18.3	
12	1,1,2Trichlotrifluoroethane	101	3.272	3.272	(0.493)	72903	20.0000	19.0	
13	Methyl Iodide	142	3.388	3.388	(0.510)	8829	20.0000	15.2	
14	Acrolein	56	3.647	3.647	(0.549)	38883	100.000	92.0	
16	Methylene Chloride	49	3.947	3.947	(0.595)	119513	20.0000	18.3	
17	Acetone	43	4.018	4.018	(0.605)	71847	20.0000	19.2	
18	trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	112443	20.0000	17.9	

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19	Methyl Acetate	43	4.175	4.175	(0.629)	99221	20.0000	18.6	8242
	20	Hexane	57	4.235	4.235	(0.638)	107805	20.0000	16.6	8952(M2)
	21	MTBE	73	4.284	4.284	(0.645)	249020	20.0000	19.0	9087
	26	1,1-Dichloroethane ++	63	4.846	4.846	(0.730)	174523	20.0000	19.6	
	27	Acrylonitrile	53	4.914	4.914	(0.740)	200964	100.000	102	
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	66763	20.0000	18.7	
	29	cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	118841	20.0000	19.2	
M	75	Total 1,2-Dichloroethene	61				231284	40.0000	37.0	
	30	2,2-Dichloropropane	77	5.525	5.525	(0.832)	129294	20.0000	19.2	
	32	Cyclohexane	56	5.607	5.607	(0.845)	147394	20.0000	18.0	8323
	34	Bromochloromethane	128	5.615	5.615	(0.846)	58086	20.0000	20.1	
	35	Chloroform +	83	5.690	5.690	(0.857)	168225	20.0000	19.6	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	126769	20.0000	19.6	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	266365	50.0000	50.2	6976
	41	1,1,1-Trichloroethane	97	5.888	5.888	(0.887)	142169	20.0000	19.6	
	44	2-Butanone	43	6.001	6.001	(0.904)	73495	20.0000	20.0	
	43	1,1-Dichloropropene	75	6.008	6.008	(0.905)	107756	20.0000	19.2	
	46	Benzene	78	6.248	6.248	(0.941)	385440	20.0000	19.8	
$	50	1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	155644	50.0000	50.4	
	51	1,2-Dichloroethane	62	6.443	6.443	(0.971)	131319	20.0000	19.6	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	1034998	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	152587	20.0000	19.3	8998
	56	Trichloroethene	130	6.792	6.792	(1.023)	112910	20.0000	19.6	
	57	Dibromomethane	93	7.178	7.178	(1.081)	60682	20.0000	19.0	
	59	1,2-Dichloropropane +	63	7.268	7.268	(1.095)	95267	20.0000	19.0	
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	132065	20.0000	19.5	
	65	1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	143642	20.0000	19.6	9689
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	128661	20.0000	17.6	
$	68	Toluene-d8	98	8.003	8.003	(0.878)	1022677	50.0000	50.0	
	69	Toluene +	91	8.044	8.044	(0.882)	439750	20.0000	19.4	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	97141	20.0000	19.1	
	73	4-methyl-2-pentanone	43	8.333	8.333	(0.914)	112054	20.0000	19.4	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	137820	20.0000	18.4	
M	82	1-3 Dichloropropene total	100				266481	40.0000	36.0	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	99744	20.0000	19.3	
	78	Dibromochloromethane	129	8.602	8.602	(0.944)	112580	20.0000	18.9	
	79	1,3-Dichloropropane	76	8.674	8.674	(0.951)	159873	20.0000	19.5	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	96033	20.0000	19.4	
	83	2-Hexanone	43	8.917	8.917	(0.978)	86905	20.0000	18.0	
	86	1-Chlorohexane	91	9.105	9.105	(0.999)	105309	20.0000	17.6	6748
*	84	CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	449491	50.0000		
	85	Chlorobenzene ++	112	9.131	9.131	(1.002)	323213	20.0000	19.2	
	87	Ethylbenzene +	106	9.139	9.139	(1.002)	159006	20.0000	20.1	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	110074	20.0000	19.3	
	89	p,m-Xylene	106	9.236	9.236	(1.013)	375780	40.0000	37.1	
	90	o-Xylene	106	9.517	9.517	(1.044)	155188	20.0000	17.5	
M	121	TOTAL XYLENE	106				530968	60.0000	54.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	276875	20.0000	18.0	
92	Bromoform ++	173	9.573	9.573	(1.050)	97445	20.0000	18.9	
93	Isopropylbenzene	105	9.712	9.712	(1.065)	434460	20.0000	18.2	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.086)	381411	50.0000	50.6	
96	Bromobenzene	77	9.963	9.963	(0.943)	223853	20.0000	17.9	
97	n-Propylbenzene	91	9.967	9.967	(0.943)	535522	20.0000	18.7	
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	152550	20.0000	19.0	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	377856	20.0000	18.9	
102	1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	339939	20.0000	17.1	
100	1,2,3-Trichloropropane	75	10.098	10.098	(0.956)	170096	20.0000	18.7	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	34332	20.0000	19.3	
104	4-Chlorotoluene	91	10.173	10.173	(0.963)	344289	20.0000	18.9	
105	tert-butylbenzene	91	10.278	10.278	(0.973)	197214	20.0000	19.5	
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	300179	20.0000	16.9	
108	sec-Butylbenzene	105	10.383	10.383	(0.983)	471922	20.0000	17.9	
110	p-Isopropyltoluene	119	10.458	10.458	(0.990)	361812	20.0000	17.3	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	270889	20.0000	19.0	
* 114	1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	488665	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	281101	20.0000	18.7	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	279855	20.0000	16.9	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	260004	20.0000	19.3	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	35619	20.0000	18.9	
120	Hexachlorobutadiene	225	11.815	11.815	(1.118)	87876	20.0000	19.4	
122	1,2,4-Trichlorobenzene	180	11.864	11.864	(1.123)	157152	20.0000	18.2	
124	Naphthalene	128	12.145	12.145	(1.149)	340972	20.0000	18.7	
125	1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	167756	20.0000	19.2	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3945D.d

Date : 18-JAN-2016 16:09

Client ID: V13STD020

Instrument: msv13.i

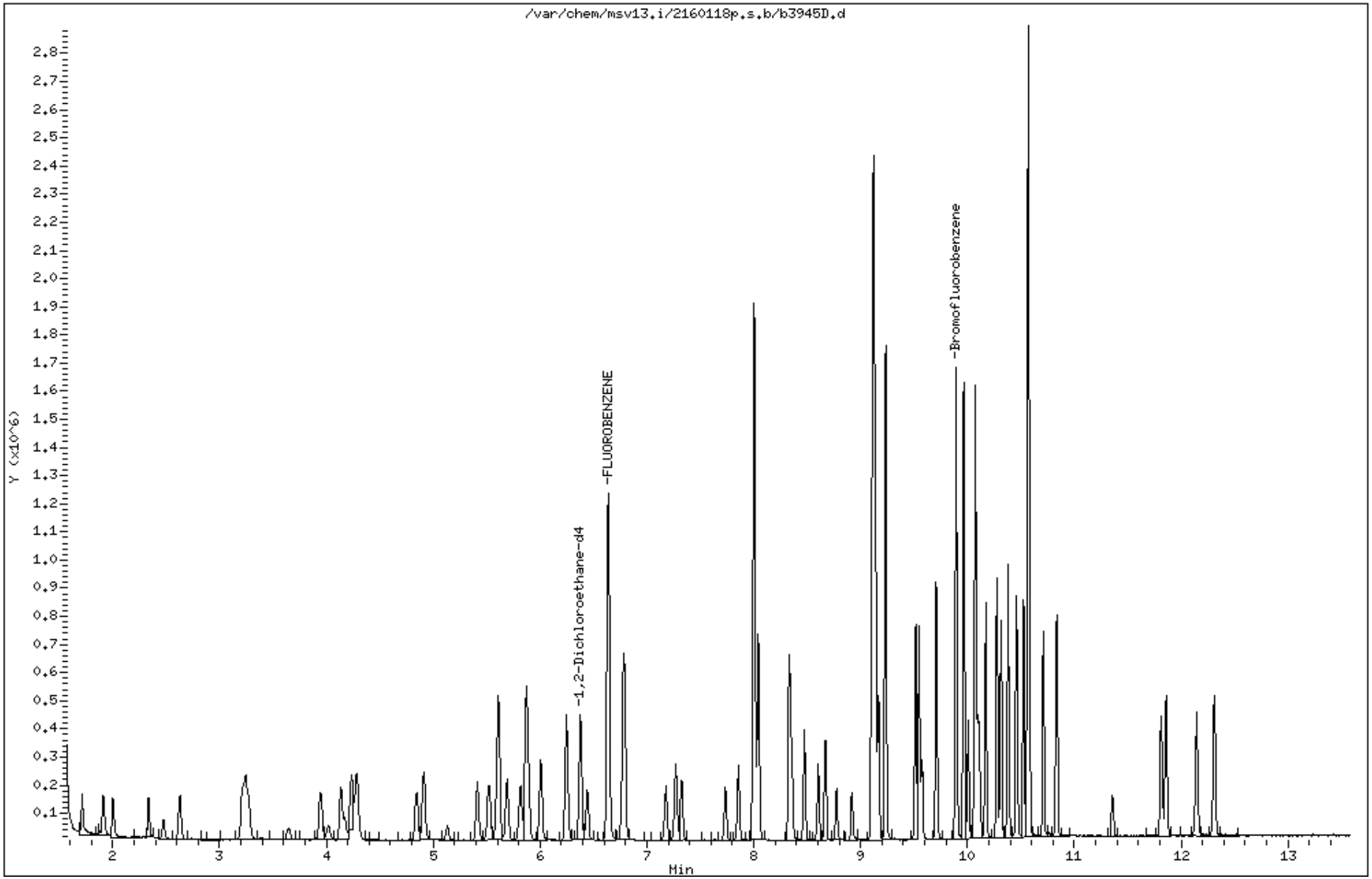
Sample Info: 1206*V13STD020

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

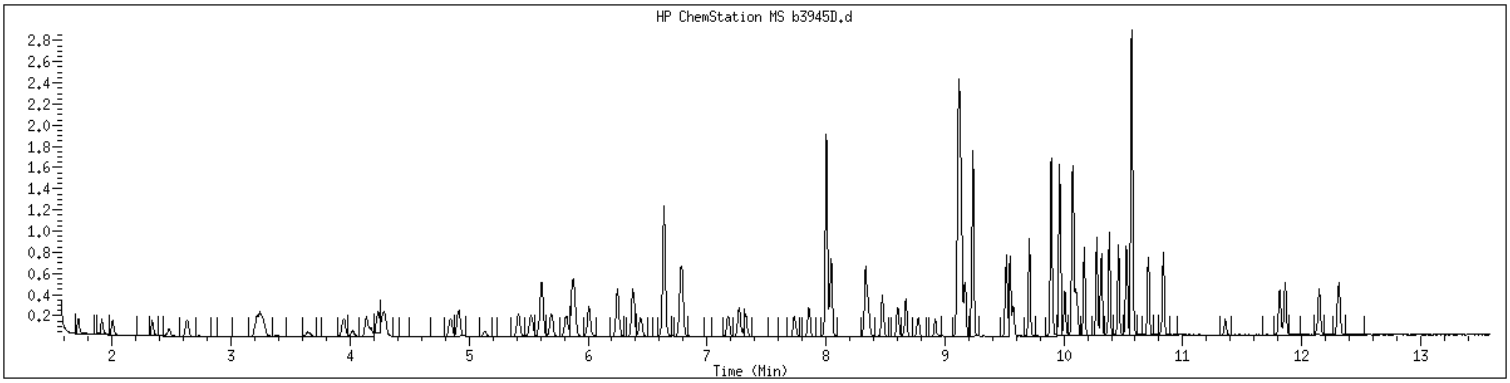
Column diameter: 0.25



Report Date: 01/19/2016 18:53

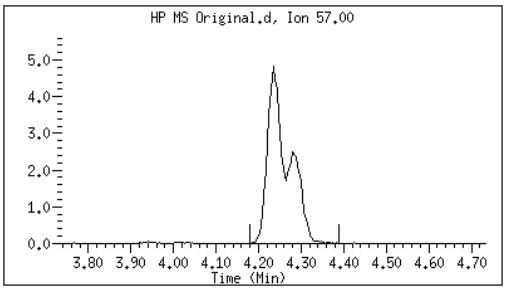
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1206 SampleType : CALIB_6
Injection Date: 01/18/2016 16:09 Instrument : msv13.i
Operator : JCK
Sample Info : 1206*V13STD020
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



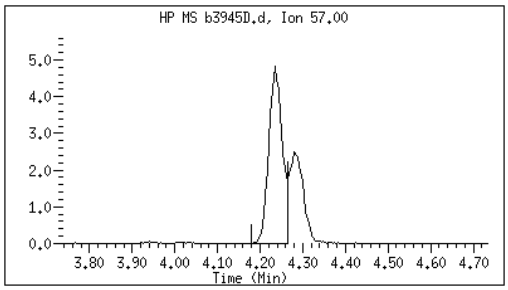
Original Final

20 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 16:57



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3946D.d
Lab Smp Id: 1207 Client Smp ID: V13STD050
Inj Date : 18-JAN-2016 16:30
Operator : JCK Inst ID: msv13.i
Smp Info : 1207*V13STD050
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 16:30 Cal File: b3946D.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	249945	50.0000	50.4	
2 Chloromethane ++	50	1.915	1.915	(0.288)	348381	50.0000	54.2	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	304678	50.0000	52.6	
6 Bromomethane	94	2.335	2.335	(0.352)	169769	50.0000	51.6	
7 Chloroethane	64	2.477	2.477	(0.373)	160313	50.0000	53.2	
8 Trichlorofluoromethane	101	2.631	2.631	(0.396)	310017	50.0000	49.1	
10 1,1-Dichloroethene +	96	3.216	3.216	(0.484)	188124	50.0000	49.4	
11 Carbon Disulfide	76	3.242	3.242	(0.488)	647001	50.0000	50.0	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	200051	50.0000	50.0	
13 Methyl Iodide	142	3.388	3.388	(0.510)	38805	50.0000	41.3	
14 Acrolein	56	3.651	3.651	(0.550)	115195	250.000	261	
16 Methylene Chloride	49	3.943	3.943	(0.594)	304516	50.0000	45.7	
17 Acetone	43	4.022	4.022	(0.606)	193600	50.0000	49.4	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	342752	50.0000	52.1	

		QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	19 Methyl Acetate	43	4.172	4.172	(0.628)	285008	50.0000	51.2	8869
	20 Hexane	57	4.239	4.239	(0.639)	354936	50.0000	48.0	9416(M2)
	21 MTBE	73	4.284	4.284	(0.645)	780778	50.0000	56.9	9521
	26 1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	477932	50.0000	51.2	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	574459	250.000	278	
	28 Vinyl Acetate	43	5.135	5.135	(0.774)	188331	50.0000	44.9	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	344990	50.0000	53.2	
M	75 Total 1,2-Dichloroethene	61				687742	100.000	105	
	30 2,2-Dichloropropane	77	5.525	5.525	(0.832)	358610	50.0000	51.0	
	32 Cyclohexane	56	5.607	5.607	(0.845)	454514	50.0000	49.9	8833
	34 Bromochloromethane	128	5.615	5.615	(0.846)	153834	50.0000	51.0	
	35 Chloroform +	83	5.690	5.690	(0.857)	452898	50.0000	50.5	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	350176	50.0000	51.8	
$	40 Dibromofluoromethane	111	5.874	5.874	(0.885)	274421	50.0000	49.5	6992
	41 1,1,1-Trichloroethane	97	5.888	5.888	(0.887)	389675	50.0000	51.4	
	44 2-Butanone	43	6.001	6.001	(0.904)	219332	50.0000	57.0	
	43 1,1-Dichloropropene	75	6.008	6.008	(0.905)	330225	50.0000	56.3	
	46 Benzene	78	6.248	6.248	(0.941)	1098408	50.0000	53.9	
$	50 1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	159322	50.0000	49.3	
	51 1,2-Dichloroethane	62	6.440	6.440	(0.970)	356223	50.0000	50.9	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	1081608	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	455068	50.0000	55.1	9224
	56 Trichloroethene	130	6.792	6.792	(1.023)	323648	50.0000	53.7	
	57 Dibromomethane	93	7.178	7.178	(1.081)	170669	50.0000	51.3	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	275182	50.0000	52.4	
	60 Bromodichloromethane	83	7.324	7.324	(1.103)	361534	50.0000	51.0	
	65 1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	405633	50.0000	53.1	9680
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	405668	50.0000	49.0	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	1078174	50.0000	50.0	
	69 Toluene +	91	8.044	8.044	(0.882)	1222523	50.0000	51.0	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	272077	50.0000	50.6	
	73 4-methyl-2-pentanone	43	8.333	8.333	(0.914)	349567	50.0000	57.4	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	410810	50.0000	50.9	
M	82 1-3 Dichloropropene total	100				816478	100.000	99.9	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	272347	50.0000	50.0	
	78 Dibromochloromethane	129	8.603	8.603	(0.944)	321659	50.0000	51.3	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	455401	50.0000	52.6	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	267751	50.0000	51.4	
	83 2-Hexanone	43	8.917	8.917	(0.978)	289189	50.0000	52.2	
	86 1-Chlorohexane	91	9.105	9.105	(0.999)	335727	50.0000	48.8	9023
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	474261	50.0000		
	85 Chlorobenzene ++	112	9.127	9.127	(1.001)	888322	50.0000	50.0	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	447235	50.0000	53.5	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	297480	50.0000	49.4	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	1109426	100.000	101	
	90 o-Xylene	106	9.517	9.517	(1.044)	502709	50.0000	49.8	
M	121 TOTAL XYLENE	106				1612135	150.000	151	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	873102	50.0000	49.6	
92	Bromoform ++	173	9.573	9.573	(1.050)	274879	50.0000	50.6	
93	Isopropylbenzene	105	9.708	9.708	(1.065)	1338866	50.0000	49.4	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.086)	394214	50.0000	49.6	
96	Bromobenzene	77	9.963	9.963	(0.943)	634625	50.0000	47.9	
97	n-Propylbenzene	91	9.963	9.963	(0.943)	1577999	50.0000	52.2	
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	422944	50.0000	54.0	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	1099647	50.0000	52.0	
102	1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	1128089	50.0000	50.1	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	484410	50.0000	50.4	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	97000	50.0000	51.5	
104	4-Chlorotoluene	91	10.173	10.173	(0.963)	1014342	50.0000	52.8	
105	tert-butylbenzene	91	10.274	10.274	(0.972)	595001	50.0000	55.5	
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	1043150	50.0000	48.6	
108	sec-Butylbenzene	105	10.383	10.383	(0.983)	1461065	50.0000	49.9	
110	p-Isopropyltoluene	119	10.458	10.458	(0.990)	1212871	50.0000	48.9	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	772414	50.0000	51.3	
* 114	1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	516508	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	793231	50.0000	49.9	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	949005	50.0000	47.2	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	710387	50.0000	49.9	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	104540	50.0000	52.6	
120	Hexachlorobutadiene	225	11.815	11.815	(1.118)	211708	50.0000	46.5	
122	1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	439435	50.0000	48.2	
124	Naphthalene	128	12.145	12.145	(1.149)	966332	50.0000	46.4	
125	1,2,3-Trichlorobenzene	180	12.314	12.314	(1.165)	444603	50.0000	48.1	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3946D.d

Date : 18-JAN-2016 16:30

Client ID: V13STD050

Instrument: msv13.i

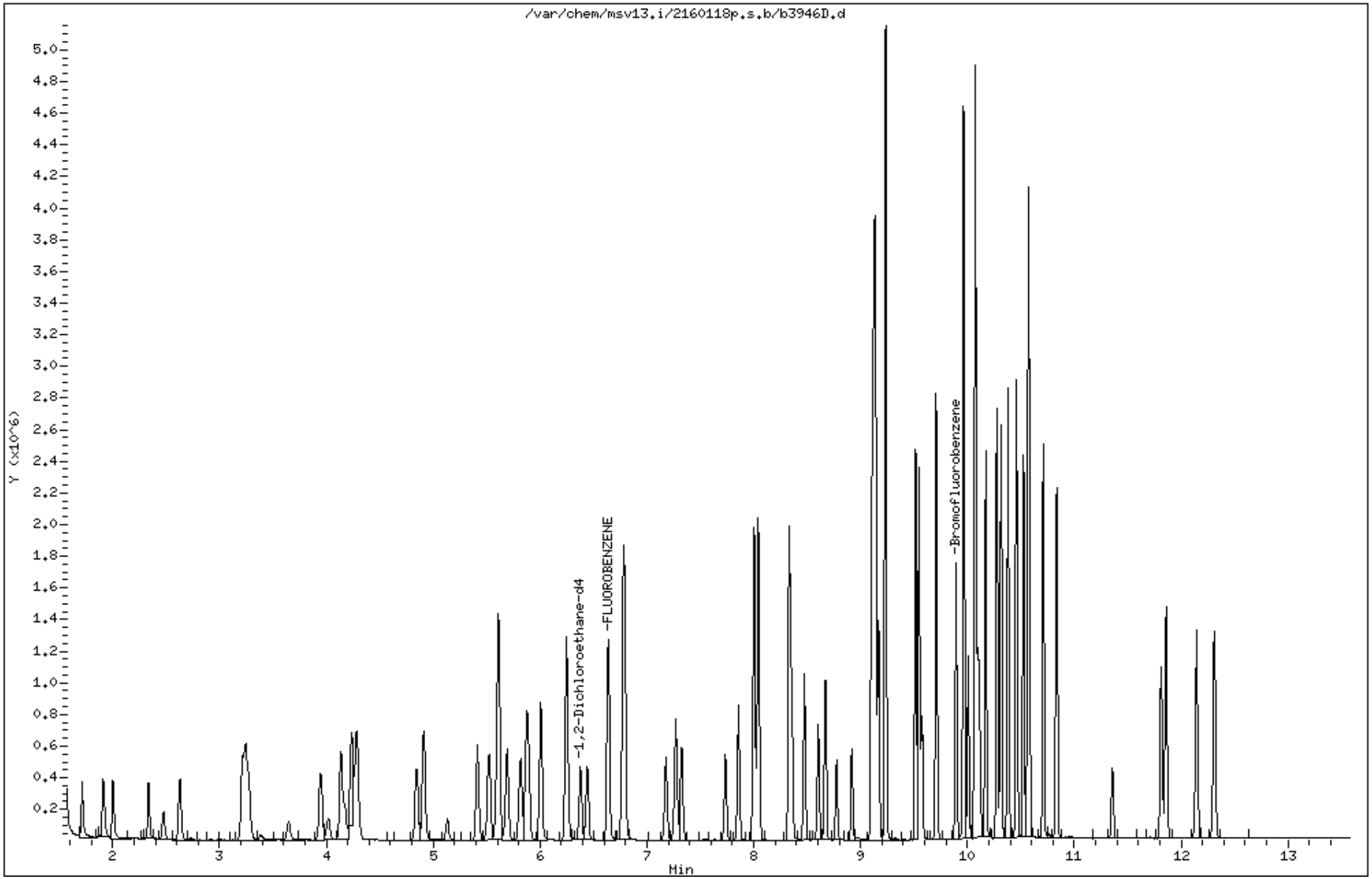
Sample Info: 1207*V13STD050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

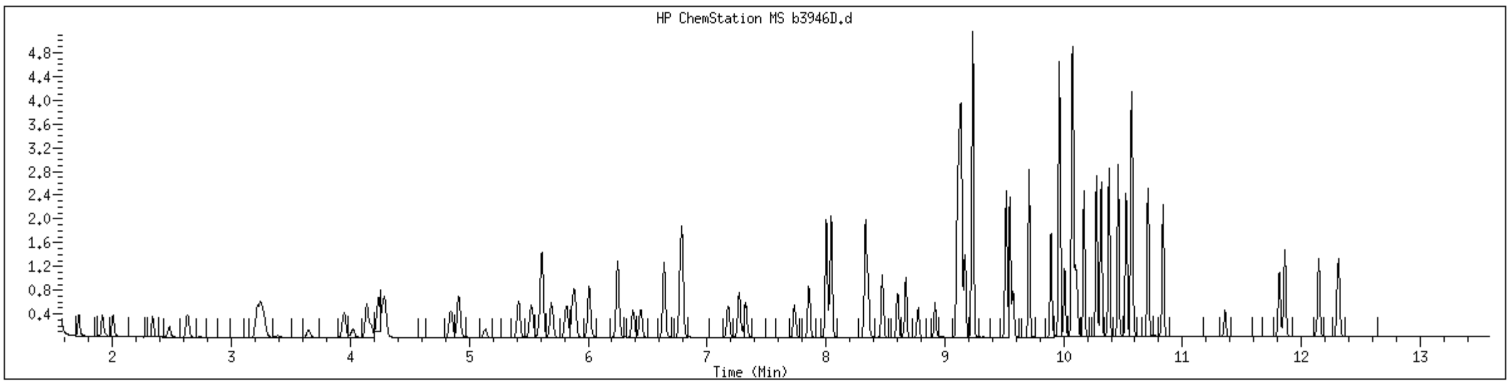
Column diameter: 0.25



Report Date: 01/19/2016 18:53

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1207 SampleType : CALIB_7
Injection Date: 01/18/2016 16:30 Instrument : msv13.i
Operator : JCK
Sample Info : 1207*V13STD050
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



Original Final

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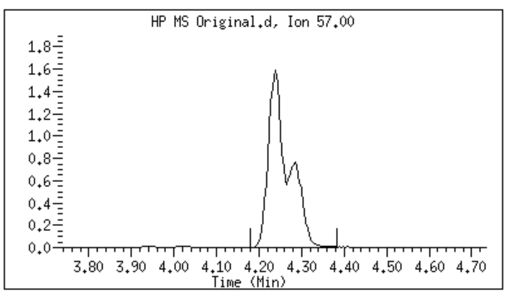
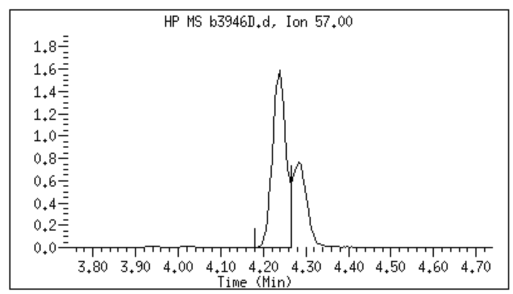
20 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 16:57



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3947D.d
Lab Smp Id: 1208 Client Smp ID: V13STD100
Inj Date : 18-JAN-2016 16:59
Operator : JCK Inst ID: msv13.i
Smp Info : 1208*V13STD100
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 16:59 Cal File: b3947D.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.713	1.713	(0.258)	492011	100.000	98.7	
2	Chloromethane ++	50	1.911	1.911	(0.288)	691948	100.000	110	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	612041	100.000	105	
6	Bromomethane	94	2.335	2.335	(0.352)	332319	100.000	102	
7	Chloroethane	64	2.474	2.474	(0.373)	307305	100.000	103	
8	Trichlorofluoromethane	101	2.627	2.627	(0.396)	638249	100.000	101	
10	1,1-Dichloroethene +	96	3.212	3.212	(0.484)	403145	100.000	105	
11	Carbon Disulfide	76	3.238	3.238	(0.488)	1390970	100.000	108	
12	1,1,2Trichlotrifluoroethane	101	3.265	3.265	(0.492)	426567	100.000	106	
13	Methyl Iodide	142	3.385	3.385	(0.510)	122355	100.000	104	
14	Acrolein	56	3.647	3.647	(0.549)	232511	500.000	524	
16	Methylene Chloride	49	3.947	3.947	(0.595)	713409	100.000	108	
17	Acetone	43	4.018	4.018	(0.605)	364965	100.000	92.8	
18	trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	715858	100.000	108	

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19	Methyl Acetate	43	4.172	4.172	(0.628)	542712	100.000	97.2	8612
	20	Hexane	57	4.235	4.235	(0.638)	812698	100.000	107	9430(M2)
	21	MTBE	73	4.280	4.280	(0.645)	1613062	100.000	117	9636
	26	1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	967400	100.000	103	
	27	Acrylonitrile	53	4.910	4.910	(0.740)	1097719	500.000	529	
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	439503	100.000	100	
	29	cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	721332	100.000	111	
M	75	Total 1,2-Dichloroethene	61				1437190	200.000	219	
	30	2,2-Dichloropropane	77	5.521	5.521	(0.832)	752470	100.000	107	
	32	Cyclohexane	56	5.607	5.607	(0.845)	974644	100.000	105	8918
	34	Bromochloromethane	128	5.615	5.615	(0.846)	306742	100.000	101	
	35	Chloroform +	83	5.690	5.690	(0.857)	912826	100.000	101	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	704440	100.000	104	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	270989	50.0000	48.6	7005
	41	1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	783013	100.000	103	
	44	2-Butanone	43	6.001	6.001	(0.904)	410688	100.000	106	
	43	1,1-Dichloropropene	75	6.005	6.005	(0.905)	699044	100.000	119	
	46	Benzene	78	6.248	6.248	(0.941)	2255359	100.000	110	
$	50	1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	157480	50.0000	48.6	
	51	1,2-Dichloroethane	62	6.443	6.443	(0.971)	715212	100.000	102	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	1086409	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	975953	100.000	118	9288
	56	Trichloroethene	130	6.792	6.792	(1.023)	642662	100.000	106	
	57	Dibromomethane	93	7.174	7.174	(1.081)	339053	100.000	101	
	59	1,2-Dichloropropane +	63	7.272	7.272	(1.095)	568631	100.000	108	
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	735416	100.000	103	
	65	1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	828771	100.000	108	9674
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	878101	100.000	103	
$	68	Toluene-d8	98	8.003	8.003	(0.878)	1072454	50.0000	49.3	
	69	Toluene +	91	8.044	8.044	(0.882)	2507667	100.000	104	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	556578	100.000	103	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.914)	677985	100.000	110	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	845936	100.000	104	
M	82	1-3 Dichloropropene total	100				1724037	200.000	207	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	544917	100.000	99.4	
	78	Dibromochloromethane	129	8.603	8.603	(0.944)	643393	100.000	102	
	79	1,3-Dichloropropane	76	8.674	8.674	(0.951)	925197	100.000	106	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	544177	100.000	104	
	83	2-Hexanone	43	8.918	8.918	(0.978)	557144	100.000	97.9	
	86	1-Chlorohexane	91	9.105	9.105	(0.999)	742948	100.000	105	9591
*	84	CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	477619	50.0000		
	85	Chlorobenzene ++	112	9.131	9.131	(1.002)	1803149	100.000	101	
	87	Ethylbenzene +	106	9.139	9.139	(1.002)	914060	100.000	108	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	598886	100.000	98.8	
	89	p,m-Xylene	106	9.236	9.236	(1.013)	2334074	200.000	209	
	90	o-Xylene	106	9.517	9.517	(1.044)	1076344	100.000	104	
M	121	TOTAL XYLENE	106				3410418	300.000	312	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	1873452	100.000	103	
92	Bromoform ++	173	9.574	9.574	(1.050)	533302	100.000	97.4	
93	Isopropylbenzene	105	9.708	9.708	(1.065)	2871091	100.000	103	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.086)	402621	50.0000	50.3	
96	Bromobenzene	77	9.963	9.963	(0.943)	1290506	100.000	95.1	
97	n-Propylbenzene	91	9.967	9.967	(0.943)	3401099	100.000	110	
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	809073	100.000	103	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	2303770	100.000	106	
102	1,3,5-Trimethylbenzene	105	10.076	10.076	(0.953)	2448478	100.000	104	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	924094	100.000	93.7	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	192848	100.000	99.9	
104	4-Chlorotoluene	91	10.173	10.173	(0.962)	2144568	100.000	109	
105	tert-butylbenzene	91	10.275	10.275	(0.972)	1269202	100.000	116	
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	2338448	100.000	103	
108	sec-Butylbenzene	105	10.379	10.379	(0.982)	3184458	100.000	105	
110	p-Isopropyltoluene	119	10.458	10.458	(0.989)	2733327	100.000	104	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	1620914	100.000	105	
* 114	1,4-DICHLOROBENZENE-D4	152	10.571	10.571	(1.000)	529578	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	1643499	100.000	101	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	2227434	100.000	104	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.025)	1548575	100.000	106	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.074)	207271	100.000	102	
120	Hexachlorobutadiene	225	11.815	11.815	(1.118)	511330	100.000	112	
122	1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	1090926	100.000	117	
124	Naphthalene	128	12.145	12.145	(1.149)	2304512	100.000	105	
125	1,2,3-Trichlorobenzene	180	12.314	12.314	(1.165)	1035077	100.000	109	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3947D.d

Date : 18-JAN-2016 16:59

Client ID: V13STD100

Instrument: msv13.i

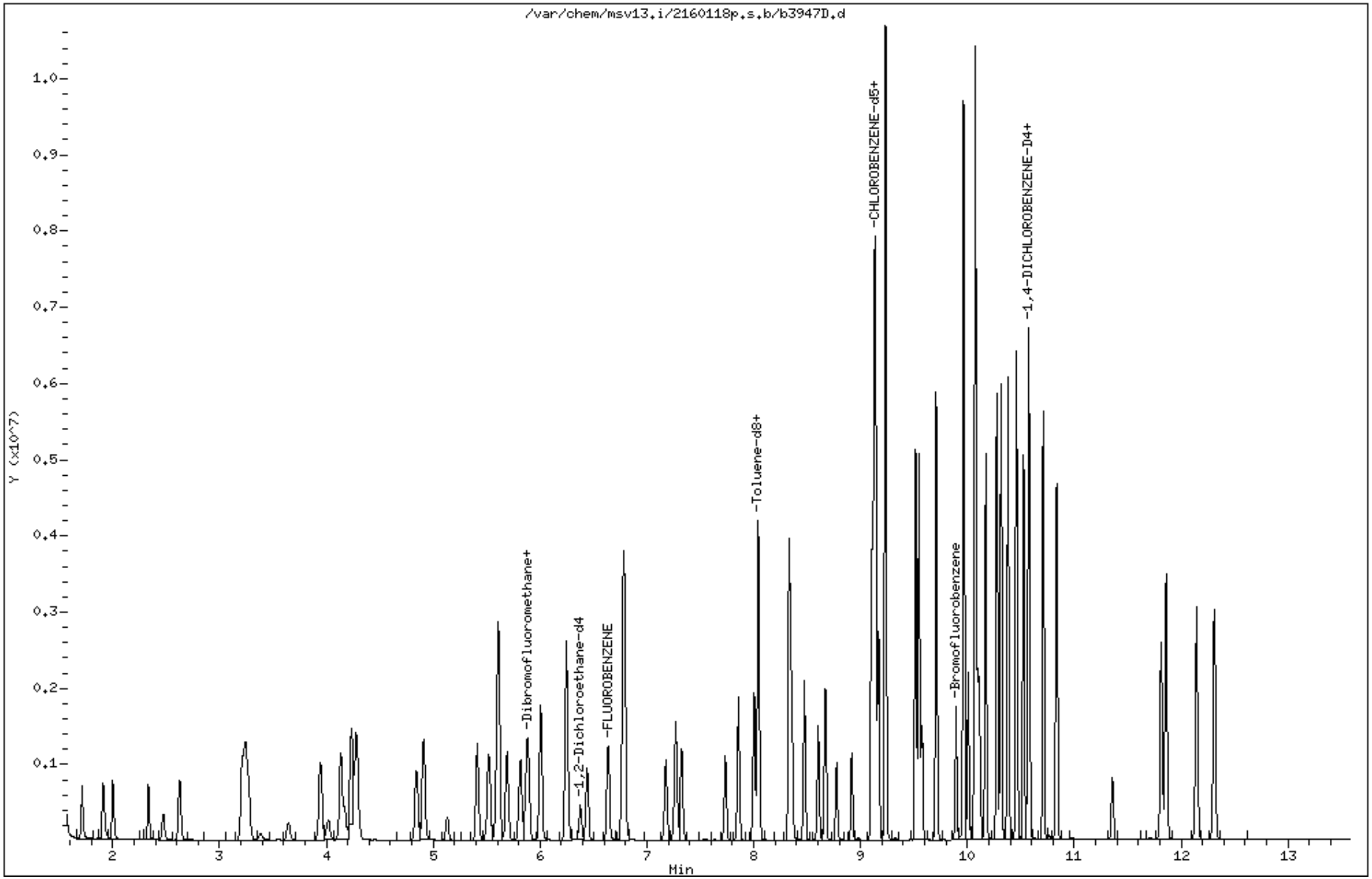
Sample Info: 1208*V13STD100

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

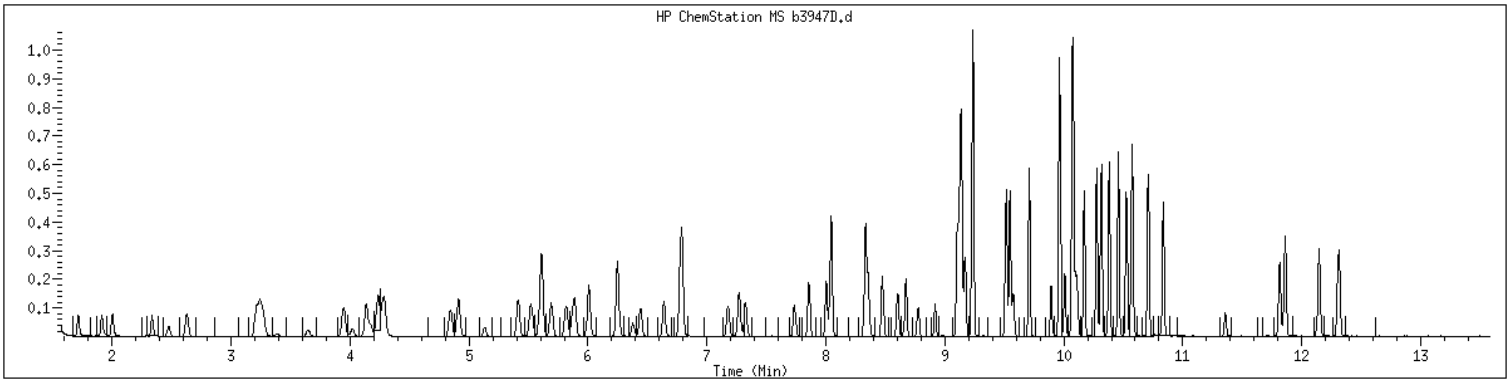
Column diameter: 0.25



Report Date: 01/19/2016 18:53

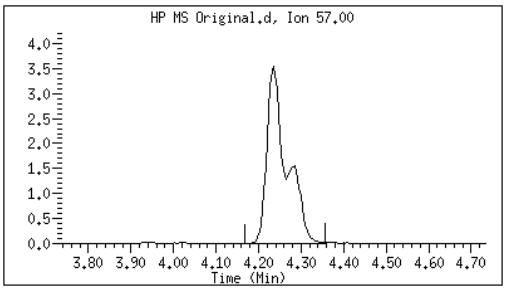
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1208 SampleType : CALIB_8
Injection Date: 01/18/2016 16:59 Instrument : msv13.i
Operator : JCK
Sample Info : 1208*V13STD100
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



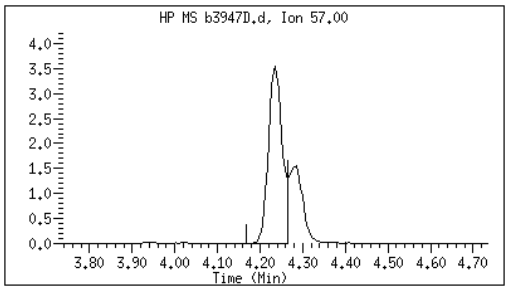
Original Final

20 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 17:25



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3948D.d
Lab Smp Id: 1209 Client Smp ID: V13STD200
Inj Date : 18-JAN-2016 17:20
Operator : JCK Inst ID: msv13.i
Smp Info : 1209*V13STD200
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.713	1.713	(0.258)	969288	200.000	181	
2	Chloromethane ++	50	1.911	1.911	(0.288)	1283336	200.000	193	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	1189795	200.000	191	
6	Bromomethane	94	2.335	2.335	(0.352)	688886	200.000	199	
7	Chloroethane	64	2.470	2.470	(0.372)	625409	200.000	198	
8	Trichlorofluoromethane	101	2.627	2.627	(0.396)	1228792	200.000	181	
10	1,1-Dichloroethene +	96	3.212	3.212	(0.484)	803315	200.000	196	
11	Carbon Disulfide	76	3.238	3.238	(0.488)	2693175	200.000	196	
12	1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	782863	200.000	182	
13	Methyl Iodide	142	3.385	3.385	(0.510)	397326	200.000	200	
14	Acrolein	56	3.647	3.647	(0.549)	463425	1000.00	975	
16	Methylene Chloride	49	3.947	3.947	(0.595)	1395321	200.000	197	
17	Acetone	43	4.018	4.018	(0.605)	745783	200.000	177	
18	trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	1445886	200.000	204	(A)

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19	Methyl Acetate	43	4.172	4.172	(0.628)	1104461	200.000	184	8626
	20	Hexane	57	4.235	4.235	(0.638)	1622799	200.000	197	9398(M2)
	21	MTBE	73	4.280	4.280	(0.645)	3303961	200.000	224	9727(A)
	26	1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	1929312	200.000	192	
	27	Acrylonitrile	53	4.910	4.910	(0.740)	2408932	1000.00	1080	(A)
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	963724	200.000	201	(A)
	29	cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	1465587	200.000	210	(A)
M	75	Total 1,2-Dichloroethene	61				2911473	400.000	414	
	30	2,2-Dichloropropane	77	5.521	5.521	(0.832)	1508913	200.000	199	
	32	Cyclohexane	56	5.607	5.607	(0.845)	1991249	200.000	198	9085
	34	Bromochloromethane	128	5.615	5.615	(0.846)	580393	200.000	179	
	35	Chloroform +	83	5.690	5.690	(0.857)	1807993	200.000	187	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	1413485	200.000	194	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	287140	50.0000	48.1	7028
	41	1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	1563359	200.000	191	
	44	2-Butanone	43	6.001	6.001	(0.904)	888015	200.000	214	(A)
	43	1,1-Dichloropropene	75	6.009	6.009	(0.905)	1424674	200.000	226	(A)
	46	Benzene	78	6.248	6.248	(0.941)	4605260	200.000	210	(A)
$	50	1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	167585	50.0000	48.2	
	51	1,2-Dichloroethane	62	6.443	6.443	(0.971)	1417474	200.000	188	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	1164248	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	1973304	200.000	222	9354(A)
	56	Trichloroethene	130	6.792	6.792	(1.023)	1289245	200.000	199	
	57	Dibromomethane	93	7.178	7.178	(1.081)	684030	200.000	191	
	59	1,2-Dichloropropane +	63	7.272	7.272	(1.095)	1154801	200.000	204	(A)
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	1475005	200.000	193	
	65	1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	1684675	200.000	205	9671(A)
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	1828120	200.000	199	
$	68	Toluene-d8	98	8.003	8.003	(0.877)	1140482	50.0000	49.6	
	69	Toluene +	91	8.044	8.044	(0.882)	5088049	200.000	199	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	1107148	200.000	193	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.913)	1446607	200.000	223	(A)
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	1741724	200.000	198	
M	82	1-3 Dichloropropene total	100				3569844	400.000	397	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.929)	1104224	200.000	190	
	78	Dibromochloromethane	129	8.603	8.603	(0.943)	1316321	200.000	197	
	79	1,3-Dichloropropane	76	8.674	8.674	(0.951)	1872690	200.000	203	(A)
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.962)	1111691	200.000	200	(A)
	83	2-Hexanone	43	8.917	8.917	(0.978)	1222184	200.000	201	(A)
	86	1-Chlorohexane	91	9.105	9.105	(0.998)	1498808	200.000	198	9123
*	84	CHLOROBENZENE-d5	82	9.120	9.120	(1.000)	505336	50.0000		
	85	Chlorobenzene ++	112	9.131	9.131	(1.001)	3596303	200.000	190	
	87	Ethylbenzene +	106	9.142	9.142	(1.002)	1833952	200.000	206	(A)
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.005)	1189061	200.000	185	
	89	p,m-Xylene	106	9.236	9.236	(1.013)	4701572	400.000	396	
	90	o-Xylene	106	9.517	9.517	(1.044)	2200529	200.000	198	
M	121	TOTAL XYLENE	106				6902101	600.000	594	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	3852583	200.000	199	
92	Bromoform ++	173	9.573	9.573	(1.050)	1091879	200.000	188	
93	Isopropylbenzene	105	9.708	9.708	(1.065)	5927415	200.000	199	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.085)	428114	50.0000	50.6	
96	Bromobenzene	77	9.963	9.963	(0.943)	2619672	200.000	181	
97	n-Propylbenzene	91	9.967	9.967	(0.943)	6980537	200.000	212	(A)
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	1630478	200.000	197	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	4657640	200.000	202	(A)
102	1,3,5-Trimethylbenzene	105	10.080	10.080	(0.954)	4992513	200.000	198	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	1890717	200.000	180	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	384244	200.000	187	
104	4-Chlorotoluene	91	10.173	10.173	(0.962)	4302604	200.000	205	(A)
105	tert-butylbenzene	91	10.274	10.274	(0.972)	2545350	200.000	218	(A)
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	4901112	200.000	199	
108	sec-Butylbenzene	105	10.379	10.379	(0.982)	6446625	200.000	198	
110	p-Isopropyltoluene	119	10.458	10.458	(0.989)	5608700	200.000	198	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	3224999	200.000	197	
* 114	1,4-DICHLOROBENZENE-D4	152	10.571	10.571	(1.000)	563169	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	3233316	200.000	186	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	4585441	200.000	199	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.025)	3095804	200.000	199	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.074)	439219	200.000	203	(A)
120	Hexachlorobutadiene	225	11.815	11.815	(1.118)	935693	200.000	194	
122	1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	2078112	200.000	209	(A)
124	Naphthalene	128	12.145	12.145	(1.149)	4679299	200.000	198	
125	1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	2061429	200.000	205	(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M2- Compound response manually integrated because Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3948D.d

Date : 18-JAN-2016 17:20

Client ID: V13STD200

Instrument: msv13.i

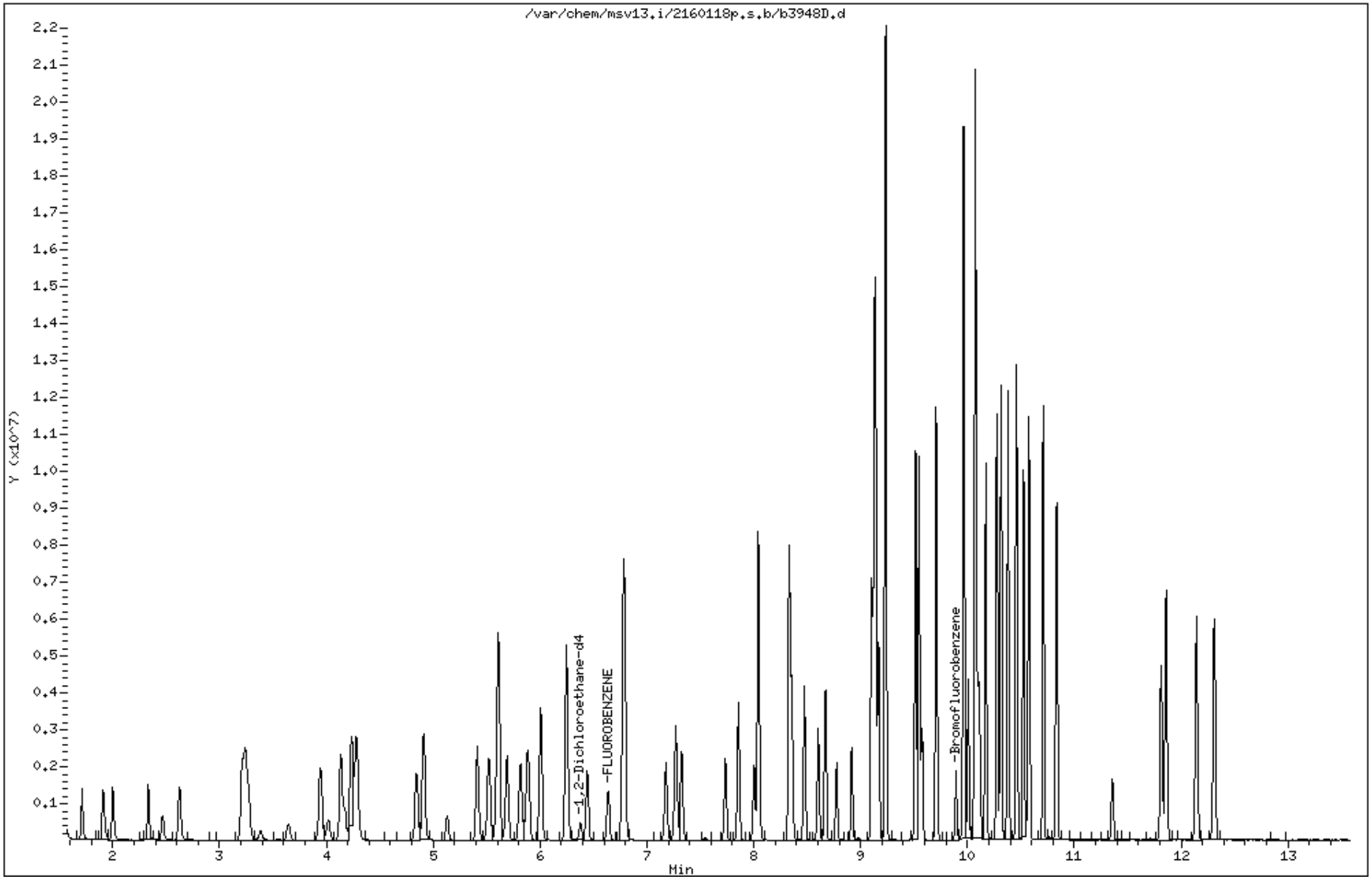
Sample Info: 1209*V13STD200

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

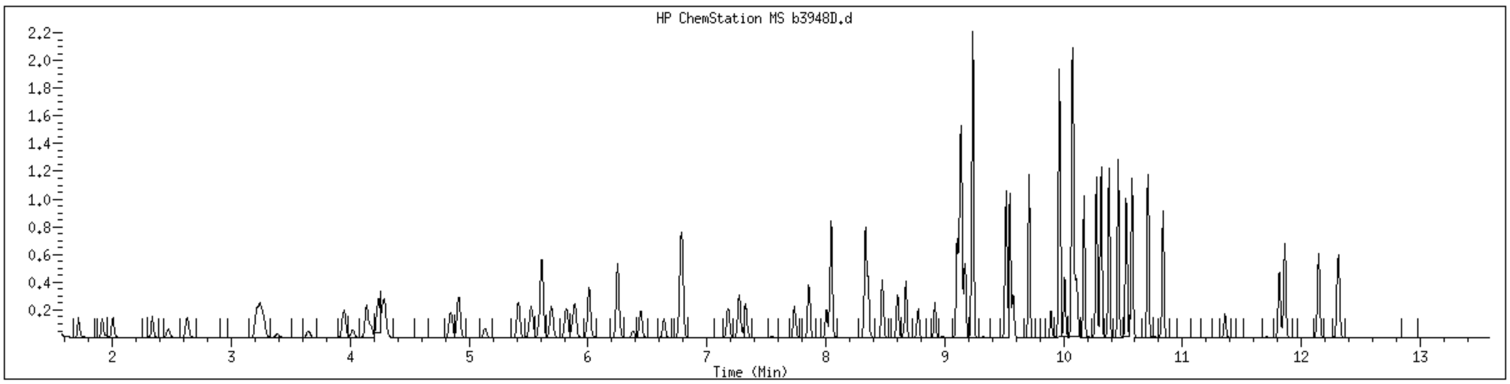
Column diameter: 0.25



Data file : /var/chem/msv13.i/2160118p.s.b/b3948D.d Page: 1
Report Date: 01/19/2016 18:54

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1209 SampleType : CALIB_9
Injection Date: 01/18/2016 17:20 Instrument : msv13.i
Operator : JCK
Sample Info : 1209*V13STD200
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



Original Final

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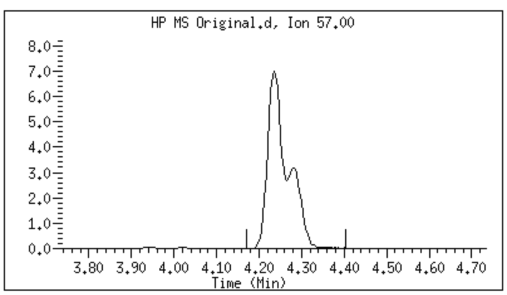
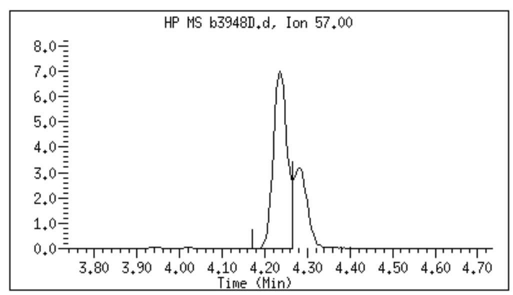
20 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 17:40



M2 - Target system integrated incorrectly

Form 6I

ICAL Verifications

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	216012310	Instrument ID:	MSV13
Analysis Date:	01/18/16 1822	Lab File ID:	2160118p/b3951D
Analysis Method:	EPA 8260B	Analytical Batch:	577166

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*
1,1,1-Trichloroethane	ug/L	50.0	48.6	97	80	120
1,1,2,2-Tetrachloroethane	ug/L	50.0	50.5	101	80	120
1,1,2-Trichloroethane	ug/L	50.0	49.0	98	80	120
1,1-Dichloroethane	ug/L	50.0	48.7	97	80	120
1,1-Dichloroethene	ug/L	50.0	46.8	94	80	120
1,2,3-Trichlorobenzene	ug/L	50.0	56.3	113	80	120
1,2,4-Trichlorobenzene	ug/L	50.0	56.7	113	80	120
1,2-Dibromo-3-chloropropane	ug/L	50.0	52.0	104	80	120
1,2-Dibromoethane	ug/L	50.0	51.3	103	80	120
1,2-Dichlorobenzene	ug/L	50.0	51.4	103	80	120
1,2-Dichloroethane	ug/L	50.0	49.0	98	80	120
1,2-Dichloropropane	ug/L	50.0	50.9	102	80	120
1,3-Dichlorobenzene	ug/L	50.0	50.0	100	80	120
1,4-Dichlorobenzene	ug/L	50.0	48.0	96	80	120
2-Butanone	ug/L	50.0	54.8	110	80	120
2-Hexanone	ug/L	50.0	52.4	105	80	120
4-Methyl-2-pentanone	ug/L	50.0	54.8	110	80	120
Acetone	ug/L	50.0	48.1	96	80	120
Benzene	ug/L	50.0	51.4	103	80	120
Bromochloromethane	ug/L	50.0	49.4	99	80	120
Bromodichloromethane	ug/L	50.0	49.6	99	80	120
Bromoform	ug/L	50.0	49.5	99	80	120
Bromomethane	ug/L	50.0	48.2	96	80	120
Carbon disulfide	ug/L	50.0	46.5	93	80	120
Carbon tetrachloride	ug/L	50.0	48.7	97	80	120
Chlorobenzene	ug/L	50.0	47.9	96	80	120
Chloroethane	ug/L	50.0	46.6	93	80	120
Chloroform	ug/L	50.0	48.2	96	80	120
Chloromethane	ug/L	50.0	50.0	100	80	120
cis-1,2-Dichloroethene	ug/L	50.0	51.3	103	80	120
Cyclohexane	ug/L	50.0	48.2	96	80	120
Dibromochloromethane	ug/L	50.0	49.6	99	80	120
Dichlorodifluoromethane	ug/L	50.0	46.1	92	80	120
Ethylbenzene	ug/L	50.0	51.0	102	80	120

FORM 6I - ORG

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	216012310	Instrument ID:	MSV13
Analysis Date:	01/18/16 1822	Lab File ID:	2160118p/b3951D
Analysis Method:	EPA 8260B	Analytical Batch:	577166

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*
Isopropylbenzene (Cumene)	ug/L	50.0	47.6	95	80	120
Methyl Acetate	ug/L	50.0	48.3	97	80	120
Methylcyclohexane	ug/L	50.0	52.8	106	80	120
Methylene chloride	ug/L	50.0	52.5	105	80	120
Styrene	ug/L	50.0	49.0	98	80	120
tert-Butyl methyl ether (MTBE)	ug/L	50.0	56.4	113	80	120
Tetrachloroethene	ug/L	50.0	48.8	98	80	120
Toluene	ug/L	50.0	49.2	98	80	120
trans-1,3-Dichloropropene	ug/L	50.0	48.4	97	80	120
Trichloroethene	ug/L	50.0	50.9	102	80	120
Trichlorofluoromethane	ug/L	50.0	47.9	96	80	120
Trichlorotrifluoroethane	ug/L	50.0	47.2	94	80	120
Vinyl chloride	ug/L	50.0	47.8	96	80	120
Xylene (total)	ug/L	150	146	97	80	120

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3951D.d
Lab Smp Id: 1600 Client Smp ID: ICV050
Inj Date : 18-JAN-2016 18:22
Operator : JCK Inst ID: msv13.i
Smp Info : 1600*ICV050
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.713	1.713	(0.258)	234129	46.0627	46.1	
2 Chloromethane ++	50	1.911	1.911	(0.288)	330960	50.0216	50.0	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	283241	47.7679	47.8	
6 Bromomethane	94	2.339	2.335	(0.352)	162722	48.1894	48.2	
7 Chloroethane	64	2.474	2.470	(0.373)	144280	46.5525	46.6	
8 Trichlorofluoromethane	101	2.627	2.627	(0.396)	309649	47.8624	47.9	
10 1,1-Dichloroethene +	96	3.212	3.212	(0.484)	182447	46.7815	46.8	
11 Carbon Disulfide	76	3.242	3.238	(0.488)	617725	46.5228	46.5	
12 1,1,2Trichlotrifluoroethane	101	3.264	3.268	(0.492)	193612	47.1955	47.2	
13 Methyl Iodide	142	3.384	3.385	(0.510)	57877	56.0027	56.0	
14 Acrolein	56	3.647	3.647	(0.549)	107165	236.939	237	
16 Methylene Chloride	49	3.947	3.947	(0.595)	357426	52.4950	52.5	
17 Acetone	43	4.018	4.018	(0.605)	192886	48.0898	48.1	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	334942	49.7093	49.7	

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/L)	SIMILARITY
	19	Methyl Acetate	43	4.175	4.172	(0.629)	275169	48.2958	48.3	8323
	20	Hexane	57	4.235	4.235	(0.638)	351670	46.4605	46.5	9357(M2)
	21	MTBE	73	4.284	4.280	(0.645)	792969	56.4083	56.4	9606
	26	1,1-Dichloroethane ++	63	4.846	4.843	(0.730)	465443	48.7015	48.7	
	27	Acrylonitrile	53	4.910	4.910	(0.740)	570467	269.417	269	
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	180174	42.1161	42.1	
	29	cis-1,2-Dichloroethene	61	5.412	5.413	(0.815)	340845	51.3243	51.3	
M	75	Total 1,2-Dichloroethene	61				675787	101.034	101	
	30	2,2-Dichloropropane	77	5.525	5.521	(0.832)	340082	47.2284	47.2	
	32	Cyclohexane	56	5.607	5.607	(0.845)	449316	48.2110	48.2	8882
	34	Bromochloromethane	128	5.611	5.615	(0.845)	152678	49.3834	49.4	
	35	Chloroform +	83	5.690	5.690	(0.857)	442509	48.1699	48.2	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	337478	48.7487	48.7	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	276620	48.6889	48.7	6979
	41	1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	377922	48.6373	48.6	
	44	2-Butanone	43	6.001	6.001	(0.904)	216073	54.8071	54.8	
	43	1,1-Dichloropropene	75	6.008	6.009	(0.905)	322272	53.6119	53.6	
	46	Benzene	78	6.248	6.248	(0.941)	1073450	51.3874	51.4	
$	50	1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	161577	48.8504	48.9	
	51	1,2-Dichloroethane	62	6.440	6.443	(0.970)	351424	48.9701	49.0	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	1108063	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	446693	52.7690	52.8	9231
	56	Trichloroethene	130	6.792	6.792	(1.023)	314156	50.9198	50.9	
	57	Dibromomethane	93	7.178	7.178	(1.081)	168361	49.3669	49.4	
	59	1,2-Dichloropropane +	63	7.272	7.272	(1.095)	273662	50.8996	50.9	
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	360276	49.6017	49.6	
	65	1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	402853	51.4673	51.5	9718
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	400916	47.3525	47.4	
$	68	Toluene-d8	98	8.007	8.003	(0.878)	1093443	50.2735	50.3	
	69	Toluene +	91	8.044	8.044	(0.882)	1187490	49.1785	49.2	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	264350	48.7980	48.8	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.913)	336466	54.7903	54.8	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	399522	48.3822	48.4	
M	82	1-3 Dichloropropene total	100				800438	95.7347	95.7	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.929)	268711	48.9673	49.0	
	78	Dibromochloromethane	129	8.603	8.603	(0.943)	313421	49.6024	49.6	
	79	1,3-Dichloropropane	76	8.670	8.674	(0.951)	445796	51.0775	51.1	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.962)	269708	51.3397	51.3	
	83	2-Hexanone	43	8.921	8.917	(0.978)	292938	52.4425	52.4	
	86	1-Chlorohexane	91	9.105	9.105	(0.998)	330770	47.7888	47.8	9088
*	84	CHLOROBENZENE-d5	82	9.120	9.120	(1.000)	477949	50.0000		
	85	Chlorobenzene ++	112	9.131	9.131	(1.001)	858258	47.8904	47.9	
	87	Ethylbenzene +	106	9.139	9.142	(1.002)	430066	51.0072	51.0	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.005)	288328	47.5250	47.5	
	89	p,m-Xylene	106	9.236	9.236	(1.013)	1077248	97.1475	97.1	
	90	o-Xylene	106	9.517	9.517	(1.044)	497930	48.9430	48.9	
M	121	TOTAL XYLENE	106				1575178	146.091	146	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	869392	49.0225	49.0	
	92 Bromoform ++	173	9.573	9.573	(1.050)	271233	49.5053	49.5	
	93 Isopropylbenzene	105	9.708	9.708	(1.065)	1298690	47.5843	47.6	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.085)	402974	50.3105	50.3	
	96 Bromobenzene	77	9.967	9.963	(0.943)	614419	46.3780	46.4	
	97 n-Propylbenzene	91	9.967	9.967	(0.943)	1529552	50.5344	50.5	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	396749	50.4966	50.5	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	1061790	50.1587	50.2	
	102 1,3,5-Trimethylbenzene	105	10.079	10.080	(0.954)	1095141	48.6628	48.7	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	457111	47.5052	47.5	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	90140	47.8329	47.8	
	104 4-Chlorotoluene	91	10.173	10.173	(0.962)	989258	51.4642	51.5	
	105 tert-butylbenzene	91	10.274	10.274	(0.972)	577729	53.8737	53.9	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	1042228	48.5221	48.5	
	108 sec-Butylbenzene	105	10.383	10.379	(0.982)	1405496	48.0087	48.0	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.989)	1194911	48.1351	48.1	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	752130	49.9531	50.0	
*	114 1,4-DICHLOROBENZENE-D4	152	10.571	10.571	(1.000)	516883	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	763865	47.9981	48.0	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	929003	46.2785	46.3	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.025)	733025	51.4244	51.4	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.074)	103417	51.9657	52.0	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	248274	54.8393	54.8	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	516544	56.6607	56.7	
	124 Naphthalene	128	12.145	12.145	(1.149)	1159937	55.1656	55.2	
	125 1,2,3-Trichlorobenzene	180	12.314	12.310	(1.165)	520257	56.2941	56.3	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3951D.d

Page 1

Date : 18-JAN-2016 18:22

Client ID: ICV050

Instrument: msv13.i

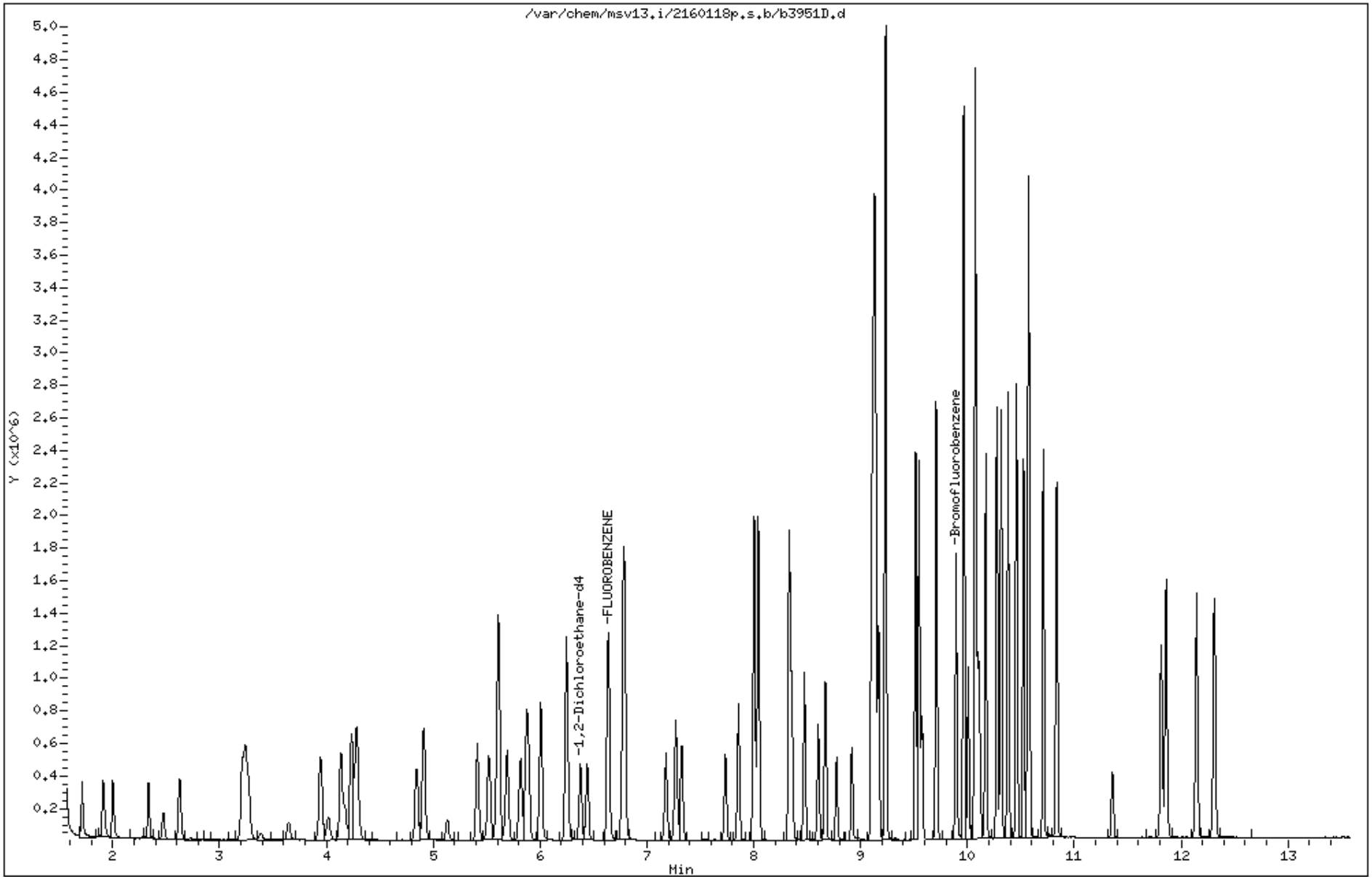
Sample Info: 1600*ICV050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

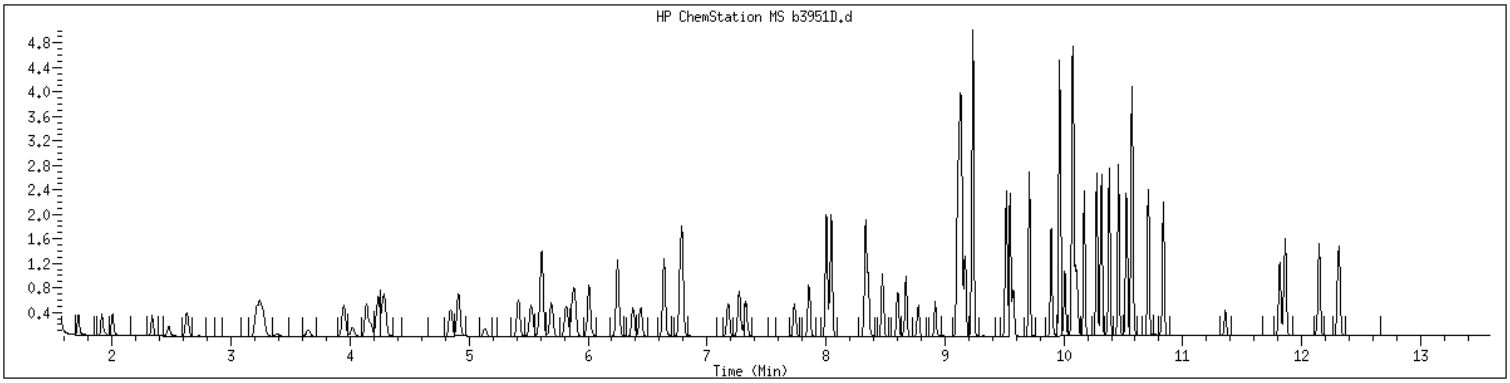
Column diameter: 0.25



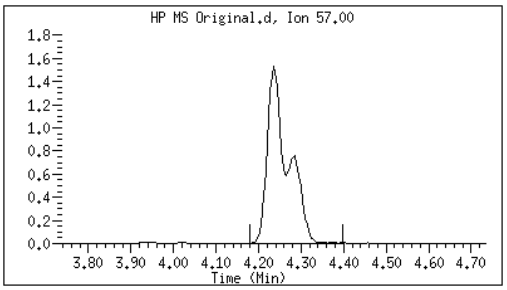
Report Date: 01/19/2016 18:54

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1600 SampleType : LCS
Injection Date: 01/18/2016 18:22 Instrument : msv13.i
Operator : JCK
Sample Info : 1600*ICV050
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE

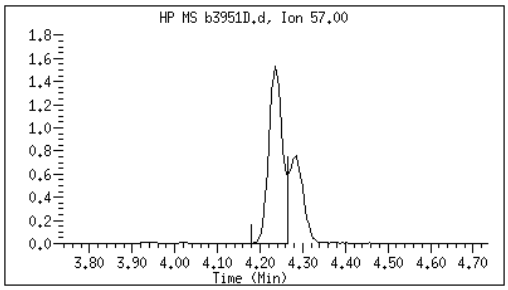


Original		Final
20 Hexane	CAS#: 110-54-3	Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/19/2016 09:46



M2 - Target system integrated incorrectly

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	216012310	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160125/b4225
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	DTB
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577621
Anlysis Date:	01/25/16 Time: 0912	Analytical Method:	EPA 8260B

ANALYTE	*RRF*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.635	0.632	.01	-.37	20	A	
1,1,1-Trichloroethane	0.351	0.363	.01	3.43	20	A	
1,1,2,2-Tetrachloroethane	50.0	48.6	.3	-2.8	20	L	
1,1,2-Trichloroethane	0.574	0.563	.01	-1.99	20	A	
1,1-Dichloroethane	0.431	0.463	.1	7.34	20	A	
1,1-Dichloroethene	0.176	0.187	.01	6.04	20	A	
1,1-Dichloropropene	0.271	0.288	.01	6.06	20	A	
1,2,3-Trichlorobenzene	0.894	0.955	.01	6.83	20	A	
1,2,3-Trichloropropane	0.931	0.874	.01	-6.13	20	A	
1,2,4-Trichlorobenzene	0.882	0.910	.01	3.14	20	A	
1,2,4-Trimethylbenzene	50.0	51.9	.01	3.8	20	L	
1,2-Dibromo-3-chloropropane	0.193	0.171	.01	-11.3	20	A	
1,2-Dibromoethane	0.550	0.535	.01	-2.61	20	A	
1,2-Dichlorobenzene	1.379	1.422	.01	3.13	20	A	
1,2-Dichloroethane	0.324	0.326	.01	.53	20	A	
1,2-Dichloroethene (total)	0.302	0.304	.01	.82	20	A	
1,2-Dichloropropane	0.243	0.249	.01	2.7	20	A	
1,3,5-Trimethylbenzene	50.0	51.8	.01	3.6	20	L	
1,3-Dichlorobenzene	1.456	1.504	.01	3.26	20	A	
1,3-Dichloropropane	0.913	0.896	.01	-1.86	20	A	
1,3-Dichloropropylene	100.0	102.0	.01	2	20	L	
1,4-Dichlorobenzene	1.539	1.543	.01	.26	20	A	
1-Bromo-2-Chloroethane	0.353	0.360	.01	1.98	20	A	
1-Chlorohexane	50.0	50.2	.01	.4	20	L	
2,2-Dichloropropane	0.325	0.337	.01	3.73	20	A	
2-Butanone	0.178	0.166	.01	-6.52	20	A	
2-Chlorotoluene	2.048	2.114	.01	3.23	20	A	
2-Hexanone	50.0	41.5	.01	-17	20	L	
4-Chlorotoluene	1.859	1.912	.01	2.81	20	A	
4-Isopropyltoluene	50.0	50.1	.01	.2	20	L	
4-Methyl-2-pentanone	0.642	0.595	.01	-7.4	20	A	
Acetone	0.181	0.174	.01	-3.92	20	A	
Acrolein	0.020	0.021	.01	1.64	20	A	
Acrylonitrile	0.096	0.110	.01	15.4	20	A	
Benzene	0.943	0.997	.01	5.8	20	A	
Bromobenzene	1.282	1.187	.01	-7.4	20	A	
Bromochloromethane	0.140	0.144	.01	3.35	20	A	
Bromodichloromethane	0.328	0.344	.01	4.89	20	A	
Bromoform	0.573	0.551	.1	-3.9	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	216012310	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160125/b4225
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	DTB
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577621
Anlysis Date:	01/25/16 Time: 0912	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	50.0	43.1	.01	-13.8	20	L	
Carbon disulfide	50.0	55.5	.01	11	20	L	
Carbon tetrachloride	0.312	0.334	.01	7.05	20	A	
Chlorobenzene	1.875	1.905	.3	1.63	20	A	
Chloroethane	50.0	57.7	.01	15.4	20	L	
Chloroform	0.415	0.430	.01	3.83	20	A	
Chloromethane	50.0	42.1	.1	-15.8	20	L	
Cyclohexane	50.0	47.7	.01	-4.6	20	L	
Dibromochloromethane	0.661	0.652	.01	-1.3	20	A	
Dibromomethane	0.154	0.152	.01	-1.54	20	A	
Dichlorodifluoromethane	0.229	0.215	.01	-6.47	20	A	
Ethylbenzene	0.882	0.958	.01	8.59	20	A	
Hexachlorobutadiene	50.0	55.9	.01	11.8	20	L	
Isopropylbenzene (Cumene)	50.0	49.5	.01	-1	20	L	
Methyl Acetate	0.257	0.235	.01	-8.45	20	A	
Methyl iodide	50.0	46.2	.01	-7.6	20	Q	
Methylcyclohexane	0.382	0.425	.01	11.2	20	A	
Methylene chloride	50.0	55.6	.01	11.2	20	L	
Naphthalene	50.0	45.4	.01	-9.2	20	L	
Styrene	50.0	49.9	.01	-.2	20	L	
Tetrachloroethene	0.567	0.592	.01	4.48	20	A	
Toluene	2.526	2.553	.01	1.07	20	A	
Trichloroethene	0.278	0.308	.01	10.5	20	A	
Trichlorofluoromethane	0.292	0.325	.01	11.3	20	A	
Trichlorotrifluoroethane	0.185	0.209	.01	12.8	20	A	
Vinyl acetate	50.0	46.4	.01	-7.2	20	L	
Vinyl chloride	0.268	0.229	.01	-14.2	20	A	
Xylene (total)	150.0	152.0	.01	1.33	20	L	
cis-1,2-Dichloroethene	0.300	0.294	.01	-1.72	20	A	
cis-1,3-Dichloropropene	50.0	50.1	.01	.2	20	L	
m,p-Xylene	100.0	103.0	.01	3	20	L	
n-Butylbenzene	50.0	48.3	.01	-3.4	20	L	
n-Hexane	50.0	47.5	.01	-5	20	L	
n-Propylbenzene	2.928	3.064	.01	4.65	20	A	
o-Xylene	50.0	48.8	.01	-2.4	20	L	
sec-Butylbenzene	50.0	50.5	.01	1	20	L	
tert-Butyl methyl ether (MTBE)	0.634	0.686	.01	8.15	20	A	
tert-Butylbenzene	1.037	1.144	.01	10.2	20	A	
trans-1,2-Dichloroethene	0.304	0.314	.01	3.33	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	216012310	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160125/b4225
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	DTB
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577621
Anlysis Date:	01/25/16 Time: 0912	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,3-Dichloropropene	50.0	51.8	.01	3.6	20	L	
trans-1,4-Dichloro-2-butene	0.182	0.164	.01	-9.91	20	A	
1,2-Dichloroethane-d4	0.149	0.153	.01	2.2	20	A	
4-Bromofluorobenzene	0.838	0.813	.01	-2.95	20	A	
Dibromofluoromethane	0.256	0.261	.01	1.87	20	A	
Toluene-d8	2.275	2.237	.01	-1.7	20	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160125.s.b/b4225.d
Lab Smp Id: 1400 Client Smp ID: V13STD050
Inj Date : 25-JAN-2016 09:12
Operator : DTB Inst ID: msv13.i
Smp Info : 1400*V13STD050
Misc Info : MSV~35290~*1*DTB
Comment :
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Meth Date : 25-Jan-2016 18:51 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.713	1.713	(0.258)	192371	50.0000	46.8	
2	Chloromethane ++	50	1.911	1.911	(0.288)	227997	50.0000	42.1	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	205650	50.0000	42.9	
6	Bromomethane	94	2.335	2.335	(0.352)	118256	50.0000	43.1	
7	Chloroethane	64	2.474	2.474	(0.373)	143790	50.0000	57.7	
8	Trichlorofluoromethane	101	2.627	2.627	(0.396)	291335	50.0000	55.6	
10	1,1-Dichloroethene +	96	3.212	3.212	(0.484)	167342	50.0000	53.0	
11	Carbon Disulfide	76	3.238	3.238	(0.488)	594662	50.0000	55.5	
12	1,1,2Trichlotrifluoroethane	101	3.265	3.265	(0.492)	187301	50.0000	56.4	
13	Methyl Iodide	142	3.381	3.381	(0.509)	36936	50.0000	46.2	
14	Acrolein	56	3.647	3.647	(0.549)	93012	250.000	254	
16	Methylene Chloride	49	3.943	3.943	(0.594)	306075	50.0000	55.6	
17	Acetone	43	4.022	4.022	(0.606)	155946	50.0000	48.0	
18	trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	281733	50.0000	51.7	

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	19	Methyl Acetate	43	4.172	4.172	(0.628)	211067	50.0000	45.8	8569
	20	Hexane	57	4.232	4.232	(0.637)	291468	50.0000	47.5	9195(M1)
	21	MTBE	73	4.281	4.281	(0.645)	615192	50.0000	54.1	9200
	26	1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	415112	50.0000	53.7	
	27	Acrylonitrile	53	4.910	4.910	(0.740)	494430	250.000	289	
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	161861	50.0000	46.4	
	29	cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	264100	50.0000	49.1	
M	75	Total 1,2-Dichloroethene	61				545833	100.000	101	
	30	2,2-Dichloropropane	77	5.521	5.521	(0.832)	302247	50.0000	51.9	
	32	Cyclohexane	56	5.608	5.608	(0.845)	359358	50.0000	47.7	8567
	34	Bromochloromethane	128	5.611	5.611	(0.845)	129305	50.0000	51.7	
	35	Chloroform +	83	5.690	5.690	(0.857)	385984	50.0000	51.9	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	299886	50.0000	53.5	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	234204	50.0000	50.9	6986
	41	1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	325208	50.0000	51.7	
	44	2-Butanone	43	6.001	6.001	(0.904)	149136	50.0000	46.7	
	43	1,1-Dichloropropene	75	6.009	6.009	(0.905)	257992	50.0000	53.0	
	46	Benzene	78	6.245	6.245	(0.941)	894310	50.0000	52.9	
$	50	1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	136786	50.0000	51.1	
	51	1,2-Dichloroethane	62	6.440	6.440	(0.970)	291936	50.0000	50.3	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	896776	50.0000		
	55	Methyl Cyclohexane	83	6.777	6.777	(1.021)	380860	50.0000	55.6	9547
	56	Trichloroethene	130	6.788	6.788	(1.023)	275858	50.0000	55.2	
	57	Dibromomethane	93	7.174	7.174	(1.081)	135884	50.0000	49.2	
	59	1,2-Dichloropropane +	63	7.268	7.268	(1.095)	223438	50.0000	51.3	
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	308280	50.0000	52.4	
	65	1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	323025	50.0000	51.0	9745
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	343855	50.0000	50.1	
$	68	Toluene-d8	98	8.003	8.003	(0.878)	925056	50.0000	49.2	
	69	Toluene +	91	8.044	8.044	(0.882)	1055877	50.0000	50.5	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	244885	50.0000	52.2	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.914)	246046	50.0000	46.3	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	346522	50.0000	51.8	
M	82	1-3 Dichloropropene total	100				690377	100.000	102	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	232714	50.0000	49.0	
	78	Dibromochloromethane	129	8.603	8.603	(0.944)	269832	50.0000	49.3	
	79	1,3-Dichloropropane	76	8.670	8.670	(0.951)	370610	50.0000	49.1	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	221366	50.0000	48.7	
	83	2-Hexanone	43	8.918	8.918	(0.978)	198345	50.0000	41.5	
	86	1-Chlorohexane	91	9.101	9.101	(0.998)	301604	50.0000	50.2	9493
*	84	CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	413587	50.0000		
	85	Chlorobenzene ++	112	9.127	9.127	(1.001)	788030	50.0000	50.8	
	87	Ethylbenzene +	106	9.139	9.139	(1.002)	396140	50.0000	54.3	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	261526	50.0000	49.8	
	89	p,m-Xylene	106	9.232	9.232	(1.013)	989390	100.000	103	
	90	o-Xylene	106	9.517	9.517	(1.044)	429904	50.0000	48.8	
M	121	TOTAL XYLENE	106				1419294	150.000	152	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	766274	50.0000	49.9	
	92 Bromoform ++	173	9.574	9.574	(1.050)	227819	50.0000	48.1	
	93 Isopropylbenzene	105	9.709	9.709	(1.065)	1171383	50.0000	49.5	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	336322	50.0000	48.5	
	96 Bromobenzene	77	9.963	9.963	(0.943)	543703	50.0000	46.3	
	97 n-Propylbenzene	91	9.963	9.963	(0.943)	1403785	50.0000	52.3	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	338849	50.0000	48.6	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	968516	50.0000	51.6	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	1036085	50.0000	51.8	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	400318	50.0000	46.9	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	75246	50.0000	45.0	
	104 4-Chlorotoluene	91	10.170	10.170	(0.962)	875883	50.0000	51.4	
	105 tert-butylbenzene	91	10.275	10.275	(0.972)	523984	50.0000	55.1	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	991879	50.0000	51.9	
	108 sec-Butylbenzene	105	10.380	10.380	(0.982)	1311839	50.0000	50.5	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	1104845	50.0000	50.1	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	689050	50.0000	51.6	
*	114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	458158	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	707136	50.0000	50.1	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	862708	50.0000	48.3	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	651526	50.0000	51.6	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	78166	50.0000	44.3	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	224348	50.0000	55.9	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	416726	50.0000	51.6	
	124 Naphthalene	128	12.145	12.145	(1.149)	839337	50.0000	45.4	
	125 1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	437550	50.0000	53.4	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.

Data File: /var/chem/msv13.i/2160125.s.b/b4225.d

Page 1

Date : 25-JAN-2016 09:12

Client ID: V13STD050

Instrument: msv13.i

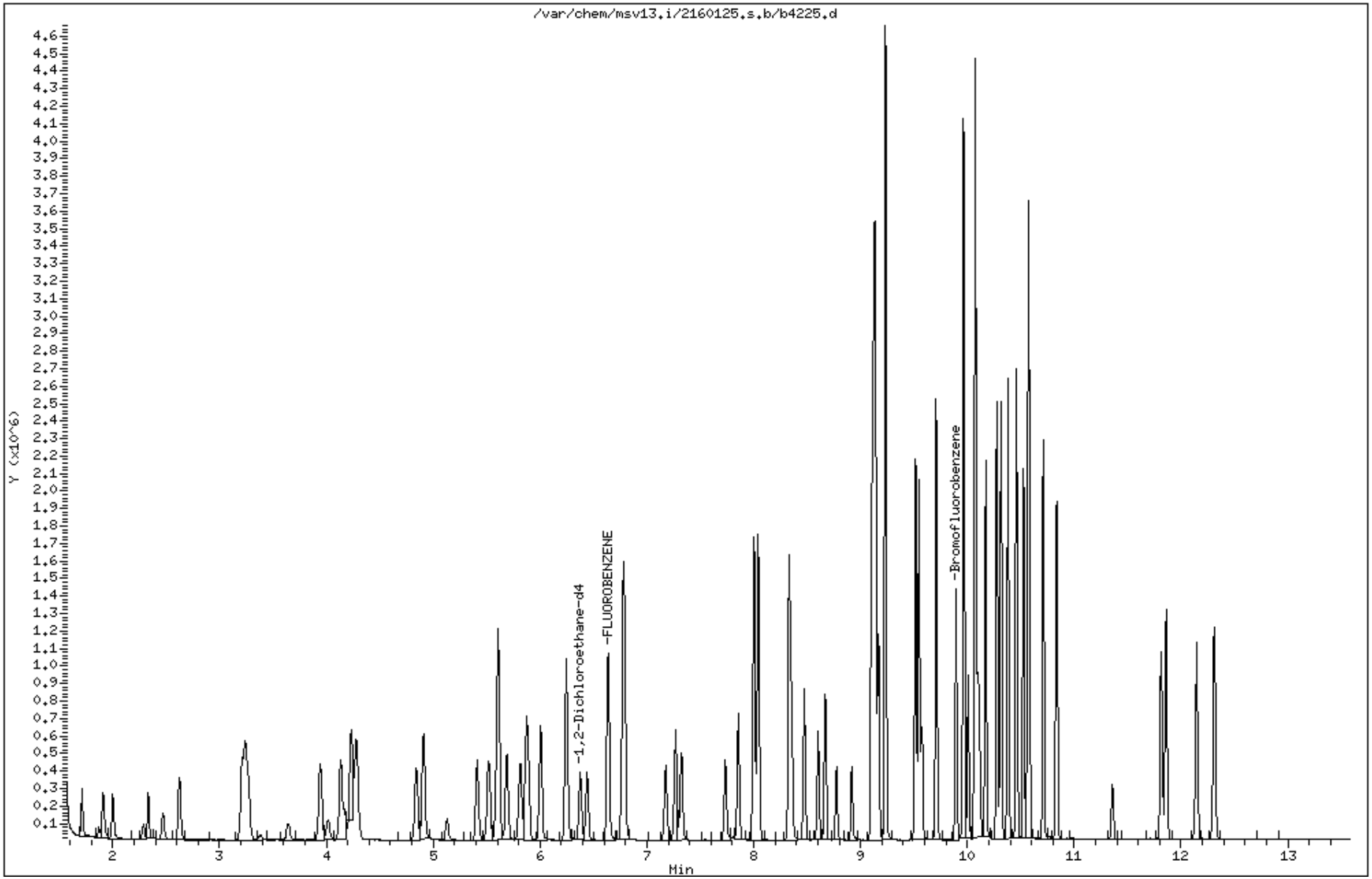
Sample Info: 1400*V13STD050

Purge Volume: 5.0

Operator: DTB

Column phase: RTX-VMS-30M

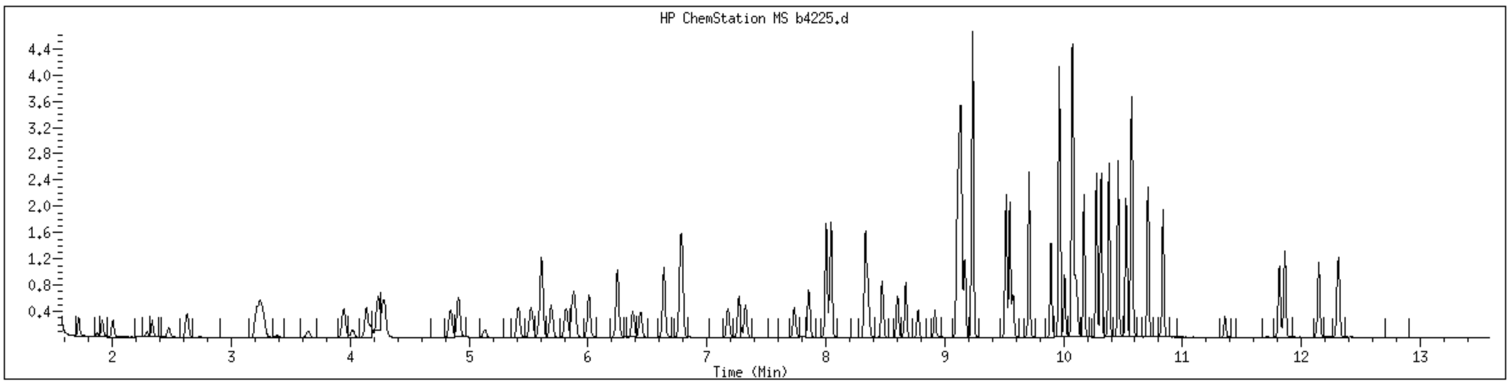
Column diameter: 0.25



Report Date: 01/25/2016 18:51

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1400 SampleType : CCALIB_7
Injection Date: 01/25/2016 09:12 Instrument : msv13.i
Operator : DTB
Sample Info : 1400*V13STD050
Misc Info : MSV~35290~*1*DTB
Method : /var/chem/msv13.i/2160125.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



Original Final

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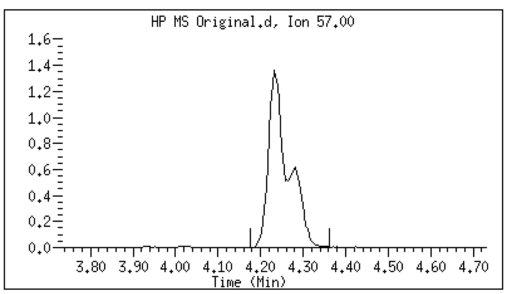
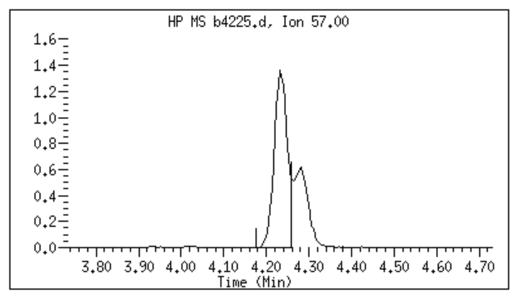
20 Hexane CAS#: 110-54-3 Reason: M1



Electronic Signature Applied

User: dtb
Date: 01/25/2016 09:34



M1 - Target system did not integrate

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	216012310	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160125/b4237
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	DTB
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577621
Anlysis Date:	01/25/16 Time: 1517	Analytical Method:	EPA 8260B

ANALYTE	*RRF*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.635	0.629	.01	-.9	50	A	
1,1,1-Trichloroethane	0.351	0.355	.01	1.2	50	A	
1,1,2,2-Tetrachloroethane	50.0	52.2	.3	4.4	50	L	
1,1,2-Trichloroethane	0.574	0.569	.01	-.95	50	A	
1,1-Dichloroethane	0.431	0.414	.1	-4.09	50	A	
1,1-Dichloroethene	0.176	0.194	.01	10.4	50	A	
1,1-Dichloropropene	0.271	0.278	.01	2.51	50	A	
1,2,3-Trichlorobenzene	0.894	0.972	.01	8.69	50	A	
1,2,3-Trichloropropane	0.931	0.934	.01	.33	50	A	
1,2,4-Trichlorobenzene	0.882	0.917	.01	4.03	50	A	
1,2,4-Trimethylbenzene	50.0	52.0	.01	4	50	L	
1,2-Dibromo-3-chloropropane	0.193	0.189	.01	-2.06	50	A	
1,2-Dibromoethane	0.550	0.550	.01	.07	50	A	
1,2-Dichlorobenzene	1.379	1.401	.01	1.58	50	A	
1,2-Dichloroethane	0.324	0.330	.01	2	50	A	
1,2-Dichloroethene (total)	0.302	0.289	.01	-4.24	50	A	
1,2-Dichloropropane	0.243	0.250	.01	2.94	50	A	
1,3,5-Trimethylbenzene	50.0	50.8	.01	1.6	50	L	
1,3-Dichlorobenzene	1.456	1.478	.01	1.48	50	A	
1,3-Dichloropropane	0.913	0.921	.01	.84	50	A	
1,3-Dichloropropylene	100.0	103.0	.01	3	50	L	
1,4-Dichlorobenzene	1.539	1.512	.01	-1.81	50	A	
1-Bromo-2-Chloroethane	0.353	0.366	.01	3.54	50	A	
1-Chlorohexane	50.0	51.2	.01	2.4	50	L	
2,2-Dichloropropane	0.325	0.332	.01	2.05	50	A	
2-Butanone	0.178	0.179	.01	.62	50	A	
2-Chlorotoluene	2.048	2.063	.01	.73	50	A	
2-Hexanone	50.0	42.9	.01	-14.2	50	L	
4-Chlorotoluene	1.859	1.889	.01	1.59	50	A	
4-Isopropyltoluene	50.0	49.5	.01	-1	50	L	
4-Methyl-2-pentanone	0.642	0.643	.01	.14	50	A	
Acetone	0.181	0.147	.01	-19.0	50	A	
Acrolein	0.020	0.023	.01	10.6	50	A	
Acrylonitrile	0.096	0.102	.01	6.93	50	A	
Benzene	0.943	0.986	.01	4.59	50	A	
Bromobenzene	1.282	1.182	.01	-7.73	50	A	
Bromochloromethane	0.140	0.145	.01	4.26	50	A	
Bromodichloromethane	0.328	0.343	.01	4.75	50	A	
Bromoform	0.573	0.571	.1	-.45	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	216012310	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160125/b4237
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	DTB
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577621
Anlysis Date:	01/25/16 Time: 1517	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	50.0	47.6	.01	-4.8	50	L	
Carbon disulfide	50.0	55.7	.01	11.4	50	L	
Carbon tetrachloride	0.312	0.323	.01	3.54	50	A	
Chlorobenzene	1.875	1.879	.3	.21	50	A	
Chloroethane	50.0	63.3	.01	26.6	50	L	
Chloroform	0.415	0.421	.01	1.62	50	A	
Chloromethane	50.0	44.1	.1	-11.8	50	L	
Cyclohexane	50.0	45.5	.01	-9	50	L	
Dibromochloromethane	0.661	0.648	.01	-1.98	50	A	
Dibromomethane	0.154	0.154	.01	.21	50	A	
Dichlorodifluoromethane	0.229	0.198	.01	-13.5	50	A	
Ethylbenzene	0.882	0.928	.01	5.26	50	A	
Hexachlorobutadiene	50.0	52.4	.01	4.8	50	L	
Isopropylbenzene (Cumene)	50.0	48.2	.01	-3.6	50	L	
Methyl Acetate	0.257	0.226	.01	-11.9	50	A	
Methyl iodide	50.0	44.0	.01	-12	50	Q	
Methylcyclohexane	0.382	0.404	.01	5.87	50	A	
Methylene chloride	50.0	49.9	.01	-.2	50	L	
Naphthalene	50.0	48.2	.01	-3.6	50	L	
Styrene	50.0	50.1	.01	.2	50	L	
Tetrachloroethene	0.567	0.561	.01	-1.02	50	A	
Toluene	2.526	2.496	.01	-1.19	50	A	
Trichloroethene	0.278	0.302	.01	8.36	50	A	
Trichlorofluoromethane	0.292	0.310	.01	6.28	50	A	
Trichlorotrifluoroethane	0.185	0.213	.01	15	50	A	
Vinyl acetate	50.0	42.4	.01	-15.2	50	L	
Vinyl chloride	0.268	0.242	.01	-9.52	50	A	
Xylene (total)	150.0	148.0	.01	-1.33	50	L	
cis-1,2-Dichloroethene	0.300	0.290	.01	-3.34	50	A	
cis-1,3-Dichloropropene	50.0	50.3	.01	.6	50	L	
m,p-Xylene	100.0	100.0	.01	0	50	L	
n-Butylbenzene	50.0	47.4	.01	-5.2	50	L	
n-Hexane	50.0	44.2	.01	-11.6	50	L	
n-Propylbenzene	2.928	2.970	.01	1.45	50	A	
o-Xylene	50.0	47.5	.01	-5	50	L	
sec-Butylbenzene	50.0	48.5	.01	-3	50	L	
tert-Butyl methyl ether (MTBE)	0.634	0.675	.01	6.44	50	A	
tert-Butylbenzene	1.037	1.114	.01	7.44	50	A	
trans-1,2-Dichloroethene	0.304	0.288	.01	-5.13	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	216012310	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160125/b4237
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	DTB
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577621
Anlysis Date:	01/25/16 Time: 1517	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,3-Dichloropropene	50.0	52.3	.01	4.6	50	L	
trans-1,4-Dichloro-2-butene	0.182	0.175	.01	-4.15	50	A	
1,2-Dichloroethane-d4	0.149	0.154	.01	2.94	50	A	
4-Bromofluorobenzene	0.838	0.826	.01	-1.46	50	A	
Dibromofluoromethane	0.256	0.262	.01	2.2	50	A	
Toluene-d8	2.275	2.225	.01	-2.2	50	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160125.s.b/b4237.d
Lab Smp Id: 1440 Client Smp ID: V13STD050
Inj Date : 25-JAN-2016 15:17
Operator : DTB Inst ID: msv13.i
Smp Info : 1440*V13STD050
Misc Info : MSV~35290~*1*DTB
Comment :
Method : /var/chem/msv13.i/2160125.s.b/8260dod5w13.m
Meth Date : 25-Jan-2016 18:56 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.713	1.713	(0.258)	175714	50.0000	43.2	
2 Chloromethane ++	50	1.911	1.911	(0.288)	235027	50.0000	44.1	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	214559	50.0000	45.2	
6 Bromomethane	94	2.335	2.335	(0.352)	128612	50.0000	47.6	
7 Chloroethane	64	2.470	2.470	(0.372)	155429	50.0000	63.3	
8 Trichlorofluoromethane	101	2.627	2.627	(0.396)	274977	50.0000	53.1	
10 1,1-Dichloroethene +	96	3.212	3.212	(0.484)	172208	50.0000	55.2	
11 Carbon Disulfide	76	3.238	3.238	(0.488)	589941	50.0000	55.7	
12 1,1,2Trichlotrifluoroethane	101	3.264	3.264	(0.492)	188704	50.0000	57.5	
13 Methyl Iodide	142	3.384	3.384	(0.510)	34387	50.0000	44.0	
14 Acrolein	56	3.647	3.647	(0.549)	100030	250.000	277	
16 Methylene Chloride	49	3.943	3.943	(0.594)	271989	50.0000	49.9	
17 Acetone	43	4.022	4.022	(0.606)	129869	50.0000	40.5	
18 trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	255637	50.0000	47.4	

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19	Methyl Acetate	43	4.172	4.172	(0.628)	200678	50.0000	44.0	9579
	20	Hexane	57	4.232	4.232	(0.637)	266835	50.0000	44.2	8680
	21	MTBE	73	4.284	4.284	(0.645)	598390	50.0000	53.2	9584
	26	1,1-Dichloroethane ++	63	4.839	4.839	(0.729)	366581	50.0000	48.0	
	27	Acrylonitrile	53	4.910	4.910	(0.740)	452716	250.000	267	
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	145110	50.0000	42.4	
	29	cis-1,2-Dichloroethene	61	5.412	5.412	(0.815)	256727	50.0000	48.3	
M	75	Total 1,2-Dichloroethene	61				512364	100.000	95.8	
	30	2,2-Dichloropropane	77	5.521	5.521	(0.832)	293881	50.0000	51.0	
	32	Cyclohexane	56	5.604	5.604	(0.844)	338398	50.0000	45.5	7958
	34	Bromochloromethane	128	5.611	5.611	(0.845)	128913	50.0000	52.1	
	35	Chloroform +	83	5.690	5.690	(0.857)	373328	50.0000	50.8	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	286649	50.0000	51.8	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	232215	50.0000	51.1	7845
	41	1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	314468	50.0000	50.6	
	44	2-Butanone	43	6.001	6.001	(0.904)	158648	50.0000	50.3	
	43	1,1-Dichloropropene	75	6.008	6.008	(0.905)	246433	50.0000	51.3	
	46	Benzene	78	6.248	6.248	(0.941)	873722	50.0000	52.3	
$	50	1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	136164	50.0000	51.5	
	51	1,2-Dichloroethane	62	6.440	6.440	(0.970)	292734	50.0000	51.0	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	886268	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	358407	50.0000	52.9	8220
	56	Trichloroethene	130	6.788	6.788	(1.023)	267363	50.0000	54.2	
	57	Dibromomethane	93	7.178	7.178	(1.081)	136681	50.0000	50.1	
	59	1,2-Dichloropropane +	63	7.272	7.272	(1.095)	221344	50.0000	51.5	
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	304260	50.0000	52.4	
	65	1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	324109	50.0000	51.8	9733
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	341756	50.0000	50.3	
$	68	Toluene-d8	98	8.003	8.003	(0.878)	908330	50.0000	48.9	
	69	Toluene +	91	8.044	8.044	(0.882)	1018835	50.0000	49.4	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	228961	50.0000	49.5	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.914)	262616	50.0000	50.1	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	346139	50.0000	52.3	
M	82	1-3 Dichloropropene total	100				687895	100.000	103	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	232106	50.0000	49.5	
	78	Dibromochloromethane	129	8.603	8.603	(0.944)	264479	50.0000	49.0	
	79	1,3-Dichloropropane	76	8.670	8.670	(0.951)	375847	50.0000	50.4	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	224493	50.0000	50.0	
	83	2-Hexanone	43	8.917	8.917	(0.978)	202676	50.0000	42.9	
	86	1-Chlorohexane	91	9.105	9.105	(0.999)	303806	50.0000	51.2	3380(M2)
*	84	CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	408194	50.0000		
	85	Chlorobenzene ++	112	9.127	9.127	(1.001)	766864	50.0000	50.1	
	87	Ethylbenzene +	106	9.139	9.139	(1.002)	379000	50.0000	52.6	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	256742	50.0000	49.6	
	89	p,m-Xylene	106	9.232	9.232	(1.013)	952138	100.000	100	
	90	o-Xylene	106	9.513	9.513	(1.044)	412088	50.0000	47.5	
M	121	TOTAL XYLENE	106				1364226	150.000	148	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	760349	50.0000	50.1	
92	Bromoform ++	173	9.573	9.573	(1.050)	232918	50.0000	49.8	
93	Isopropylbenzene	105	9.708	9.708	(1.065)	1123474	50.0000	48.2	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.086)	337035	50.0000	49.3	
96	Bromobenzene	77	9.963	9.963	(0.943)	536806	50.0000	46.1	
97	n-Propylbenzene	91	9.963	9.963	(0.943)	1348514	50.0000	50.7	
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	359952	50.0000	52.2	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	936383	50.0000	50.4	
102	1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	1006393	50.0000	50.8	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	423948	50.0000	50.2	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	79321	50.0000	47.9	
104	4-Chlorotoluene	91	10.169	10.169	(0.962)	857566	50.0000	50.8	
105	tert-butylbenzene	91	10.274	10.274	(0.972)	505947	50.0000	53.7	
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	985527	50.0000	52.0	
108	sec-Butylbenzene	105	10.379	10.379	(0.982)	1247903	50.0000	48.5	
110	p-Isopropyltoluene	119	10.458	10.458	(0.990)	1081804	50.0000	49.5	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	670975	50.0000	50.7	
* 114	1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	453974	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	686227	50.0000	49.1	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	836778	50.0000	47.4	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	635862	50.0000	50.8	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	85590	50.0000	49.0	
120	Hexachlorobutadiene	225	11.815	11.815	(1.118)	208806	50.0000	52.4	
122	1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	416496	50.0000	52.0	
124	Naphthalene	128	12.145	12.145	(1.149)	884477	50.0000	48.2	
125	1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	441126	50.0000	54.3	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160125.s.b/b4237.d

Date : 25-JAN-2016 15:17

Client ID: V13STD050

Instrument: msv13.i

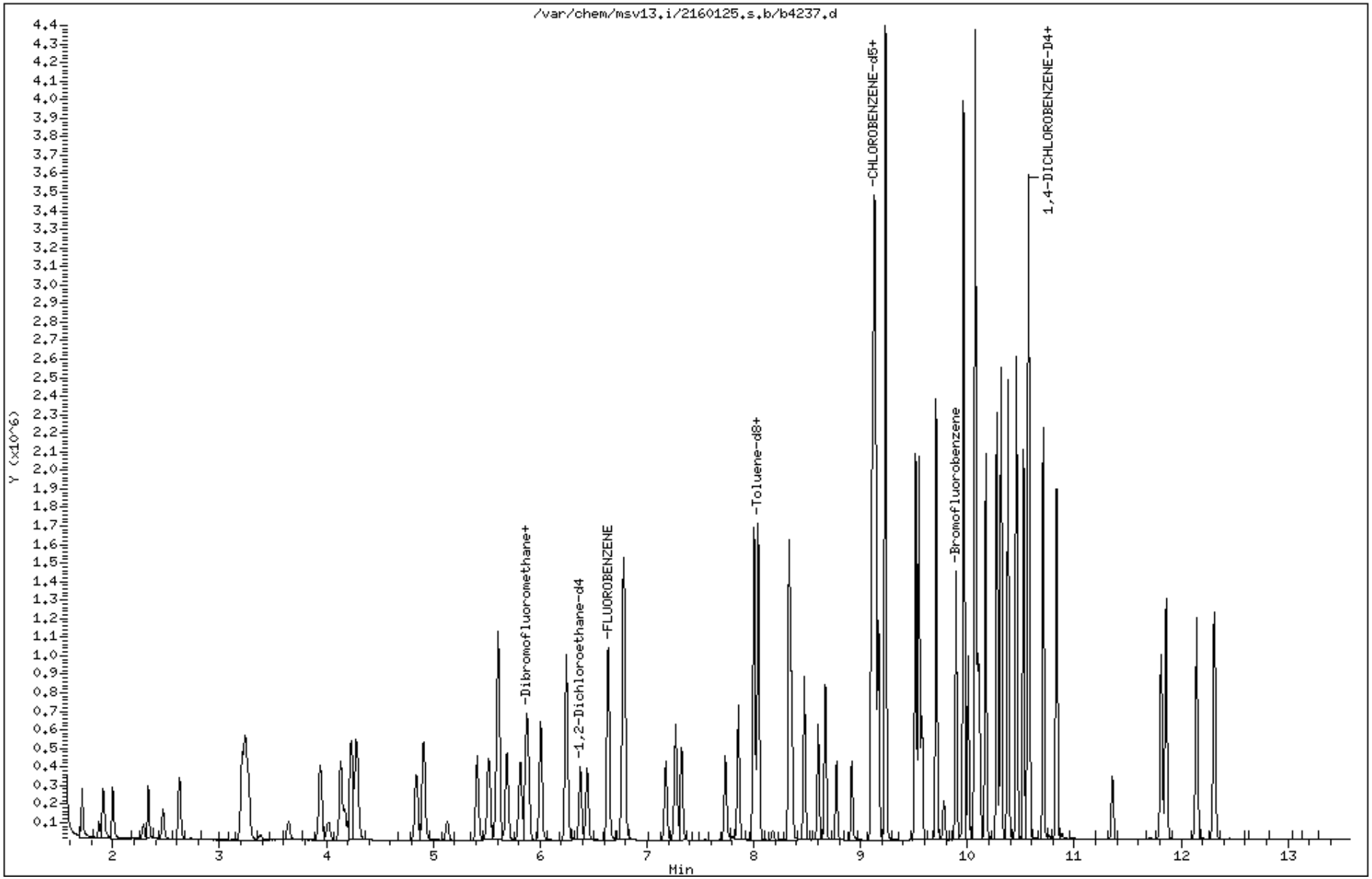
Sample Info: 1440*V13STD050

Purge Volume: 5.0

Operator: DTB

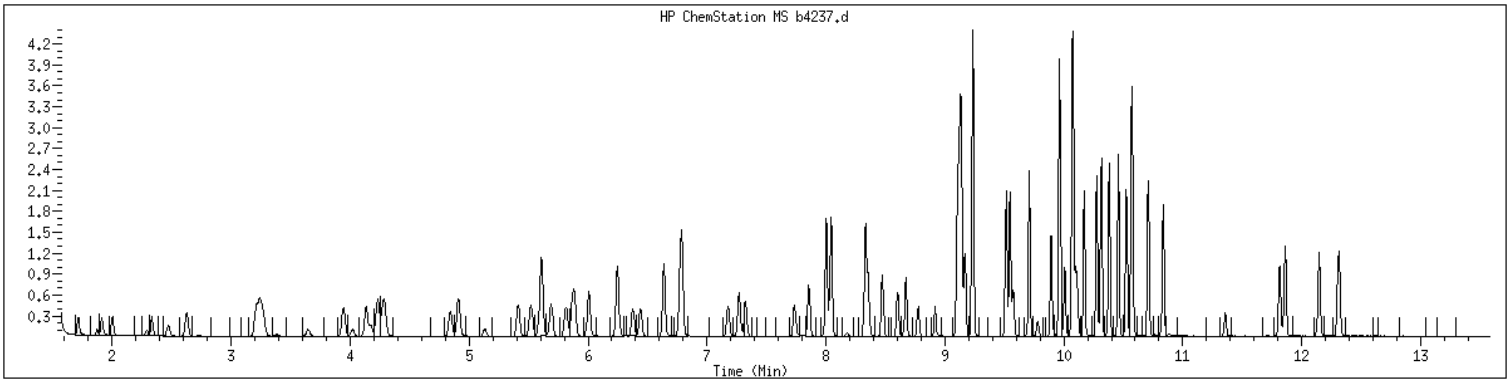
Column phase: RTX-VMS-30M

Column diameter: 0.25

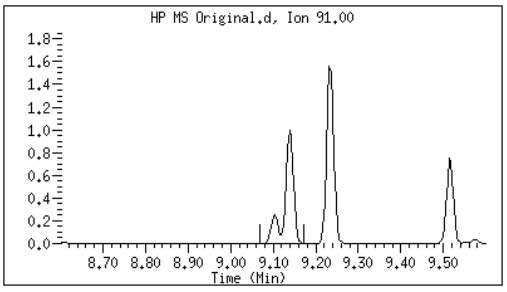


MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1440 SampleType : CCALIB_7
Injection Date: 01/25/2016 15:17 Instrument : msv13.i
Operator : DTB
Sample Info : 1440*V13STD050
Misc Info : MSV~35290~*1*DTB
Method : /var/chem/msv13.i/2160125.s.b/8260dod5w13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE

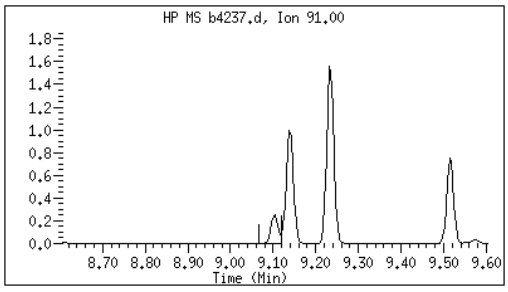


Original		Final
86 1-Chlorohexane	CAS#: 544-10-5	Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/25/2016 18:46



M2 - Target system integrated incorrectly

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	216012310	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160118p/b3946
Analyst:	JCK	Analytical Batch:	577166
Analysis Date:	01/18/16 Time: 1630	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	474261	9.12	516508	10.57	1081608	6.64

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#		#	
LCS1532494	1532494	413587		9.12		458158		10.57		896776		6.64	
LCSD1532495	1532495	414190		9.12		456307		10.57		917225		6.64	
MB1532493	1532493	314565		9.12		311889		10.57		797776		6.64	
MW-8	21601231001	315549		9.12		327843		10.57		797337		6.64	
MW-8-c	21601231002	318849		9.12		315792		10.57		800483		6.64	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = -0.17 minutes of internal standard RT
RT UPPER LIMIT = +0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 18-JAN-2016
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b3941.d	0.00 ml	18-JAN-2016 14:03	1.0	JCK	2
1203		b3942.d	5.00 ml	18-JAN-2016 15:07	1.0	JCK	1
1204		b3943.d	5.00 ml	18-JAN-2016 15:28	1.0	JCK	1
1204		b3943LOQ.d	5.00 ml	18-JAN-2016 15:28	1.0	JCK	1
1205		b3944.d	5.00 ml	18-JAN-2016 15:49	1.0	JCK	1
1206		b3945.d	5.00 ml	18-JAN-2016 16:09	1.0	JCK	1
1207		b3946.d	5.00 ml	18-JAN-2016 16:30	1.0	JCK	1
1208		b3947.d	5.00 ml	18-JAN-2016 16:59	1.0	JCK	1
1209		b3948.d	5.00 ml	18-JAN-2016 17:20	1.0	JCK	1
BLANK		b3949.d	5.00 ml	18-JAN-2016 17:41	1.0	JCK	1
1600		b3950.d	5.00 ml	18-JAN-2016 18:02	1.0	JCK	1
1600		b3951.d	5.00 ml	18-JAN-2016 18:22	1.0	JCK	1
1530498		b3952.d	5.00 ml	18-JAN-2016 18:47	1.0	JCK	1
1530499		b3953.d	5.00 ml	18-JAN-2016 19:08	1.0	JCK	1
BLANK		b3954.d	5.00 ml	18-JAN-2016 19:29	1.0	JCK	1
BLANK		b3955.d	5.00 ml	18-JAN-2016 19:50	1.0	JCK	1
1530497		b3956.d	5.00 ml	18-JAN-2016 20:11	1.0	JCK	1
21601161001		b3957.d	5.00 ml	18-JAN-2016 20:32	1.0	JCK	1
21601120901		b3958.d	5.00 ml	18-JAN-2016 20:52	1.0	JCK	1
21601120902		b3959.d	5.00 ml	18-JAN-2016 21:13	1.0	JCK	1
21601091204		b3960.d	5.00 ml	18-JAN-2016 21:34	1.0	JCK	1
21601151801		b3961.d	5.00 ml	18-JAN-2016 21:55	1.0	JCK	1
BLANK		b3962.d	5.00 ml	18-JAN-2016 22:16	1.0	JCK	1
1440		b3963.d	5.00 ml	18-JAN-2016 22:37	1.0	JCK	1
1440		b3964.d	5.00 ml	18-JAN-2016 22:58	1.0	JCK	1
BLANK		b3965.d	5.00 ml	18-JAN-2016 23:19	1.0	JCK	1
BLANK		b3966.d	5.00 ml	18-JAN-2016 23:39	1.0	JCK	1
BLANK		b3967.d	5.00 ml	19-JAN-2016 00:00	1.0	JCK	1
BLANK		b3968.d	5.00 ml	19-JAN-2016 00:21	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: TUNE TIME: :

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 25-JAN-2016
Instrument: msv13.i
Analyst(s): DTB

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-46-5	05/04/16
1000 (BFB)	BFB IS/SS	50	126-46-5	05/04/16
1400 (CCV)	8260	250	126-50-7	01/28/16
	Ac/Ac/VA	MC	126-51-6	03/31/16

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b4224.d	0.00 ml	25-JAN-2016 08:20	1.0	DTB	2
1400		b4225.d	5.00 ml	25-JAN-2016 09:12	1.0	DTB	1
1532494		b4225L.d	5.00 ml	25-JAN-2016 09:12	1.0	DTB	1
1532495		b4226.d	5.00 ml	25-JAN-2016 09:34	1.0	DTB	1
BLANK		b4227.d	5.00 ml	25-JAN-2016 09:57	1.0	DTB	1
BLANK		b4228.d	5.00 ml	25-JAN-2016 10:18	1.0	DTB	1
1532493		b4229.d	5.00 ml	25-JAN-2016 10:39	1.0	DTB	1
DEFOAMBLK pH	defoam added	b4230.d	5.00 ml	25-JAN-2016 12:09	1.0	DTB	1
21601190409 1		b4231.d	5.00 ml	25-JAN-2016 12:30	1.0	DTB	1
21601231001 1		b4232.d	5.00 ml	25-JAN-2016 12:51	1.0	DTB	1
21601231002 1		b4233.d	5.00 ml	25-JAN-2016 13:12	1.0	DTB	1
21601250901 1		b4234.d	5.00 ml	25-JAN-2016 13:33	1.0	DTB	1
21601250902 1		b4235.d	5.00 ml	25-JAN-2016 13:57	5.0	DTB	1
21601250903 1		b4236.d	5.00 ml	25-JAN-2016 14:18	1.0	DTB	1
1440		b4237.d	5.00 ml	25-JAN-2016 15:17	1.0	DTB	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 20:20

AECOM

Chain of Custody and Analytical Request

Page: of
Project Number: 60439678
Chain of Custody Number (1):
LIMS Number:

Project Name / Location: ALARNG OMS #28 Mobile, AL

Client Name: US Corps of Engineers, Mobile District, Mobile, AL

Collected by: Randy Morgan

Project Manager: Vasi Kourlas / Steve Ho

Sample ID	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hh:mm)	See Comments: COMP	GRAB	Well	Sample Information	Sample Analysis Requested: TCL VOC's 8260B	Quality Assurance Samples: COMMENTS	Cooler ID
MW-8	22-Jan-2016	0803		X		Groundwater	X		1
MW-8-c	22-Jan-2016	0803		X		Groundwater	X	(Trip Blank)	2

Client ID: 4838 - AECOM
SDG: 216012310
PM: AMK

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	1-22-16	0930			
2.	FedEx	1-23-16	10:25	DollieMcClure	1-23-16	10:25
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: Gulf Coast Analytical
Lab Recipient:

Shipped:
Airbill #: 7822 1910 3347
Location: Baton Rouge LA
Date: Time:

23 E24
JCAM

1.) Chain of Custody Number = date collected + custody number (e.g. 01-19-2004-01)

52745\admin\project control\project forms\Blank COC

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

216012310

SAMPLE DELIVERY GROUP 216012310	
Client PM AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** McCune, Dodie N.
Line Item(s) 1 - W - 5 Day VOCs	**Receive Date(s)** 01/23/16

CHECKLIST	YES	NO	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☑	☐	☐
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOC water samples received without head space?	☑	☐	☐
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E24	Temp(°C)
782219103347		2.5

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.4

Page 1 of 1

Appendix B2
GCAL Report 216012515 dated February 4, 2016

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/04/2016

GCAL Report 216012515

Project Greenville OMS 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	**RPD between primary and confirmation result is greater than 40**

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____

Authorized Signature
GCAL Report 216012515

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 216012515

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

This report was revised 02/04/16 with corrected client IDs for samples 21601251513 (OMS-28-1) and 21601251514 (OMS-28-3-a).

VOLATILES MASS SPECTROMETRY

In the EPA 8260B analysis, sample 21601251504 (OMS-28-5) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument. The dilution is reflected in elevated detection limits.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21601251501	OMS-28-2	Water	01/19/2016 15:43	01/23/2016 17:22
21601251502	OMS-28-2-c	Water	01/19/2016 15:43	01/23/2016 17:22
21601251503	MW-9	Water	01/20/2016 08:23	01/23/2016 17:22
21601251504	OMS-28-5	Water	01/20/2016 10:40	01/23/2016 17:22
21601251505	OMS-28-4	Water	01/20/2016 11:40	01/23/2016 17:22
21601251506	MW-5	Water	01/20/2016 14:00	01/23/2016 17:22
21601251507	MW-6	Water	01/20/2016 15:05	01/23/2016 17:22
21601251508	OMS-28-7	Water	01/20/2016 16:23	01/23/2016 17:22
21601251509	OMS-28-7-MS	Water	01/20/2016 16:23	01/23/2016 17:22
21601251510	OMS-28-7-MSD	Water	01/20/2016 16:23	01/23/2016 17:22
21601251511	OMS-28-3	Water	01/21/2016 11:25	01/23/2016 17:22
21601251512	MW-12	Water	01/21/2016 14:03	01/23/2016 17:22
21601251513	OMS-28-1	Water	01/21/2016 15:00	01/23/2016 17:22
21601251514	OMS-28-3-a	Water	01/21/2016 11:25	01/23/2016 17:22

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21601251501	OMS-28-2	W	EPA 8260B DOD Water
21601251502	OMS-28-2-c	W	EPA 8260B DOD Water
21601251503	MW-9	W	EPA 8260B DOD Water
21601251504	OMS-28-5	W	EPA 8260B DOD Water
21601251505	OMS-28-4	W	EPA 8260B DOD Water
21601251506	MW-5	W	EPA 8260B DOD Water
21601251507	MW-6	W	EPA 8260B DOD Water
21601251508	OMS-28-7	W	EPA 8260B DOD Water
21601251509	OMS-28-7-MS	W	EPA 8260B DOD Water
21601251510	OMS-28-7-MSD	W	EPA 8260B DOD Water
21601251511	OMS-28-3	W	EPA 8260B DOD Water
21601251512	MW-12	W	EPA 8260B DOD Water
21601251513	OMS-28-1	W	EPA 8260B DOD Water
21601251514	OMS-28-3-a	W	EPA 8260B DOD Water

Manual Integrations

No Manual Integrations Performed By GCAL.

Summary of Compounds Detected

OMS-28-2

Collect Date	01/19/2016 15:43	**GCAL ID**	21601251501
Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-09-2	Methylene chloride	0.709J	0.200	0.500	5.00	ug/L

OMS-28-5

Collect Date	01/20/2016 10:40	**GCAL ID**	21601251504
Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	27.8	1.00	2.50	5.00	ug/L
127-18-4	Tetrachloroethene	455	1.00	2.50	5.00	ug/L
156-60-5	trans-1,2-Dichloroethene	10.3	1.00	2.50	5.00	ug/L
79-01-6	Trichloroethene	200	1.00	2.50	5.00	ug/L

OMS-28-4

Collect Date	01/20/2016 11:40	**GCAL ID**	21601251505
Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
127-18-4	Tetrachloroethene	0.880J	0.200	0.500	1.00	ug/L

OMS-28-7

Collect Date	01/20/2016 16:23	**GCAL ID**	21601251508
Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-09-2	Methylene chloride	0.771J	0.200	0.500	5.00	ug/L

Summary of Compounds Detected

OMS-28-7-MS				
	Collect Date	01/20/2016 16:23	**GCAL ID**	21601251509
	Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
71-55-6	1,1,1-Trichloroethane	49.7	0.200	0.500	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	52.7	0.200	0.500	1.00	ug/L
79-00-5	1,1,2-Trichloroethane	48.6	0.200	0.500	1.00	ug/L
75-34-3	1,1-Dichloroethane	47.0	0.200	0.500	1.00	ug/L
75-35-4	1,1-Dichloroethene	53.4	0.200	0.500	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	52.2	0.200	0.500	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	49.3	0.200	0.500	1.00	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	49.6	0.200	0.500	1.00	ug/L
106-93-4	1,2-Dibromoethane	48.8	0.200	0.500	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	50.0	0.200	0.500	1.00	ug/L
107-06-2	1,2-Dichloroethane	49.4	0.200	0.500	1.00	ug/L
78-87-5	1,2-Dichloropropane	49.9	0.200	0.500	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	49.5	0.200	0.500	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	47.4	0.200	0.500	1.00	ug/L
78-93-3	2-Butanone	39.3	0.200	0.500	5.00	ug/L
591-78-6	2-Hexanone	37.7	0.500	1.00	5.00	ug/L
108-10-1	4-Methyl-2-pentanone	51.3	0.200	0.500	5.00	ug/L
67-64-1	Acetone	22.5	0.500	1.00	5.00	ug/L
71-43-2	Benzene	50.3	0.200	0.500	1.00	ug/L
74-97-5	Bromochloromethane	50.2	0.200	0.500	1.00	ug/L
75-27-4	Bromodichloromethane	51.4	0.200	0.500	1.00	ug/L
75-25-2	Bromoform	50.2	0.250	0.500	1.00	ug/L
74-83-9	Bromomethane	43.5	0.500	1.00	1.00	ug/L
75-15-0	Carbon disulfide	54.1	0.200	0.500	1.00	ug/L
56-23-5	Carbon tetrachloride	51.2	0.250	0.500	1.00	ug/L
108-90-7	Chlorobenzene	49.6	0.200	0.500	1.00	ug/L
75-00-3	Chloroethane	57.1	0.250	0.500	1.00	ug/L
67-66-3	Chloroform	49.9	0.200	0.500	1.00	ug/L
74-87-3	Chloromethane	41.0	0.200	0.500	1.00	ug/L
156-59-2	cis-1,2-Dichloroethene	47.6	0.200	0.500	1.00	ug/L
10061-01-5	cis-1,3-Dichloropropene	45.6	0.200	0.500	1.00	ug/L
110-82-7	Cyclohexane	45.1	0.500	1.00	2.00	ug/L
124-48-1	Dibromochloromethane	49.1	0.200	0.500	1.00	ug/L
75-71-8	Dichlorodifluoromethane	40.4	0.200	0.500	1.00	ug/L
100-41-4	Ethylbenzene	52.5	0.200	0.500	1.00	ug/L
98-82-8	Isopropylbenzene (Cumene)	47.9	0.200	0.500	1.00	ug/L
79-20-9	Methyl Acetate	43.0	1.00	2.00	5.00	ug/L
108-87-2	Methylcyclohexane	51.6	0.200	0.500	1.00	ug/L
75-09-2	Methylene chloride	46.6	0.200	0.500	5.00	ug/L
100-42-5	Styrene	49.2	0.200	0.500	1.00	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	51.6	0.200	0.500	1.00	ug/L
127-18-4	Tetrachloroethene	49.2	0.200	0.500	1.00	ug/L
108-88-3	Toluene	49.0	0.200	0.500	1.00	ug/L
156-60-5	trans-1,2-Dichloroethene	46.7	0.200	0.500	1.00	ug/L
10061-02-6	trans-1,3-Dichloropropene	50.4	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	52.7	0.200	0.500	1.00	ug/L
75-69-4	Trichlorofluoromethane	52.4	0.200	0.500	1.00	ug/L
76-13-1	Trichlorotrifluoroethane	56.3	0.200	0.500	1.00	ug/L
75-01-4	Vinyl chloride	39.4	0.200	0.500	1.00	ug/L

Summary of Compounds Detected

OMS-28-7-MS				
	Collect Date	01/20/2016 16:23	**GCAL ID**	21601251509
	Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B (Continued)

CAS#	Parameter	Result	DL	LOD	LOQ	Units
1330-20-7	Xylene (total)	147	0.400	1.00	3.00	ug/L

OMS-28-7-MSD				
	Collect Date	01/20/2016 16:23	**GCAL ID**	21601251510
	Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
71-55-6	1,1,1-Trichloroethane	48.7	0.200	0.500	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	51.3	0.200	0.500	1.00	ug/L
79-00-5	1,1,2-Trichloroethane	49.5	0.200	0.500	1.00	ug/L
75-34-3	1,1-Dichloroethane	46.5	0.200	0.500	1.00	ug/L
75-35-4	1,1-Dichloroethene	52.4	0.200	0.500	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	52.2	0.200	0.500	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	50.2	0.200	0.500	1.00	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	50.4	0.200	0.500	1.00	ug/L
106-93-4	1,2-Dibromoethane	49.6	0.200	0.500	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	49.5	0.200	0.500	1.00	ug/L
107-06-2	1,2-Dichloroethane	48.7	0.200	0.500	1.00	ug/L
78-87-5	1,2-Dichloropropane	50.0	0.200	0.500	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	49.3	0.200	0.500	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	47.0	0.200	0.500	1.00	ug/L
78-93-3	2-Butanone	39.6	0.200	0.500	5.00	ug/L
591-78-6	2-Hexanone	38.3	0.500	1.00	5.00	ug/L
108-10-1	4-Methyl-2-pentanone	51.7	0.200	0.500	5.00	ug/L
67-64-1	Acetone	25.2	0.500	1.00	5.00	ug/L
71-43-2	Benzene	49.8	0.200	0.500	1.00	ug/L
74-97-5	Bromochloromethane	49.4	0.200	0.500	1.00	ug/L
75-27-4	Bromodichloromethane	50.5	0.200	0.500	1.00	ug/L
75-25-2	Bromoform	50.2	0.250	0.500	1.00	ug/L
74-83-9	Bromomethane	44.1	0.500	1.00	1.00	ug/L
75-15-0	Carbon disulfide	52.5	0.200	0.500	1.00	ug/L
56-23-5	Carbon tetrachloride	49.3	0.250	0.500	1.00	ug/L
108-90-7	Chlorobenzene	48.6	0.200	0.500	1.00	ug/L
75-00-3	Chloroethane	57.9	0.250	0.500	1.00	ug/L
67-66-3	Chloroform	48.2	0.200	0.500	1.00	ug/L
74-87-3	Chloromethane	41.7	0.200	0.500	1.00	ug/L
156-59-2	cis-1,2-Dichloroethene	47.1	0.200	0.500	1.00	ug/L
10061-01-5	cis-1,3-Dichloropropene	44.8	0.200	0.500	1.00	ug/L
110-82-7	Cyclohexane	43.4	0.500	1.00	2.00	ug/L
124-48-1	Dibromochloromethane	49.5	0.200	0.500	1.00	ug/L
75-71-8	Dichlorodifluoromethane	39.2	0.200	0.500	1.00	ug/L
100-41-4	Ethylbenzene	51.2	0.200	0.500	1.00	ug/L
98-82-8	Isopropylbenzene (Cumene)	47.6	0.200	0.500	1.00	ug/L
79-20-9	Methyl Acetate	43.1	1.00	2.00	5.00	ug/L
108-87-2	Methylcyclohexane	50.6	0.200	0.500	1.00	ug/L
75-09-2	Methylene chloride	49.5	0.200	0.500	5.00	ug/L

Summary of Compounds Detected

OMS-28-7-MSD

Collect Date	01/20/2016 16:23	**GCAL ID**	21601251510
Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B (Continued)

CAS#	Parameter	Result	DL	LOD	LOQ	Units
100-42-5	Styrene	48.7	0.200	0.500	1.00	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	52.0	0.200	0.500	1.00	ug/L
127-18-4	Tetrachloroethene	47.9	0.200	0.500	1.00	ug/L
108-88-3	Toluene	48.1	0.200	0.500	1.00	ug/L
156-60-5	trans-1,2-Dichloroethene	48.3	0.200	0.500	1.00	ug/L
10061-02-6	trans-1,3-Dichloropropene	49.6	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	50.8	0.200	0.500	1.00	ug/L
75-69-4	Trichlorofluoromethane	52.2	0.200	0.500	1.00	ug/L
76-13-1	Trichlorotrifluoroethane	54.1	0.200	0.500	1.00	ug/L
75-01-4	Vinyl chloride	39.5	0.200	0.500	1.00	ug/L
1330-20-7	Xylene (total)	145	0.400	1.00	3.00	ug/L

OMS-28-3

Collect Date	01/21/2016 11:25	**GCAL ID**	21601251511
Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	1.59	0.200	0.500	1.00	ug/L
75-09-2	Methylene chloride	0.527J	0.200	0.500	5.00	ug/L
79-01-6	Trichloroethene	8.92	0.200	0.500	1.00	ug/L

OMS-28-1

Collect Date	01/21/2016 15:00	**GCAL ID**	21601251513
Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-09-2	Methylene chloride	0.504J	0.200	0.500	5.00	ug/L

OMS-28-3-a

Collect Date	01/21/2016 11:25	**GCAL ID**	21601251514
Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	1.60	0.200	0.500	1.00	ug/L

Summary of Compounds Detected

OMS-28-3-a				
	Collect Date	01/21/2016 11:25	**GCAL ID**	21601251514
	Receive Date	01/23/2016 17:22	**Matrix**	Water

EPA 8260B (Continued)

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	8.78	0.200	0.500	1.00	ug/L

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-2
Collect Date:	01/19/16	Time:	1543	GCAL Sample ID:	21601251501
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4250
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1336	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-2
Collect Date:	01/19/16	Time:	1543	GCAL Sample ID:	21601251501
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4250
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1336	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.709	J	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4250.d
Lab Smp Id: 21601251501
Inj Date : 26-JAN-2016 13:36
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251501*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
16 Methylene Chloride	49	3.943	3.947	(0.594)	6650	0.70944	0.709	
$ 40 Dibromofluoromethane	111	5.870	5.870	(0.884)	220204	55.1818	55.2	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	125147	53.8683	53.9	
* 53 FLUOROBENZENE	96	6.642	6.638	(1.000)	778288	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	738996	53.0295	53.0	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	306231	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	251393	48.9855	49.0	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	306325	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4250.d

Page 1

Date : 26-JAN-2016 13:36

Client ID:

Instrument: msv13.i

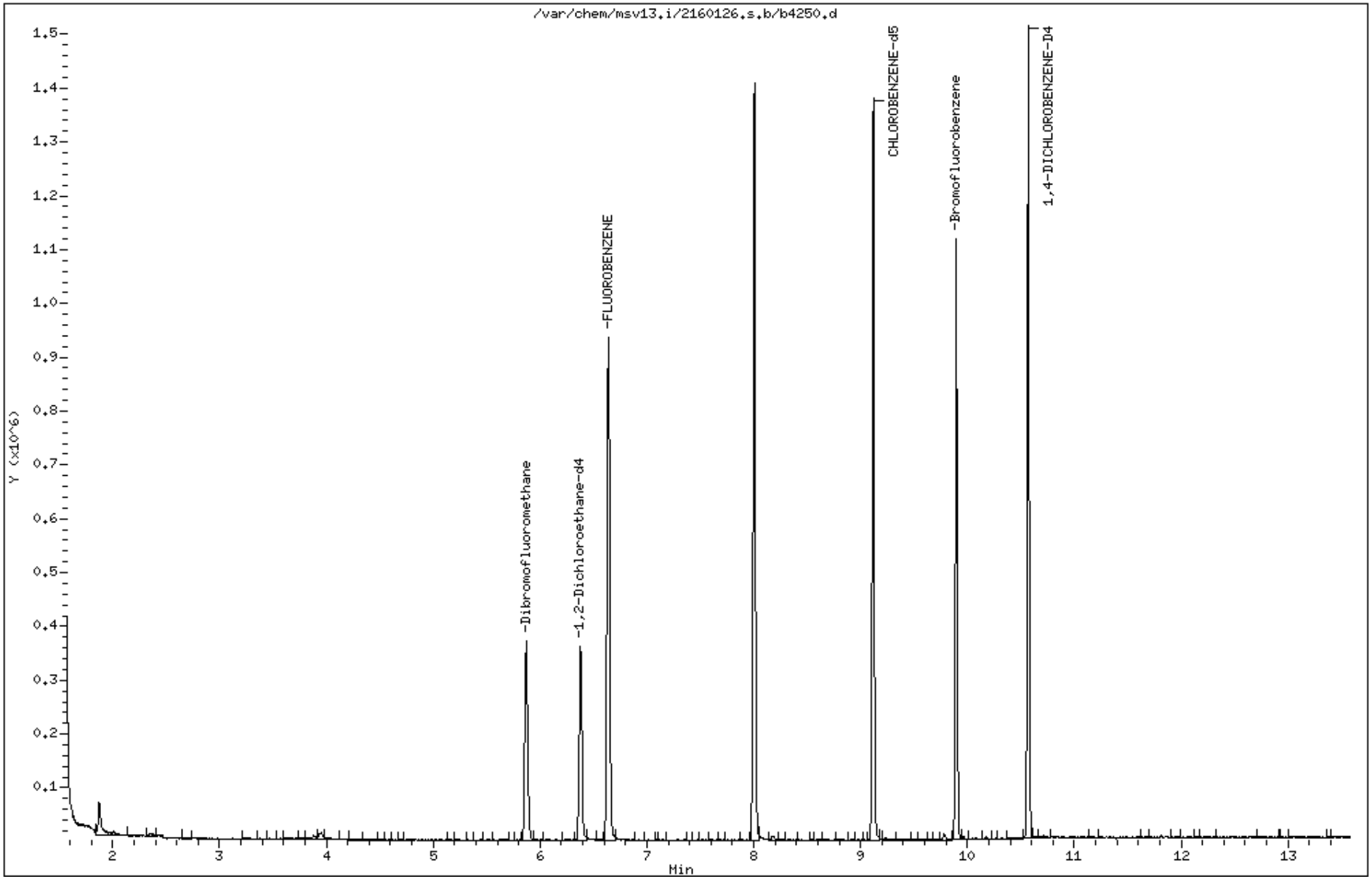
Sample Info: 21601251501*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25



Revision 1

Data File: /var/chem/msv13.i/2160126.s.b/b4250.d

Date : 26-JAN-2016 13:36

Client ID:

Instrument: msv13.i

Sample Info: 21601251501*

Purge Volume: 5.0

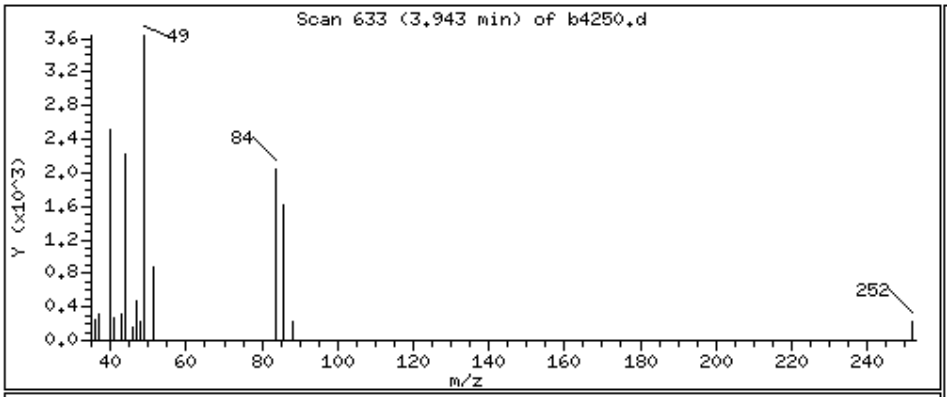
Operator: MMM

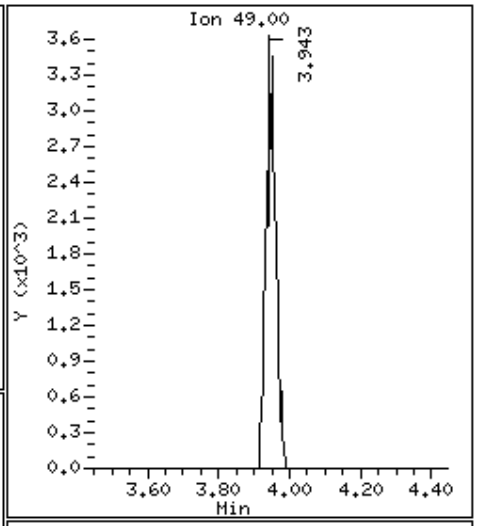
Column phase: RTX-VMS-30M

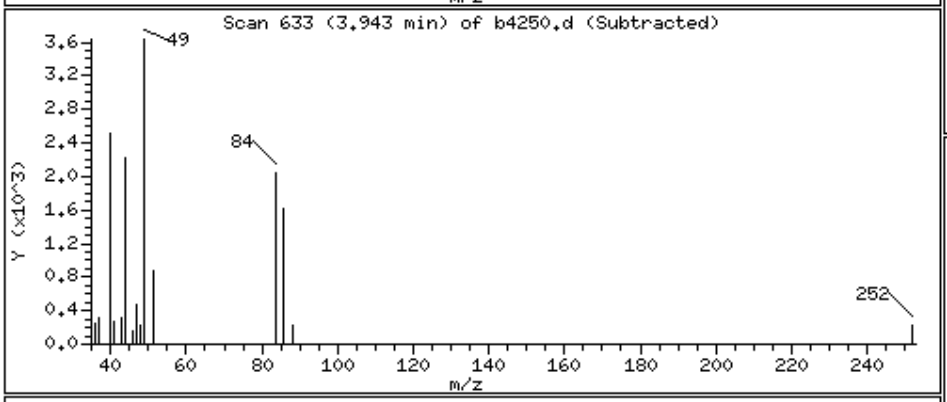
Column diameter: 0.25

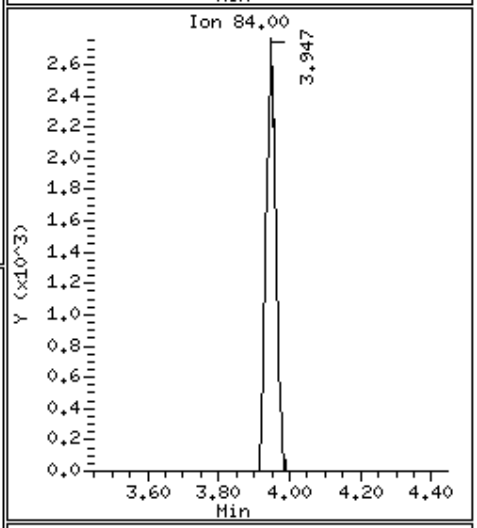
16 Methylene Chloride

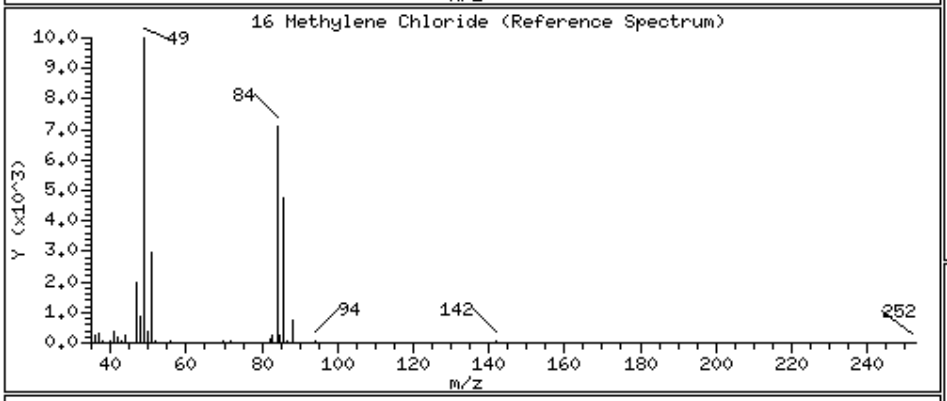
Concentration: 0.709 ug/L

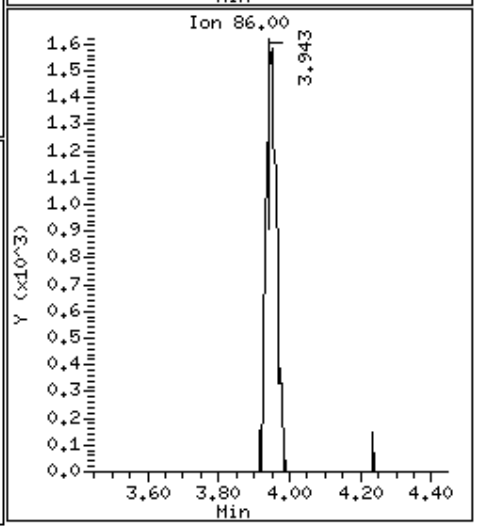


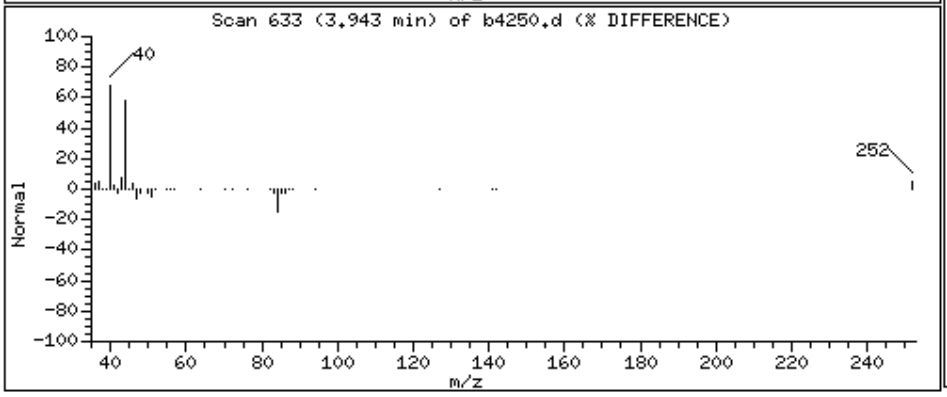








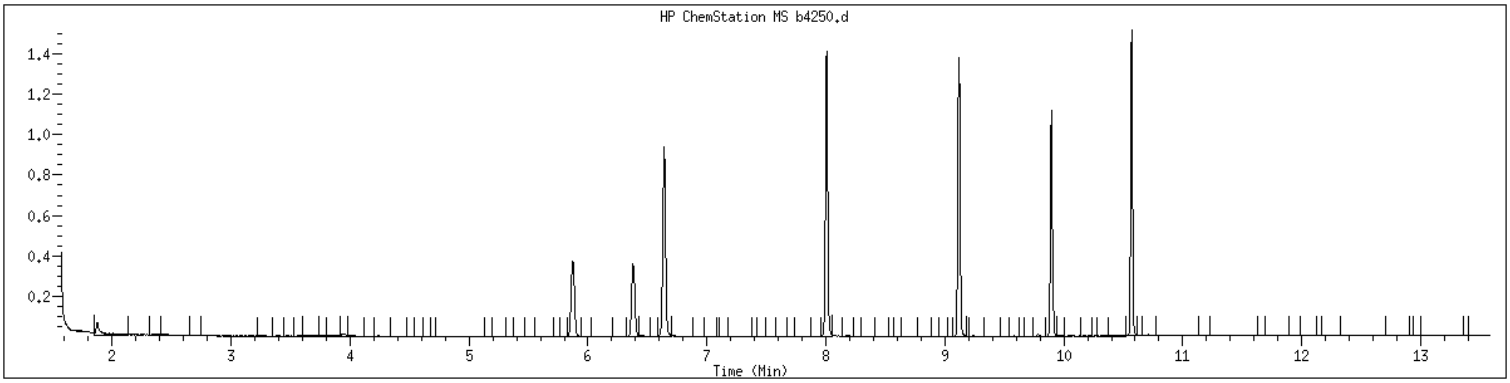




Data file : /var/chem/msv13.i/2160126.s.b/b4250.d Page: 1
Report Date: 01/26/2016 14:21

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251501 SampleType : SAMPLE
Injection Date: 01/26/2016 13:36 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251501*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-2-c
Collect Date:	01/19/16	Time:	1543	GCAL Sample ID:	21601251502
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4251
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1357	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-2-c
Collect Date:	01/19/16	Time:	1543	GCAL Sample ID:	21601251502
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4251
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1357	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4251.d
Lab Smp Id: 21601251502
Inj Date : 26-JAN-2016 13:57
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251502*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.870	5.870	(0.884)	220551	54.3241	54.3	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	126670	53.5919	53.6	
* 53 FLUOROBENZENE	96	6.642	6.638	(1.000)	791822	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	750583	52.8070	52.8	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	312343	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	254713	48.6612	48.7	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	310346	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4251.d

Page 1

Date : 26-JAN-2016 13:57

Client ID:

Instrument: msv13.i

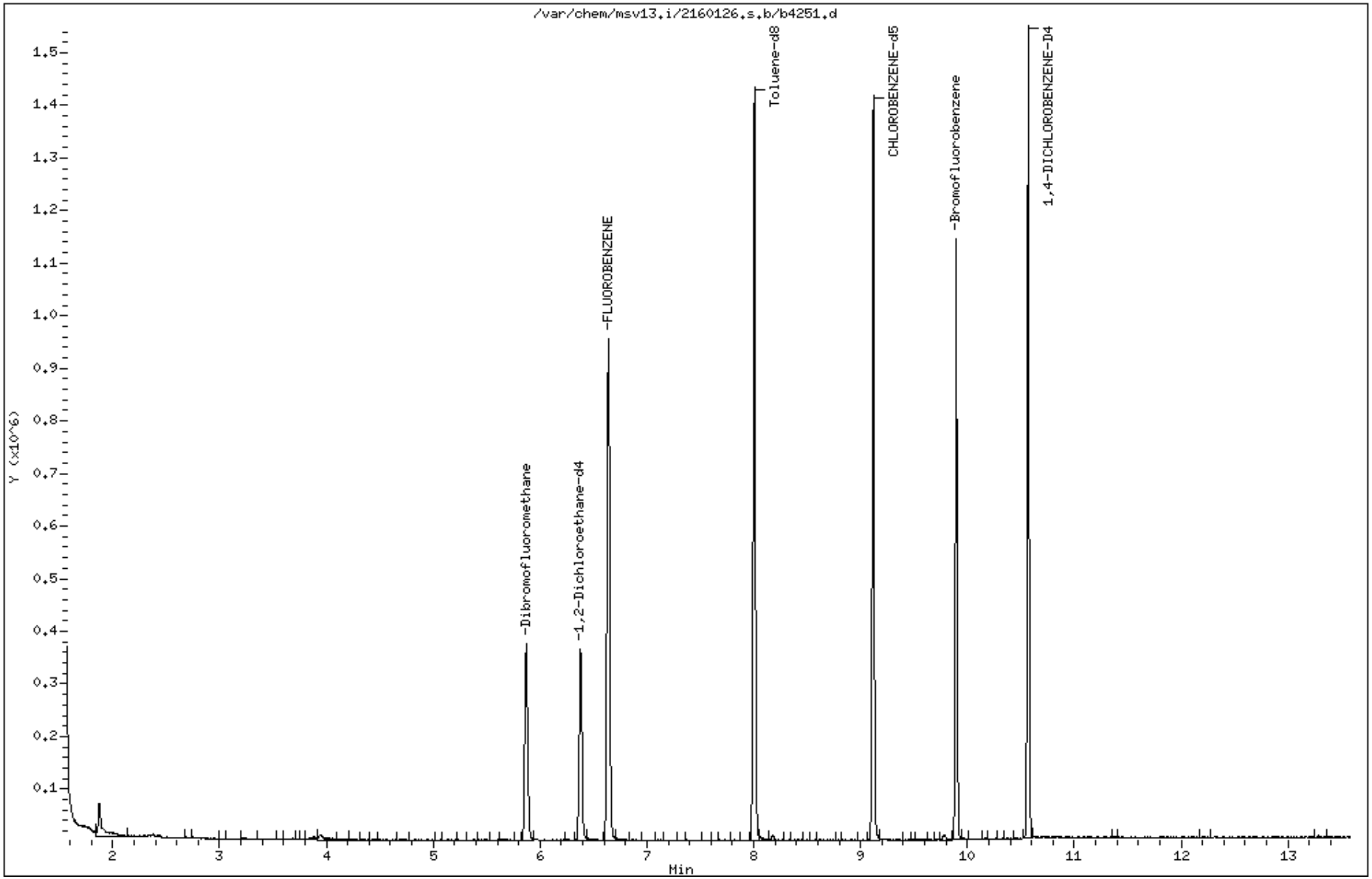
Sample Info: 21601251502*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

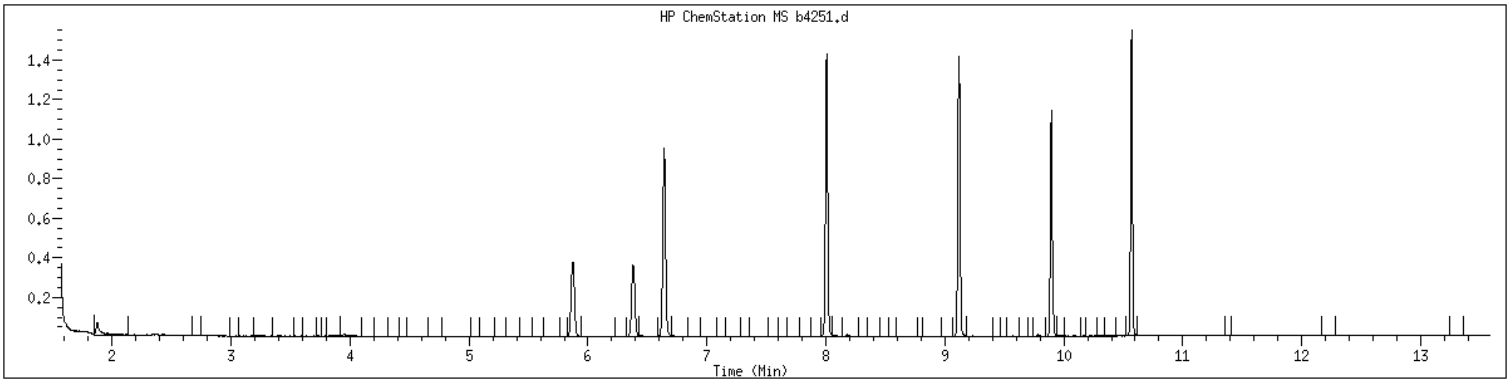
Column diameter: 0.25



Report Date: 01/26/2016 14:23

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251502 SampleType : SAMPLE
Injection Date: 01/26/2016 13:57 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251502*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515	Client Sample ID:	MW-9
Collect Date:	01/20/16 Time: 0823	GCAL Sample ID:	21601251503
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2160126/b4256
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: MMM	Analytical Batch:	577716
Analysis Date:	01/26/16 Time: 1544	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MW-9
Collect Date:	01/20/16	Time:	0823	GCAL Sample ID:	21601251503
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4256
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1544	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4256.d
Lab Smp Id: 21601251503
Inj Date : 26-JAN-2016 15:44
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251503*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.873	5.870	(0.884)	217234	53.8112	53.8	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	122830	52.2626	52.3	
* 53 FLUOROBENZENE	96	6.642	6.638	(1.000)	787347	50.0000		
$ 68 Toluene-d8	98	8.006	8.003	(0.878)	750028	52.9470	52.9	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	311287	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	257478	49.3563	49.4	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	308262	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4256.d

Page 1

Date : 26-JAN-2016 15:44

Client ID:

Instrument: msv13.i

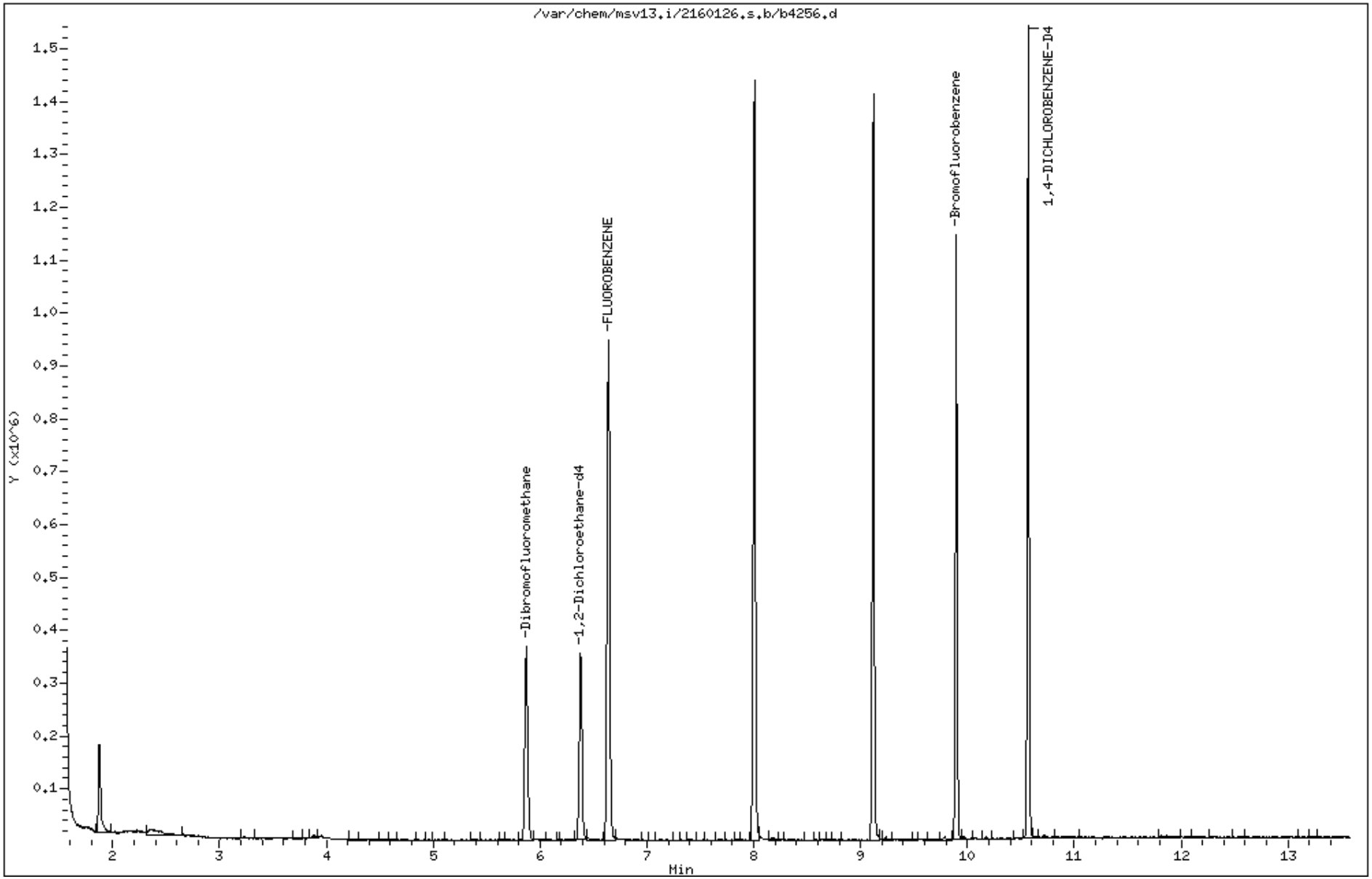
Sample Info: 21601251503*

Purge Volume: 5.0

Operator: MMM

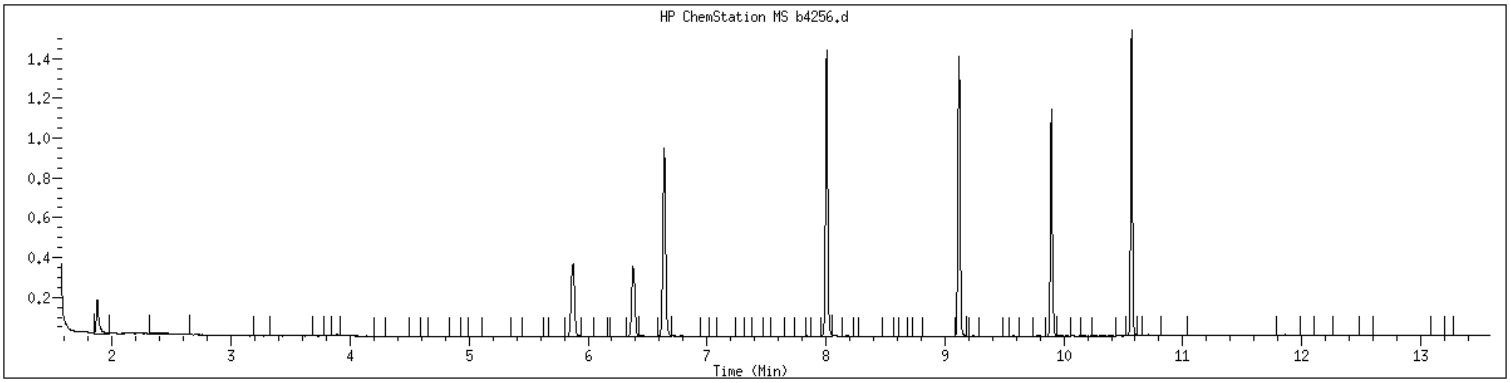
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251503 SampleType : SAMPLE
Injection Date: 01/26/2016 15:44 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251503*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-5
Collect Date:	01/20/16	Time:	1040	GCAL Sample ID:	21601251504
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4257
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	5	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1608	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	2.50	U	1.00	2.50	5.00
79-34-5	1,1,2,2-Tetrachloroethane	2.50	U	1.00	2.50	5.00
79-00-5	1,1,2-Trichloroethane	2.50	U	1.00	2.50	5.00
75-34-3	1,1-Dichloroethane	2.50	U	1.00	2.50	5.00
75-35-4	1,1-Dichloroethene	2.50	U	1.00	2.50	5.00
87-61-6	1,2,3-Trichlorobenzene	2.50	U	1.00	2.50	5.00
120-82-1	1,2,4-Trichlorobenzene	2.50	U	1.00	2.50	5.00
96-12-8	1,2-Dibromo-3-chloropropane	2.50	U	1.00	2.50	5.00
106-93-4	1,2-Dibromoethane	2.50	U	1.00	2.50	5.00
95-50-1	1,2-Dichlorobenzene	2.50	U	1.00	2.50	5.00
107-06-2	1,2-Dichloroethane	2.50	U	1.00	2.50	5.00
78-87-5	1,2-Dichloropropane	2.50	U	1.00	2.50	5.00
541-73-1	1,3-Dichlorobenzene	2.50	U	1.00	2.50	5.00
106-46-7	1,4-Dichlorobenzene	2.50	U	1.00	2.50	5.00
78-93-3	2-Butanone	2.50	U	1.00	2.50	25.0
591-78-6	2-Hexanone	5.00	U	2.50	5.00	25.0
108-10-1	4-Methyl-2-pentanone	2.50	U	1.00	2.50	25.0
67-64-1	Acetone	5.00	U	2.50	5.00	25.0
71-43-2	Benzene	2.50	U	1.00	2.50	5.00
74-97-5	Bromochloromethane	2.50	U	1.00	2.50	5.00
75-27-4	Bromodichloromethane	2.50	U	1.00	2.50	5.00
75-25-2	Bromoform	2.50	U	1.25	2.50	5.00
74-83-9	Bromomethane	5.00	U	2.50	5.00	5.00
75-15-0	Carbon disulfide	2.50	U	1.00	2.50	5.00
56-23-5	Carbon tetrachloride	2.50	U	1.25	2.50	5.00
108-90-7	Chlorobenzene	2.50	U	1.00	2.50	5.00
75-00-3	Chloroethane	2.50	U	1.25	2.50	5.00
67-66-3	Chloroform	2.50	U	1.00	2.50	5.00
74-87-3	Chloromethane	2.50	U	1.00	2.50	5.00
156-59-2	cis-1,2-Dichloroethene	27.8		1.00	2.50	5.00
10061-01-5	cis-1,3-Dichloropropene	2.50	U	1.00	2.50	5.00
110-82-7	Cyclohexane	5.00	U	2.50	5.00	10.0
124-48-1	Dibromochloromethane	2.50	U	1.00	2.50	5.00
75-71-8	Dichlorodifluoromethane	2.50	U	1.00	2.50	5.00
100-41-4	Ethylbenzene	2.50	U	1.00	2.50	5.00
98-82-8	Isopropylbenzene (Cumene)	2.50	U	1.00	2.50	5.00

FORM I VOA

Revision 1

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-5
Collect Date:	01/20/16	Time:	1040	GCAL Sample ID:	21601251504
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4257
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	5	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1608	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	10.0	U	5.00	10.0	25.0
108-87-2	Methylcyclohexane	2.50	U	1.00	2.50	5.00
75-09-2	Methylene chloride	2.50	U	1.00	2.50	25.0
100-42-5	Styrene	2.50	U	1.00	2.50	5.00
1634-04-4	tert-Butyl methyl ether (MTBE)	2.50	U	1.00	2.50	5.00
127-18-4	Tetrachloroethene	455		1.00	2.50	5.00
108-88-3	Toluene	2.50	U	1.00	2.50	5.00
156-60-5	trans-1,2-Dichloroethene	10.3		1.00	2.50	5.00
10061-02-6	trans-1,3-Dichloropropene	2.50	U	1.00	2.50	5.00
79-01-6	Trichloroethene	200		1.00	2.50	5.00
75-69-4	Trichlorofluoromethane	2.50	U	1.00	2.50	5.00
76-13-1	Trichlorotrifluoroethane	2.50	U	1.00	2.50	5.00
75-01-4	Vinyl chloride	2.50	U	1.00	2.50	5.00
1330-20-7	Xylene (total)	5.00	U	2.00	5.00	15.0

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4257.d
Lab Smp Id: 21601251504
Inj Date : 26-JAN-2016 16:08
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251504*
Misc Info : MSV~35296~*5*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	5.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	9456	2.06631	10.3	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.815)	25089	5.56248	27.8	
M	75 Total 1,2-Dichloroethene	61				34545	7.62879	38.1	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	207270	53.7159	269	4354
$	50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	117609	52.3538	262	
*	53 FLUOROBENZENE	96	6.642	6.638	(1.000)	752567	50.0000		
	56 Trichloroethene	130	6.792	6.792	(1.023)	167896	40.0683	200	
$	68 Toluene-d8	98	8.007	8.003	(0.878)	720031	52.3161	262	
	71 Tetrachloroethene	164	8.333	8.332	(0.914)	311959	91.0041	455	
*	84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	302441	50.0000		
$	95 Bromofluorobenzene	174	9.896	9.896	(1.085)	243091	47.9614	240	
*	114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	303213	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4257.d

Page 1

Date : 26-JAN-2016 16:08

Client ID:

Instrument: msv13.i

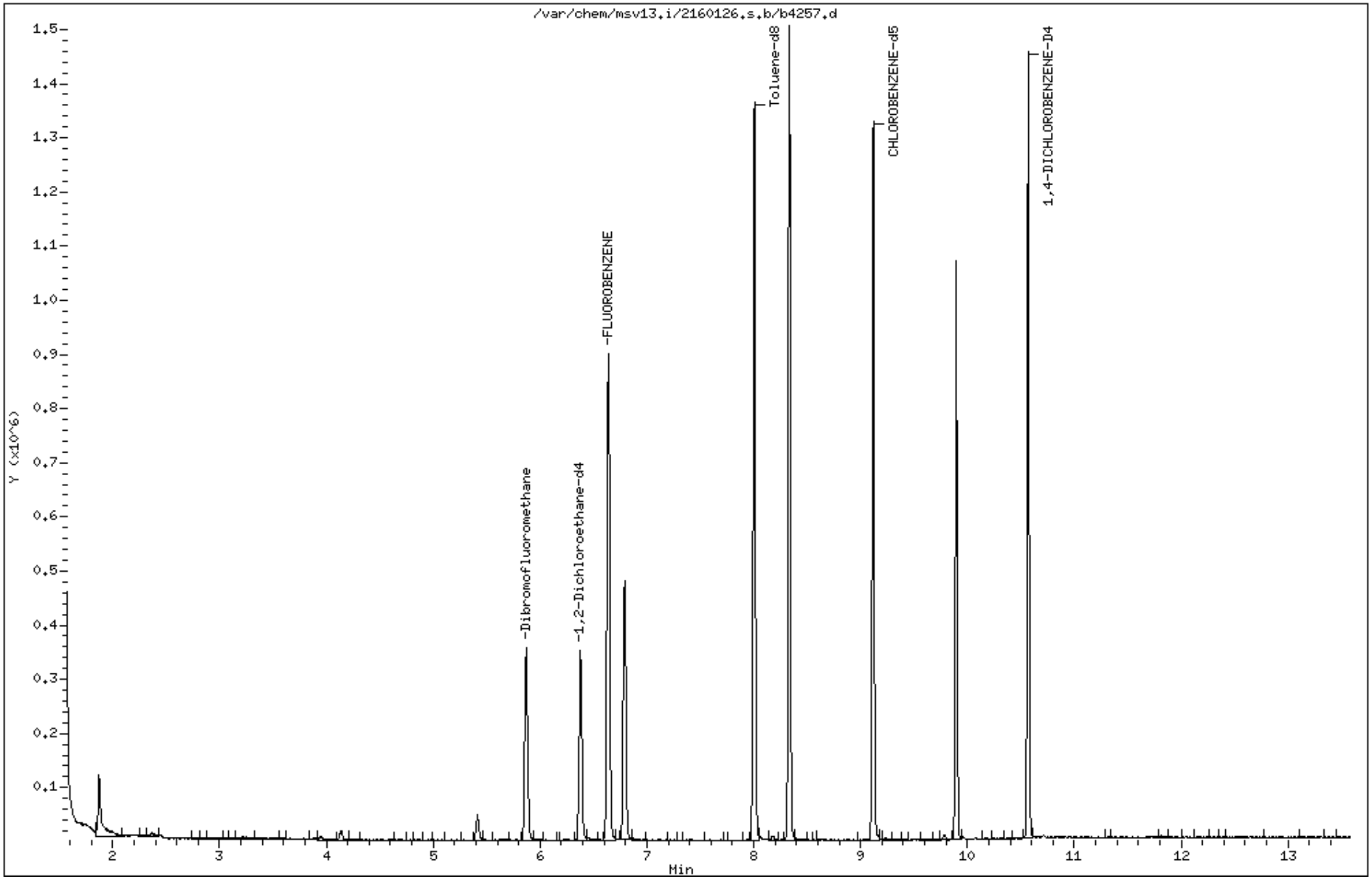
Sample Info: 21601251504*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25



Revision 1

Data File: /var/chem/msv13.i/2160126.s.b/b4257.d

Date : 26-JAN-2016 16:08

Client ID:

Instrument: msv13.i

Sample Info: 21601251504x

Purge Volume: 5.0

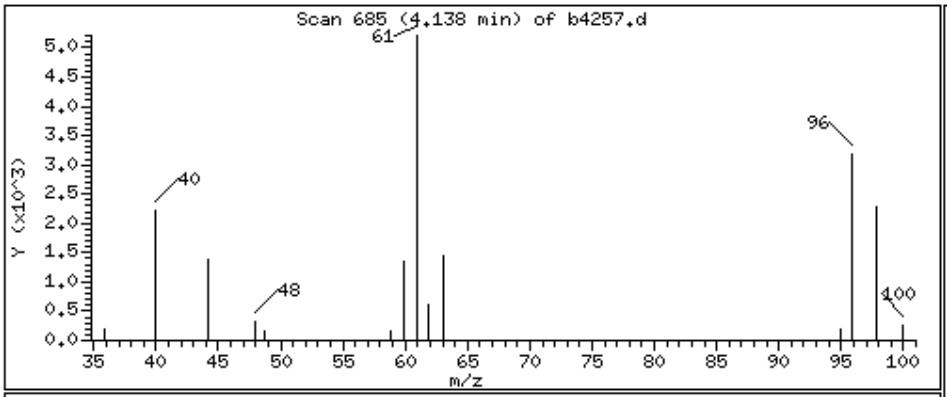
Operator: MMM

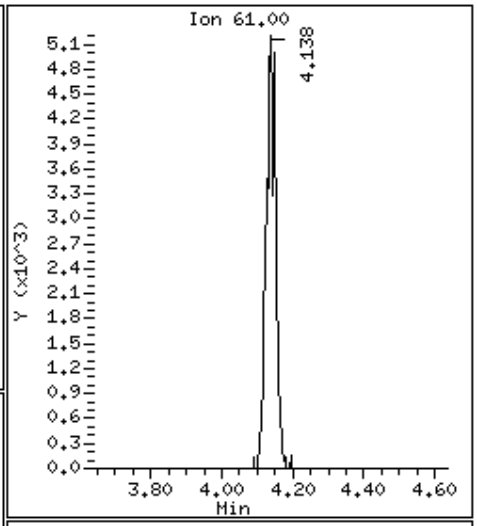
Column phase: RTX-VMS-30M

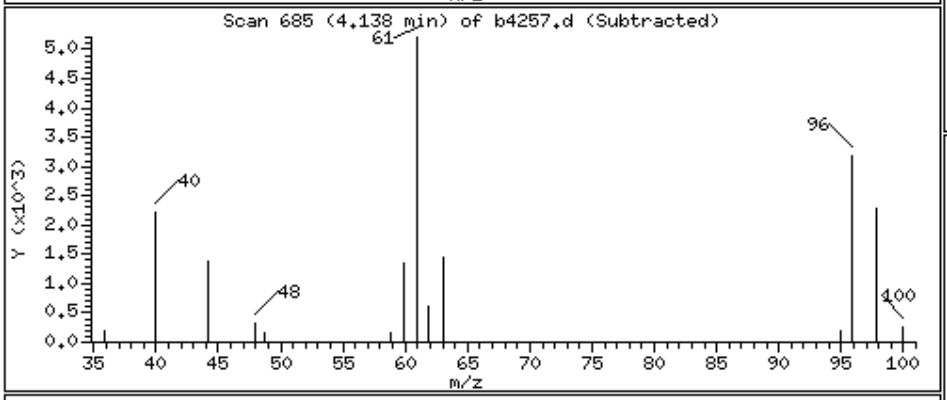
Column diameter: 0.25

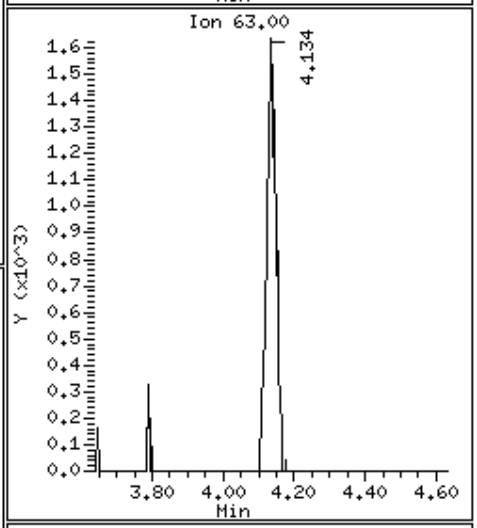
18 trans-1,2-Dichloroethene

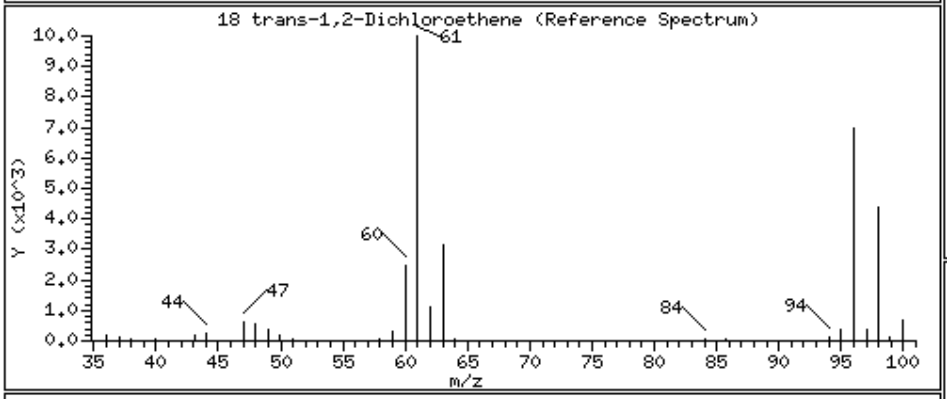
Concentration: 10.3 ug/L

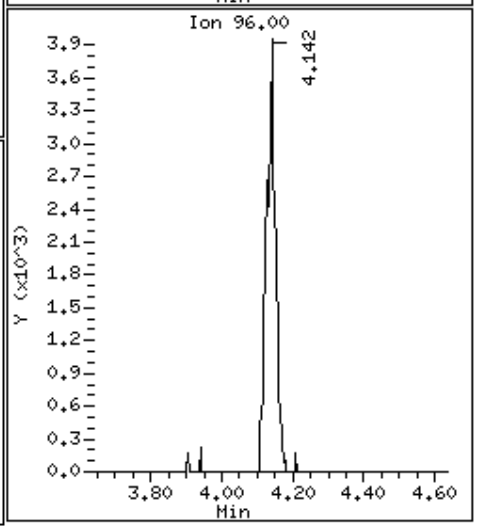


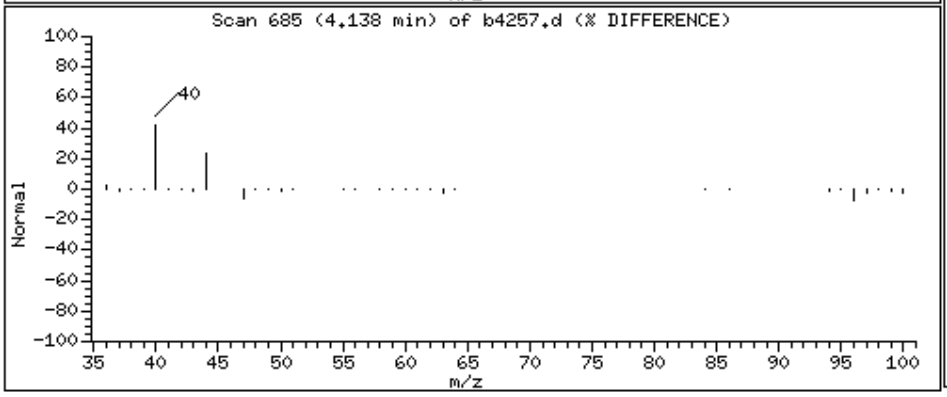












Data File: /var/chem/msv13.i/2160126.s.b/b4257.d

Date : 26-JAN-2016 16:08

Client ID:

Instrument: msv13.i

Sample Info: 21601251504x

Purge Volume: 5.0

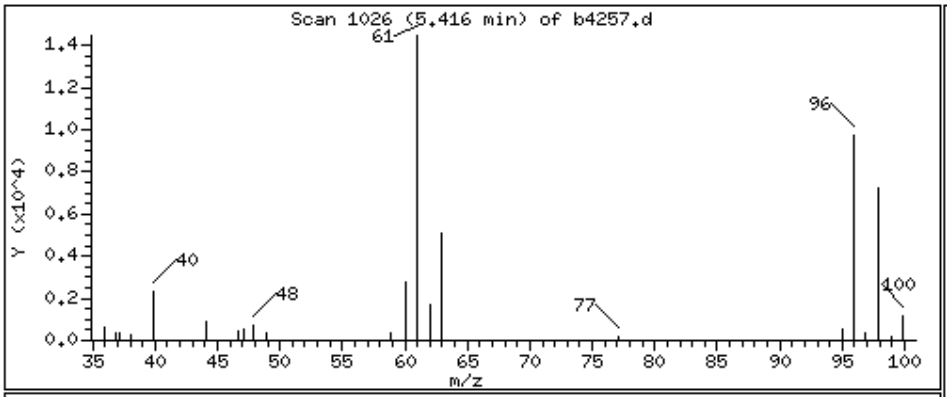
Operator: MMM

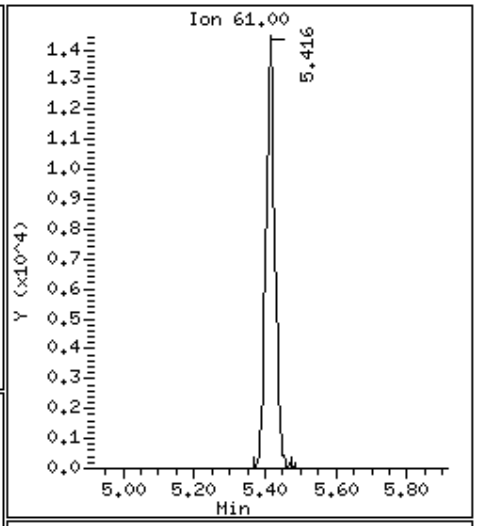
Column phase: RTX-VMS-30M

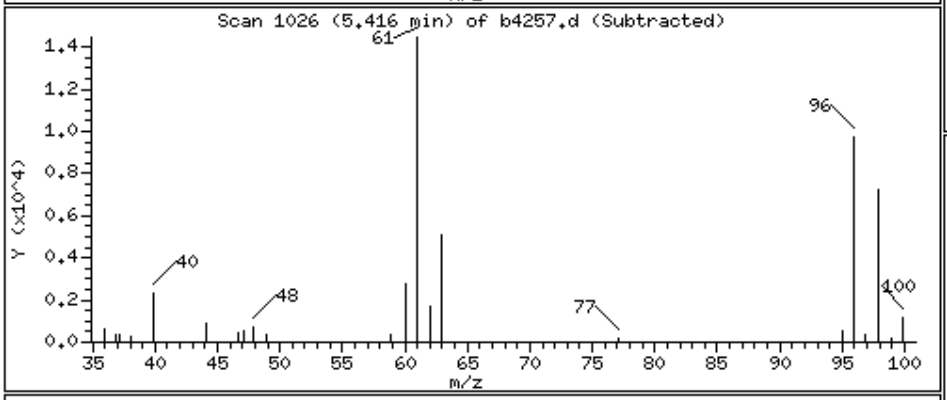
Column diameter: 0.25

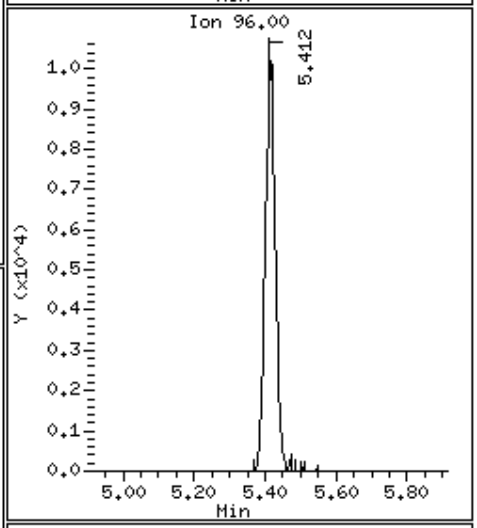
29 cis-1,2-Dichloroethene

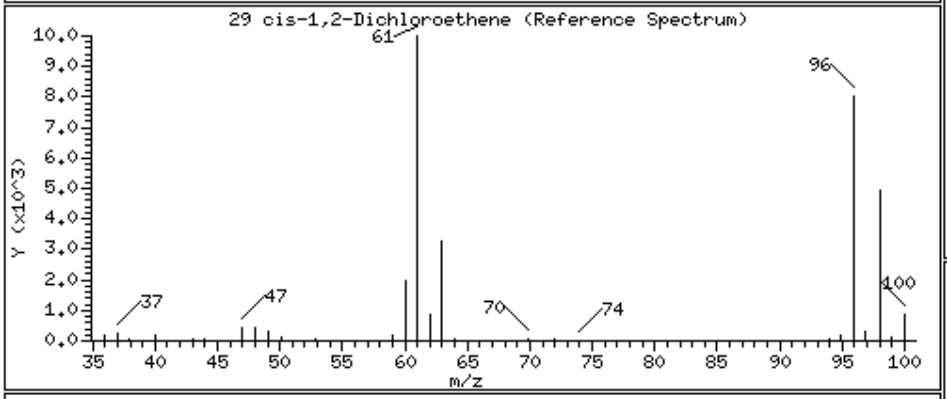
Concentration: 27.8 ug/L

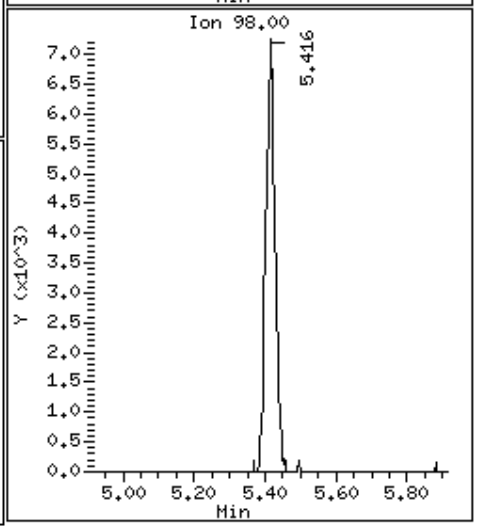


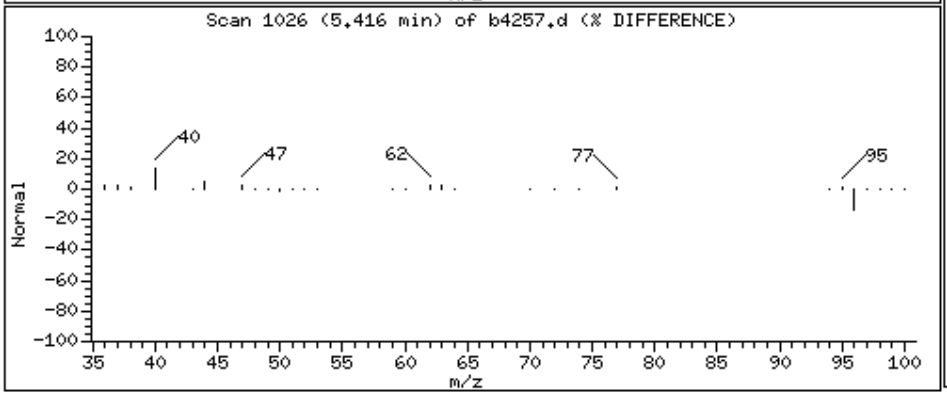












Data File: /var/chem/msv13.i/2160126.s.b/b4257.d

Date : 26-JAN-2016 16:08

Client ID:

Instrument: msv13.i

Sample Info: 21601251504x

Purge Volume: 5.0

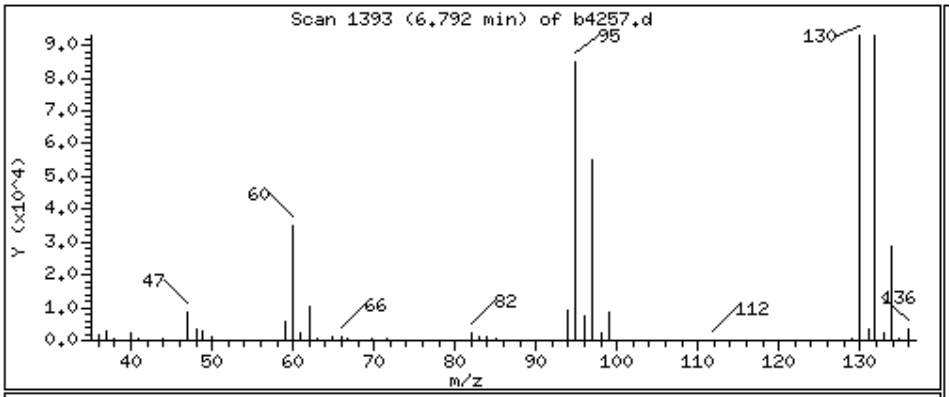
Operator: MMM

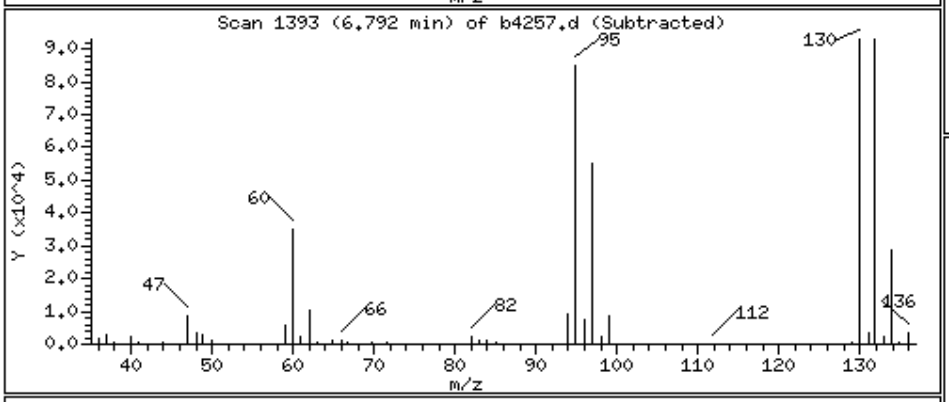
Column phase: RTX-VMS-30M

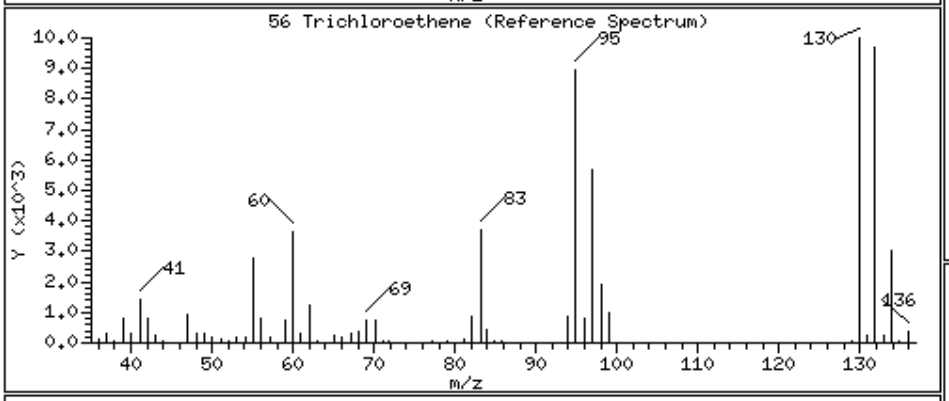
Column diameter: 0.25

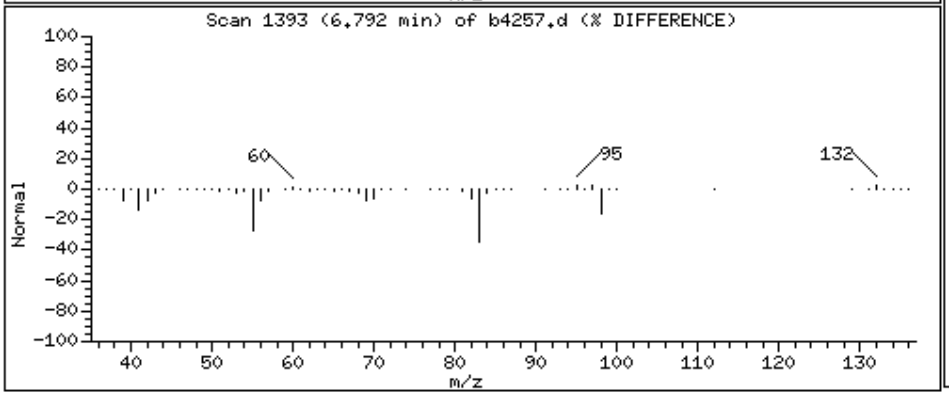
56 Trichloroethene

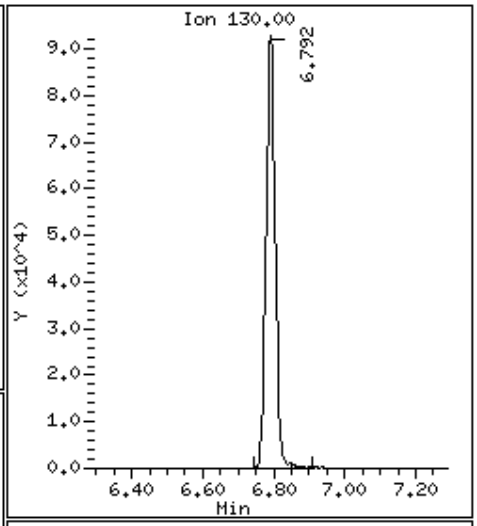
Concentration: 200 ug/L

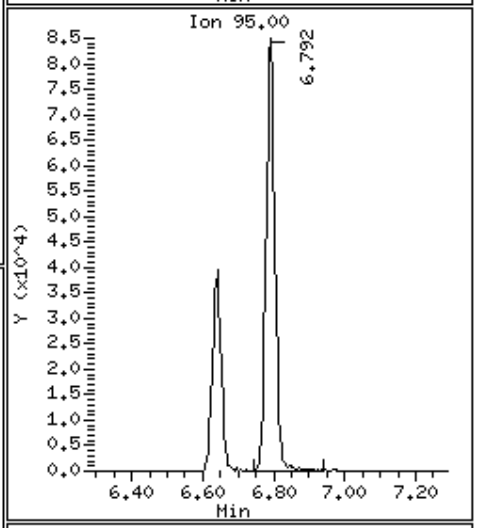


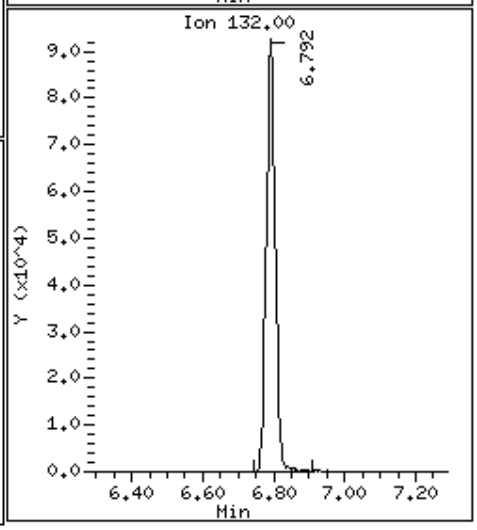












Data File: /var/chem/msv13.i/2160126.s.b/b4257.d

Date : 26-JAN-2016 16:08

Client ID:

Instrument: msv13.i

Sample Info: 21601251504x

Purge Volume: 5.0

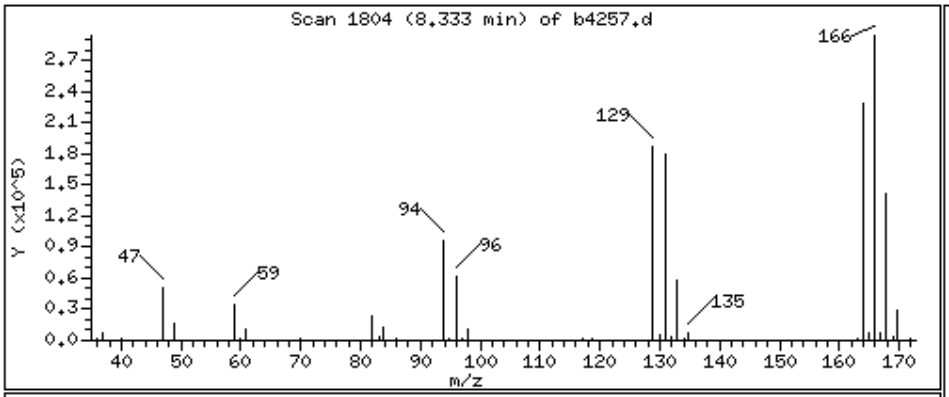
Operator: MMM

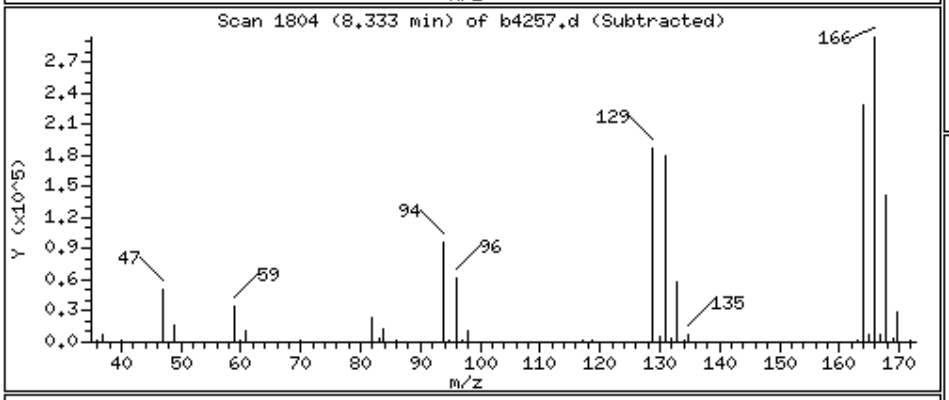
Column phase: RTX-VMS-30M

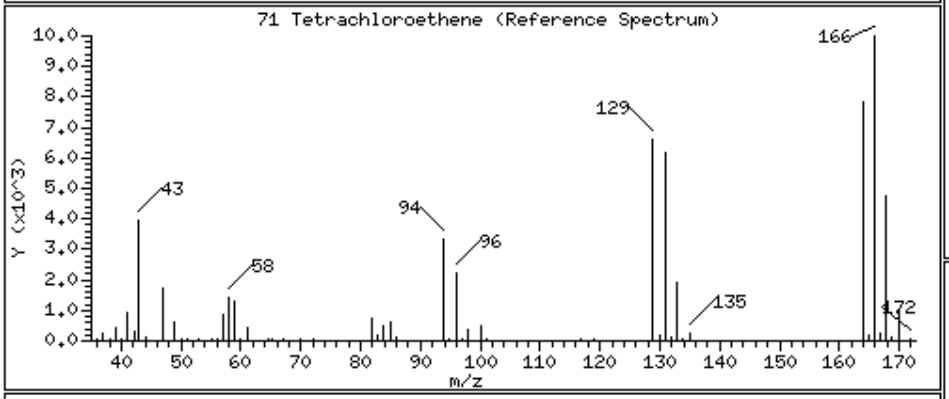
Column diameter: 0.25

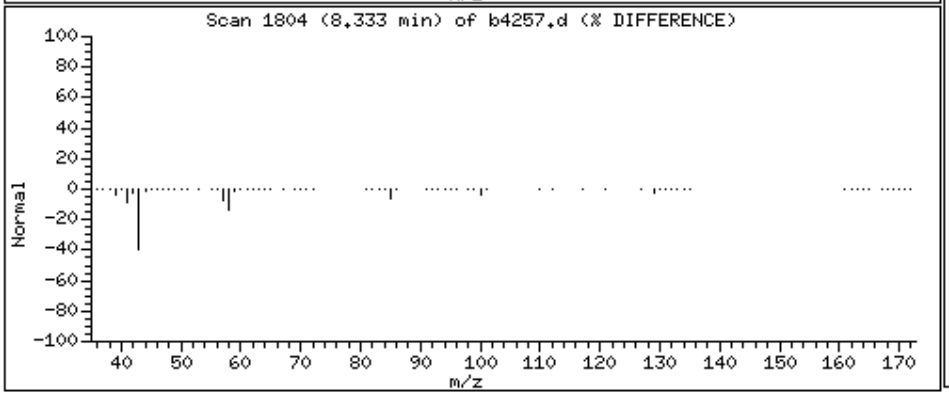
71 Tetrachloroethene

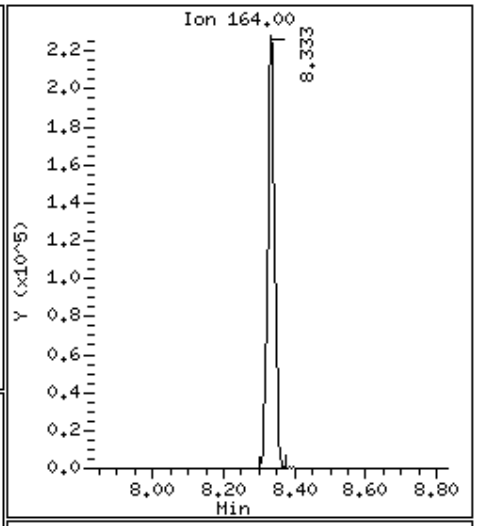
Concentration: 455 ug/L

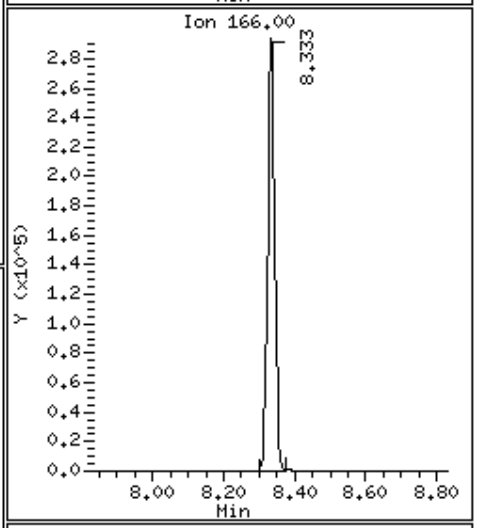


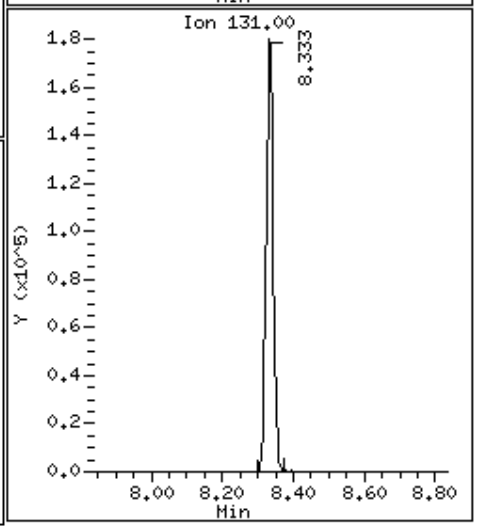






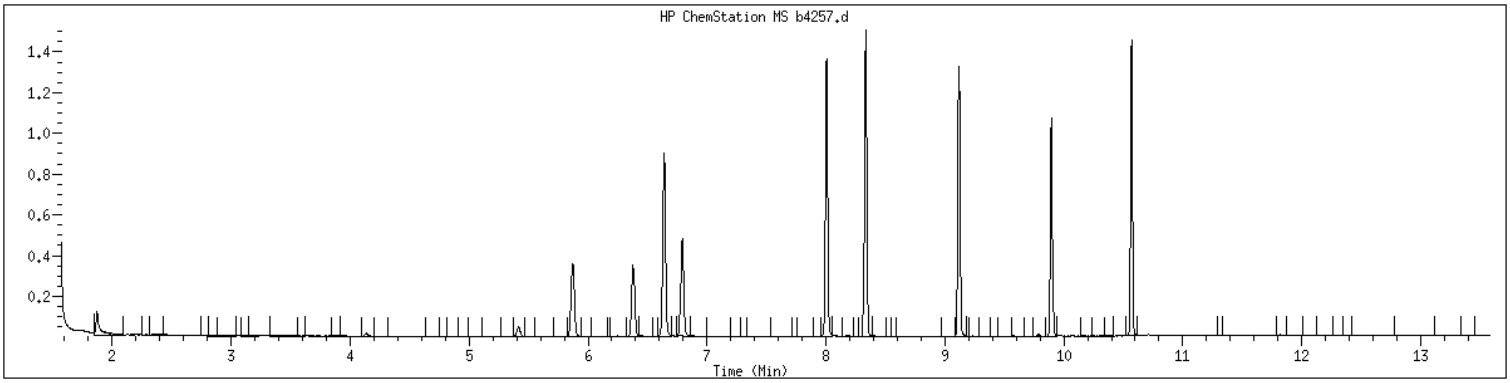






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251504 SampleType : SAMPLE
Injection Date: 01/26/2016 16:08 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251504*
Misc Info : MSV~35296~*5*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 5.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-4
Collect Date:	01/20/16	Time:	1140	GCAL Sample ID:	21601251505
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4258
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1629	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-4
Collect Date:	01/20/16	Time:	1140	GCAL Sample ID:	21601251505
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4258
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1629	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.880	J	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4258.d
Lab Smp Id: 21601251505
Inj Date : 26-JAN-2016 16:29
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251505*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.870	5.870	(0.884)	209145	54.2672	54.3	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	121524	54.1618	54.2	
* 53 FLUOROBENZENE	96	6.642	6.638	(1.000)	751660	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	711573	52.6489	52.6	
71 Tetrachloroethene	164	8.333	8.332	(0.914)	2964	0.88050	0.880	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	296999	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	242571	48.7357	48.7	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	297712	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4258.d
Date : 26-JAN-2016 16:29
Client ID:
Sample Info: 2160125150Sw
Purge Volume: 5.0
Column phase: RTX-VMS-30M
Instrument: msv13.i
Operator: MMM
Column diameter: 0.25
Page 1
Y (x10^6)
Min
/var/chem/msv13.i/2160126.s.b/b4258.d
-Dibromofluoromethane
-1,2-Dichloroethane-d4
-FLUOROBENZENE
CHLOROBENZENE-d5
-Bromofluorobenzene
1,4-DICHLOROBENZENE-D4

Data File: /var/chem/msv13.i/2160126.s.b/b4258.d

Date : 26-JAN-2016 16:29

Client ID:

Instrument: msv13.i

Sample Info: 21601251505x

Purge Volume: 5.0

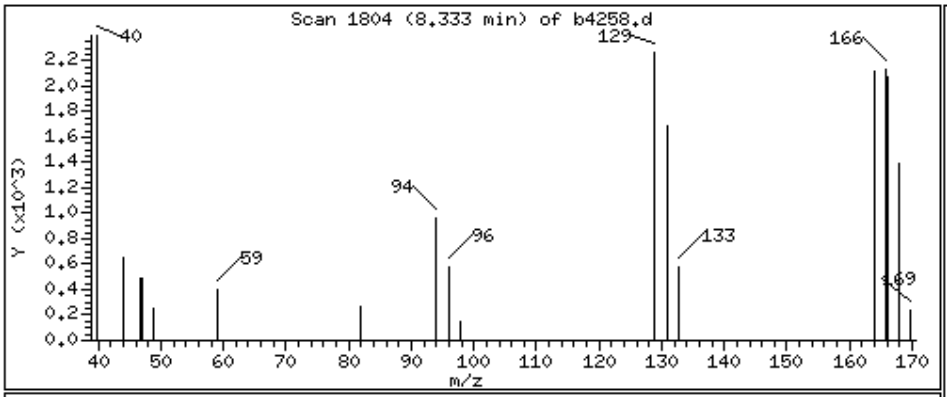
Operator: MMM

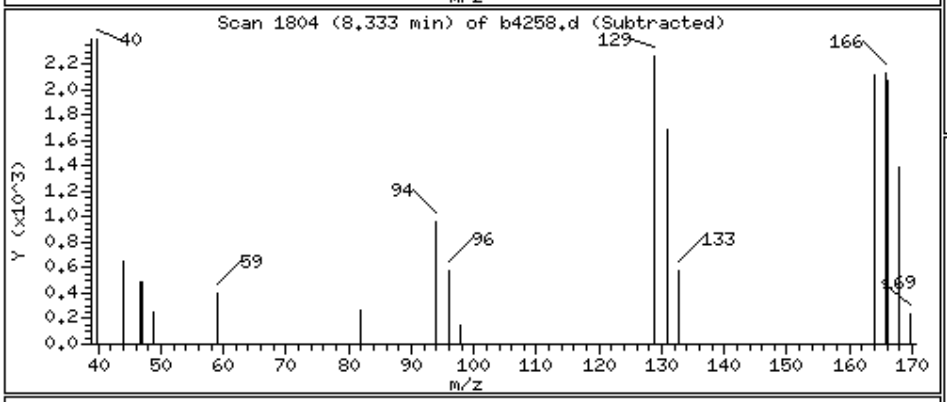
Column phase: RTX-VMS-30M

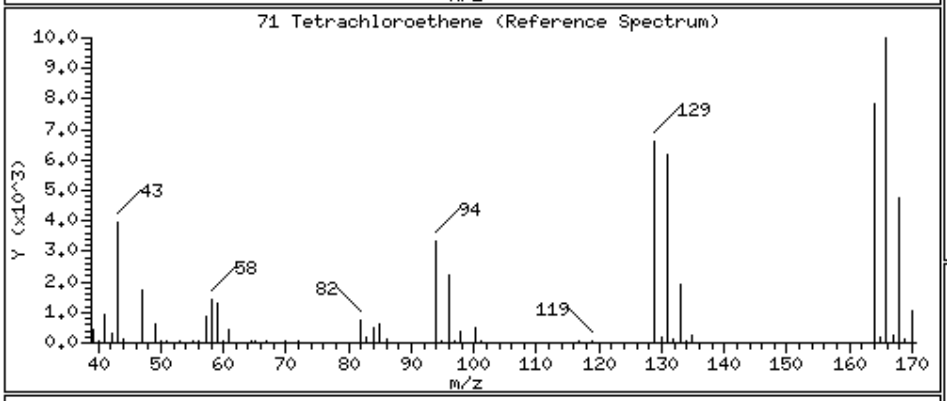
Column diameter: 0.25

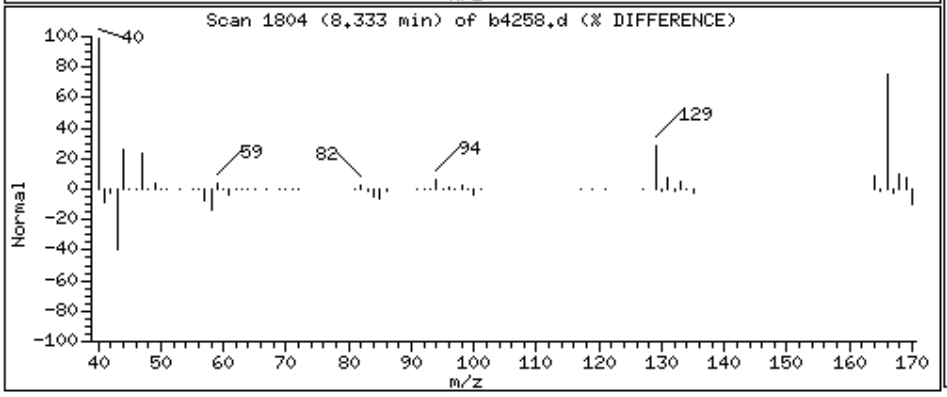
71 Tetrachloroethene

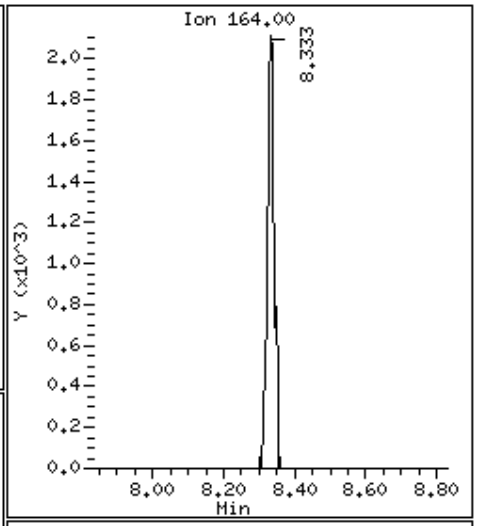
Concentration: 0.880 ug/L

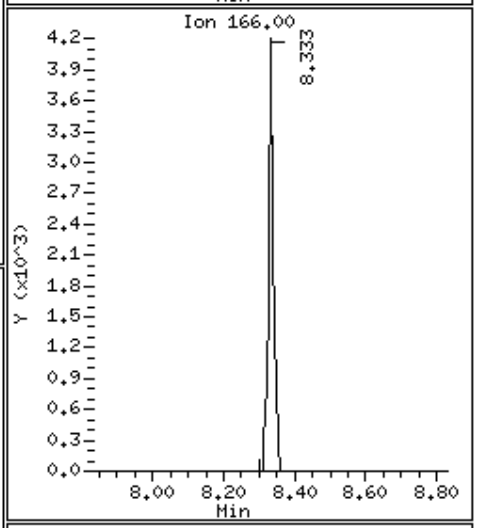


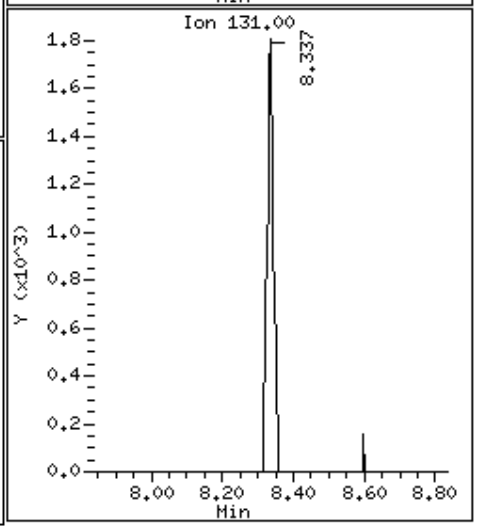






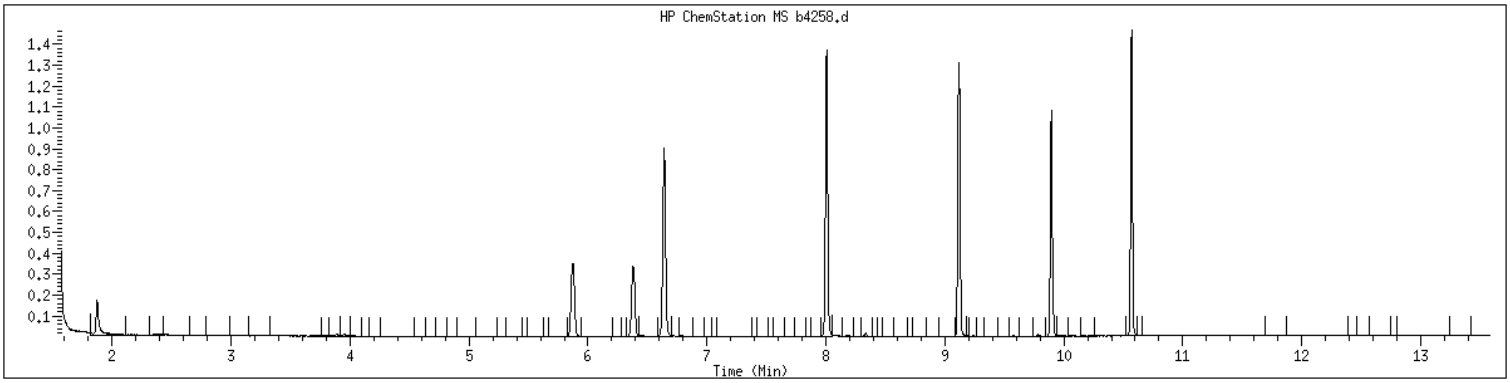






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251505 SampleType : SAMPLE
Injection Date: 01/26/2016 16:29 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251505*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MW-5
Collect Date:	01/20/16	Time:	1400	GCAL Sample ID:	21601251506
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4259
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1650	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MW-5
Collect Date:	01/20/16	Time:	1400	GCAL Sample ID:	21601251506
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4259
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1650	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4259.d
Lab Smp Id: 21601251506
Inj Date : 26-JAN-2016 16:50
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251506*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.874	5.870	(0.885)	218903	55.5371	55.5	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.961)	135095	58.8724	58.9	
* 53 FLUOROBENZENE	96	6.638	6.638	(1.000)	768741	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	684115	51.7681	51.8	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	290397	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	237784	48.8601	48.9	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	290910	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4259.d

Page 1

Date : 26-JAN-2016 16:50

Client ID:

Instrument: msv13.i

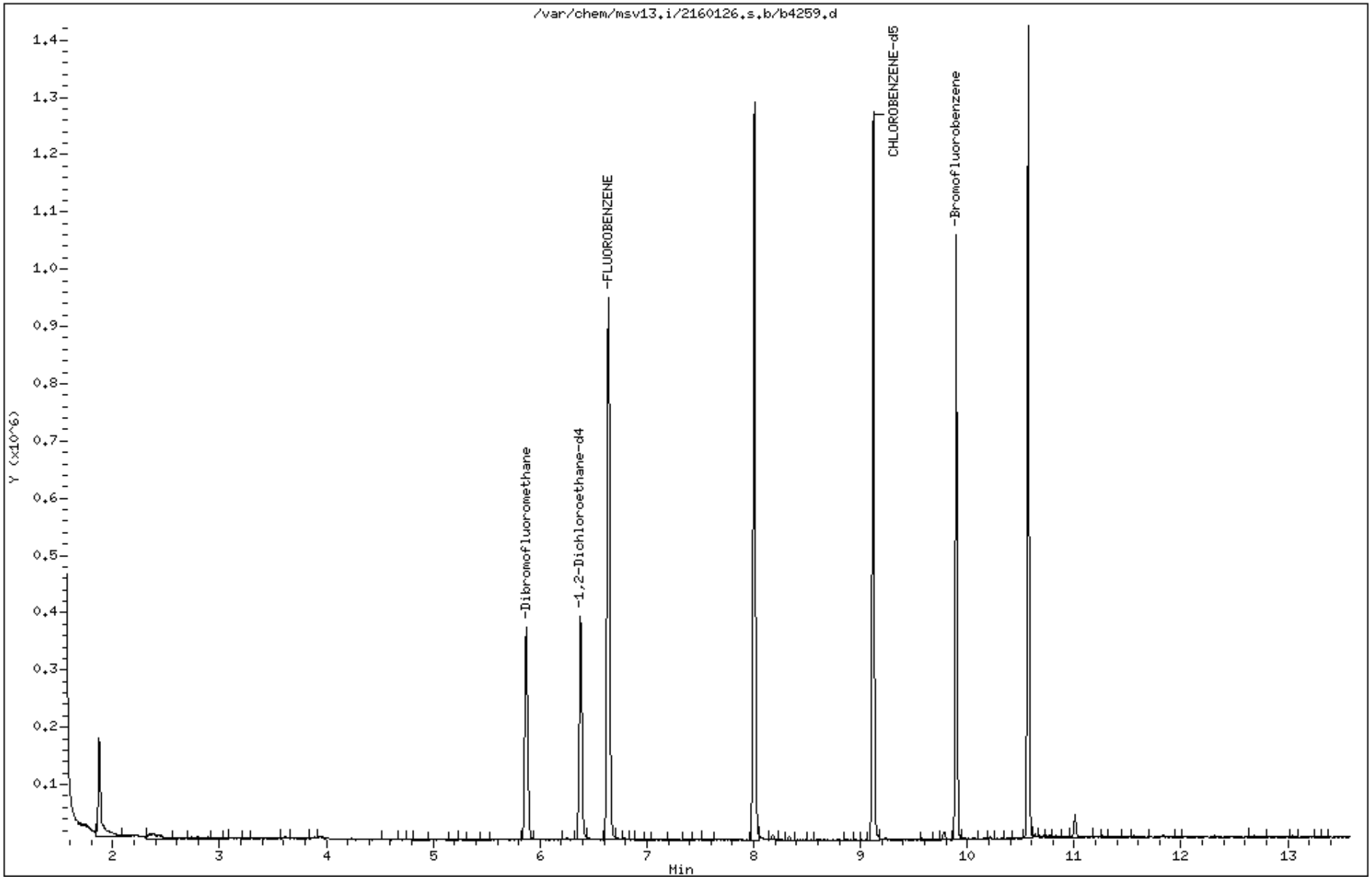
Sample Info: 21601251506*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25

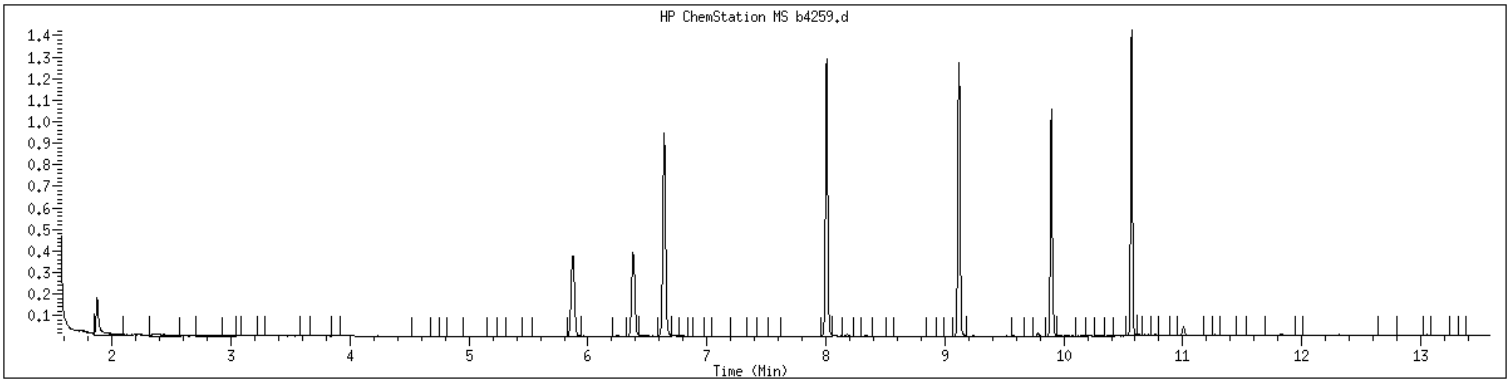


Revision 1

GCAL Report#: 216012515

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251506 SampleType : SAMPLE
Injection Date: 01/26/2016 16:50 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251506*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MW-6
Collect Date:	01/20/16	Time:	1505	GCAL Sample ID:	21601251507
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4260
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1711	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MW-6
Collect Date:	01/20/16	Time:	1505	GCAL Sample ID:	21601251507
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4260
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1711	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4260.d
Lab Smp Id: 21601251507
Inj Date : 26-JAN-2016 17:11
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251507*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.874	5.870	(0.885)	214035	54.9409	54.9	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.961)	122231	53.8932	53.9	
* 53 FLUOROBENZENE	96	6.638	6.638	(1.000)	759802	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	729442	53.2623	53.3	
* 84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	300951	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.086)	250623	49.6922	49.7	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	303887	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4260.d

Page 1

Date : 26-JAN-2016 17:11

Client ID:

Instrument: msv13.i

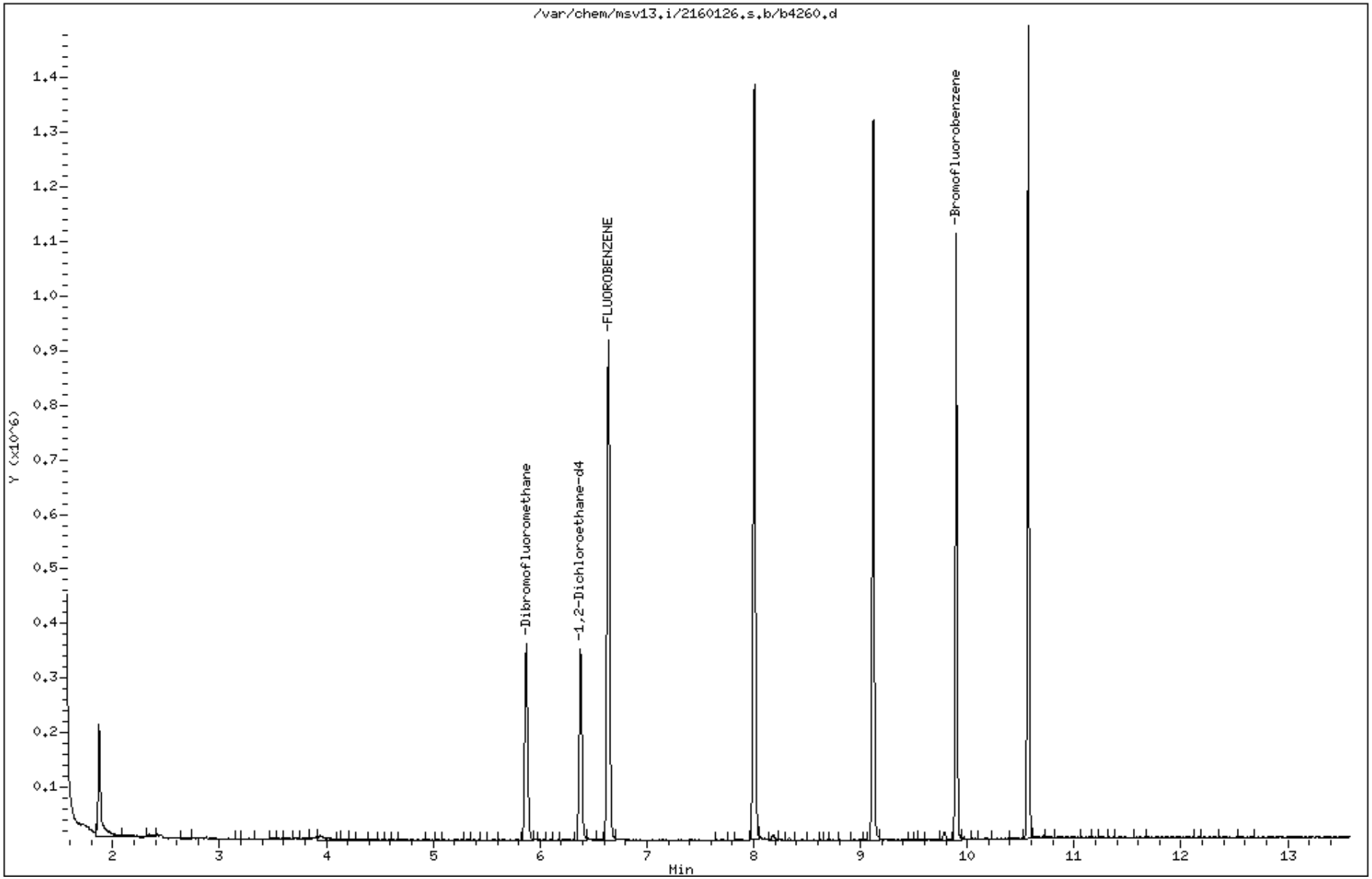
Sample Info: 21601251507*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

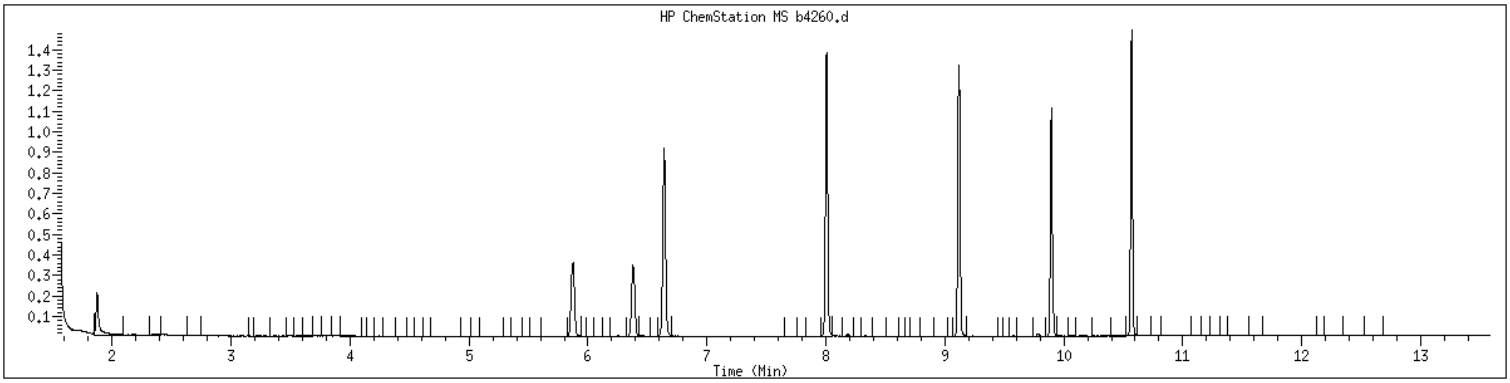
Column diameter: 0.25



Revision 1

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251507 SampleType : SAMPLE
Injection Date: 01/26/2016 17:11 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251507*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-7
Collect Date:	01/20/16	Time:	1623	GCAL Sample ID:	21601251508
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4249
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1314	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-7
Collect Date:	01/20/16	Time:	1623	GCAL Sample ID:	21601251508
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4249
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1314	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.771	J	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4249.d
Lab Smp Id: 21601251508
Inj Date : 26-JAN-2016 13:14
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251508*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
16 Methylene Chloride	49	3.943	3.947	(0.594)	6984	0.77077	0.771	(H)
$ 40 Dibromofluoromethane	111	5.874	5.870	(0.884)	218315	54.3594	54.4	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	126914	54.2803	54.3	
* 53 FLUOROBENZENE	96	6.642	6.638	(1.000)	783286	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	751022	52.9910	53.0	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	311441	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	258327	49.4946	49.5	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	314482	50.0000		

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /var/chem/msv13.i/2160126.s.b/b4249.d

Page 1

Date : 26-JAN-2016 13:14

Client ID:

Instrument: msv13.i

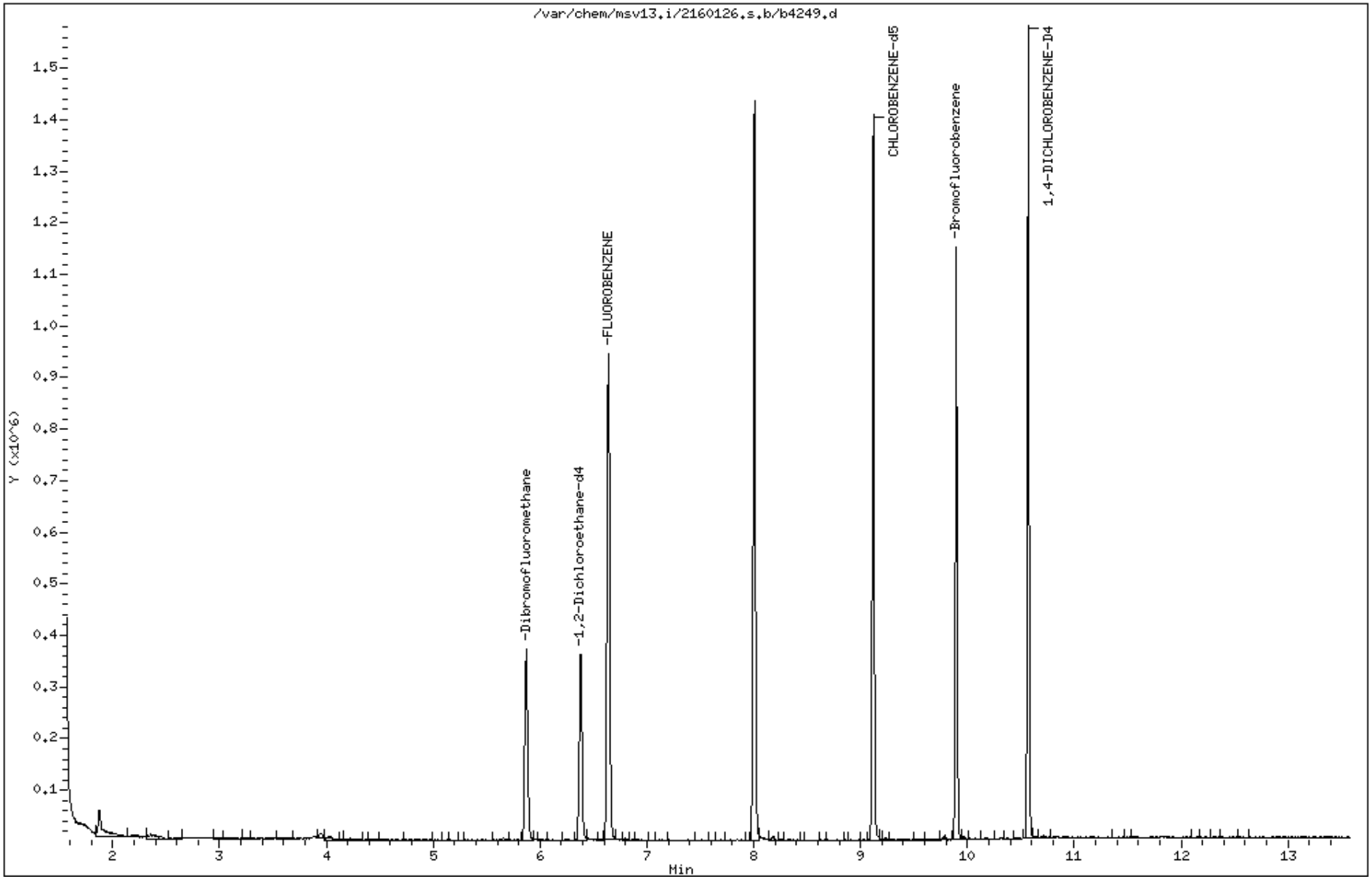
Sample Info: 21601251508*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25



Revision 1

Data File: /var/chem/msv13.i/2160126.s.b/b4249.d

Date : 26-JAN-2016 13:14

Client ID:

Instrument: msv13.i

Sample Info: 21601251508x

Purge Volume: 5.0

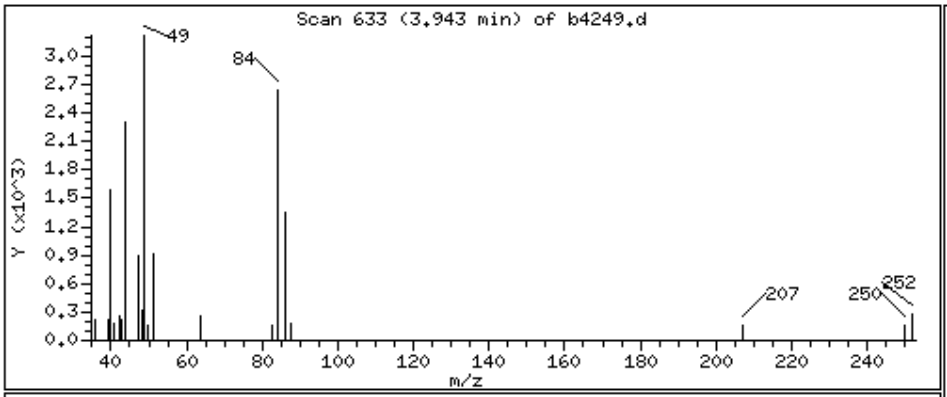
Operator: MMM

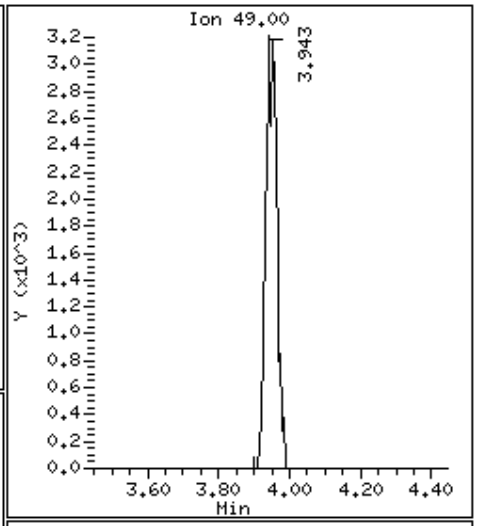
Column phase: RTX-VMS-30M

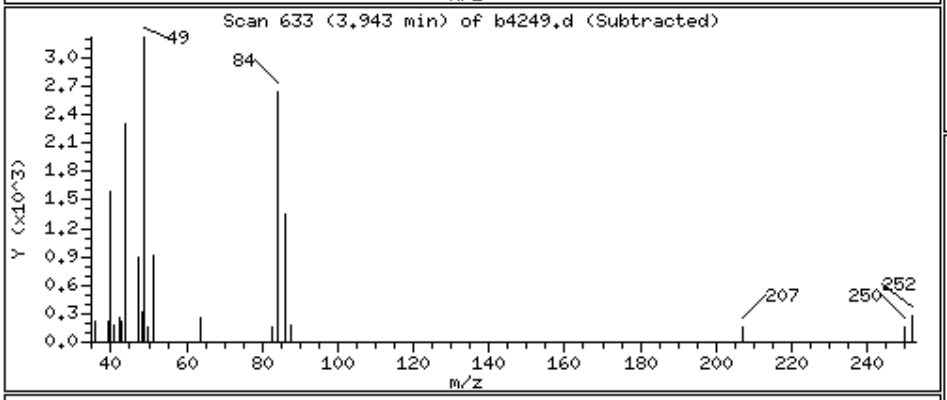
Column diameter: 0.25

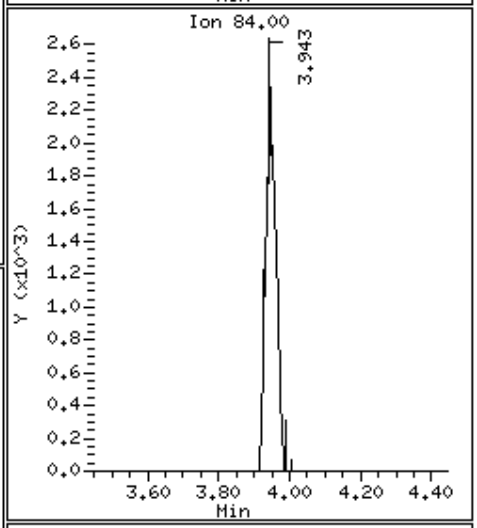
16 Methylene Chloride

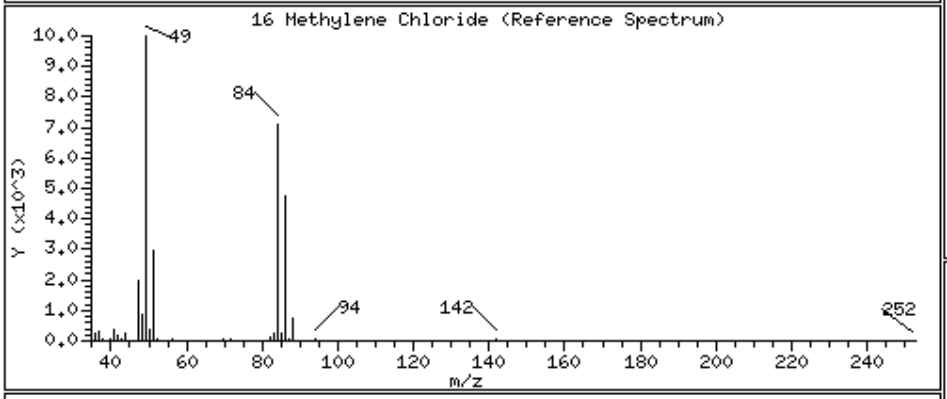
Concentration: 0.771 ug/L

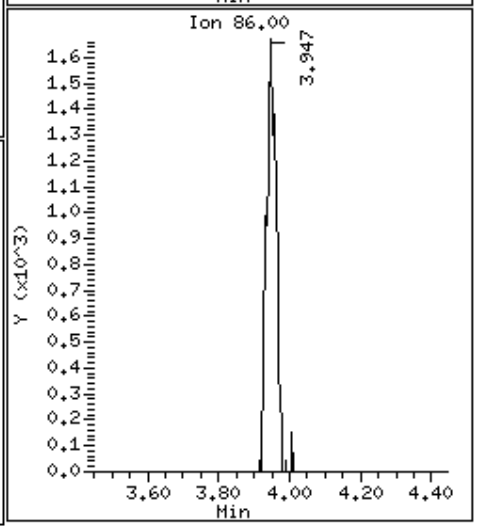


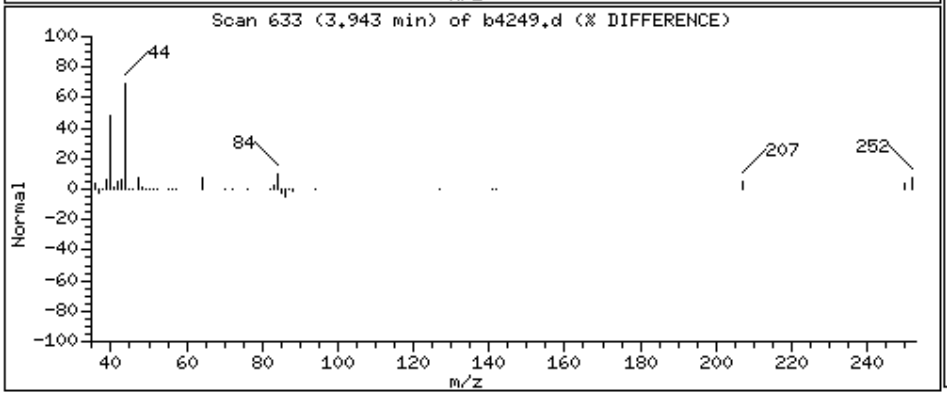






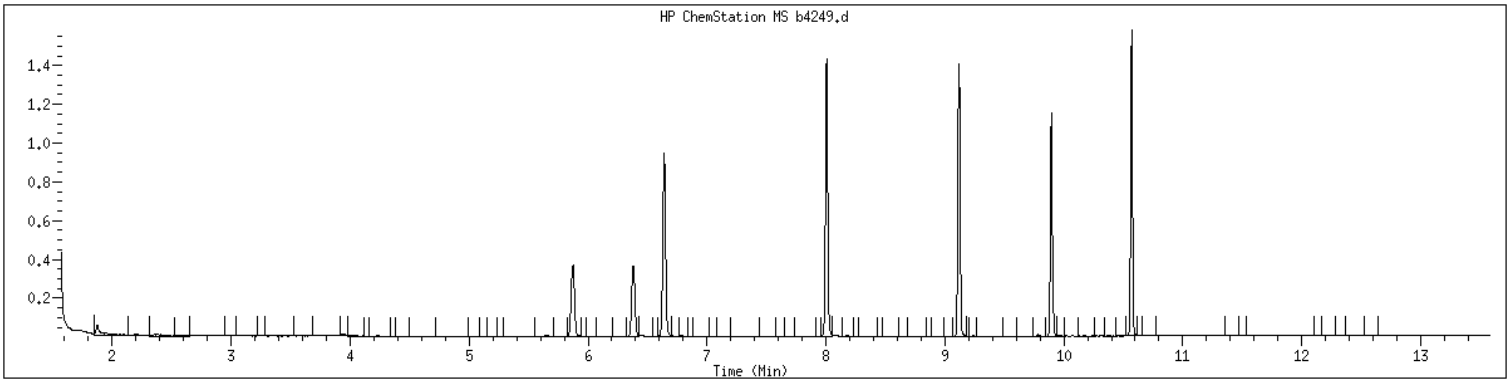






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251508 SampleType : SAMPLE
Injection Date: 01/26/2016 13:14 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251508*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-7-MS
Collect Date:	01/20/16	Time:	1623	GCAL Sample ID:	21601251509
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4252ms
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1419	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	49.7		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	52.7		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	48.6		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	47.0		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	53.4		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	52.2		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	49.3		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	49.6		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	48.8		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	50.0		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	49.4		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	49.9		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	49.5		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	47.4		0.200	0.500	1.00
78-93-3	2-Butanone	39.3		0.200	0.500	5.00
591-78-6	2-Hexanone	37.7		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	51.3		0.200	0.500	5.00
67-64-1	Acetone	22.5		0.500	1.00	5.00
71-43-2	Benzene	50.3		0.200	0.500	1.00
74-97-5	Bromochloromethane	50.2		0.200	0.500	1.00
75-27-4	Bromodichloromethane	51.4		0.200	0.500	1.00
75-25-2	Bromoform	50.2		0.250	0.500	1.00
74-83-9	Bromomethane	43.5		0.500	1.00	1.00
75-15-0	Carbon disulfide	54.1		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	51.2		0.250	0.500	1.00
108-90-7	Chlorobenzene	49.6		0.200	0.500	1.00
75-00-3	Chloroethane	57.1		0.250	0.500	1.00
67-66-3	Chloroform	49.9		0.200	0.500	1.00
74-87-3	Chloromethane	41.0		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	47.6		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	45.6		0.200	0.500	1.00
110-82-7	Cyclohexane	45.1		0.500	1.00	2.00
124-48-1	Dibromochloromethane	49.1		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	40.4		0.200	0.500	1.00
100-41-4	Ethylbenzene	52.5		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	47.9		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-7-MS
Collect Date:	01/20/16	Time:	1623	GCAL Sample ID:	21601251509
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4252ms
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1419	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	43.0		1.00	2.00	5.00
108-87-2	Methylcyclohexane	51.6		0.200	0.500	1.00
75-09-2	Methylene chloride	46.6		0.200	0.500	5.00
100-42-5	Styrene	49.2		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	51.6		0.200	0.500	1.00
127-18-4	Tetrachloroethene	49.2		0.200	0.500	1.00
108-88-3	Toluene	49.0		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	46.7		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	50.4		0.200	0.500	1.00
79-01-6	Trichloroethene	52.7		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	52.4		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	56.3		0.200	0.500	1.00
75-01-4	Vinyl chloride	39.4		0.200	0.500	1.00
1330-20-7	Xylene (total)	147		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4252ms.d
Lab Smp Id: 21601251509
Inj Date : 26-JAN-2016 14:19
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251509*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	164475	40.3752	40.4	
2 Chloromethane ++	50	1.915	1.911	(0.288)	220307	41.0081	41.0	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	187174	39.3865	39.4	
6 Bromomethane	94	2.339	2.335	(0.352)	118094	43.4992	43.5	
7 Chloroethane	64	2.477	2.477	(0.373)	140888	57.1055	57.1	
8 Trichlorofluoromethane	101	2.627	2.627	(0.396)	271743	52.4088	52.4	
10 1,1-Dichloroethene +	96	3.216	3.216	(0.484)	166786	53.3603	53.4	
11 Carbon Disulfide	76	3.242	3.242	(0.488)	574124	54.0911	54.1	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	184941	56.2501	56.3	
13 Methyl Iodide	142	3.385	3.384	(0.510)	43880	53.5223	53.5	
14 Acrolein	56	3.647	3.647	(0.549)	96250	265.524	266	
16 Methylene Chloride	49	3.947	3.947	(0.595)	254898	46.6338	46.6	
17 Acetone	43	4.022	4.022	(0.606)	72181	22.4543	22.5	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	252126	46.6882	46.7	

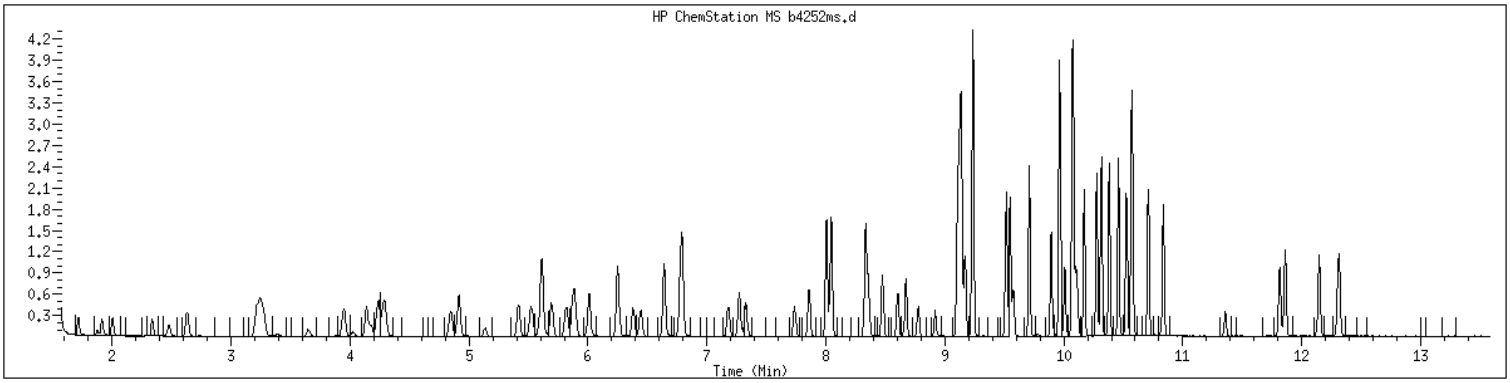
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.176	4.175	(0.629)	196269	42.9817	43.0	9633
	20 Hexane	57	4.239	4.235	(0.639)	248498	41.2044	41.2	8725
	21 MTBE	73	4.288	4.284	(0.646)	580860	51.5559	51.6	9544
	26 1,1-Dichloroethane ++	63	4.847	4.843	(0.730)	359862	46.9820	47.0	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	484826	285.694	286	
	28 Vinyl Acetate	43	5.135	5.135	(0.774)	158657	45.9539	46.0	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	253242	47.5798	47.6	
M	75 Total 1,2-Dichloroethene	61				505369	94.2679	94.3	
	30 2,2-Dichloropropane	77	5.521	5.525	(0.832)	287929	49.8914	49.9	
	32 Cyclohexane	56	5.608	5.607	(0.845)	336341	45.1422	45.1	7918
	34 Bromochloromethane	128	5.615	5.615	(0.846)	124410	50.2089	50.2	
	35 Chloroform +	83	5.694	5.693	(0.858)	367385	49.8994	49.9	
	36 Carbon Tetrachloride	117	5.821	5.817	(0.877)	284033	51.1925	51.2	
$	40 Dibromofluoromethane	111	5.874	5.870	(0.885)	230990	50.7295	50.7	8095
	41 1,1,1-Trichloroethane	97	5.889	5.892	(0.887)	309637	49.7211	49.7	
	44 2-Butanone	43	6.005	6.005	(0.905)	124287	39.3355	39.3	
	43 1,1-Dichloropropene	75	6.012	6.008	(0.906)	240207	49.8593	49.9	
	46 Benzene	78	6.249	6.248	(0.941)	841514	50.2639	50.3	
$	50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.961)	136102	51.3423	51.3	
	51 1,2-Dichloroethane	62	6.444	6.443	(0.971)	284158	49.4060	49.4	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	888064	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	350379	51.6449	51.6	8614
	56 Trichloroethene	130	6.792	6.792	(1.023)	260612	52.7055	52.7	
	57 Dibromomethane	93	7.182	7.178	(1.082)	135455	49.5576	49.6	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	215095	49.9172	49.9	
	60 Bromodichloromethane	83	7.328	7.328	(1.104)	299441	51.4390	51.4	
	65 1-Bromo-2-chloroethane	63	7.737	7.736	(1.165)	313563	49.9838	50.0	9730
	67 cis-1,3-Dichloropropene	75	7.860	7.856	(1.184)	308876	45.5975	45.6	
$	68 Toluene-d8	98	8.007	8.003	(0.878)	892245	48.3645	48.4	
	69 Toluene +	91	8.044	8.044	(0.882)	1004068	49.0239	49.0	
	71 Tetrachloroethene	164	8.333	8.332	(0.914)	226135	49.2141	49.2	
	73 4-methyl-2-pentanone	43	8.333	8.332	(0.914)	267064	51.2717	51.3	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	333720	50.3901	50.4	
M	82 1-3 Dichloropropene total	100				642597	95.9876	96.0	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.929)	226039	48.5628	48.6	
	78 Dibromochloromethane	129	8.603	8.606	(0.943)	263252	49.1186	49.1	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	365093	49.3169	49.3	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.962)	217608	48.8352	48.8	
	83 2-Hexanone	43	8.918	8.917	(0.978)	175696	37.7081	37.7	
	86 1-Chlorohexane	91	9.101	9.105	(0.998)	276661	47.1535	47.2	9692
*	84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	405399	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.001)	753719	49.5837	49.6	
	87 Ethylbenzene +	106	9.139	9.138	(1.002)	375805	52.5483	52.5	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.168	(1.005)	251493	48.8720	48.9	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	933382	99.2002	99.2	
	90 o-Xylene	106	9.517	9.517	(1.044)	408971	47.4544	47.5	
M	121 TOTAL XYLENE	106				1342354	146.655	147	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	740542	49.2208	49.2	
	92 Bromoform ++	173	9.577	9.573	(1.050)	233074	50.1537	50.2	
	93 Isopropylbenzene	105	9.709	9.708	(1.065)	1108679	47.8792	47.9	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.085)	336089	49.4692	49.5	
	96 Bromobenzene	77	9.963	9.963	(0.943)	528618	45.6855	45.7	
	97 n-Propylbenzene	91	9.967	9.963	(0.943)	1319602	49.9177	49.9	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	360774	52.6773	52.7	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	919965	49.7585	49.8	
	102 1,3,5-Trimethylbenzene	105	10.080	10.076	(0.954)	979258	49.7796	49.8	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	416027	49.5028	49.5	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	76621	46.5529	46.6	
	104 4-Chlorotoluene	91	10.173	10.173	(0.963)	843137	50.2207	50.2	
	105 tert-butylbenzene	91	10.275	10.274	(0.972)	496787	53.0410	53.0	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	948902	50.4505	50.5	
	108 sec-Butylbenzene	105	10.380	10.383	(0.982)	1222163	47.8036	47.8	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	1041049	48.0228	48.0	
	113 1,3-Dichlorobenzene	146	10.526	10.525	(0.996)	651425	49.5362	49.5	
*	114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	451444	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	658207	47.3542	47.4	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	802311	45.7955	45.8	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	622050	49.9649	50.0	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	86138	49.5576	49.6	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	206454	52.1291	52.1	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	392290	49.2686	49.3	
	124 Naphthalene	128	12.145	12.145	(1.149)	856888	46.9968	47.0	
	125 1,2,3-Trichlorobenzene	180	12.310	12.314	(1.165)	421456	52.2140	52.2	

Data File: /var/chem/msv13.i/2160126.s.b/b4252ms.d
Date : 26-JAN-2016 14:19
Client ID:
Sample Info: 216012515O9*
Purge Volume: 5.0
Column phase: RTX-VMS-30M
Instrument: msv13.i
Operator: MMM
Column diameter: 0.25
Page 1
Y (x10^6)
Min
/var/chem/msv13.i/2160126.s.b/b4252ms.d
-1,2-Dichloroethane-d4
-FLUOROBENZENE
-Bromofluorobenzene

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251509 SampleType : MS
Injection Date: 01/26/2016 14:19 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251509*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-7-MSD
Collect Date:	01/20/16	Time:	1623	GCAL Sample ID:	21601251510
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4253msd
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1440	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	48.7		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	51.3		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	49.5		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	46.5		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	52.4		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	52.2		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	50.2		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	50.4		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	49.6		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	49.5		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	48.7		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	50.0		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	49.3		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	47.0		0.200	0.500	1.00
78-93-3	2-Butanone	39.6		0.200	0.500	5.00
591-78-6	2-Hexanone	38.3		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	51.7		0.200	0.500	5.00
67-64-1	Acetone	25.2		0.500	1.00	5.00
71-43-2	Benzene	49.8		0.200	0.500	1.00
74-97-5	Bromochloromethane	49.4		0.200	0.500	1.00
75-27-4	Bromodichloromethane	50.5		0.200	0.500	1.00
75-25-2	Bromoform	50.2		0.250	0.500	1.00
74-83-9	Bromomethane	44.1		0.500	1.00	1.00
75-15-0	Carbon disulfide	52.5		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	49.3		0.250	0.500	1.00
108-90-7	Chlorobenzene	48.6		0.200	0.500	1.00
75-00-3	Chloroethane	57.9		0.250	0.500	1.00
67-66-3	Chloroform	48.2		0.200	0.500	1.00
74-87-3	Chloromethane	41.7		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	47.1		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	44.8		0.200	0.500	1.00
110-82-7	Cyclohexane	43.4		0.500	1.00	2.00
124-48-1	Dibromochloromethane	49.5		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	39.2		0.200	0.500	1.00
100-41-4	Ethylbenzene	51.2		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	47.6		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-7-MSD
Collect Date:	01/20/16	Time:	1623	GCAL Sample ID:	21601251510
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4253msd
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1440	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	43.1		1.00	2.00	5.00
108-87-2	Methylcyclohexane	50.6		0.200	0.500	1.00
75-09-2	Methylene chloride	49.5		0.200	0.500	5.00
100-42-5	Styrene	48.7		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	52.0		0.200	0.500	1.00
127-18-4	Tetrachloroethene	47.9		0.200	0.500	1.00
108-88-3	Toluene	48.1		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	48.3		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	49.6		0.200	0.500	1.00
79-01-6	Trichloroethene	50.8		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	52.2		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	54.1		0.200	0.500	1.00
75-01-4	Vinyl chloride	39.5		0.200	0.500	1.00
1330-20-7	Xylene (total)	145		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4253msd.d
Lab Smp Id: 21601251510
Inj Date : 26-JAN-2016 14:40
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251510*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	160887	39.2386	39.2	
2 Chloromethane ++	50	1.911	1.911	(0.288)	225280	41.7127	41.7	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	188929	39.4981	39.5	
6 Bromomethane	94	2.339	2.335	(0.352)	120398	44.0795	44.1	
7 Chloroethane	64	2.477	2.477	(0.373)	143803	57.9341	57.9	
8 Trichlorofluoromethane	101	2.631	2.627	(0.396)	272679	52.2486	52.2	
10 1,1-Dichloroethene +	96	3.212	3.216	(0.484)	164743	52.3652	52.4	
11 Carbon Disulfide	76	3.242	3.242	(0.488)	561140	52.4999	52.5	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	179045	54.1039	54.1	
13 Methyl Iodide	142	3.388	3.384	(0.510)	47073	56.3793	56.4	
14 Acrolein	56	3.647	3.647	(0.549)	112427	308.143	308	
16 Methylene Chloride	49	3.947	3.947	(0.595)	271869	49.4583	49.5	
17 Acetone	43	4.022	4.022	(0.606)	81378	25.1511	25.2	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	262753	48.3408	48.3	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.176	4.175	(0.629)	198212	43.1259	43.1	9624
	20 Hexane	57	4.236	4.235	(0.638)	241858	39.9110	39.9	8727
	21 MTBE	73	4.288	4.284	(0.646)	589750	52.0059	52.0	9555
	26 1,1-Dichloroethane ++	63	4.847	4.843	(0.730)	358834	46.5444	46.5	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	490411	287.113	287	
	28 Vinyl Acetate	43	5.135	5.135	(0.774)	161511	46.4404	46.4	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	252175	47.0723	47.1	
M	75 Total 1,2-Dichloroethene	61				514928	95.4131	95.4	
	30 2,2-Dichloropropane	77	5.525	5.525	(0.832)	278512	47.9470	47.9	
	32 Cyclohexane	56	5.608	5.607	(0.845)	325073	43.4154	43.4	7870
	34 Bromochloromethane	128	5.611	5.615	(0.845)	123080	49.3503	49.4	
	35 Chloroform +	83	5.694	5.693	(0.858)	357133	48.1927	48.2	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	275510	49.3347	49.3	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	232673	50.7681	50.8	7273
	41 1,1,1-Trichloroethane	97	5.892	5.892	(0.888)	305043	48.6661	48.7	
	44 2-Butanone	43	6.005	6.005	(0.905)	125899	39.5874	39.6	
	43 1,1-Dichloropropene	75	6.012	6.008	(0.906)	233503	48.1536	48.2	
	46 Benzene	78	6.249	6.248	(0.941)	839235	49.8031	49.8	
$	50 1,2-Dichloroethane-d4	67	6.384	6.379	(0.962)	135133	50.6463	50.6	
	51 1,2-Dichloroethane	62	6.444	6.443	(0.971)	282152	48.7395	48.7	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	893854	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	345309	50.5680	50.6	8611
	56 Trichloroethene	130	6.796	6.792	(1.024)	252582	50.7507	50.8	
	57 Dibromomethane	93	7.178	7.178	(1.081)	134605	48.9275	48.9	
	59 1,2-Dichloropropane +	63	7.276	7.272	(1.096)	217018	50.0372	50.0	
	60 Bromodichloromethane	83	7.328	7.328	(1.104)	295896	50.5008	50.5	
	65 1-Bromo-2-chloroethane	63	7.737	7.736	(1.165)	312376	49.4721	49.5	9732
	67 cis-1,3-Dichloropropene	75	7.860	7.856	(1.184)	304901	44.7579	44.8	
$	68 Toluene-d8	98	8.003	8.003	(0.877)	896219	48.8902	48.9	
	69 Toluene +	91	8.044	8.044	(0.882)	978032	48.0576	48.1	
	71 Tetrachloroethene	164	8.337	8.332	(0.914)	218486	47.8531	47.9	
	73 4-methyl-2-pentanone	43	8.333	8.332	(0.914)	267571	51.6970	51.7	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	330355	49.5725	49.6	
M	82 1-3 Dichloropropene total	100				635256	94.3305	94.3	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.929)	228808	49.4716	49.5	
	78 Dibromochloromethane	129	8.606	8.606	(0.944)	263687	49.5139	49.5	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	367315	49.9340	49.9	
	80 1,2-Dibromoethane(EDB)	107	8.779	8.775	(0.963)	219770	49.6354	49.6	
	83 2-Hexanone	43	8.918	8.917	(0.978)	177597	38.3225	38.3	
	86 1-Chlorohexane	91	9.105	9.105	(0.998)	283927	48.6327	48.6	3551(M2)
*	84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	402826	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.001)	734722	48.6427	48.6	
	87 Ethylbenzene +	106	9.139	9.138	(1.002)	363513	51.1541	51.2	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.168	(1.005)	251897	49.2632	49.3	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	916840	98.0842	98.1	
	90 o-Xylene	106	9.517	9.517	(1.044)	405181	47.3206	47.3	
M	121 TOTAL XYLENE	106				1322021	145.405	145	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
91 Styrene	104	9.547	9.547	(1.047)	728408	48.7452	48.7	
92 Bromoform ++	173	9.577	9.573	(1.050)	231785	50.1948	50.2	
93 Isopropylbenzene	105	9.709	9.708	(1.065)	1094374	47.5763	47.6	
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	337447	49.9864	50.0	
96 Bromobenzene	77	9.967	9.963	(0.943)	518904	44.9708	45.0	
97 n-Propylbenzene	91	9.967	9.963	(0.943)	1299718	49.3025	49.3	
98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	351076	51.3432	51.3	
99 2-Chlorotoluene	91	10.072	10.072	(0.953)	897121	48.6581	48.7	
102 1,3,5-Trimethylbenzene	105	10.080	10.076	(0.954)	970055	49.4606	49.5	
100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	414615	49.4722	49.5	
101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	76039	46.3278	46.3	
104 4-Chlorotoluene	91	10.173	10.173	(0.963)	823389	49.1810	49.2	
105 tert-butylbenzene	91	10.278	10.274	(0.973)	485371	51.9664	52.0	
107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	944463	50.3602	50.4	
108 sec-Butylbenzene	105	10.383	10.383	(0.983)	1203891	47.2362	47.2	
110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	1035787	47.9193	47.9	
113 1,3-Dichlorobenzene	146	10.526	10.525	(0.996)	646305	49.2837	49.3	
* 114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	450190	50.0000		
115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	651700	47.0167	47.0	
117 n-Butylbenzene	91	10.709	10.709	(1.013)	796161	45.5863	45.6	
118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	615017	49.5375	49.5	
119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	87438	50.4454	50.4	
120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	202536	51.2538	51.3	
122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	398714	50.2149	50.2	
124 Naphthalene	128	12.145	12.145	(1.149)	891905	48.9581	49.0	
125 1,2,3-Trichlorobenzene	180	12.310	12.314	(1.165)	420433	52.2322	52.2	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160126.s.b/b4253msd.d
Date : 26-JAN-2016 14:40
Client ID:
Sample Info: 2160125151Ow
Purge Volume: 5.0
Column phase: RTX-VMS-30M

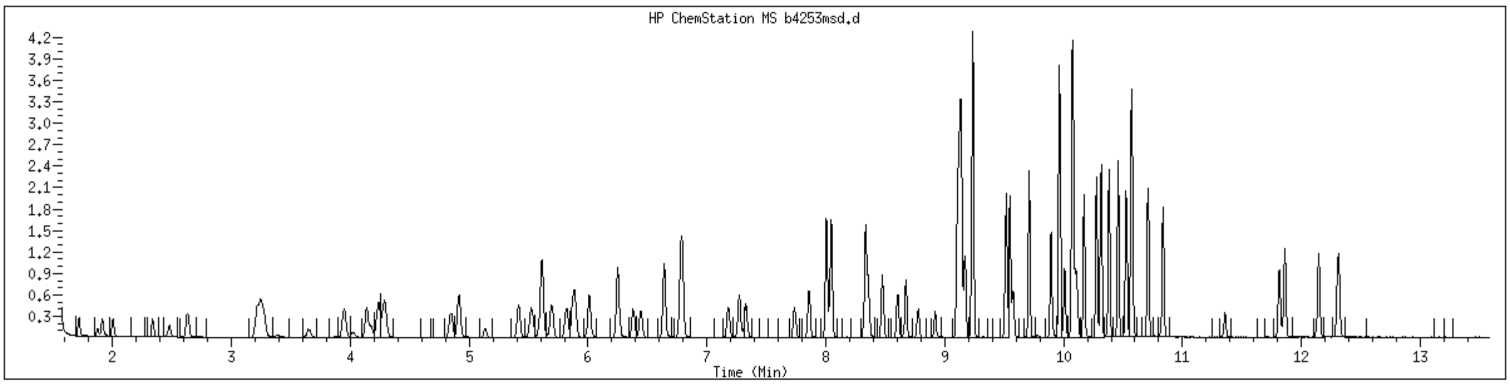
Instrument: msv13.i
Operator: MMM
Column diameter: 0.25

Page 1

Report Date: 01/26/2016 15:21

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID   : 21601251510   SampleType   : MSD
Injection Date: 01/26/2016 14:40   Instrument   : msv13.i
Operator   : MMM
Sample Info   : 21601251510*
Misc Info   : MSV~35296~*1*MMM
Method   : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution   : 1.00
Matrix   : WATER
Integrator   : HP RTE   Compound Sublist: 8260b-CVE



Original   Final

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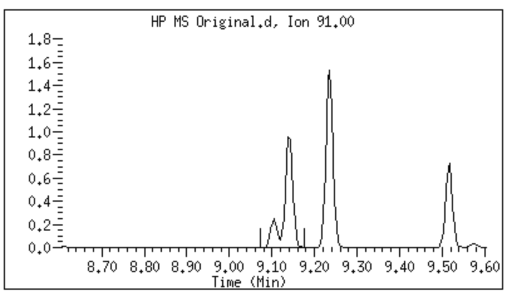
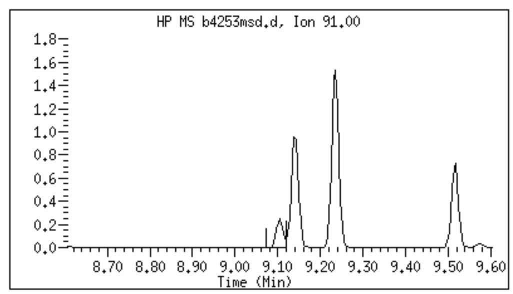
86 1-Chlorohexane   CAS#: 544-10-5   Reason: M2



Electronic Signature
Applied

User: mmm
Date: 01/26/2016 15:21



M2 - Target system integrated incorrectly

Revision 1

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-3
Collect Date:	01/21/16	Time:	1125	GCAL Sample ID:	21601251511
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4261
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1732	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	1.59		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-3
Collect Date:	01/21/16	Time:	1125	GCAL Sample ID:	21601251511
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4261
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1732	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.527	J	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	8.92		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4261.d
Lab Smp Id: 21601251511
Inj Date : 26-JAN-2016 17:32
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251511*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	16 Methylene Chloride	49	3.950	3.947	(0.595)	5658	0.52671	0.527	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.815)	7236	1.58680	1.59	
M	75 Total 1,2-Dichloroethene	61				7236	1.58680	1.59	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	209538	53.7115	53.7	4354
$	50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	119787	52.7419	52.7	
*	53 FLUOROBENZENE	96	6.642	6.638	(1.000)	760863	50.0000		
	56 Trichloroethene	130	6.792	6.792	(1.023)	37795	8.92142	8.92	
$	68 Toluene-d8	98	8.007	8.003	(0.878)	727607	53.5547	53.6	
*	84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	298555	50.0000		
$	95 Bromofluorobenzene	174	9.896	9.896	(1.085)	248314	49.6295	49.6	
*	114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	303238	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4261.d

Page 1

Date : 26-JAN-2016 17:32

Client ID:

Instrument: msv13.i

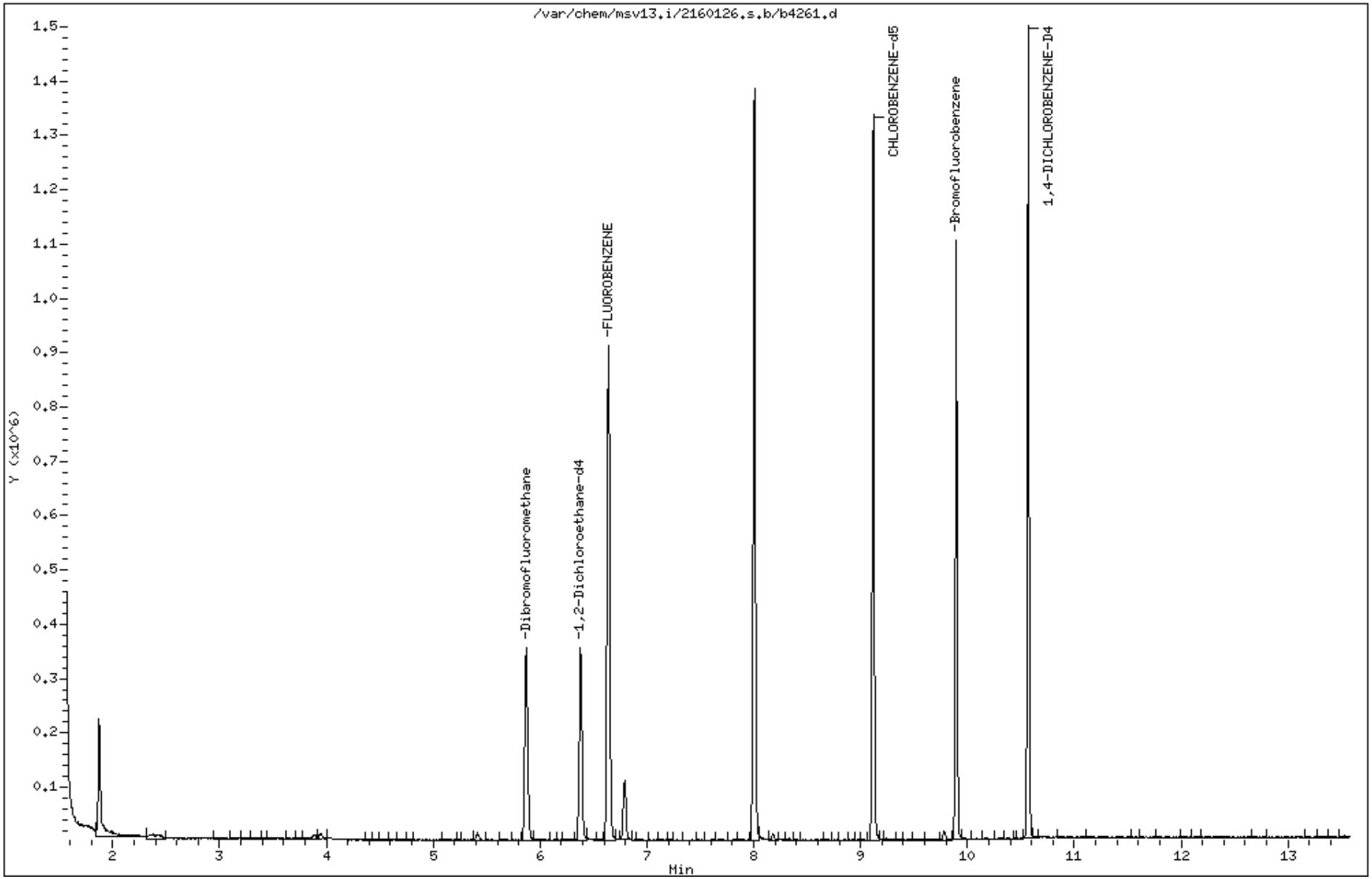
Sample Info: 21601251511*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25



Revision 1

Data File: /var/chem/msv13.i/2160126.s.b/b4261.d

Date : 26-JAN-2016 17:32

Client ID:

Instrument: msv13.i

Sample Info: 21601251511*

Purge Volume: 5.0

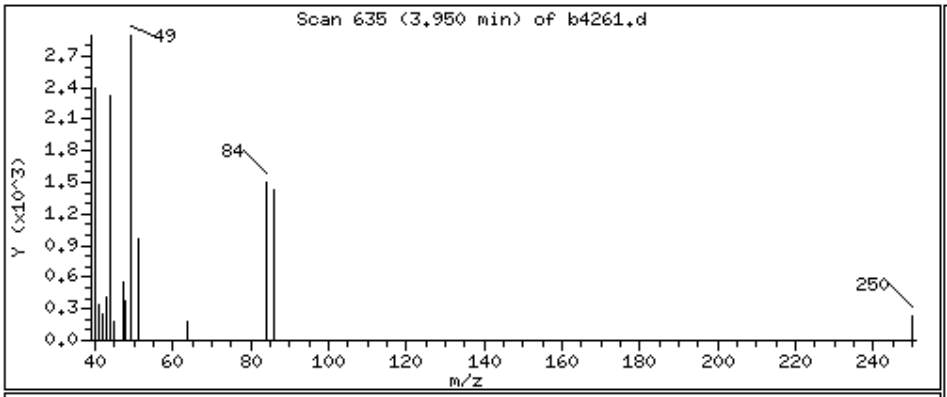
Operator: MMM

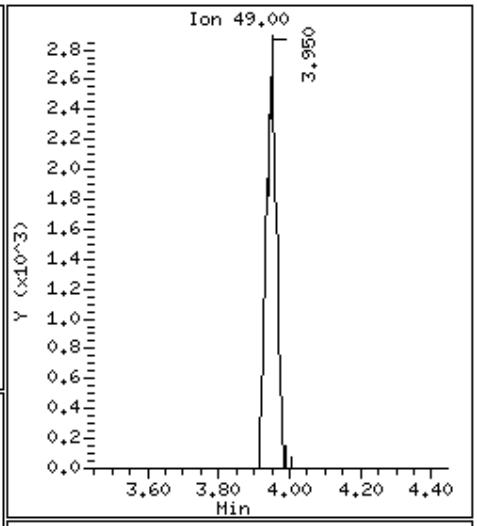
Column phase: RTX-VMS-30M

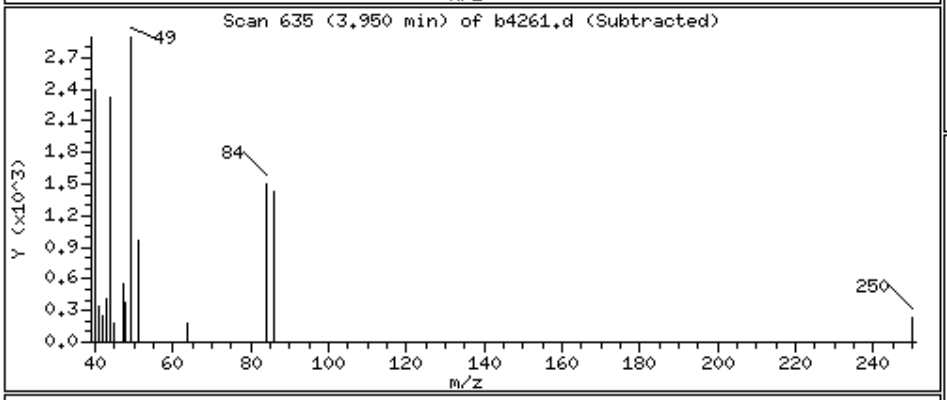
Column diameter: 0.25

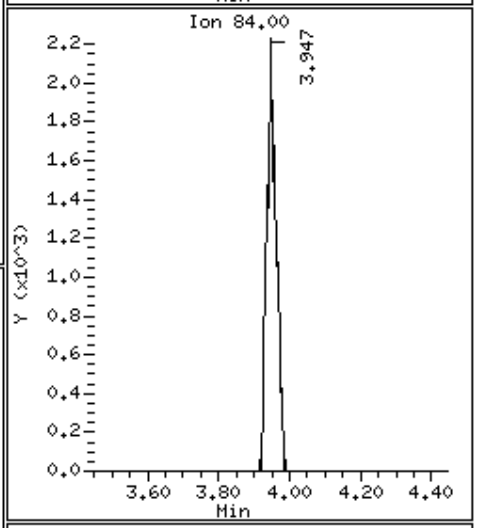
16 Methylene Chloride

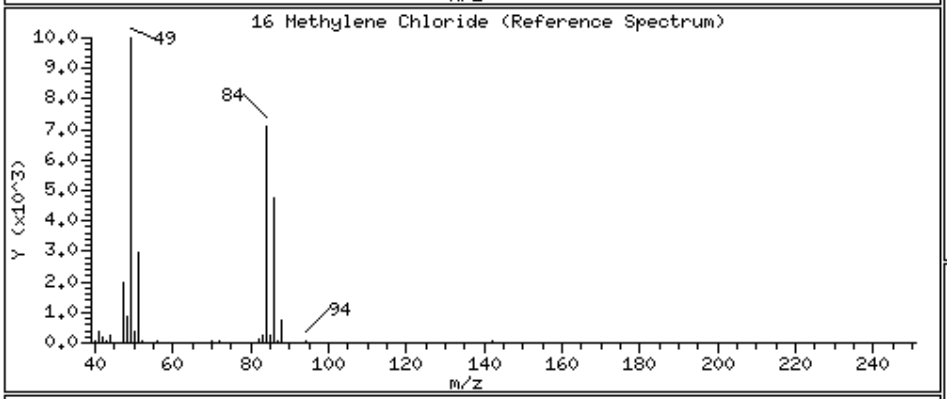
Concentration: 0.527 ug/L

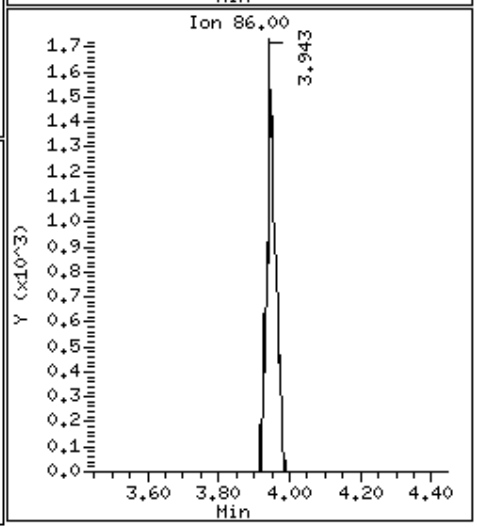


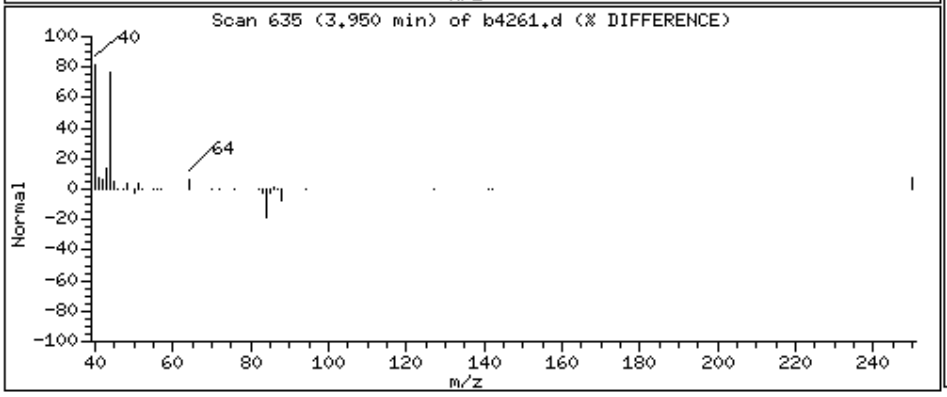












Data File: /var/chem/msv13.i/2160126.s.b/b4261.d

Date : 26-JAN-2016 17:32

Client ID:

Instrument: msv13.i

Sample Info: 21601251511x

Purge Volume: 5.0

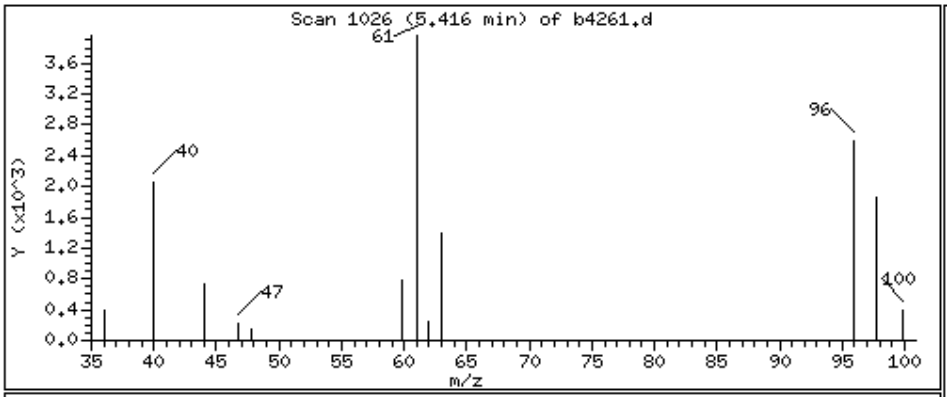
Operator: MMM

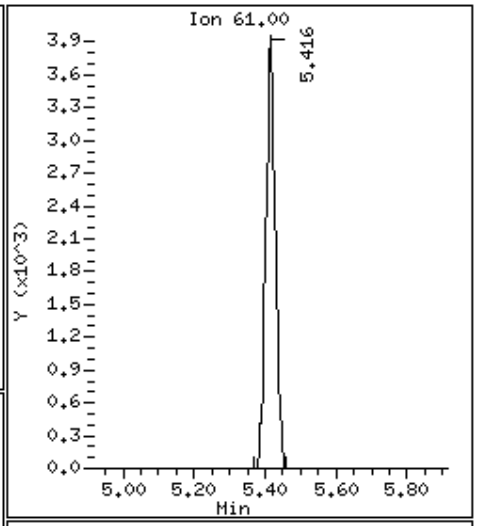
Column phase: RTX-VMS-30M

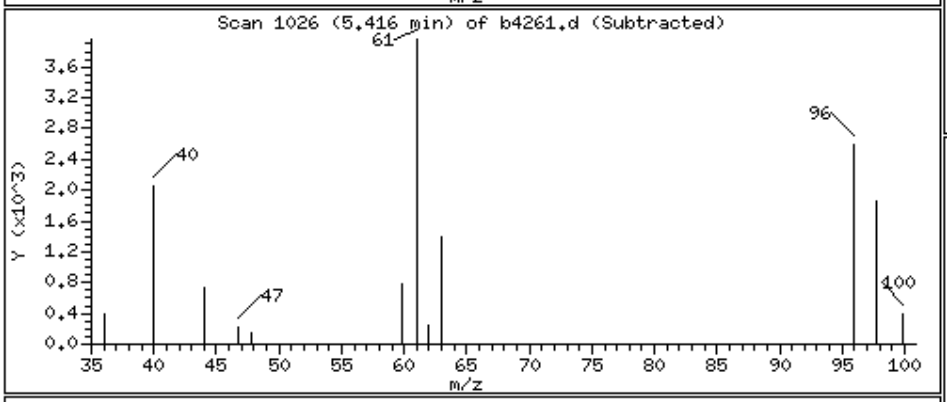
Column diameter: 0.25

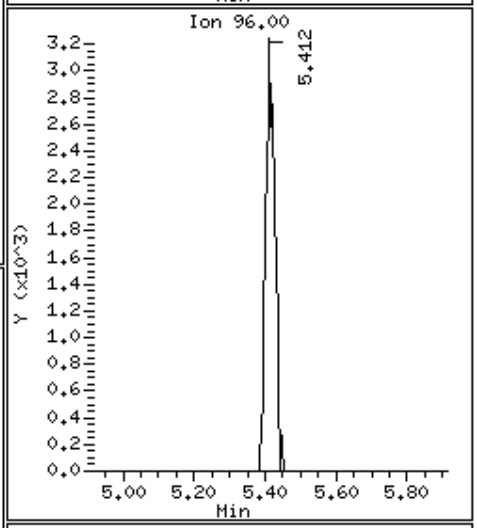
29 cis-1,2-Dichloroethene

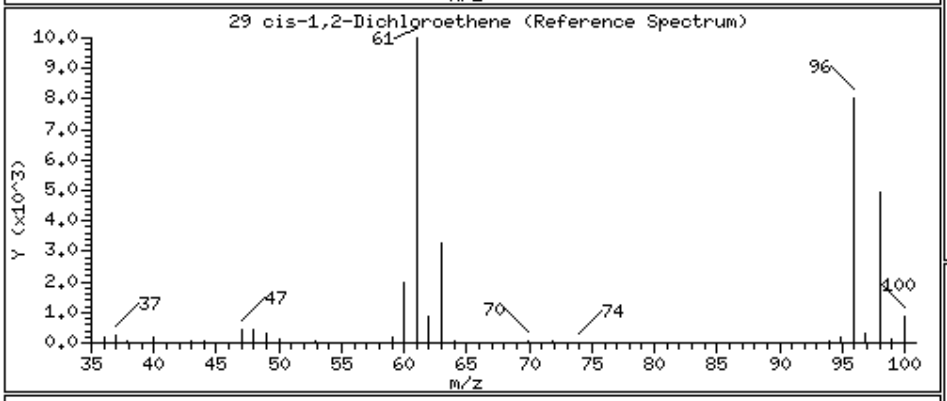
Concentration: 1.59 ug/L

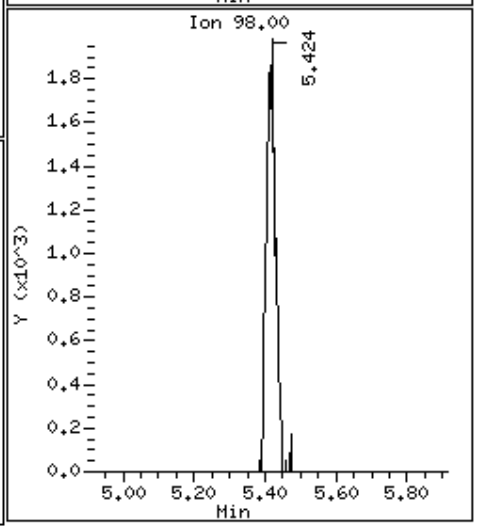


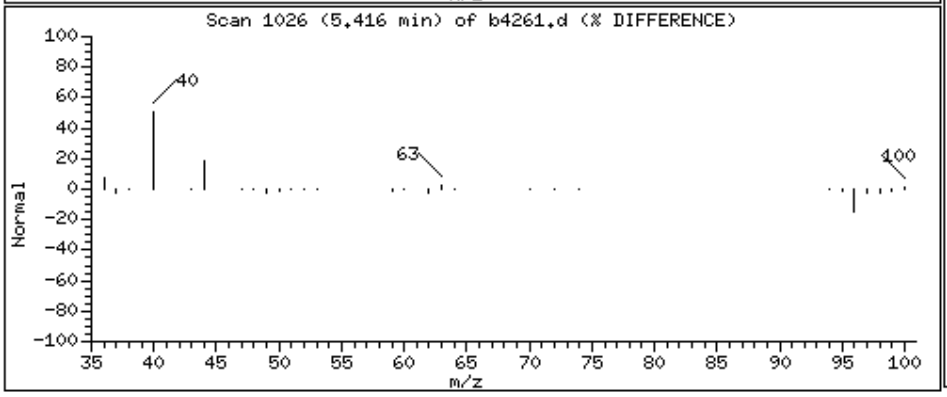












Data File: /var/chem/msv13.i/2160126.s.b/b4261.d

Date : 26-JAN-2016 17:32

Client ID:

Instrument: msv13.i

Sample Info: 21601251511*

Purge Volume: 5.0

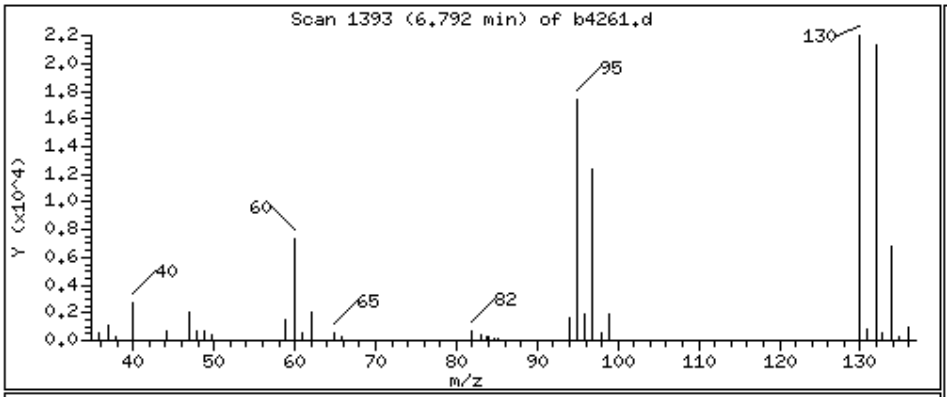
Operator: MMM

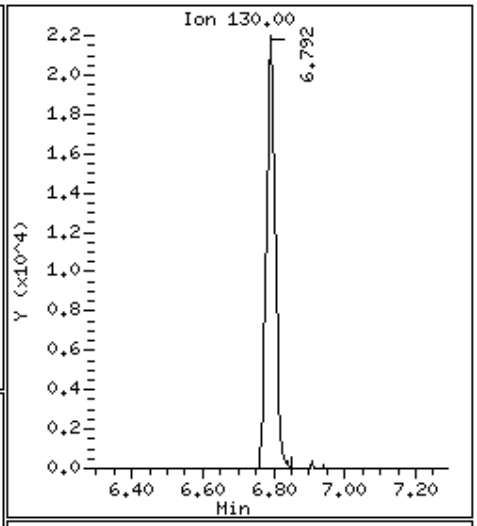
Column phase: RTX-VMS-30M

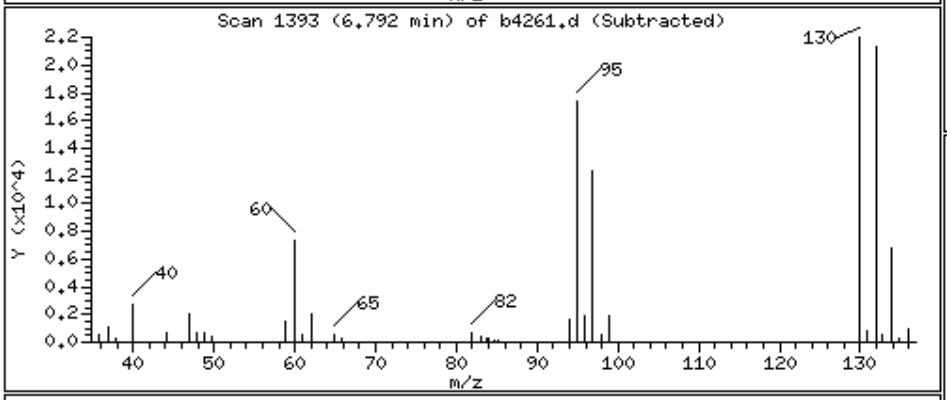
Column diameter: 0.25

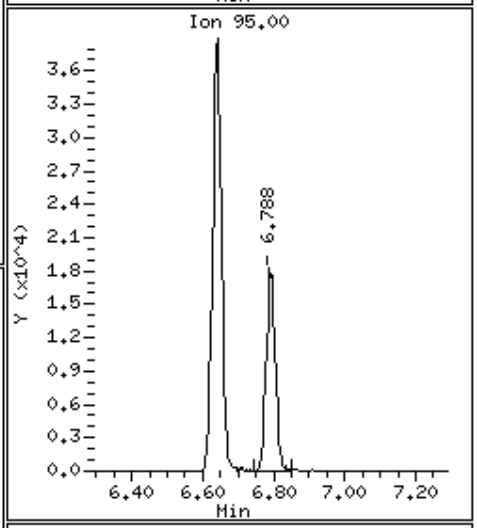
56 Trichloroethene

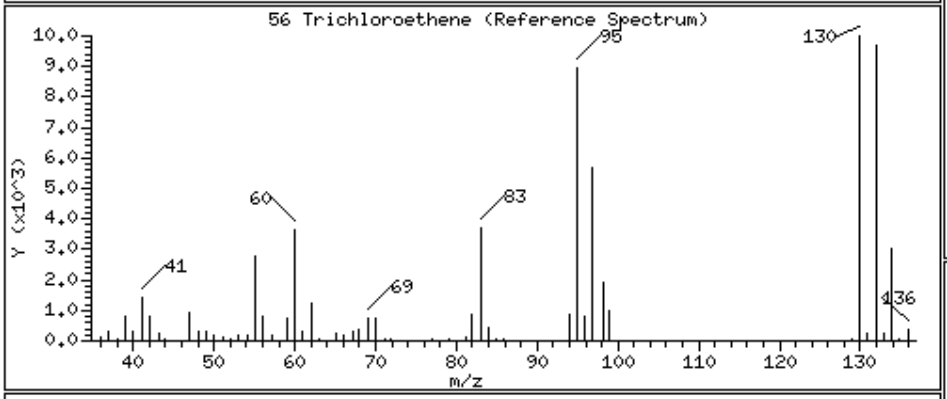
Concentration: 8.92 ug/L

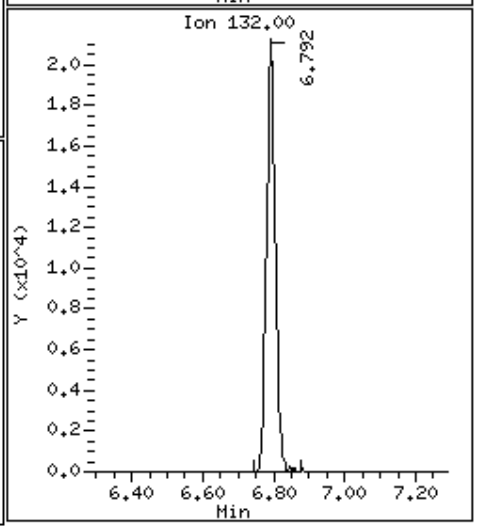


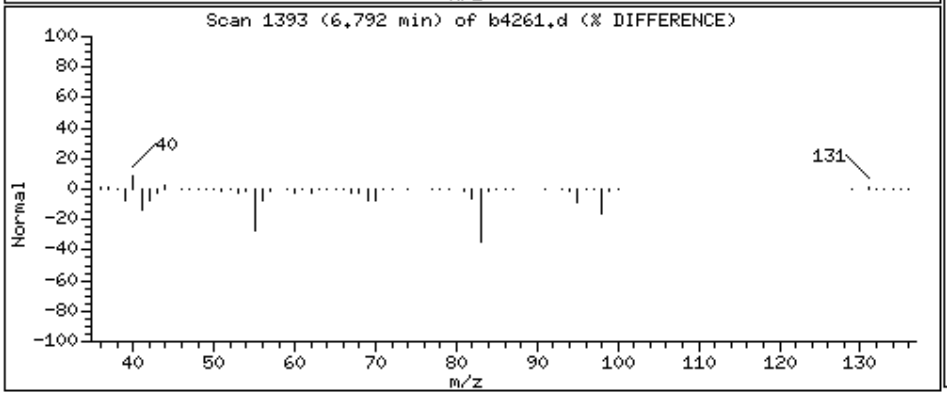








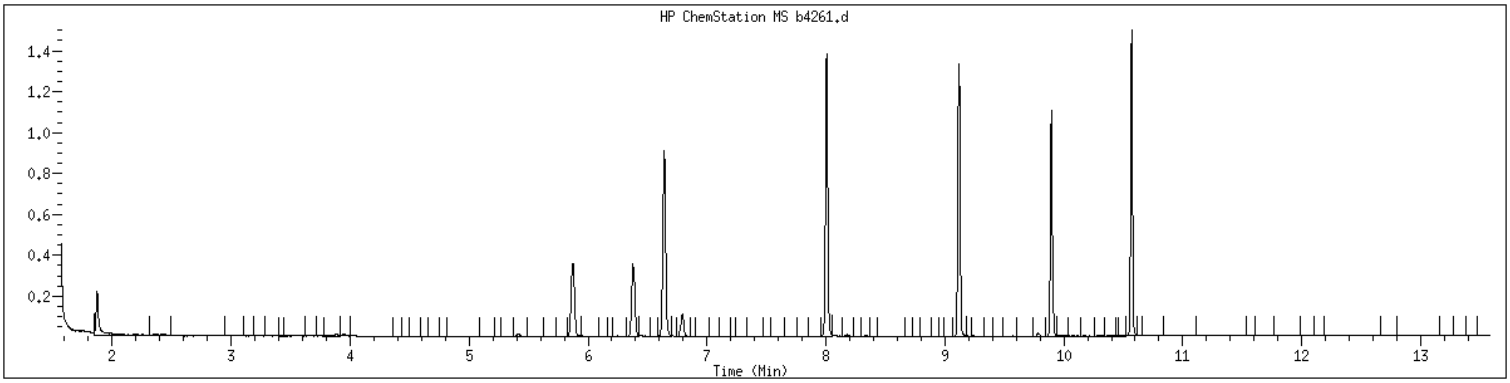




Report Date: 01/26/2016 18:01

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251511 SampleType : SAMPLE
Injection Date: 01/26/2016 17:32 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251511*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MW-12
Collect Date:	01/21/16	Time:	1403	GCAL Sample ID:	21601251512
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4262
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1753	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MW-12
Collect Date:	01/21/16	Time:	1403	GCAL Sample ID:	21601251512
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4262
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1753	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4262.d
Lab Smp Id: 21601251512
Inj Date : 26-JAN-2016 17:53
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251512*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.870	5.870	(0.884)	198597	55.7393	55.7	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	113953	54.9359	54.9	
* 53 FLUOROBENZENE	96	6.642	6.638	(1.000)	694900	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	667315	52.8121	52.8	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	277666	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	227927	48.9820	49.0	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	278297	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4262.d

Page 1

Date : 26-JAN-2016 17:53

Client ID:

Instrument: msv13.i

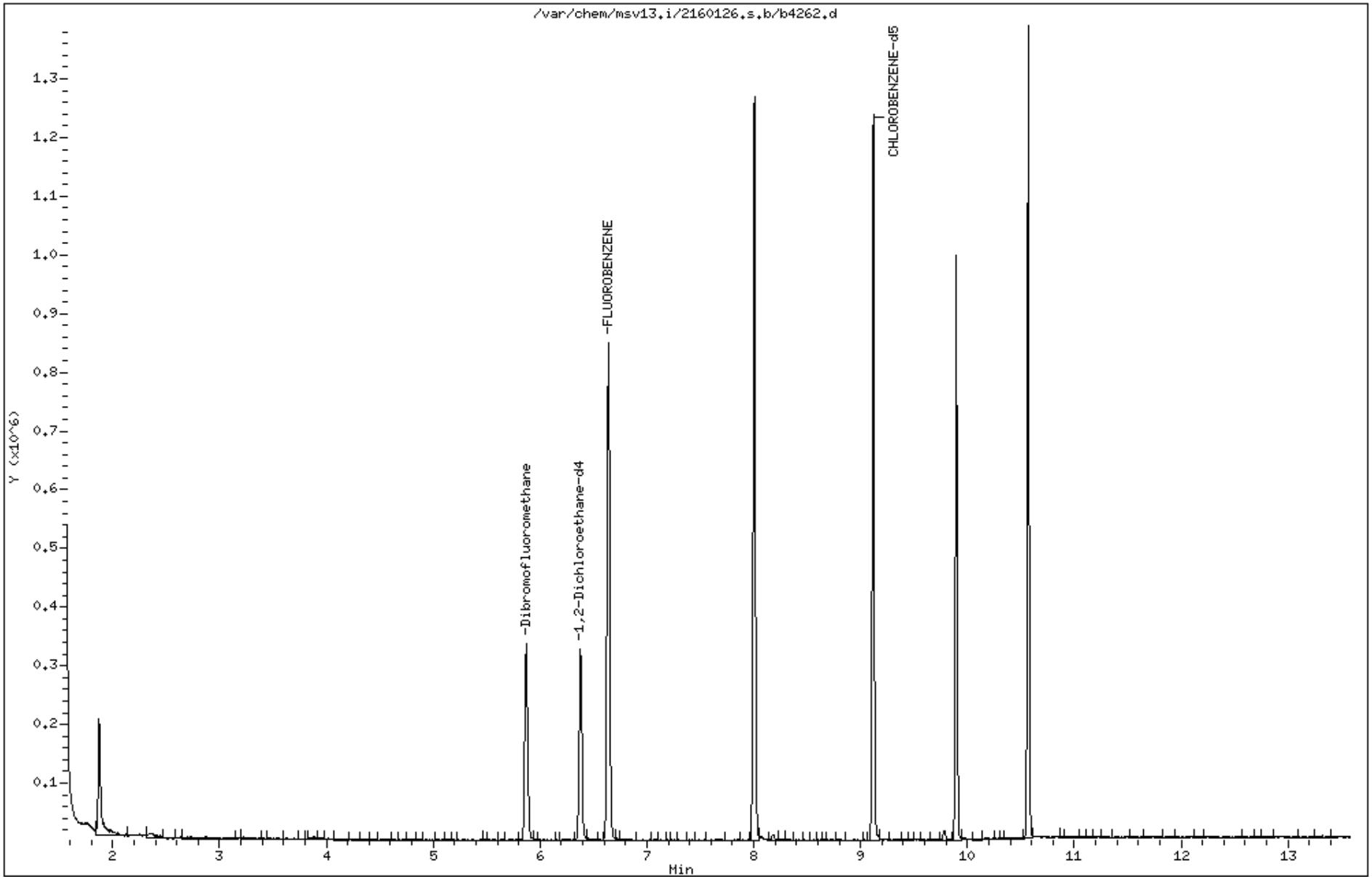
Sample Info: 21601251512*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25

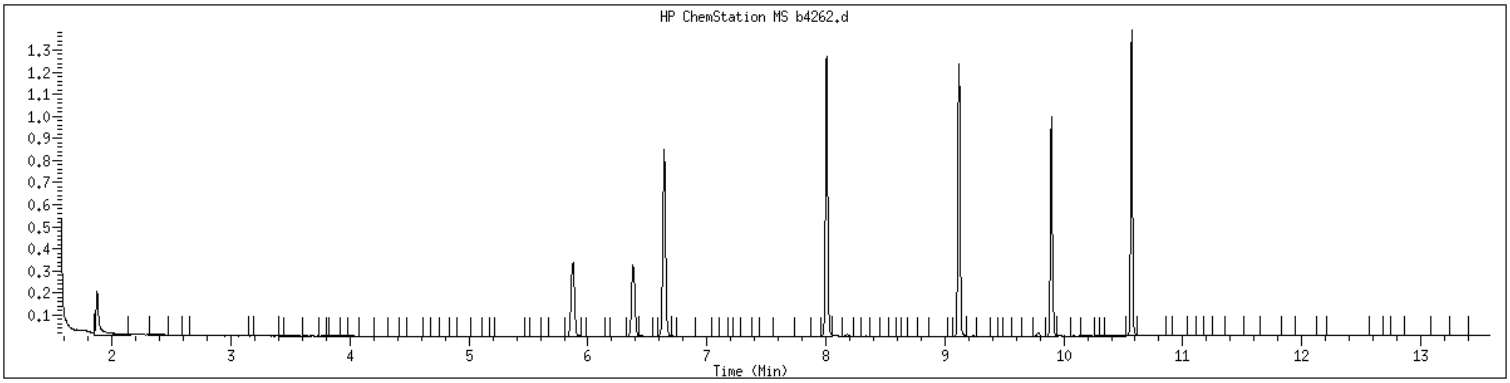


Revision 1

Report Date: 01/26/2016 18:15

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251512 SampleType : SAMPLE
Injection Date: 01/26/2016 17:53 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251512*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-1
Collect Date:	01/21/16	Time:	1500	GCAL Sample ID:	21601251513
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4263
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1814	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-1
Collect Date:	01/21/16	Time:	1500	GCAL Sample ID:	21601251513
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4263
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1814	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.504	J	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4263.d
Lab Smp Id: 21601251513
Inj Date : 26-JAN-2016 18:14
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251513*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
16 Methylene Chloride	49	3.947	3.947	(0.594)	5352	0.50397	0.504	
$ 40 Dibromofluoromethane	111	5.870	5.870	(0.884)	205736	54.7186	54.7	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	117528	53.6918	53.7	
* 53 FLUOROBENZENE	96	6.642	6.638	(1.000)	733308	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	697599	53.0535	53.1	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	288946	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	238536	49.2607	49.3	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	292434	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4263.d

Page 1

Date : 26-JAN-2016 18:14

Client ID:

Instrument: msv13.i

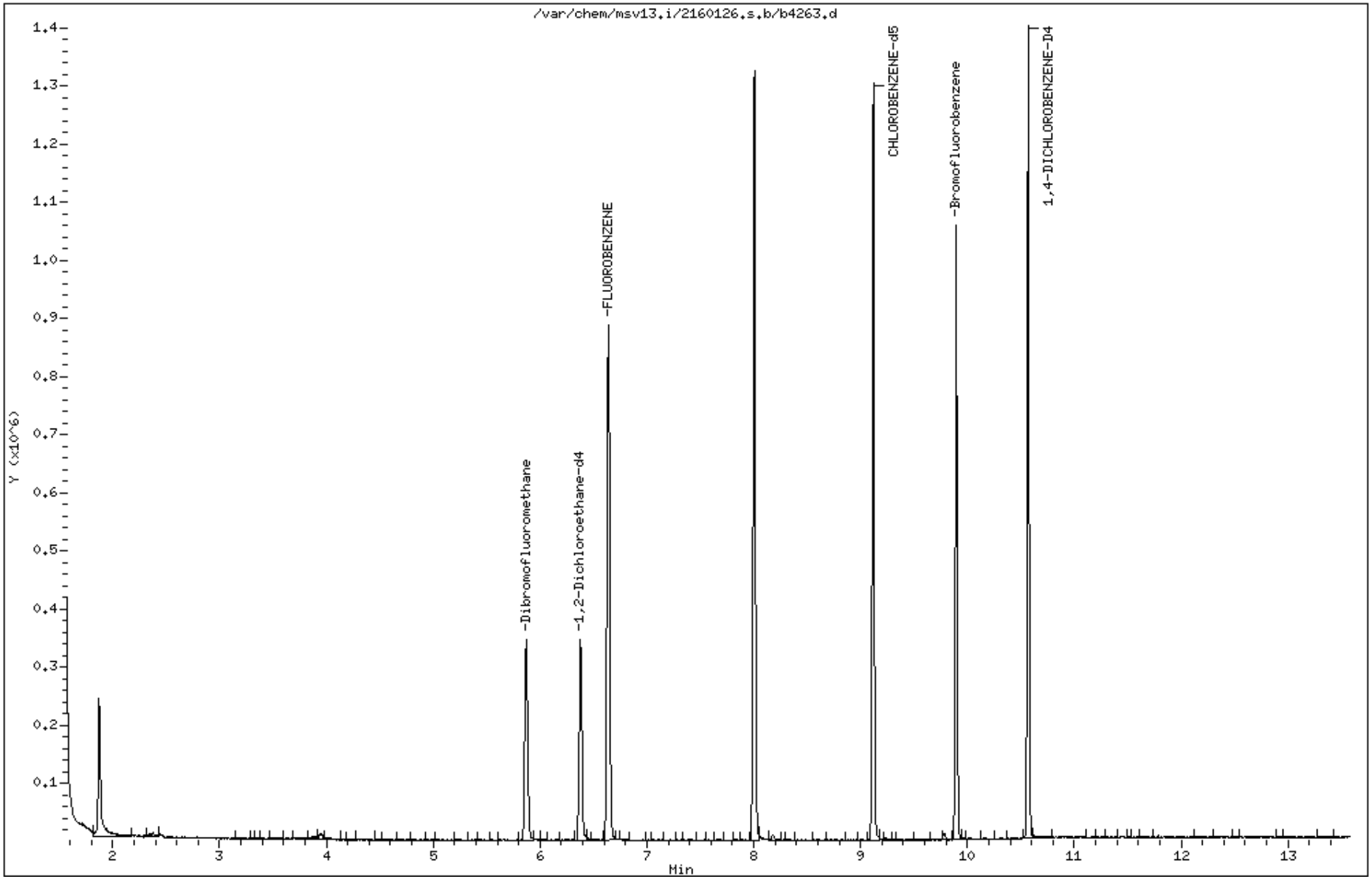
Sample Info: 21601251513*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25



Revision 1

Data File: /var/chem/msv13.i/2160126.s.b/b4263.d

Date : 26-JAN-2016 18:14

Client ID:

Instrument: msv13.i

Sample Info: 21601251513*

Purge Volume: 5.0

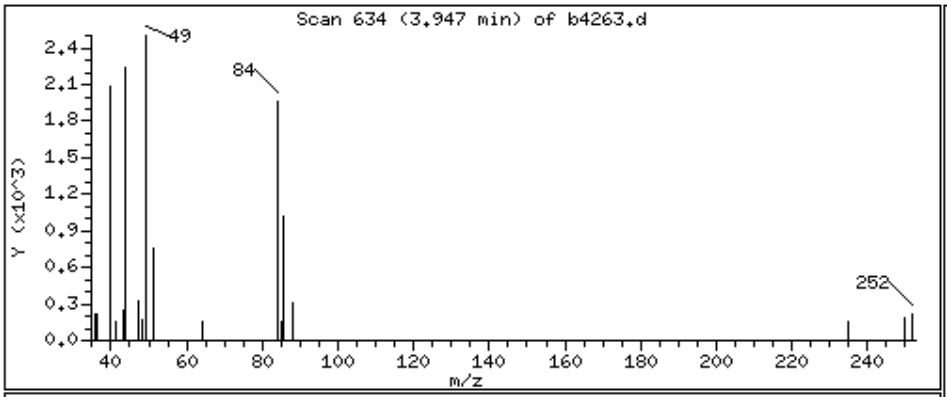
Operator: MMM

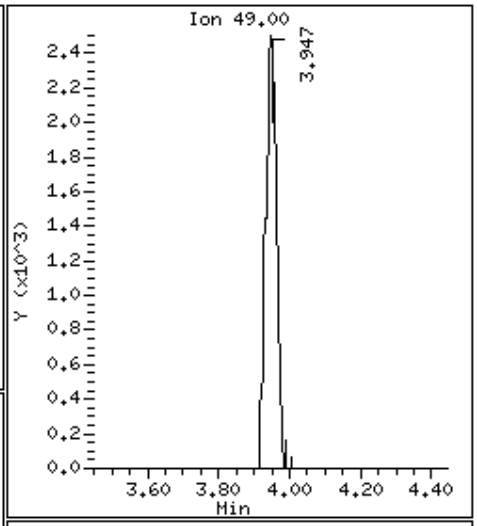
Column phase: RTX-VMS-30M

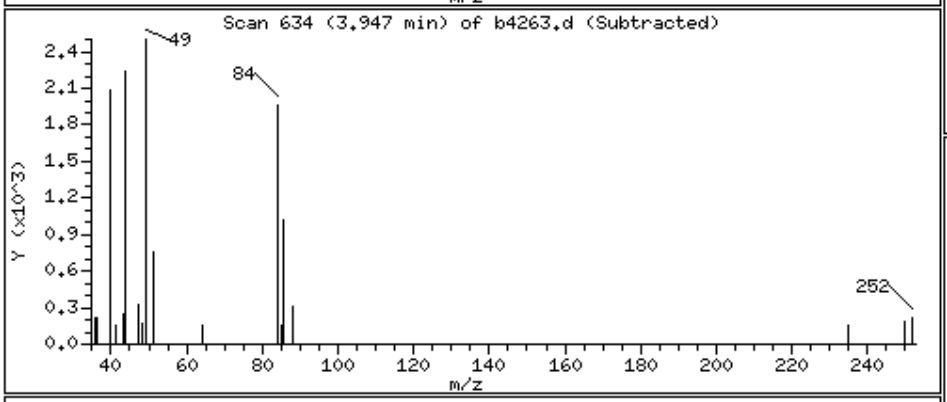
Column diameter: 0.25

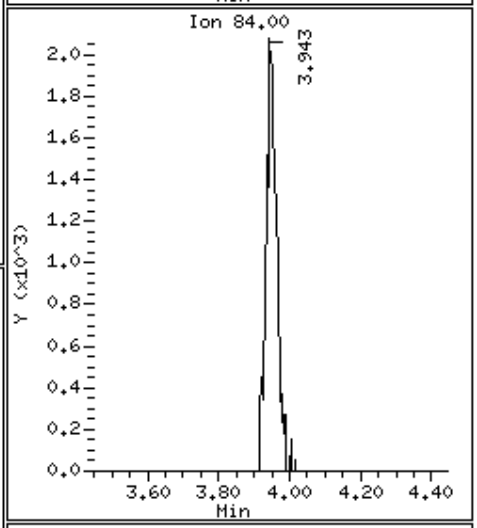
16 Methylene Chloride

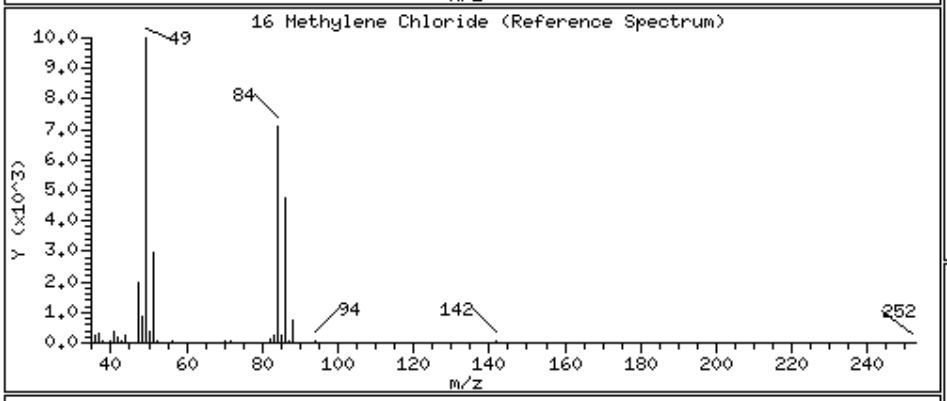
Concentration: 0.504 ug/L

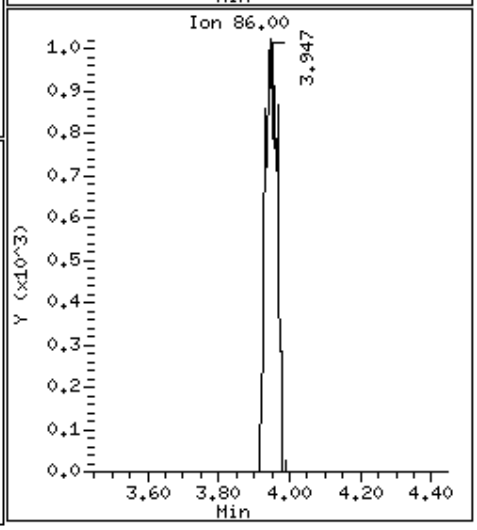


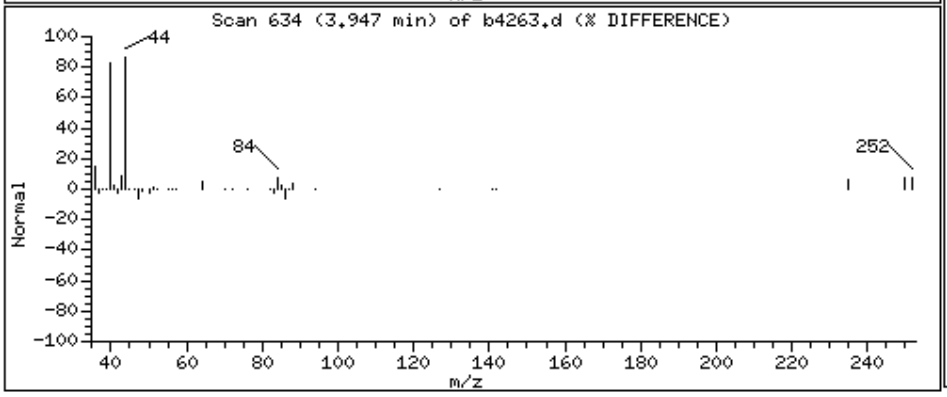








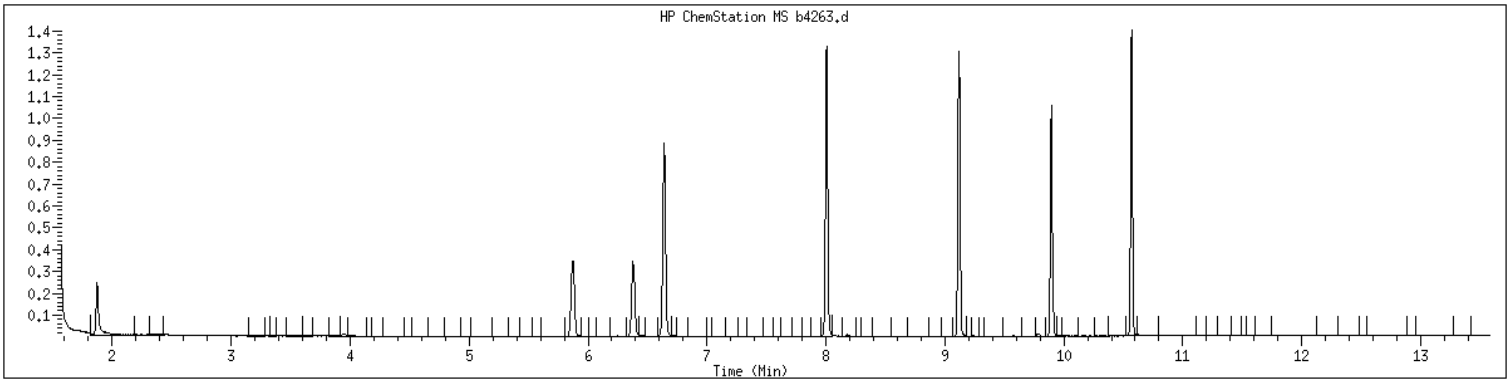




Report Date: 01/26/2016 18:42

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251513 SampleType : SAMPLE
Injection Date: 01/26/2016 18:14 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251513*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515	Client Sample ID:	OMS-28-3-a
Collect Date:	01/21/16 Time: 1125	GCAL Sample ID:	21601251514
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2160126/b4264
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: MMM	Analytical Batch:	577716
Analysis Date:	01/26/16 Time: 1835	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	1.60		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	OMS-28-3-a
Collect Date:	01/21/16	Time:	1125	GCAL Sample ID:	21601251514
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4264
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1835	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	8.78		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4264.d
Lab Smp Id: 21601251514
Inj Date : 26-JAN-2016 18:35
Operator : MMM Inst ID: msv13.i
Smp Info : 21601251514*
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.815)	6643	1.60187	1.60	
M	75 Total 1,2-Dichloroethene	61				6643	1.60187	1.60	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	197224	55.5910	55.6	4354
$	50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.960)	112367	54.4033	54.4	
*	53 FLUOROBENZENE	96	6.642	6.638	(1.000)	691937	50.0000		
	56 Trichloroethene	130	6.792	6.792	(1.023)	33823	8.77913	8.78	
$	68 Toluene-d8	98	8.007	8.003	(0.878)	667127	53.3143	53.3	
*	84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	274973	50.0000		
$	95 Bromofluorobenzene	174	9.896	9.896	(1.085)	228231	49.5277	49.5	
*	114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	275991	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4264.d

Page 1

Date : 26-JAN-2016 18:35

Client ID:

Instrument: msv13.i

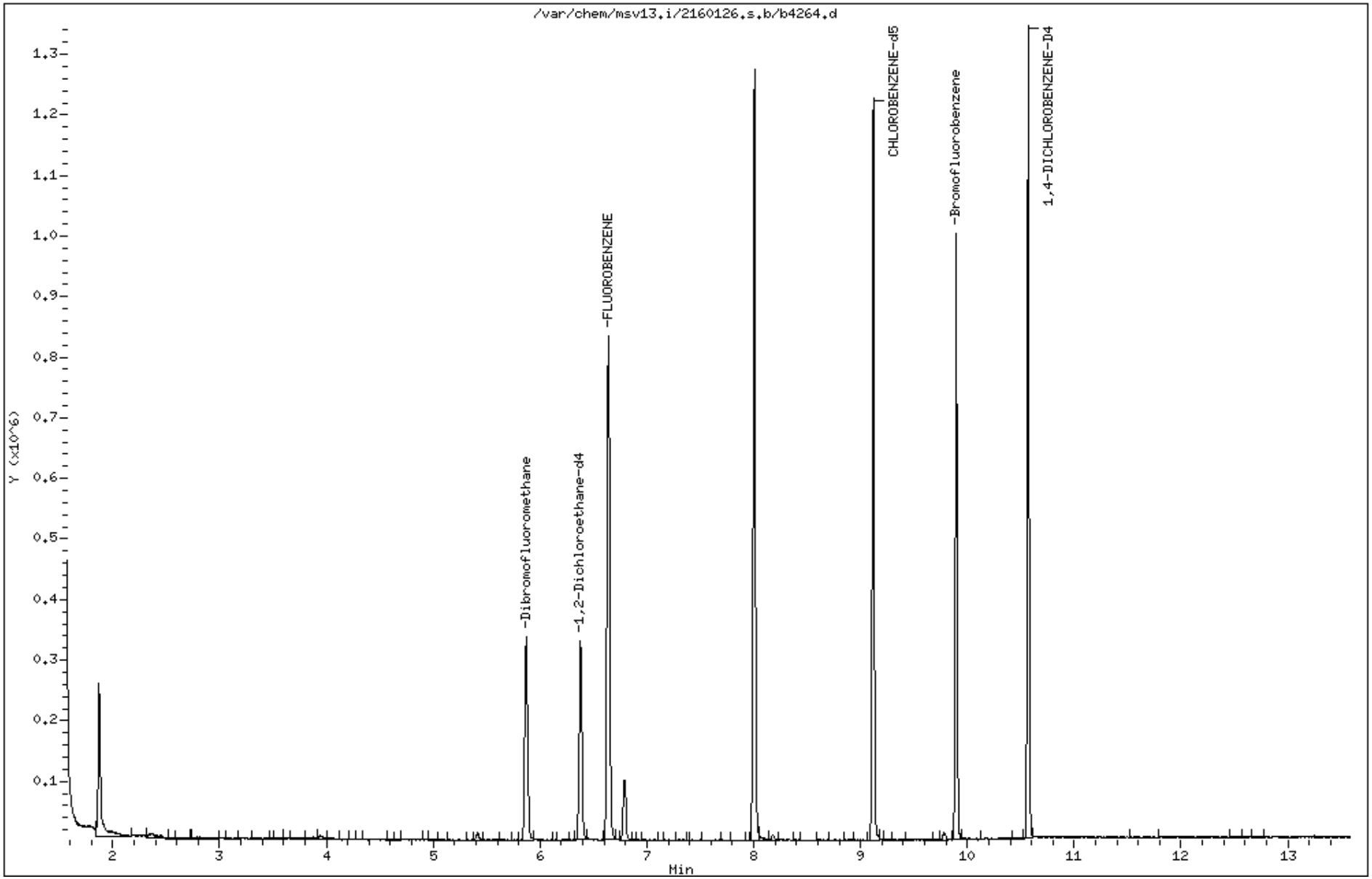
Sample Info: 21601251514*

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25



Revision 1

GCAL Report#: 216012515

Data File: /var/chem/msv13.i/2160126.s.b/b4264.d

Date : 26-JAN-2016 18:35

Client ID:

Instrument: msv13.i

Sample Info: 21601251514x

Purge Volume: 5.0

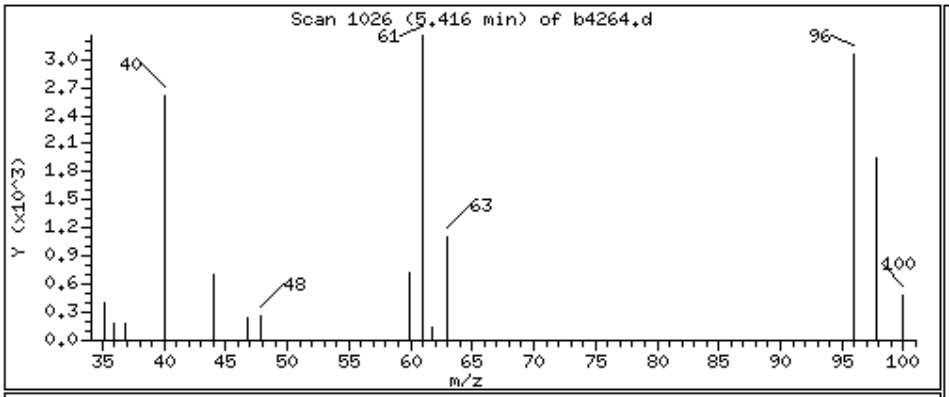
Operator: MMM

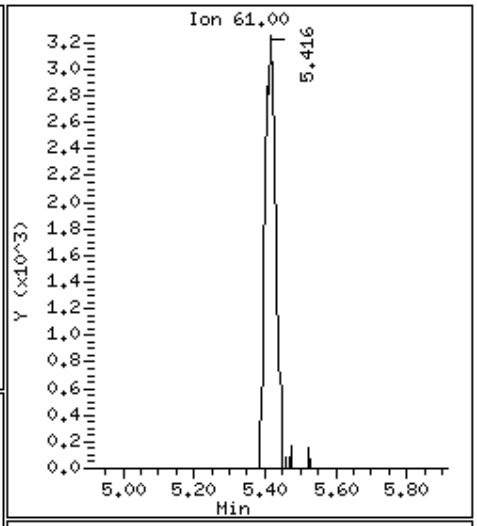
Column phase: RTX-VMS-30M

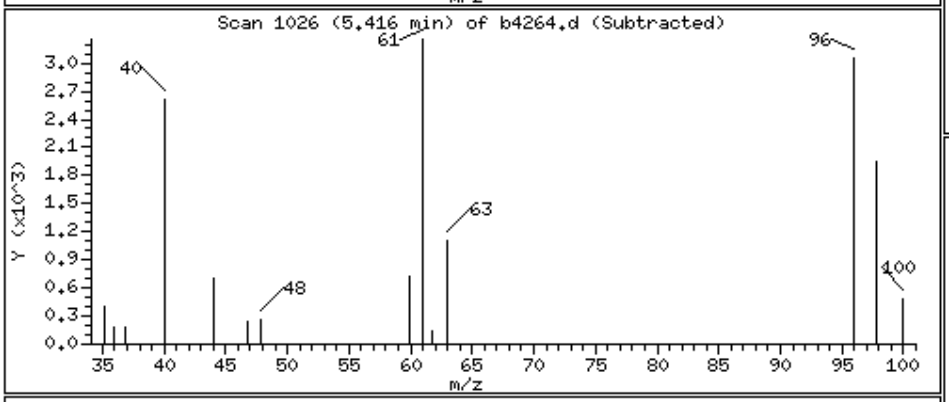
Column diameter: 0.25

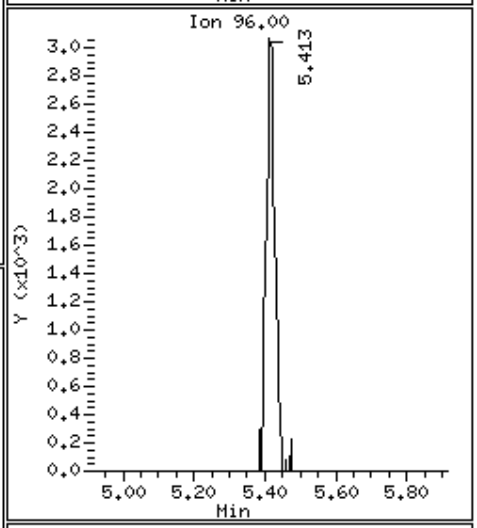
29 cis-1,2-Dichloroethene

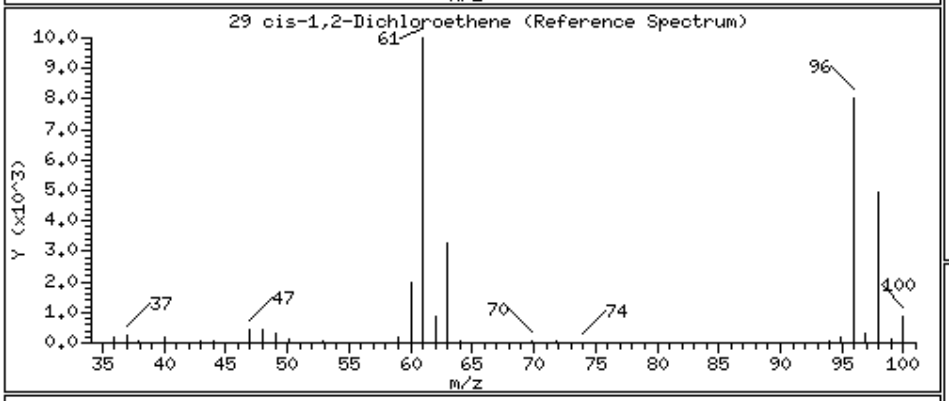
Concentration: 1.60 ug/L

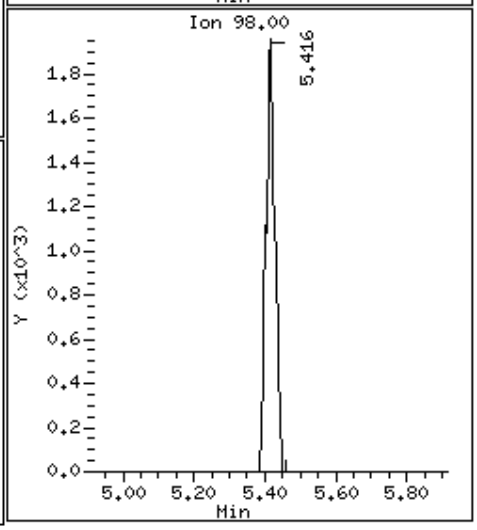


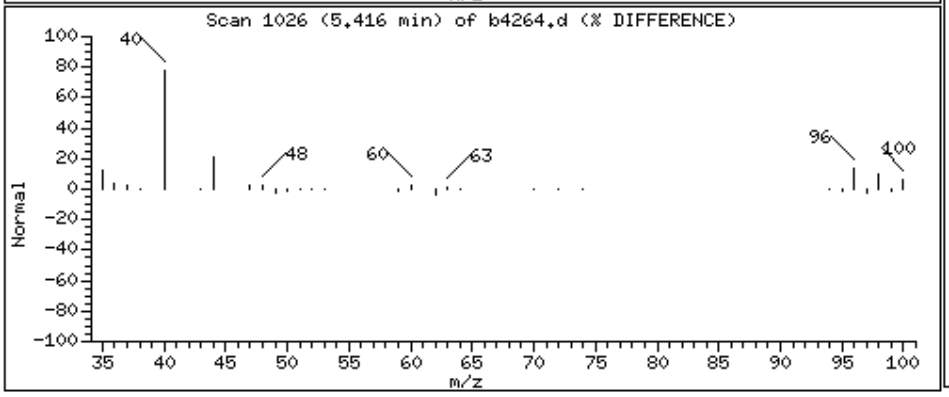












Data File: /var/chem/msv13.i/2160126.s.b/b4264.d

Date : 26-JAN-2016 18:35

Client ID:

Instrument: msv13.i

Sample Info: 21601251514x

Purge Volume: 5.0

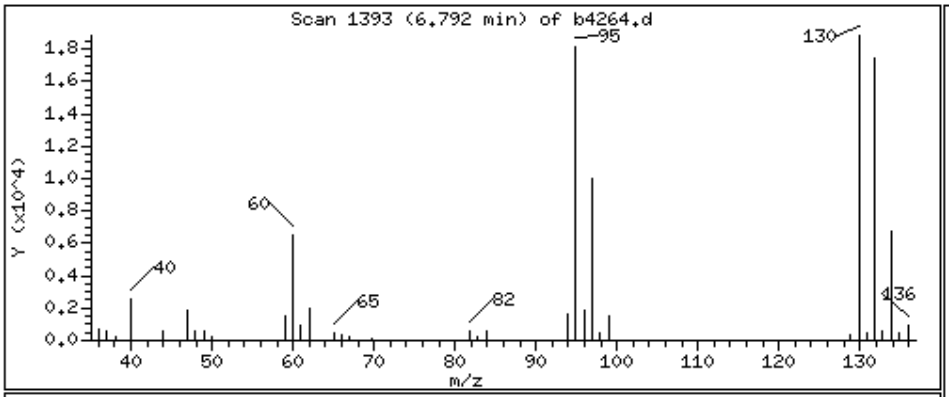
Operator: MMM

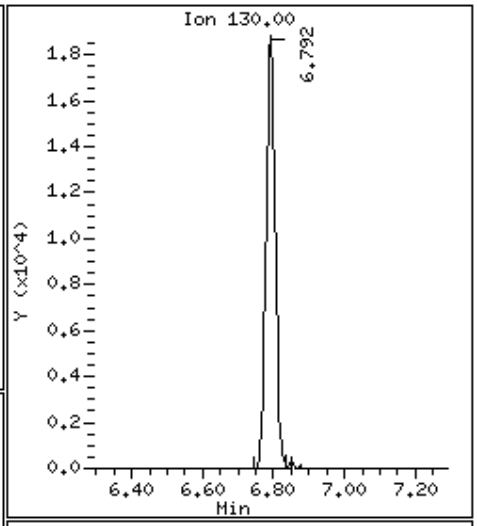
Column phase: RTX-VMS-30M

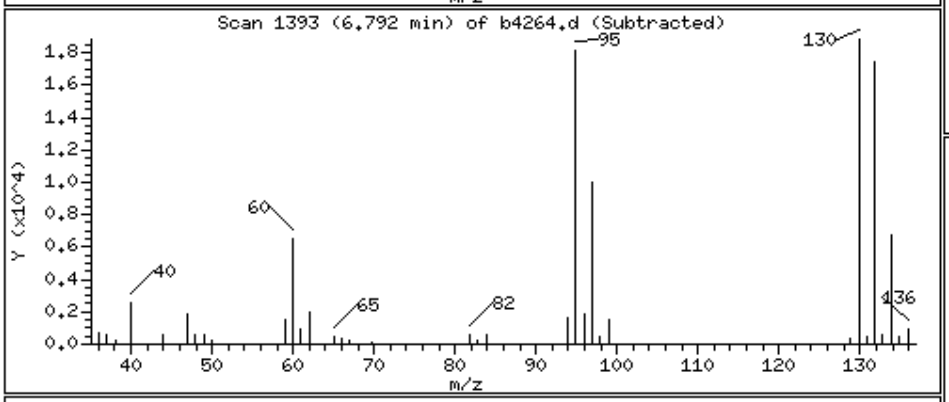
Column diameter: 0.25

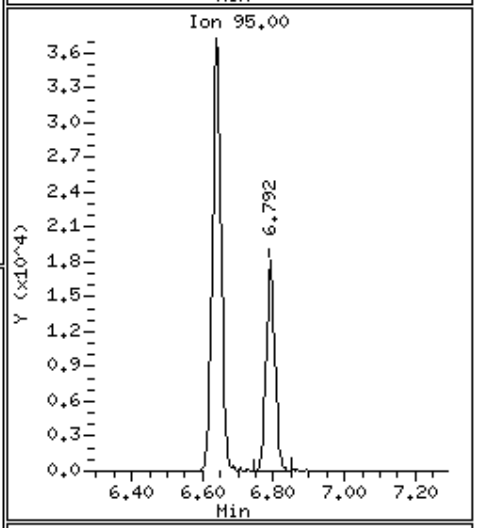
56 Trichloroethene

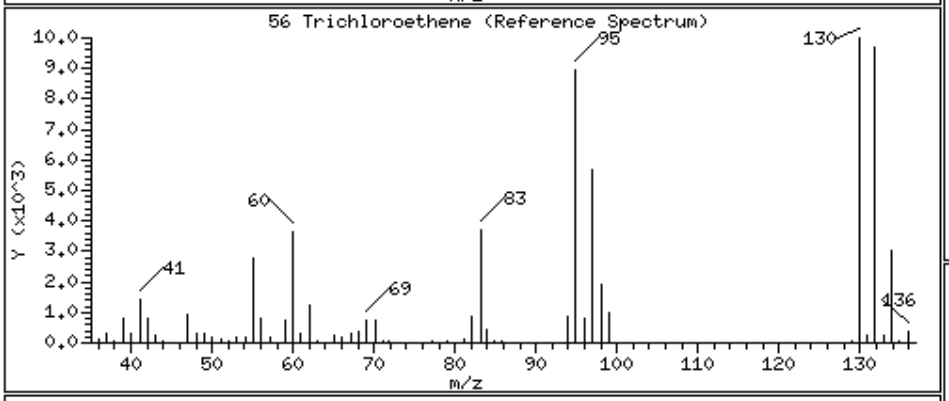
Concentration: 8.78 ug/L

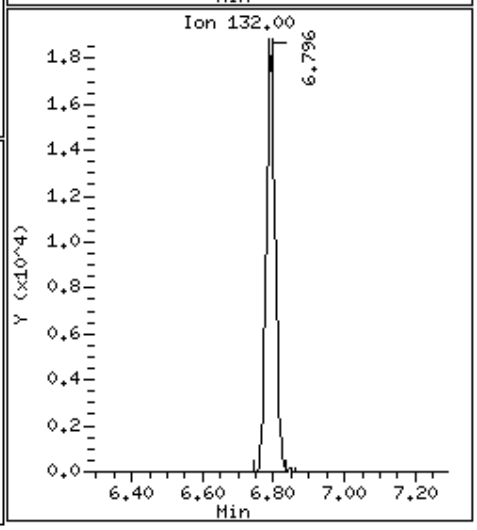


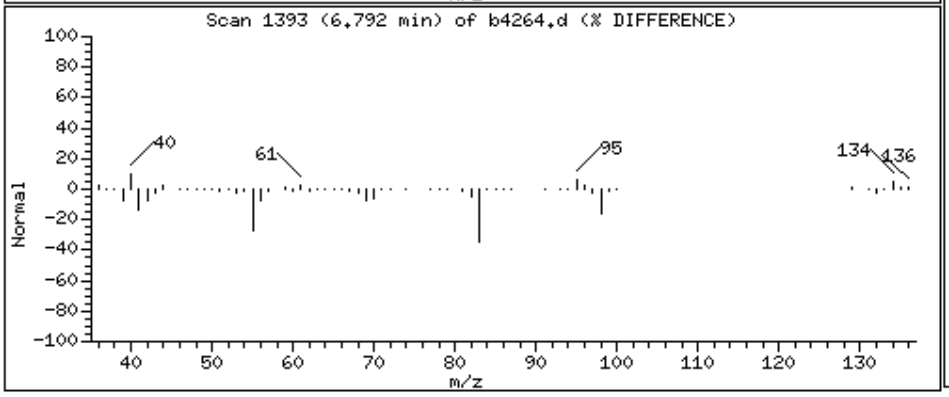








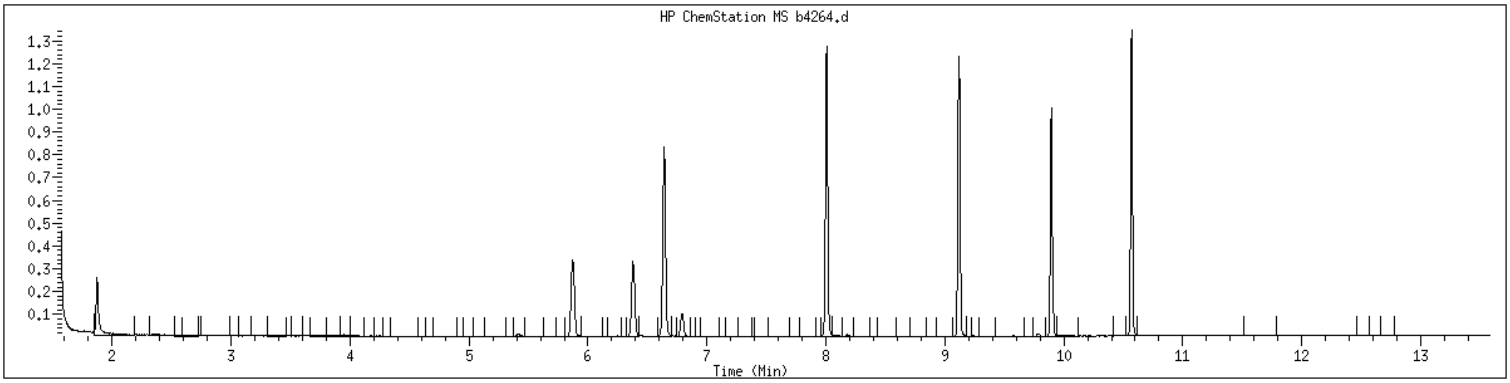




Report Date: 01/26/2016 19:18

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21601251514 SampleType : SAMPLE
Injection Date: 01/26/2016 18:35 Instrument : msv13.i
Operator : MMM
Sample Info : 21601251514*
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MB1532964
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532964
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4248
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1253	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	MB1532964
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532964
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4248
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1253	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
75-01-4	Vinyl chloride	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4248.d
Lab Smp Id: 1532964 Client Smp ID: MB
Inj Date : 26-JAN-2016 12:53
Operator : MMM Inst ID: msv13.i
Smp Info : 1532964*MB
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.874	5.870	(0.885)	219357	54.1092	54.1	4354
$ 50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.961)	125411	53.1369	53.1	
* 53 FLUOROBENZENE	96	6.638	6.638	(1.000)	790664	50.0000		
$ 68 Toluene-d8	98	8.007	8.003	(0.878)	744770	52.9327	52.9	
* 84 CHLOROBENZENE-d5	82	9.120	9.116	(1.000)	309188	50.0000		
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.085)	256730	49.5470	49.5	
* 114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	311017	50.0000		

Data File: /var/chem/msv13.i/2160126.s.b/b4248.d

Date : 26-JAN-2016 12:53

Client ID: MB

Instrument: msv13.i

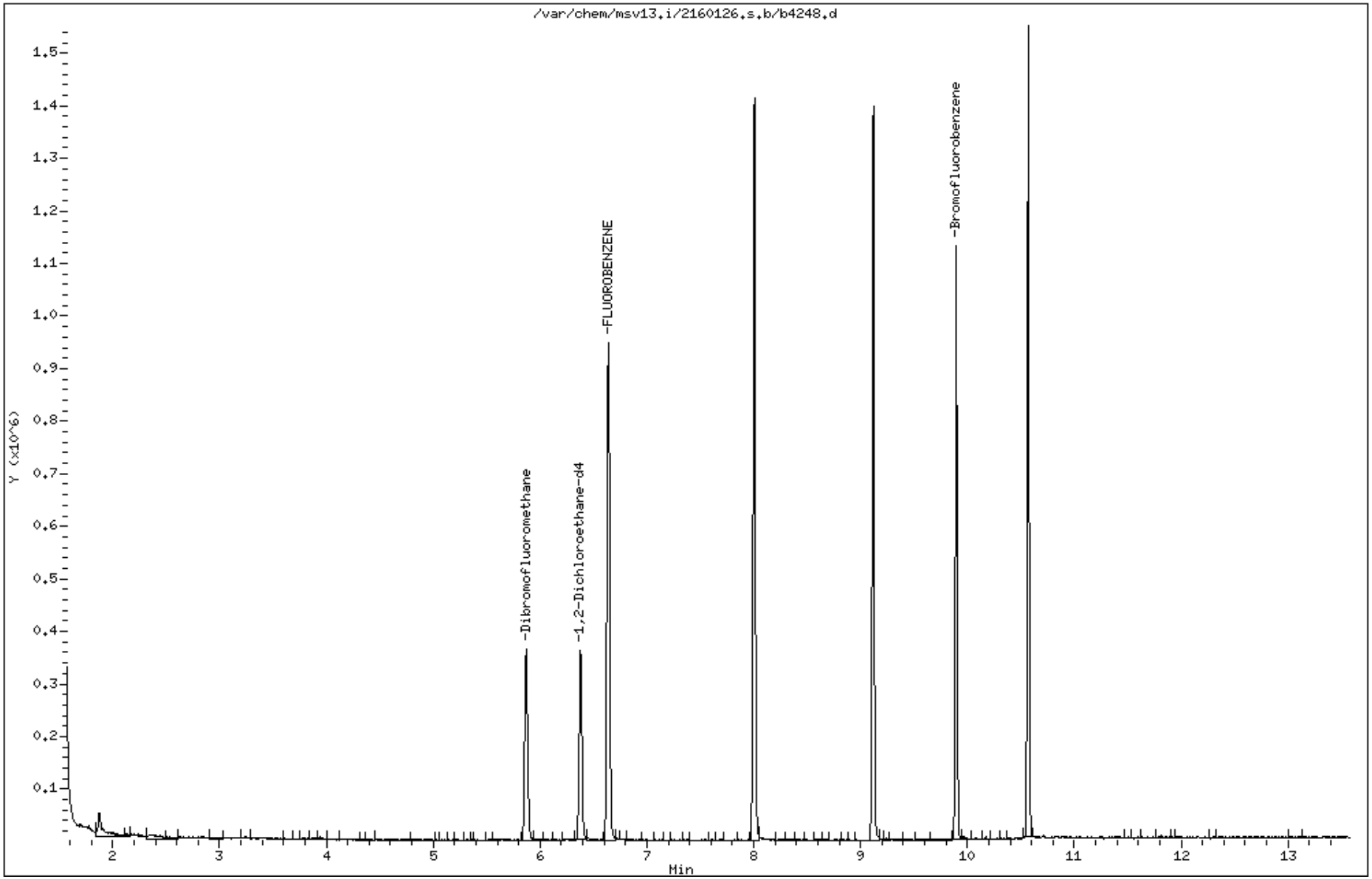
Sample Info: 1532964*MB

Purge Volume: 5.0

Operator: MMM

Column phase: RTX-VMS-30M

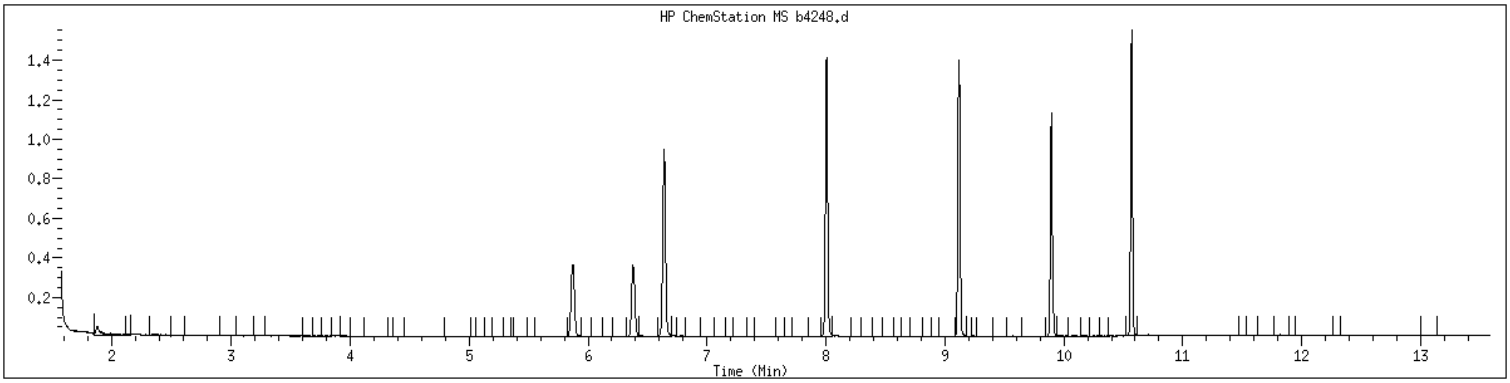
Column diameter: 0.25



Report Date: 01/26/2016 13:15

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1532964 SampleType : BLANK
Injection Date: 01/26/2016 12:53 Instrument : msv13.i
Operator : MMM
Sample Info : 1532964*MB
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	LCS1532965
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532965
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4244L
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1106	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	48.4		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	50.9		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	48.7		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	46.5		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	52.9		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	53.4		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	50.6		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	50.5		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	48.5		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	49.0		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	48.7		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	49.6		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	48.7		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	46.9		0.200	0.500	1.00
78-93-3	2-Butanone	53.4		0.200	0.500	5.00
591-78-6	2-Hexanone	47.1		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	52.7		0.200	0.500	5.00
67-64-1	Acetone	47.2		0.500	1.00	5.00
71-43-2	Benzene	50.0		0.200	0.500	1.00
74-97-5	Bromochloromethane	49.0		0.200	0.500	1.00
75-27-4	Bromodichloromethane	50.1		0.200	0.500	1.00
75-25-2	Bromoform	50.0		0.250	0.500	1.00
74-83-9	Bromomethane	43.9		0.500	1.00	1.00
75-15-0	Carbon disulfide	50.8		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	49.2		0.250	0.500	1.00
108-90-7	Chlorobenzene	47.8		0.200	0.500	1.00
75-00-3	Chloroethane	55.2		0.250	0.500	1.00
67-66-3	Chloroform	49.2		0.200	0.500	1.00
74-87-3	Chloromethane	42.3		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	47.0		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	45.0		0.200	0.500	1.00
110-82-7	Cyclohexane	43.2		0.500	1.00	2.00
124-48-1	Dibromochloromethane	48.6		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	40.7		0.200	0.500	1.00
100-41-4	Ethylbenzene	50.7		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	46.4		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	LCS1532965
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532965
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4244L
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1106	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	44.8		1.00	2.00	5.00
108-87-2	Methylcyclohexane	49.0		0.200	0.500	1.00
75-09-2	Methylene chloride	49.3		0.200	0.500	5.00
100-42-5	Styrene	48.3		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	52.2		0.200	0.500	1.00
127-18-4	Tetrachloroethene	47.0		0.200	0.500	1.00
108-88-3	Toluene	47.1		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	46.4		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	50.1		0.200	0.500	1.00
79-01-6	Trichloroethene	50.6		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	50.7		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	51.7		0.200	0.500	1.00
75-01-4	Vinyl chloride	41.9		0.200	0.500	1.00
1330-20-7	Xylene (total)	142		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4244L.d
Lab Smp Id: 1532965 Client Smp ID: LCS
Inj Date : 26-JAN-2016 11:06
Operator : MMM Inst ID: msv13.i
Smp Info : 1532965*LCS
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	166451	40.6633	40.7	
2 Chloromethane ++	50	1.911	1.911	(0.288)	227630	42.2566	42.3	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	200099	41.9032	41.9	
6 Bromomethane	94	2.335	2.335	(0.352)	119615	43.8588	43.9	
7 Chloroethane	64	2.477	2.477	(0.373)	137093	55.2434	55.2	
8 Trichlorofluoromethane	101	2.627	2.627	(0.396)	264377	50.7423	50.7	
10 1,1-Dichloroethene +	96	3.216	3.216	(0.484)	166063	52.8728	52.9	
11 Carbon Disulfide	76	3.242	3.242	(0.488)	542646	50.8267	50.8	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	170797	51.6976	51.7	
13 Methyl Iodide	142	3.384	3.384	(0.510)	48164	57.5229	57.5	
14 Acrolein	56	3.647	3.647	(0.549)	90881	249.504	250	
16 Methylene Chloride	49	3.947	3.947	(0.595)	270758	49.3366	49.3	
17 Acetone	43	4.022	4.022	(0.606)	152603	47.2430	47.2	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	251824	46.4074	46.4	

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/L)	SIMILARITY
	19	Methyl Acetate	43	4.175	4.175	(0.629)	205732	44.8367	44.8	9696
	20	Hexane	57	4.235	4.235	(0.638)	270593	44.4811	44.5	8732
	21	MTBE	73	4.284	4.284	(0.645)	590648	52.1720	52.2	9583
	26	1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	358098	46.5264	46.5	
	27	Acrylonitrile	53	4.914	4.914	(0.740)	516345	302.800	303	
	28	Vinyl Acetate	43	5.135	5.135	(0.774)	159665	46.0179	46.0	
	29	cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	251566	47.0370	47.0	
M	75	Total 1,2-Dichloroethene	61				503390	93.4444	93.4	
	30	2,2-Dichloropropane	77	5.525	5.525	(0.832)	283759	48.9318	48.9	
	32	Cyclohexane	56	5.607	5.607	(0.845)	323127	43.2349	43.2	7834
	34	Bromochloromethane	128	5.615	5.615	(0.846)	122078	49.0302	49.0	
	35	Chloroform +	83	5.693	5.693	(0.858)	363883	49.1855	49.2	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	274188	49.1799	49.2	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	234108	51.1664	51.2	7326
	41	1,1,1-Trichloroethane	97	5.892	5.892	(0.888)	302568	48.3518	48.4	
	44	2-Butanone	43	6.005	6.005	(0.905)	169390	53.3514	53.4	
	43	1,1-Dichloropropene	75	6.008	6.008	(0.905)	236995	48.9553	49.0	
	46	Benzene	78	6.248	6.248	(0.941)	840689	49.9726	50.0	
$	50	1,2-Dichloroethane-d4	67	6.379	6.379	(0.961)	140352	52.6901	52.7	
	51	1,2-Dichloroethane	62	6.443	6.443	(0.971)	281367	48.6850	48.7	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	892365	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	334094	49.0072	49.0	8529
	56	Trichloroethene	130	6.792	6.792	(1.023)	251472	50.6120	50.6	
	57	Dibromomethane	93	7.178	7.178	(1.081)	135800	49.4442	49.4	
	59	1,2-Dichloropropane +	63	7.272	7.272	(1.095)	214928	49.6380	49.6	
	60	Bromodichloromethane	83	7.328	7.328	(1.104)	292873	50.0682	50.1	
	65	1-Bromo-2-chloroethane	63	7.736	7.736	(1.165)	316261	50.1709	50.2	9742
	67	cis-1,3-Dichloropropene	75	7.856	7.856	(1.184)	306118	45.0001	45.0	
$	68	Toluene-d8	98	8.003	8.003	(0.878)	894861	47.8578	47.9	
	69	Toluene +	91	8.044	8.044	(0.882)	978044	47.1148	47.1	
	71	Tetrachloroethene	164	8.332	8.332	(0.914)	218756	46.9717	47.0	
	73	4-methyl-2-pentanone	43	8.332	8.332	(0.914)	278464	52.7455	52.7	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	333363	50.0984	50.1	
M	82	1-3 Dichloropropene total	100				639481	95.0985	95.1	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	229549	48.6575	48.7	
	78	Dibromochloromethane	129	8.606	8.606	(0.944)	263752	48.5539	48.6	
	79	1,3-Dichloropropane	76	8.674	8.674	(0.951)	366693	48.8709	48.9	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	219234	48.5424	48.5	
	83	2-Hexanone	43	8.917	8.917	(0.978)	225042	47.0897	47.1	
	86	1-Chlorohexane	91	9.105	9.105	(0.999)	284983	47.8885	47.9	3518(M2)
*	84	CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	410892	50.0000		
	85	Chlorobenzene ++	112	9.131	9.131	(1.002)	736537	47.8056	47.8	
	87	Ethylbenzene +	106	9.138	9.138	(1.002)	367296	50.6719	50.7	
	88	1,1,1,2-Tetrachloroethane	133	9.168	9.168	(1.006)	254094	48.7174	48.7	
	89	p,m-Xylene	106	9.236	9.236	(1.013)	914989	96.0017	96.0	
	90	o-Xylene	106	9.517	9.517	(1.044)	401366	46.0108	46.0	
M	121	TOTAL XYLENE	106				1316355	142.012	142	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
91 Styrene	104	9.547	9.547	(1.047)	735517	48.2762	48.3	
92 Bromoform ++	173	9.573	9.573	(1.050)	235424	49.9820	50.0	
93 Isopropylbenzene	105	9.708	9.708	(1.065)	1087065	46.3826	46.4	
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.086)	340346	49.4261	49.4	
96 Bromobenzene	77	9.963	9.963	(0.943)	524059	45.0646	45.1	
97 n-Propylbenzene	91	9.963	9.963	(0.943)	1302693	49.0313	49.0	
98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	350896	50.8973	50.9	
99 2-Chlorotoluene	91	10.072	10.072	(0.953)	907543	48.8408	48.8	
102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	968910	49.0339	49.0	
100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	423157	50.0991	50.1	
101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	81487	49.2613	49.3	
104 4-Chlorotoluene	91	10.173	10.173	(0.963)	833133	49.3763	49.4	
105 tert-butylbenzene	91	10.274	10.274	(0.972)	484996	51.5227	51.5	
107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	944288	49.9840	50.0	
108 sec-Butylbenzene	105	10.383	10.383	(0.983)	1209496	47.0915	47.1	
110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	1037675	47.6498	47.6	
113 1,3-Dichlorobenzene	146	10.525	10.525	(0.996)	643096	48.6579	48.7	
* 114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	453716	50.0000		
115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	655212	46.9027	46.9	
117 n-Butylbenzene	91	10.709	10.709	(1.013)	800008	45.4598	45.5	
118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	612888	48.9824	49.0	
119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	88146	50.4587	50.5	
120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	206386	51.8415	51.8	
122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	404761	50.5803	50.6	
124 Naphthalene	128	12.145	12.145	(1.149)	913776	49.7326	49.7	
125 1,2,3-Trichlorobenzene	180	12.314	12.314	(1.165)	433137	53.3923	53.4	

QC Flag Legend

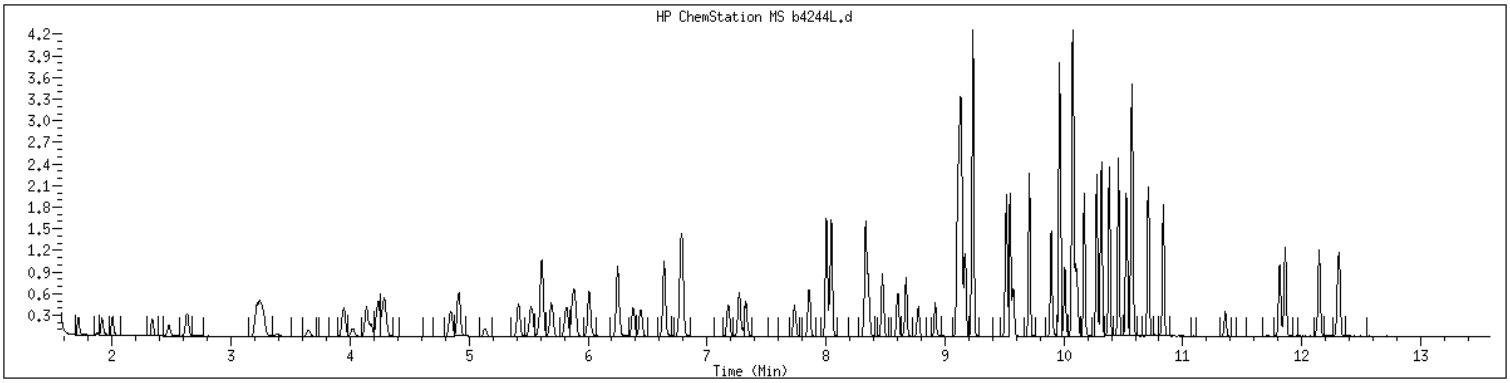
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160126.s.b/b4244L.d
Date : 26-JAN-2016 11:06
Client ID: LCS
Sample Info: 1532965wLCS
Purge Volume: 5.0
Column phase: RTX-VMS-30M
Instrument: msv13.i
Operator: MMM
Column diameter: 0.25
Page 1
Y (x10^6)
Min
-Dibromofluoromethane+
-1,2-Dichloroethane-d4
-FLUOROBENZENE
-Toluene-d8+
-CHLOROBENZENE-d5+
-Bromofluorobenzene
1,4-DICHLOROBENZENE-D4+
/var/chem/msv13.i/2160126.s.b/b4244L.d

Report Date: 01/26/2016 11:33

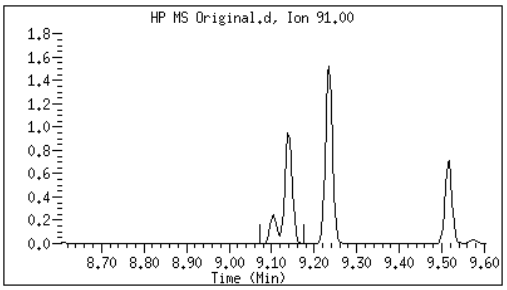
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1532965 SampleType : LCS
Injection Date: 01/26/2016 11:06 Instrument : msv13.i
Operator : MMM
Sample Info : 1532965*LCS
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



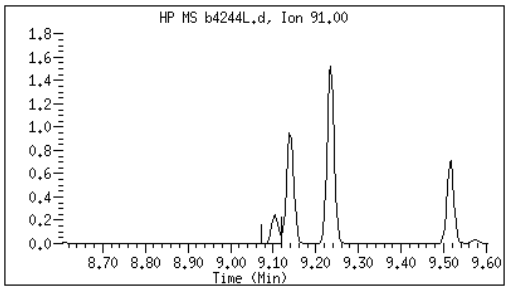
Original Final

86 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: mmm
Date: 01/26/2016 11:30



M2 - Target system integrated incorrectly

Revision 1

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	LCSD1532966
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532966
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4245
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1129	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	52.5		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	51.7		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	50.4		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	51.4		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	51.4		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	57.0		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	54.5		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	50.1		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	50.9		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	51.7		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	53.7		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	53.0		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	52.0		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	49.5		0.200	0.500	1.00
78-93-3	2-Butanone	59.0		0.200	0.500	5.00
591-78-6	2-Hexanone	47.9		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	53.7		0.200	0.500	5.00
67-64-1	Acetone	49.8		0.500	1.00	5.00
71-43-2	Benzene	52.9		0.200	0.500	1.00
74-97-5	Bromochloromethane	48.3		0.200	0.500	1.00
75-27-4	Bromodichloromethane	53.5		0.200	0.500	1.00
75-25-2	Bromoform	51.2		0.250	0.500	1.00
74-83-9	Bromomethane	43.4		0.500	1.00	1.00
75-15-0	Carbon disulfide	49.4		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	53.2		0.250	0.500	1.00
108-90-7	Chlorobenzene	50.6		0.200	0.500	1.00
75-00-3	Chloroethane	55.5		0.250	0.500	1.00
67-66-3	Chloroform	52.5		0.200	0.500	1.00
74-87-3	Chloromethane	43.8		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	51.8		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	44.4		0.200	0.500	1.00
110-82-7	Cyclohexane	48.4		0.500	1.00	2.00
124-48-1	Dibromochloromethane	51.0		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	39.7		0.200	0.500	1.00
100-41-4	Ethylbenzene	54.8		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	50.6		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	216012515			Client Sample ID:	LCSD1532966
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1532966
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2160126/b4245
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16	Time:	1129	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	47.9		1.00	2.00	5.00
108-87-2	Methylcyclohexane	53.9		0.200	0.500	1.00
75-09-2	Methylene chloride	48.8		0.200	0.500	5.00
100-42-5	Styrene	51.2		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	54.3		0.200	0.500	1.00
127-18-4	Tetrachloroethene	51.1		0.200	0.500	1.00
108-88-3	Toluene	50.2		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	50.3		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	48.5		0.200	0.500	1.00
79-01-6	Trichloroethene	52.3		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	50.5		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	53.1		0.200	0.500	1.00
75-01-4	Vinyl chloride	43.3		0.200	0.500	1.00
1330-20-7	Xylene (total)	152		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4245.d
Lab Smp Id: 1532966 Client Smp ID: LCSD
Inj Date : 26-JAN-2016 11:29
Operator : MMM Inst ID: msv13.i
Smp Info : 1532966*LCSD
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	173066	39.7107	39.7	
2 Chloromethane ++	50	1.911	1.911	(0.288)	250521	43.7877	43.8	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	220319	43.3345	43.3	
6 Bromomethane	94	2.335	2.335	(0.352)	126166	43.4368	43.4	
7 Chloroethane	64	2.477	2.477	(0.373)	146560	55.4775	55.5	
8 Trichlorofluoromethane	101	2.631	2.627	(0.396)	279900	50.4579	50.5	
10 1,1-Dichloroethene +	96	3.212	3.216	(0.484)	172008	51.4385	51.4	
11 Carbon Disulfide	76	3.238	3.242	(0.488)	561631	49.3845	49.4	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	186603	53.0504	53.1	
13 Methyl Iodide	142	3.385	3.384	(0.510)	60060	65.4603	65.5	
14 Acrolein	56	3.647	3.647	(0.549)	91760	236.613	237	
16 Methylene Chloride	49	3.947	3.947	(0.595)	285450	48.8469	48.8	
17 Acetone	43	4.022	4.022	(0.606)	171158	49.7681	49.8	
18 trans-1,2-Dichloroethene	61	4.134	4.138	(0.623)	290325	50.2521	50.3	

		QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.176	4.175	(0.629)	233902	47.8791	47.9	9692
	20 Hexane	57	4.236	4.235	(0.638)	300795	46.3519	46.4	8786
	21 MTBE	73	4.284	4.284	(0.645)	654759	54.3213	54.3	9391
	26 1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	421187	51.3988	51.4	
	27 Acrylonitrile	53	4.910	4.914	(0.740)	560721	308.847	309	
	28 Vinyl Acetate	43	5.135	5.135	(0.774)	196942	52.7991	52.8	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	294988	51.8050	51.8	
M	75 Total 1,2-Dichloroethene	61				585313	102.057	102	
	30 2,2-Dichloropropane	77	5.521	5.525	(0.832)	337399	54.6469	54.6	
	32 Cyclohexane	56	5.608	5.607	(0.845)	386540	48.3658	48.4	7953
	34 Bromochloromethane	128	5.615	5.615	(0.846)	127966	48.2726	48.3	
	35 Chloroform +	83	5.694	5.693	(0.858)	413284	52.4691	52.5	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	315958	53.2290	53.2	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	245452	50.3866	50.4	7640
	41 1,1,1-Trichloroethane	97	5.889	5.892	(0.887)	349448	52.4508	52.5	
	44 2-Butanone	43	6.005	6.005	(0.905)	199540	59.0293	59.0	
	43 1,1-Dichloropropene	75	6.012	6.008	(0.906)	275841	53.5179	53.5	
	46 Benzene	78	6.249	6.248	(0.941)	947144	52.8801	52.9	
$	50 1,2-Dichloroethane-d4	67	6.380	6.379	(0.961)	150788	53.1688	53.2	
	51 1,2-Dichloroethane	62	6.443	6.443	(0.971)	330417	53.6987	53.7	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	950086	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	391517	53.9414	53.9	8619
	56 Trichloroethene	130	6.792	6.792	(1.023)	276552	52.2781	52.3	
	57 Dibromomethane	93	7.178	7.178	(1.081)	154247	52.7488	52.7	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	244499	53.0369	53.0	
	60 Bromodichloromethane	83	7.328	7.328	(1.104)	333328	53.5222	53.5	
	65 1-Bromo-2-chloroethane	63	7.737	7.736	(1.165)	339692	50.6141	50.6	9810
	67 cis-1,3-Dichloropropene	75	7.857	7.856	(1.184)	321025	44.3548	44.4	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	881535	48.5275	48.5	
	69 Toluene +	91	8.044	8.044	(0.882)	1012458	50.2028	50.2	
	71 Tetrachloroethene	164	8.333	8.332	(0.914)	231266	51.1140	51.1	
	73 4-methyl-2-pentanone	43	8.329	8.332	(0.914)	275441	53.7027	53.7	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	343306	48.4854	48.5	
M	82 1-3 Dichloropropene total	100				664331	92.8402	92.8	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	231142	50.4318	50.4	
	78 Dibromochloromethane	129	8.603	8.606	(0.944)	269063	50.9840	51.0	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	371889	51.0167	51.0	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	223471	50.9314	50.9	
	83 2-Hexanone	43	8.918	8.917	(0.978)	222631	47.9121	47.9	
	86 1-Chlorohexane	91	9.101	9.105	(0.998)	293925	50.7113	50.7	9722
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	399187	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.002)	757910	50.6353	50.6	
	87 Ethylbenzene +	106	9.139	9.138	(1.002)	385862	54.7941	54.8	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.168	(1.006)	258546	51.0245	51.0	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	954648	102.973	103	
	90 o-Xylene	106	9.517	9.517	(1.044)	419096	49.3071	49.3	
M	121 TOTAL XYLENE	106				1373744	152.280	152	

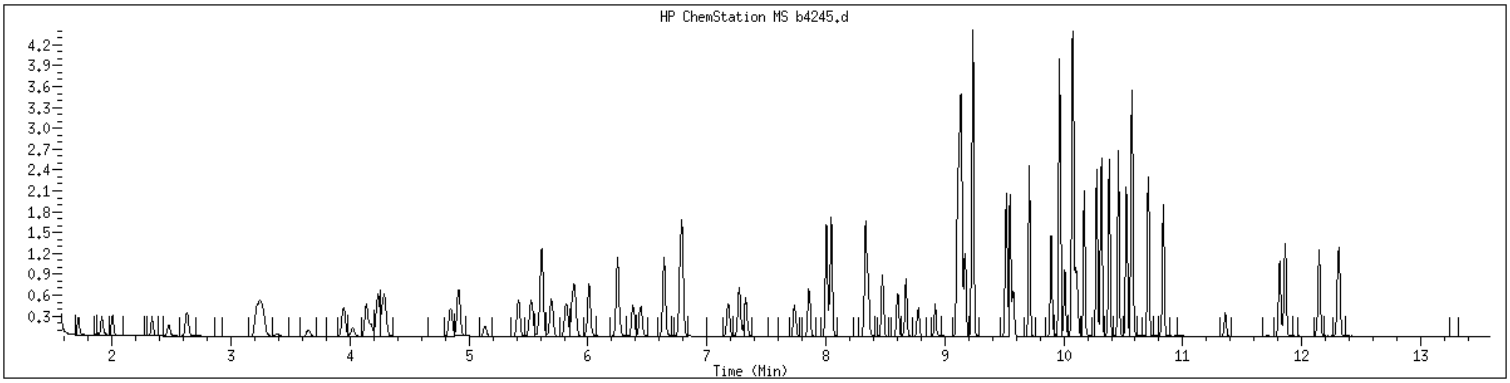
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	759079	51.1503	51.2	
	92 Bromoform ++	173	9.574	9.573	(1.050)	234302	51.2024	51.2	
	93 Isopropylbenzene	105	9.709	9.708	(1.065)	1155510	50.5627	50.6	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	334325	49.9754	50.0	
	96 Bromobenzene	77	9.963	9.963	(0.943)	531025	46.2939	46.3	
	97 n-Propylbenzene	91	9.963	9.963	(0.943)	1370718	52.3037	52.3	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	351440	51.7184	51.7	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	946052	51.6159	51.6	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.953)	1024068	52.4160	52.4	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	422842	50.7527	50.8	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	80674	49.4429	49.4	
	104 4-Chlorotoluene	91	10.173	10.173	(0.962)	872780	52.4399	52.4	
	105 tert-butylbenzene	91	10.275	10.274	(0.972)	518751	55.8693	55.9	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	992803	53.0748	53.1	
	108 sec-Butylbenzene	105	10.380	10.383	(0.982)	1285924	50.6550	50.7	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.989)	1115950	51.7058	51.7	
	113 1,3-Dichlorobenzene	146	10.526	10.525	(0.996)	677456	51.9651	52.0	
*	114 1,4-DICHLOROBENZENE-D4	152	10.571	10.567	(1.000)	447539	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	681753	49.4762	49.5	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	872168	49.9178	49.9	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.025)	637803	51.6772	51.7	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.074)	86368	50.1233	50.1	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	227835	58.2264	58.2	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	430211	54.5026	54.5	
	124 Naphthalene	128	12.145	12.145	(1.149)	941831	51.8689	51.9	
	125 1,2,3-Trichlorobenzene	180	12.310	12.314	(1.165)	456100	56.9989	57.0	

Data File: /var/chem/msv13.i/2160126.s.b/b4245.d
Date : 26-JAN-2016 11:29
Client ID: LCSD
Sample Info: 1532966*LCSD
Purge Volume: 5.0
Column phase: RTX-VMS-30M
Instrument: msv13.i
Operator: MMM
Column diameter: 0.25
Page 1
Y (x10^6)
Min
/var/chem/msv13.i/2160126.s.b/b4245.d
-Dibromofluoromethane+
-1,2-Dichloroethane-d4
-FLUOROBENZENE
-Toluene-d8+
-CHLOROBENZENE-d5+
-Bromofluorobenzene
1,4-DICHLOROBENZENE-D4+

Data file : /var/chem/msv13.i/2160126.s.b/b4245.d Page: 1
Report Date: 01/26/2016 13:13

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1532966 SampleType : LCSD
Injection Date: 01/26/2016 11:29 Instrument : msv13.i
Operator : MMM
Sample Info : 1532966*LCSD
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 216012515 Analytical Method: EPA 8260B

	Client Sample ID	GCALSample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1 .	OMS-28-2	21601251501	98		110		106		108		0
2 .	OMS-28-7-MSD	21601251510	100		102		98		101		0
3 .	OMS-28-3	21601251511	99		107		107		105		0
4 .	MW-12	21601251512	98		111		106		110		0
5 .	OMS-28-1	21601251513	99		109		106		107		0
6 .	OMS-28-3-a	21601251514	99		111		107		109		0
7 .	MB1532964	1532964	99		108		106		106		0
8 .	LCS1532965	1532965	99		102		96		105		0
9 .	LCSD1532966	1532966	100		101		97		106		0
10 .	OMS-28-2-c	21601251502	97		109		106		107		0
11 .	MW-9	21601251503	99		108		106		105		0
12 .	OMS-28-5	21601251504	96		108		105		105		0
13 .	OMS-28-4	21601251505	97		109		105		108		0
14 .	MW-5	21601251506	98		111		104		118		0
15 .	MW-6	21601251507	99		110		107		108		0
16 .	OMS-28-7	21601251508	99		109		106		109		0
17 .	OMS-28-7-MS	21601251509	99		101		97		103		0

		QC LIMITS	
SMC 1	4-Bromofluorobenzene	85 - 114	# Column to be used to flag recovery values
SMC 2	Dibromofluoromethane	80 - 119	* Values outside of QC limits
SMC 3	Toluene-d8	89 - 112	
SMC 4	1,2-Dichloroethane-d4	81 - 118	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 216012515 Parent Sample ID: OMS-28-7

Analytical Method: EPA 8260B Analytical Batch: 577716

GCAL QC ID: 21601251509

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*MS RESULT*	*MS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	49.7	99		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	52.7	105		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	48.6	97		80 - 119
1,1-Dichloroethane	ug/L	50	0	47	94		77 - 125
1,1-Dichloroethene	ug/L	50	0	53.4	107		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	52.2	104		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	49.3	99		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	49.6	99		62 - 128
1,2-Dibromoethane	ug/L	50	0	48.8	98		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	50	100		80 - 119
1,2-Dichloroethane	ug/L	50	0	49.4	99		73 - 128
1,2-Dichloropropane	ug/L	50	0	49.9	100		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	49.5	99		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	47.4	95		79 - 118
2-Butanone	ug/L	50	0	39.3	79		56 - 143
2-Hexanone	ug/L	50	0	37.7	75		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	51.3	103		67 - 130
Acetone	ug/L	50	0	22.5	45		39 - 160
Benzene	ug/L	50	0	50.3	101		79 - 120
Bromochloromethane	ug/L	50	0	50.2	100		78 - 123
Bromodichloromethane	ug/L	50	0	51.4	103		79 - 125
Bromoform	ug/L	50	0	50.2	100		66 - 130
Bromomethane	ug/L	50	0	43.5	87		53 - 141
Carbon disulfide	ug/L	50	0	54.1	108		64 - 133
Carbon tetrachloride	ug/L	50	0	51.2	102		72 - 136
Chlorobenzene	ug/L	50	0	49.6	99		82 - 118
Chloroethane	ug/L	50	0	57.1	114		60 - 138
Chloroform	ug/L	50	0	49.9	100		79 - 124
Chloromethane	ug/L	50	0	41	82		50 - 139
Cyclohexane	ug/L	50	0	45.1	90		71 - 130
Dibromochloromethane	ug/L	50	0	49.1	98		74 - 126
Dichlorodifluoromethane	ug/L	50	0	40.4	81		32 - 152
Ethylbenzene	ug/L	50	0	52.5	105		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	47.9	96		72 - 131
Methyl Acetate	ug/L	50	0	43	86		56 - 136
Methylcyclohexane	ug/L	50	0	51.6	103		72 - 132
Methylene chloride	ug/L	50	.771	46.6	92		74 - 124
Styrene	ug/L	50	0	49.2	98		78 - 123
Tetrachloroethene	ug/L	50	0	49.2	98		74 - 129

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 216012515 Parent Sample ID: OMS-28-7

Analytical Method: EPA 8260B Analytical Batch: 577716

Toluene	ug/L	50	0	49	98		80 - 121
Trichloroethene	ug/L	50	0	52.7	105		79 - 123
Trichlorofluoromethane	ug/L	50	0	52.4	105		65 - 141
Trichlorotrifluoroethane	ug/L	50	0	56.3	113		70 - 136
Vinyl chloride	ug/L	50	0	39.4	79		58 - 137
Xylene (total)	ug/L	150	0	147	98		79 - 121
cis-1,2-Dichloroethene	ug/L	50	0	47.6	95		78 - 123
cis-1,3-Dichloropropene	ug/L	50	0	45.6	91		75 - 124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	51.6	103		71 - 124
trans-1,2-Dichloroethene	ug/L	50	0	46.7	93		75 - 124
trans-1,3-Dichloropropene	ug/L	50	0	50.4	101		73 - 127

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Revision 1

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 216012515 Parent Sample ID: OMS-28-7

Analytical Method: EPA 8260B Analytical Batch: 577716

GCAL QC ID: 21601251510

ANALYTE	*UNITS*	*SPIKE ADDED*	*MSD RESULT*	*MSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/L	50	48.7	97		2		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	51.3	103		3		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	49.5	99		2		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	46.5	93		1		77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	52.4	105		2		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	52.2	104		0		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	50.2	100		2		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	50.4	101		2		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	49.6	99		2		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	49.5	99		1		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	48.7	97		1		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	50	100		.2		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	49.3	99		.4		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	47	94		.8		79 - 118	0 - 20
2-Butanone	ug/L	50	39.6	79		.8		56 - 143	0 - 20
2-Hexanone	ug/L	50	38.3	77		2		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	51.7	103		.8		67 - 130	0 - 20
Acetone	ug/L	50	25.2	50		11		39 - 160	0 - 20
Benzene	ug/L	50	49.8	100		1		79 - 120	0 - 20
Bromochloromethane	ug/L	50	49.4	99		2		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	50.5	101		2		79 - 125	0 - 20
Bromoform	ug/L	50	50.2	100		0		66 - 130	0 - 20
Bromomethane	ug/L	50	44.1	88		1		53 - 141	0 - 20
Carbon disulfide	ug/L	50	52.5	105		3		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	49.3	99		4		72 - 136	0 - 20
Chlorobenzene	ug/L	50	48.6	97		2		82 - 118	0 - 20
Chloroethane	ug/L	50	57.9	116		1		60 - 138	0 - 20
Chloroform	ug/L	50	48.2	96		3		79 - 124	0 - 20
Chloromethane	ug/L	50	41.7	83		2		50 - 139	0 - 20
Cyclohexane	ug/L	50	43.4	87		4		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	49.5	99		.8		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	39.2	78		3		32 - 152	0 - 20
Ethylbenzene	ug/L	50	51.2	102		3		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	47.6	95		.6		72 - 131	0 - 20
Methyl Acetate	ug/L	50	43.1	86		.2		56 - 136	0 - 20
Methylcyclohexane	ug/L	50	50.6	101		2		72 - 132	0 - 20
Methylene chloride	ug/L	50	49.5	97		6		74 - 124	0 - 20
Styrene	ug/L	50	48.7	97		1		78 - 123	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Revision 1

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 216012515 Parent Sample ID: OMS-28-7

Analytical Method: EPA 8260B Analytical Batch: 577716

Tetrachloroethene	ug/L	50	47.9	96		3		74 - 129	0 - 20
Toluene	ug/L	50	48.1	96		2		80 - 121	0 - 20
Trichloroethene	ug/L	50	50.8	102		4		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	52.2	104		.4		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	54.1	108		4		70 - 136	0 - 20
Vinyl chloride	ug/L	50	39.5	79		.3		58 - 137	0 - 20
Xylene (total)	ug/L	150	145	97		1		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	47.1	94		1		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	44.8	90		2		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	52	104		.8		71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	48.3	97		3		75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	49.6	99		2		73 - 127	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 216012515

Analytical Method: EPA 8260B Analytical Batch: 577716

GCAL QC ID: 1532965

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	48.4	97		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	50.9	102		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	48.7	97		80 - 119
1,1-Dichloroethane	ug/L	50	0	46.5	93		77 - 125
1,1-Dichloroethene	ug/L	50	0	52.9	106		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	53.4	107		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	50.6	101		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	50.5	101		62 - 128
1,2-Dibromoethane	ug/L	50	0	48.5	97		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	49	98		80 - 119
1,2-Dichloroethane	ug/L	50	0	48.7	97		73 - 128
1,2-Dichloropropane	ug/L	50	0	49.6	99		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	48.7	97		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	46.9	94		79 - 118
2-Butanone	ug/L	50	0	53.4	107		56 - 143
2-Hexanone	ug/L	50	0	47.1	94		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	52.7	105		67 - 130
Acetone	ug/L	50	0	47.2	94		39 - 160
Benzene	ug/L	50	0	50	100		79 - 120
Bromochloromethane	ug/L	50	0	49	98		78 - 123
Bromodichloromethane	ug/L	50	0	50.1	100		79 - 125
Bromoform	ug/L	50	0	50	100		66 - 130
Bromomethane	ug/L	50	0	43.9	88		53 - 141
Carbon disulfide	ug/L	50	0	50.8	102		64 - 133
Carbon tetrachloride	ug/L	50	0	49.2	98		72 - 136
Chlorobenzene	ug/L	50	0	47.8	96		82 - 118
Chloroethane	ug/L	50	0	55.2	110		60 - 138
Chloroform	ug/L	50	0	49.2	98		79 - 124
Chloromethane	ug/L	50	0	42.3	85		50 - 139
Cyclohexane	ug/L	50	0	43.2	86		71 - 130
Dibromochloromethane	ug/L	50	0	48.6	97		74 - 126
Dichlorodifluoromethane	ug/L	50	0	40.7	81		32 - 152
Ethylbenzene	ug/L	50	0	50.7	101		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	46.4	93		72 - 131
Methyl Acetate	ug/L	50	0	44.8	90		56 - 136
Methylcyclohexane	ug/L	50	0	49	98		72 - 132
Methylene chloride	ug/L	50	0	49.3	99		74 - 124
Styrene	ug/L	50	0	48.3	97		78 - 123
Tetrachloroethene	ug/L	50	0	47	94		74 - 129

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 216012515

Analytical Method: EPA 8260B Analytical Batch: 577716

Toluene	ug/L	50	0	47.1	94		80 - 121
Trichloroethene	ug/L	50	0	50.6	101		79 - 123
Trichlorofluoromethane	ug/L	50	0	50.7	101		65 - 141
Trichlorotrifluoroethane	ug/L	50	0	51.7	103		70 - 136
Vinyl chloride	ug/L	50	0	41.9	84		58 - 137
Xylene (total)	ug/L	150	0	142	95		79 - 121
cis-1,2-Dichloroethene	ug/L	50	0	47	94		78 - 123
cis-1,3-Dichloropropene	ug/L	50	0	45	90		75 - 124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	52.2	104		71 - 124
trans-1,2-Dichloroethene	ug/L	50	0	46.4	93		75 - 124
trans-1,3-Dichloropropene	ug/L	50	0	50.1	100		73 - 127

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Revision 1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 216012515

Analytical Method: EPA 8260B

Analytical Batch: 577716

GCAL QC ID: 1532966

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/L	50	52.5	105		8		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	51.7	103		2		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	50.4	101		3		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	51.4	103		10		77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	51.4	103		3		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	57	114		7		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	54.5	109		7		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	50.1	100		.8		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	50.9	102		5		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	51.7	103		5		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	53.7	107		10		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	53	106		7		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	52	104		7		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	49.5	99		5		79 - 118	0 - 20
2-Butanone	ug/L	50	59	118		10		56 - 143	0 - 20
2-Hexanone	ug/L	50	47.9	96		2		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	53.7	107		2		67 - 130	0 - 20
Acetone	ug/L	50	49.8	100		5		39 - 160	0 - 20
Benzene	ug/L	50	52.9	106		6		79 - 120	0 - 20
Bromochloromethane	ug/L	50	48.3	97		1		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	53.5	107		7		79 - 125	0 - 20
Bromoform	ug/L	50	51.2	102		2		66 - 130	0 - 20
Bromomethane	ug/L	50	43.4	87		1		53 - 141	0 - 20
Carbon disulfide	ug/L	50	49.4	99		3		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	53.2	106		8		72 - 136	0 - 20
Chlorobenzene	ug/L	50	50.6	101		6		82 - 118	0 - 20
Chloroethane	ug/L	50	55.5	111		.5		60 - 138	0 - 20
Chloroform	ug/L	50	52.5	105		6		79 - 124	0 - 20
Chloromethane	ug/L	50	43.8	88		3		50 - 139	0 - 20
Cyclohexane	ug/L	50	48.4	97		11		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	51	102		5		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	39.7	79		2		32 - 152	0 - 20
Ethylbenzene	ug/L	50	54.8	110		8		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	50.6	101		9		72 - 131	0 - 20
Methyl Acetate	ug/L	50	47.9	96		7		56 - 136	0 - 20
Methylcyclohexane	ug/L	50	53.9	108		10		72 - 132	0 - 20
Methylene chloride	ug/L	50	48.8	98		1		74 - 124	0 - 20
Styrene	ug/L	50	51.2	102		6		78 - 123	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Revision 1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 216012515

Analytical Method: EPA 8260B

Analytical Batch: 577716

Tetrachloroethene	ug/L	50	51.1	102		8		74 - 129	0 - 20
Toluene	ug/L	50	50.2	100		6		80 - 121	0 - 20
Trichloroethene	ug/L	50	52.3	105		3		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	50.5	101		.4		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	53.1	106		3		70 - 136	0 - 20
Vinyl chloride	ug/L	50	43.3	87		3		58 - 137	0 - 20
Xylene (total)	ug/L	150	152	101		7		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	51.8	104		10		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	44.4	89		1		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	54.3	109		4		71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	50.3	101		8		75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	48.5	97		3		73 - 127	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	216012515	Method Blank ID:	1532964
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2160126/b4248
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: MMM	Analytical Batch:	577716
Analysis Date:	01/26/16 Time: 1253	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1 .	LCS1532965	1532965	2160126/b4244L	01/26/16	1106
2 .	LCSD1532966	1532966	2160126/b4245	01/26/16	1129
3 .	OMS-28-7	21601251508	2160126/b4249	01/26/16	1314
4 .	OMS-28-2	21601251501	2160126/b4250	01/26/16	1336
5 .	OMS-28-2-c	21601251502	2160126/b4251	01/26/16	1357
6 .	OMS-28-7-MS	21601251509	2160126/b4252ms	01/26/16	1419
7 .	OMS-28-7-MSD	21601251510	2160126/b4253msd	01/26/16	1440
8 .	MW-9	21601251503	2160126/b4256	01/26/16	1544
9 .	OMS-28-5	21601251504	2160126/b4257	01/26/16	1608
10 .	OMS-28-4	21601251505	2160126/b4258	01/26/16	1629
11 .	MW-5	21601251506	2160126/b4259	01/26/16	1650
12 .	MW-6	21601251507	2160126/b4260	01/26/16	1711
13 .	OMS-28-3	21601251511	2160126/b4261	01/26/16	1732
14 .	MW-12	21601251512	2160126/b4262	01/26/16	1753
15 .	OMS-28-1	21601251513	2160126/b4263	01/26/16	1814
16 .	OMS-28-3-a	21601251514	2160126/b4264	01/26/16	1835

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	216012515	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160118p/b3941D
Analyst:	JCK	Analytical Batch:	577166
Analysis Date:	01/18/16 Time: 1403	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	16.89	(	)	
75	30.0 - 60.0% of mass 95	45.41	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.21	(	)	
173	Less than 2.0% of mass 174	1.2	(1.22	)	1
174	50.0 - 120.0% of mass 95	99.12	(	)	
175	5.0 - 9.0% of mass 174	7.17	(7.24	)	1
176	95.0 - 101.0% of mass 174	98.42	(99.3	)	1
177	5.0 - 9.0% of mass 176	6.18	(6.28	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2160118p/b3942D	01/18/16	1507
2 .	V13STD005	1204	2160118p/b3943D	01/18/16	1528
3 .	V13STD010	1205	2160118p/b3944D	01/18/16	1549
4 .	V13STD020	1206	2160118p/b3945D	01/18/16	1609
5 .	V13STD050	1207	2160118p/b3946D	01/18/16	1630
6 .	V13STD100	1208	2160118p/b3947D	01/18/16	1659
7 .	V13STD200	1209	2160118p/b3948D	01/18/16	1720
8 .	ICV050	1600	2160118p/b3951D	01/18/16	1822

FORM V VOA

Data File: /var/chem/msv13.i/2160118p.s.b/b3941D.d

Date : 18-JAN-2016 14:03

Client ID: V13BFB

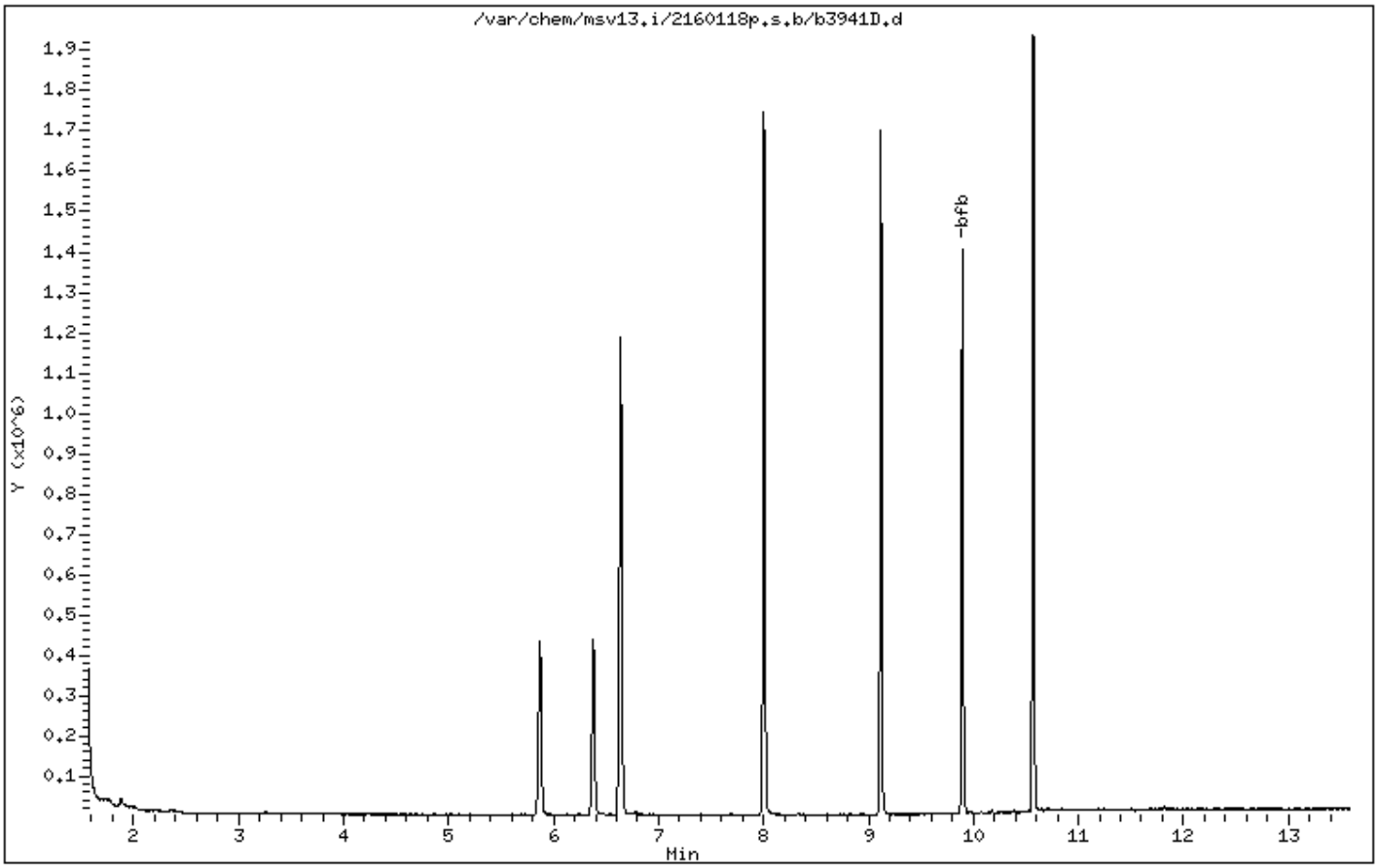
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2160118p.s.b/b3941D.d

Date : 18-JAN-2016 14:03

Client ID: V13BFB

Instrument: msv13.i

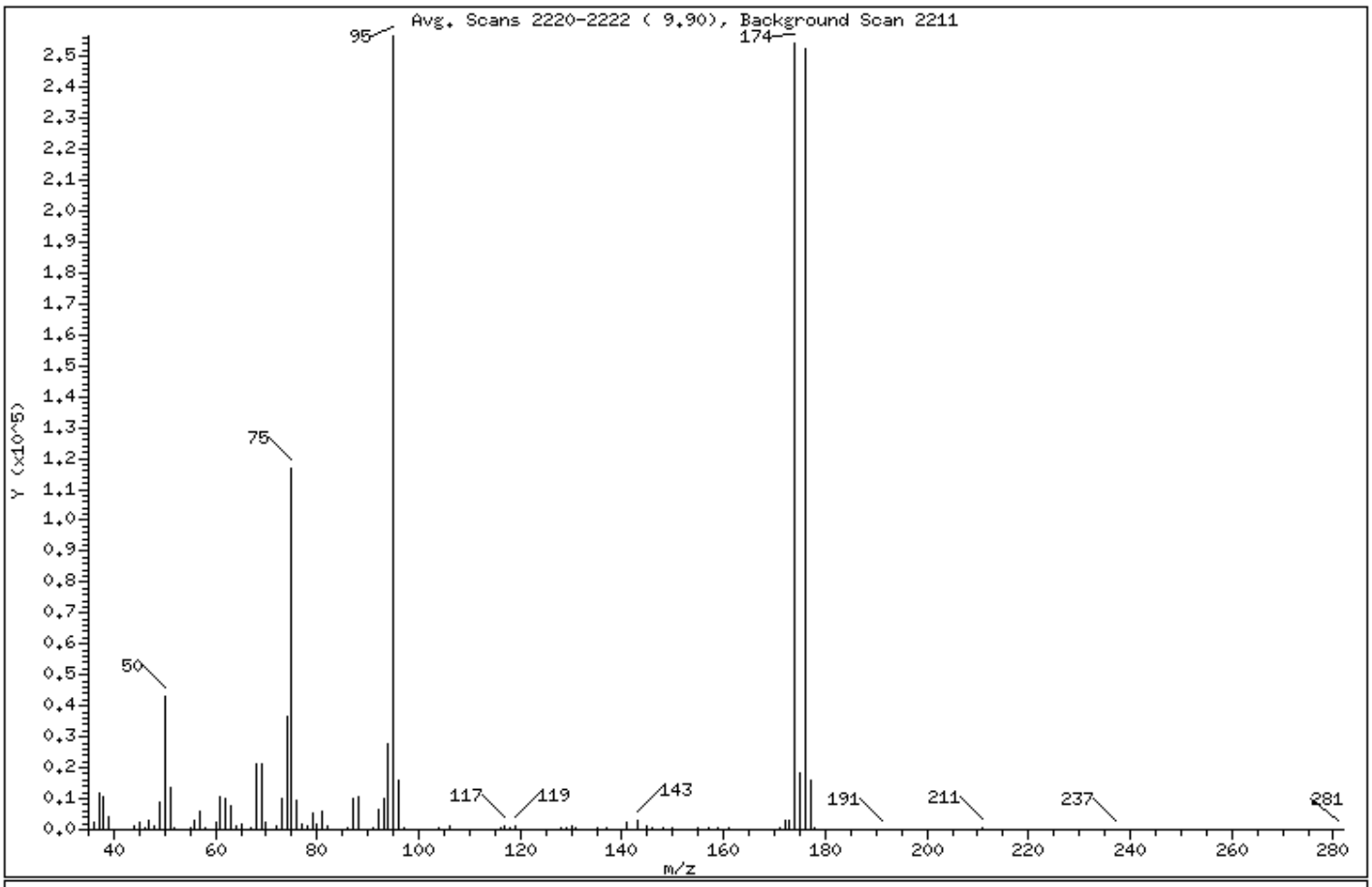
Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.89
75	30.00 - 60.00% of mass 95	45.41
96	5.00 - 9.00% of mass 95	6.21
173	Less than 2.00% of mass 174	1.21 (1.22)
174	50.00 - 120.00% of mass 95	99.12
175	5.00 - 9.00% of mass 174	7.18 (7.24)
176	95.00 - 101.00% of mass 174	98.43 (99.30)
177	5.00 - 9.00% of mass 176	6.18 (6.28)

Date : 18-JAN-2016 14:03

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b3941D.d
Spectrum: Avg. Scans 2220-2222 (9.90), Background Scan 2211
Location of Maximum: 95.00
Number of points: 111

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	2457	68.00	21352	106.00	893	149.00	237
37.00	11586	69.00	21464	107.00	65	150.00	343
38.00	10610	70.00	2133	108.00	158	152.00	104
39.00	4226	72.00	1273	111.00	182	153.00	196
41.00	122	73.00	9745	112.00	122	154.00	174
44.00	1125	74.00	36704	113.00	52	155.00	775
45.00	2178	75.00	116504	115.00	218	156.00	140
46.00	331	76.00	9481	116.00	728	157.00	622
47.00	3172	77.00	1859	117.00	1459	159.00	471
48.00	1349	78.00	979	118.00	666	161.00	319
49.00	8947	79.00	5585	119.00	1221	171.00	659
50.00	43344	80.00	1953	124.00	56	172.00	3064
51.00	13668	81.00	5696	125.00	122	173.00	3114
52.00	633	82.00	1114	128.00	802	174.00	254272
53.00	274	83.00	91	129.00	337	175.00	18408
54.00	148	86.00	458	130.00	942	176.00	252544
55.00	548	87.00	10287	131.00	471	177.00	15859
56.00	2879	88.00	10408	135.00	368	178.00	448
57.00	5914	91.00	849	137.00	444	191.00	121
58.00	300	92.00	6362	140.00	180	192.00	121
60.00	2134	93.00	10039	141.00	2359	208.00	202
61.00	10328	94.00	27640	142.00	227	209.00	58
62.00	10318	95.00	256576	143.00	3022	211.00	350
63.00	7958	96.00	15924	144.00	234	215.00	70
64.00	1431	97.00	536	145.00	1146	233.00	50
65.00	1583	103.00	55	146.00	450	237.00	58
66.00	265	104.00	683	147.00	191	281.00	226
67.00	785	105.00	288	148.00	582		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	216012515	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160126/b4242
Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16 Time: 1003	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	16.23	(	)	
75	30.0 - 60.0% of mass 95	42.55	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.46	(	)	
173	Less than 2.0% of mass 174	1.72	(1.73	)	1
174	50.0 - 120.0% of mass 95	99.9	(	)	
175	5.0 - 9.0% of mass 174	7.88	(7.89	)	1
176	95.0 - 101.0% of mass 174	95.65	(95.75	)	1
177	5.0 - 9.0% of mass 176	6.28	(6.57	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2160126/b4244	01/26/16	1106
2 .	LCS1532965	1532965	2160126/b4244L	01/26/16	1106
3 .	LCSD1532966	1532966	2160126/b4245	01/26/16	1129
4 .	MB1532964	1532964	2160126/b4248	01/26/16	1253
5 .	OMS-28-7	21601251508	2160126/b4249	01/26/16	1314
6 .	OMS-28-2	21601251501	2160126/b4250	01/26/16	1336
7 .	OMS-28-2-c	21601251502	2160126/b4251	01/26/16	1357
8 .	OMS-28-7-MS	21601251509	2160126/b4252ms	01/26/16	1419
9 .	OMS-28-7-MSD	21601251510	160126/b4253ms	01/26/16	1440
10 .	MW-9	21601251503	2160126/b4256	01/26/16	1544
11 .	OMS-28-5	21601251504	2160126/b4257	01/26/16	1608
12 .	OMS-28-4	21601251505	2160126/b4258	01/26/16	1629
13 .	MW-5	21601251506	2160126/b4259	01/26/16	1650
14 .	MW-6	21601251507	2160126/b4260	01/26/16	1711
15 .	OMS-28-3	21601251511	2160126/b4261	01/26/16	1732
16 .	MW-12	21601251512	2160126/b4262	01/26/16	1753
17 .	OMS-28-1	21601251513	2160126/b4263	01/26/16	1814
18 .	OMS-28-3-a	21601251514	2160126/b4264	01/26/16	1835

FORM V VOA

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	216012515	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160126/b4242
Analyst:	MMM	Analytical Batch:	577716
Analysis Date:	01/26/16 Time: 1003	Analytical Method:	EPA 8260B

19 .	V13STD050	1440	2160126/b4266	01/26/16	1917

FORM V VOA

Data File: /var/chem/msv13.i/2160126.s.b/b4242.d

Page 1

Date : 26-JAN-2016 10:03

Client ID: V13BFB

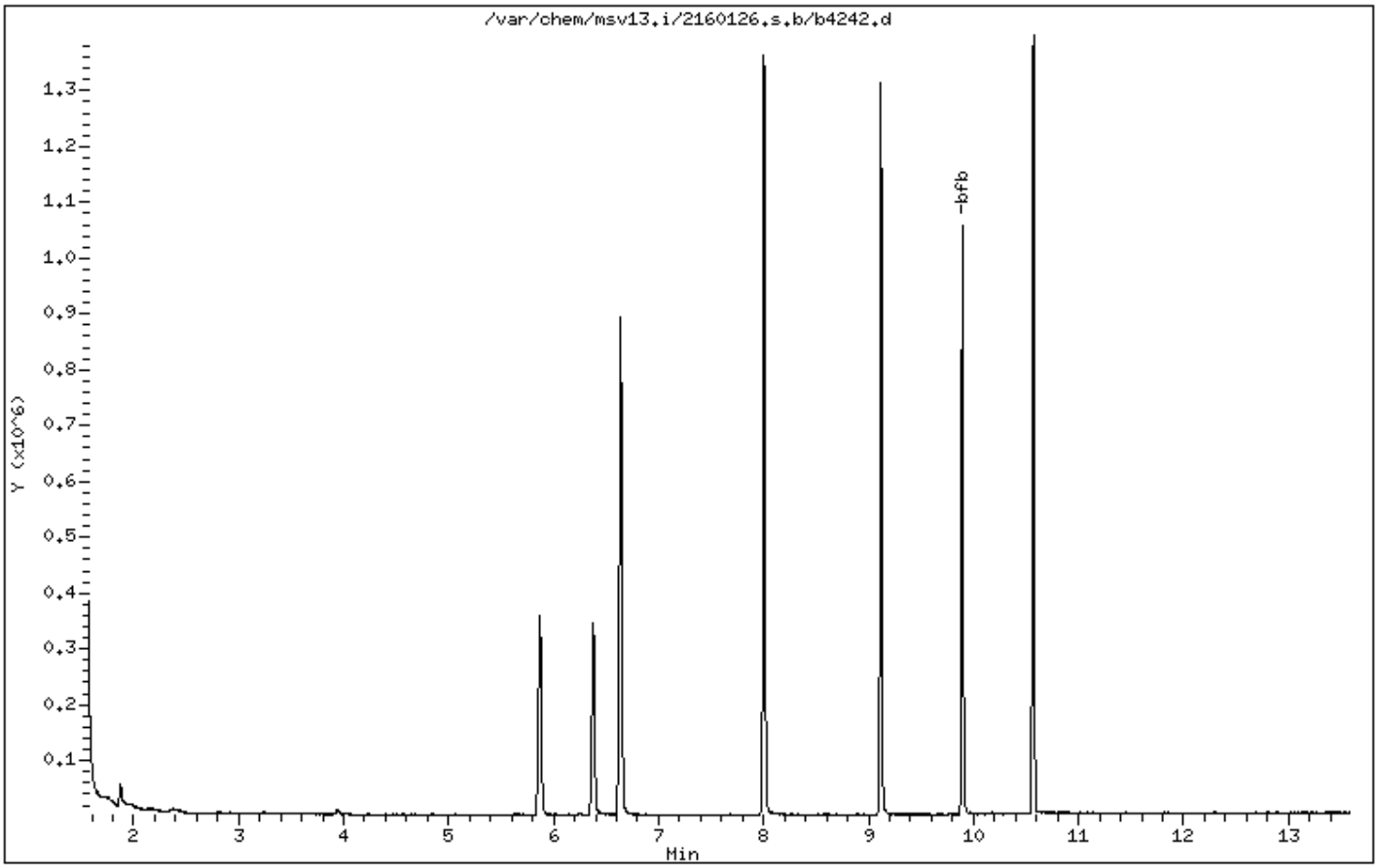
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2160126.s.b/b4242.d

Date : 26-JAN-2016 10:03

Client ID: V13BFB

Instrument: msv13.i

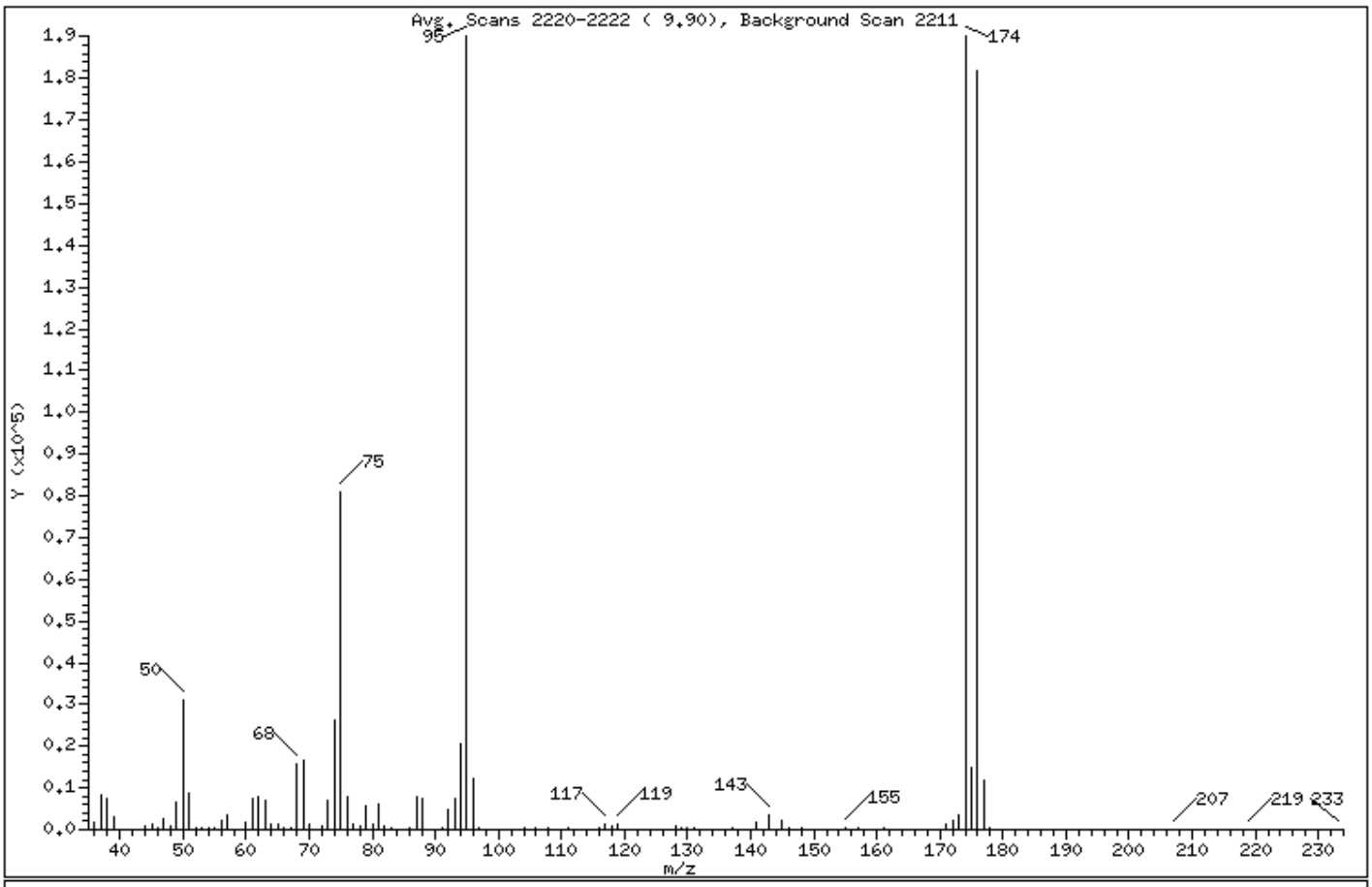
Sample Info: 1000*V13BFB

Operator: MMM

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.23
75	30.00 - 60.00% of mass 95	42.55
96	5.00 - 9.00% of mass 95	6.46
173	Less than 2.00% of mass 174	1.73 (1.73)
174	50.00 - 120.00% of mass 95	99.90
175	5.00 - 9.00% of mass 174	7.88 (7.89)
176	95.00 - 101.00% of mass 174	95.65 (95.75)
177	5.00 - 9.00% of mass 176	6.28 (6.57)

Date : 26-JAN-2016 10:03

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: MMM

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b4242.d
Spectrum: Avg. Scans 2220-2222 (9.90), Background Scan 2211
Location of Maximum: 95.00
Number of points: 107

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1546	66.00	334	97.00	591	144.00	169
37.00	8133	67.00	573	103.00	52	145.00	2065
38.00	7360	68.00	15725	104.00	623	146.00	338
39.00	3116	69.00	16816	105.00	157	147.00	136
41.00	54	70.00	1420	106.00	517	148.00	498
43.00	58	72.00	780	107.00	177	149.00	101
44.00	1035	73.00	7050	108.00	329	150.00	74
45.00	1376	74.00	26232	111.00	220	152.00	57
46.00	465	75.00	80944	112.00	127	153.00	143
47.00	2767	76.00	7789	113.00	131	155.00	627
48.00	1071	77.00	1103	115.00	133	156.00	84
49.00	6692	78.00	908	116.00	543	157.00	440
50.00	30880	79.00	5826	117.00	1433	159.00	192
51.00	8732	80.00	1437	118.00	786	161.00	416
52.00	535	81.00	6104	119.00	1238	171.00	1238
53.00	304	82.00	810	128.00	675	172.00	2063
54.00	487	83.00	318	129.00	253	173.00	3282
55.00	323	85.00	81	130.00	642	174.00	190016
56.00	2256	86.00	279	131.00	379	175.00	14993
57.00	3537	87.00	7849	134.00	93	176.00	181952
58.00	152	88.00	7249	135.00	177	177.00	11956
60.00	1728	91.00	525	136.00	66	178.00	295
61.00	7446	92.00	5023	137.00	266	207.00	164
62.00	7674	93.00	7374	140.00	155	211.00	56
63.00	6865	94.00	20648	141.00	1611	219.00	55
64.00	1308	95.00	190208	142.00	170	233.00	121
65.00	1434	96.00	12296	143.00	3566		

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2160118p/b3942D ~ 1	
Report No:	216012515			Instrument ID:	MSV13	1204 ~ 2160118p/b3943D ~ 5	1205 ~ 2160118p/b3944D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2160118p/b3945D ~ 20	1207 ~ 2160118p/b3946D ~ 50	
Calib. Date 1:	01/18/16	Time 1:	1507	Analytical Batch:	577166	1208 ~ 2160118p/b3947D ~ 100	1209 ~ 2160118p/b3948D ~ 200	
Calib. Date 2:	01/18/16	Time 2:	1720	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.784	0.608	0.596	0.612	0.627	0.627	0.588	0.635			10.65	A
1,1,1-Trichloroethane			0.385	0.337	0.333	0.343	0.360	0.360	0.336	0.351			5.407	A
1,1,2,2-Tetrachloroethane			8363	34436	73852	152550	422944	809073	1630478	0.724	-0.050		0.998	L
1,1,2-Trichloroethane			0.673	0.551	0.548	0.555	0.574	0.570	0.546	0.574			7.851	A
1,1-Dichloroethane			0.483	0.407	0.406	0.422	0.442	0.445	0.414	0.431			6.371	A
1,1-Dichloroethene			0.199	0.175	0.166	0.161	0.174	0.186	0.172	0.176			7.237	A
1,1-Dichloropropene			0.253	0.225	0.227	0.260	0.305	0.322	0.306	0.271			14.61	A
1,2,3-Trichlorobenzene			0.919	0.803	0.925	0.858	0.861	0.977	0.915	0.894			6.377	A
1,2,3-Trichloropropane			1.112	0.844	1.040	0.870	0.938	0.872	0.839	0.931			11.42	A
1,2,4-Trichlorobenzene			0.909	0.806	0.850	0.804	0.851	1.030	0.923	0.882			9.038	A
1,2,4-Trimethylbenzene			9650	51755	107169	300179	1043150	2338448	4901112	2.218	0.061		0.999	L
1,2-Dibromo-3-chloropropane			0.228	0.167	0.178	0.182	0.202	0.196	0.195	0.193			10.26	A
1,2-Dibromoethane			0.599	0.505	0.525	0.534	0.565	0.570	0.550	0.550			5.683	A
1,2-Dichlorobenzene			1.505	1.323	1.282	1.330	1.375	1.462	1.374	1.379			5.738	A
1,2-Dichloroethane			0.364	0.311	0.311	0.317	0.329	0.329	0.304	0.324			6.206	A
1,2-Dichloroethane-d4			0.153	0.154	0.151	0.150	0.147	0.145	0.144	0.149			2.655	A
1,2-Dichloroethene (total)			0.329	0.271	0.273	0.279	0.318	0.331	0.313	0.302			8.809	A
1,2-Dichloropropane			0.259	0.223	0.222	0.230	0.254	0.262	0.248	0.243			7.075	A
1,3,5-Trimethylbenzene			10600	57246	137811	339939	1128089	2448478	4992513	2.258	0.035		0.999	L
1,3-Dichlorobenzene			1.560	1.430	1.362	1.386	1.495	1.530	1.432	1.456			5.086	A
1,3-Dichloropropane			0.956	0.839	0.852	0.889	0.960	0.969	0.926	0.913			5.833	A
1,3-Dichloropropylene			11339	54730	120772	266481	816478	1724037	3569844	0.389	0.058		0.999	L
1,4-Dichlorobenzene			1.821	1.547	1.448	1.438	1.536	1.552	1.435	1.539			8.754	A
1-Bromo-2-Chloroethane			0.365	0.318	0.324	0.347	0.375	0.381	0.362	0.353			6.953	A
1-Chlorohexane			4849	19187	44542	105309	335727	742948	1498808	0.757	0.042		0.998	L

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, Q - Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2160118p/b3942D ~ 1	
Report No:	216012515		Instrument ID:	MSV13	1204 ~ 2160118p/b3943D ~ 5	1205 ~ 2160118p/b3944D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2160118p/b3945D ~ 20	1207 ~ 2160118p/b3946D ~ 50	
Calib. Date 1:	01/18/16	Time 1: 1507	Analytical Batch:	577166	1208 ~ 2160118p/b3947D ~ 100	1209 ~ 2160118p/b3948D ~ 200	
Calib. Date 2:	01/18/16	Time 2: 1720	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
2,2-Dichloropropane			0.360	0.297	0.303	0.312	0.332	0.346	0.324	0.325			7.038	A
2-Butanone			0.161	0.160	0.164	0.178	0.203	0.189	0.191	0.178			9.461	A
2-Chlorotoluene			2.103	1.815	2.111	1.933	2.129	2.175	2.068	2.048			6.232	A
2-Hexanone			3065	16123	37612	86905	289189	557144	1222184	0.609	0.043		0.999	L
4-Bromofluorobenzene			0.815	0.837	0.844	0.849	0.831	0.843	0.847	0.838			1.415	A
4-Chlorotoluene			1.764	1.665	1.927	1.761	1.964	2.025	1.910	1.859			7.005	A
4-Isopropyltoluene			10705	57367	121322	361812	1212871	2733327	5608700	2.545	0.054		0.998	L
4-Methyl-2-pentanone			0.621	0.542	0.549	0.623	0.737	0.710	0.716	0.642			12.49	A
Acetone			0.230	0.177	0.179	0.174	0.179	0.168	0.160	0.181			12.45	A
Acrolein			0.020	0.020	0.021	0.019	0.021	0.021	0.020	0.020			4.395	A
Acrylonitrile			0.074	0.090	0.096	0.097	0.106	0.101	0.103	0.096			11.22	A
Benzene			0.941	0.819	0.865	0.931	1.016	1.038	0.989	0.943			8.437	A
Bromobenzene			1.631	1.264	1.320	1.145	1.229	1.218	1.163	1.282			12.87	A
Bromochloromethane			0.162	0.132	0.134	0.140	0.142	0.141	0.125	0.140			8.403	A
Bromodichloromethane			0.382	0.297	0.306	0.319	0.334	0.338	0.317	0.328			8.579	A
Bromoform			0.732	0.529	0.531	0.542	0.580	0.558	0.540	0.573			12.59	A
Bromomethane			4559	15462	32754	67312	169769	332319	688886	0.148	-0.029		0.999	L
Carbon disulfide			16646	59647	119502	233824	647001	1390970	2693175	0.588	-0.018		0.997	L
Carbon tetrachloride			0.348	0.289	0.292	0.306	0.324	0.324	0.304	0.312			6.610	A
Chlorobenzene			2.172	1.836	1.778	1.798	1.873	1.888	1.779	1.875			7.367	A
Chloroethane			4329	14122	30011	59161	160313	307305	625409	0.135	-0.035		0.999	L
Chloroform			0.480	0.390	0.398	0.406	0.419	0.420	0.388	0.415			7.648	A
Chloromethane			10000	31533	65076	129328	348381	691948	1283336	0.281	-0.064		0.994	L
Cyclohexane			5820	26432	60102	147394	454514	974644	1991249	0.436	0.034		0.998	L
Dibromochloromethane			0.741	0.633	0.624	0.626	0.678	0.674	0.651	0.661			6.241	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, Q - Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

Revision 1

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2160118p/b3942D ~ 1	
Report No:	216012515		Instrument ID:	MSV13	1204 ~ 2160118p/b3943D ~ 5	1205 ~ 2160118p/b3944D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2160118p/b3945D ~ 20	1207 ~ 2160118p/b3946D ~ 50	
Calib. Date 1:	01/18/16	Time 1: 1507	Analytical Batch:	577166	1208 ~ 2160118p/b3947D ~ 100	1209 ~ 2160118p/b3948D ~ 200	
Calib. Date 2:	01/18/16	Time 2: 1720	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Dibromofluoromethane			0.266	0.262	0.259	0.257	0.254	0.249	0.247	0.256			2.686	A
Dibromomethane			0.173	0.145	0.151	0.147	0.158	0.156	0.147	0.154			6.348	A
Dichlorodifluoromethane			0.271	0.218	0.223	0.228	0.231	0.226	0.208	0.229			8.734	A
Ethylbenzene			0.886	0.776	0.821	0.884	0.943	0.957	0.907	0.882			7.306	A
Hexachlorobutadiene			4903	20853	40126	87876	211708	511330	935693	0.424	-0.035		0.993	L
Isopropylbenzene (Cumene)			14744	75624	185115	434460	1338866	2871091	5927415	2.979	0.040		0.999	L
Methyl Acetate			0.332	0.230	0.247	0.240	0.264	0.250	0.237	0.257			13.46	A
Methyl iodide			322	1668	3586	8829	38800	122400	397300	20.2	0.134	-26.192	0.994	Q
Methylcyclohexane			0.371	0.313	0.328	0.369	0.421	0.449	0.424	0.382			13.42	A
Methylene chloride			11258	36262	71555	119513	304516	713409	1395321	0.303	-0.014		0.997	L
Naphthalene			8657	50077	131358	340972	966332	2304512	4679299	2.118	0.044		0.998	L
Styrene			9046	46018	113128	276875	873102	1873452	3852583	1.940	0.043		0.999	L
Tetrachloroethene			0.694	0.512	0.517	0.540	0.574	0.583	0.548	0.567			10.94	A
Toluene			2.797	2.370	2.349	2.446	2.578	2.625	2.517	2.526			6.225	A
Toluene-d8			2.360	2.270	2.247	2.275	2.273	2.245	2.257	2.275			1.716	A
Trichloroethene			0.295	0.247	0.263	0.273	0.299	0.296	0.277	0.278			7.038	A
Trichlorofluoromethane			0.343	0.281	0.278	0.297	0.287	0.294	0.264	0.292			8.602	A
Trichlorotrifluoroethane			0.212	0.182	0.176	0.176	0.185	0.196	0.168	0.185			8.030	A
Vinyl acetate			2778	14224	32135	66763	188331	439503	963724	0.209	0.065		0.998	L
Vinyl chloride			0.297	0.252	0.249	0.257	0.282	0.282	0.255	0.268			6.987	A
Xylene (total)			20800	100523	231999	530968	1612135	3410418	6902101	1.157	0.072		0.999	L
cis-1,2-Dichloroethene			0.322	0.261	0.263	0.287	0.319	0.332	0.315	0.300			9.792	A
cis-1,3-Dichloropropene			5659	26932	58299	128661	405668	878101	1828120	0.399	0.040		0.999	L
m,p-Xylene			14322	70941	164777	375780	1109426	2334074	4701572	1.181	0.034		0.999	L
n-Butylbenzene			11845	49239	102214	279855	949005	2227434	4585441	2.081	0.062		0.998	L

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, Q - Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2160118p/b3942D ~ 1	
Report No:	216012515		Instrument ID:	MSV13	1204 ~ 2160118p/b3943D ~ 5	1205 ~ 2160118p/b3944D ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)		Analyst:	JCK	1206 ~ 2160118p/b3945D ~ 20	1207 ~ 2160118p/b3946D ~ 50	
Calib. Date 1:	01/18/16	Time 1: 1507	Analytical Batch:	577166	1208 ~ 2160118p/b3947D ~ 100	1209 ~ 2160118p/b3948D ~ 200	
Calib. Date 2:	01/18/16	Time 2: 1720	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
n-Hexane			5705	25278	51275	107805	354936	812698	1622799	0.357	0.041		0.997	L
n-Propylbenzene			2.961	2.474	2.956	2.740	3.055	3.211	3.099	2.928			8.472	A
o-Xylene			6478	29582	67222	155188	502709	1076344	2200529	1.108	0.039		0.999	L
sec-Butylbenzene			15282	84739	177306	471922	1461065	3184458	6446625	2.912	0.027		0.998	L
tert-Butyl methyl ether (MTBE)			0.536	0.544	0.586	0.602	0.722	0.742	0.709	0.634			13.85	A
tert-Butylbenzene			0.939	0.856	0.977	1.009	1.152	1.198	1.130	1.037			12.10	A
trans-1,2-Dichloroethene			0.336	0.281	0.283	0.272	0.317	0.329	0.310	0.304			8.385	A
trans-1,3-Dichloropropene			5680	27798	62473	137820	410810	845936	1741724	0.379	0.017		0.999	L
trans-1,4-Dichloro-2-butene			0.202	0.162	0.197	0.176	0.188	0.182	0.171	0.182			7.838	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, Q - Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3942D.d
Lab Smp Id: 1203 Client Smp ID: V13STD001
Inj Date : 18-JAN-2016 15:07
Operator : JCK Inst ID: msv13.i
Smp Info : 1203*V13STD001
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 15:07 Cal File: b3942D.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.716	1.716	(0.259)	5379	1.00000	1.18	
2	Chloromethane ++	50	1.911	1.911	(0.288)	10000	1.00000		(M2)
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	5878	1.00000	1.11	
6	Bromomethane	94	2.339	2.339	(0.352)	4559	1.00000	0.0992	
7	Chloroethane	64	2.470	2.470	(0.372)	4329	1.00000		
8	Trichlorofluoromethane	101	2.627	2.627	(0.396)	6801	1.00000	1.18	
10	1,1-Dichloroethene +	96	3.208	3.208	(0.483)	3939	1.00000	1.13	
11	Carbon Disulfide	76	3.238	3.238	(0.488)	16646	1.00000	0.548	
12	1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	4207	1.00000	1.15	
13	Methyl Iodide	142	3.373	3.373	(0.508)	322	1.00000	7.03	(M2)
14	Acrolein	56	3.651	3.651	(0.550)	2016	5.00000	4.98	
16	Methylene Chloride	49	3.943	3.943	(0.594)	11258	1.00000	1.17	
17	Acetone	43	4.022	4.022	(0.606)	4552	1.00000	1.27	
18	trans-1,2-Dichloroethene	61	4.142	4.142	(0.624)	6658	1.00000	1.10	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.175	4.175	(0.629)	6577	1.00000	1.29	6828
	20 Hexane	57	4.232	4.232	(0.637)	5705	1.00000	2.85	7405
	21 MTBE	73	4.280	4.280	(0.645)	10618	1.00000	0.845	6762
	26 1,1-Dichloroethane ++	63	4.835	4.835	(0.728)	9563	1.00000	1.12	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	7362	5.00000	3.89	
	28 Vinyl Acetate	43	5.128	5.128	(0.772)	2778	1.00000	3.91	(M1)
	29 cis-1,2-Dichloroethene	61	5.409	5.409	(0.815)	6373	1.00000	1.07	
M	75 Total 1,2-Dichloroethene	61				13031	2.00000	2.18	
	30 2,2-Dichloropropane	77	5.521	5.521	(0.832)	7135	1.00000	1.11	
	32 Cyclohexane	56	5.604	5.604	(0.844)	5820	1.00000	2.39	6849
	34 Bromochloromethane	128	5.604	5.604	(0.844)	3211	1.00000	1.16	
	35 Chloroform +	83	5.686	5.686	(0.857)	9521	1.00000	1.16	
	36 Carbon Tetrachloride	117	5.814	5.814	(0.876)	6887	1.00000	1.11	
$	40 Dibromofluoromethane	111	5.866	5.866	(0.884)	263485	50.0000	51.9	6956
	41 1,1,1-Trichloroethane	97	5.877	5.877	(0.885)	7631	1.00000	1.10	
	44 2-Butanone	43	6.001	6.001	(0.904)	3197	1.00000	0.907	
	43 1,1-Dichloropropene	75	6.008	6.008	(0.905)	5018	1.00000	0.933	
	46 Benzene	78	6.245	6.245	(0.941)	18642	1.00000	0.998	
$	50 1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	151588	50.0000	51.2	
	51 1,2-Dichloroethane	62	6.440	6.440	(0.970)	7217	1.00000	1.12	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	990934	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	7352	1.00000	0.971	8450
	56 Trichloroethene	130	6.788	6.788	(1.023)	5846	1.00000	1.06	
	57 Dibromomethane	93	7.171	7.171	(1.080)	3432	1.00000	1.13	
	59 1,2-Dichloropropane +	63	7.264	7.264	(1.094)	5134	1.00000	1.07	
	60 Bromodichloromethane	83	7.328	7.328	(1.104)	7580	1.00000	1.17	
	65 1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	7238	1.00000	1.03	8820
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	5659	1.00000	2.74	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	938681	50.0000	51.9	
	69 Toluene +	91	8.044	8.044	(0.882)	22258	1.00000	1.11	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	5522	1.00000	1.22	
	73 4-methyl-2-pentanone	43	8.329	8.329	(0.914)	4941	1.00000	0.967	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	5680	1.00000	1.59	
M	82 1-3 Dichloropropene total	100				11339	2.00000	4.32	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	5357	1.00000	1.17	
	78 Dibromochloromethane	129	8.599	8.599	(0.943)	5892	1.00000	1.12	
	79 1,3-Dichloropropane	76	8.670	8.670	(0.951)	7603	1.00000	1.05	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	4763	1.00000	1.09	
	83 2-Hexanone	43	8.917	8.917	(0.978)	3065	1.00000	2.77	
	86 1-Chlorohexane	91	9.101	9.101	(0.998)	4849	1.00000	2.88	3070
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	397825	50.0000		
	85 Chlorobenzene ++	112	9.127	9.127	(1.001)	17282	1.00000	1.16	
	87 Ethylbenzene +	106	9.142	9.142	(1.003)	7046	1.00000	1.00	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	6241	1.00000	1.24	
	89 p,m-Xylene	106	9.232	9.232	(1.013)	14322	2.00000	3.24	
	90 o-Xylene	106	9.513	9.513	(1.044)	6478	1.00000	2.67	
M	121 TOTAL XYLENE	106				20800	3.00000	5.91	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	91 Styrene	104	9.543	9.543	(1.047)	9046	1.00000	2.73	
	92 Bromoform ++	173	9.573	9.573	(1.050)	5824	1.00000	1.28	
	93 Isopropylbenzene	105	9.708	9.708	(1.065)	14744	1.00000	2.60	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	324113	50.0000	48.6	
	96 Bromobenzene	77	9.963	9.963	(0.943)	12213	1.00000	1.27	
	97 n-Propylbenzene	91	9.967	9.967	(0.943)	22170	1.00000	1.01	
	98 1,1,2,2-Tetrachloroethane++	83	10.012	10.012	(0.947)	8363	1.00000		
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	15748	1.00000	1.03	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	10600	1.00000	2.37	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	8325	1.00000	1.19	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	1510	1.00000	1.11	
	104 4-Chlorotoluene	91	10.173	10.173	(0.963)	13209	1.00000	0.949	
	105 tert-butylbenzene	91	10.278	10.278	(0.973)	7030	1.00000	0.905	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	9650	1.00000	3.65	
	108 sec-Butylbenzene	105	10.383	10.383	(0.983)	15282	1.00000	2.03	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	10705	1.00000	3.28	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	11682	1.00000	1.07	
*	114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	374404	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	13635	1.00000	1.18	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	11845	1.00000	3.86	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	11267	1.00000	1.09	
	119 1,2-Dibromo-3-Chloropropane	157	11.361	11.361	(1.075)	1705	1.00000	1.18	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	4903	1.00000		
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	6809	1.00000	1.03	
	124 Naphthalene	128	12.145	12.145	(1.149)	8657	1.00000	2.73	
	125 1,2,3-Trichlorobenzene	180	12.314	12.314	(1.165)	6878	1.00000	1.03	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3942D.d

Date : 18-JAN-2016 15:07

Client ID: V13STD001

Instrument: msv13.i

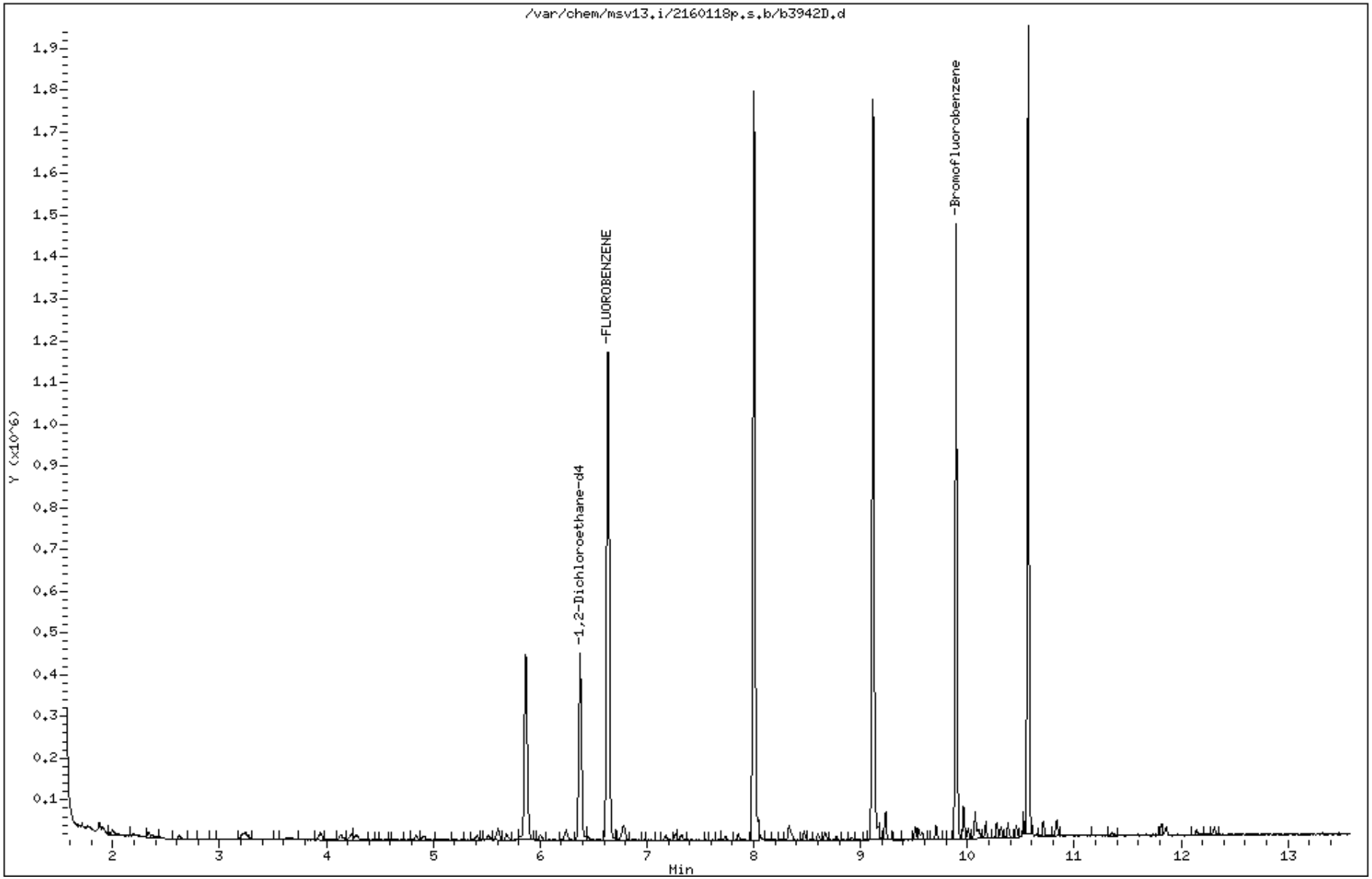
Sample Info: 1203*V13STD001

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

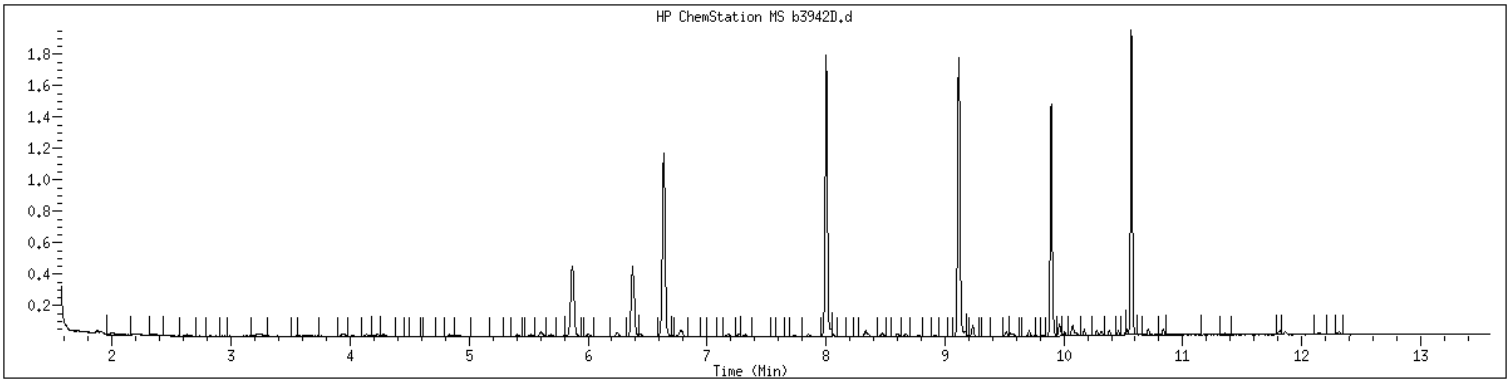
Column diameter: 0.25



Report Date: 01/19/2016 18:53

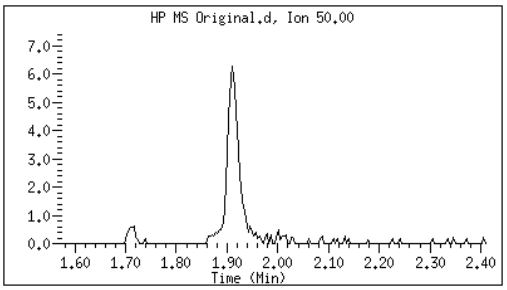
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1203 SampleType : CALIB_3
Injection Date: 01/18/2016 15:07 Instrument : msv13.i
Operator : JCK
Sample Info : 1203*V13STD001
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



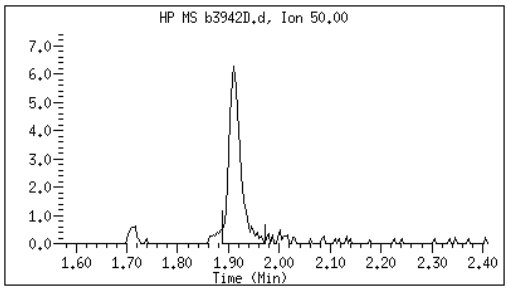
Original Final

2 Chloromethane ++ CAS#: 74-87-3 Reason: M2

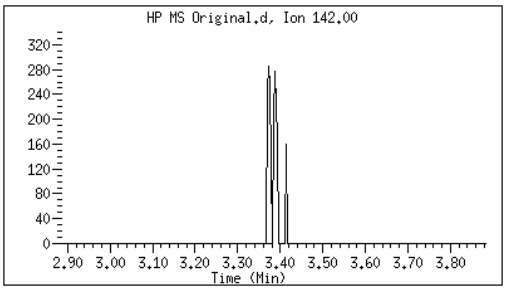


Electronic Signature Applied

User: jck2
Date: 01/18/2016 17:44

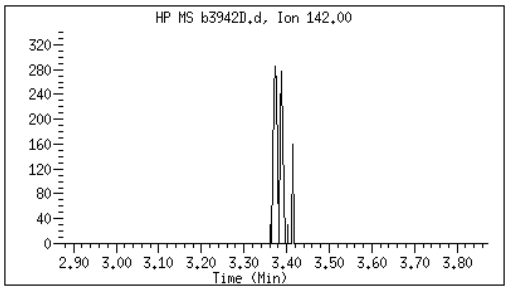


13 Methyl Iodide CAS#: 74-88-4 Reason: M2



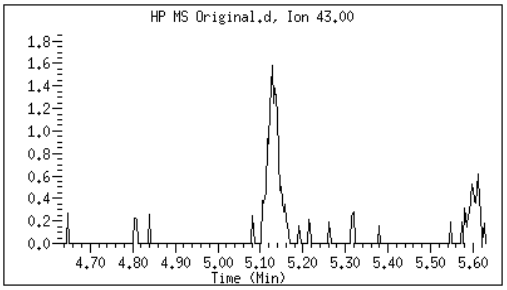
Electronic Signature Applied

User: jck2
Date: 01/18/2016 15:45



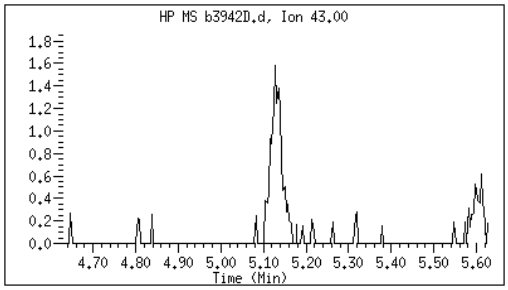
Original Final

28 Vinyl Acetate CAS#: 108-05-4 Reason: M1



Electronic Signature Applied

User: jck2
Date: 01/18/2016 15:45



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3943D.d
Lab Smp Id: 1204 Client Smp ID: V13STD005
Inj Date : 18-JAN-2016 15:28
Operator : JCK Inst ID: msv13.i
Smp Info : 1204*V13STD005
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 15:28 Cal File: b3943D.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.716	1.716	(0.259)	21512	5.00000	4.75	
2	Chloromethane ++	50	1.915	1.915	(0.288)	31533	5.00000	2.51	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	24879	5.00000	4.71	
6	Bromomethane	94	2.335	2.335	(0.352)	15462	5.00000	3.83	
7	Chloroethane	64	2.481	2.481	(0.374)	14122	5.00000	3.54	
8	Trichlorofluoromethane	101	2.631	2.631	(0.396)	27788	5.00000	4.82	
10	1,1-Dichloroethene +	96	3.216	3.216	(0.484)	17296	5.00000	4.97	
11	Carbon Disulfide	76	3.238	3.238	(0.488)	59647	5.00000	4.25	
12	1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	17984	5.00000	4.92	
13	Methyl Iodide	142	3.396	3.396	(0.512)	1668	5.00000	8.40	
14	Acrolein	56	3.651	3.651	(0.550)	10051	25.0000	24.9	
16	Methylene Chloride	49	3.947	3.947	(0.595)	36262	5.00000	5.35	
17	Acetone	43	4.018	4.018	(0.605)	17537	5.00000	4.90	
18	trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	27735	5.00000	4.62	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.176	4.176	(0.629)	22765	5.00000	4.48	7813
	20 Hexane	57	4.235	4.235	(0.638)	25278	5.00000	5.62	8352
	21 MTBE	73	4.288	4.288	(0.646)	53725	5.00000	4.29	8435
	26 1,1-Dichloroethane ++	63	4.847	4.847	(0.730)	40204	5.00000	4.72	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	44595	25.0000	23.6	
	28 Vinyl Acetate	43	5.131	5.131	(0.773)	14224	5.00000	6.68	
	29 cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	25745	5.00000	4.35	
M	75 Total 1,2-Dichloroethene	61				53480	10.0000	8.96	
	30 2,2-Dichloropropane	77	5.521	5.521	(0.832)	29366	5.00000	4.57	
	32 Cyclohexane	56	5.604	5.604	(0.844)	26432	5.00000	4.78	8006
	34 Bromochloromethane	128	5.619	5.619	(0.846)	13018	5.00000	4.72	
	35 Chloroform +	83	5.694	5.694	(0.858)	38509	5.00000	4.70	
	36 Carbon Tetrachloride	117	5.814	5.814	(0.876)	28604	5.00000	4.63	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	259115	50.0000	51.1	6969
	41 1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	33272	5.00000	4.80	
	44 2-Butanone	43	6.009	6.009	(0.905)	15765	5.00000	4.48	
	43 1,1-Dichloropropene	75	6.012	6.012	(0.906)	22216	5.00000	4.14	
	46 Benzene	78	6.249	6.249	(0.941)	80939	5.00000	4.35	
$	50 1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	152527	50.0000	51.7	
	51 1,2-Dichloroethane	62	6.440	6.440	(0.970)	30734	5.00000	4.80	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	988110	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	30890	5.00000	4.09	8602
	56 Trichloroethene	130	6.792	6.792	(1.023)	24371	5.00000	4.43	
	57 Dibromomethane	93	7.178	7.178	(1.081)	14366	5.00000	4.72	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	21987	5.00000	4.59	
	60 Bromodichloromethane	83	7.324	7.324	(1.103)	29392	5.00000	4.54	
	65 1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	31425	5.00000	4.50	9557
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	26932	5.00000	5.44	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	947954	50.0000	49.9	
	69 Toluene +	91	8.040	8.040	(0.882)	98996	5.00000	4.69	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	21365	5.00000	4.51	
	73 4-methyl-2-pentanone	43	8.333	8.333	(0.914)	22618	5.00000	4.22	
	74 trans-1,3-Dichloropropene	75	8.359	8.359	(1.259)	27798	5.00000	4.54	
M	82 1-3 Dichloropropene total	100				54730	10.0000	9.98	0
	76 1,1,2-Trichloroethane	97	8.471	8.471	(0.929)	23027	5.00000	4.80	
	78 Dibromochloromethane	129	8.606	8.606	(0.944)	26448	5.00000	4.79	
	79 1,3-Dichloropropane	76	8.670	8.670	(0.951)	35053	5.00000	4.60	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	21099	5.00000	4.60	
	83 2-Hexanone	43	8.918	8.918	(0.978)	16123	5.00000	5.30	
	86 1-Chlorohexane	91	9.101	9.101	(0.998)	19187	5.00000	5.11	5005
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	417636	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.002)	76667	5.00000	4.90	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	32409	5.00000	4.40	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	25392	5.00000	4.79	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	70941	10.0000	8.91	
	90 o-Xylene	106	9.514	9.514	(1.044)	29582	5.00000	5.13	
M	121 TOTAL XYLENE	106				100523	15.0000	14.0	

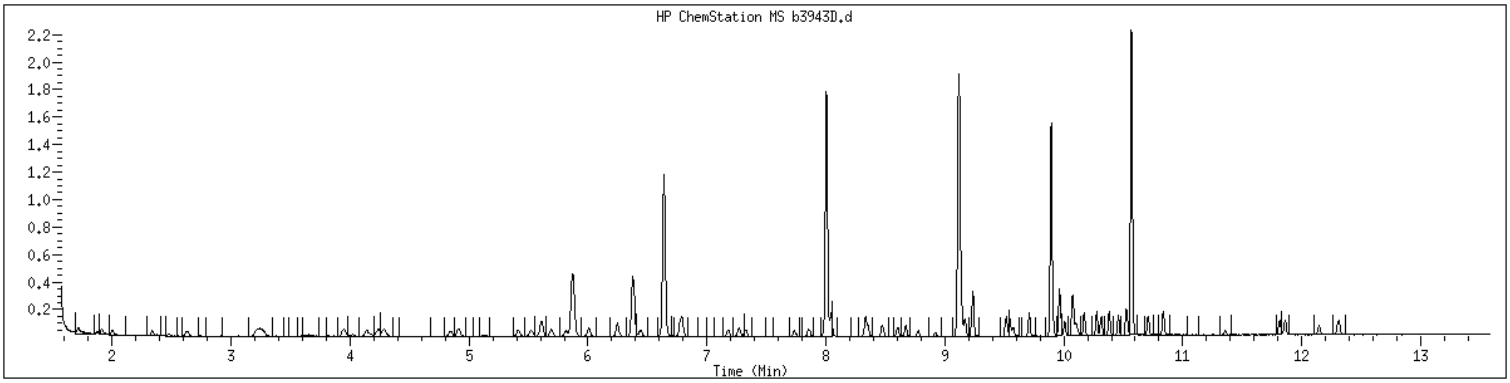
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91 Styrene	104	9.547	9.547	(1.047)	46018	5.00000	4.98	
92 Bromoform ++	173	9.577	9.577	(1.051)	22108	5.00000	4.62	
93 Isopropylbenzene	105	9.709	9.709	(1.065)	75624	5.00000	5.02	
$ 95 Bromofluorobenzene	174	9.896	9.896	(1.086)	349552	50.0000	49.9	
96 Bromobenzene	77	9.967	9.967	(0.943)	53441	5.00000	4.93	
97 n-Propylbenzene	91	9.967	9.967	(0.943)	104585	5.00000	4.22	
98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	34436	5.00000	3.11	
99 2-Chlorotoluene	91	10.072	10.072	(0.953)	76730	5.00000	4.43	
102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	57246	5.00000	4.74	
100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	35666	5.00000	4.53	
101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	6831	5.00000	4.43	
104 4-Chlorotoluene	91	10.173	10.173	(0.963)	70403	5.00000	4.48	
105 tert-butylbenzene	91	10.275	10.275	(0.972)	36200	5.00000	4.13	
107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	51755	5.00000	5.83	
108 sec-Butylbenzene	105	10.380	10.380	(0.982)	84739	5.00000	4.77	
110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	57367	5.00000	5.39	
113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	60456	5.00000	4.91	
* 114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	422796	50.0000		
115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	65399	5.00000	5.02	
117 n-Butylbenzene	91	10.709	10.709	(1.013)	49239	5.00000	5.90	
118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	55950	5.00000	4.80	
119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	7043	5.00000	4.33	
120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	20853	5.00000	4.07	
122 1,2,4-Trichlorobenzene	180	11.856	11.856	(1.122)	34079	5.00000	4.57	
124 Naphthalene	128	12.149	12.149	(1.150)	50077	5.00000	4.98	
125 1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	33968	5.00000	4.49	

Data File: /var/chem/msv13.i/2160118p.s.b/b3943D.d
Date : 18-JAN-2016 15:28
Client ID: V13STD005
Sample Info: 1204*V13STD005
Purge Volume: 5.0
Column phase: RTX-VMS-30M
Instrument: msv13.i
Operator: JCK
Column diameter: 0.25
Page 1
Y (x10^6)
Min
-Dibromofluoromethane+
-1,2-Dichloroethane-d4
-FLUOROBENZENE
-Toluene-d8+
CHLOROBENZENE-d5+
-Bromofluorobenzene
1,4-DICHLOROBENZENE-D4+
/var/chem/msv13.i/2160118p.s.b/b3943D.d

Data file : /var/chem/msv13.i/2160118p.s.b/b3943D.d Page: 1
Report Date: 01/19/2016 18:53

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1204 SampleType : CALIB_4
Injection Date: 01/18/2016 15:28 Instrument : msv13.i
Operator : JCK
Sample Info : 1204*V13STD005
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3944D.d
Lab Smp Id: 1205 Client Smp ID: V13STD010
Inj Date : 18-JAN-2016 15:49
Operator : JCK Inst ID: msv13.i
Smp Info : 1205*V13STD010
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 15:49 Cal File: b3944D.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.713	1.713	(0.258)	45511	10.0000	9.73	
2	Chloromethane ++	50	1.911	1.911	(0.288)	65076	10.0000	8.19	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	50811	10.0000	9.31	
6	Bromomethane	94	2.339	2.339	(0.352)	32754	10.0000	9.40	
7	Chloroethane	64	2.477	2.477	(0.373)	30011	10.0000	9.15	
8	Trichlorofluoromethane	101	2.631	2.631	(0.396)	56668	10.0000	9.52	
10	1,1-Dichloroethene +	96	3.212	3.212	(0.484)	33763	10.0000	9.41	
11	Carbon Disulfide	76	3.242	3.242	(0.488)	119502	10.0000	9.08	
12	1,1,2Trichlotrifluoroethane	101	3.264	3.264	(0.492)	35907	10.0000	9.51	
13	Methyl Iodide	142	3.384	3.384	(0.510)	3586	10.0000	10.2	(M2)
14	Acrolein	56	3.643	3.643	(0.549)	21199	50.0000	50.9	
16	Methylene Chloride	49	3.943	3.943	(0.594)	71555	10.0000	10.9	
17	Acetone	43	4.022	4.022	(0.606)	36535	10.0000	9.90	
18	trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	57776	10.0000	9.32	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.172	4.172	(0.628)	50447	10.0000	9.62	8460
	20 Hexane	57	4.235	4.235	(0.638)	51275	10.0000	9.08	8743
	21 MTBE	73	4.288	4.288	(0.646)	119460	10.0000	9.23	8919
	26 1,1-Dichloroethane ++	63	4.846	4.846	(0.730)	82898	10.0000	9.42	
	27 Acrylonitrile	53	4.910	4.910	(0.740)	98377	50.0000	50.5	
	28 Vinyl Acetate	43	5.131	5.131	(0.773)	32135	10.0000	10.8	
	29 cis-1,2-Dichloroethene	61	5.412	5.412	(0.815)	53616	10.0000	8.77	
M	75 Total 1,2-Dichloroethene	61				111392	20.0000	18.1	
	30 2,2-Dichloropropane	77	5.521	5.521	(0.832)	61825	10.0000	9.33	
	32 Cyclohexane	56	5.604	5.604	(0.844)	60102	10.0000	8.47	8368
	34 Bromochloromethane	128	5.615	5.615	(0.846)	27427	10.0000	9.64	
	35 Chloroform +	83	5.694	5.694	(0.858)	81211	10.0000	9.60	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	59564	10.0000	9.35	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	264439	50.0000	50.6	6947
	41 1,1,1-Trichloroethane	97	5.888	5.888	(0.887)	67890	10.0000	9.49	
	44 2-Butanone	43	6.005	6.005	(0.905)	33537	10.0000	9.24	
	43 1,1-Dichloropropene	75	6.005	6.005	(0.905)	46399	10.0000	8.39	
	46 Benzene	78	6.248	6.248	(0.941)	176452	10.0000	9.18	
$	50 1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	153838	50.0000	50.5	
	51 1,2-Dichloroethane	62	6.443	6.443	(0.971)	63534	10.0000	9.62	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	1019873	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	66915	10.0000	8.59	8726
	56 Trichloroethene	130	6.792	6.792	(1.023)	53561	10.0000	9.43	
	57 Dibromomethane	93	7.174	7.174	(1.081)	30878	10.0000	9.84	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	45382	10.0000	9.17	
	60 Bromodichloromethane	83	7.324	7.324	(1.103)	62394	10.0000	9.33	
	65 1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	66086	10.0000	9.17	9692
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	58299	10.0000	9.18	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	980881	50.0000	49.4	
	69 Toluene +	91	8.044	8.044	(0.882)	205038	10.0000	9.30	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	45140	10.0000	9.12	
	73 4-methyl-2-pentanone	43	8.333	8.333	(0.914)	47903	10.0000	8.54	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	62473	10.0000	8.91	
M	82 1-3 Dichloropropene total	100				120772	20.0000	18.1	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	47851	10.0000	9.55	
	78 Dibromochloromethane	129	8.603	8.603	(0.944)	54492	10.0000	9.44	
	79 1,3-Dichloropropane	76	8.670	8.670	(0.951)	74383	10.0000	9.33	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	45822	10.0000	9.55	
	83 2-Hexanone	43	8.917	8.917	(0.978)	37612	10.0000	9.21	
	86 1-Chlorohexane	91	9.105	9.105	(0.999)	44542	10.0000	8.82	4832
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	436503	50.0000		
	85 Chlorobenzene ++	112	9.127	9.127	(1.001)	155251	10.0000	9.49	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	71690	10.0000	9.31	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	52004	10.0000	9.39	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	164777	20.0000	17.7	
	90 o-Xylene	106	9.517	9.517	(1.044)	67222	10.0000	8.89	
M	121 TOTAL XYLENE	106				231999	30.0000	26.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	113128	10.0000	8.82	
92	Bromoform ++	173	9.573	9.573	(1.050)	46337	10.0000	9.26	
93	Isopropylbenzene	105	9.708	9.708	(1.065)	185115	10.0000	9.09	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.086)	368358	50.0000	50.4	
96	Bromobenzene	77	9.963	9.963	(0.943)	104722	10.0000	10.3	
97	n-Propylbenzene	91	9.967	9.967	(0.943)	234433	10.0000	10.1	
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	73852	10.0000	10.4	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	167438	10.0000	10.3	
102	1,3,5-Trimethylbenzene	105	10.079	10.079	(0.954)	137811	10.0000	9.44	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	82510	10.0000	11.2	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	15602	10.0000	10.8	
104	4-Chlorotoluene	91	10.173	10.173	(0.963)	152811	10.0000	10.4	
105	tert-butylbenzene	91	10.278	10.278	(0.973)	77502	10.0000	9.42	
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	107169	10.0000	9.17	
108	sec-Butylbenzene	105	10.383	10.383	(0.983)	177306	10.0000	9.00	
110	p-Isopropyltoluene	119	10.458	10.458	(0.990)	121322	10.0000	8.73	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	108024	10.0000	9.35	
* 114	1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	396524	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	114806	10.0000	9.40	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	102214	10.0000	9.29	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	101691	10.0000	9.30	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	14116	10.0000	9.25	
120	Hexachlorobutadiene	225	11.811	11.811	(1.118)	40126	10.0000	10.2	
122	1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	67445	10.0000	9.64	
124	Naphthalene	128	12.145	12.145	(1.149)	131358	10.0000	10.0	
125	1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	73325	10.0000	10.3	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3944D.d

Date : 18-JAN-2016 15:49

Client ID: V13STD010

Instrument: msv13.i

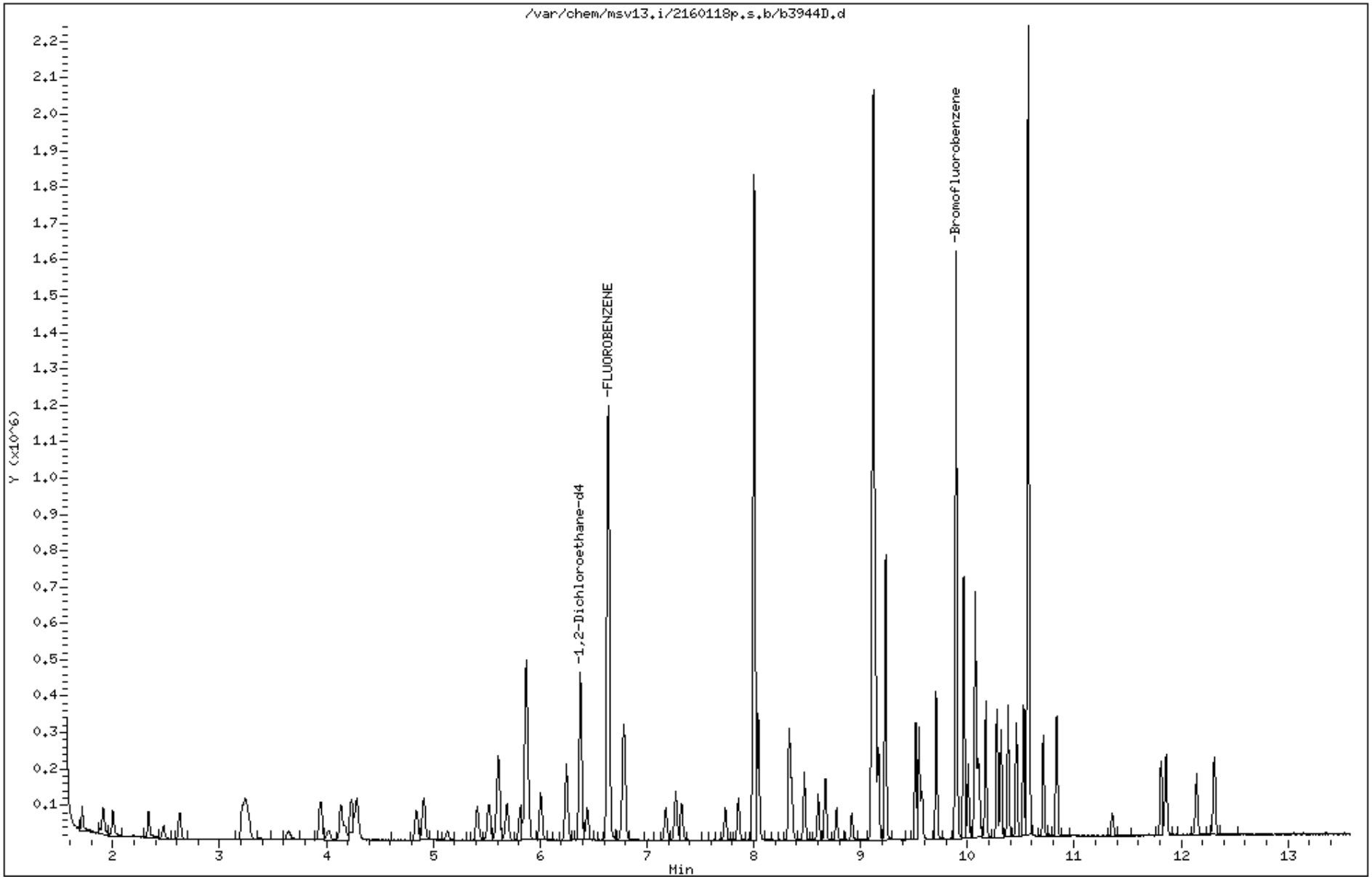
Sample Info: 1205*V13STD010

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

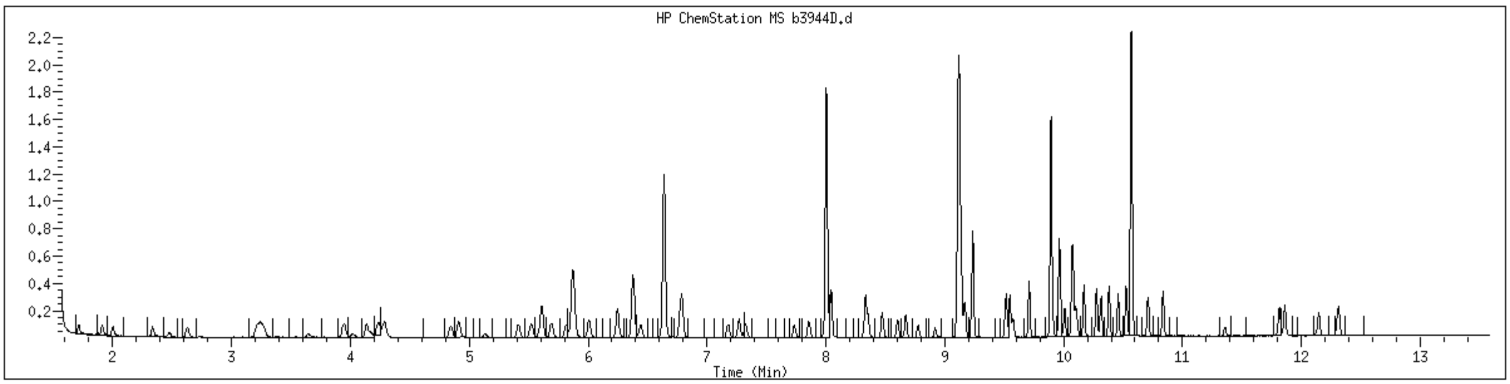
Column diameter: 0.25



Report Date: 01/19/2016 18:53

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1205 SampleType : CALIB_5
Injection Date: 01/18/2016 15:49 Instrument : msv13.i
Operator : JCK
Sample Info : 1205*V13STD010
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



Original Final

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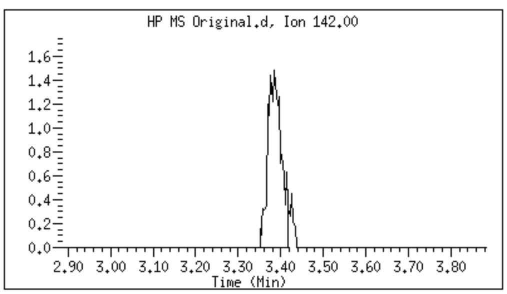
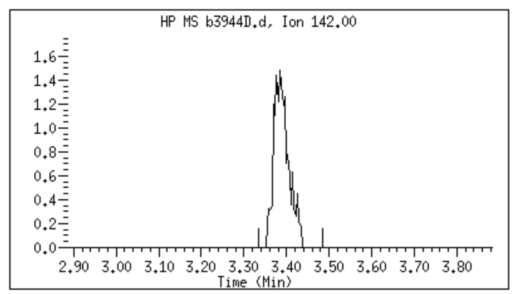
13 Methyl Iodide CAS#: 74-88-4 Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 16:10



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3945D.d
Lab Smp Id: 1206 Client Smp ID: V13STD020
Inj Date : 18-JAN-2016 16:09
Operator : JCK Inst ID: msv13.i
Smp Info : 1206*V13STD020
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 16:09 Cal File: b3945D.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.716	1.716	(0.259)	94224	20.0000	19.8	
2	Chloromethane ++	50	1.911	1.911	(0.288)	129328	20.0000	19.1	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	106234	20.0000	19.2	
6	Bromomethane	94	2.339	2.339	(0.352)	67312	20.0000	20.5	
7	Chloroethane	64	2.477	2.477	(0.373)	59161	20.0000	19.4	
8	Trichlorofluoromethane	101	2.631	2.631	(0.396)	122994	20.0000	20.4	
10	1,1-Dichloroethene +	96	3.216	3.216	(0.484)	66483	20.0000	18.3	
11	Carbon Disulfide	76	3.242	3.242	(0.488)	233824	20.0000	18.3	
12	1,1,2Trichlotrifluoroethane	101	3.272	3.272	(0.493)	72903	20.0000	19.0	
13	Methyl Iodide	142	3.388	3.388	(0.510)	8829	20.0000	15.2	
14	Acrolein	56	3.647	3.647	(0.549)	38883	100.000	92.0	
16	Methylene Chloride	49	3.947	3.947	(0.595)	119513	20.0000	18.3	
17	Acetone	43	4.018	4.018	(0.605)	71847	20.0000	19.2	
18	trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	112443	20.0000	17.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.175	4.175	(0.629)	99221	20.0000	18.6	8242
	20 Hexane	57	4.235	4.235	(0.638)	107805	20.0000	16.6	8952(M2)
	21 MTBE	73	4.284	4.284	(0.645)	249020	20.0000	19.0	9087
	26 1,1-Dichloroethane ++	63	4.846	4.846	(0.730)	174523	20.0000	19.6	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	200964	100.000	102	
	28 Vinyl Acetate	43	5.131	5.131	(0.773)	66763	20.0000	18.7	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	118841	20.0000	19.2	
M	75 Total 1,2-Dichloroethene	61				231284	40.0000	37.0	
	30 2,2-Dichloropropane	77	5.525	5.525	(0.832)	129294	20.0000	19.2	
	32 Cyclohexane	56	5.607	5.607	(0.845)	147394	20.0000	18.0	8323
	34 Bromochloromethane	128	5.615	5.615	(0.846)	58086	20.0000	20.1	
	35 Chloroform +	83	5.690	5.690	(0.857)	168225	20.0000	19.6	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	126769	20.0000	19.6	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	266365	50.0000	50.2	6976
	41 1,1,1-Trichloroethane	97	5.888	5.888	(0.887)	142169	20.0000	19.6	
	44 2-Butanone	43	6.001	6.001	(0.904)	73495	20.0000	20.0	
	43 1,1-Dichloropropene	75	6.008	6.008	(0.905)	107756	20.0000	19.2	
	46 Benzene	78	6.248	6.248	(0.941)	385440	20.0000	19.8	
$	50 1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	155644	50.0000	50.4	
	51 1,2-Dichloroethane	62	6.443	6.443	(0.971)	131319	20.0000	19.6	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	1034998	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	152587	20.0000	19.3	8998
	56 Trichloroethene	130	6.792	6.792	(1.023)	112910	20.0000	19.6	
	57 Dibromomethane	93	7.178	7.178	(1.081)	60682	20.0000	19.0	
	59 1,2-Dichloropropane +	63	7.268	7.268	(1.095)	95267	20.0000	19.0	
	60 Bromodichloromethane	83	7.324	7.324	(1.103)	132065	20.0000	19.5	
	65 1-Bromo-2-chloroethane	63	7.733	7.733	(1.165)	143642	20.0000	19.6	9689
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	128661	20.0000	17.6	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	1022677	50.0000	50.0	
	69 Toluene +	91	8.044	8.044	(0.882)	439750	20.0000	19.4	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	97141	20.0000	19.1	
	73 4-methyl-2-pentanone	43	8.333	8.333	(0.914)	112054	20.0000	19.4	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	137820	20.0000	18.4	
M	82 1-3 Dichloropropene total	100				266481	40.0000	36.0	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	99744	20.0000	19.3	
	78 Dibromochloromethane	129	8.602	8.602	(0.944)	112580	20.0000	18.9	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	159873	20.0000	19.5	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	96033	20.0000	19.4	
	83 2-Hexanone	43	8.917	8.917	(0.978)	86905	20.0000	18.0	
	86 1-Chlorohexane	91	9.105	9.105	(0.999)	105309	20.0000	17.6	6748
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	449491	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.002)	323213	20.0000	19.2	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	159006	20.0000	20.1	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	110074	20.0000	19.3	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	375780	40.0000	37.1	
	90 o-Xylene	106	9.517	9.517	(1.044)	155188	20.0000	17.5	
M	121 TOTAL XYLENE	106				530968	60.0000	54.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	276875	20.0000	18.0	
	92 Bromoform ++	173	9.573	9.573	(1.050)	97445	20.0000	18.9	
	93 Isopropylbenzene	105	9.712	9.712	(1.065)	434460	20.0000	18.2	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	381411	50.0000	50.6	
	96 Bromobenzene	77	9.963	9.963	(0.943)	223853	20.0000	17.9	
	97 n-Propylbenzene	91	9.967	9.967	(0.943)	535522	20.0000	18.7	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	152550	20.0000	19.0	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	377856	20.0000	18.9	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	339939	20.0000	17.1	
	100 1,2,3-Trichloropropane	75	10.098	10.098	(0.956)	170096	20.0000	18.7	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	34332	20.0000	19.3	
	104 4-Chlorotoluene	91	10.173	10.173	(0.963)	344289	20.0000	18.9	
	105 tert-butylbenzene	91	10.278	10.278	(0.973)	197214	20.0000	19.5	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	300179	20.0000	16.9	
	108 sec-Butylbenzene	105	10.383	10.383	(0.983)	471922	20.0000	17.9	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	361812	20.0000	17.3	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	270889	20.0000	19.0	
*	114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	488665	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	281101	20.0000	18.7	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	279855	20.0000	16.9	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	260004	20.0000	19.3	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	35619	20.0000	18.9	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	87876	20.0000	19.4	
	122 1,2,4-Trichlorobenzene	180	11.864	11.864	(1.123)	157152	20.0000	18.2	
	124 Naphthalene	128	12.145	12.145	(1.149)	340972	20.0000	18.7	
	125 1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	167756	20.0000	19.2	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3945D.d

Page 1

Date : 18-JAN-2016 16:09

Client ID: V13STD020

Instrument: msv13.i

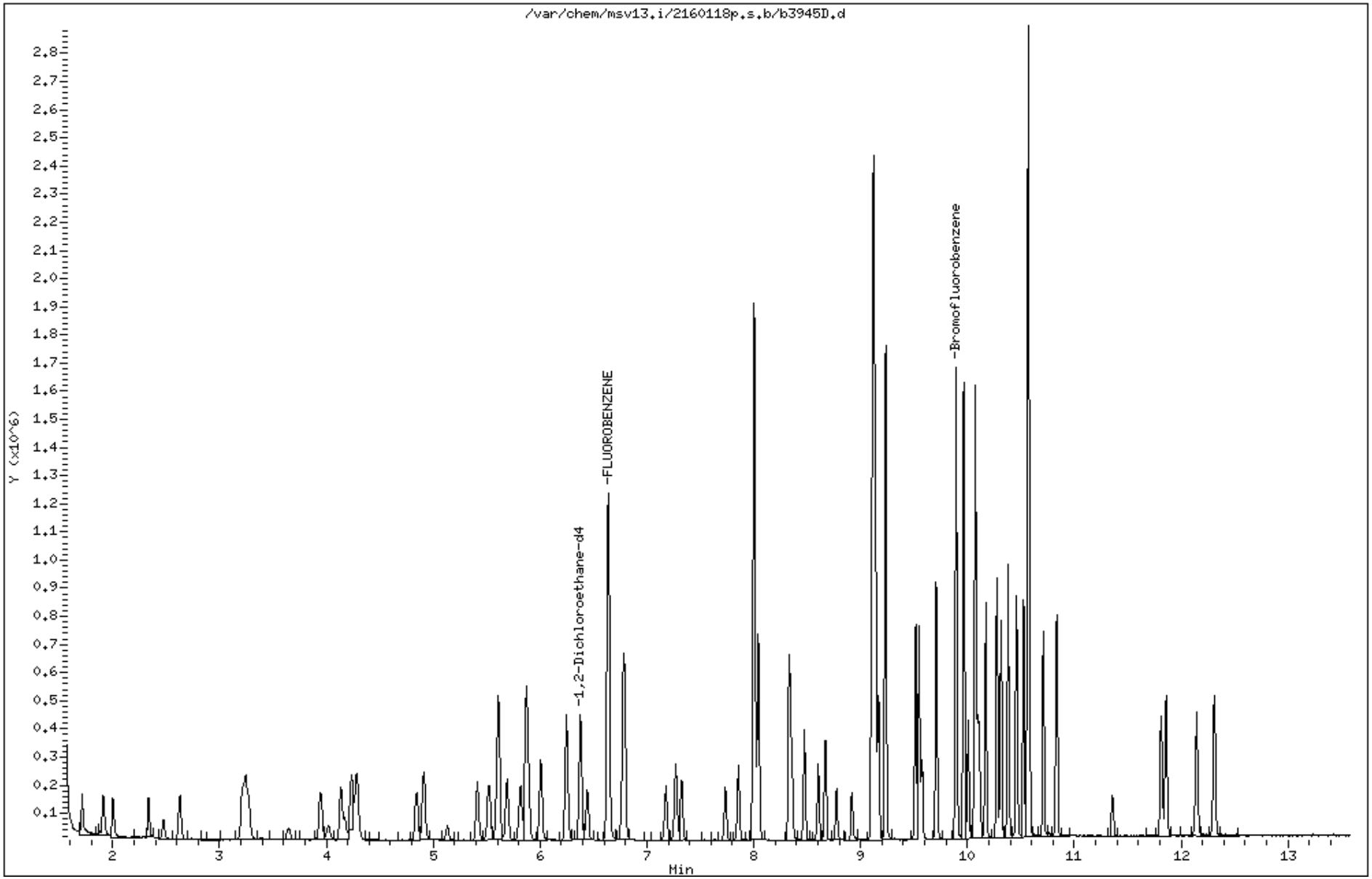
Sample Info: 1206*V13STD020

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

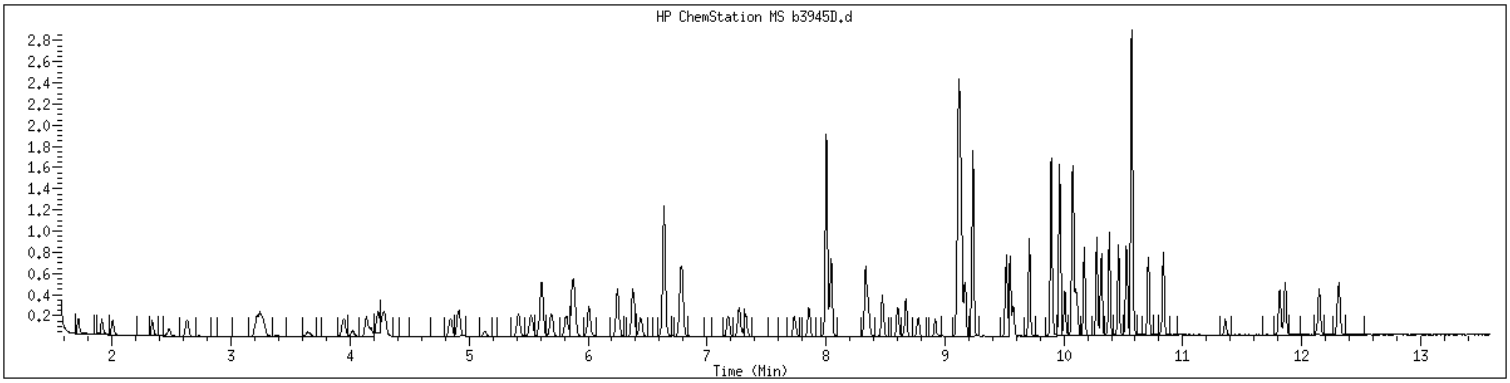


Revision 1

Report Date: 01/19/2016 18:53

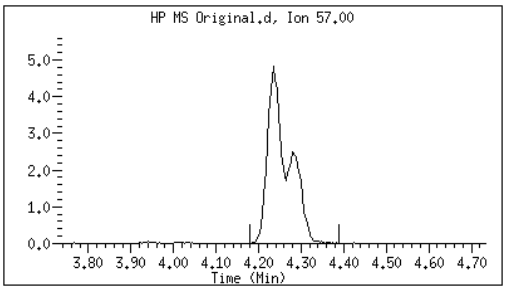
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1206 SampleType : CALIB_6
Injection Date: 01/18/2016 16:09 Instrument : msv13.i
Operator : JCK
Sample Info : 1206*V13STD020
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



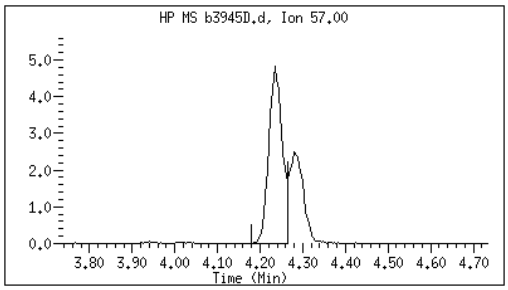
Original Final

20 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 16:57



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3946D.d
Lab Smp Id: 1207 Client Smp ID: V13STD050
Inj Date : 18-JAN-2016 16:30
Operator : JCK Inst ID: msv13.i
Smp Info : 1207*V13STD050
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 16:30 Cal File: b3946D.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	249945	50.0000	50.4	
2 Chloromethane ++	50	1.915	1.915	(0.288)	348381	50.0000	54.2	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	304678	50.0000	52.6	
6 Bromomethane	94	2.335	2.335	(0.352)	169769	50.0000	51.6	
7 Chloroethane	64	2.477	2.477	(0.373)	160313	50.0000	53.2	
8 Trichlorofluoromethane	101	2.631	2.631	(0.396)	310017	50.0000	49.1	
10 1,1-Dichloroethene +	96	3.216	3.216	(0.484)	188124	50.0000	49.4	
11 Carbon Disulfide	76	3.242	3.242	(0.488)	647001	50.0000	50.0	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	200051	50.0000	50.0	
13 Methyl Iodide	142	3.388	3.388	(0.510)	38805	50.0000	41.3	
14 Acrolein	56	3.651	3.651	(0.550)	115195	250.000	261	
16 Methylene Chloride	49	3.943	3.943	(0.594)	304516	50.0000	45.7	
17 Acetone	43	4.022	4.022	(0.606)	193600	50.0000	49.4	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	342752	50.0000	52.1	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.172	4.172	(0.628)	285008	50.0000	51.2	8869
	20 Hexane	57	4.239	4.239	(0.639)	354936	50.0000	48.0	9416(M2)
	21 MTBE	73	4.284	4.284	(0.645)	780778	50.0000	56.9	9521
	26 1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	477932	50.0000	51.2	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	574459	250.000	278	
	28 Vinyl Acetate	43	5.135	5.135	(0.774)	188331	50.0000	44.9	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	344990	50.0000	53.2	
M	75 Total 1,2-Dichloroethene	61				687742	100.000	105	
	30 2,2-Dichloropropane	77	5.525	5.525	(0.832)	358610	50.0000	51.0	
	32 Cyclohexane	56	5.607	5.607	(0.845)	454514	50.0000	49.9	8833
	34 Bromochloromethane	128	5.615	5.615	(0.846)	153834	50.0000	51.0	
	35 Chloroform +	83	5.690	5.690	(0.857)	452898	50.0000	50.5	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	350176	50.0000	51.8	
$	40 Dibromofluoromethane	111	5.874	5.874	(0.885)	274421	50.0000	49.5	6992
	41 1,1,1-Trichloroethane	97	5.888	5.888	(0.887)	389675	50.0000	51.4	
	44 2-Butanone	43	6.001	6.001	(0.904)	219332	50.0000	57.0	
	43 1,1-Dichloropropene	75	6.008	6.008	(0.905)	330225	50.0000	56.3	
	46 Benzene	78	6.248	6.248	(0.941)	1098408	50.0000	53.9	
$	50 1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	159322	50.0000	49.3	
	51 1,2-Dichloroethane	62	6.440	6.440	(0.970)	356223	50.0000	50.9	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	1081608	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	455068	50.0000	55.1	9224
	56 Trichloroethene	130	6.792	6.792	(1.023)	323648	50.0000	53.7	
	57 Dibromomethane	93	7.178	7.178	(1.081)	170669	50.0000	51.3	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	275182	50.0000	52.4	
	60 Bromodichloromethane	83	7.324	7.324	(1.103)	361534	50.0000	51.0	
	65 1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	405633	50.0000	53.1	9680
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	405668	50.0000	49.0	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	1078174	50.0000	50.0	
	69 Toluene +	91	8.044	8.044	(0.882)	1222523	50.0000	51.0	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	272077	50.0000	50.6	
	73 4-methyl-2-pentanone	43	8.333	8.333	(0.914)	349567	50.0000	57.4	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	410810	50.0000	50.9	
M	82 1-3 Dichloropropene total	100				816478	100.000	99.9	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	272347	50.0000	50.0	
	78 Dibromochloromethane	129	8.603	8.603	(0.944)	321659	50.0000	51.3	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	455401	50.0000	52.6	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	267751	50.0000	51.4	
	83 2-Hexanone	43	8.917	8.917	(0.978)	289189	50.0000	52.2	
	86 1-Chlorohexane	91	9.105	9.105	(0.999)	335727	50.0000	48.8	9023
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	474261	50.0000		
	85 Chlorobenzene ++	112	9.127	9.127	(1.001)	888322	50.0000	50.0	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	447235	50.0000	53.5	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	297480	50.0000	49.4	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	1109426	100.000	101	
	90 o-Xylene	106	9.517	9.517	(1.044)	502709	50.0000	49.8	
M	121 TOTAL XYLENE	106				1612135	150.000	151	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	873102	50.0000	49.6	
	92 Bromoform ++	173	9.573	9.573	(1.050)	274879	50.0000	50.6	
	93 Isopropylbenzene	105	9.708	9.708	(1.065)	1338866	50.0000	49.4	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	394214	50.0000	49.6	
	96 Bromobenzene	77	9.963	9.963	(0.943)	634625	50.0000	47.9	
	97 n-Propylbenzene	91	9.963	9.963	(0.943)	1577999	50.0000	52.2	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	422944	50.0000	54.0	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	1099647	50.0000	52.0	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	1128089	50.0000	50.1	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	484410	50.0000	50.4	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	97000	50.0000	51.5	
	104 4-Chlorotoluene	91	10.173	10.173	(0.963)	1014342	50.0000	52.8	
	105 tert-butylbenzene	91	10.274	10.274	(0.972)	595001	50.0000	55.5	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	1043150	50.0000	48.6	
	108 sec-Butylbenzene	105	10.383	10.383	(0.983)	1461065	50.0000	49.9	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	1212871	50.0000	48.9	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	772414	50.0000	51.3	
*	114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	516508	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	793231	50.0000	49.9	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	949005	50.0000	47.2	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	710387	50.0000	49.9	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	104540	50.0000	52.6	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	211708	50.0000	46.5	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	439435	50.0000	48.2	
	124 Naphthalene	128	12.145	12.145	(1.149)	966332	50.0000	46.4	
	125 1,2,3-Trichlorobenzene	180	12.314	12.314	(1.165)	444603	50.0000	48.1	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3946D.d

Date : 18-JAN-2016 16:30

Client ID: V13STD050

Instrument: msv13.i

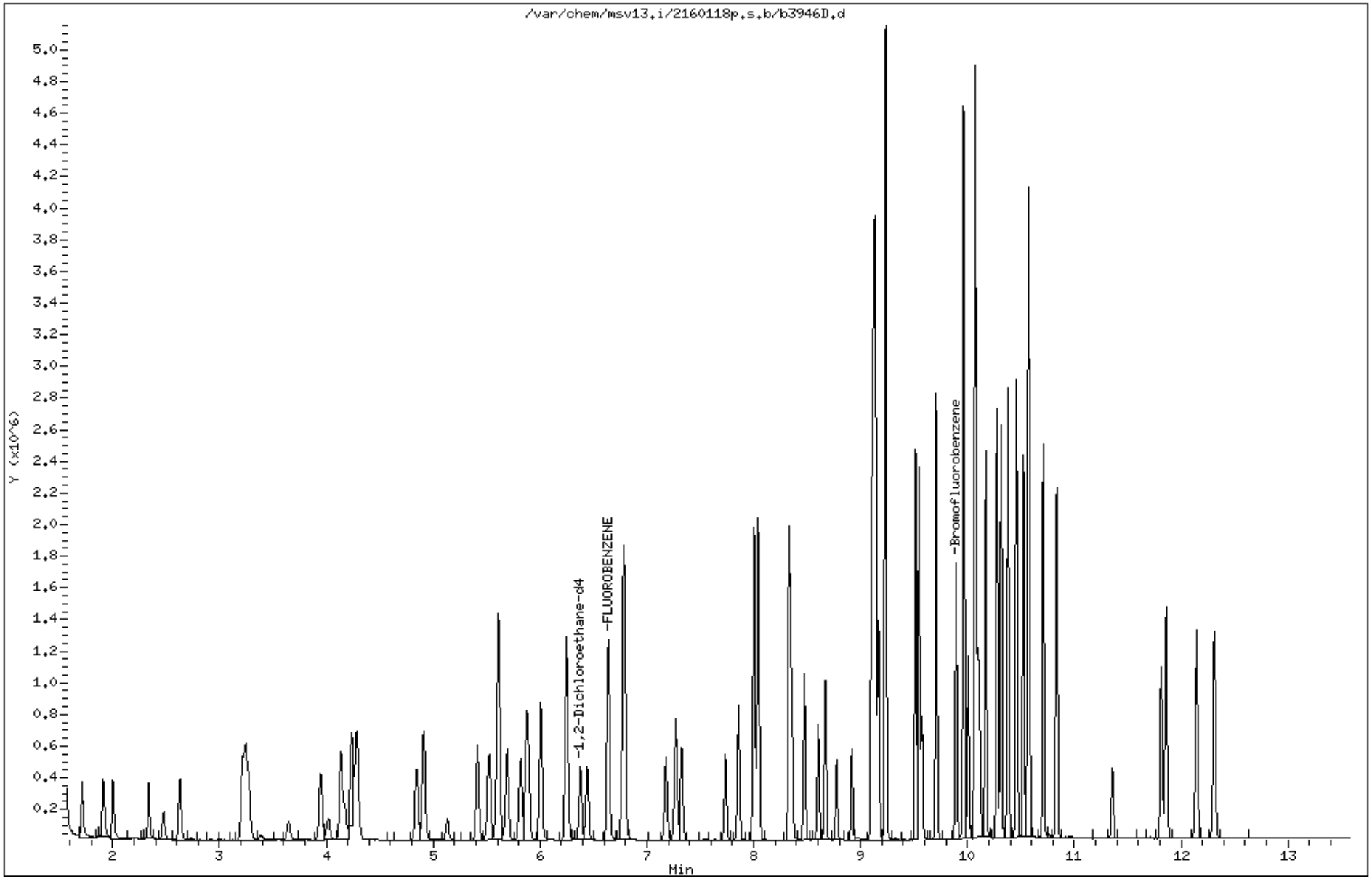
Sample Info: 1207*V13STD050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

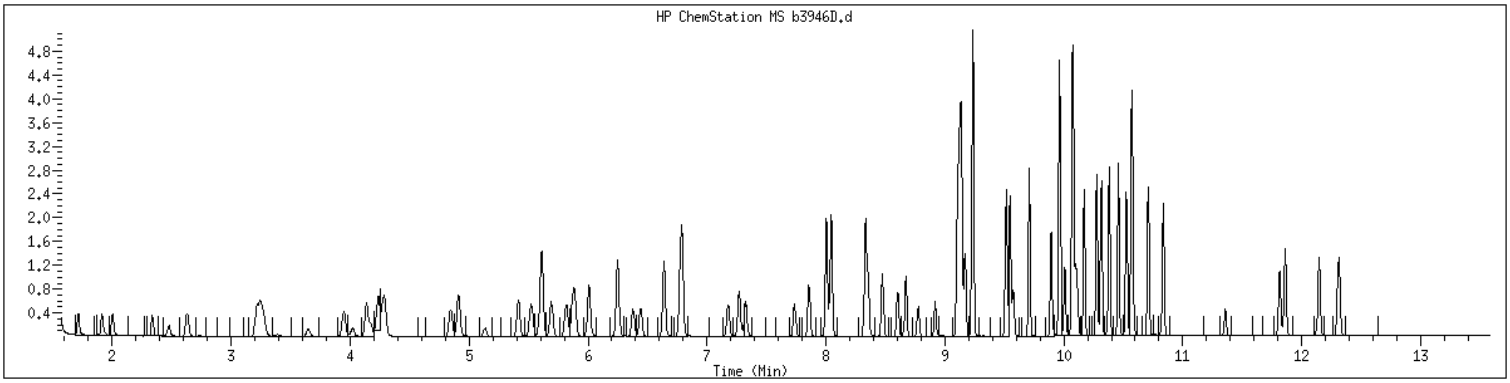
Column diameter: 0.25



Data file : /var/chem/msv13.i/2160118p.s.b/b3946D.d Page: 1
Report Date: 01/19/2016 18:53

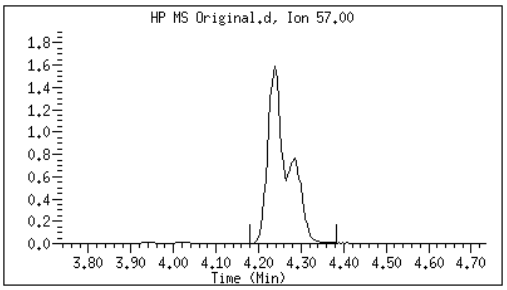
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1207 SampleType : CALIB_7
Injection Date: 01/18/2016 16:30 Instrument : msv13.i
Operator : JCK
Sample Info : 1207*V13STD050
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



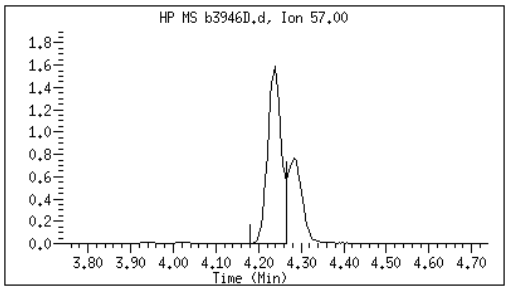
Original Final

20 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature
Applied

User: jck2
Date: 01/18/2016 16:57



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3947D.d
Lab Smp Id: 1208 Client Smp ID: V13STD100
Inj Date : 18-JAN-2016 16:59
Operator : JCK Inst ID: msv13.i
Smp Info : 1208*V13STD100
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 16:59 Cal File: b3947D.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.713	1.713	(0.258)	492011	100.000	98.7	
2	Chloromethane ++	50	1.911	1.911	(0.288)	691948	100.000	110	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	612041	100.000	105	
6	Bromomethane	94	2.335	2.335	(0.352)	332319	100.000	102	
7	Chloroethane	64	2.474	2.474	(0.373)	307305	100.000	103	
8	Trichlorofluoromethane	101	2.627	2.627	(0.396)	638249	100.000	101	
10	1,1-Dichloroethene +	96	3.212	3.212	(0.484)	403145	100.000	105	
11	Carbon Disulfide	76	3.238	3.238	(0.488)	1390970	100.000	108	
12	1,1,2Trichlotrifluoroethane	101	3.265	3.265	(0.492)	426567	100.000	106	
13	Methyl Iodide	142	3.385	3.385	(0.510)	122355	100.000	104	
14	Acrolein	56	3.647	3.647	(0.549)	232511	500.000	524	
16	Methylene Chloride	49	3.947	3.947	(0.595)	713409	100.000	108	
17	Acetone	43	4.018	4.018	(0.605)	364965	100.000	92.8	
18	trans-1,2-Dichloroethene	61	4.134	4.134	(0.623)	715858	100.000	108	

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19	Methyl Acetate	43	4.172	4.172	(0.628)	542712	100.000	97.2	8612
	20	Hexane	57	4.235	4.235	(0.638)	812698	100.000	107	9430(M2)
	21	MTBE	73	4.280	4.280	(0.645)	1613062	100.000	117	9636
	26	1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	967400	100.000	103	
	27	Acrylonitrile	53	4.910	4.910	(0.740)	1097719	500.000	529	
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	439503	100.000	100	
	29	cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	721332	100.000	111	
M	75	Total 1,2-Dichloroethene	61				1437190	200.000	219	
	30	2,2-Dichloropropane	77	5.521	5.521	(0.832)	752470	100.000	107	
	32	Cyclohexane	56	5.607	5.607	(0.845)	974644	100.000	105	8918
	34	Bromochloromethane	128	5.615	5.615	(0.846)	306742	100.000	101	
	35	Chloroform +	83	5.690	5.690	(0.857)	912826	100.000	101	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	704440	100.000	104	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	270989	50.0000	48.6	7005
	41	1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	783013	100.000	103	
	44	2-Butanone	43	6.001	6.001	(0.904)	410688	100.000	106	
	43	1,1-Dichloropropene	75	6.005	6.005	(0.905)	699044	100.000	119	
	46	Benzene	78	6.248	6.248	(0.941)	2255359	100.000	110	
$	50	1,2-Dichloroethane-d4	67	6.376	6.376	(0.960)	157480	50.0000	48.6	
	51	1,2-Dichloroethane	62	6.443	6.443	(0.971)	715212	100.000	102	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	1086409	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	975953	100.000	118	9288
	56	Trichloroethene	130	6.792	6.792	(1.023)	642662	100.000	106	
	57	Dibromomethane	93	7.174	7.174	(1.081)	339053	100.000	101	
	59	1,2-Dichloropropane +	63	7.272	7.272	(1.095)	568631	100.000	108	
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	735416	100.000	103	
	65	1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	828771	100.000	108	9674
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	878101	100.000	103	
$	68	Toluene-d8	98	8.003	8.003	(0.878)	1072454	50.0000	49.3	
	69	Toluene +	91	8.044	8.044	(0.882)	2507667	100.000	104	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	556578	100.000	103	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.914)	677985	100.000	110	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	845936	100.000	104	
M	82	1-3 Dichloropropene total	100				1724037	200.000	207	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	544917	100.000	99.4	
	78	Dibromochloromethane	129	8.603	8.603	(0.944)	643393	100.000	102	
	79	1,3-Dichloropropane	76	8.674	8.674	(0.951)	925197	100.000	106	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	544177	100.000	104	
	83	2-Hexanone	43	8.918	8.918	(0.978)	557144	100.000	97.9	
	86	1-Chlorohexane	91	9.105	9.105	(0.999)	742948	100.000	105	9591
*	84	CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	477619	50.0000		
	85	Chlorobenzene ++	112	9.131	9.131	(1.002)	1803149	100.000	101	
	87	Ethylbenzene +	106	9.139	9.139	(1.002)	914060	100.000	108	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.006)	598886	100.000	98.8	
	89	p,m-Xylene	106	9.236	9.236	(1.013)	2334074	200.000	209	
	90	o-Xylene	106	9.517	9.517	(1.044)	1076344	100.000	104	
M	121	TOTAL XYLENE	106				3410418	300.000	312	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	1873452	100.000	103	
	92 Bromoform ++	173	9.574	9.574	(1.050)	533302	100.000	97.4	
	93 Isopropylbenzene	105	9.708	9.708	(1.065)	2871091	100.000	103	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	402621	50.0000	50.3	
	96 Bromobenzene	77	9.963	9.963	(0.943)	1290506	100.000	95.1	
	97 n-Propylbenzene	91	9.967	9.967	(0.943)	3401099	100.000	110	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	809073	100.000	103	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	2303770	100.000	106	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.953)	2448478	100.000	104	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	924094	100.000	93.7	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	192848	100.000	99.9	
	104 4-Chlorotoluene	91	10.173	10.173	(0.962)	2144568	100.000	109	
	105 tert-butylbenzene	91	10.275	10.275	(0.972)	1269202	100.000	116	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	2338448	100.000	103	
	108 sec-Butylbenzene	105	10.379	10.379	(0.982)	3184458	100.000	105	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.989)	2733327	100.000	104	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	1620914	100.000	105	
*	114 1,4-DICHLOROBENZENE-D4	152	10.571	10.571	(1.000)	529578	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	1643499	100.000	101	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	2227434	100.000	104	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.025)	1548575	100.000	106	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.074)	207271	100.000	102	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	511330	100.000	112	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	1090926	100.000	117	
	124 Naphthalene	128	12.145	12.145	(1.149)	2304512	100.000	105	
	125 1,2,3-Trichlorobenzene	180	12.314	12.314	(1.165)	1035077	100.000	109	

QC Flag Legend

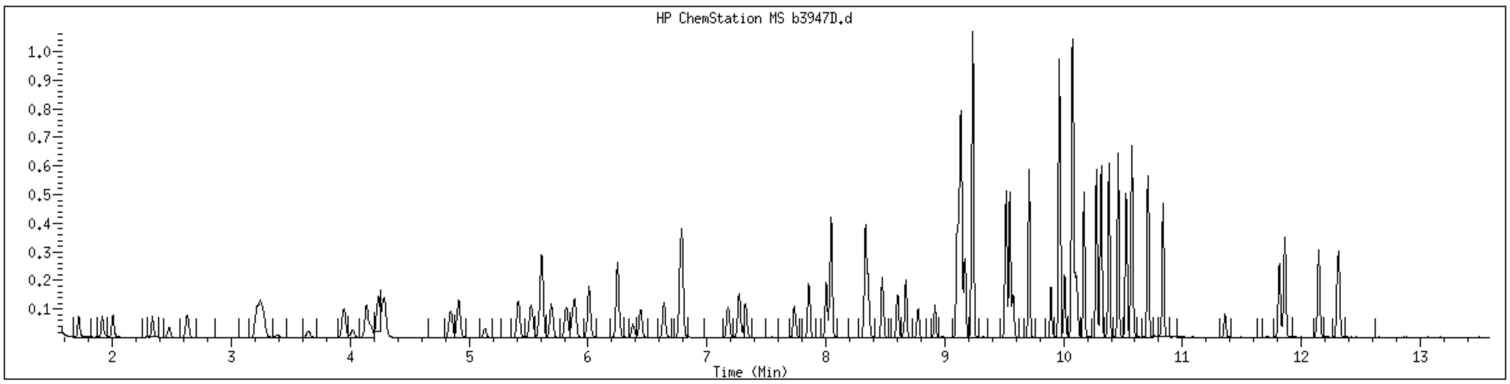
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3947D.d
Date : 18-JAN-2016 16:59
Client ID: V13STD100
Sample Info: 1208wV13STD100
Purge Volume: 5.0
Column phase: RTX-VMS-30M
Instrument: msv13.i
Operator: JCK
Column diameter: 0.25
Page 1
Y (x10^7)
Min
-Dibromofluoromethane+
-1,2-Dichloroethane-d4
-FLUOROBENZENE
-Toluene-d8+
-CHLOROBENZENE-d5+
-Bromofluorobenzene
-1,4-DICHLOROBENZENE-D4+
/var/chem/msv13.i/2160118p.s.b/b3947D.d

Report Date: 01/19/2016 18:53

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID   : 1208   SampleType   : CALIB_8
Injection Date: 01/18/2016 16:59   Instrument   : msv13.i
Operator   : JCK
Sample Info   : 1208*V13STD100
Misc Info   : MSV~35254~*1*JCK
Method   : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution   : 1.00
Matrix   : WATER
Integrator   : HP RTE   Compound Sublist: 8260b-CVE



Original   Final

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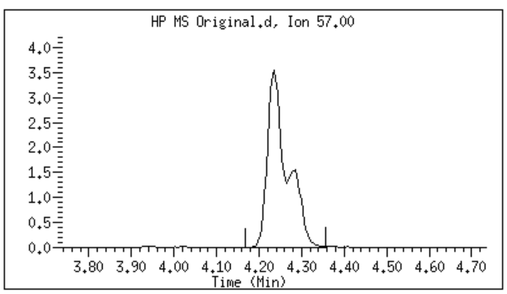
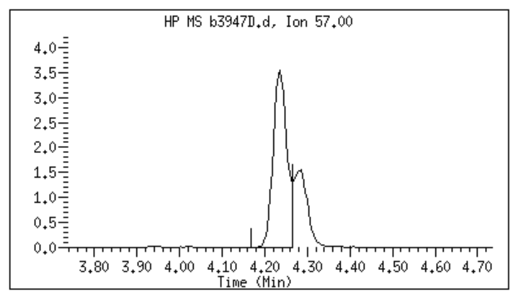
20 Hexane   CAS#: 110-54-3   Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 17:25



M2 - Target system integrated incorrectly

Revision 1

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3948D.d
Lab Smp Id: 1209 Client Smp ID: V13STD200
Inj Date : 18-JAN-2016 17:20
Operator : JCK Inst ID: msv13.i
Smp Info : 1209*V13STD200
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.713	1.713	(0.258)	969288	200.000	181	
2 Chloromethane ++	50	1.911	1.911	(0.288)	1283336	200.000	193	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	1189795	200.000	191	
6 Bromomethane	94	2.335	2.335	(0.352)	688886	200.000	199	
7 Chloroethane	64	2.470	2.470	(0.372)	625409	200.000	198	
8 Trichlorofluoromethane	101	2.627	2.627	(0.396)	1228792	200.000	181	
10 1,1-Dichloroethene +	96	3.212	3.212	(0.484)	803315	200.000	196	
11 Carbon Disulfide	76	3.238	3.238	(0.488)	2693175	200.000	196	
12 1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	782863	200.000	182	
13 Methyl Iodide	142	3.385	3.385	(0.510)	397326	200.000	200	
14 Acrolein	56	3.647	3.647	(0.549)	463425	1000.00	975	
16 Methylene Chloride	49	3.947	3.947	(0.595)	1395321	200.000	197	
17 Acetone	43	4.018	4.018	(0.605)	745783	200.000	177	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	1445886	200.000	204	(A)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.172	4.172	(0.628)	1104461	200.000	184	8626
	20 Hexane	57	4.235	4.235	(0.638)	1622799	200.000	197	9398(M2)
	21 MTBE	73	4.280	4.280	(0.645)	3303961	200.000	224	9727(A)
	26 1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	1929312	200.000	192	
	27 Acrylonitrile	53	4.910	4.910	(0.740)	2408932	1000.00	1080	(A)
	28 Vinyl Acetate	43	5.131	5.131	(0.773)	963724	200.000	201	(A)
	29 cis-1,2-Dichloroethene	61	5.413	5.413	(0.815)	1465587	200.000	210	(A)
M	75 Total 1,2-Dichloroethene	61				2911473	400.000	414	
	30 2,2-Dichloropropane	77	5.521	5.521	(0.832)	1508913	200.000	199	
	32 Cyclohexane	56	5.607	5.607	(0.845)	1991249	200.000	198	9085
	34 Bromochloromethane	128	5.615	5.615	(0.846)	580393	200.000	179	
	35 Chloroform +	83	5.690	5.690	(0.857)	1807993	200.000	187	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	1413485	200.000	194	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	287140	50.0000	48.1	7028
	41 1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	1563359	200.000	191	
	44 2-Butanone	43	6.001	6.001	(0.904)	888015	200.000	214	(A)
	43 1,1-Dichloropropene	75	6.009	6.009	(0.905)	1424674	200.000	226	(A)
	46 Benzene	78	6.248	6.248	(0.941)	4605260	200.000	210	(A)
$	50 1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	167585	50.0000	48.2	
	51 1,2-Dichloroethane	62	6.443	6.443	(0.971)	1417474	200.000	188	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	1164248	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	1973304	200.000	222	9354(A)
	56 Trichloroethene	130	6.792	6.792	(1.023)	1289245	200.000	199	
	57 Dibromomethane	93	7.178	7.178	(1.081)	684030	200.000	191	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	1154801	200.000	204	(A)
	60 Bromodichloromethane	83	7.324	7.324	(1.103)	1475005	200.000	193	
	65 1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	1684675	200.000	205	9671(A)
	67 cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	1828120	200.000	199	
$	68 Toluene-d8	98	8.003	8.003	(0.877)	1140482	50.0000	49.6	
	69 Toluene +	91	8.044	8.044	(0.882)	5088049	200.000	199	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	1107148	200.000	193	
	73 4-methyl-2-pentanone	43	8.329	8.329	(0.913)	1446607	200.000	223	(A)
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	1741724	200.000	198	
M	82 1-3 Dichloropropene total	100				3569844	400.000	397	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.929)	1104224	200.000	190	
	78 Dibromochloromethane	129	8.603	8.603	(0.943)	1316321	200.000	197	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	1872690	200.000	203	(A)
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.962)	1111691	200.000	200	(A)
	83 2-Hexanone	43	8.917	8.917	(0.978)	1222184	200.000	201	(A)
	86 1-Chlorohexane	91	9.105	9.105	(0.998)	1498808	200.000	198	9123
*	84 CHLOROBENZENE-d5	82	9.120	9.120	(1.000)	505336	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.001)	3596303	200.000	190	
	87 Ethylbenzene +	106	9.142	9.142	(1.002)	1833952	200.000	206	(A)
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.005)	1189061	200.000	185	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	4701572	400.000	396	
	90 o-Xylene	106	9.517	9.517	(1.044)	2200529	200.000	198	
M	121 TOTAL XYLENE	106				6902101	600.000	594	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.547	9.547	(1.047)	3852583	200.000	199	
92	Bromoform ++	173	9.573	9.573	(1.050)	1091879	200.000	188	
93	Isopropylbenzene	105	9.708	9.708	(1.065)	5927415	200.000	199	
$ 95	Bromofluorobenzene	174	9.896	9.896	(1.085)	428114	50.0000	50.6	
96	Bromobenzene	77	9.963	9.963	(0.943)	2619672	200.000	181	
97	n-Propylbenzene	91	9.967	9.967	(0.943)	6980537	200.000	212	(A)
98	1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	1630478	200.000	197	
99	2-Chlorotoluene	91	10.072	10.072	(0.953)	4657640	200.000	202	(A)
102	1,3,5-Trimethylbenzene	105	10.080	10.080	(0.954)	4992513	200.000	198	
100	1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	1890717	200.000	180	
101	trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	384244	200.000	187	
104	4-Chlorotoluene	91	10.173	10.173	(0.962)	4302604	200.000	205	(A)
105	tert-butylbenzene	91	10.274	10.274	(0.972)	2545350	200.000	218	(A)
107	1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	4901112	200.000	199	
108	sec-Butylbenzene	105	10.379	10.379	(0.982)	6446625	200.000	198	
110	p-Isopropyltoluene	119	10.458	10.458	(0.989)	5608700	200.000	198	
113	1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	3224999	200.000	197	
* 114	1,4-DICHLOROBENZENE-D4	152	10.571	10.571	(1.000)	563169	50.0000		
115	1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	3233316	200.000	186	
117	n-Butylbenzene	91	10.709	10.709	(1.013)	4585441	200.000	199	
118	1,2-Dichlorobenzene	146	10.837	10.837	(1.025)	3095804	200.000	199	
119	1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.074)	439219	200.000	203	(A)
120	Hexachlorobutadiene	225	11.815	11.815	(1.118)	935693	200.000	194	
122	1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	2078112	200.000	209	(A)
124	Naphthalene	128	12.145	12.145	(1.149)	4679299	200.000	198	
125	1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	2061429	200.000	205	(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M2- Compound response manually integrated because Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3948D.d

Date : 18-JAN-2016 17:20

Client ID: V13STD200

Instrument: msv13.i

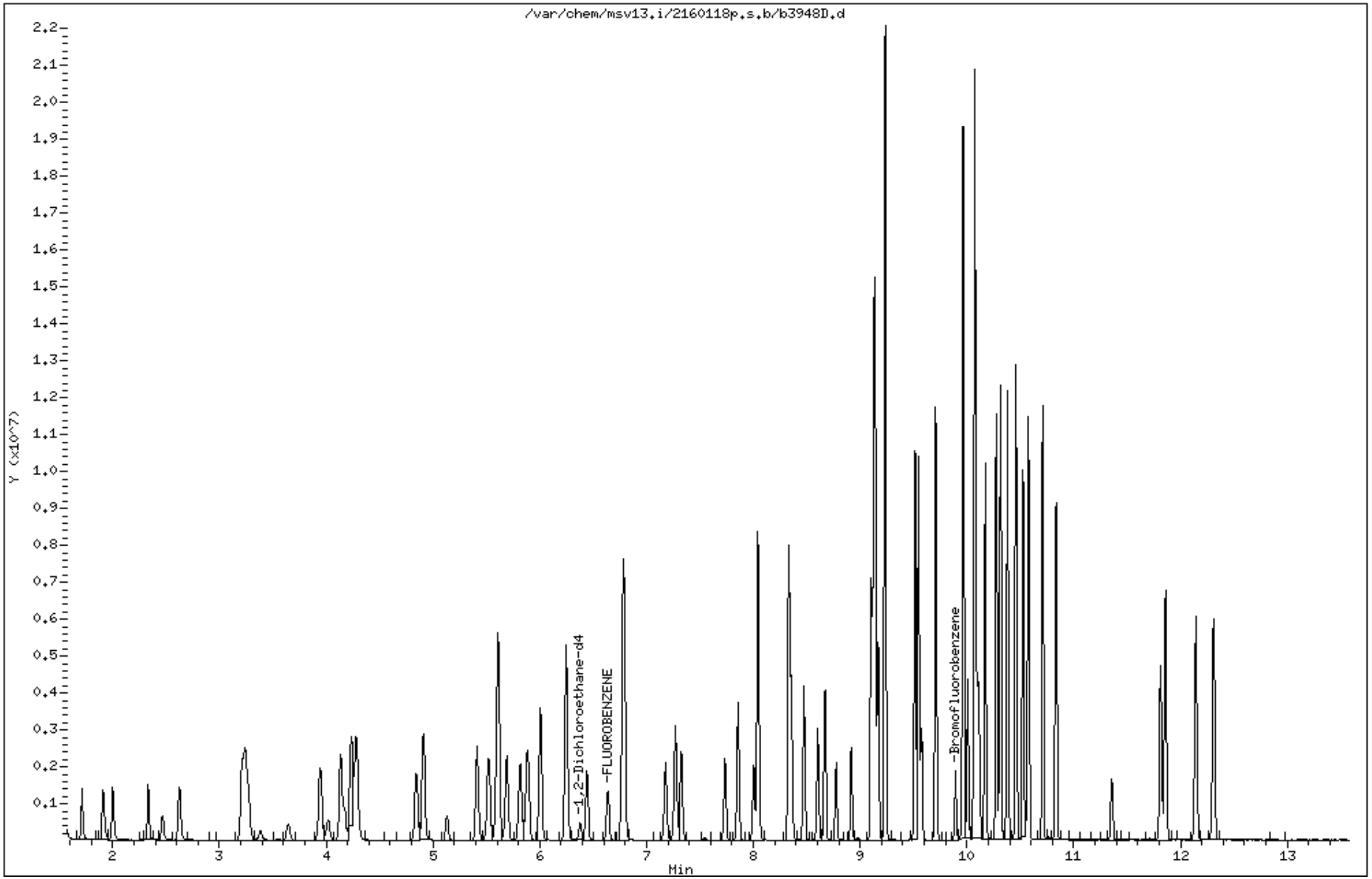
Sample Info: 1209*V13STD200

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

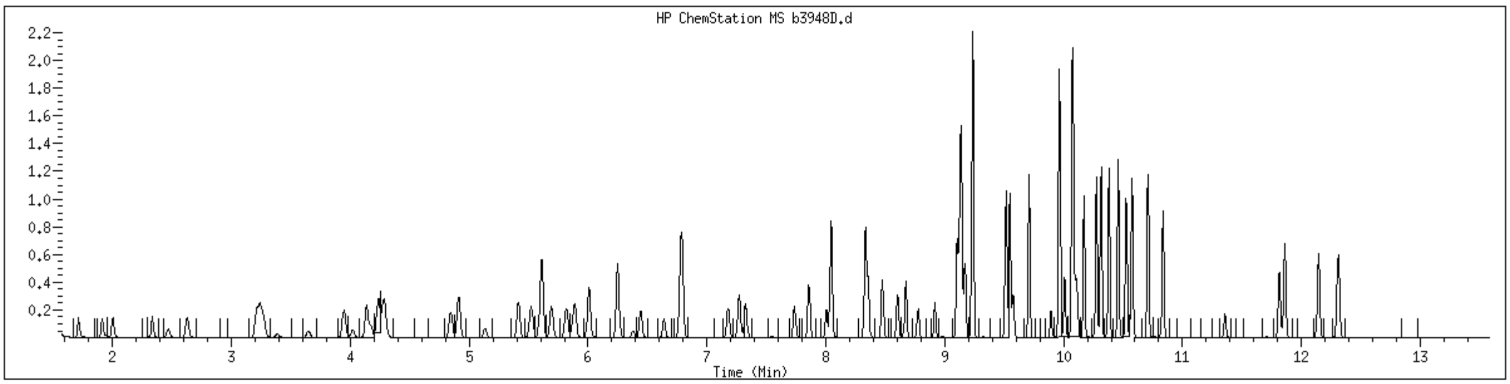
Column diameter: 0.25



Report Date: 01/19/2016 18:54

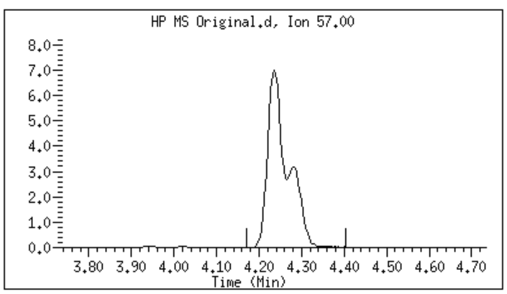
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1209 SampleType : CALIB_9
Injection Date: 01/18/2016 17:20 Instrument : msv13.i
Operator : JCK
Sample Info : 1209*V13STD200
Misc Info : MSV~35254~*1*JCK
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



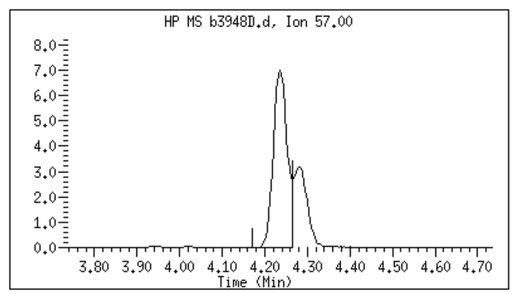
Original Final

20 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/18/2016 17:40



M2 - Target system integrated incorrectly

Revision 1

Form 6I

ICAL Verifications

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	216012515	Instrument ID:	MSV13
Analysis Date:	01/18/16 1822	Lab File ID:	2160118p/b3951D
Analysis Method:	EPA 8260B	Analytical Batch:	577166

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL
1,1,1-Trichloroethane	ug/L	50.0	48.6	97	80	120
1,1,2,2-Tetrachloroethane	ug/L	50.0	50.5	101	80	120
1,1,2-Trichloroethane	ug/L	50.0	49.0	98	80	120
1,1-Dichloroethane	ug/L	50.0	48.7	97	80	120
1,1-Dichloroethene	ug/L	50.0	46.8	94	80	120
1,2,3-Trichlorobenzene	ug/L	50.0	56.3	113	80	120
1,2,4-Trichlorobenzene	ug/L	50.0	56.7	113	80	120
1,2-Dibromo-3-chloropropane	ug/L	50.0	52.0	104	80	120
1,2-Dibromoethane	ug/L	50.0	51.3	103	80	120
1,2-Dichlorobenzene	ug/L	50.0	51.4	103	80	120
1,2-Dichloroethane	ug/L	50.0	49.0	98	80	120
1,2-Dichloropropane	ug/L	50.0	50.9	102	80	120
1,3-Dichlorobenzene	ug/L	50.0	50.0	100	80	120
1,4-Dichlorobenzene	ug/L	50.0	48.0	96	80	120
2-Butanone	ug/L	50.0	54.8	110	80	120
2-Hexanone	ug/L	50.0	52.4	105	80	120
4-Methyl-2-pentanone	ug/L	50.0	54.8	110	80	120
Acetone	ug/L	50.0	48.1	96	80	120
Benzene	ug/L	50.0	51.4	103	80	120
Bromochloromethane	ug/L	50.0	49.4	99	80	120
Bromodichloromethane	ug/L	50.0	49.6	99	80	120
Bromoform	ug/L	50.0	49.5	99	80	120
Bromomethane	ug/L	50.0	48.2	96	80	120
Carbon disulfide	ug/L	50.0	46.5	93	80	120
Carbon tetrachloride	ug/L	50.0	48.7	97	80	120
Chlorobenzene	ug/L	50.0	47.9	96	80	120
Chloroethane	ug/L	50.0	46.6	93	80	120
Chloroform	ug/L	50.0	48.2	96	80	120
Chloromethane	ug/L	50.0	50.0	100	80	120
cis-1,2-Dichloroethene	ug/L	50.0	51.3	103	80	120
Cyclohexane	ug/L	50.0	48.2	96	80	120
Dibromochloromethane	ug/L	50.0	49.6	99	80	120
Dichlorodifluoromethane	ug/L	50.0	46.1	92	80	120
Ethylbenzene	ug/L	50.0	51.0	102	80	120

FORM 6I - ORG

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	216012515	Instrument ID:	MSV13
Analysis Date:	01/18/16 1822	Lab File ID:	2160118p/b3951D
Analysis Method:	EPA 8260B	Analytical Batch:	577166

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*
Isopropylbenzene (Cumene)	ug/L	50.0	47.6	95	80	120
Methyl Acetate	ug/L	50.0	48.3	97	80	120
Methylcyclohexane	ug/L	50.0	52.8	106	80	120
Methylene chloride	ug/L	50.0	52.5	105	80	120
Styrene	ug/L	50.0	49.0	98	80	120
tert-Butyl methyl ether (MTBE)	ug/L	50.0	56.4	113	80	120
Tetrachloroethene	ug/L	50.0	48.8	98	80	120
Toluene	ug/L	50.0	49.2	98	80	120
trans-1,3-Dichloropropene	ug/L	50.0	48.4	97	80	120
Trichloroethene	ug/L	50.0	50.9	102	80	120
Trichlorofluoromethane	ug/L	50.0	47.9	96	80	120
Trichlorotrifluoroethane	ug/L	50.0	47.2	94	80	120
Vinyl chloride	ug/L	50.0	47.8	96	80	120
Xylene (total)	ug/L	150	146	97	80	120

GCAL, Inc.

Data file : /var/chem/msv13.i/2160118p.s.b/b3951D.d
Lab Smp Id: 1600 Client Smp ID: ICV050
Inj Date : 18-JAN-2016 18:22
Operator : JCK Inst ID: msv13.i
Smp Info : 1600*ICV050
Misc Info : MSV~35254~*1*JCK
Comment :
Method : /var/chem/msv13.i/2160118p.s.b/8260dodw13.m
Meth Date : 19-Jan-2016 18:53 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1	Dichlorodifluoromethane	85	1.713	1.713	(0.258)	234129	46.0627	46.1	
2	Chloromethane ++	50	1.911	1.911	(0.288)	330960	50.0216	50.0	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	283241	47.7679	47.8	
6	Bromomethane	94	2.339	2.335	(0.352)	162722	48.1894	48.2	
7	Chloroethane	64	2.474	2.470	(0.373)	144280	46.5525	46.6	
8	Trichlorofluoromethane	101	2.627	2.627	(0.396)	309649	47.8624	47.9	
10	1,1-Dichloroethene +	96	3.212	3.212	(0.484)	182447	46.7815	46.8	
11	Carbon Disulfide	76	3.242	3.238	(0.488)	617725	46.5228	46.5	
12	1,1,2Trichlotrifluoroethane	101	3.264	3.268	(0.492)	193612	47.1955	47.2	
13	Methyl Iodide	142	3.384	3.385	(0.510)	57877	56.0027	56.0	
14	Acrolein	56	3.647	3.647	(0.549)	107165	236.939	237	
16	Methylene Chloride	49	3.947	3.947	(0.595)	357426	52.4950	52.5	
17	Acetone	43	4.018	4.018	(0.605)	192886	48.0898	48.1	
18	trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	334942	49.7093	49.7	

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/L)	SIMILARITY
	19	Methyl Acetate	43	4.175	4.172	(0.629)	275169	48.2958	48.3	8323
	20	Hexane	57	4.235	4.235	(0.638)	351670	46.4605	46.5	9357(M2)
	21	MTBE	73	4.284	4.280	(0.645)	792969	56.4083	56.4	9606
	26	1,1-Dichloroethane ++	63	4.846	4.843	(0.730)	465443	48.7015	48.7	
	27	Acrylonitrile	53	4.910	4.910	(0.740)	570467	269.417	269	
	28	Vinyl Acetate	43	5.131	5.131	(0.773)	180174	42.1161	42.1	
	29	cis-1,2-Dichloroethene	61	5.412	5.413	(0.815)	340845	51.3243	51.3	
M	75	Total 1,2-Dichloroethene	61				675787	101.034	101	
	30	2,2-Dichloropropane	77	5.525	5.521	(0.832)	340082	47.2284	47.2	
	32	Cyclohexane	56	5.607	5.607	(0.845)	449316	48.2110	48.2	8882
	34	Bromochloromethane	128	5.611	5.615	(0.845)	152678	49.3834	49.4	
	35	Chloroform +	83	5.690	5.690	(0.857)	442509	48.1699	48.2	
	36	Carbon Tetrachloride	117	5.817	5.817	(0.876)	337478	48.7487	48.7	
$	40	Dibromofluoromethane	111	5.870	5.870	(0.884)	276620	48.6889	48.7	6979
	41	1,1,1-Trichloroethane	97	5.889	5.889	(0.887)	377922	48.6373	48.6	
	44	2-Butanone	43	6.001	6.001	(0.904)	216073	54.8071	54.8	
	43	1,1-Dichloropropene	75	6.008	6.009	(0.905)	322272	53.6119	53.6	
	46	Benzene	78	6.248	6.248	(0.941)	1073450	51.3874	51.4	
$	50	1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	161577	48.8504	48.9	
	51	1,2-Dichloroethane	62	6.440	6.443	(0.970)	351424	48.9701	49.0	
*	53	FLUOROBENZENE	96	6.638	6.638	(1.000)	1108063	50.0000		
	55	Methyl Cyclohexane	83	6.781	6.781	(1.021)	446693	52.7690	52.8	9231
	56	Trichloroethene	130	6.792	6.792	(1.023)	314156	50.9198	50.9	
	57	Dibromomethane	93	7.178	7.178	(1.081)	168361	49.3669	49.4	
	59	1,2-Dichloropropane +	63	7.272	7.272	(1.095)	273662	50.8996	50.9	
	60	Bromodichloromethane	83	7.324	7.324	(1.103)	360276	49.6017	49.6	
	65	1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	402853	51.4673	51.5	9718
	67	cis-1,3-Dichloropropene	75	7.857	7.857	(1.184)	400916	47.3525	47.4	
$	68	Toluene-d8	98	8.007	8.003	(0.878)	1093443	50.2735	50.3	
	69	Toluene +	91	8.044	8.044	(0.882)	1187490	49.1785	49.2	
	71	Tetrachloroethene	164	8.333	8.333	(0.914)	264350	48.7980	48.8	
	73	4-methyl-2-pentanone	43	8.329	8.329	(0.913)	336466	54.7903	54.8	
	74	trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	399522	48.3822	48.4	
M	82	1-3 Dichloropropene total	100				800438	95.7347	95.7	0
	76	1,1,2-Trichloroethane	97	8.475	8.475	(0.929)	268711	48.9673	49.0	
	78	Dibromochloromethane	129	8.603	8.603	(0.943)	313421	49.6024	49.6	
	79	1,3-Dichloropropane	76	8.670	8.674	(0.951)	445796	51.0775	51.1	
	80	1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.962)	269708	51.3397	51.3	
	83	2-Hexanone	43	8.921	8.917	(0.978)	292938	52.4425	52.4	
	86	1-Chlorohexane	91	9.105	9.105	(0.998)	330770	47.7888	47.8	9088
*	84	CHLOROBENZENE-d5	82	9.120	9.120	(1.000)	477949	50.0000		
	85	Chlorobenzene ++	112	9.131	9.131	(1.001)	858258	47.8904	47.9	
	87	Ethylbenzene +	106	9.139	9.142	(1.002)	430066	51.0072	51.0	
	88	1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.005)	288328	47.5250	47.5	
	89	p,m-Xylene	106	9.236	9.236	(1.013)	1077248	97.1475	97.1	
	90	o-Xylene	106	9.517	9.517	(1.044)	497930	48.9430	48.9	
M	121	TOTAL XYLENE	106				1575178	146.091	146	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	869392	49.0225	49.0	
	92 Bromoform ++	173	9.573	9.573	(1.050)	271233	49.5053	49.5	
	93 Isopropylbenzene	105	9.708	9.708	(1.065)	1298690	47.5843	47.6	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.085)	402974	50.3105	50.3	
	96 Bromobenzene	77	9.967	9.963	(0.943)	614419	46.3780	46.4	
	97 n-Propylbenzene	91	9.967	9.967	(0.943)	1529552	50.5344	50.5	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	396749	50.4966	50.5	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	1061790	50.1587	50.2	
	102 1,3,5-Trimethylbenzene	105	10.079	10.080	(0.954)	1095141	48.6628	48.7	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	457111	47.5052	47.5	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	90140	47.8329	47.8	
	104 4-Chlorotoluene	91	10.173	10.173	(0.962)	989258	51.4642	51.5	
	105 tert-butylbenzene	91	10.274	10.274	(0.972)	577729	53.8737	53.9	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	1042228	48.5221	48.5	
	108 sec-Butylbenzene	105	10.383	10.379	(0.982)	1405496	48.0087	48.0	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.989)	1194911	48.1351	48.1	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	752130	49.9531	50.0	
*	114 1,4-DICHLOROBENZENE-D4	152	10.571	10.571	(1.000)	516883	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	763865	47.9981	48.0	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	929003	46.2785	46.3	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.025)	733025	51.4244	51.4	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.074)	103417	51.9657	52.0	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	248274	54.8393	54.8	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	516544	56.6607	56.7	
	124 Naphthalene	128	12.145	12.145	(1.149)	1159937	55.1656	55.2	
	125 1,2,3-Trichlorobenzene	180	12.314	12.310	(1.165)	520257	56.2941	56.3	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160118p.s.b/b3951D.d

Page 1

Date : 18-JAN-2016 18:22

Client ID: ICV050

Instrument: msv13.i

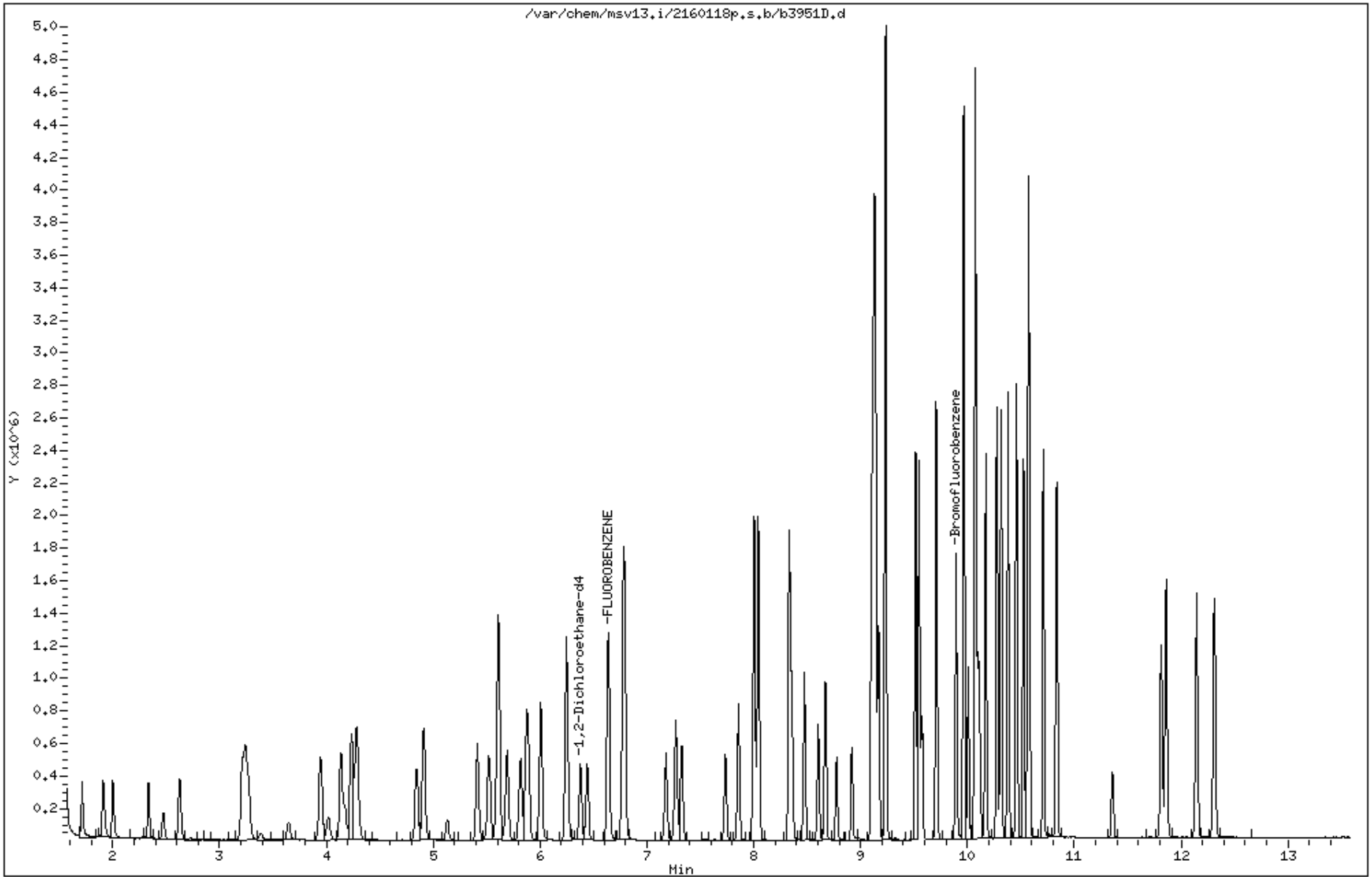
Sample Info: 1600*ICV050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

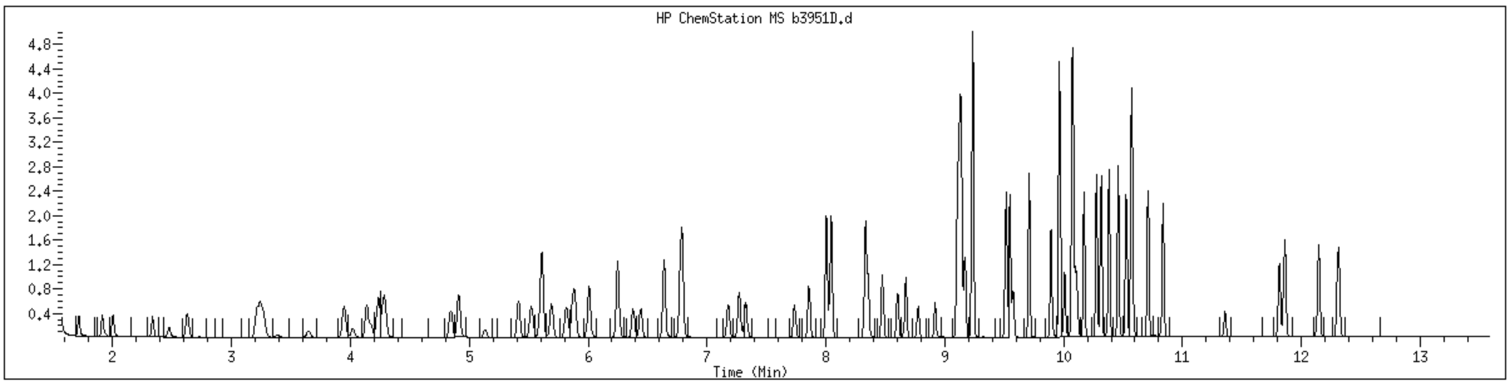
Column diameter: 0.25



Revision 1

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID	: 1600	SampleType	: LCS
Injection Date	: 01/18/2016 18:22	Instrument	: msv13.i
Operator	: JCK		
Sample Info	: 1600*ICV050		
Misc Info	: MSV~35254~*1*JCK		
Method	: /var/chem/msv13.i/2160118p.s.b/8260dodw13.m		
Dilution	: 1.00		
Matrix	: WATER		
Integrator	: HP RTE	Compound Sublist	: 8260b-CVE



Original   Final

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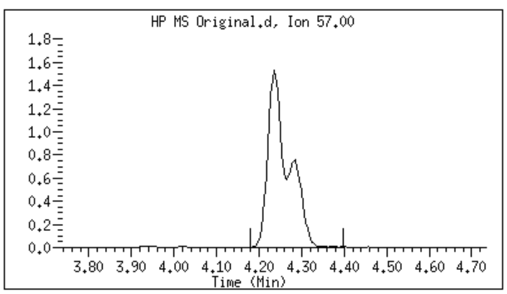
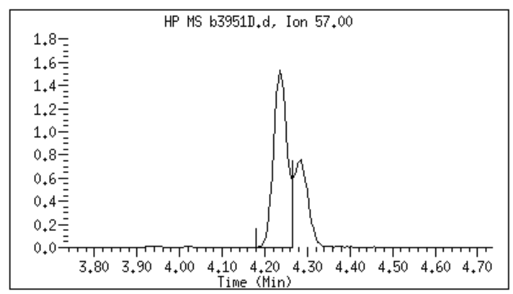
20 Hexane   CAS#: 110-54-3   Reason: M2



Electronic Signature Applied

User: jck2
Date: 01/19/2016 09:46



M2 - Target system integrated incorrectly

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	216012515	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160126/b4244
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	MMM
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577716
Anlysis Date:	01/26/16 Time: 1106	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.635	0.618	.01	-2.57	20	A	
1,1,1-Trichloroethane	0.351	0.339	.01	-3.3	20	A	
1,1,2,2-Tetrachloroethane	50.0	50.9	.3	1.8	20	L	
1,1,2-Trichloroethane	0.574	0.559	.01	-2.69	20	A	
1,1-Dichloroethane	0.431	0.401	.1	-6.95	20	A	
1,1-Dichloroethene	0.176	0.186	.01	5.75	20	A	
1,1-Dichloropropene	0.271	0.266	.01	-2.09	20	A	
1,2,3-Trichlorobenzene	0.894	0.955	.01	6.78	20	A	
1,2,3-Trichloropropane	0.931	0.933	.01	.2	20	A	
1,2,4-Trichlorobenzene	0.882	0.892	.01	1.16	20	A	
1,2,4-Trimethylbenzene	50.0	50.0	.01	0	20	L	
1,2-Dibromo-3-chloropropane	0.193	0.194	.01	.92	20	A	
1,2-Dibromoethane	0.550	0.534	.01	-2.92	20	A	
1,2-Dichlorobenzene	1.379	1.351	.01	-2.04	20	A	
1,2-Dichloroethane	0.324	0.315	.01	-2.63	20	A	
1,2-Dichloroethene (total)	0.302	0.282	.01	-6.56	20	A	
1,2-Dichloropropane	0.243	0.241	.01	-.72	20	A	
1,3,5-Trimethylbenzene	50.0	49.0	.01	-2	20	L	
1,3-Dichlorobenzene	1.456	1.417	.01	-2.68	20	A	
1,3-Dichloropropane	0.913	0.892	.01	-2.26	20	A	
1,3-Dichloropropylene	100.0	95.1	.01	-4.9	20	L	
1,4-Dichlorobenzene	1.539	1.444	.01	-6.19	20	A	
1-Bromo-2-Chloroethane	0.353	0.354	.01	.34	20	A	
1-Chlorohexane	50.0	47.9	.01	-4.2	20	L	
2,2-Dichloropropane	0.325	0.318	.01	-2.14	20	A	
2-Butanone	0.178	0.190	.01	6.7	20	A	
2-Chlorotoluene	2.048	2.000	.01	-2.32	20	A	
2-Hexanone	50.0	47.1	.01	-5.8	20	L	
4-Chlorotoluene	1.859	1.836	.01	-1.25	20	A	
4-Isopropyltoluene	50.0	47.6	.01	-4.8	20	L	
4-Methyl-2-pentanone	0.642	0.678	.01	5.49	20	A	
Acetone	0.181	0.171	.01	-5.51	20	A	
Acrolein	0.020	0.020	.01	-.2	20	A	
Acrylonitrile	0.096	0.116	.01	21.1	20	A	*
Benzene	0.943	0.942	.01	-.05	20	A	
Bromobenzene	1.282	1.155	.01	-9.87	20	A	
Bromochloromethane	0.140	0.137	.01	-1.94	20	A	
Bromodichloromethane	0.328	0.328	.01	.14	20	A	
Bromoform	0.573	0.573	.1	-.04	20	A	

FORM V II VOA

Revision 1

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	216012515	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160126/b4244
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	MMM
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577716
Anlysis Date:	01/26/16 Time: 1106	Analytical Method:	EPA 8260B

ANALYTE	*RRF*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	50.0	43.9	.01	-12.2	20	L	
Carbon disulfide	50.0	50.8	.01	1.6	20	L	
Carbon tetrachloride	0.312	0.307	.01	-1.64	20	A	
Chlorobenzene	1.875	1.793	.3	-4.39	20	A	
Chloroethane	50.0	55.2	.01	10.4	20	L	
Chloroform	0.415	0.408	.01	-1.63	20	A	
Chloromethane	50.0	42.3	.1	-15.4	20	L	
Cyclohexane	50.0	43.2	.01	-13.6	20	L	
Dibromochloromethane	0.661	0.642	.01	-2.89	20	A	
Dibromomethane	0.154	0.152	.01	-1.11	20	A	
Dichlorodifluoromethane	0.229	0.187	.01	-18.6	20	A	
Ethylbenzene	0.882	0.894	.01	1.34	20	A	
Hexachlorobutadiene	50.0	51.8	.01	3.6	20	L	
Isopropylbenzene (Cumene)	50.0	46.4	.01	-7.2	20	L	
Methyl Acetate	0.257	0.231	.01	-10.3	20	A	
Methyl iodide	50.0	57.5	.01	15	20	Q	
Methylcyclohexane	0.382	0.374	.01	-1.99	20	A	
Methylene chloride	50.0	49.3	.01	-1.4	20	L	
Naphthalene	50.0	49.7	.01	-.6	20	L	
Styrene	50.0	48.3	.01	-3.4	20	L	
Tetrachloroethene	0.567	0.532	.01	-6.06	20	A	
Toluene	2.526	2.380	.01	-5.77	20	A	
Trichloroethene	0.278	0.282	.01	1.22	20	A	
Trichlorofluoromethane	0.292	0.296	.01	1.48	20	A	
Trichlorotrifluoroethane	0.185	0.191	.01	3.4	20	A	
Vinyl acetate	50.0	46.0	.01	-8	20	L	
Vinyl chloride	0.268	0.224	.01	-16.1	20	A	
Xylene (total)	150.0	142.0	.01	-5.33	20	L	
cis-1,2-Dichloroethene	0.300	0.282	.01	-5.93	20	A	
cis-1,3-Dichloropropene	50.0	45.0	.01	-10	20	L	
m,p-Xylene	100.0	96.0	.01	-4	20	L	
n-Butylbenzene	50.0	45.5	.01	-9	20	L	
n-Hexane	50.0	44.5	.01	-11	20	L	
n-Propylbenzene	2.928	2.871	.01	-1.94	20	A	
o-Xylene	50.0	46.0	.01	-8	20	L	
sec-Butylbenzene	50.0	47.1	.01	-5.8	20	L	
tert-Butyl methyl ether (MTBE)	0.634	0.662	.01	4.34	20	A	
tert-Butylbenzene	1.037	1.069	.01	3.05	20	A	
trans-1,2-Dichloroethene	0.304	0.282	.01	-7.19	20	A	

FORM V II VOA

Revision 1

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	216012515	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160126/b4244
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	MMM
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577716
Anlysis Date:	01/26/16 Time: 1106	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,3-Dichloropropene	50.0	50.1	.01	.2	20	L	
trans-1,4-Dichloro-2-butene	0.182	0.180	.01	-1.48	20	A	
1,2-Dichloroethane-d4	0.149	0.157	.01	5.38	20	A	
4-Bromofluorobenzene	0.838	0.828	.01	-1.15	20	A	
Dibromofluoromethane	0.256	0.262	.01	2.33	20	A	
Toluene-d8	2.275	2.178	.01	-4.28	20	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4244.d
Lab Smp Id: 1400 Client Smp ID: V13STD050
Inj Date : 26-JAN-2016 11:06
Operator : MMM Inst ID: msv13.i
Smp Info : 1400*V13STD050
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Meth Date : 26-Jan-2016 11:29 mmm Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.716	1.716	(0.259)	166451	50.0000	40.7	
2	Chloromethane ++	50	1.911	1.911	(0.288)	227630	50.0000	42.3	
3	Vinyl Chloride +	62	2.001	2.001	(0.301)	200099	50.0000	41.9	
6	Bromomethane	94	2.335	2.335	(0.352)	119615	50.0000	43.9	
7	Chloroethane	64	2.477	2.477	(0.373)	137093	50.0000	55.2	
8	Trichlorofluoromethane	101	2.627	2.627	(0.396)	264377	50.0000	50.7	
10	1,1-Dichloroethene +	96	3.216	3.216	(0.484)	166063	50.0000	52.9	
11	Carbon Disulfide	76	3.242	3.242	(0.488)	542646	50.0000	50.8	
12	1,1,2Trichlotrifluoroethane	101	3.268	3.268	(0.492)	170797	50.0000	51.7	
13	Methyl Iodide	142	3.384	3.384	(0.510)	48164	50.0000	57.5	
14	Acrolein	56	3.647	3.647	(0.549)	90881	250.000	250	
16	Methylene Chloride	49	3.947	3.947	(0.595)	270758	50.0000	49.3	
17	Acetone	43	4.022	4.022	(0.606)	152603	50.0000	47.2	
18	trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	251824	50.0000	46.4	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.175	4.175	(0.629)	205732	50.0000	44.8	9696
	20 Hexane	57	4.235	4.235	(0.638)	270593	50.0000	44.5	8732
	21 MTBE	73	4.284	4.284	(0.645)	590648	50.0000	52.2	9583
	26 1,1-Dichloroethane ++	63	4.843	4.843	(0.730)	358098	50.0000	46.5	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	516345	250.000	303	
	28 Vinyl Acetate	43	5.135	5.135	(0.774)	159665	50.0000	46.0	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	251566	50.0000	47.0	
M	75 Total 1,2-Dichloroethene	61				503390	100.000	93.4	
	30 2,2-Dichloropropane	77	5.525	5.525	(0.832)	283759	50.0000	48.9	
	32 Cyclohexane	56	5.607	5.607	(0.845)	323127	50.0000	43.2	7834
	34 Bromochloromethane	128	5.615	5.615	(0.846)	122078	50.0000	49.0	
	35 Chloroform +	83	5.693	5.693	(0.858)	363883	50.0000	49.2	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	274188	50.0000	49.2	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	234108	50.0000	51.2	7326
	41 1,1,1-Trichloroethane	97	5.892	5.892	(0.888)	302568	50.0000	48.4	
	44 2-Butanone	43	6.005	6.005	(0.905)	169390	50.0000	53.4	
	43 1,1-Dichloropropene	75	6.008	6.008	(0.905)	236995	50.0000	49.0	
	46 Benzene	78	6.248	6.248	(0.941)	840689	50.0000	50.0	
$	50 1,2-Dichloroethane-d4	67	6.379	6.379	(0.961)	140352	50.0000	52.7	
	51 1,2-Dichloroethane	62	6.443	6.443	(0.971)	281367	50.0000	48.7	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	892365	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	334094	50.0000	49.0	8529
	56 Trichloroethene	130	6.792	6.792	(1.023)	251472	50.0000	50.6	
	57 Dibromomethane	93	7.178	7.178	(1.081)	135800	50.0000	49.4	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	214928	50.0000	49.6	
	60 Bromodichloromethane	83	7.328	7.328	(1.104)	292873	50.0000	50.1	
	65 1-Bromo-2-chloroethane	63	7.736	7.736	(1.165)	316261	50.0000	50.2	9742
	67 cis-1,3-Dichloropropene	75	7.856	7.856	(1.184)	306118	50.0000	45.0	
$	68 Toluene-d8	98	8.003	8.003	(0.878)	894861	50.0000	47.9	
	69 Toluene +	91	8.044	8.044	(0.882)	978044	50.0000	47.1	
	71 Tetrachloroethene	164	8.332	8.332	(0.914)	218756	50.0000	47.0	
	73 4-methyl-2-pentanone	43	8.332	8.332	(0.914)	278464	50.0000	52.7	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	333363	50.0000	50.1	
M	82 1-3 Dichloropropene total	100				639481	100.000	95.1	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.930)	229549	50.0000	48.7	
	78 Dibromochloromethane	129	8.606	8.606	(0.944)	263752	50.0000	48.6	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	366693	50.0000	48.9	
	80 1,2-Dibromoethane(EDB)	107	8.775	8.775	(0.963)	219234	50.0000	48.5	
	83 2-Hexanone	43	8.917	8.917	(0.978)	225042	50.0000	47.1	
	86 1-Chlorohexane	91	9.105	9.138	(0.999)	284983	50.0000	47.9	3518(M2)
*	84 CHLOROBENZENE-d5	82	9.116	9.116	(1.000)	410892	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.002)	736537	50.0000	47.8	
	87 Ethylbenzene +	106	9.138	9.138	(1.002)	367296	50.0000	50.7	
	88 1,1,1,2-Tetrachloroethane	133	9.168	9.168	(1.006)	254094	50.0000	48.7	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	914989	100.000	96.0	
	90 o-Xylene	106	9.517	9.517	(1.044)	401366	50.0000	46.0	
M	121 TOTAL XYLENE	106				1316355	150.000	142	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	735517	50.0000	48.3	
	92 Bromoform ++	173	9.573	9.573	(1.050)	235424	50.0000	50.0	
	93 Isopropylbenzene	105	9.708	9.708	(1.065)	1087065	50.0000	46.4	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.086)	340346	50.0000	49.4	
	96 Bromobenzene	77	9.963	9.963	(0.943)	524059	50.0000	45.1	
	97 n-Propylbenzene	91	9.963	9.963	(0.943)	1302693	50.0000	49.0	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	350896	50.0000	50.9	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	907543	50.0000	48.8	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.954)	968910	50.0000	49.0	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	423157	50.0000	50.1	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	81487	50.0000	49.3	
	104 4-Chlorotoluene	91	10.173	10.173	(0.963)	833133	50.0000	49.4	
	105 tert-butylbenzene	91	10.274	10.274	(0.972)	484996	50.0000	51.5	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	944288	50.0000	50.0	
	108 sec-Butylbenzene	105	10.383	10.383	(0.983)	1209496	50.0000	47.1	
	110 p-Isopropyltoluene	119	10.458	10.458	(0.990)	1037675	50.0000	47.6	
	113 1,3-Dichlorobenzene	146	10.525	10.525	(0.996)	643096	50.0000	48.7	
*	114 1,4-DICHLOROBENZENE-D4	152	10.567	10.567	(1.000)	453716	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	655212	50.0000	46.9	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	800008	50.0000	45.5	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.026)	612888	50.0000	49.0	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.075)	88146	50.0000	50.5	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	206386	50.0000	51.8	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	404761	50.0000	50.6	
	124 Naphthalene	128	12.145	12.145	(1.149)	913776	50.0000	49.7	
	125 1,2,3-Trichlorobenzene	180	12.314	12.314	(1.165)	433137	50.0000	53.4	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2160126.s.b/b4244.d
Date : 26-JAN-2016 11:06
Client ID: V13STD050
Sample Info: 1400*V13STD050
Purge Volume: 5.0
Column phase: RTX-VMS-30M

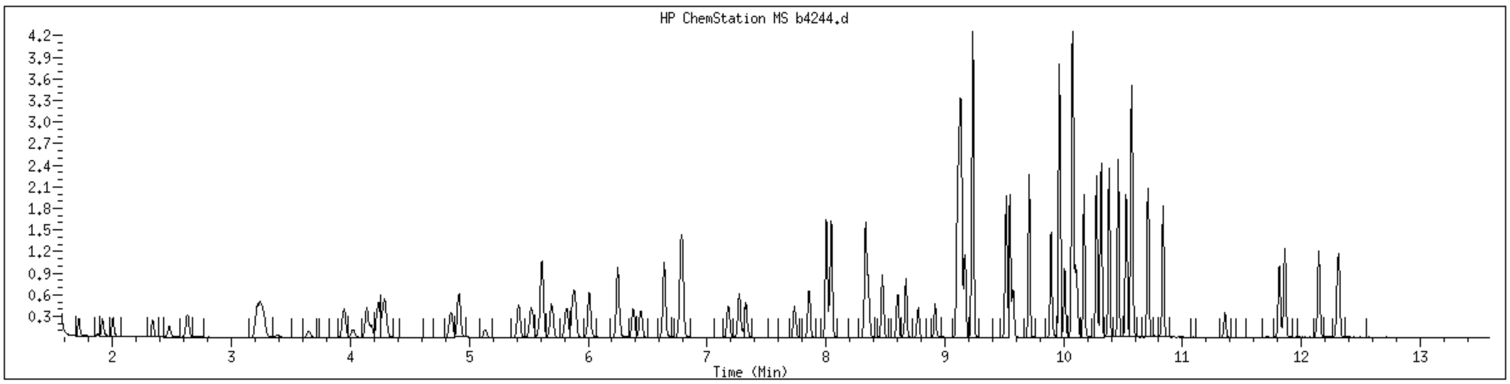
Instrument: msv13.i
Operator: MMH
Column diameter: 0.25

Report Date: 01/26/2016 11:31

MANUAL INTEGRATION GRAPHIC REPORT

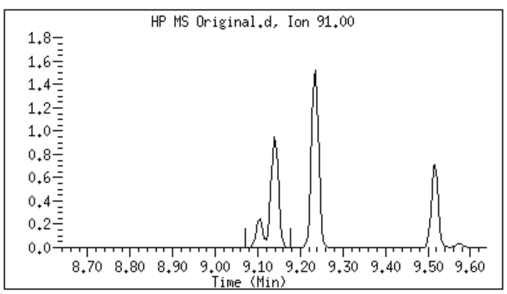
Lab ID : 1400
Injection Date: 01/26/2016 11:06
Operator : MMM
Sample Info : 1400*V13STD050
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE

SampleType : CCALIB_7
Instrument : msv13.i
Compound Sublist: 8260b-CVE



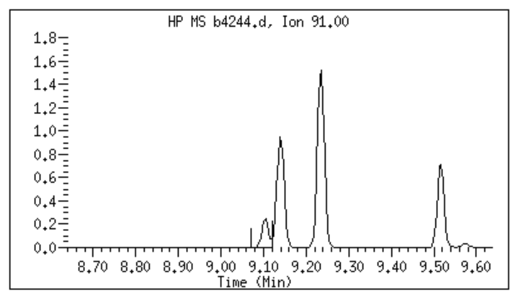
Original Final

86 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: mmm
Date: 01/26/2016 11:30



M2 - Target system integrated incorrectly

Revision 1

7A
VOLATILE CLOSING CALIBRATION CHECK

Report No:	216012515	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160126/b4266
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	MMM
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577716
Anlysis Date:	01/26/16 Time: 1917	Analytical Method:	EPA 8260B

ANALYTE	$\overline{RRF}$	RRF50	Min RRF	%D/%Drift	Max %D/ %Drift	TYPE	Q
1,1,1,2-Tetrachloroethane	0.635	0.634	.01	-.13	50	A	
1,1,1-Trichloroethane	0.351	0.349	.01	-.42	50	A	
1,1,2,2-Tetrachloroethane	50.0	50.0	.3	0	50	L	
1,1,2-Trichloroethane	0.574	0.561	.01	-2.3	50	A	
1,1-Dichloroethane	0.431	0.415	.1	-3.69	50	A	
1,1-Dichloroethene	0.176	0.192	.01	8.86	50	A	
1,1-Dichloropropene	0.271	0.266	.01	-1.92	50	A	
1,2,3-Trichlorobenzene	0.894	0.954	.01	6.7	50	A	
1,2,3-Trichloropropane	0.931	0.912	.01	-2.01	50	A	
1,2,4-Trichlorobenzene	0.882	0.885	.01	.36	50	A	
1,2,4-Trimethylbenzene	50.0	50.5	.01	1	50	L	
1,2-Dibromo-3-chloropropane	0.193	0.185	.01	-3.7	50	A	
1,2-Dibromoethane	0.550	0.551	.01	.26	50	A	
1,2-Dichlorobenzene	1.379	1.386	.01	.51	50	A	
1,2-Dichloroethane	0.324	0.328	.01	1.44	50	A	
1,2-Dichloroethene (total)	0.302	0.294	.01	-2.51	50	A	
1,2-Dichloropropane	0.243	0.248	.01	2.19	50	A	
1,3,5-Trimethylbenzene	50.0	50.2	.01	.4	50	L	
1,3-Dichlorobenzene	1.456	1.466	.01	.63	50	A	
1,3-Dichloropropane	0.913	0.915	.01	.17	50	A	
1,3-Dichloropropylene	100.0	97.1	.01	-2.9	50	L	
1,4-Dichlorobenzene	1.539	1.481	.01	-3.79	50	A	
1-Bromo-2-Chloroethane	0.353	0.360	.01	1.9	50	A	
1-Chlorohexane	50.0	46.4	.01	-7.2	50	L	
2,2-Dichloropropane	0.325	0.319	.01	-1.88	50	A	
2-Butanone	0.178	0.181	.01	1.77	50	A	
2-Chlorotoluene	2.048	2.048	.01	0	50	A	
2-Hexanone	50.0	43.8	.01	-12.4	50	L	
4-Chlorotoluene	1.859	1.891	.01	1.69	50	A	
4-Isopropyltoluene	50.0	47.8	.01	-4.4	50	L	
4-Methyl-2-pentanone	0.642	0.648	.01	.9	50	A	
Acetone	0.181	0.148	.01	-18.5	50	A	
Acrolein	0.020	0.024	.01	18	50	A	
Acrylonitrile	0.096	0.108	.01	12.8	50	A	
Benzene	0.943	0.974	.01	3.31	50	A	
Bromobenzene	1.282	1.181	.01	-7.86	50	A	
Bromochloromethane	0.140	0.144	.01	3.34	50	A	
Bromodichloromethane	0.328	0.337	.01	2.91	50	A	
Bromoform	0.573	0.573	.1	.02	50	A	

FORM V II VOA

Revision 1

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	216012515	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160126/b4266
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	MMM
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577716
Anlysis Date:	01/26/16 Time: 1917	Analytical Method:	EPA 8260B

ANALYTE	*RRF*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	50.0	46.9	.01	-6.2	50	L	
Carbon disulfide	50.0	54.0	.01	8	50	L	
Carbon tetrachloride	0.312	0.313	.01	.34	50	A	
Chlorobenzene	1.875	1.884	.3	.48	50	A	
Chloroethane	50.0	59.1	.01	18.2	50	L	
Chloroform	0.415	0.421	.01	1.46	50	A	
Chloromethane	50.0	40.0	.1	-20	50	L	
Cyclohexane	50.0	44.1	.01	-11.8	50	L	
Dibromochloromethane	0.661	0.651	.01	-1.47	50	A	
Dibromomethane	0.154	0.158	.01	2.36	50	A	
Dichlorodifluoromethane	0.229	0.182	.01	-20.7	50	A	
Ethylbenzene	0.882	0.934	.01	5.92	50	A	
Hexachlorobutadiene	50.0	52.3	.01	4.6	50	L	
Isopropylbenzene (Cumene)	50.0	48.0	.01	-4	50	L	
Methyl Acetate	0.257	0.224	.01	-12.9	50	A	
Methyl iodide	50.0	57.1	.01	14.2	50	Q	
Methylcyclohexane	0.382	0.387	.01	1.23	50	A	
Methylene chloride	50.0	46.8	.01	-6.4	50	L	
Naphthalene	50.0	47.5	.01	-5	50	L	
Styrene	50.0	49.2	.01	-1.6	50	L	
Tetrachloroethene	0.567	0.551	.01	-2.7	50	A	
Toluene	2.526	2.493	.01	-1.3	50	A	
Trichloroethene	0.278	0.305	.01	9.57	50	A	
Trichlorofluoromethane	0.292	0.306	.01	4.65	50	A	
Trichlorotrifluoroethane	0.185	0.205	.01	10.7	50	A	
Vinyl acetate	50.0	38.6	.01	-22.8	50	L	
Vinyl chloride	0.268	0.211	.01	-21.2	50	A	
Xylene (total)	150.0	148.0	.01	-1.33	50	L	
cis-1,2-Dichloroethene	0.300	0.291	.01	-3.02	50	A	
cis-1,3-Dichloropropene	50.0	45.7	.01	-8.6	50	L	
m,p-Xylene	100.0	99.8	.01	-.2	50	L	
n-Butylbenzene	50.0	45.1	.01	-9.8	50	L	
n-Hexane	50.0	39.7	.01	-20.6	50	L	
n-Propylbenzene	2.928	2.918	.01	-.34	50	A	
o-Xylene	50.0	48.0	.01	-4	50	L	
sec-Butylbenzene	50.0	47.9	.01	-4.2	50	L	
tert-Butyl methyl ether (MTBE)	0.634	0.665	.01	4.85	50	A	
tert-Butylbenzene	1.037	1.104	.01	6.38	50	A	
trans-1,2-Dichloroethene	0.304	0.298	.01	-2.01	50	A	

FORM V II VOA

Revision 1

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	216012515	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160126/b4266
Init. Calib. Date 1:	01/18/16 Time 1: 1507	Analyst:	MMM
Init. Calib. Date 2:	01/18/16 Time 2: 1720	Analytical Batch:	577716
Anlysis Date:	01/26/16 Time: 1917	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF50*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,3-Dichloropropene	50.0	51.4	.01	2.8	50	L	
trans-1,4-Dichloro-2-butene	0.182	0.165	.01	-9.65	50	A	
1,2-Dichloroethane-d4	0.149	0.153	.01	2.25	50	A	
4-Bromofluorobenzene	0.838	0.838	.01	-.04	50	A	
Dibromofluoromethane	0.256	0.262	.01	2.21	50	A	
Toluene-d8	2.275	2.215	.01	-2.65	50	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2160126.s.b/b4266.d
Lab Smp Id: 1440 Client Smp ID: V13STD050
Inj Date : 26-JAN-2016 19:17
Operator : MMM Inst ID: msv13.i
Smp Info : 1440*V13STD050
Misc Info : MSV~35296~*1*MMM
Comment :
Method : /var/chem/msv13.i/2160126.s.b/8260dod5w13.m
Meth Date : 27-Jan-2016 18:49 jck2 Quant Type: ISTD
Cal Date : 18-JAN-2016 17:20 Cal File: b3948D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b-CVE.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.716	1.716	(0.259)	152931	50.0000	39.6	
2 Chloromethane ++	50	1.911	1.911	(0.288)	204013	50.0000	40.0	
3 Vinyl Chloride +	62	2.001	2.001	(0.301)	177250	50.0000	39.4	
6 Bromomethane	94	2.339	2.339	(0.352)	120441	50.0000	46.9	
7 Chloroethane	64	2.477	2.477	(0.373)	137873	50.0000	59.1	
8 Trichlorofluoromethane	101	2.631	2.631	(0.396)	256988	50.0000	52.3	
10 1,1-Dichloroethene +	96	3.216	3.216	(0.484)	161136	50.0000	54.4	
11 Carbon Disulfide	76	3.242	3.242	(0.488)	542628	50.0000	54.0	
12 1,1,2Trichlotrifluoroethane	101	3.264	3.264	(0.492)	172411	50.0000	55.4	
13 Methyl Iodide	142	3.388	3.388	(0.510)	44950	50.0000	57.1	
14 Acrolein	56	3.651	3.651	(0.550)	101262	250.000	295	
16 Methylene Chloride	49	3.947	3.947	(0.595)	242481	50.0000	46.8	
17 Acetone	43	4.022	4.022	(0.606)	124074	50.0000	40.7	
18 trans-1,2-Dichloroethene	61	4.138	4.138	(0.623)	250619	50.0000	49.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.175	4.175	(0.629)	188179	50.0000	43.5	9638
	20 Hexane	57	4.235	4.235	(0.638)	226587	50.0000	39.7	8742
	21 MTBE	73	4.284	4.284	(0.645)	559474	50.0000	52.4	9533
	26 1,1-Dichloroethane ++	63	4.846	4.846	(0.730)	349353	50.0000	48.2	
	27 Acrylonitrile	53	4.914	4.914	(0.740)	453448	250.000	282	
	28 Vinyl Acetate	43	5.135	5.135	(0.774)	124245	50.0000	38.6	
	29 cis-1,2-Dichloroethene	61	5.416	5.416	(0.816)	244458	50.0000	48.5	
M	75 Total 1,2-Dichloroethene	61				495077	100.000	97.5	
	30 2,2-Dichloropropane	77	5.525	5.525	(0.832)	268182	50.0000	49.1	
	32 Cyclohexane	56	5.607	5.607	(0.845)	310833	50.0000	44.1	7768
	34 Bromochloromethane	128	5.615	5.615	(0.846)	121269	50.0000	51.7	
	35 Chloroform +	83	5.694	5.694	(0.858)	353777	50.0000	50.7	
	36 Carbon Tetrachloride	117	5.817	5.817	(0.876)	263645	50.0000	50.2	
$	40 Dibromofluoromethane	111	5.870	5.870	(0.884)	220402	50.0000	51.1	7348
	41 1,1,1-Trichloroethane	97	5.892	5.892	(0.888)	293691	50.0000	49.8	
	44 2-Butanone	43	6.008	6.008	(0.905)	152286	50.0000	50.9	
	43 1,1-Dichloropropene	75	6.008	6.008	(0.905)	223782	50.0000	49.0	
	46 Benzene	78	6.248	6.248	(0.941)	819124	50.0000	51.7	
$	50 1,2-Dichloroethane-d4	67	6.380	6.380	(0.961)	128371	50.0000	51.1	
	51 1,2-Dichloroethane	62	6.443	6.443	(0.971)	276317	50.0000	50.7	
*	53 FLUOROBENZENE	96	6.638	6.638	(1.000)	841149	50.0000		
	55 Methyl Cyclohexane	83	6.781	6.781	(1.021)	325258	50.0000	50.6	8492
	56 Trichloroethene	130	6.792	6.792	(1.023)	256594	50.0000	54.8	
	57 Dibromomethane	93	7.178	7.178	(1.081)	132501	50.0000	51.2	
	59 1,2-Dichloropropane +	63	7.272	7.272	(1.095)	208547	50.0000	51.1	
	60 Bromodichloromethane	83	7.328	7.328	(1.104)	283720	50.0000	51.5	
	65 1-Bromo-2-chloroethane	63	7.737	7.737	(1.165)	302730	50.0000	50.9	9772
	67 cis-1,3-Dichloropropene	75	7.860	7.860	(1.184)	292952	50.0000	45.7	
$	68 Toluene-d8	98	8.007	8.007	(0.878)	857514	50.0000	48.7	
	69 Toluene +	91	8.044	8.044	(0.882)	965200	50.0000	49.3	
	71 Tetrachloroethene	164	8.333	8.333	(0.914)	213478	50.0000	48.7	
	73 4-methyl-2-pentanone	43	8.333	8.333	(0.914)	250947	50.0000	50.5	
	74 trans-1,3-Dichloropropene	75	8.355	8.355	(1.259)	322641	50.0000	51.4	
M	82 1-3 Dichloropropene total	100				615593	100.000	97.1	0
	76 1,1,2-Trichloroethane	97	8.475	8.475	(0.929)	217130	50.0000	48.8	
	78 Dibromochloromethane	129	8.603	8.603	(0.943)	252154	50.0000	49.3	
	79 1,3-Dichloropropane	76	8.674	8.674	(0.951)	354063	50.0000	50.1	
	80 1,2-Dibromoethane(EDB)	107	8.779	8.779	(0.963)	213316	50.0000	50.1	
	83 2-Hexanone	43	8.917	8.917	(0.978)	196714	50.0000	43.8	
	86 1-Chlorohexane	91	9.101	9.101	(0.998)	260000	50.0000	46.4	9679
*	84 CHLOROBENZENE-d5	82	9.120	9.120	(1.000)	387135	50.0000		
	85 Chlorobenzene ++	112	9.131	9.131	(1.001)	729286	50.0000	50.2	
	87 Ethylbenzene +	106	9.139	9.139	(1.002)	361692	50.0000	53.0	
	88 1,1,1,2-Tetrachloroethane	133	9.169	9.169	(1.005)	245379	50.0000	49.9	
	89 p,m-Xylene	106	9.236	9.236	(1.013)	896513	100.000	99.8	
	90 o-Xylene	106	9.517	9.517	(1.044)	395344	50.0000	48.0	
M	121 TOTAL XYLENE	106				1291857	150.000	148	

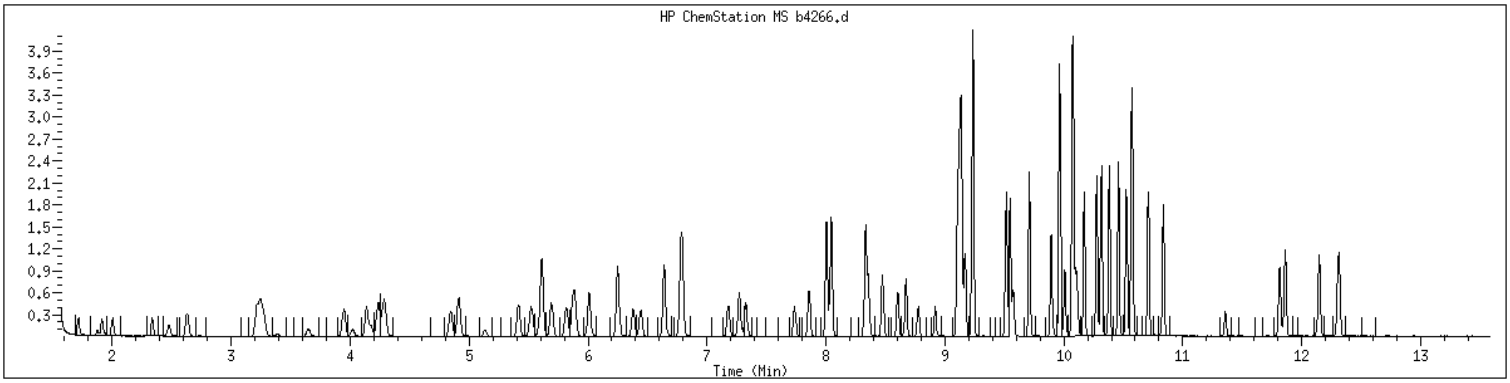
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	91 Styrene	104	9.547	9.547	(1.047)	706439	50.0000	49.2	
	92 Bromoform ++	173	9.573	9.573	(1.050)	221944	50.0000	50.0	
	93 Isopropylbenzene	105	9.708	9.708	(1.065)	1061648	50.0000	48.0	
$	95 Bromofluorobenzene	174	9.896	9.896	(1.085)	324255	50.0000	50.0	
	96 Bromobenzene	77	9.963	9.963	(0.943)	511690	50.0000	46.1	
	97 n-Propylbenzene	91	9.967	9.967	(0.943)	1264471	50.0000	49.8	
	98 1,1,2,2-Tetrachloroethane++	83	10.008	10.008	(0.947)	329580	50.0000	50.0	
	99 2-Chlorotoluene	91	10.072	10.072	(0.953)	887332	50.0000	50.0	
	102 1,3,5-Trimethylbenzene	105	10.076	10.076	(0.953)	948135	50.0000	50.2	
	100 1,2,3-Trichloropropane	75	10.102	10.102	(0.956)	395266	50.0000	49.0	
	101 trans-1,4-Dichloro-2-Butene	53	10.117	10.117	(0.957)	71377	50.0000	45.2	
	104 4-Chlorotoluene	91	10.173	10.173	(0.962)	819440	50.0000	50.8	
	105 tert-butylbenzene	91	10.274	10.274	(0.972)	478246	50.0000	53.2	
	107 1,2,4-Trimethylbenzene	105	10.316	10.316	(0.976)	912144	50.0000	50.5	
	108 sec-Butylbenzene	105	10.383	10.383	(0.982)	1175137	50.0000	47.9	
	110 p-Isopropyltoluene	119	10.462	10.462	(0.990)	995341	50.0000	47.8	
	113 1,3-Dichlorobenzene	146	10.526	10.526	(0.996)	635154	50.0000	50.3	
*	114 1,4-DICHLOROBENZENE-D4	152	10.571	10.571	(1.000)	433362	50.0000		
	115 1,4-Dichlorobenzene	146	10.578	10.578	(1.001)	641831	50.0000	48.1	
	117 n-Butylbenzene	91	10.709	10.709	(1.013)	757009	50.0000	45.1	
	118 1,2-Dichlorobenzene	146	10.837	10.837	(1.025)	600629	50.0000	50.3	
	119 1,2-Dibromo-3-Chloropropane	157	11.358	11.358	(1.074)	80339	50.0000	48.1	
	120 Hexachlorobutadiene	225	11.815	11.815	(1.118)	198934	50.0000	52.3	
	122 1,2,4-Trichlorobenzene	180	11.860	11.860	(1.122)	383526	50.0000	50.2	
	124 Naphthalene	128	12.145	12.145	(1.149)	832459	50.0000	47.5	
	125 1,2,3-Trichlorobenzene	180	12.310	12.310	(1.165)	413378	50.0000	53.3	

Data File: /var/chem/msv13.i/2160126.s.b/b4266.d
Date : 26-JAN-2016 19:17
Client ID: V13STD050
Sample Info: 1440*V13STD050
Purge Volume: 5.0
Column phase: RTX-VMS-30M
Instrument: msv13.i
Operator: MMH
Column diameter: 0.25
Page 1
Y (x10^6)
Min
/var/chem/msv13.i/2160126.s.b/b4266.d
-Dibromofluoromethane+
-1,2-Dichloroethane-d4
-FLUOROBENZENE
-Toluene-d8+
-CHLOROBENZENE-d5+
-Bromofluorobenzene
1,4-DICHLOROBENZENE-D4+

Data file : /var/chem/msv13.i/2160126.s.b/b4266.d Page: 1
Report Date: 01/27/2016 18:49

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1440 SampleType : CCALIB_7
Injection Date: 01/26/2016 19:17 Instrument : msv13.i
Operator : MMM
Sample Info : 1440*V13STD050
Misc Info : MSV~35296~*1*MMM
Method : /var/chem/msv13.i/2160126.s.b/8260dod5w13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b-CVE



NO MANUAL INTEGRATIONS

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	216012515	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2160118p/b3946D
Analyst:	JCK	Analytical Batch:	577166
Analysis Date:	01/18/16 Time: 1630	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	474261	9.12	516508	10.57	1081608	6.64

CLIENT SAMPLE ID	GCAL SAMP ID		#		#		#		#		#	
LCS1532965	1532965	410892		9.12		453716		10.57		892365		6.64	
OMS-28-5	21601251504	302441		9.12		303213		10.57		752567		6.64	
OMS-28-4	21601251505	296999		9.12		297712		10.57		751660		6.64	
MW-5	21601251506	290397		9.12		290910		10.57		768741		6.64	
MW-6	21601251507	300951		9.12		303887		10.57		759802		6.64	
OMS-28-3	21601251511	298555		9.12		303238		10.57		760863		6.64	
MW-12	21601251512	277666		9.12		278297		10.57		694900		6.64	
OMS-28-1	21601251513	288946		9.12		292434		10.57		733308		6.64	
OMS-28-3-a	21601251514	274973		9.12		275991		10.57		691937		6.64	
LCSD1532966	1532966	399187		9.12		447539		10.57		950086		6.64	
MB1532964	1532964	309188		9.12		311017		10.57		790664		6.64	
OMS-28-7	21601251508	311441		9.12		314482		10.57		783286		6.64	
OMS-28-2	21601251501	306231		9.12		306325		10.57		778288		6.64	
OMS-28-2-c	21601251502	312343		9.12		310346		10.57		791822		6.64	
OMS-28-7-MS	21601251509	405399		9.12		451444		10.57		888064		6.64	
OMS-28-7-MSD	21601251510	402826		9.12		450190		10.57		893854		6.64	
MW-9	21601251503	311287		9.12		308262		10.57		787347		6.64	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = -0.17 minutes of internal standard RT
RT UPPER LIMIT = +0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 18-JAN-2016
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b3941.d	0.00 ml	18-JAN-2016 14:03	1.0	JCK	2
1203		b3942.d	5.00 ml	18-JAN-2016 15:07	1.0	JCK	1
1204		b3943.d	5.00 ml	18-JAN-2016 15:28	1.0	JCK	1
1204		b3943LOQ.d	5.00 ml	18-JAN-2016 15:28	1.0	JCK	1
1205		b3944.d	5.00 ml	18-JAN-2016 15:49	1.0	JCK	1
1206		b3945.d	5.00 ml	18-JAN-2016 16:09	1.0	JCK	1
1207		b3946.d	5.00 ml	18-JAN-2016 16:30	1.0	JCK	1
1208		b3947.d	5.00 ml	18-JAN-2016 16:59	1.0	JCK	1
1209		b3948.d	5.00 ml	18-JAN-2016 17:20	1.0	JCK	1
BLANK		b3949.d	5.00 ml	18-JAN-2016 17:41	1.0	JCK	1
1600		b3950.d	5.00 ml	18-JAN-2016 18:02	1.0	JCK	1
1600		b3951.d	5.00 ml	18-JAN-2016 18:22	1.0	JCK	1
1530498		b3952.d	5.00 ml	18-JAN-2016 18:47	1.0	JCK	1
1530499		b3953.d	5.00 ml	18-JAN-2016 19:08	1.0	JCK	1
BLANK		b3954.d	5.00 ml	18-JAN-2016 19:29	1.0	JCK	1
BLANK		b3955.d	5.00 ml	18-JAN-2016 19:50	1.0	JCK	1
1530497		b3956.d	5.00 ml	18-JAN-2016 20:11	1.0	JCK	1
21601161001		b3957.d	5.00 ml	18-JAN-2016 20:32	1.0	JCK	1
21601120901		b3958.d	5.00 ml	18-JAN-2016 20:52	1.0	JCK	1
21601120902		b3959.d	5.00 ml	18-JAN-2016 21:13	1.0	JCK	1
21601091204		b3960.d	5.00 ml	18-JAN-2016 21:34	1.0	JCK	1
21601151801		b3961.d	5.00 ml	18-JAN-2016 21:55	1.0	JCK	1
BLANK		b3962.d	5.00 ml	18-JAN-2016 22:16	1.0	JCK	1
1440		b3963.d	5.00 ml	18-JAN-2016 22:37	1.0	JCK	1
1440		b3964.d	5.00 ml	18-JAN-2016 22:58	1.0	JCK	1
BLANK		b3965.d	5.00 ml	18-JAN-2016 23:19	1.0	JCK	1
BLANK		b3966.d	5.00 ml	18-JAN-2016 23:39	1.0	JCK	1
BLANK		b3967.d	5.00 ml	19-JAN-2016 00:00	1.0	JCK	1
BLANK		b3968.d	5.00 ml	19-JAN-2016 00:21	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: TUNE TIME: :

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 26-JAN-2016
Instrument: msv13.i
Analyst(s): MMM

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-46-5	05/04/16
1000 (BFB)	BFB IS/SS	50	126-46-5	05/04/16
1400 (CCV)	8260	250	126-50-7	01/28/16
	Ac/Ac/VA	MC	126-51-6	03/31/16

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b4242.d	0.00 ml	26-JAN-2016 10:03	1.0	MMM	2
1400	RR	b4243.d	5.00 ml	26-JAN-2016 10:45	1.0	MMM	1
1400		b4244.d	5.00 ml	26-JAN-2016 11:06	1.0	MMM	1
1532965		b4244L.d	5.00 ml	26-JAN-2016 11:06	1.0	MMM	1
1532966		b4245.d	5.00 ml	26-JAN-2016 11:29	1.0	MMM	1
BLANK		b4246.d	5.00 ml	26-JAN-2016 12:10	1.0	MMM	1
BLANK		b4247.d	5.00 ml	26-JAN-2016 12:31	1.0	MMM	1
1532964 pH		b4248.d	5.00 ml	26-JAN-2016 12:53	1.0	MMM	1
21601251508 1		b4249.d	5.00 ml	26-JAN-2016 13:14	1.0	MMM	1
21601251501 1		b4250.d	5.00 ml	26-JAN-2016 13:36	1.0	MMM	1
21601251502 1		b4251.d	5.00 ml	26-JAN-2016 13:57	1.0	MMM	1
21601251509 1		b4252ms.d	5.00 ml	26-JAN-2016 14:19	1.0	MMM	1
21601251510 1		b4253msd.d	5.00 ml	26-JAN-2016 14:40	1.0	MMM	1
BLANK		b4254.d	5.00 ml	26-JAN-2016 15:01	1.0	MMM	1
BLANK		b4255.d	5.00 ml	26-JAN-2016 15:22	1.0	MMM	1
21601251503 1		b4256.d	5.00 ml	26-JAN-2016 15:44	1.0	MMM	1
21601251504 1		b4257.d	5.00 ml	26-JAN-2016 16:08	5.0	MMM	1
21601251505 1		b4258.d	5.00 ml	26-JAN-2016 16:29	1.0	MMM	1
21601251506 1		b4259.d	5.00 ml	26-JAN-2016 16:50	1.0	MMM	1
21601251507 1		b4260.d	5.00 ml	26-JAN-2016 17:11	1.0	MMM	1
21601251511 1		b4261.d	5.00 ml	26-JAN-2016 17:32	1.0	MMM	1
21601251512 1		b4262.d	5.00 ml	26-JAN-2016 17:53	1.0	MMM	1
21601251513 1		b4263.d	5.00 ml	26-JAN-2016 18:14	1.0	MMM	1
21601251514 1		b4264.d	5.00 ml	26-JAN-2016 18:35	1.0	MMM	1
BLANK		b4265.d	5.00 ml	26-JAN-2016 18:56	1.0	MMM	1
1440		b4266.d	5.00 ml	26-JAN-2016 19:17	1.0	MMM	1
BLANK		b4267.d	5.00 ml	26-JAN-2016 19:38	1.0	MMM	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 22:03

Client ID: 4838 - AECOM
SDG: 216012515
PM: AMK

AECOM

Chain of Custody and Analytical Request

LIMS Number:

Project Name / Location: ALARNG OMS #28 Mobile, AL

Client Name: US Corps of Engineers, Mobile District, Mobile, AL

Collected by: Randy Morgan | Project Manager: Vasi Kourlas / Steve Ho

Sample ID	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hh:mm)	See Comments: COMP	GRAB	Well	Sample Information	Sample Analysis Requested: TCL VOC's 8260B	Quality Assurance Samples: COMMENTS	Cooler ID
OMS-28-2	19-Jan-2016	1543		X		Groundwater	X		1
OMS-28-2-c	19-Jan-2016	1543		X		Groundwater	X	(Trip Blank)	2
MW-9	20-Jan-2016	0823		X		Groundwater	X		3
OMS-28-5	20-Jan-2016	1040		X		Groundwater	X	5 DAY TAT	4
OMS-28-4	20-Jan-2016	1140		X		Groundwater	X		5
MW-5	20-Jan-2016	1400		X		Groundwater	X		6
MW-6	20-Jan-2016	1505		X		Groundwater	X		7
OMS-28-7	20 Jan-2016	1623		X		Groundwater	X		8
OMS-28-7-MS	20-Jan-2016	1623		X		Groundwater	X		9
OMS-28-7-MSD	20-Jan-2016	1623		X		Groundwater	X		10
OMS-28-3	21-Jan-2016	1125		X		Groundwater	X		11
MW-12	21-Jan-2016	1403		X		Groundwater	X		12
OMS-28-1	21-Jan-2016	1500		X		Groundwater	X		13
OMS-28-3-a	21-Jan-2016	1125		X		Groundwater	X		14
				X		Groundwater	X RM		

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	1-22-16	1700			
2.	Fedex	1-23-16	1922	Phaby Jaffar	1-23-16	1722
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: Gulf Coast Analytical
Lab Recipient:

Shipped: XX
Airbill #: 802045976901
Location: Baton Rouge LA
Date: Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 01-19-2004-01) 0.9626 7822 1630 1204 42cpm

52745\admin\project control\project forms\Blank COC

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

216012515

SAMPLE DELIVERY GROUP 216012515	
Client PM AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** McCune, Dodie N.
Line Item(s) 1 - W - 5 Day VOCs	**Receive Date(s)** 01/23/16

CHECKLIST	YES	NO	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☑	☐	☐
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOC water samples received without head space?	☑	☐	☐
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E26	Temp(°C)
782216301204		0.9

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.4

Page 1 of 1

Appendix B3
GCAL Report 217050803 dated May 22, 2017

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 05/11/2017

GCAL Report 217050803

Project ARNG OMS 28/ 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____

Authorized Signature
GCAL Report 217050803

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 217050803

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES MASS SPECTROMETRY

In the EPA 8260B analysis, samples 21705080311 (OMS-28-GW32-12-S), 21705080317 (OMS-28-5), and 21705080318 (OMS-28-5-a) had to be diluted to bracket the concentration of target analytes within the calibration range of the instrument. The dilutions are reflected in elevated detection limits.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21705080301	OMS-28-7	Water	05/01/2017 11:27	05/06/2017 09:22
21705080302	OMS-28-7-c	Water	05/01/2017 00:01	05/06/2017 09:22
21705080303	MW-8	Water	05/01/2017 12:25	05/06/2017 09:22
21705080304	MW-5	Water	05/01/2017 13:15	05/06/2017 09:22
21705080305	MW-6	Water	05/01/2017 14:20	05/06/2017 09:22
21705080306	OMS-28-3	Water	05/01/2017 15:13	05/06/2017 09:22
21705080307	OMS-28-3-MS	Water	05/01/2017 15:13	05/06/2017 09:22
21705080308	OMS-28-3-MSD	Water	05/01/2017 15:13	05/06/2017 09:22
21705080309	OMS-28-1	Water	05/01/2017 16:40	05/06/2017 09:22
21705080310	MW-12	Water	05/01/2017 17:57	05/06/2017 09:22
21705080311	OMS-28-GW32-12-S	Water	05/02/2017 14:30	05/06/2017 09:22
21705080312	OMS-28-GW02-19-S	Water	05/03/2017 10:00	05/06/2017 09:22
21705080313	OMS-28-GW03-34-S	Water	05/04/2017 10:30	05/06/2017 09:22
21705080314	OMS-28-GW20-12-S	Water	05/05/2017 16:15	05/06/2017 09:22
21705080315	OMS-28-GW18-18-S	Water	05/05/2017 10:45	05/06/2017 09:22
21705080316	MW-9	Water	05/05/2017 12:35	05/06/2017 09:22
21705080317	OMS-28-5	Water	05/05/2017 14:08	05/06/2017 09:22
21705080318	OMS-28-5-a	Water	05/05/2017 14:08	05/06/2017 09:22
21705080319	OMS-28-4	Water	05/05/2017 15:15	05/06/2017 09:22
21705080320	OMS-28-2	Water	05/05/2017 17:00	05/06/2017 09:22

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21705080301	OMS-28-7	W	EPA 8260B DOD Water
21705080302	OMS-28-7-c	W	EPA 8260B DOD Water
21705080303	MW-8	W	EPA 8260B DOD Water
21705080304	MW-5	W	EPA 8260B DOD Water
21705080305	MW-6	W	EPA 8260B DOD Water
21705080306	OMS-28-3	W	EPA 8260B DOD Water
21705080307	OMS-28-3-MS	W	EPA 8260B DOD Water
21705080308	OMS-28-3-MSD	W	EPA 8260B DOD Water
21705080309	OMS-28-1	W	EPA 8260B DOD Water
21705080310	MW-12	W	EPA 8260B DOD Water
21705080311	OMS-28-GW32-12-S	W	EPA 8260B DOD Water
21705080312	OMS-28-GW02-19-S	W	EPA 8260B DOD Water
21705080313	OMS-28-GW03-34-S	W	EPA 8260B DOD Water
21705080314	OMS-28-GW20-12-S	W	EPA 8260B DOD Water
21705080315	OMS-28-GW18-18-S	W	EPA 8260B DOD Water
21705080316	MW-9	W	EPA 8260B DOD Water
21705080317	OMS-28-5	W	EPA 8260B DOD Water
21705080318	OMS-28-5-a	W	EPA 8260B DOD Water
21705080319	OMS-28-4	W	EPA 8260B DOD Water
21705080320	OMS-28-2	W	EPA 8260B DOD Water

Manual Integrations

No Manual Integrations Performed By GCAL.

Summary of Compounds Detected

MW-8

Collect Date	05/01/2017 12:25	**GCAL ID**	21705080303
Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	0.373J	0.200	0.500	1.00	ug/L

OMS-28-3

Collect Date	05/01/2017 15:13	**GCAL ID**	21705080306
Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	1.26	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	9.60	0.200	0.500	1.00	ug/L

OMS-28-3-MS

Collect Date	05/01/2017 15:13	**GCAL ID**	21705080307
Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
71-55-6	1,1,1-Trichloroethane	52.5	0.200	0.500	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	52.7	0.200	0.500	1.00	ug/L
79-00-5	1,1,2-Trichloroethane	50.0	0.200	0.500	1.00	ug/L
75-34-3	1,1-Dichloroethane	53.4	0.200	0.500	1.00	ug/L
75-35-4	1,1-Dichloroethene	50.6	0.200	0.500	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	43.5	0.200	0.500	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	41.9	0.200	0.500	1.00	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	51.8	0.200	0.500	1.00	ug/L
106-93-4	1,2-Dibromoethane	50.6	0.200	0.500	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	49.7	0.200	0.500	1.00	ug/L
107-06-2	1,2-Dichloroethane	50.1	0.200	0.500	1.00	ug/L
78-87-5	1,2-Dichloropropane	52.4	0.200	0.500	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	50.3	0.200	0.500	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	48.9	0.200	0.500	1.00	ug/L
78-93-3	2-Butanone	40.6	0.200	0.500	5.00	ug/L
591-78-6	2-Hexanone	45.2	0.500	1.00	5.00	ug/L
108-10-1	4-Methyl-2-pentanone	52.9	0.200	0.500	5.00	ug/L
67-64-1	Acetone	25.9	0.500	1.00	5.00	ug/L
71-43-2	Benzene	52.9	0.200	0.500	1.00	ug/L
74-97-5	Bromochloromethane	53.3	0.200	0.500	1.00	ug/L
75-27-4	Bromodichloromethane	52.4	0.200	0.500	1.00	ug/L
75-25-2	Bromoform	51.5	0.250	0.500	1.00	ug/L
74-83-9	Bromomethane	54.4	0.500	1.00	1.00	ug/L
75-15-0	Carbon disulfide	50.7	0.200	0.500	1.00	ug/L
56-23-5	Carbon tetrachloride	53.9	0.250	0.500	1.00	ug/L

Summary of Compounds Detected

OMS-28-3-MS				
	Collect Date	05/01/2017 15:13	**GCAL ID**	21705080307
	Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B (Continued)

CAS#	Parameter	Result	DL	LOD	LOQ	Units
108-90-7	Chlorobenzene	50.9	0.200	0.500	1.00	ug/L
75-00-3	Chloroethane	47.7	0.250	0.500	1.00	ug/L
67-66-3	Chloroform	52.6	0.200	0.500	1.00	ug/L
74-87-3	Chloromethane	50.6	0.200	0.500	1.00	ug/L
156-59-2	cis-1,2-Dichloroethene	54.4	0.200	0.500	1.00	ug/L
10061-01-5	cis-1,3-Dichloropropene	54.2	0.200	0.500	1.00	ug/L
110-82-7	Cyclohexane	50.4	0.500	1.00	2.00	ug/L
124-48-1	Dibromochloromethane	50.3	0.200	0.500	1.00	ug/L
75-71-8	Dichlorodifluoromethane	50.4	0.200	0.500	1.00	ug/L
100-41-4	Ethylbenzene	51.9	0.200	0.500	1.00	ug/L
98-82-8	Isopropylbenzene (Cumene)	50.2	0.200	0.500	1.00	ug/L
79-20-9	Methyl Acetate	52.5	1.00	2.00	5.00	ug/L
108-87-2	Methylcyclohexane	57.0	0.200	0.500	1.00	ug/L
75-09-2	Methylene chloride	47.6	0.200	0.500	5.00	ug/L
100-42-5	Styrene	48.9	0.200	0.500	1.00	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	53.6	0.200	0.500	1.00	ug/L
127-18-4	Tetrachloroethene	49.8	0.200	0.500	1.00	ug/L
108-88-3	Toluene	50.1	0.200	0.500	1.00	ug/L
156-60-5	trans-1,2-Dichloroethene	50.6	0.200	0.500	1.00	ug/L
10061-02-6	trans-1,3-Dichloropropene	54.2	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	60.9	0.200	0.500	1.00	ug/L
75-69-4	Trichlorofluoromethane	52.6	0.200	0.500	1.00	ug/L
76-13-1	Trichlorotrifluoroethane	53.9	0.200	0.500	1.00	ug/L
1330-20-7	Xylene (total)	152	0.400	1.00	3.00	ug/L

OMS-28-3-MSD				
	Collect Date	05/01/2017 15:13	**GCAL ID**	21705080308
	Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
71-55-6	1,1,1-Trichloroethane	51.3	0.200	0.500	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	51.8	0.200	0.500	1.00	ug/L
79-00-5	1,1,2-Trichloroethane	49.8	0.200	0.500	1.00	ug/L
75-34-3	1,1-Dichloroethane	53.6	0.200	0.500	1.00	ug/L
75-35-4	1,1-Dichloroethene	52.5	0.200	0.500	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	44.5	0.200	0.500	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	44.4	0.200	0.500	1.00	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	52.8	0.200	0.500	1.00	ug/L
106-93-4	1,2-Dibromoethane	50.3	0.200	0.500	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	50.0	0.200	0.500	1.00	ug/L
107-06-2	1,2-Dichloroethane	48.4	0.200	0.500	1.00	ug/L
78-87-5	1,2-Dichloropropane	50.5	0.200	0.500	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	49.8	0.200	0.500	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	48.6	0.200	0.500	1.00	ug/L
78-93-3	2-Butanone	40.3	0.200	0.500	5.00	ug/L

Summary of Compounds Detected

OMS-28-3-MSD				
	Collect Date	05/01/2017 15:13	**GCAL ID**	21705080308
	Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B (Continued)

CAS#	Parameter	Result	DL	LOD	LOQ	Units
591-78-6	2-Hexanone	45.0	0.500	1.00	5.00	ug/L
108-10-1	4-Methyl-2-pentanone	53.0	0.200	0.500	5.00	ug/L
67-64-1	Acetone	26.9	0.500	1.00	5.00	ug/L
71-43-2	Benzene	51.6	0.200	0.500	1.00	ug/L
74-97-5	Bromochloromethane	52.4	0.200	0.500	1.00	ug/L
75-27-4	Bromodichloromethane	50.8	0.200	0.500	1.00	ug/L
75-25-2	Bromoform	51.7	0.250	0.500	1.00	ug/L
74-83-9	Bromomethane	56.1	0.500	1.00	1.00	ug/L
75-15-0	Carbon disulfide	51.5	0.200	0.500	1.00	ug/L
56-23-5	Carbon tetrachloride	53.2	0.250	0.500	1.00	ug/L
108-90-7	Chlorobenzene	50.1	0.200	0.500	1.00	ug/L
75-00-3	Chloroethane	47.9	0.250	0.500	1.00	ug/L
67-66-3	Chloroform	51.0	0.200	0.500	1.00	ug/L
74-87-3	Chloromethane	48.0	0.200	0.500	1.00	ug/L
156-59-2	cis-1,2-Dichloroethene	55.4	0.200	0.500	1.00	ug/L
10061-01-5	cis-1,3-Dichloropropene	53.1	0.200	0.500	1.00	ug/L
110-82-7	Cyclohexane	49.0	0.500	1.00	2.00	ug/L
124-48-1	Dibromochloromethane	50.8	0.200	0.500	1.00	ug/L
75-71-8	Dichlorodifluoromethane	47.8	0.200	0.500	1.00	ug/L
100-41-4	Ethylbenzene	51.8	0.200	0.500	1.00	ug/L
98-82-8	Isopropylbenzene (Cumene)	49.2	0.200	0.500	1.00	ug/L
79-20-9	Methyl Acetate	53.7	1.00	2.00	5.00	ug/L
108-87-2	Methylcyclohexane	54.0	0.200	0.500	1.00	ug/L
75-09-2	Methylene chloride	48.8	0.200	0.500	5.00	ug/L
100-42-5	Styrene	48.6	0.200	0.500	1.00	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	55.5	0.200	0.500	1.00	ug/L
127-18-4	Tetrachloroethene	49.4	0.200	0.500	1.00	ug/L
108-88-3	Toluene	49.5	0.200	0.500	1.00	ug/L
156-60-5	trans-1,2-Dichloroethene	51.0	0.200	0.500	1.00	ug/L
10061-02-6	trans-1,3-Dichloropropene	53.0	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	58.4	0.200	0.500	1.00	ug/L
75-69-4	Trichlorofluoromethane	52.2	0.200	0.500	1.00	ug/L
76-13-1	Trichlorotrifluoroethane	54.3	0.200	0.500	1.00	ug/L
1330-20-7	Xylene (total)	151	0.400	1.00	3.00	ug/L

OMS-28-GW32-12-S				
	Collect Date	05/02/2017 14:30	**GCAL ID**	21705080311
	Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	3.71	0.400	1.00	2.00	ug/L
79-01-6	Trichloroethene	268	0.400	1.00	2.00	ug/L

Summary of Compounds Detected

OMS-28-GW02-19-S

Collect Date	05/03/2017 10:00	**GCAL ID**	21705080312
Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
78-93-3	2-Butanone	3.87J	0.200	0.500	5.00	ug/L
67-64-1	Acetone	12.2	0.500	1.00	5.00	ug/L

OMS-28-GW20-12-S

Collect Date	05/05/2017 16:15	**GCAL ID**	21705080314
Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	0.927J	0.200	0.500	1.00	ug/L
127-18-4	Tetrachloroethene	25.7	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	32.5	0.200	0.500	1.00	ug/L

OMS-28-GW18-18-S

Collect Date	05/05/2017 10:45	**GCAL ID**	21705080315
Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	2.44	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	4.42	0.200	0.500	1.00	ug/L

OMS-28-5

Collect Date	05/05/2017 14:08	**GCAL ID**	21705080317
Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-35-4	1,1-Dichloroethene	1.29J	0.400	1.00	2.00	ug/L
156-59-2	cis-1,2-Dichloroethene	103	0.400	1.00	2.00	ug/L
127-18-4	Tetrachloroethene	154	0.400	1.00	2.00	ug/L
156-60-5	trans-1,2-Dichloroethene	31.6	0.400	1.00	2.00	ug/L
79-01-6	Trichloroethene	246	0.400	1.00	2.00	ug/L

Summary of Compounds Detected

OMS-28-5-a	**Collect Date**	05/05/2017 14:08	**GCAL ID**	21705080318
	Receive Date	05/06/2017 09:22	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-35-4	1,1-Dichloroethene	1.60J	0.400	1.00	2.00	ug/L
156-59-2	cis-1,2-Dichloroethene	102	0.400	1.00	2.00	ug/L
127-18-4	Tetrachloroethene	145	0.400	1.00	2.00	ug/L
156-60-5	trans-1,2-Dichloroethene	33.8	0.400	1.00	2.00	ug/L
79-01-6	Trichloroethene	247	0.400	1.00	2.00	ug/L

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-7
Collect Date:	05/01/17	Time:	1127	GCAL Sample ID:	21705080301
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3096
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1812	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-7
Collect Date:	05/01/17	Time:	1127	GCAL Sample ID:	21705080301
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3096
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1812	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3096.d
Lab Smp Id: 21705080301 Client Smp ID: 21705080301
Inj Date : 08-MAY-2017 18:12
Operator : JMC2 Inst ID: msv14.i
Smp Info : 21705080301*
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.908	(0.885)	195449	51.1460	51.1	6891
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	128836	50.7383	50.7	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	752244	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	710076	50.7465	50.7	
* 71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	296589	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	174008	48.7840	48.8	
* 97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	209992	50.0000		

Data File: /var/chem/msv14.i/2170508.s.b/b3096.d

Page 1

Date : 08-MAY-2017 18:12

Client ID: 21705080301

Instrument: msv14.i

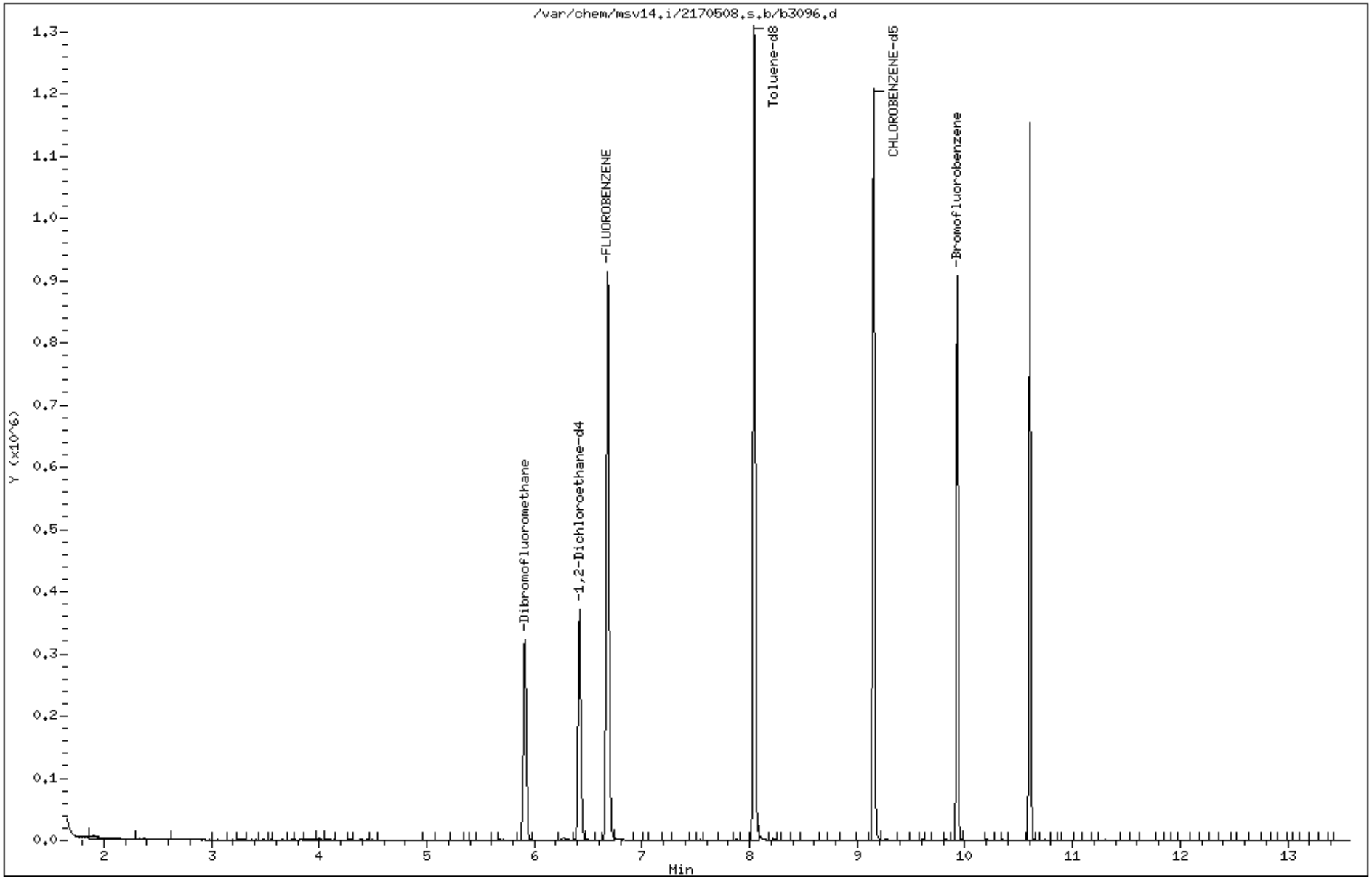
Sample Info: 21705080301*

Purge Volume: 5.0

Operator: JMC2

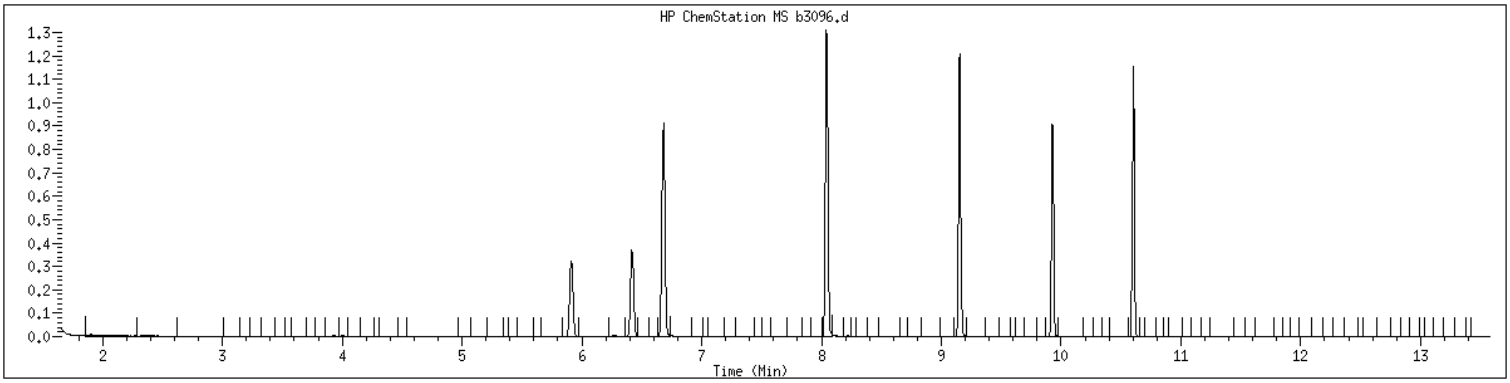
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080301 SampleType : SAMPLE
Injection Date: 05/08/2017 18:12 Instrument : msv14.i
Operator : JMC2
Sample Info : 21705080301*
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-7-c
Collect Date:	05/01/17 Time: 0001	GCAL Sample ID:	21705080302
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3092
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1643	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-7-c
Collect Date:	05/01/17	Time:	0001	GCAL Sample ID:	21705080302
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3092
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1643	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3092.d
Lab Smp Id: 21705080302 Client Smp ID: 21705080302
Inj Date : 08-MAY-2017 16:43
Operator : JMC2 Inst ID: msv14.i
Smp Info : 21705080302*
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.908	(0.885)	195799	52.2727	52.3	6900
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	128360	51.5720	51.6	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	737349	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	693389	50.7066	50.7	
* 71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	289847	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	169064	48.5004	48.5	
* 97 1,4-DICHLOROBENZENE-D4	152	10.605	10.601	(1.000)	205571	50.0000		

Data File: /var/chem/msv14.i/2170508.s.b/b3092.d

Page 1

Date : 08-MAY-2017 16:43

Client ID: 21705080302

Instrument: msv14.i

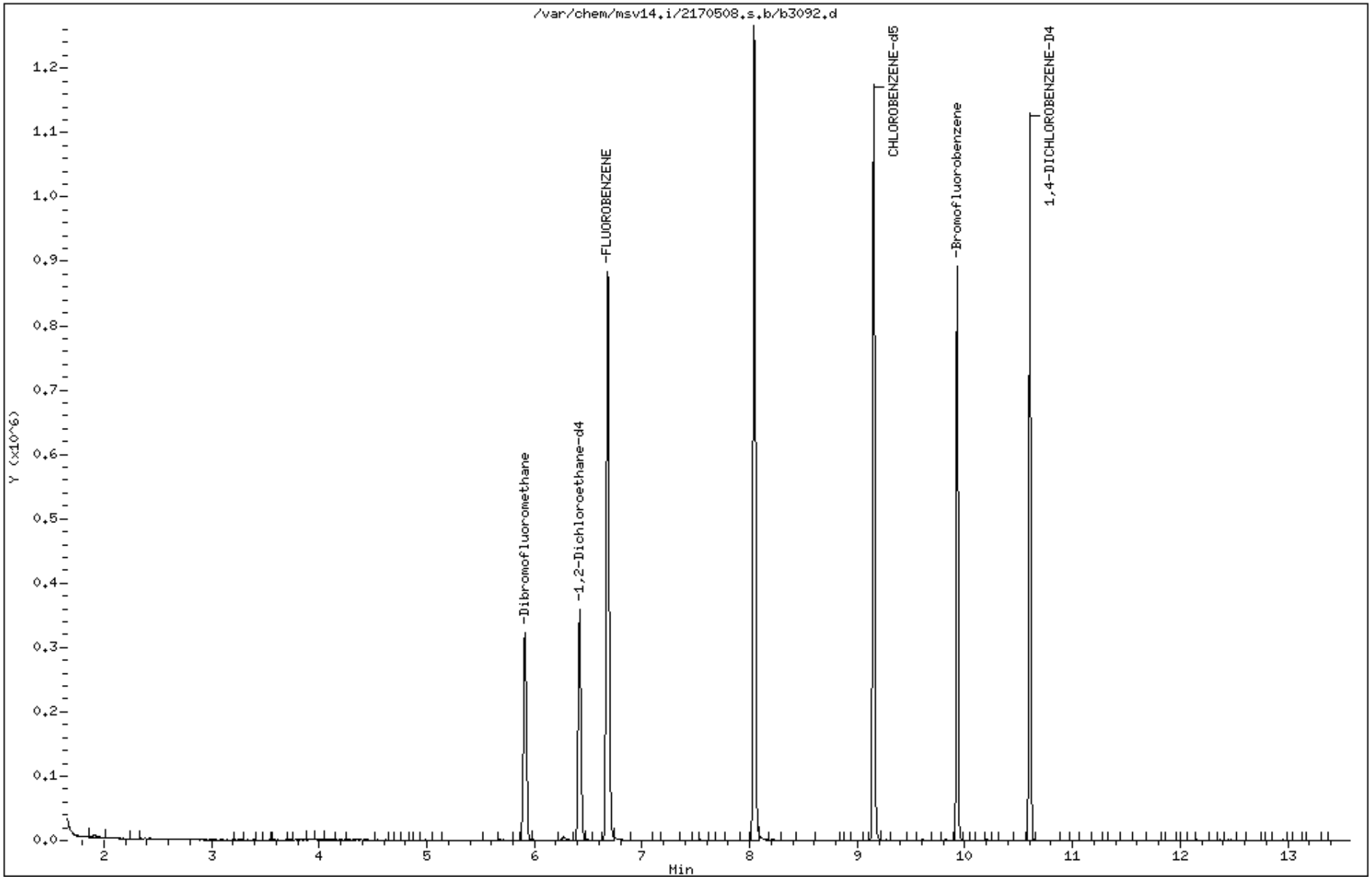
Sample Info: 21705080302*

Purge Volume: 5.0

Operator: JMC2

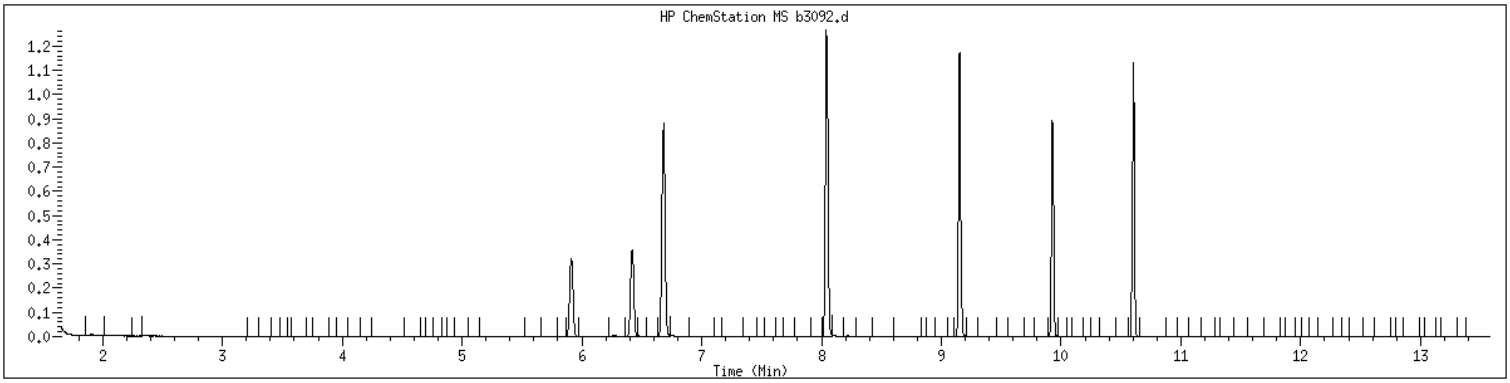
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080302 SampleType : SAMPLE
Injection Date: 05/08/2017 16:43 Instrument : msv14.i
Operator : JMC2
Sample Info : 21705080302*
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	MW-8
Collect Date:	05/01/17 Time: 1225	GCAL Sample ID:	21705080303
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3093
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1705	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	MW-8
Collect Date:	05/01/17	Time:	1225	GCAL Sample ID:	21705080303
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3093
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1705	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.373	J	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3093.d
Lab Smp Id: 21705080303 Client Smp ID: 21705080303
Inj Date : 08-MAY-2017 17:05
Operator : JMC2 Inst ID: msv14.i
Smp Info : 21705080303*
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.908	(0.885)	195140	51.8650	51.9	6887
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	127478	50.9898	51.0	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	740643	50.0000		
49 Trichloroethene	130	6.830	6.830	(1.022)	1391	0.37312	0.373	(H)
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	703829	51.4489	51.4	
* 71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	289966	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	171110	49.0672	49.1	
* 97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	207377	50.0000		

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /var/chem/msv14.i/2170508.s.b/b3093.d

Page 1

Date : 08-MAY-2017 17:05

Client ID: 21705080303

Instrument: msv14.i

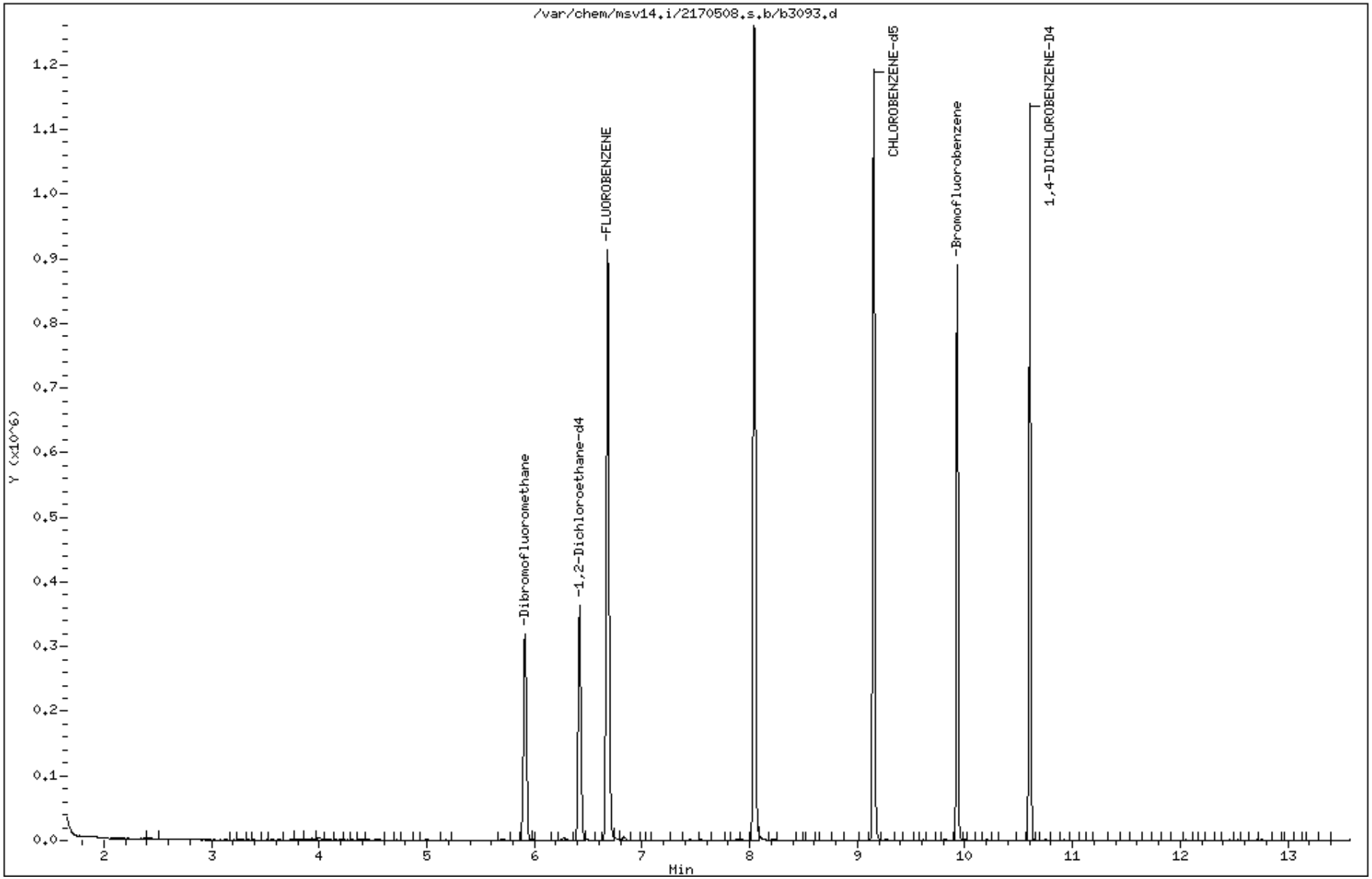
Sample Info: 21705080303*

Purge Volume: 5.0

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170508.s.b/b3093.d

Date : 08-MAY-2017 17:05

Client ID: 21705080303

Instrument: msv14.i

Sample Info: 21705080303x

Purge Volume: 5.0

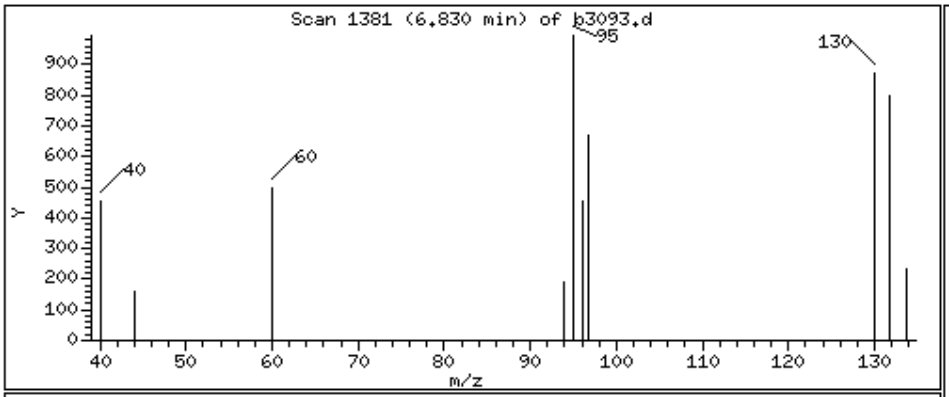
Operator: JMC2

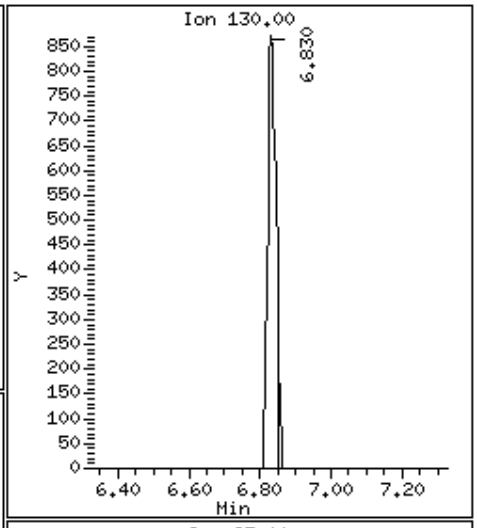
Column phase: RTX-VMS-30M

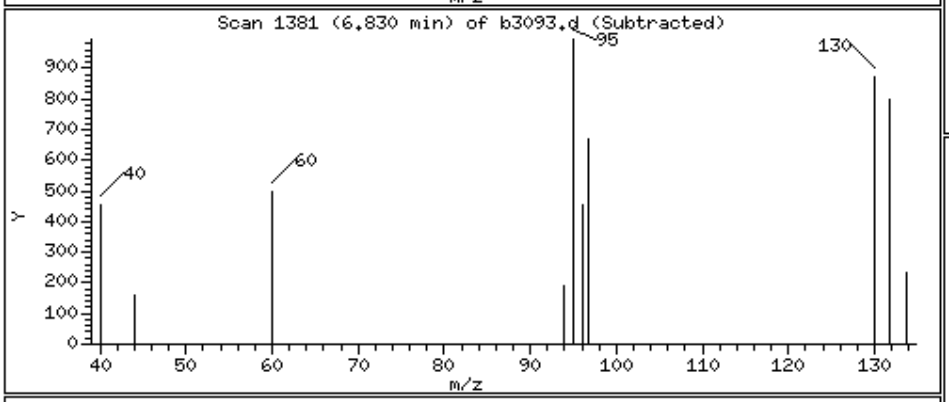
Column diameter: 0.25

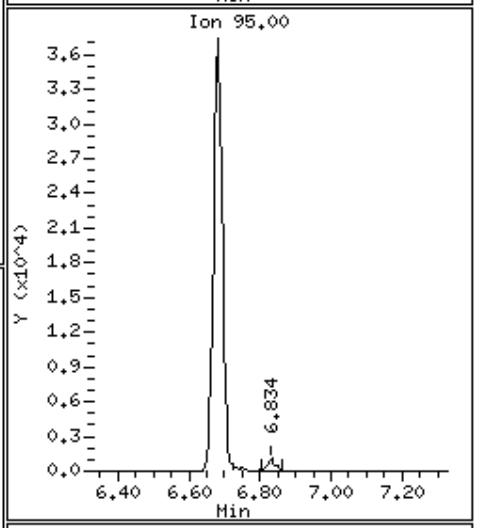
49 Trichloroethene

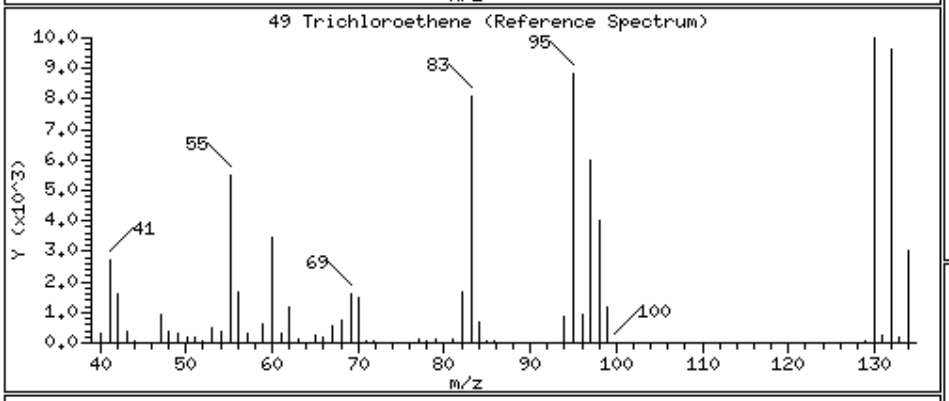
Concentration: 0.373 ug/L

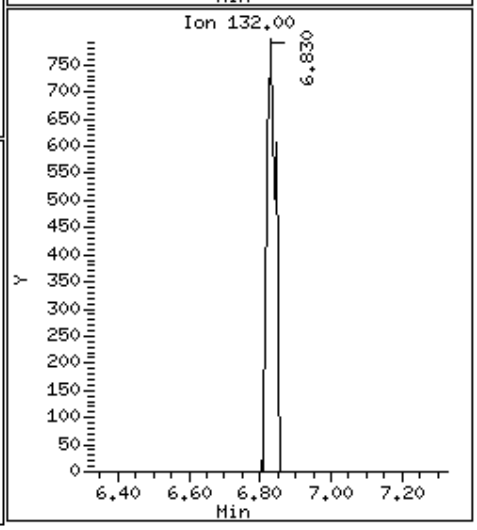


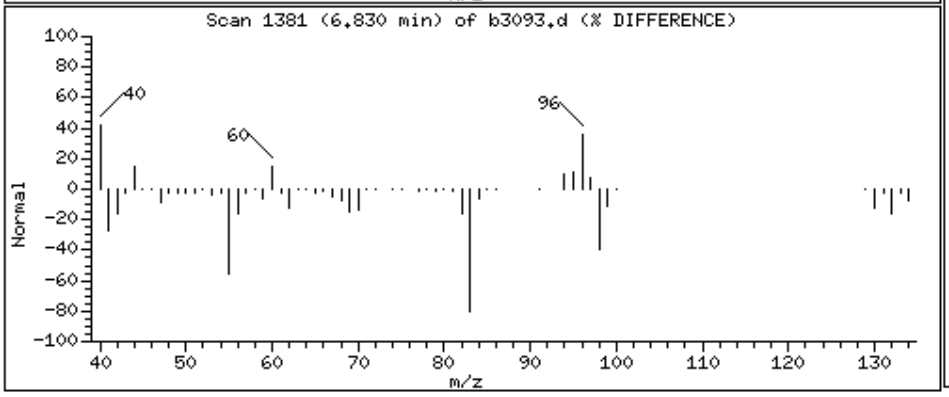








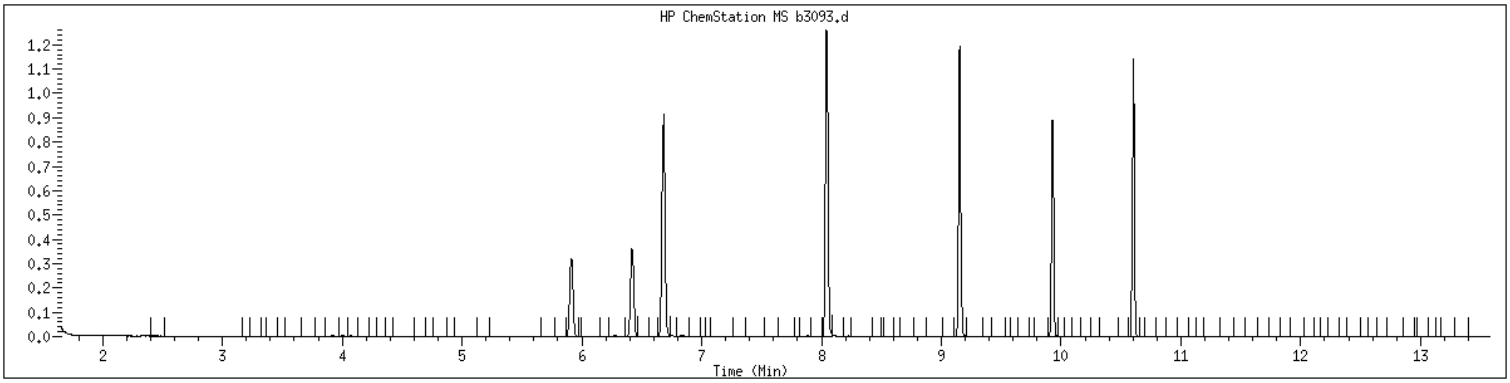




Report Date: 05/09/2017 11:24

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080303 SampleType : SAMPLE
Injection Date: 05/08/2017 17:05 Instrument : msv14.i
Operator : JMC2
Sample Info : 21705080303*
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	MW-5
Collect Date:	05/01/17 Time: 1315	GCAL Sample ID:	21705080304
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3094
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1728	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	MW-5
Collect Date:	05/01/17	Time:	1315	GCAL Sample ID:	21705080304
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3094
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1728	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3094.d
Lab Smp Id: 21705080304 Client Smp ID: 21705080304
Inj Date : 08-MAY-2017 17:28
Operator : JMC2 Inst ID: msv14.i
Smp Info : 21705080304*
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.908	(0.885)	193644	51.1357	51.1	6891
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	127662	50.7343	50.7	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	745448	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.879)	701609	50.9250	50.9	
* 71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	292025	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	171119	48.7238	48.7	
* 97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	208462	50.0000		

Data File: /var/chem/msv14.i/2170508.s.b/b3094.d

Page 1

Date : 08-MAY-2017 17:28

Client ID: 21705080304

Instrument: msv14.i

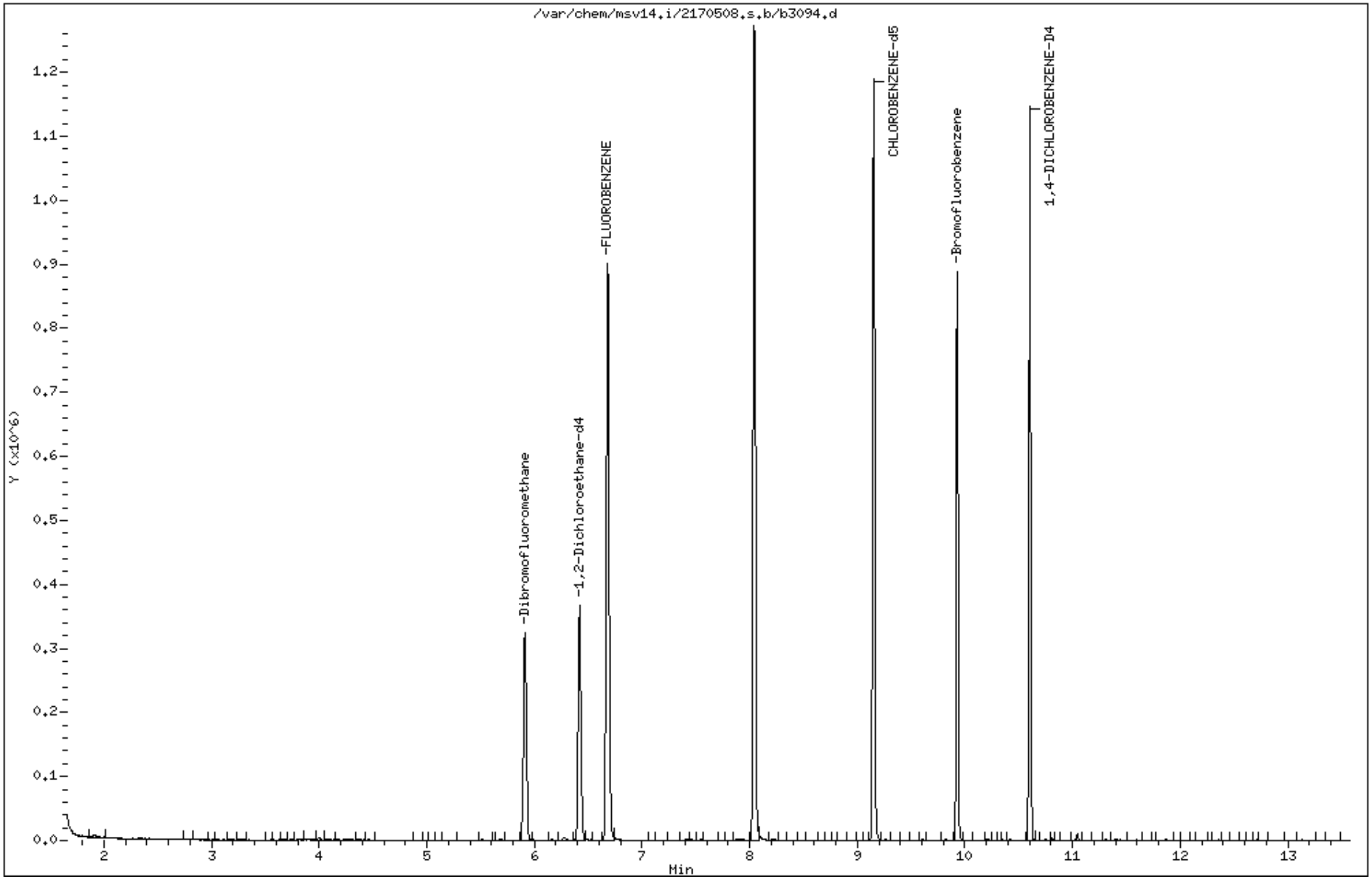
Sample Info: 21705080304*

Purge Volume: 5.0

Operator: JMC2

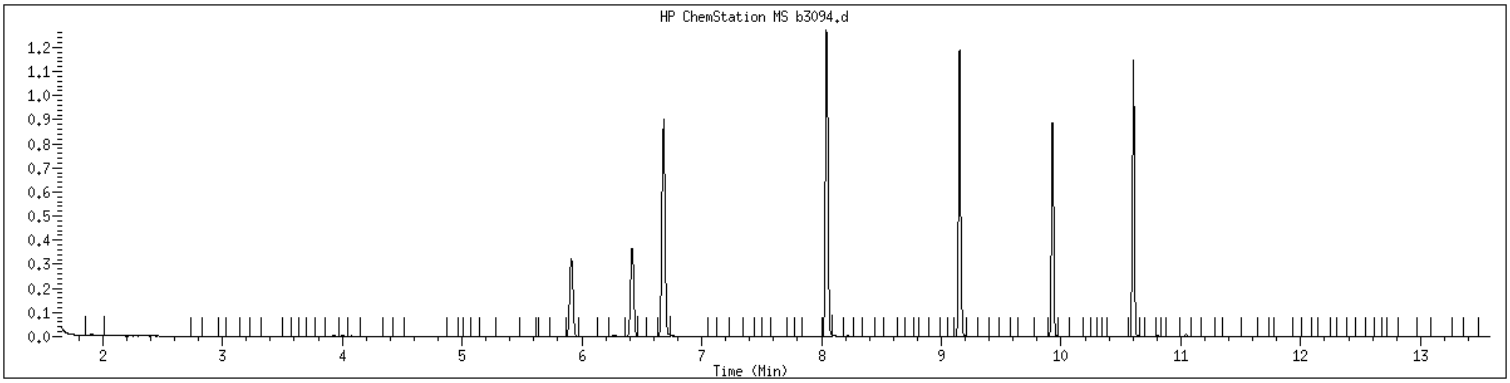
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080304 SampleType : SAMPLE
Injection Date: 05/08/2017 17:28 Instrument : msv14.i
Operator : JMC2
Sample Info : 21705080304*
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	MW-6
Collect Date:	05/01/17 Time: 1420	GCAL Sample ID:	21705080305
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3095
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1750	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	MW-6
Collect Date:	05/01/17	Time:	1420	GCAL Sample ID:	21705080305
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3095
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1750	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3095.d
Lab Smp Id: 21705080305 Client Smp ID: 21705080305
Inj Date : 08-MAY-2017 17:50
Operator : JMC2 Inst ID: msv14.i
Smp Info : 21705080305*
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.908	(0.885)	196037	52.0335	52.0	6890
$ 43 1,2-Dichloroethane-d4	67	6.422	6.418	(0.961)	129123	51.5785	51.6	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	741638	50.0000		
$ 60 Toluene-d8	98	8.045	8.041	(0.879)	701292	51.0384	51.0	
* 71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	291245	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	169999	48.5345	48.5	
* 97 1,4-DICHLOROBENZENE-D4	152	10.605	10.601	(1.000)	208970	50.0000		

Data File: /var/chem/msv14.i/2170508.s.b/b3095.d

Page 1

Date : 08-MAY-2017 17:50

Client ID: 21705080305

Instrument: msv14.i

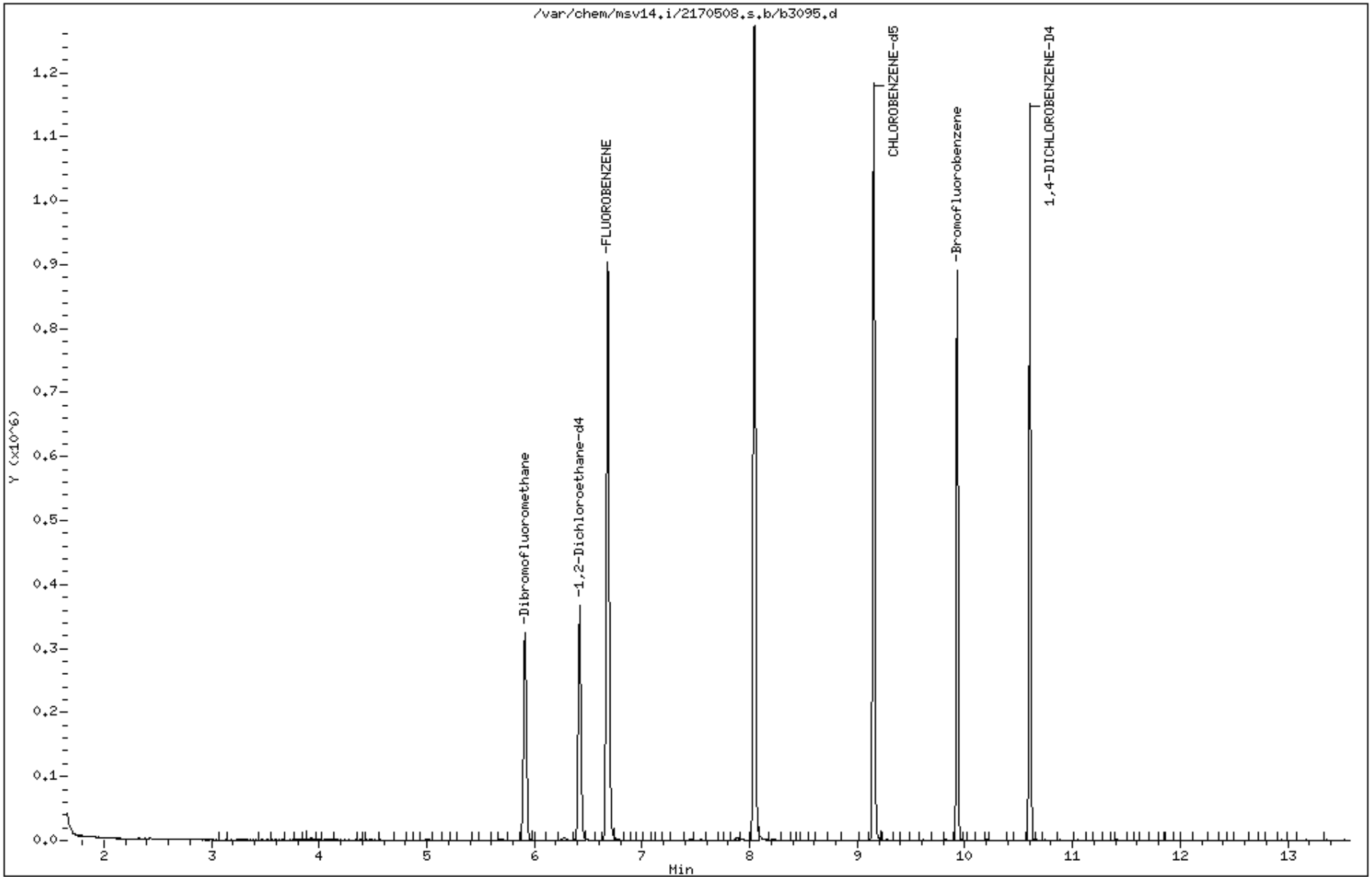
Sample Info: 21705080305*

Purge Volume: 5.0

Operator: JMC2

Column phase: RTX-VMS-30M

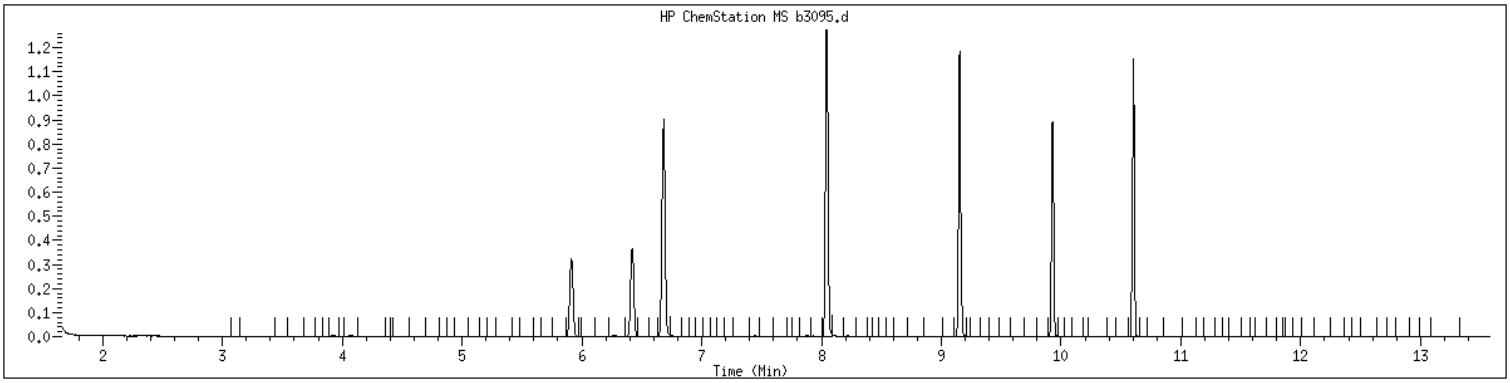
Column diameter: 0.25



Report Date: 05/09/2017 11:25

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080305 SampleType : SAMPLE
Injection Date: 05/08/2017 17:50 Instrument : msv14.i
Operator : JMC2
Sample Info : 21705080305*
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-3
Collect Date:	05/01/17 Time: 1513	GCAL Sample ID:	21705080306
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3168
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1603	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	1.26		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-3
Collect Date:	05/01/17	Time:	1513	GCAL Sample ID:	21705080306
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3168
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1603	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	9.60		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3168.d
Lab Smp Id: 21705080306 Client Smp ID: 21705080306
Inj Date : 10-MAY-2017 16:03
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080306*
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
M	48 Total 1,2-Dichloroethene	61				6109	1.26382	1.26	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	6109	1.26382	1.26	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	187220	51.0890	51.1	6891
$	43 1,2-Dichloroethane-d4	67	6.422	6.418	(0.961)	124408	51.0909	51.1	
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	721377	50.0000		
	49 Trichloroethene	130	6.834	6.830	(1.023)	34855	9.59914	9.60	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	677158	50.7576	50.8	
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	282778	50.0000		
$	80 Bromofluorobenzene	174	9.931	9.927	(1.085)	166059	48.8292	48.8	
*	97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	205564	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3168.d

Date : 10-MAY-2017 16:03

Client ID: 21705080306

Instrument: msv14.i

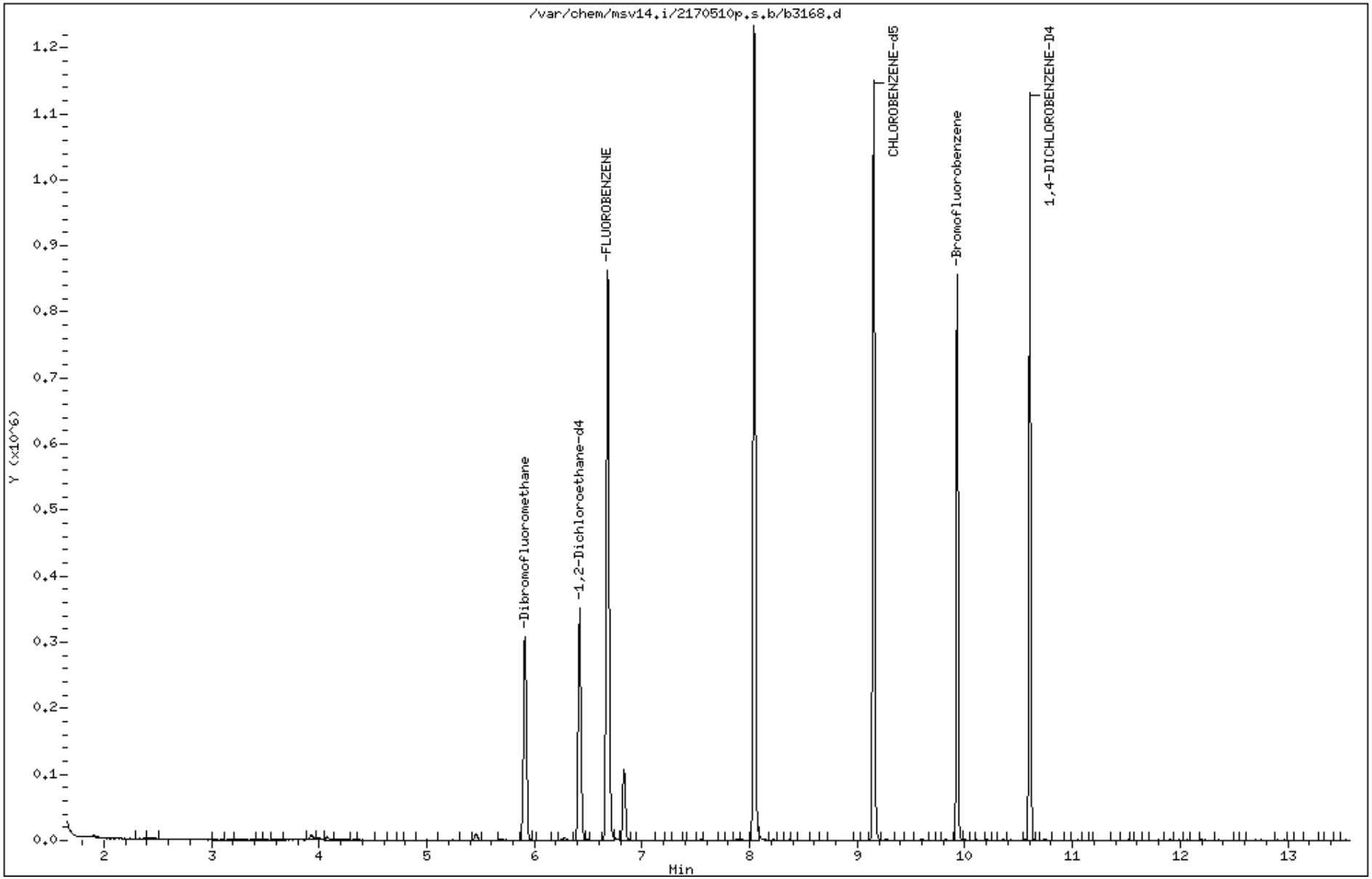
Sample Info: 21705080306*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170510p.s.b/b3168.d

Date : 10-MAY-2017 16:03

Client ID: 21705080306

Instrument: msv14.i

Sample Info: 21705080306x

Purge Volume: 5.0

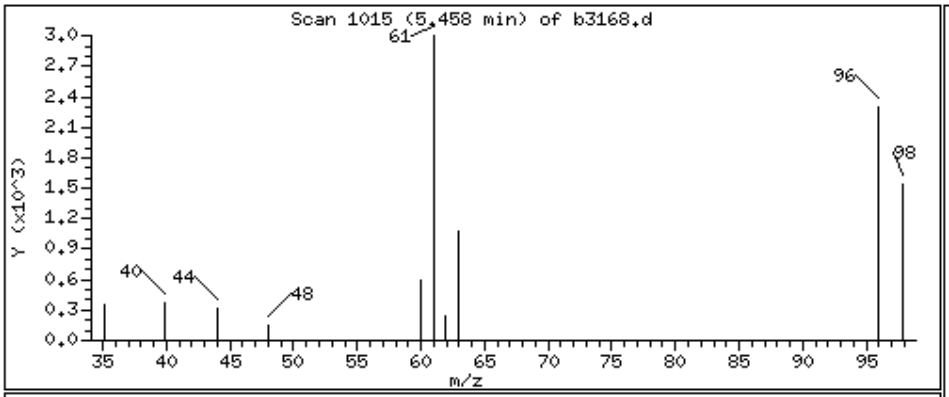
Operator: JCK

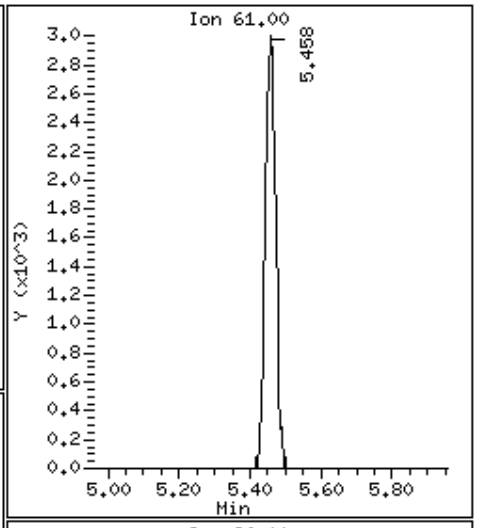
Column phase: RTX-VMS-30M

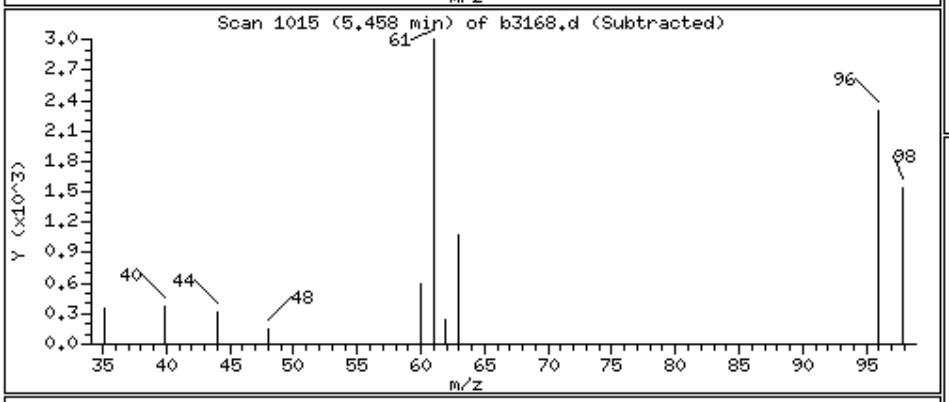
Column diameter: 0.25

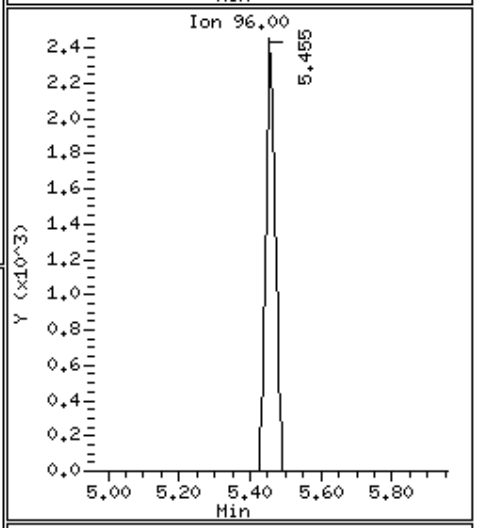
30 cis-1,2-Dichloroethene

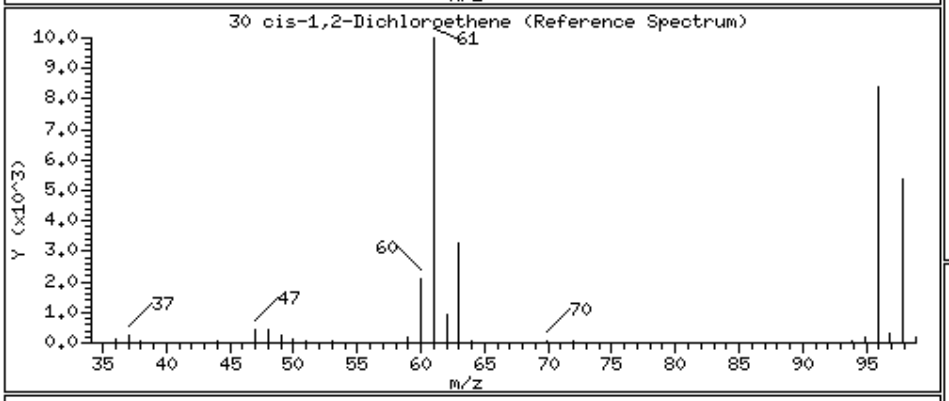
Concentration: 1.26 ug/L

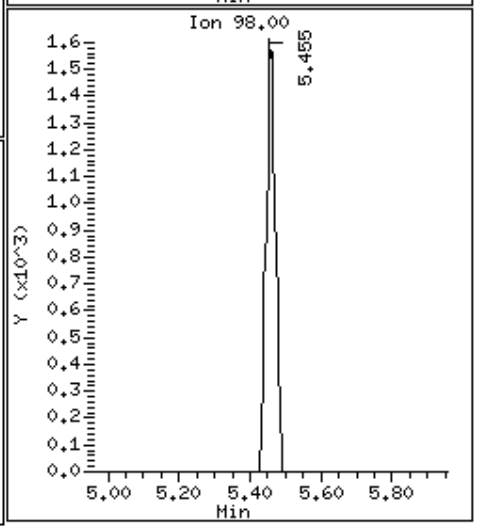


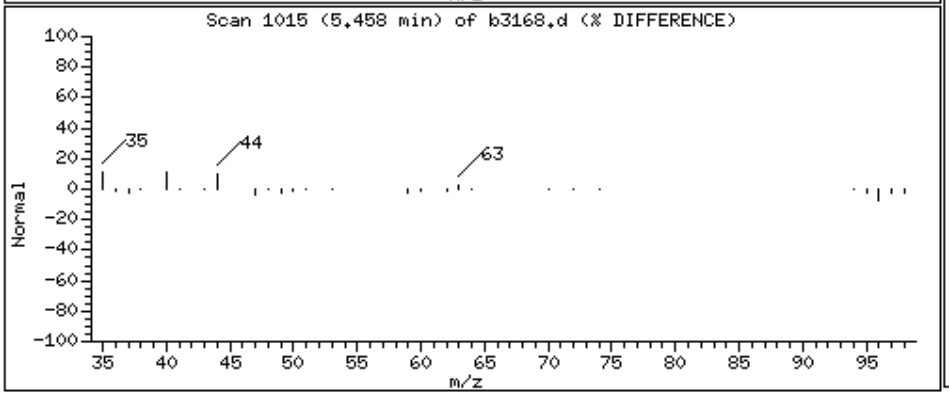












Data File: /var/chem/msv14.i/2170510p.s.b/b3168.d

Date : 10-MAY-2017 16:03

Client ID: 21705080306

Instrument: msv14.i

Sample Info: 21705080306x

Purge Volume: 5.0

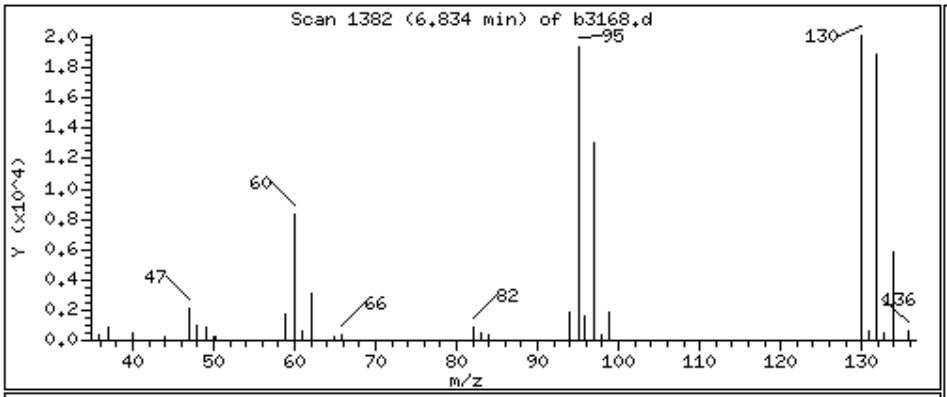
Operator: JCK

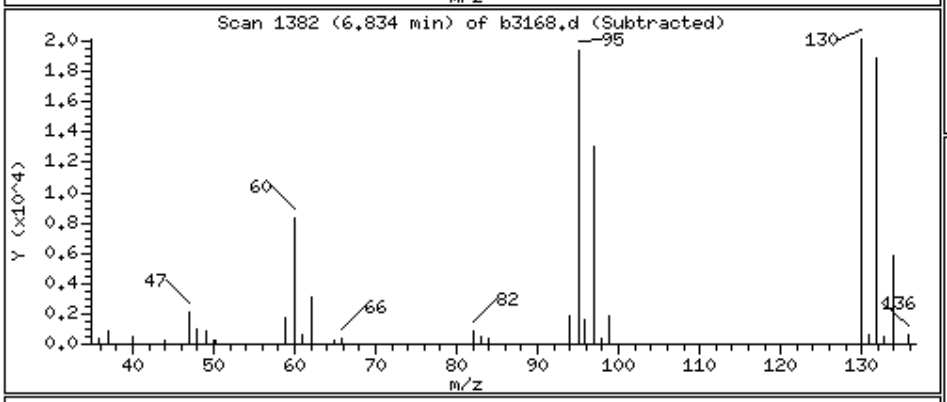
Column phase: RTX-VMS-30M

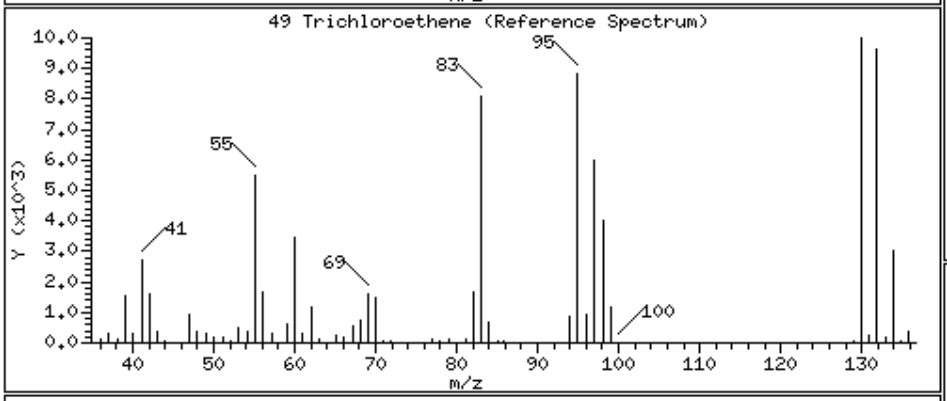
Column diameter: 0.25

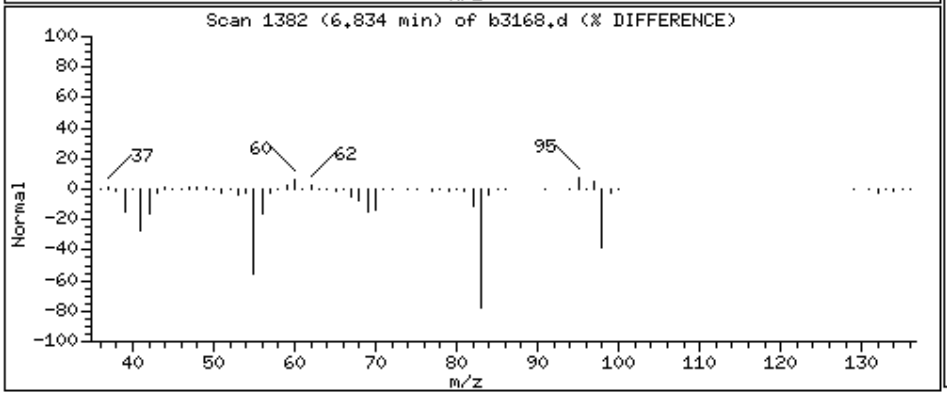
49 Trichloroethene

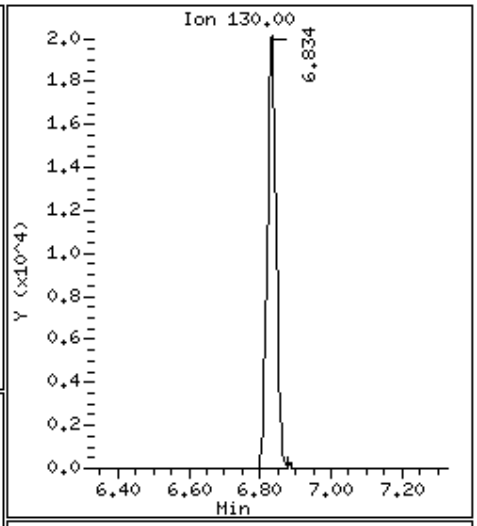
Concentration: 9.60 ug/L

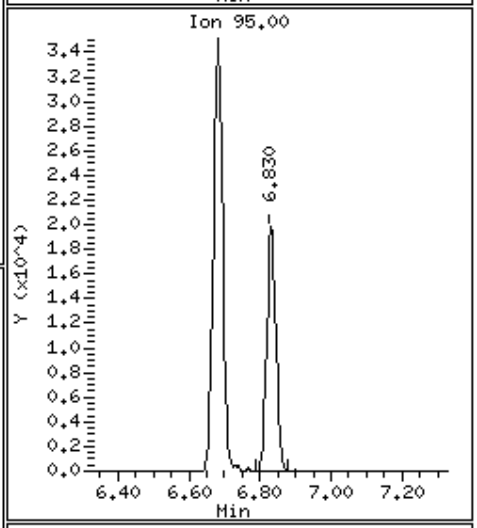


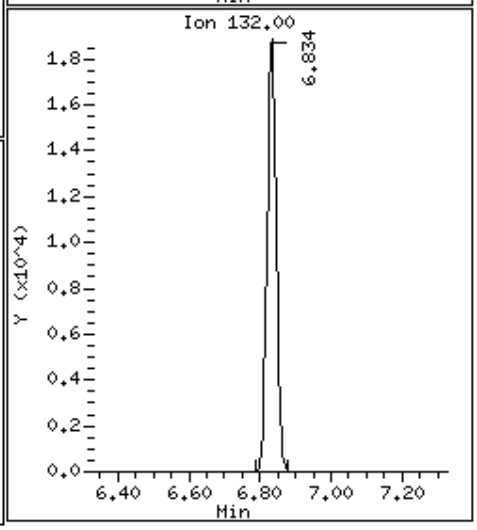






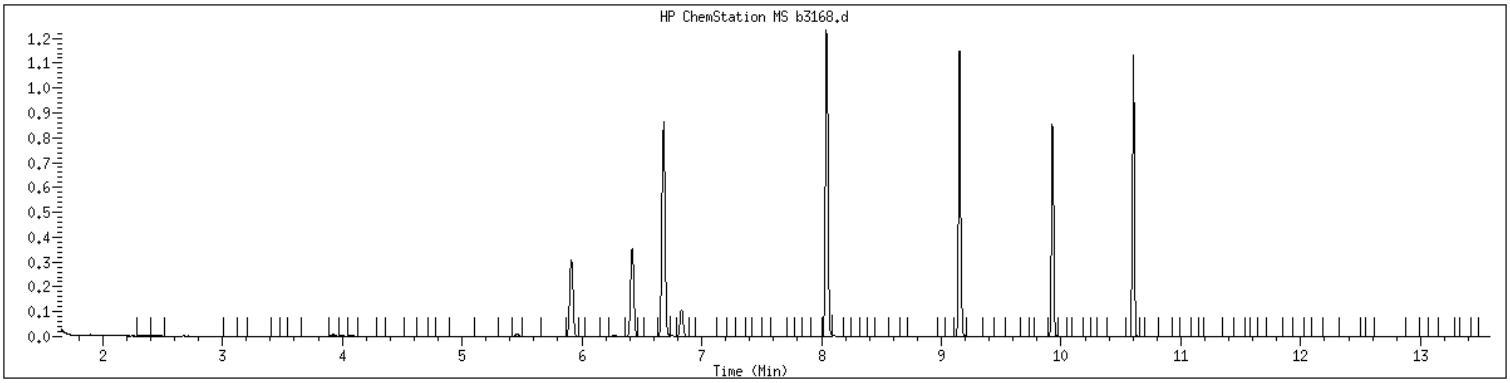






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080306 SampleType : SAMPLE
Injection Date: 05/10/2017 16:03 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080306*
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-3-MS
Collect Date:	05/01/17 Time: 1513	GCAL Sample ID:	21705080307
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3179ms
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 2015	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	52.5		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	52.7		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	50.0		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	53.4		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	50.6		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	43.5		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	41.9		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	51.8		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	50.6		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	49.7		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	50.1		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	52.4		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	50.3		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	48.9		0.200	0.500	1.00
78-93-3	2-Butanone	40.6		0.200	0.500	5.00
591-78-6	2-Hexanone	45.2		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	52.9		0.200	0.500	5.00
67-64-1	Acetone	25.9		0.500	1.00	5.00
71-43-2	Benzene	52.9		0.200	0.500	1.00
74-97-5	Bromochloromethane	53.3		0.200	0.500	1.00
75-27-4	Bromodichloromethane	52.4		0.200	0.500	1.00
75-25-2	Bromoform	51.5		0.250	0.500	1.00
74-83-9	Bromomethane	54.4		0.500	1.00	1.00
75-15-0	Carbon disulfide	50.7		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	53.9		0.250	0.500	1.00
108-90-7	Chlorobenzene	50.9		0.200	0.500	1.00
75-00-3	Chloroethane	47.7		0.250	0.500	1.00
67-66-3	Chloroform	52.6		0.200	0.500	1.00
74-87-3	Chloromethane	50.6		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	54.4		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	54.2		0.200	0.500	1.00
110-82-7	Cyclohexane	50.4		0.500	1.00	2.00
124-48-1	Dibromochloromethane	50.3		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	50.4		0.200	0.500	1.00
100-41-4	Ethylbenzene	51.9		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	50.2		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-3-MS
Collect Date:	05/01/17	Time:	1513	GCAL Sample ID:	21705080307
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3179ms
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	2015	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	52.5		1.00	2.00	5.00
108-87-2	Methylcyclohexane	57.0		0.200	0.500	1.00
75-09-2	Methylene chloride	47.6		0.200	0.500	5.00
100-42-5	Styrene	48.9		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	53.6		0.200	0.500	1.00
127-18-4	Tetrachloroethene	49.8		0.200	0.500	1.00
108-88-3	Toluene	50.1		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	50.6		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	54.2		0.200	0.500	1.00
79-01-6	Trichloroethene	60.9		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	52.6		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	53.9		0.200	0.500	1.00
1330-20-7	Xylene (total)	152		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3179ms.d
Lab Smp Id: 21705080307 Client Smp ID: MS
Inj Date : 10-MAY-2017 20:15
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080307*MS
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	188124	50.3955	50.4	
2 Chloromethane ++	50	1.953	1.953	(0.292)	150127	50.6001	50.6	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	194575	52.2985	52.3	
5 Bromomethane	94	2.377	2.377	(0.356)	74408	54.4488	54.4	
6 Chloroethane	64	2.516	2.516	(0.377)	114677	47.7009	47.7	
7 Trichlorofluoromethane	101	2.677	2.673	(0.401)	228197	52.6486	52.6	
11 1,1-Dichloroethene +	96	3.262	3.262	(0.488)	122745	50.5533	50.6	
14 Carbon Disulfide	76	3.295	3.292	(0.493)	401374	50.7436	50.7	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	134966	53.8568	53.9	
13 Methyl Iodide	142	3.434	3.434	(0.514)	67393	46.0880	46.1	
9 Acrolein	56	3.696	3.696	(0.553)	62644	299.032	299	
17 Methylene Chloride	49	3.996	3.996	(0.598)	213767	47.6418	47.6	
12 Acetone	43	4.071	4.068	(0.609)	62966	25.9269	25.9	
19 trans-1,2-Dichloroethene	61	4.184	4.188	(0.626)	257647	50.5565	50.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.221	(0.632)	174116	52.4911	52.5	8266
	23 Hexane	57	4.289	4.289	(0.642)	229744	50.3805	50.4	9352(M2)
	21 MTBE	73	4.334	4.330	(0.649)	559367	53.5839	53.6	9610
	26 tert-Butyl Alcohol	59	4.469	4.465	(0.669)	21035	47.1163	47.1	9131
	27 Isopropyl Ether	45	4.780	4.776	(0.715)	553763	48.7032	48.7	9836
	29 Chloroprene	53	4.866	4.866	(0.728)	232578	41.8025	41.8	9003
	24 1,1-Dichloroethane ++	63	4.892	4.888	(0.732)	377917	53.4363	53.4	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	395176	271.543	272	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	96594	41.5117	41.5	
M	48 Total 1,2-Dichloroethene	61				534679	104.976	105	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	277032	54.4195	54.4	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	289824	50.4263	50.4	
	38 Cyclohexane	56	5.653	5.653	(0.846)	325581	50.3946	50.4	9126
	34 Bromochloromethane	128	5.657	5.657	(0.847)	86294	53.3495	53.3	
	41 Chloroform +	83	5.732	5.732	(0.858)	357155	52.6486	52.6	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	257336	53.9010	53.9	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	196482	50.9104	50.9	6894
	37 1,1,1-Trichloroethane	97	5.931	5.934	(0.888)	305356	52.5093	52.5	
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	254210	54.0316	54.0	
	32 2-Butanone	43	6.047	6.043	(0.905)	107904	40.5691	40.6	
	44 Benzene	78	6.290	6.290	(0.942)	784117	52.8678	52.9	
$	43 1,2-Dichloroethane-d4	67	6.422	6.418	(0.961)	130770	50.9932	51.0	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	289765	50.1405	50.1	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	44490	277.773	278	9423
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	759720	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	290124	56.9999	57.0	8094
	49 Trichloroethene	130	6.834	6.830	(1.023)	232699	60.8514	60.9	
	52 Dibromomethane	93	7.216	7.216	(1.080)	127353	51.2083	51.2	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	204768	52.3912	52.4	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	279246	52.4351	52.4	
	55 1,4- Dioxane	58	7.543	7.539	(1.129)	38851	1204.62	1200	9480
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	297938	52.0840	52.1	9608
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	320736	54.1718	54.2	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	726074	48.6118	48.6	
	61 Toluene +	91	8.082	8.082	(0.883)	798431	50.0654	50.1	
M	145 1-3 Dichloropropene total	100				630773	108.369	108	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	142300	49.8392	49.8	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	220134	52.9021	52.9	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	310037	54.1973	54.2	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	189174	50.0396	50.0	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	234268	51.1630	51.2	9709
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	206438	50.3145	50.3	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	348236	51.4519	51.5	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	186358	50.5990	50.6	
	68 2-Hexanone	43	8.952	8.952	(0.978)	151308	45.1764	45.2	
	140 1-Chlorohexane	91	9.139	9.139	(0.999)	198294	44.0198	44.0	9011
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	316589	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
72	Chlorobenzene ++	112	9.162	9.166	(1.001)	495326	50.8552	50.9	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	254870	51.8983	51.9	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	185108	50.1353	50.1	
75	p,m-Xylene	106	9.271	9.271	(1.013)	588360	103.396	103	
M 99	TOTAL XYLENE	106				870960	152.476	152	
76	o-Xylene	106	9.552	9.552	(1.044)	282600	49.0798	49.1	
77	Styrene	104	9.582	9.582	(1.047)	476602	48.8617	48.9	
78	Bromoform ++	173	9.608	9.608	(1.050)	147381	51.5291	51.5	
79	Isopropylbenzene	105	9.747	9.743	(1.065)	735166	50.1536	50.2	
161	cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	85099	47.5123	47.5	9598
$ 80	Bromofluorobenzene	174	9.930	9.927	(1.085)	187425	49.2260	49.2	
84	Bromobenzene	77	9.998	9.998	(0.943)	372726	50.5484	50.5	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	822363	51.6688	51.7	
81	1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	264162	52.6979	52.7	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	582211	52.2063	52.2	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	579329	54.1143	54.1	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	334312	52.0984	52.1	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	73678	49.8294	49.8	
90	4-Chlorotoluene	91	10.204	10.208	(0.963)	523943	51.3033	51.3	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	321457	54.0204	54.0	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	598248	53.5395	53.5	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	656665	53.9760	54.0	
92	p-Isopropyltoluene	119	10.496	10.496	(0.990)	546783	54.1555	54.2	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	316685	50.2614	50.3	
* 97	1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	225369	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	315576	48.8584	48.9	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	477467	51.8812	51.9	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	298024	49.7122	49.7	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	42912	51.8484	51.8	
109	Hexachlorobutadiene	225	11.861	11.857	(1.119)	60948	48.2746	48.3	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	144429	41.8690	41.9	
110	Naphthalene	128	12.191	12.191	(1.150)	445883	42.2069	42.2	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	146944	43.4748	43.5	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170510p.s.b/b3179ms.d

Page 1

Date : 10-MAY-2017 20:15

Client ID: MS

Instrument: msv14.i

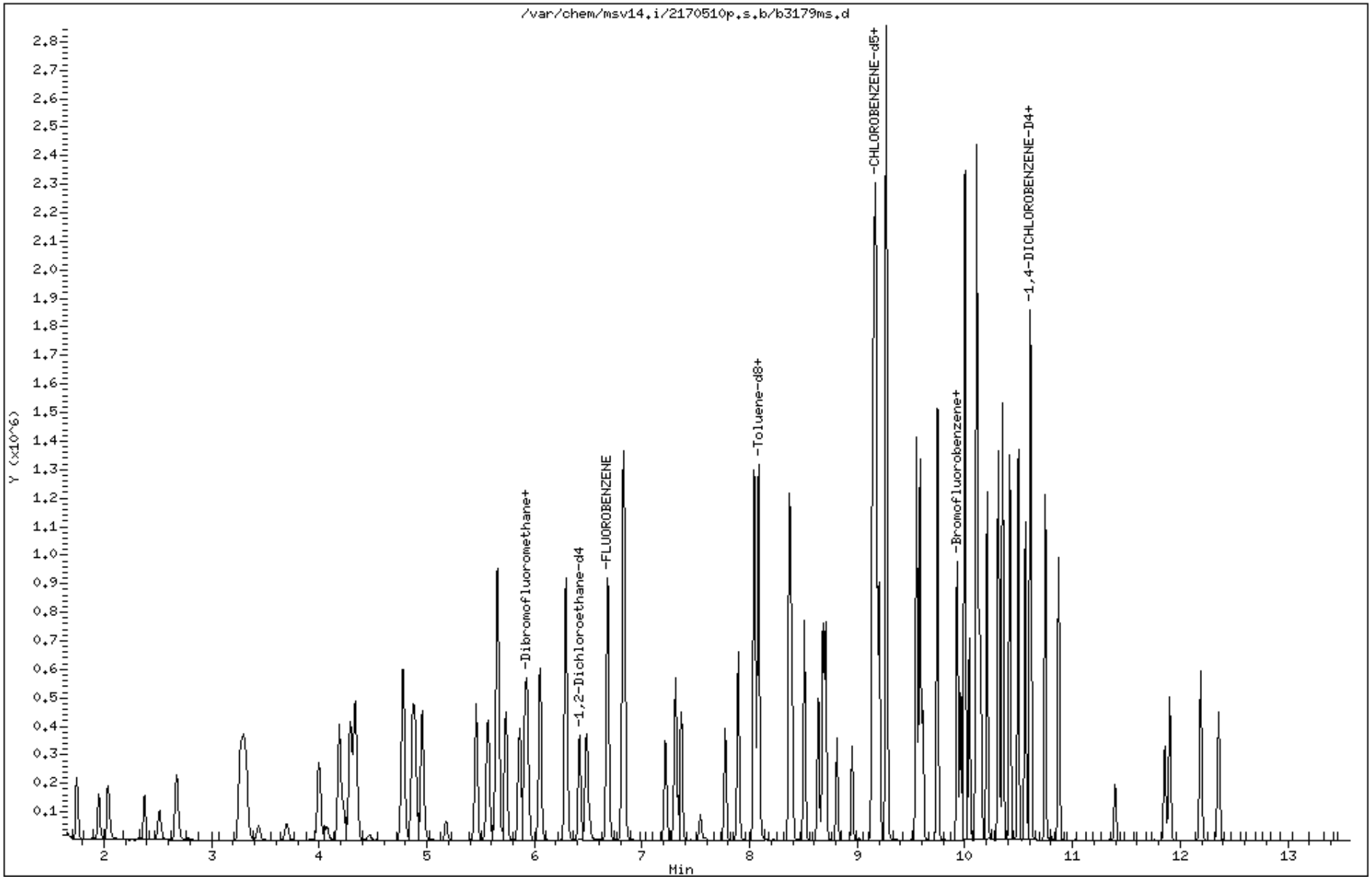
Sample Info: 21705080307*MS

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

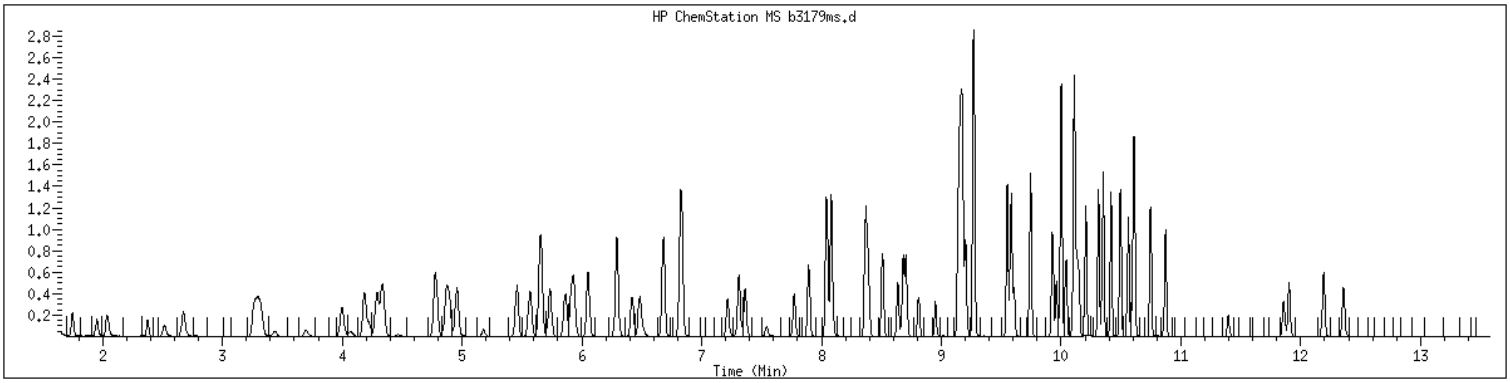
Column diameter: 0.25



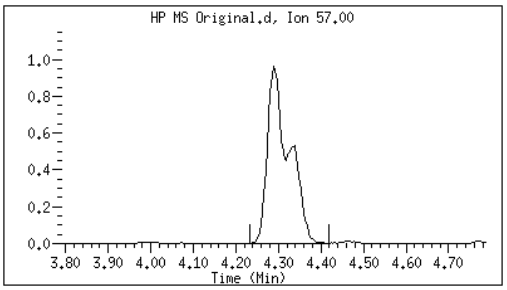
Report Date: 05/11/2017 09:43

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080307 SampleType : MS
Injection Date: 05/10/2017 20:15 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080307*MS
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1

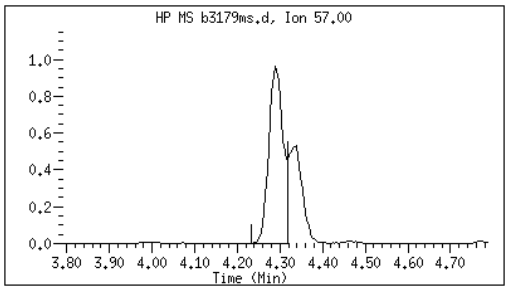


Original		Final
23 Hexane	CAS#: 110-54-3	Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 09:43



M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-3-MSD
Collect Date:	05/01/17 Time: 1513	GCAL Sample ID:	21705080308
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3180msd
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 2038	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	51.3		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	51.8		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	49.8		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	53.6		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	52.5		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	44.5		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	44.4		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	52.8		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	50.3		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	50.0		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	48.4		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	50.5		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	49.8		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	48.6		0.200	0.500	1.00
78-93-3	2-Butanone	40.3		0.200	0.500	5.00
591-78-6	2-Hexanone	45.0		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	53.0		0.200	0.500	5.00
67-64-1	Acetone	26.9		0.500	1.00	5.00
71-43-2	Benzene	51.6		0.200	0.500	1.00
74-97-5	Bromochloromethane	52.4		0.200	0.500	1.00
75-27-4	Bromodichloromethane	50.8		0.200	0.500	1.00
75-25-2	Bromoform	51.7		0.250	0.500	1.00
74-83-9	Bromomethane	56.1		0.500	1.00	1.00
75-15-0	Carbon disulfide	51.5		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	53.2		0.250	0.500	1.00
108-90-7	Chlorobenzene	50.1		0.200	0.500	1.00
75-00-3	Chloroethane	47.9		0.250	0.500	1.00
67-66-3	Chloroform	51.0		0.200	0.500	1.00
74-87-3	Chloromethane	48.0		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	55.4		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	53.1		0.200	0.500	1.00
110-82-7	Cyclohexane	49.0		0.500	1.00	2.00
124-48-1	Dibromochloromethane	50.8		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	47.8		0.200	0.500	1.00
100-41-4	Ethylbenzene	51.8		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	49.2		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-3-MSD
Collect Date:	05/01/17	Time:	1513	GCAL Sample ID:	21705080308
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3180msd
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	2038	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	53.7		1.00	2.00	5.00
108-87-2	Methylcyclohexane	54.0		0.200	0.500	1.00
75-09-2	Methylene chloride	48.8		0.200	0.500	5.00
100-42-5	Styrene	48.6		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	55.5		0.200	0.500	1.00
127-18-4	Tetrachloroethene	49.4		0.200	0.500	1.00
108-88-3	Toluene	49.5		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	51.0		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	53.0		0.200	0.500	1.00
79-01-6	Trichloroethene	58.4		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	52.2		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	54.3		0.200	0.500	1.00
1330-20-7	Xylene (total)	151		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3180msd.d
Lab Smp Id: 21705080308 Client Smp ID: MSD
Inj Date : 10-MAY-2017 20:38
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080308*MSD
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	176477	47.7889	47.8	
2 Chloromethane ++	50	1.954	1.953	(0.292)	140830	47.9820	48.0	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	181976	49.4433	49.4	
5 Bromomethane	94	2.377	2.377	(0.356)	75872	56.1239	56.1	
6 Chloroethane	64	2.516	2.516	(0.377)	113880	47.8838	47.9	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	223824	52.2005	52.2	
11 1,1-Dichloroethene +	96	3.266	3.262	(0.489)	126013	52.4629	52.5	
14 Carbon Disulfide	76	3.296	3.292	(0.493)	403015	51.5056	51.5	
10 1,1,2Trichlotrifluoroethane	101	3.314	3.318	(0.496)	134558	54.2771	54.3	
13 Methyl Iodide	142	3.438	3.434	(0.515)	73600	50.0197	50.0	
9 Acrolein	56	3.700	3.696	(0.554)	64896	313.146	313	
17 Methylene Chloride	49	3.997	3.996	(0.598)	216761	48.8337	48.8	
12 Acetone	43	4.071	4.068	(0.609)	64529	26.8591	26.9	
19 trans-1,2-Dichloroethene	61	4.184	4.188	(0.626)	257259	51.0286	51.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	176141	53.6782	53.7	8735
	23 Hexane	57	4.285	4.289	(0.641)	229789	50.9338	50.9	9295(M2)
	21 MTBE	73	4.334	4.330	(0.649)	573471	55.5315	55.5	9651
	26 tert-Butyl Alcohol	59	4.469	4.465	(0.669)	22628	51.2349	51.2	9469
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	562080	49.9716	50.0	9798
	29 Chloroprene	53	4.866	4.866	(0.728)	230892	41.9475	41.9	8921
	24 1,1-Dichloroethane ++	63	4.889	4.888	(0.732)	374662	53.5514	53.6	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	397569	276.155	276	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	98749	42.8987	42.9	
M	48 Total 1,2-Dichloroethene	61				536446	106.467	106	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	279187	55.4384	55.4	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	277024	48.7227	48.7	
	38 Cyclohexane	56	5.653	5.653	(0.846)	313144	49.0162	49.0	9109
	34 Bromochloromethane	128	5.661	5.657	(0.847)	83881	52.4209	52.4	
	41 Chloroform +	83	5.736	5.732	(0.859)	342082	50.9743	51.0	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	251281	53.2044	53.2	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	192387	50.3907	50.4	6892
	37 1,1,1-Trichloroethane	97	5.931	5.934	(0.888)	294869	51.2566	51.3	
	42 1,1-Dichloropropene	75	6.055	6.054	(0.906)	246518	52.9657	53.0	
	32 2-Butanone	43	6.047	6.043	(0.905)	106018	40.2929	40.3	
	44 Benzene	78	6.291	6.290	(0.942)	757678	51.6400	51.6	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	126785	49.9761	50.0	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	276652	48.3913	48.4	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	43127	272.188	272	9505
*	47 FLUOROBENZENE	96	6.681	6.680	(1.000)	751558	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.827	(1.021)	272132	54.0457	54.0	8498
	49 Trichloroethene	130	6.834	6.830	(1.023)	220953	58.4072	58.4	
	52 Dibromomethane	93	7.217	7.216	(1.080)	123101	50.0362	50.0	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	195370	50.5296	50.5	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	267507	50.7764	50.8	
	55 1,4- Dioxane	58	7.543	7.539	(1.129)	39917	1251.11	1250	9409
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	287334	50.7757	50.8	9660
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	311022	53.1016	53.1	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	712971	49.3056	49.3	
	61 Toluene +	91	8.083	8.082	(0.883)	764360	49.5065	49.5	
M	145 1-3 Dichloropropene total	100				610833	106.080	106	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	136527	49.3910	49.4	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	213358	52.9613	53.0	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	299811	52.9788	53.0	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	182156	49.7691	49.8	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	226180	51.0225	51.0	9667
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	201810	50.8055	50.8	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	335185	51.1536	51.2	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	179243	50.2690	50.3	
	68 2-Hexanone	43	8.952	8.952	(0.978)	146035	45.0371	45.0	
	140 1-Chlorohexane	91	9.140	9.139	(0.999)	189625	43.4890	43.5	8787
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	306501	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	472364	50.0940	50.1	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	246424	51.8300	51.8	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	178880	50.0430	50.0	
75	p,m-Xylene	106	9.271	9.271	(1.013)	565273	102.612	103	
M 99	TOTAL XYLENE	106				837056	151.371	151	
76	o-Xylene	106	9.552	9.552	(1.044)	271783	48.7590	48.8	
77	Styrene	104	9.582	9.582	(1.047)	458655	48.5729	48.6	
78	Bromoform ++	173	9.608	9.608	(1.050)	143207	51.7177	51.7	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	698600	49.2380	49.2	
161	cis-1,4-dichloro-2-butene	53	9.961	9.960	(0.940)	79095	45.9317	45.9	9537
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	183890	49.8872	49.9	
84	Bromobenzene	77	9.998	9.998	(0.943)	355037	50.0810	50.1	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	777782	50.8281	50.8	
81	1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	249879	51.8483	51.8	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	556203	51.8749	51.9	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	552745	53.7023	53.7	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	319323	51.7588	51.8	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	70222	49.3972	49.4	
90	4-Chlorotoluene	91	10.204	10.208	(0.963)	501984	51.1249	51.1	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	304133	53.1594	53.2	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	572057	53.2493	53.2	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	626686	53.5782	53.6	
92	p-Isopropyltoluene	119	10.497	10.496	(0.990)	519834	53.5518	53.6	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	301421	49.7579	49.8	
* 97	1,4-DICHLOROBENZENE-D4	152	10.602	10.601	(1.000)	216677	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	301938	48.6222	48.6	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	456346	51.5753	51.6	
102	1,2-Dichlorobenzene	146	10.872	10.871	(1.025)	288169	49.9966	50.0	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	41978	52.7546	52.8	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	62649	51.6124	51.6	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	148546	44.3770	44.4	
110	Naphthalene	128	12.191	12.191	(1.150)	450904	44.0472	44.0	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	144981	44.4658	44.5	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170510p.s.b/b3180msd.d

Page 1

Date : 10-MAY-2017 20:38

Client ID: MSD

Instrument: msv14.i

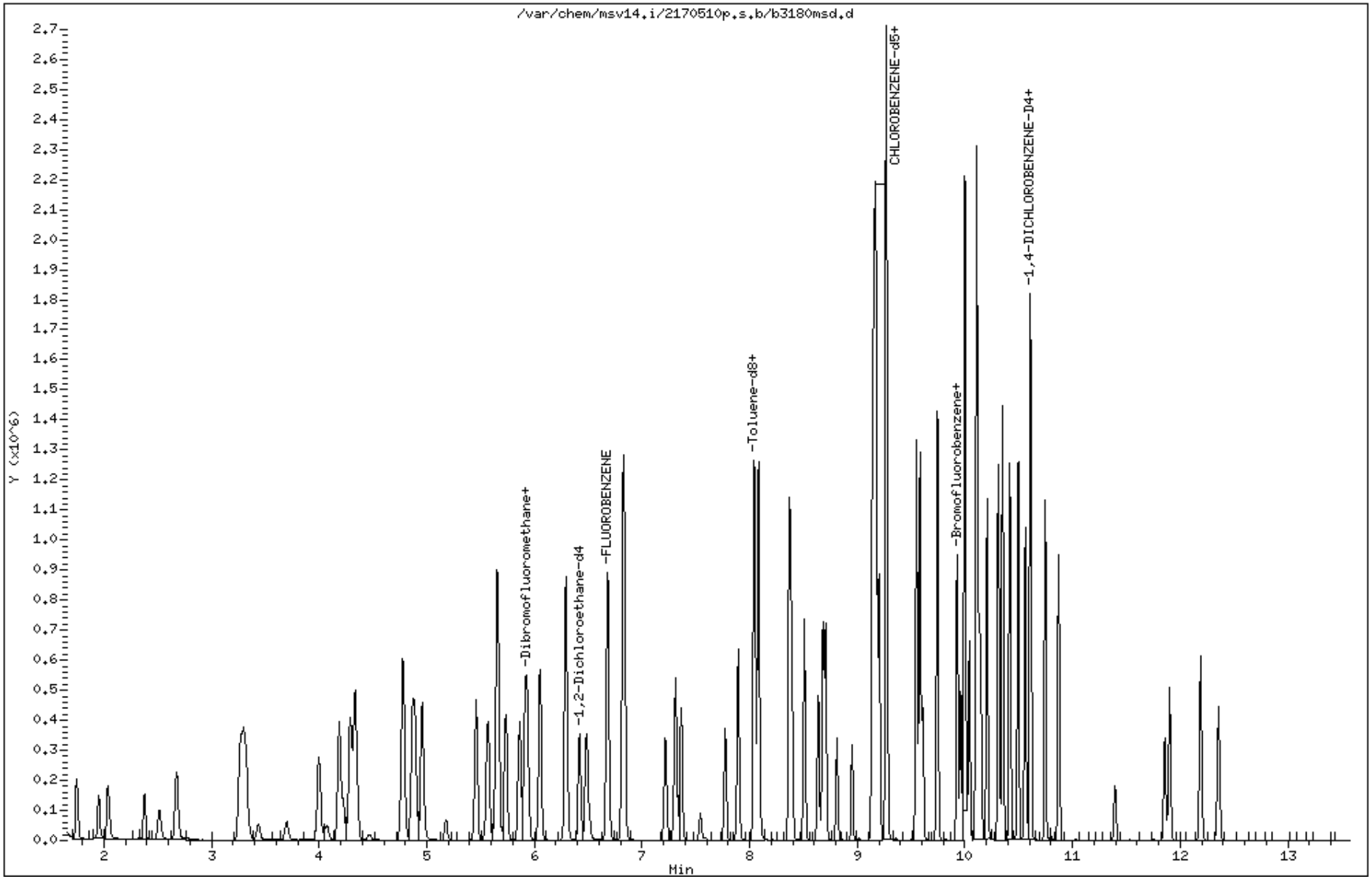
Sample Info: 21705080308*MSD

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

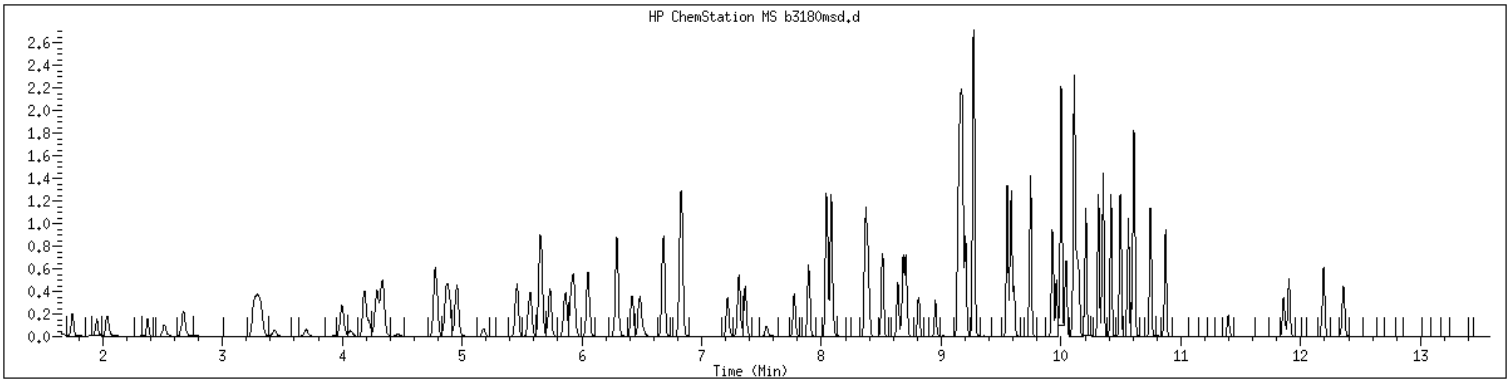
Column diameter: 0.25



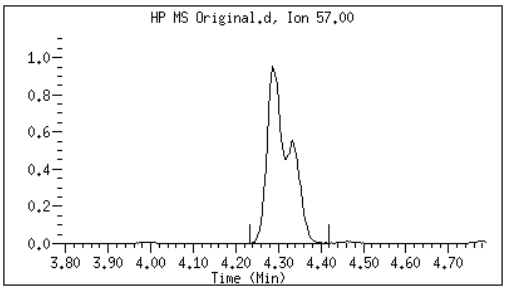
Report Date: 05/11/2017 09:43

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080308 SampleType : MSD
Injection Date: 05/10/2017 20:38 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080308*MSD
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1

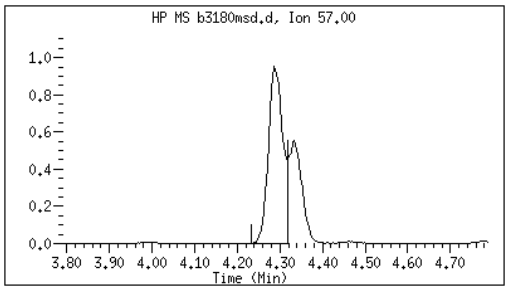


Original		Final
23 Hexane	CAS#: 110-54-3	Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 09:43



M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-1
Collect Date:	05/01/17 Time: 1640	GCAL Sample ID:	21705080309
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3097
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1834	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-1
Collect Date:	05/01/17	Time:	1640	GCAL Sample ID:	21705080309
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3097
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1834	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3097.d
Lab Smp Id: 21705080309 Client Smp ID: 21705080309
Inj Date : 08-MAY-2017 18:34
Operator : JMC2 Inst ID: msv14.i
Smp Info : 21705080309*
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.908	(0.885)	190214	51.1387	51.1	6893
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	125584	50.8115	50.8	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	732200	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.879)	693327	50.5843	50.6	
* 71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	290522	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	169188	48.4232	48.4	
* 97 1,4-DICHLOROBENZENE-D4	152	10.605	10.601	(1.000)	203995	50.0000		

Data File: /var/chem/msv14.i/2170508.s.b/b3097.d

Page 1

Date : 08-MAY-2017 18:34

Client ID: 21705080309

Instrument: msv14.i

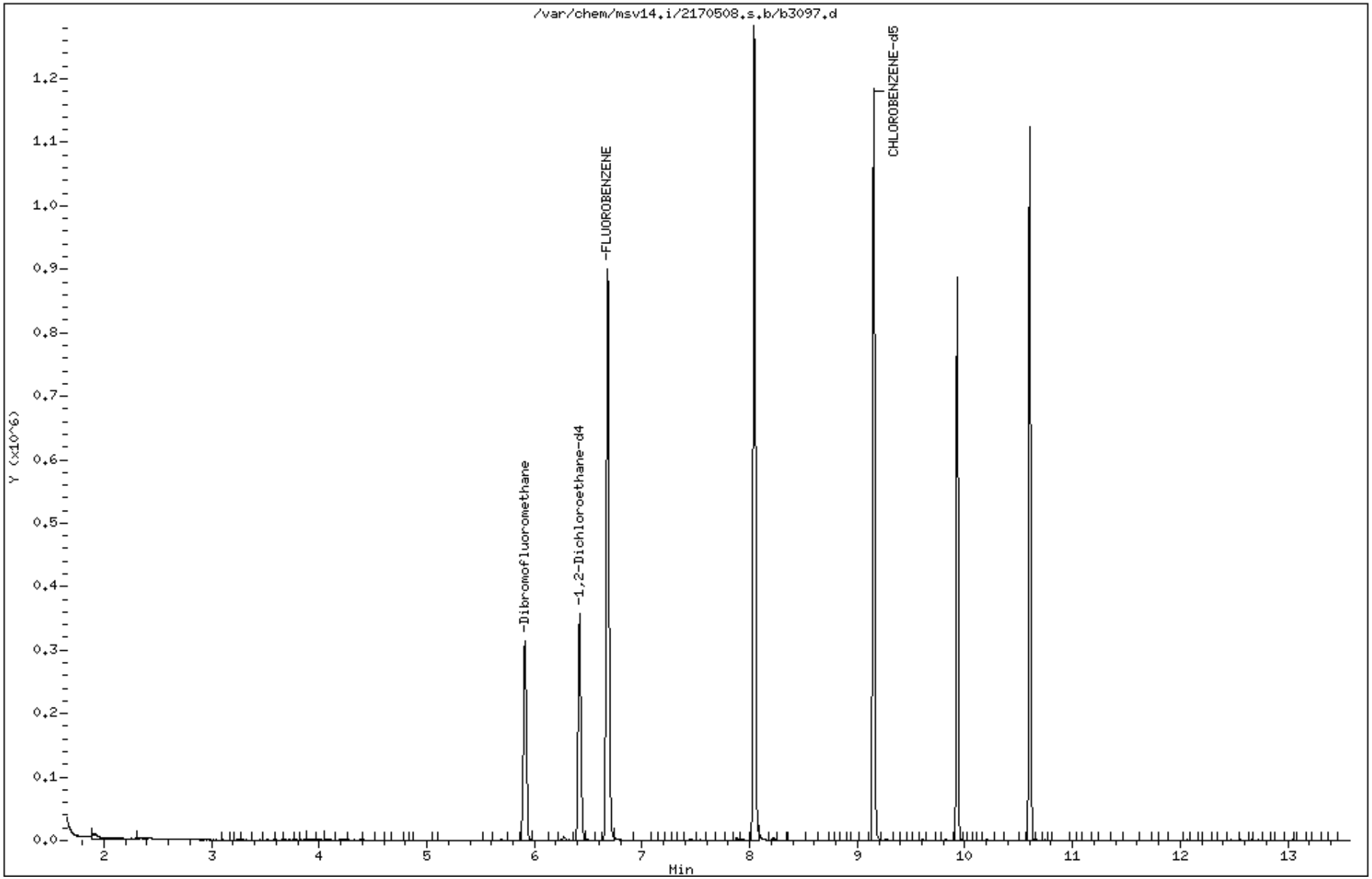
Sample Info: 21705080309*

Purge Volume: 5.0

Operator: JMC2

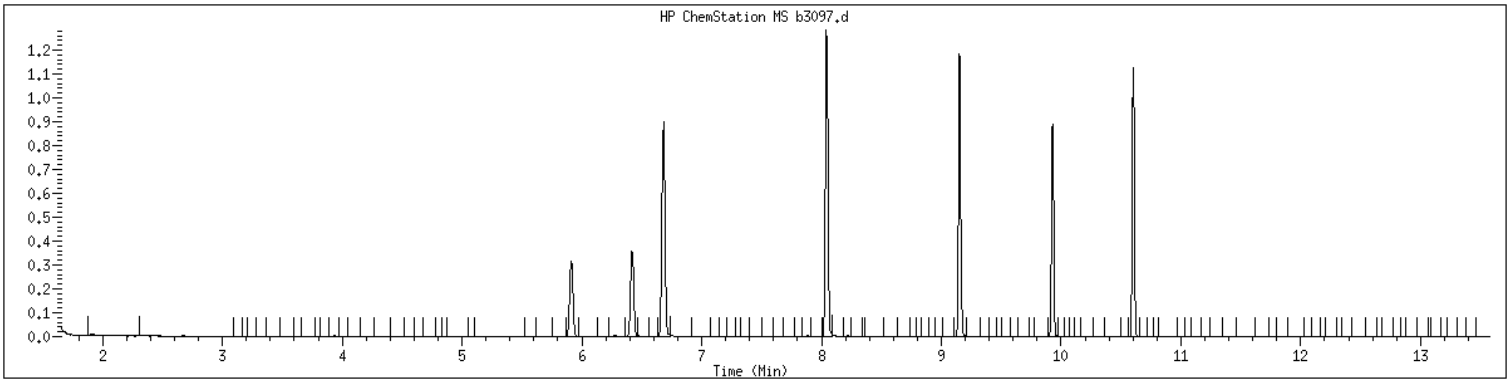
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080309 SampleType : SAMPLE
Injection Date: 05/08/2017 18:34 Instrument : msv14.i
Operator : JMC2
Sample Info : 21705080309*
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	MW-12
Collect Date:	05/01/17 Time: 1757	GCAL Sample ID:	21705080310
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3098
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1857	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	MW-12
Collect Date:	05/01/17	Time:	1757	GCAL Sample ID:	21705080310
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3098
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1857	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3098.d
Lab Smp Id: 21705080310 Client Smp ID: 21705080310
Inj Date : 08-MAY-2017 18:57
Operator : JMC2 Inst ID: msv14.i
Smp Info : 21705080310*
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.908	(0.885)	191988	50.9071	50.9	6891
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	126272	50.3885	50.4	
* 47 FLUOROBENZENE	96	6.681	6.680	(1.000)	742391	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.879)	704701	50.3588	50.4	
* 71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	296610	50.0000		
$ 80 Bromofluorobenzene	174	9.927	9.927	(1.085)	173862	48.7396	48.7	
* 97 1,4-DICHLOROBENZENE-D4	152	10.602	10.601	(1.000)	211110	50.0000		

Data File: /var/chem/msv14.i/2170508.s.b/b3098.d

Page 1

Date : 08-MAY-2017 18:57

Client ID: 21705080310

Instrument: msv14.i

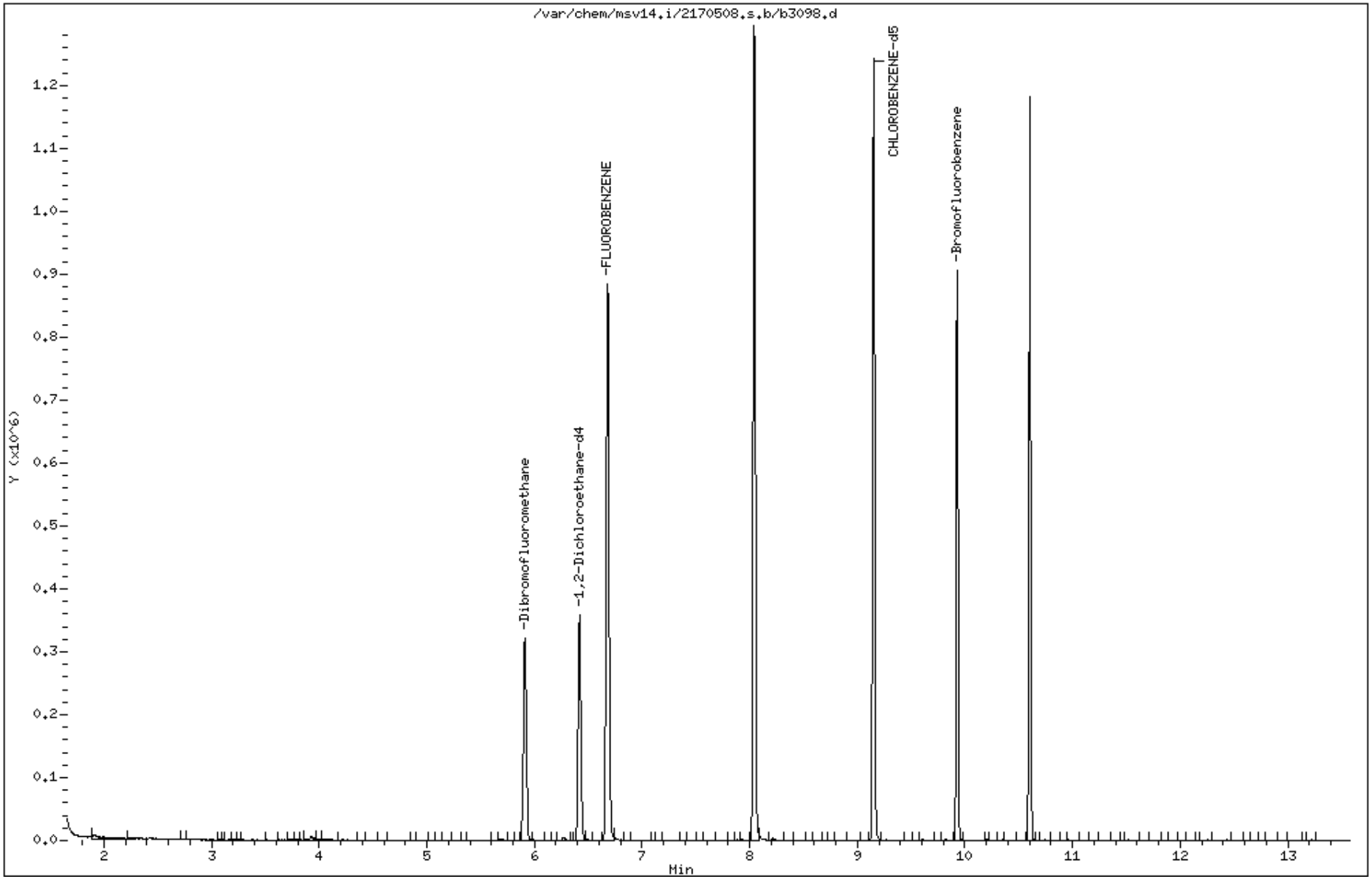
Sample Info: 21705080310x

Purge Volume: 5.0

Operator: JMC2

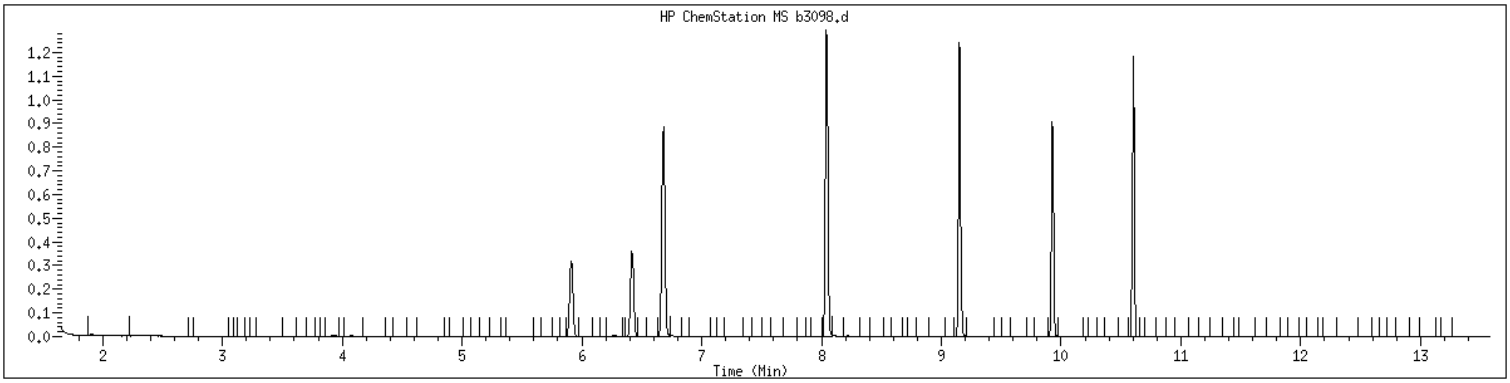
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080310 SampleType : SAMPLE
Injection Date: 05/08/2017 18:57 Instrument : msv14.i
Operator : JMC2
Sample Info : 21705080310*
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-GW32-12-S
Collect Date:	05/02/17 Time: 1430	GCAL Sample ID:	21705080311
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3176
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	2 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1903	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	1.00	U	0.400	1.00	2.00
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	0.400	1.00	2.00
79-00-5	1,1,2-Trichloroethane	1.00	U	0.400	1.00	2.00
75-34-3	1,1-Dichloroethane	1.00	U	0.400	1.00	2.00
75-35-4	1,1-Dichloroethene	1.00	U	0.400	1.00	2.00
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.400	1.00	2.00
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.400	1.00	2.00
96-12-8	1,2-Dibromo-3-chloropropane	1.00	U	0.400	1.00	2.00
106-93-4	1,2-Dibromoethane	1.00	U	0.400	1.00	2.00
95-50-1	1,2-Dichlorobenzene	1.00	U	0.400	1.00	2.00
107-06-2	1,2-Dichloroethane	1.00	U	0.400	1.00	2.00
78-87-5	1,2-Dichloropropane	1.00	U	0.400	1.00	2.00
541-73-1	1,3-Dichlorobenzene	1.00	U	0.400	1.00	2.00
106-46-7	1,4-Dichlorobenzene	1.00	U	0.400	1.00	2.00
78-93-3	2-Butanone	1.00	U	0.400	1.00	10.0
591-78-6	2-Hexanone	2.00	U	1.00	2.00	10.0
108-10-1	4-Methyl-2-pentanone	1.00	U	0.400	1.00	10.0
67-64-1	Acetone	2.00	U	1.00	2.00	10.0
71-43-2	Benzene	1.00	U	0.400	1.00	2.00
74-97-5	Bromochloromethane	1.00	U	0.400	1.00	2.00
75-27-4	Bromodichloromethane	1.00	U	0.400	1.00	2.00
75-25-2	Bromoform	1.00	U	0.500	1.00	2.00
74-83-9	Bromomethane	2.00	U	1.00	2.00	2.00
75-15-0	Carbon disulfide	1.00	U	0.400	1.00	2.00
56-23-5	Carbon tetrachloride	1.00	U	0.500	1.00	2.00
108-90-7	Chlorobenzene	1.00	U	0.400	1.00	2.00
75-00-3	Chloroethane	1.00	U	0.500	1.00	2.00
67-66-3	Chloroform	1.00	U	0.400	1.00	2.00
74-87-3	Chloromethane	1.00	U	0.400	1.00	2.00
156-59-2	cis-1,2-Dichloroethene	3.71		0.400	1.00	2.00
10061-01-5	cis-1,3-Dichloropropene	1.00	U	0.400	1.00	2.00
110-82-7	Cyclohexane	2.00	U	1.00	2.00	4.00
124-48-1	Dibromochloromethane	1.00	U	0.400	1.00	2.00
75-71-8	Dichlorodifluoromethane	1.00	U	0.400	1.00	2.00
100-41-4	Ethylbenzene	1.00	U	0.400	1.00	2.00
98-82-8	Isopropylbenzene (Cumene)	1.00	U	0.400	1.00	2.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-GW32-12-S
Collect Date:	05/02/17	Time:	1430	GCAL Sample ID:	21705080311
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3176
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	2	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1903	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	4.00	U	2.00	4.00	10.0
108-87-2	Methylcyclohexane	1.00	U	0.400	1.00	2.00
75-09-2	Methylene chloride	1.00	U	0.400	1.00	10.0
100-42-5	Styrene	1.00	U	0.400	1.00	2.00
1634-04-4	tert-Butyl methyl ether (MTBE)	1.00	U	0.400	1.00	2.00
127-18-4	Tetrachloroethene	1.00	U	0.400	1.00	2.00
108-88-3	Toluene	1.00	U	0.400	1.00	2.00
156-60-5	trans-1,2-Dichloroethene	1.00	U	0.400	1.00	2.00
10061-02-6	trans-1,3-Dichloropropene	1.00	U	0.400	1.00	2.00
79-01-6	Trichloroethene	268		0.400	1.00	2.00
75-69-4	Trichlorofluoromethane	1.00	U	0.400	1.00	2.00
76-13-1	Trichlorotrifluoroethane	1.00	U	0.400	1.00	2.00
1330-20-7	Xylene (total)	2.00	U	0.800	2.00	6.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3176.d
Lab Smp Id: 21705080311 Client Smp ID: 21705080311
Inj Date : 10-MAY-2017 19:03
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080311*
Misc Info : MSV~38307~*2*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 2.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	2.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
M	48 Total 1,2-Dichloroethene	61				8539	1.85317	3.71	
	30 cis-1,2-Dichloroethene	61	5.462	5.458	(0.818)	8539	1.85317	3.71	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	177918	50.9316	102	6914
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	118713	51.1429	102	
*	47 FLUOROBENZENE	96	6.681	6.680	(1.000)	687654	50.0000		
	49 Trichloroethene	130	6.834	6.830	(1.023)	463055	133.780	268	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	652169	50.9752	102	
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	271180	50.0000		
$	80 Bromofluorobenzene	174	9.931	9.927	(1.085)	159045	48.7669	97.5	
*	97 1,4-DICHLOROBENZENE-D4	152	10.605	10.601	(1.000)	194446	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3176.d

Date : 10-MAY-2017 19:03

Client ID: 21705080311

Instrument: msv14.i

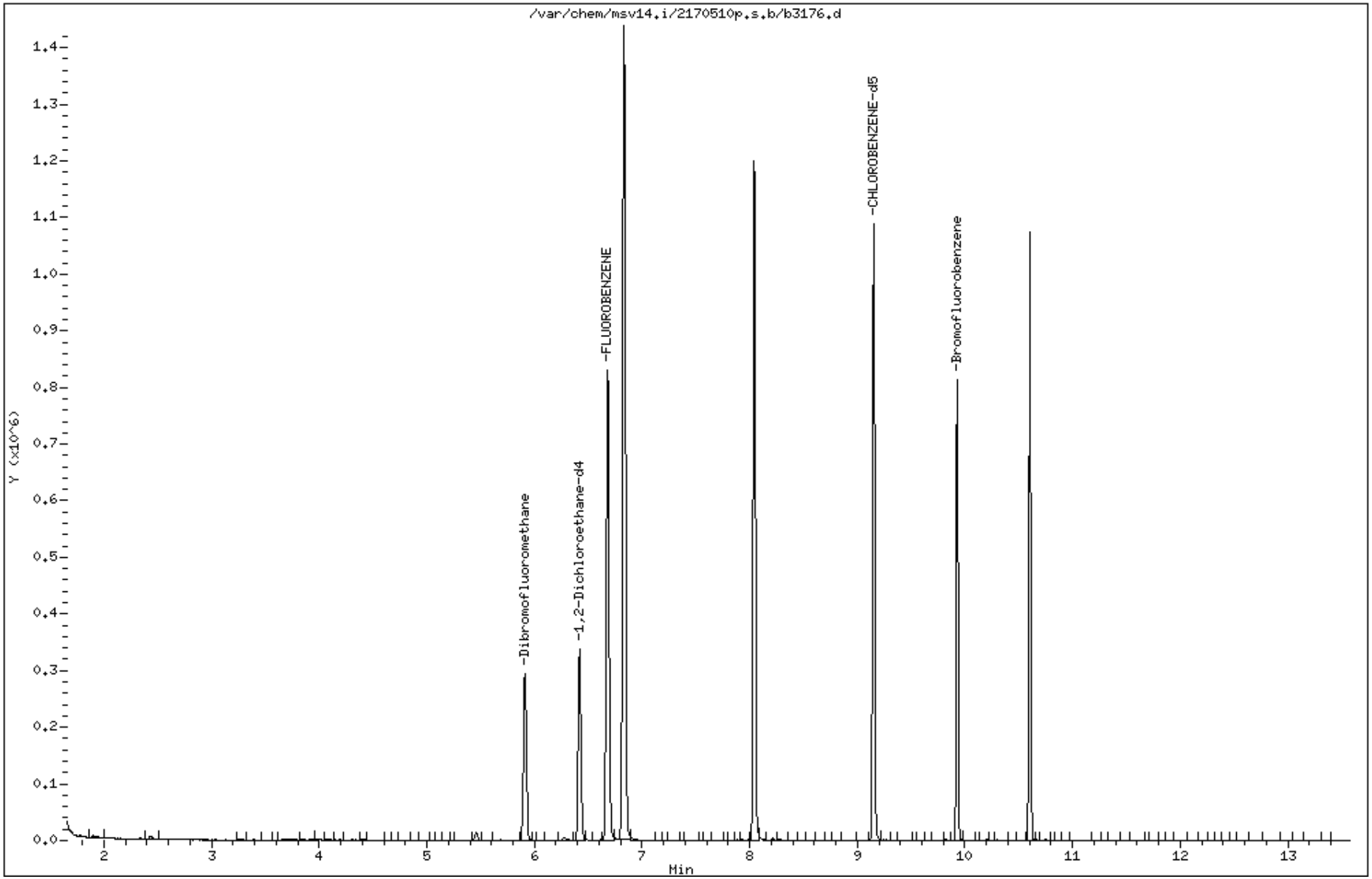
Sample Info: 21705080311*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170510p.s.b/b3176.d

Date : 10-MAY-2017 19:03

Client ID: 21705080311

Instrument: msv14.i

Sample Info: 21705080311x

Purge Volume: 5.0

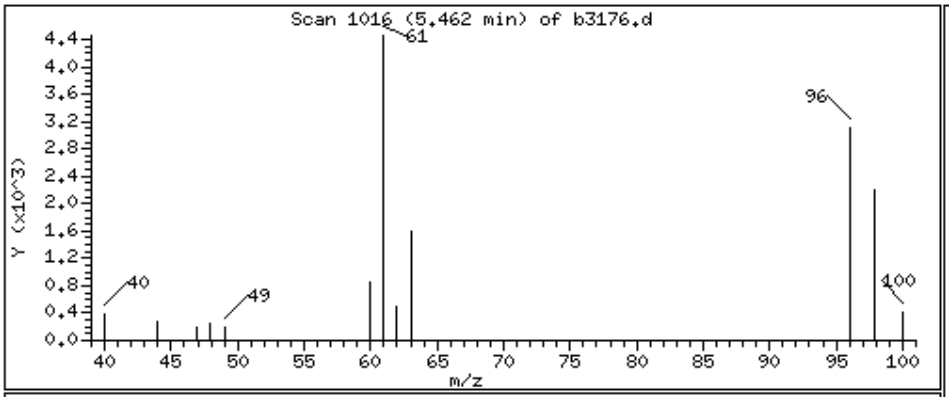
Operator: JCK

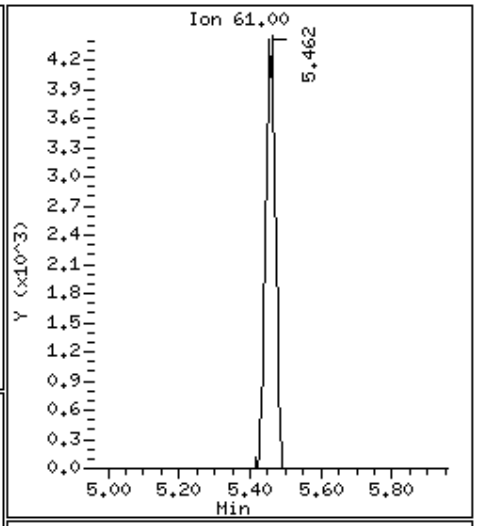
Column phase: RTX-VMS-30M

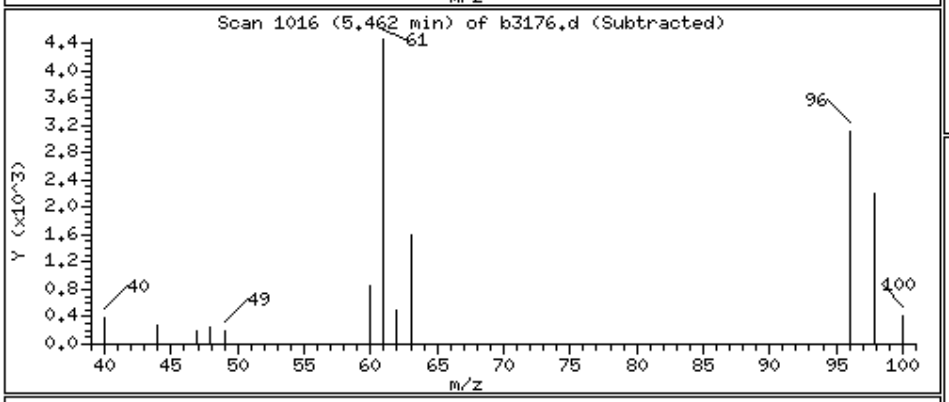
Column diameter: 0.25

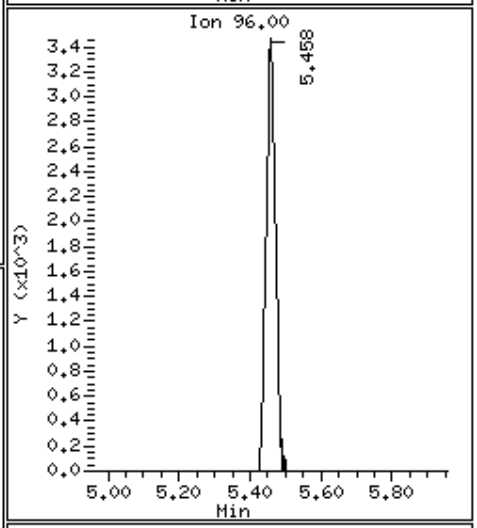
30 cis-1,2-Dichloroethene

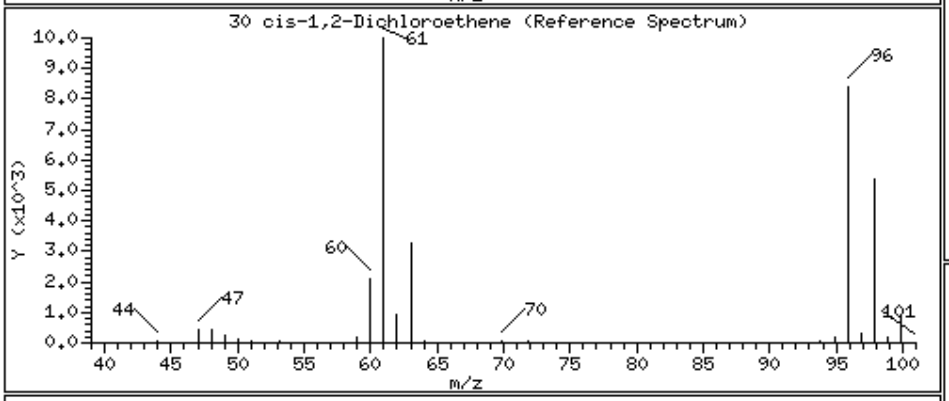
Concentration: 3.71 ug/L

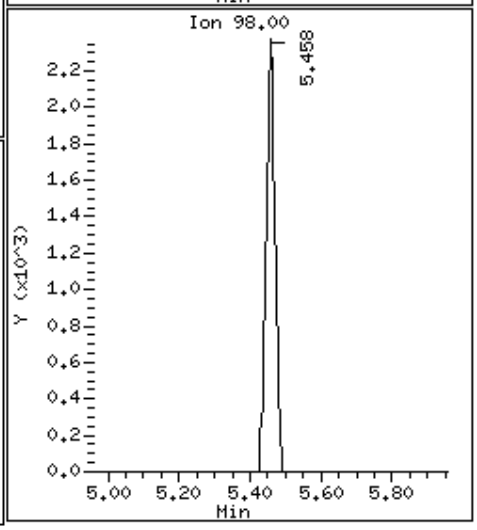


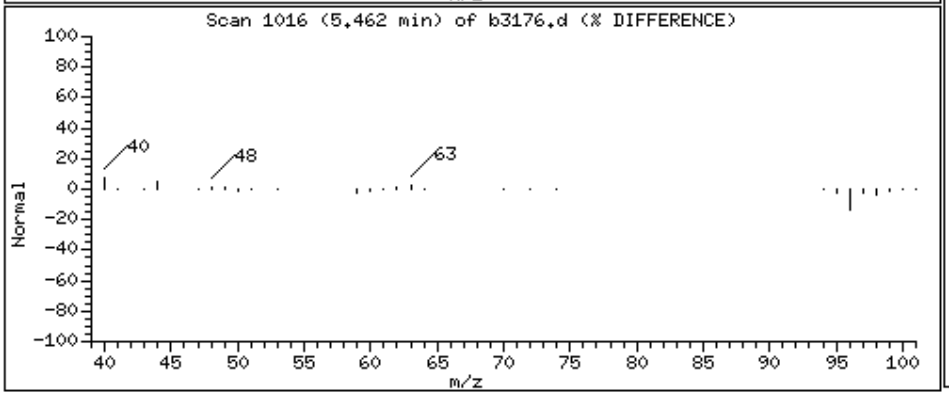












Data File: /var/chem/msv14.i/2170510p.s.b/b3176.d

Date : 10-MAY-2017 19:03

Client ID: 21705080311

Instrument: msv14.i

Sample Info: 21705080311x

Purge Volume: 5.0

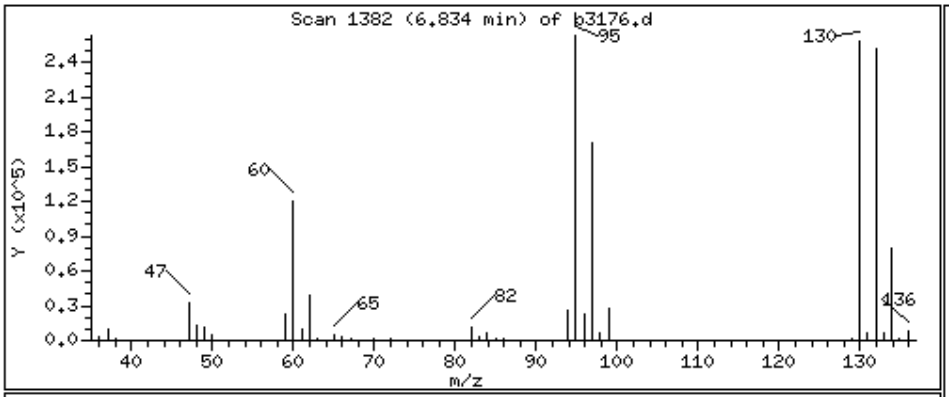
Operator: JCK

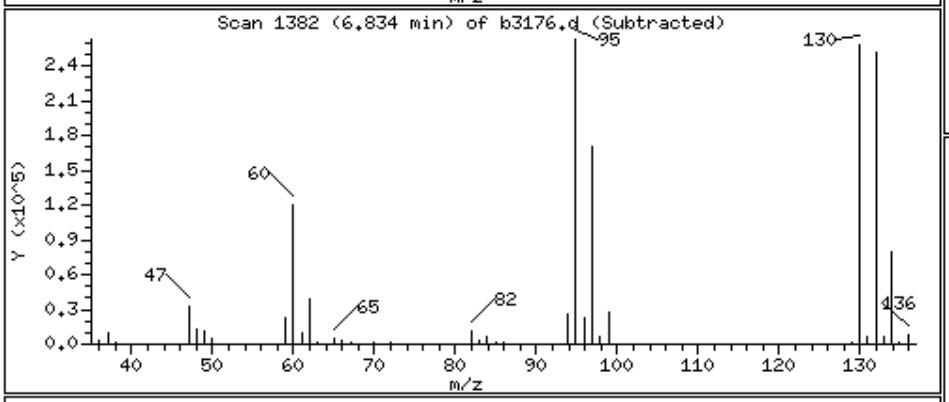
Column phase: RTX-VMS-30M

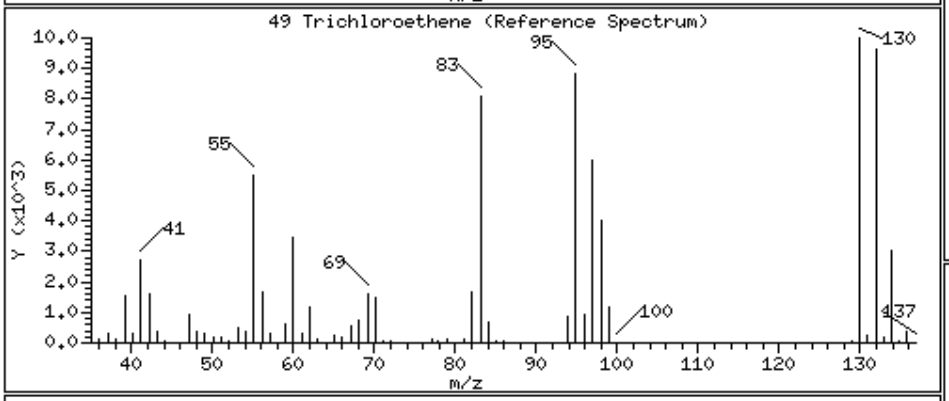
Column diameter: 0.25

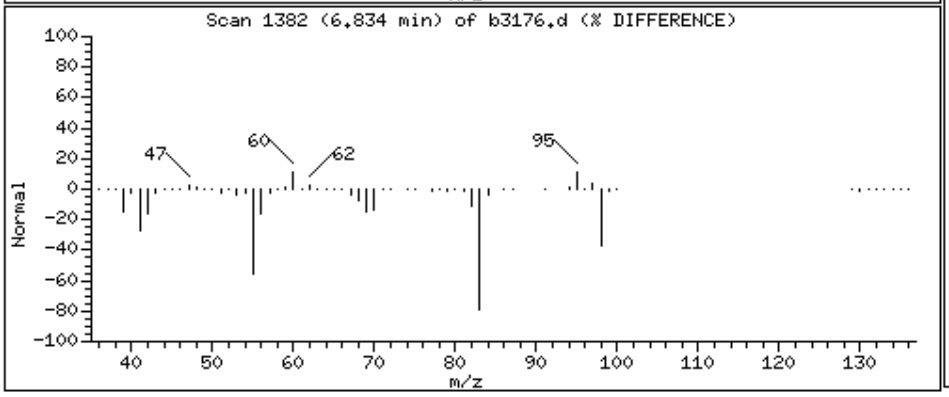
49 Trichloroethene

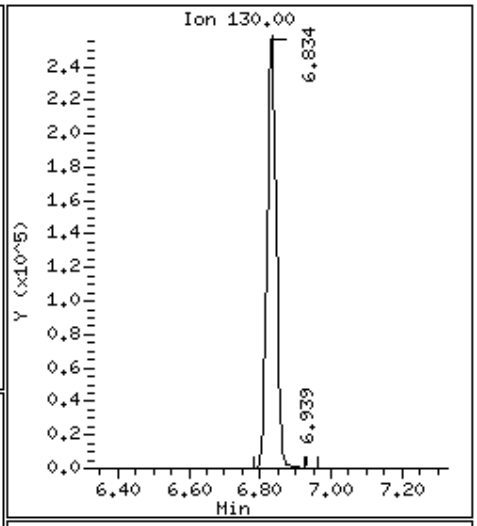
Concentration: 268 ug/L

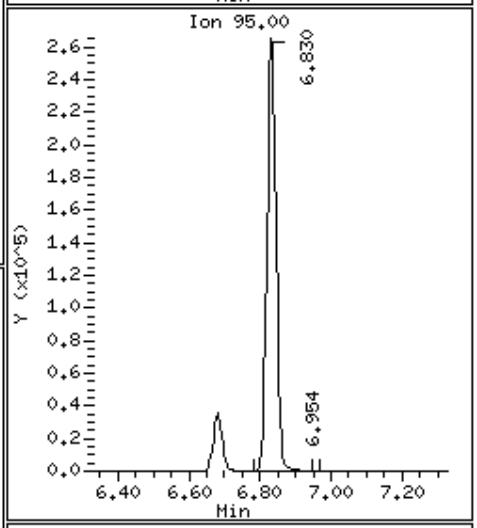


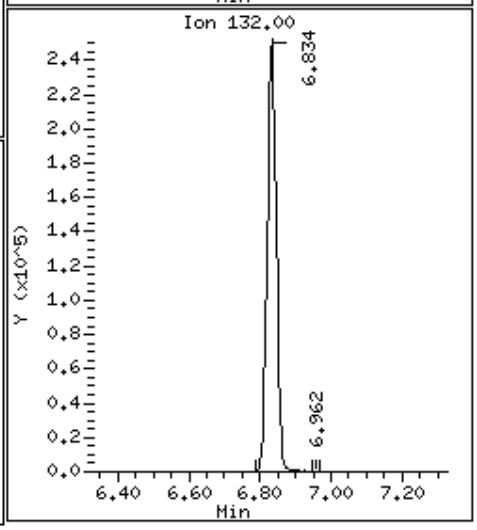






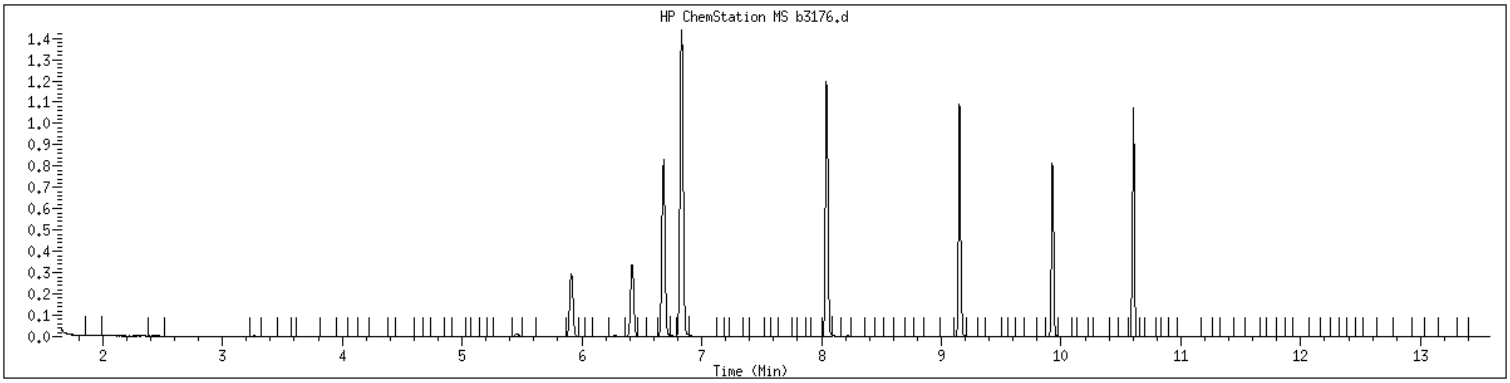






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080311 SampleType : SAMPLE
Injection Date: 05/10/2017 19:03 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080311*
Misc Info : MSV~38307~*2*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 2.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-GW02-19-S
Collect Date:	05/03/17 Time: 1000	GCAL Sample ID:	21705080312
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3169
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1625	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	3.87	J	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	12.2		0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-GW02-19-S
Collect Date:	05/03/17	Time:	1000	GCAL Sample ID:	21705080312
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3169
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1625	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3169.d
Lab Smp Id: 21705080312 Client Smp ID: 21705080312
Inj Date : 10-MAY-2017 16:25
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080312*
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
12 Acetone	43	4.071	4.068	(0.609)	28199	12.2345	12.2	
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	190185	51.9237	51.9	6894
32 2-Butanone	43	6.043	6.043	(0.905)	9780	3.87438	3.87	(H)
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	126087	51.8060	51.8	
* 47 FLUOROBENZENE	96	6.681	6.680	(1.000)	721021	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.879)	687511	50.0047	50.0	
* 71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	291424	50.0000		
$ 80 Bromofluorobenzene	174	9.931	9.927	(1.085)	177693	50.7000	50.7	
* 97 1,4-DICHLOROBENZENE-D4	152	10.602	10.601	(1.000)	207660	50.0000		

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /var/chem/msv14.i/2170510p.s.b/b3169.d

Page 1

Date : 10-MAY-2017 16:25

Client ID: 21705080312

Instrument: msv14.i

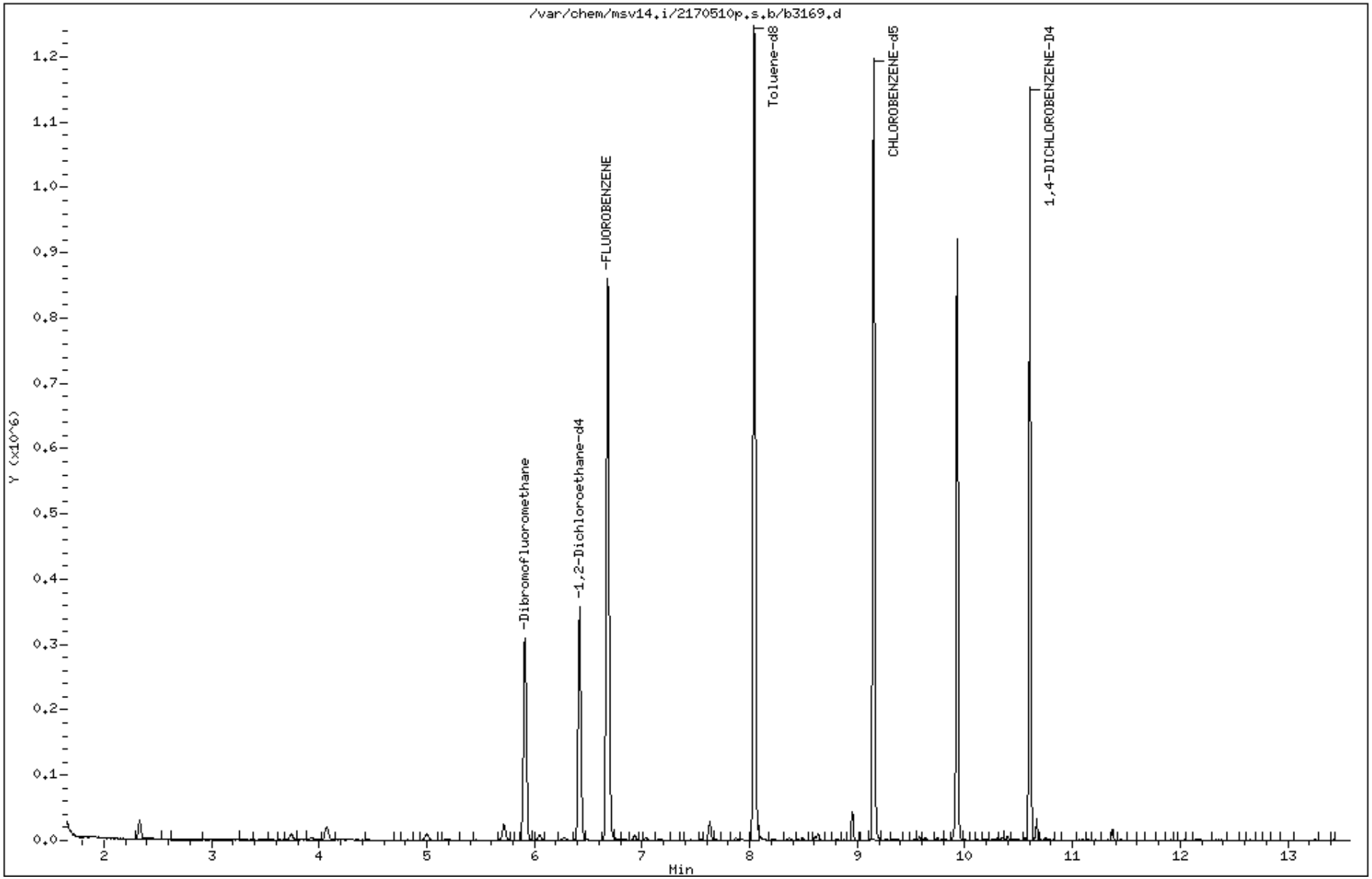
Sample Info: 21705080312*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170510p.s.b/b3169.d

Date : 10-MAY-2017 16:25

Client ID: 21705080312

Instrument: msv14.i

Sample Info: 21705080312x

Purge Volume: 5.0

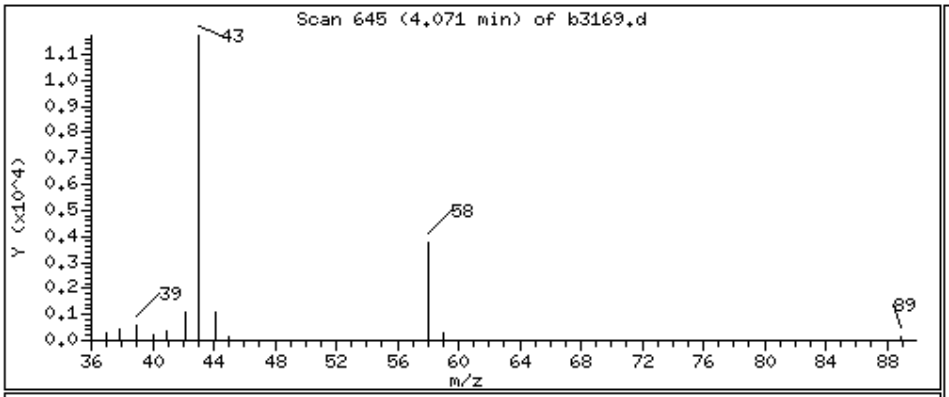
Operator: JCK

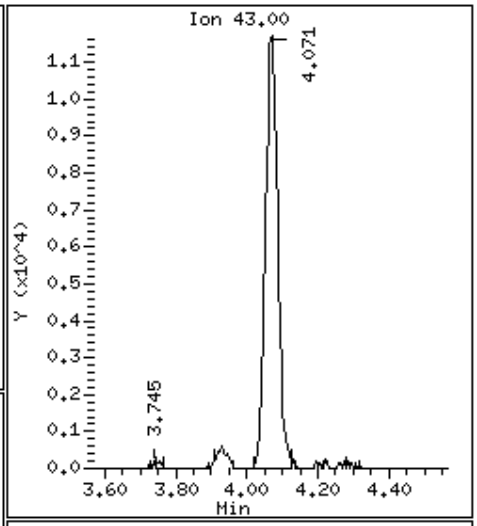
Column phase: RTX-VMS-30M

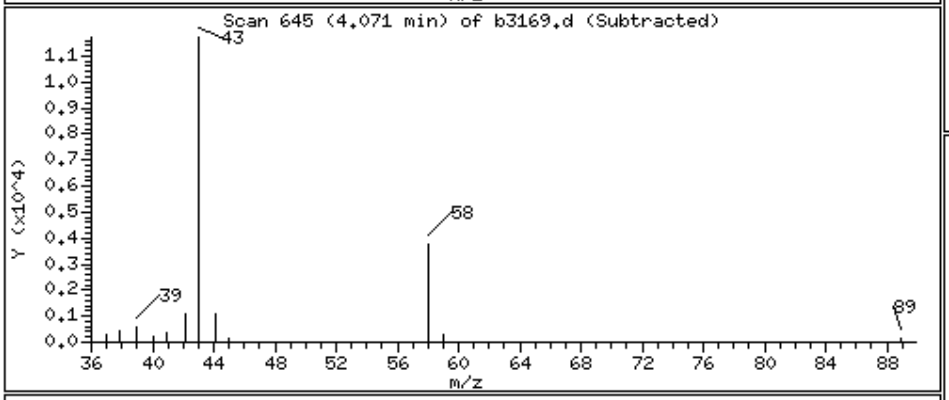
Column diameter: 0.25

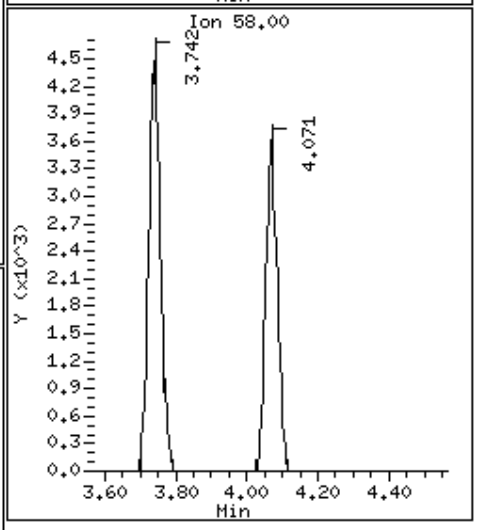
12 Acetone

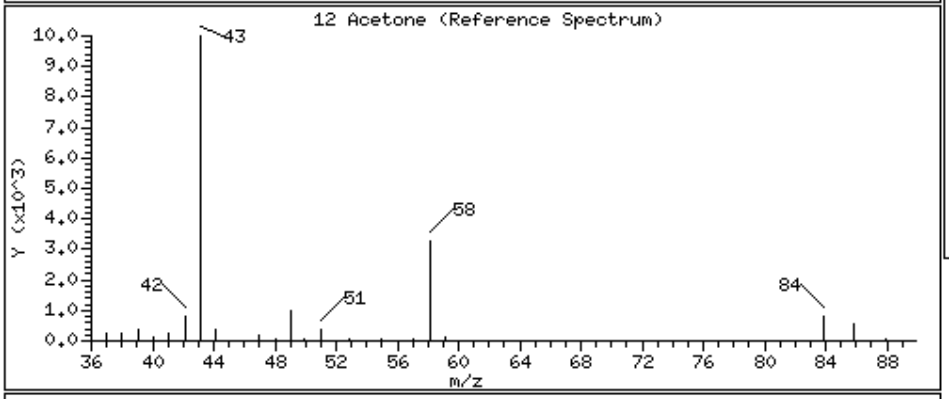
Concentration: 12.2 ug/L

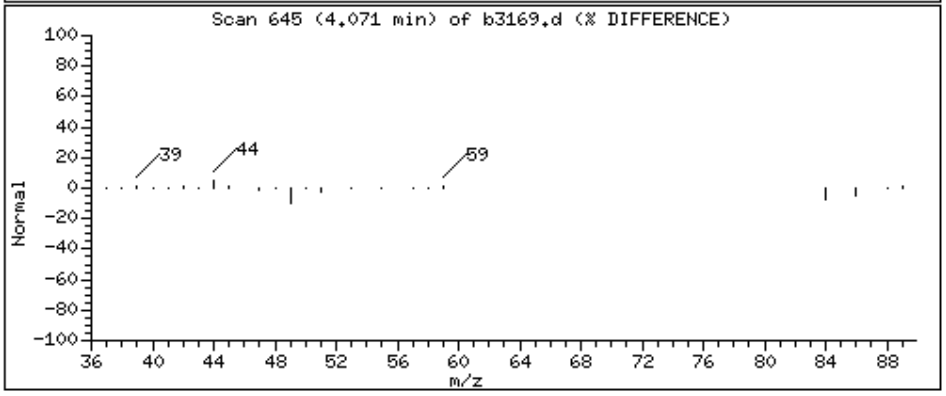












Data File: /var/chem/msv14.i/2170510p.s.b/b3169.d

Date : 10-MAY-2017 16:25

Client ID: 21705080312

Instrument: msv14.i

Sample Info: 21705080312x

Purge Volume: 5.0

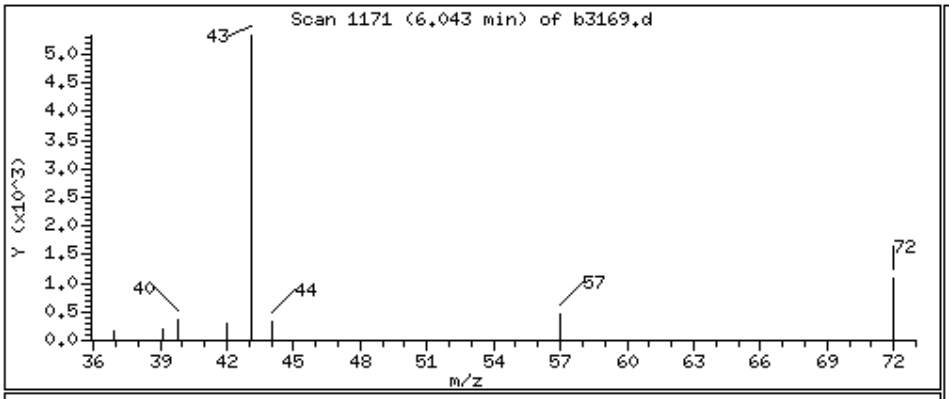
Operator: JCK

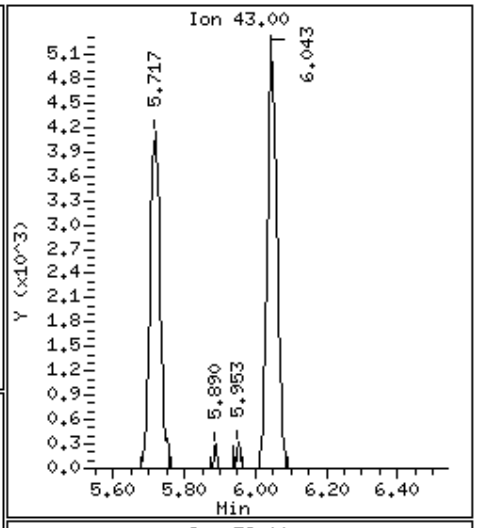
Column phase: RTX-VMS-30M

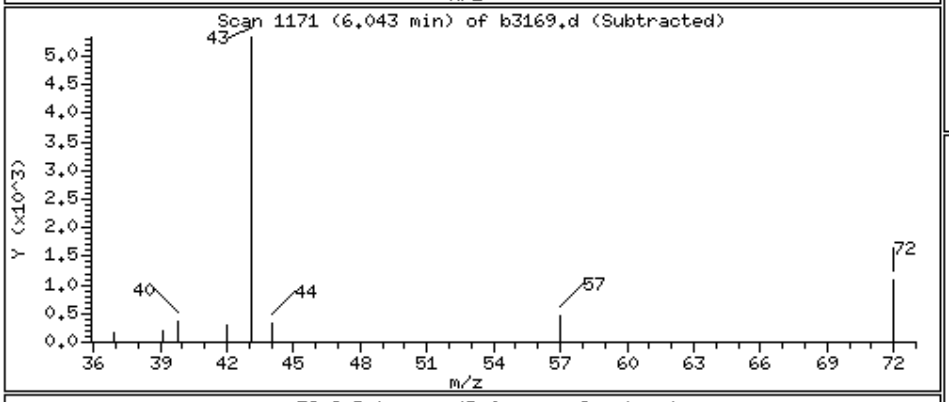
Column diameter: 0.25

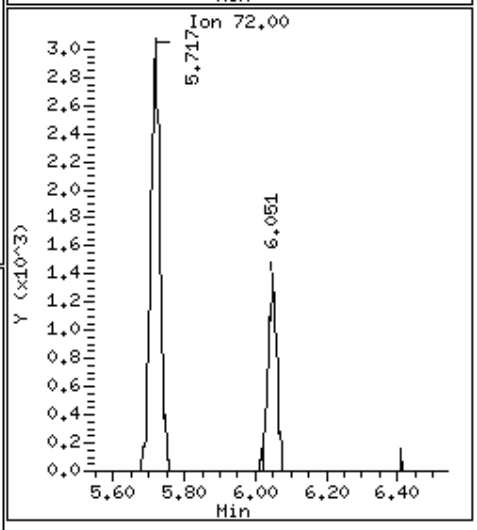
32 2-Butanone

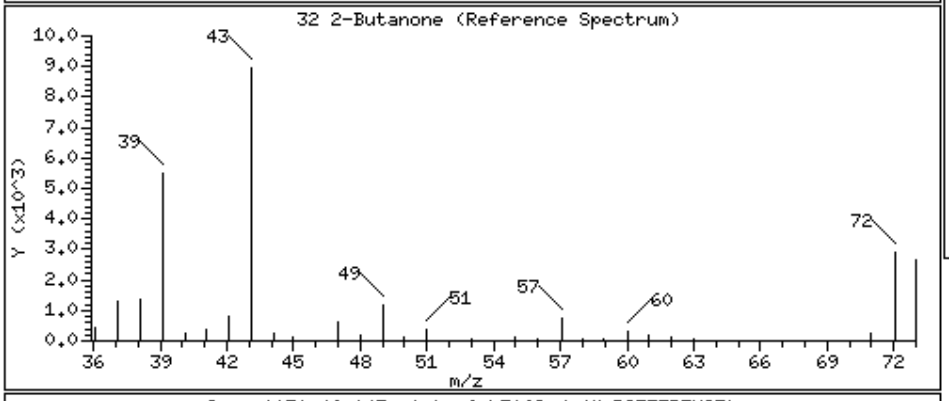
Concentration: 3.87 ug/L

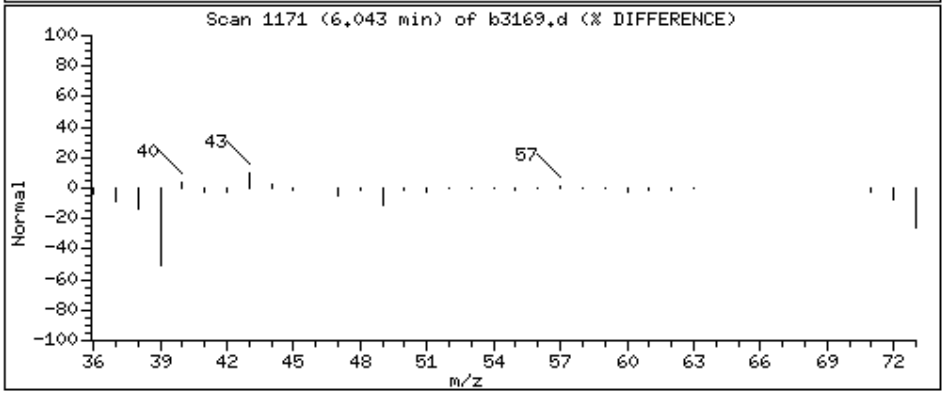






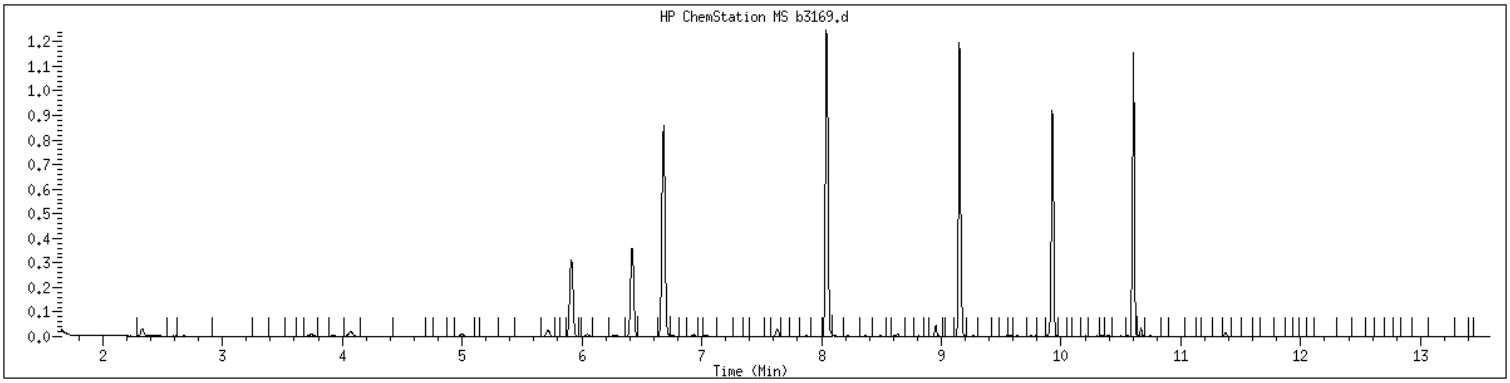






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080312 SampleType : SAMPLE
Injection Date: 05/10/2017 16:25 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080312*
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-GW03-34-S
Collect Date:	05/04/17 Time: 1030	GCAL Sample ID:	21705080313
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3170
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1648	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-GW03-34-S
Collect Date:	05/04/17	Time:	1030	GCAL Sample ID:	21705080313
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3170
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1648	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3170.d
Lab Smp Id: 21705080313 Client Smp ID: 21705080313
Inj Date : 10-MAY-2017 16:48
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080313*
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	187302	51.1083	51.1	6888
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	124156	50.9843	51.0	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	721420	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	682370	50.8293	50.8	
* 71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	284552	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	168409	49.2115	49.2	
* 97 1,4-DICHLOROBENZENE-D4	152	10.605	10.601	(1.000)	205683	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3170.d

Page 1

Date : 10-MAY-2017 16:48

Client ID: 21705080313

Instrument: msv14.i

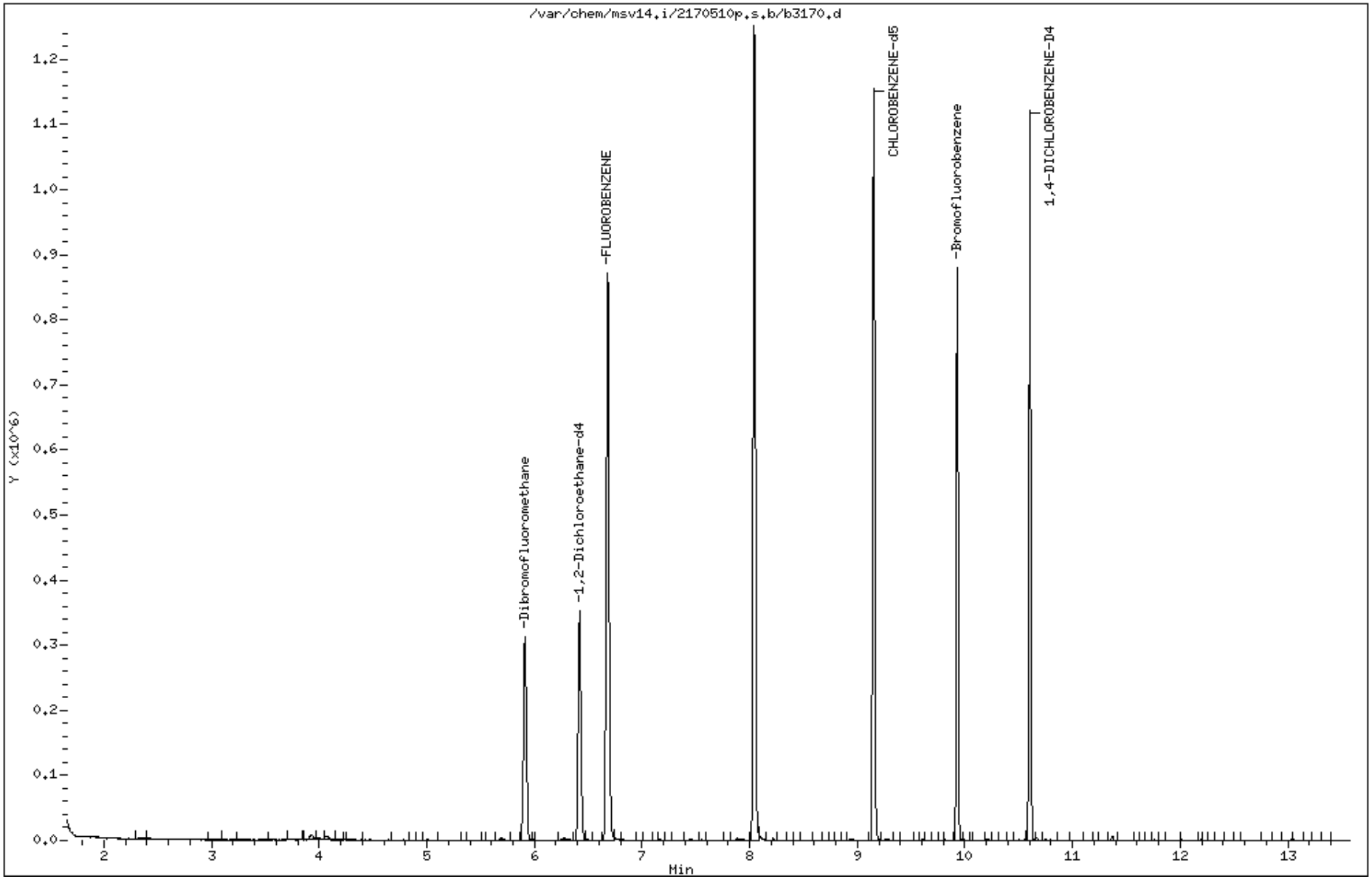
Sample Info: 21705080313*

Purge Volume: 5.0

Operator: JCK

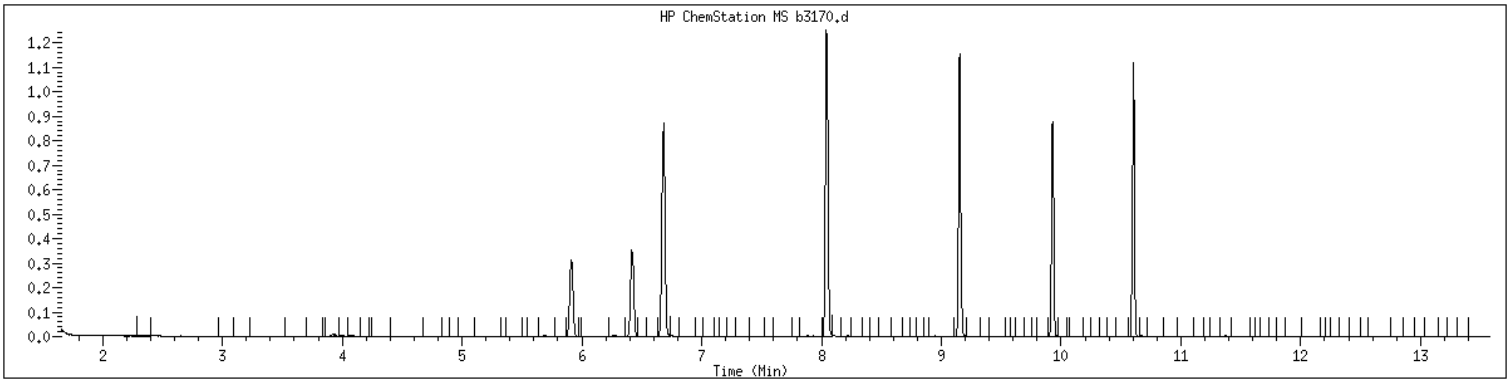
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080313 SampleType : SAMPLE
Injection Date: 05/10/2017 16:48 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080313*
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-GW20-12-S
Collect Date:	05/05/17 Time: 1615	GCAL Sample ID:	21705080314
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3171
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1710	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.927	J	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-GW20-12-S
Collect Date:	05/05/17 Time: 1615	GCAL Sample ID:	21705080314
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3171
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1710	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	25.7		0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	32.5		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3171.d
Lab Smp Id: 21705080314 Client Smp ID: 21705080314
Inj Date : 10-MAY-2017 17:10
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080314*
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
M	48 Total 1,2-Dichloroethene	61				4333	0.92704	0.927	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	4333	0.92704	0.927	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	183043	51.6559	51.7	6893
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	120940	51.3638	51.4	
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	697542	50.0000		
	49 Trichloroethene	130	6.834	6.830	(1.023)	114261	32.5430	32.5	
$	60 Toluene-d8	98	8.045	8.041	(0.879)	659718	50.1438	50.1	
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	64544	25.6638	25.7	
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	278867	50.0000		
$	80 Bromofluorobenzene	174	9.930	9.927	(1.085)	162985	48.5975	48.6	
*	97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	202474	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3171.d

Page 1

Date : 10-MAY-2017 17:10

Client ID: 21705080314

Instrument: msv14.i

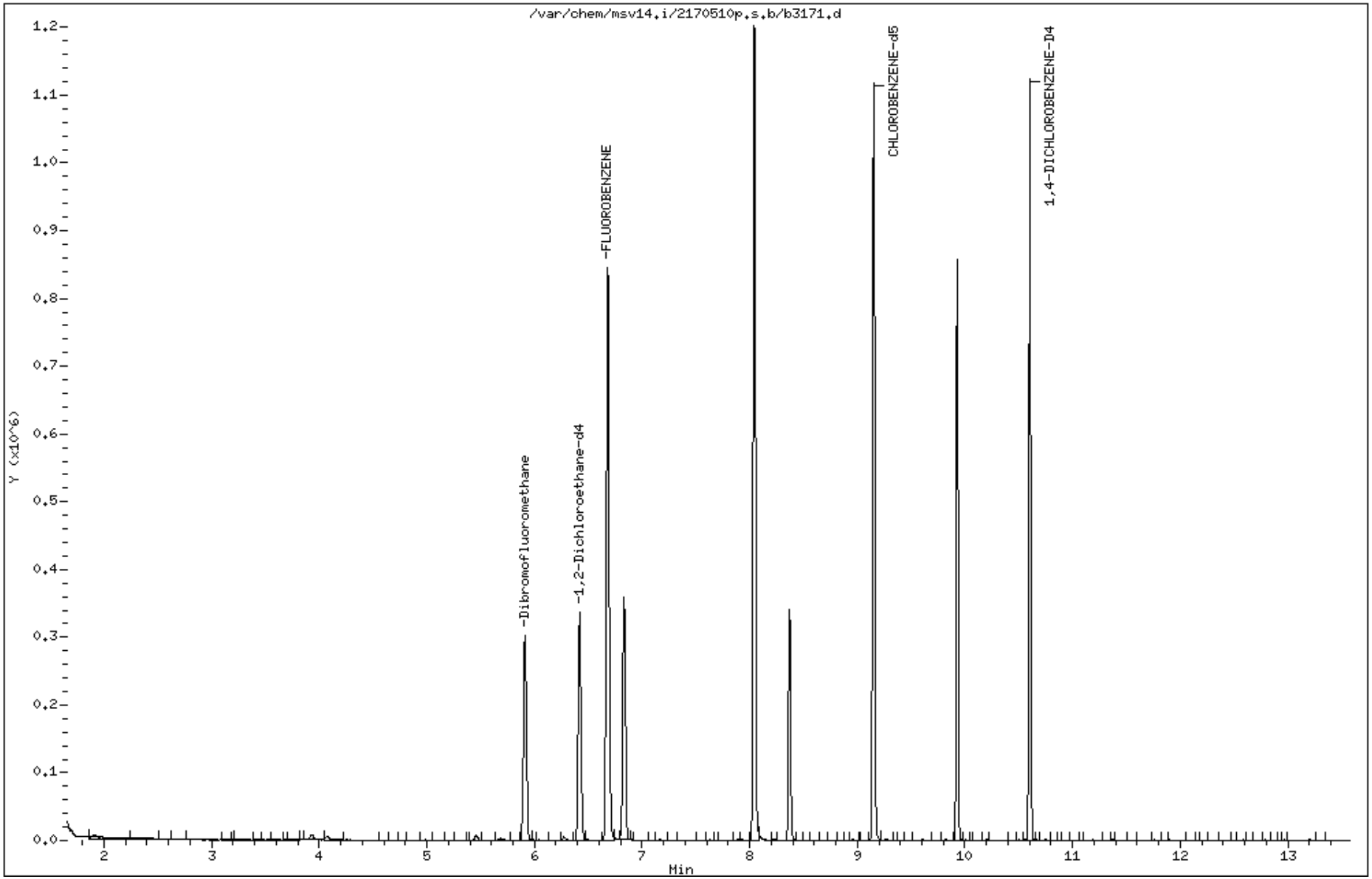
Sample Info: 21705080314*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170510p.s.b/b3171.d

Date : 10-MAY-2017 17:10

Client ID: 21705080314

Instrument: msv14.i

Sample Info: 21705080314x

Purge Volume: 5.0

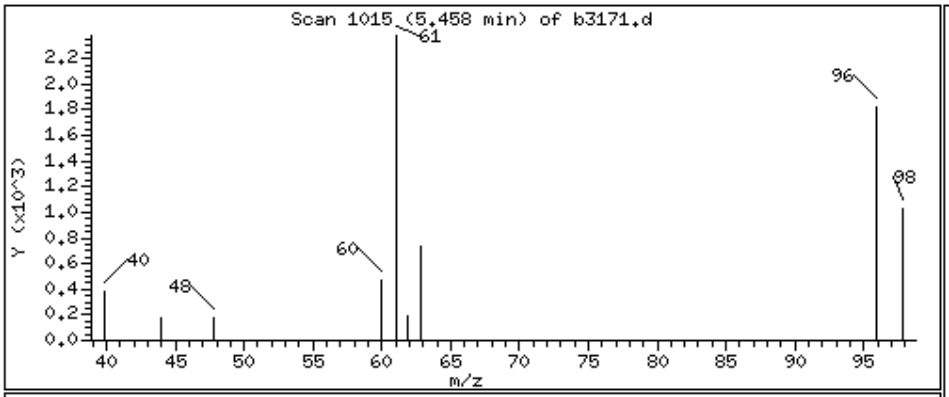
Operator: JCK

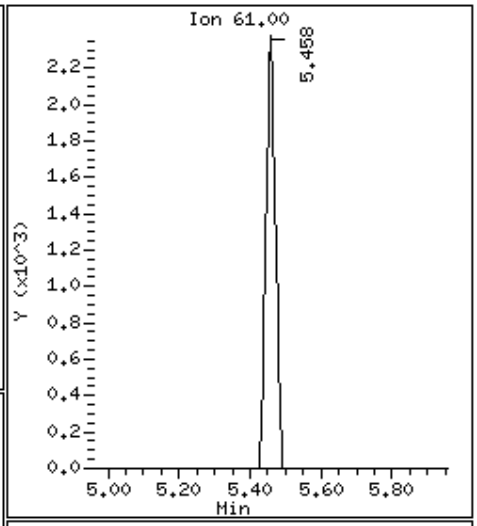
Column phase: RTX-VMS-30M

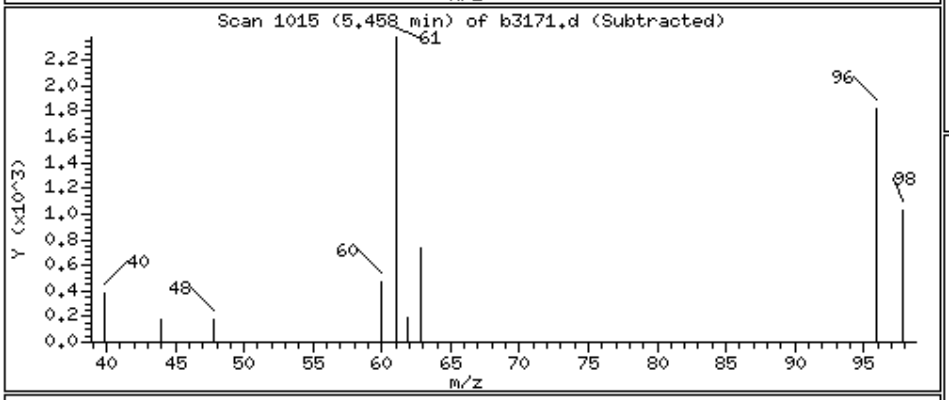
Column diameter: 0.25

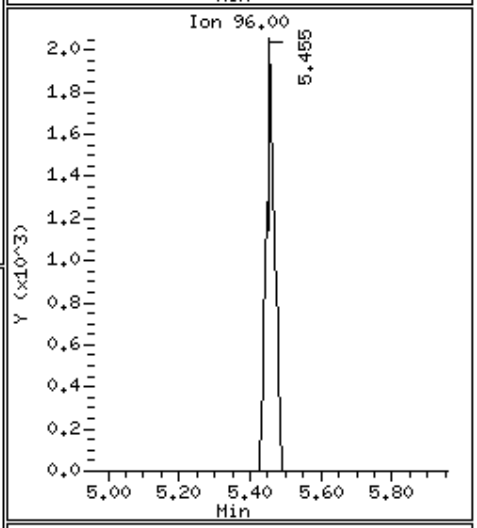
30 cis-1,2-Dichloroethene

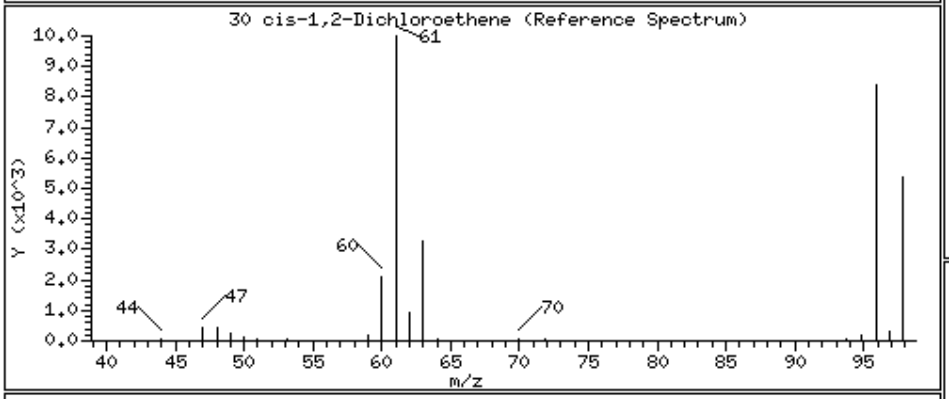
Concentration: 0.927 ug/L

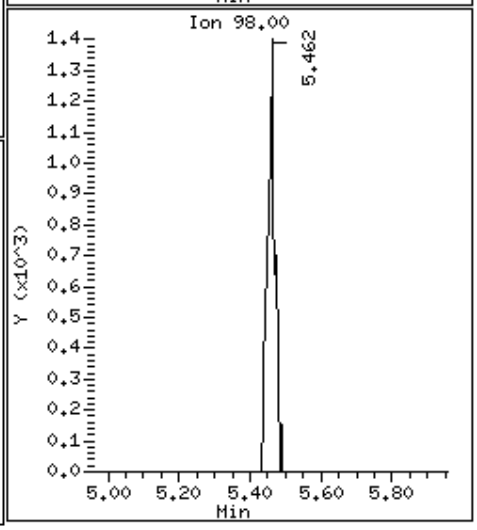


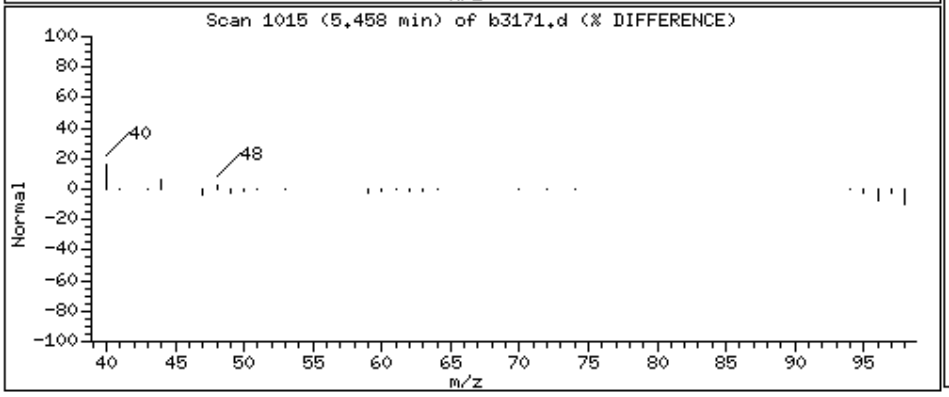












Data File: /var/chem/msv14.i/2170510p.s.b/b3171.d

Date : 10-MAY-2017 17:10

Client ID: 21705080314

Instrument: msv14.i

Sample Info: 21705080314x

Purge Volume: 5.0

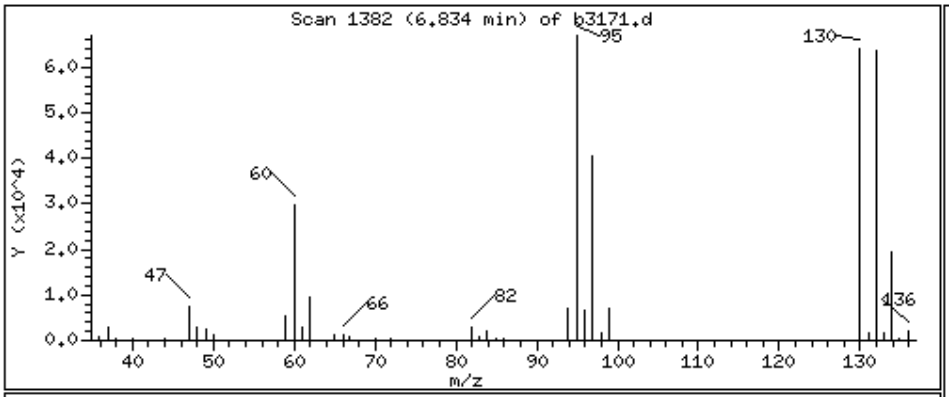
Operator: JCK

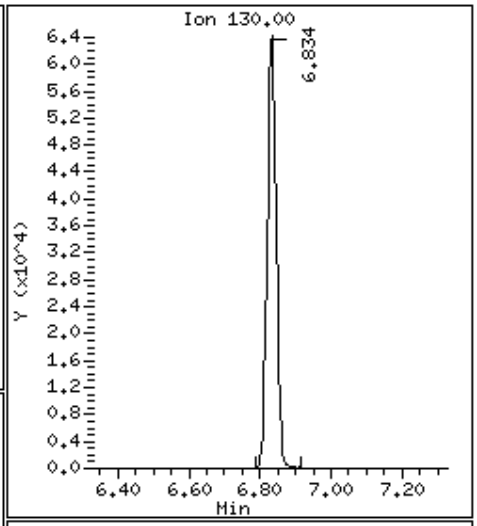
Column phase: RTX-VMS-30M

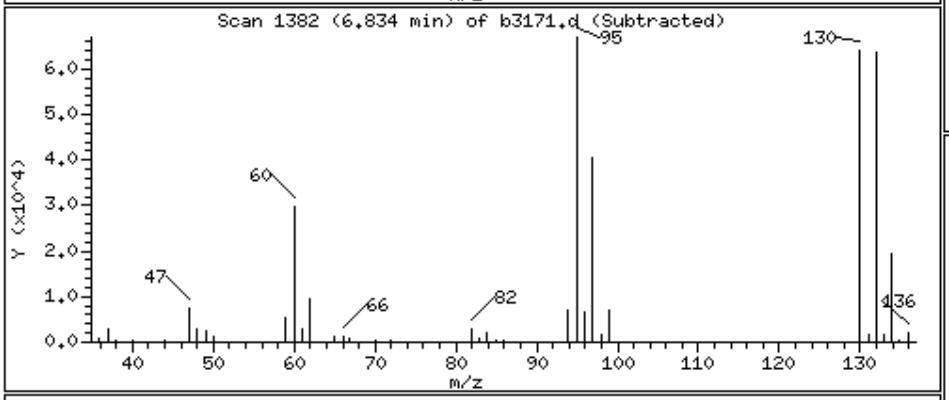
Column diameter: 0.25

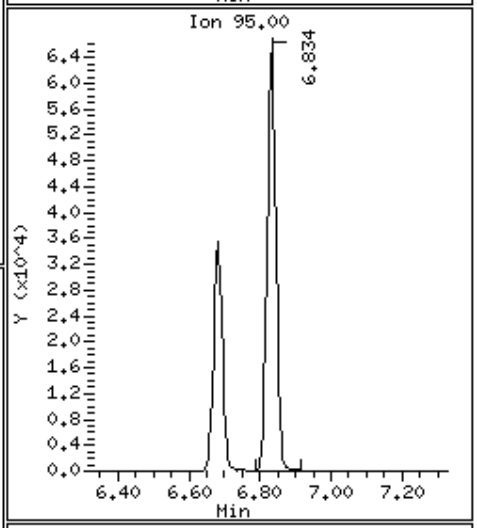
49 Trichloroethene

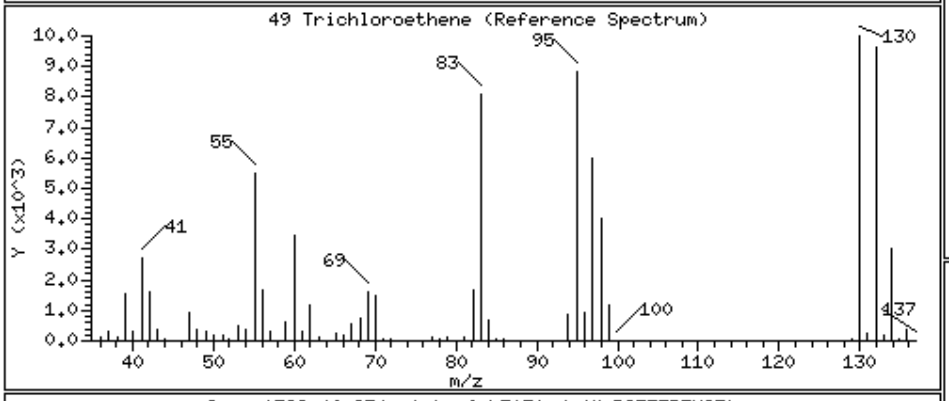
Concentration: 32.5 ug/L

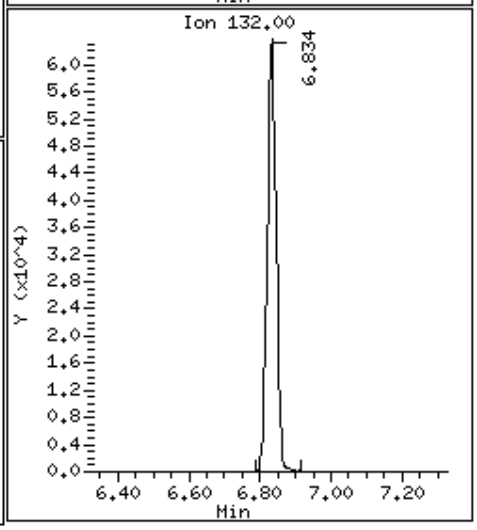


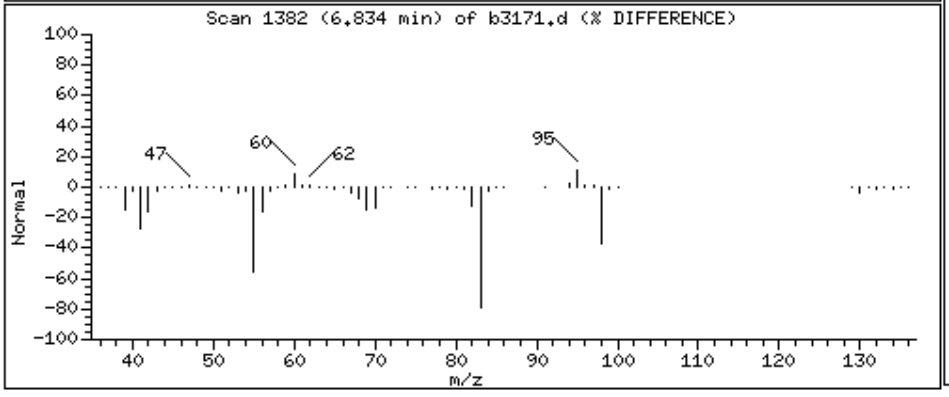












Data File: /var/chem/msv14.i/2170510p.s.b/b3171.d

Date : 10-MAY-2017 17:10

Client ID: 21705080314

Instrument: msv14.i

Sample Info: 21705080314x

Purge Volume: 5.0

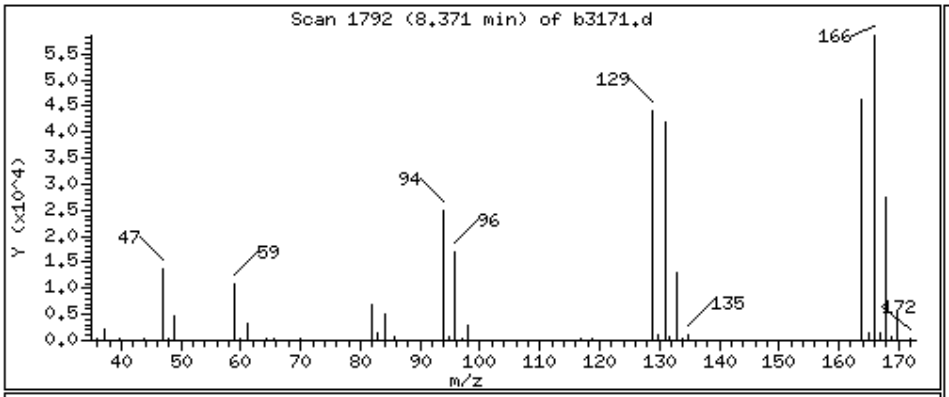
Operator: JCK

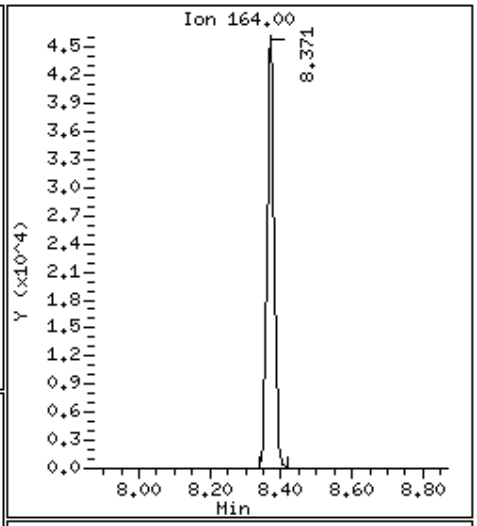
Column phase: RTX-VMS-30M

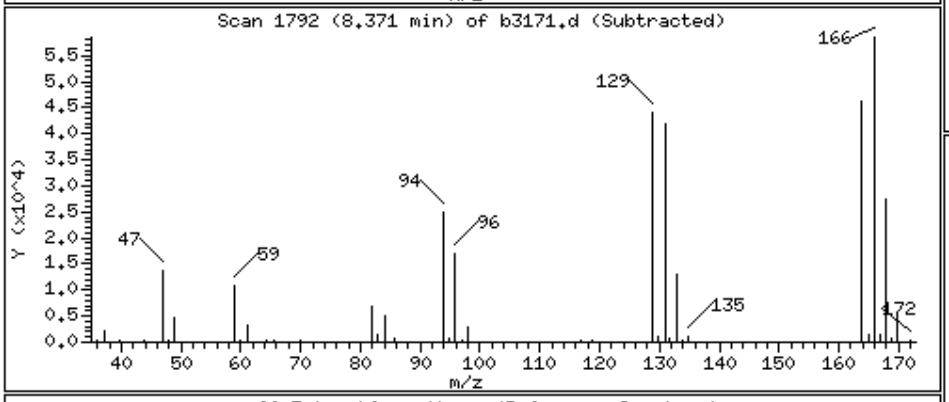
Column diameter: 0.25

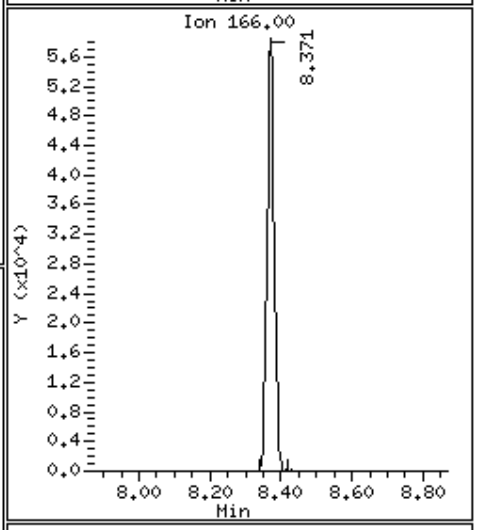
66 Tetrachloroethene

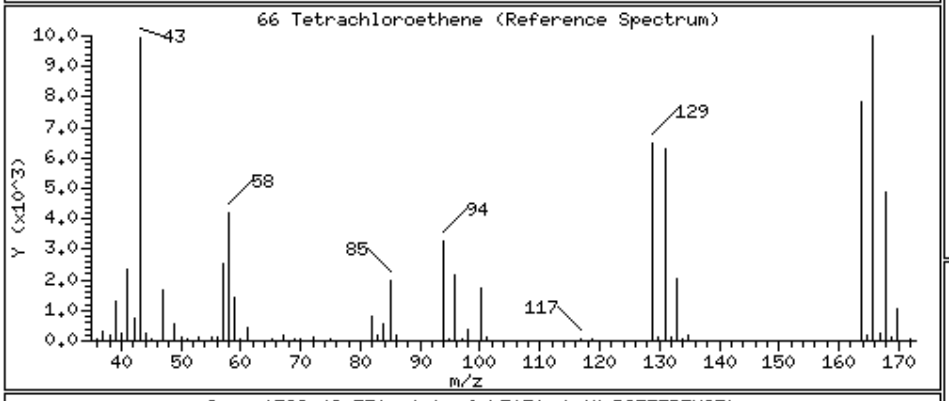
Concentration: 25.7 ug/L

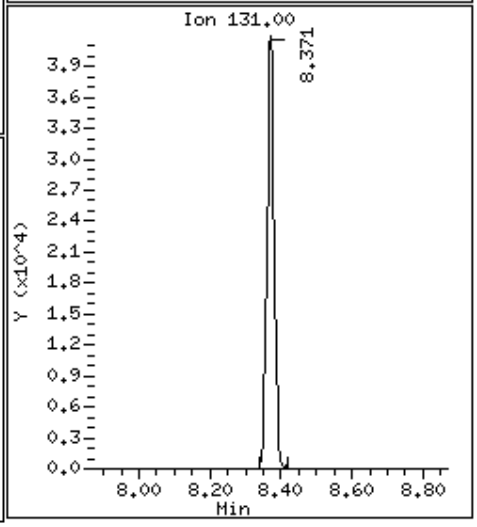


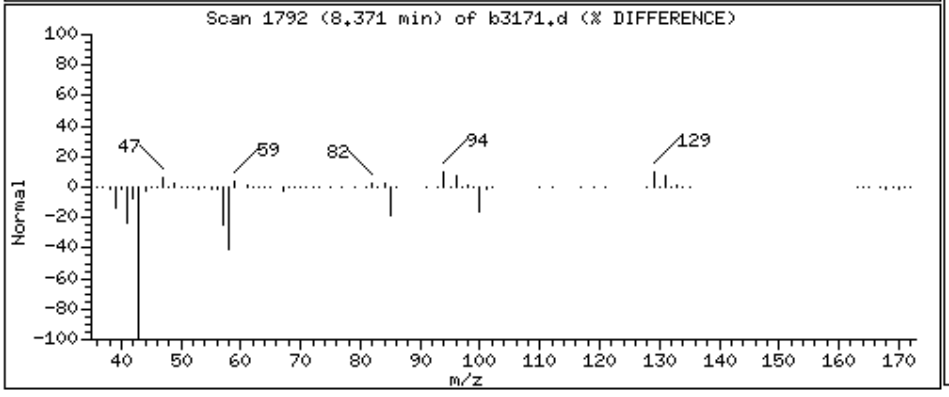






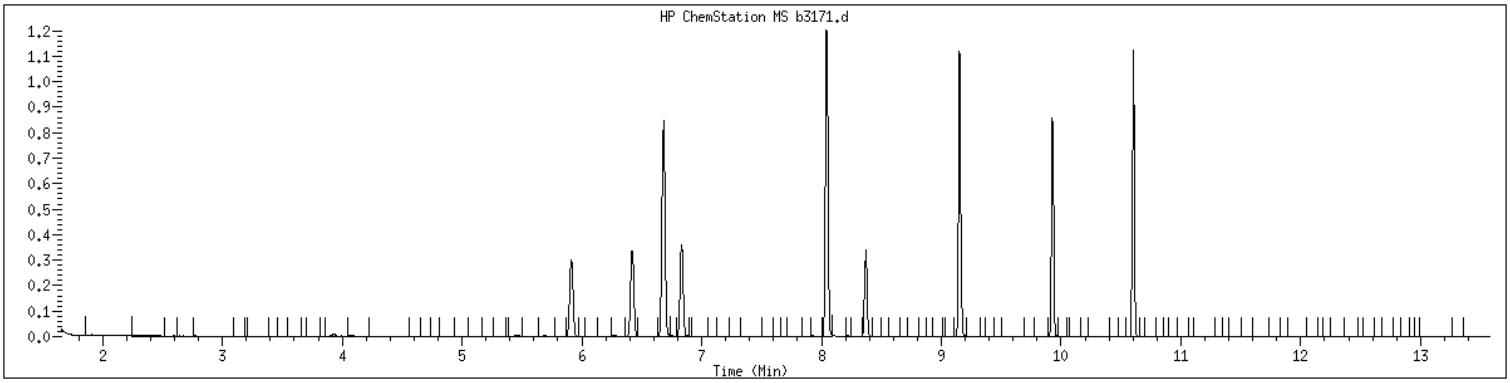






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080314 SampleType : SAMPLE
Injection Date: 05/10/2017 17:10 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080314*
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-GW18-18-S
Collect Date:	05/05/17 Time: 1045	GCAL Sample ID:	21705080315
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3172
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1732	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	2.44		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-GW18-18-S
Collect Date:	05/05/17	Time:	1045	GCAL Sample ID:	21705080315
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3172
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1732	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	4.42		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3172.d
Lab Smp Id: 21705080315 Client Smp ID: 21705080315
Inj Date : 10-MAY-2017 17:32
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080315*
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	3 Vinyl Chloride +	62	2.040	2.036	(0.305)	715	0.20249	0.202	
M	48 Total 1,2-Dichloroethene	61				11793	2.44091	2.44	
	30 cis-1,2-Dichloroethene	61	5.462	5.458	(0.818)	11793	2.44091	2.44	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	186633	50.9537	51.0	6886
$	43 1,2-Dichloroethane-d4	67	6.422	6.418	(0.961)	125542	51.5817	51.6	
*	47 FLUOROBENZENE	96	6.681	6.680	(1.000)	721025	50.0000		
	49 Trichloroethene	130	6.830	6.830	(1.022)	16057	4.42429	4.42	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	676438	51.0486	51.0	
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	280867	50.0000		
$	80 Bromofluorobenzene	174	9.931	9.927	(1.085)	167546	49.6017	49.6	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.601	(1.000)	208454	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3172.d

Date : 10-MAY-2017 17:32

Client ID: 21705080315

Instrument: msv14.i

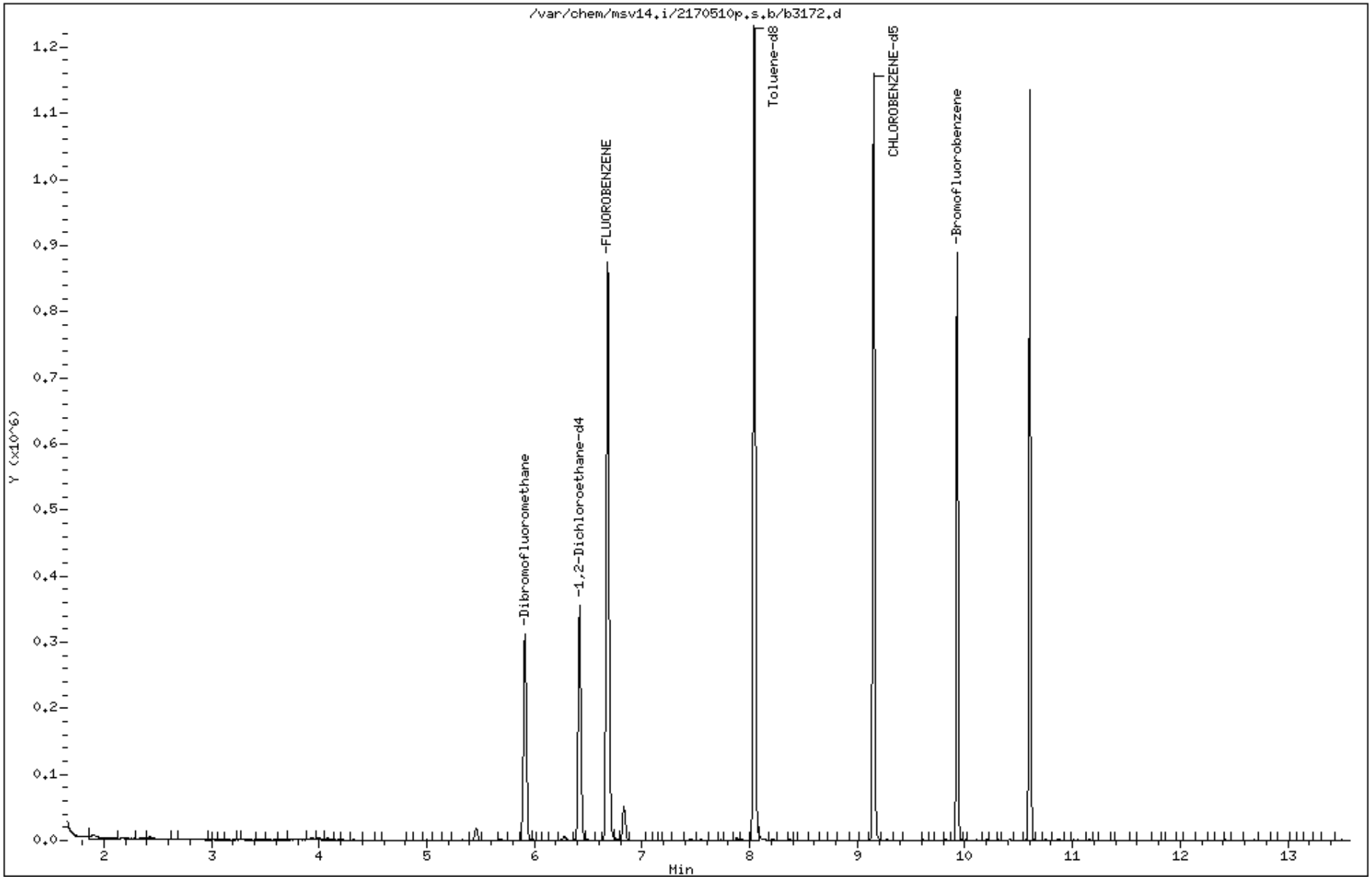
Sample Info: 21705080315*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170510p.s.b/b3172.d

Date : 10-MAY-2017 17:32

Client ID: 21705080315

Instrument: msv14.i

Sample Info: 21705080315x

Purge Volume: 5.0

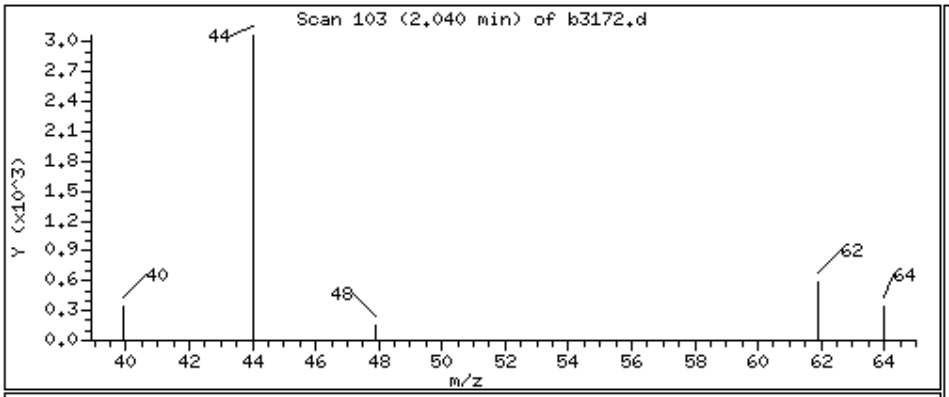
Operator: JCK

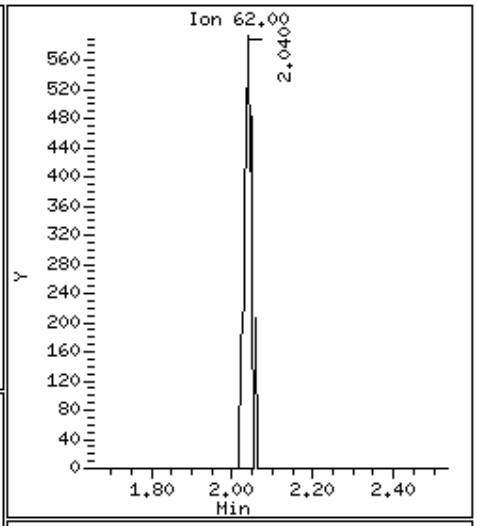
Column phase: RTX-VMS-30M

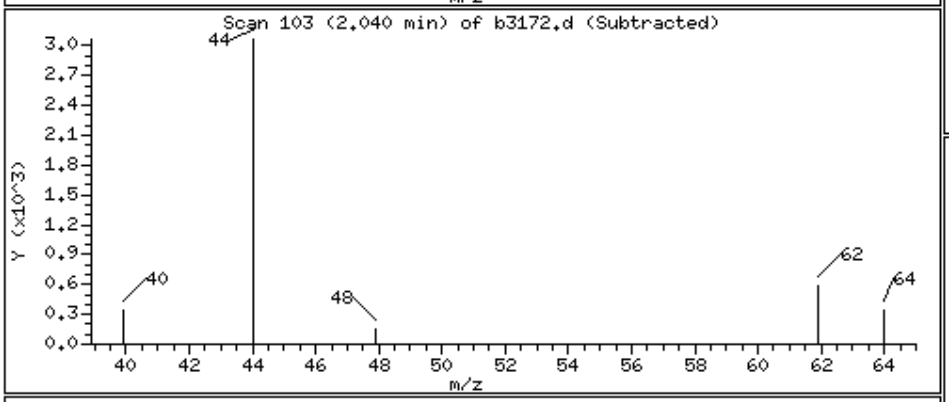
Column diameter: 0.25

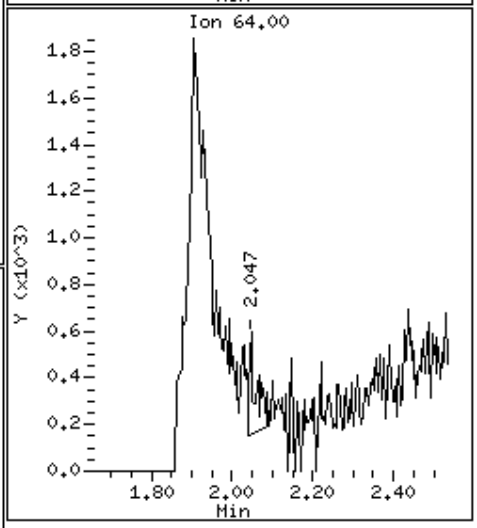
3 Vinyl Chloride +

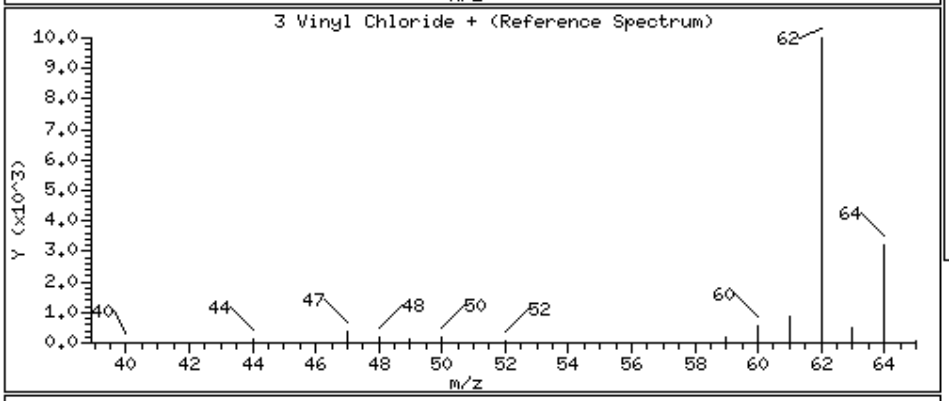
Concentration: 0.202 ug/L

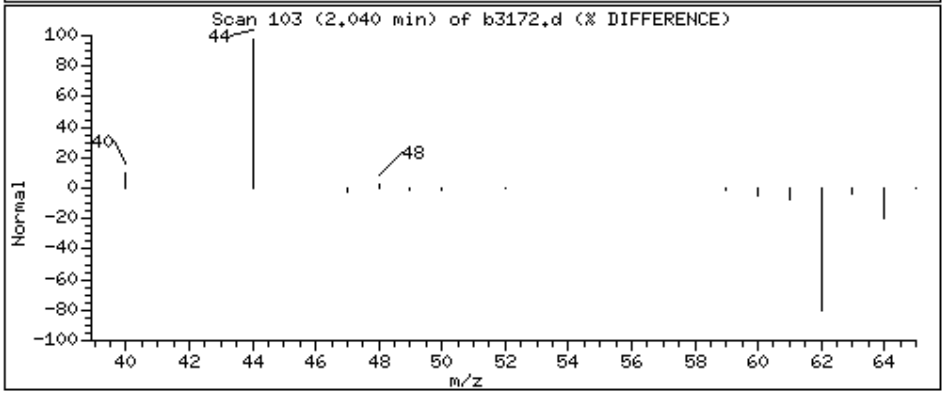












Data File: /var/chem/msv14.i/2170510p.s.b/b3172.d

Date : 10-MAY-2017 17:32

Client ID: 21705080315

Instrument: msv14.i

Sample Info: 21705080315x

Purge Volume: 5.0

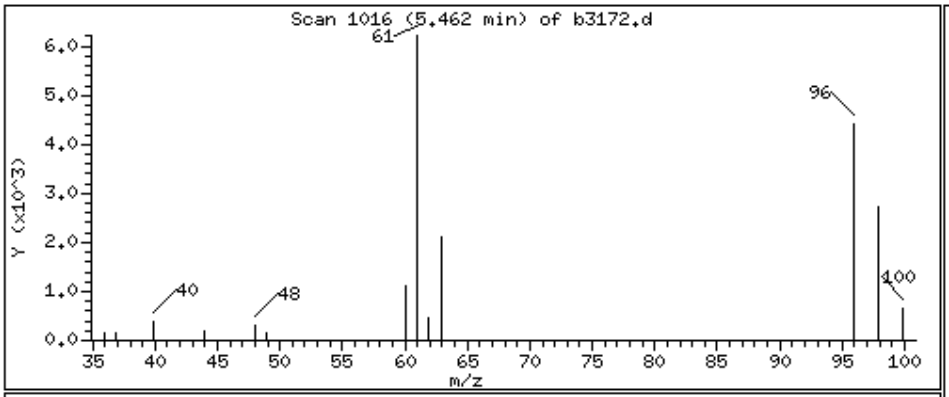
Operator: JCK

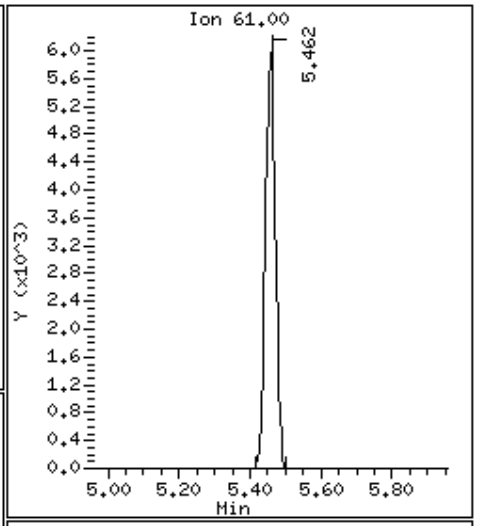
Column phase: RTX-VMS-30M

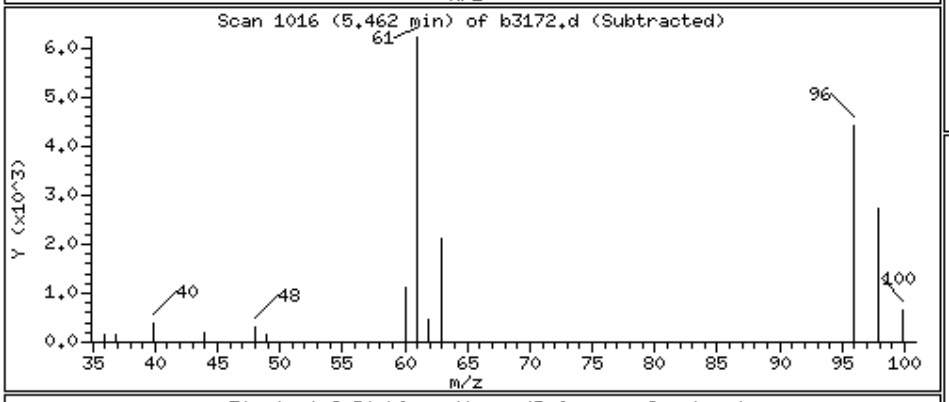
Column diameter: 0.25

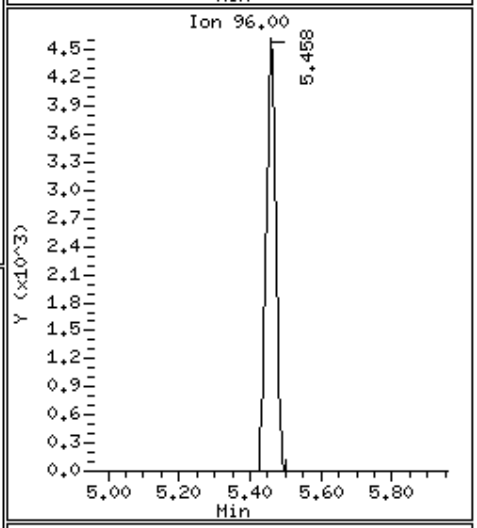
30 cis-1,2-Dichloroethene

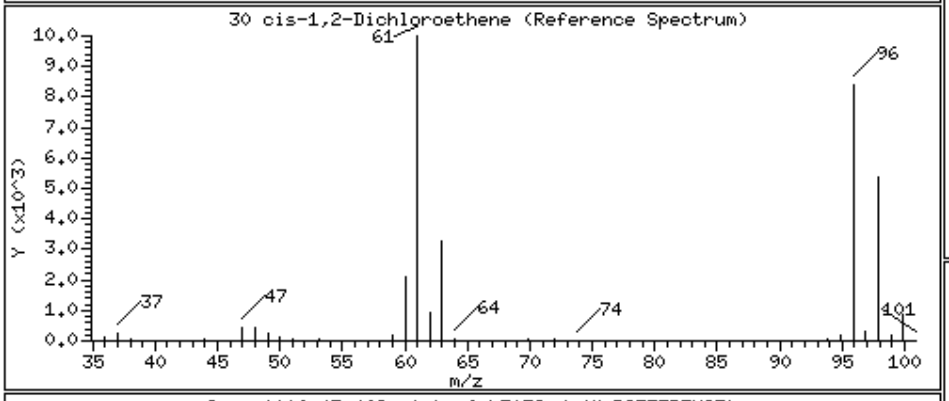
Concentration: 2.44 ug/L

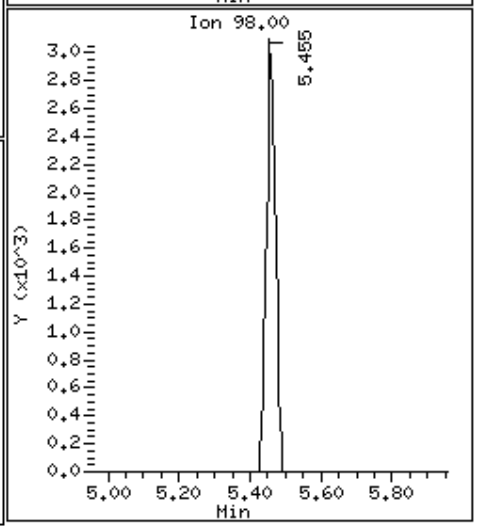


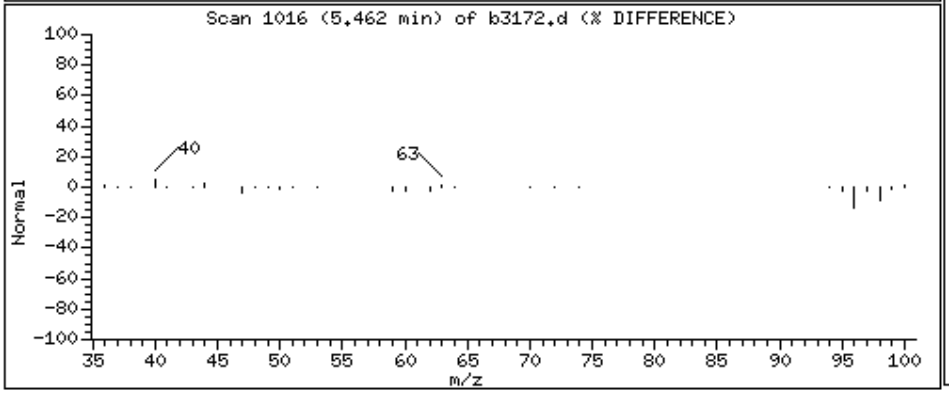












Data File: /var/chem/msv14.i/2170510p.s.b/b3172.d

Date : 10-MAY-2017 17:32

Client ID: 21705080315

Instrument: msv14.i

Sample Info: 21705080315x

Purge Volume: 5.0

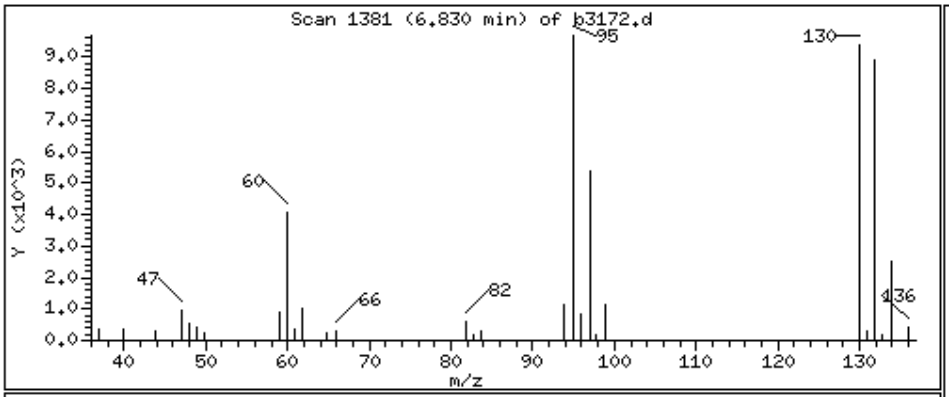
Operator: JCK

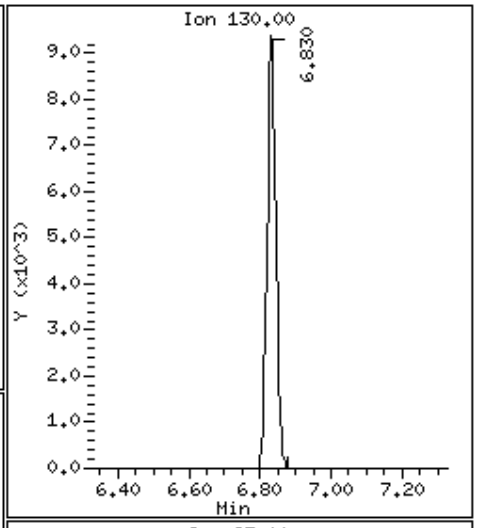
Column phase: RTX-VMS-30M

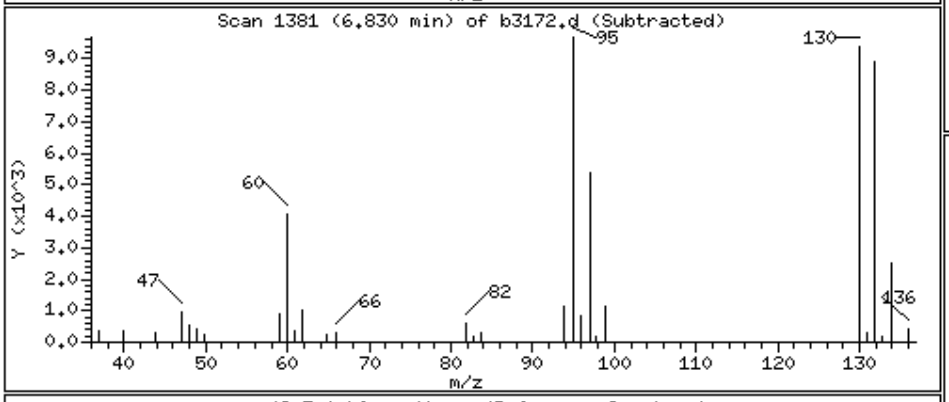
Column diameter: 0.25

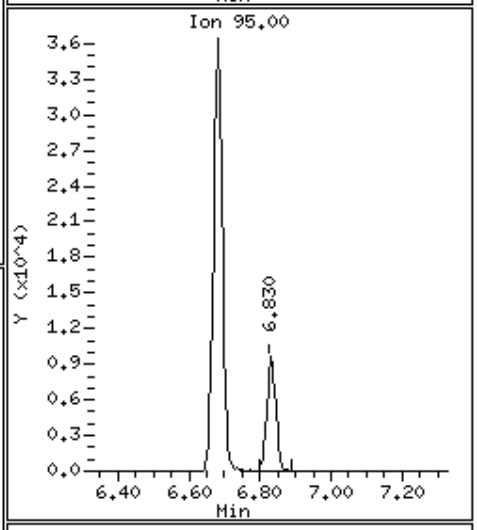
49 Trichloroethene

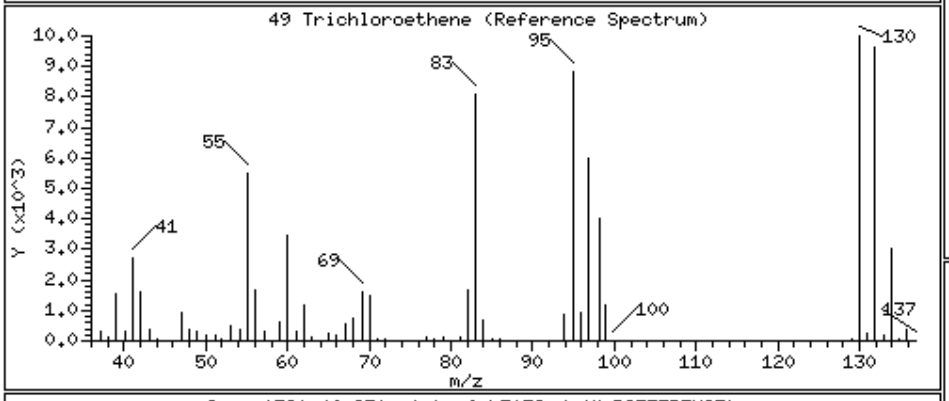
Concentration: 4.42 ug/L

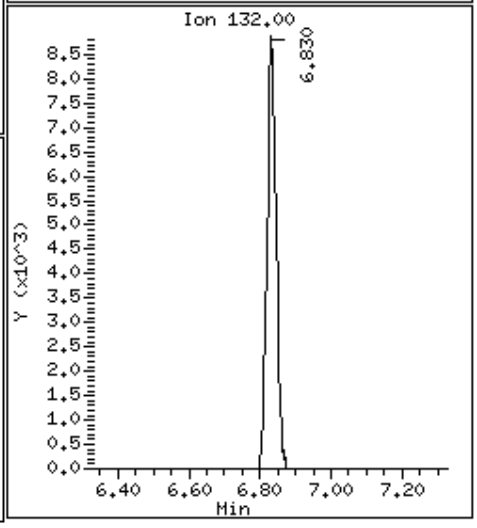


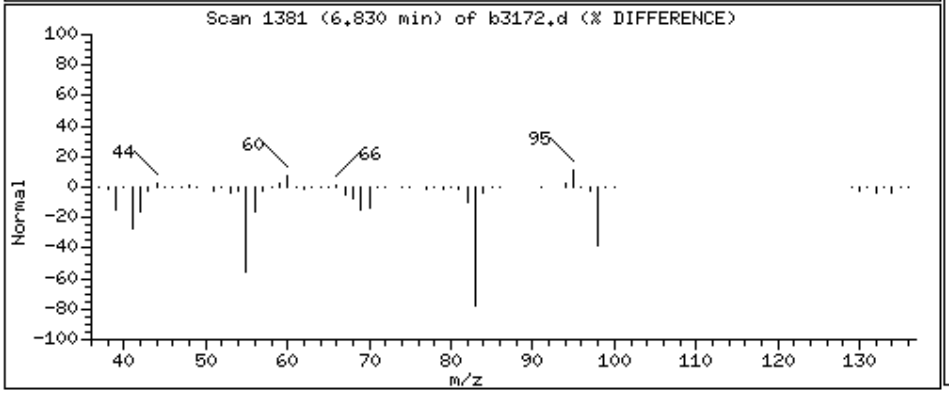






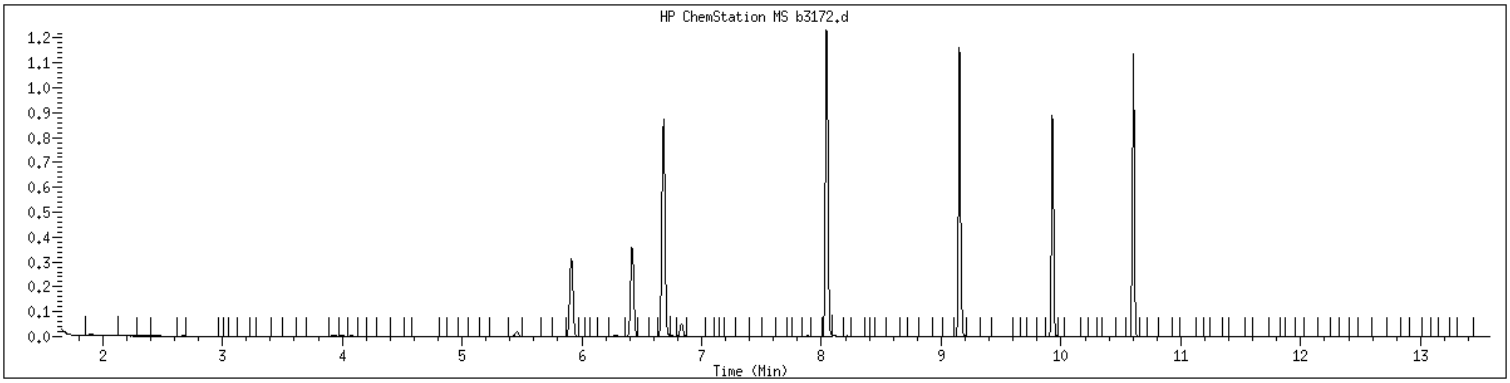






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080315 SampleType : SAMPLE
Injection Date: 05/10/2017 17:32 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080315*
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	MW-9
Collect Date:	05/05/17 Time: 1235	GCAL Sample ID:	21705080316
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3173
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1754	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	MW-9
Collect Date:	05/05/17	Time:	1235	GCAL Sample ID:	21705080316
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3173
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1754	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3173.d
Lab Smp Id: 21705080316 Client Smp ID: 21705080316
Inj Date : 10-MAY-2017 17:54
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080316*
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	182223	50.6802	50.7	6890
$ 43 1,2-Dichloroethane-d4	67	6.422	6.418	(0.961)	122474	51.2624	51.3	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	707786	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	665571	50.7757	50.8	
* 71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	277840	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	164144	49.1240	49.1	
* 97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	202880	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3173.d

Page 1

Date : 10-MAY-2017 17:54

Client ID: 21705080316

Instrument: msv14.i

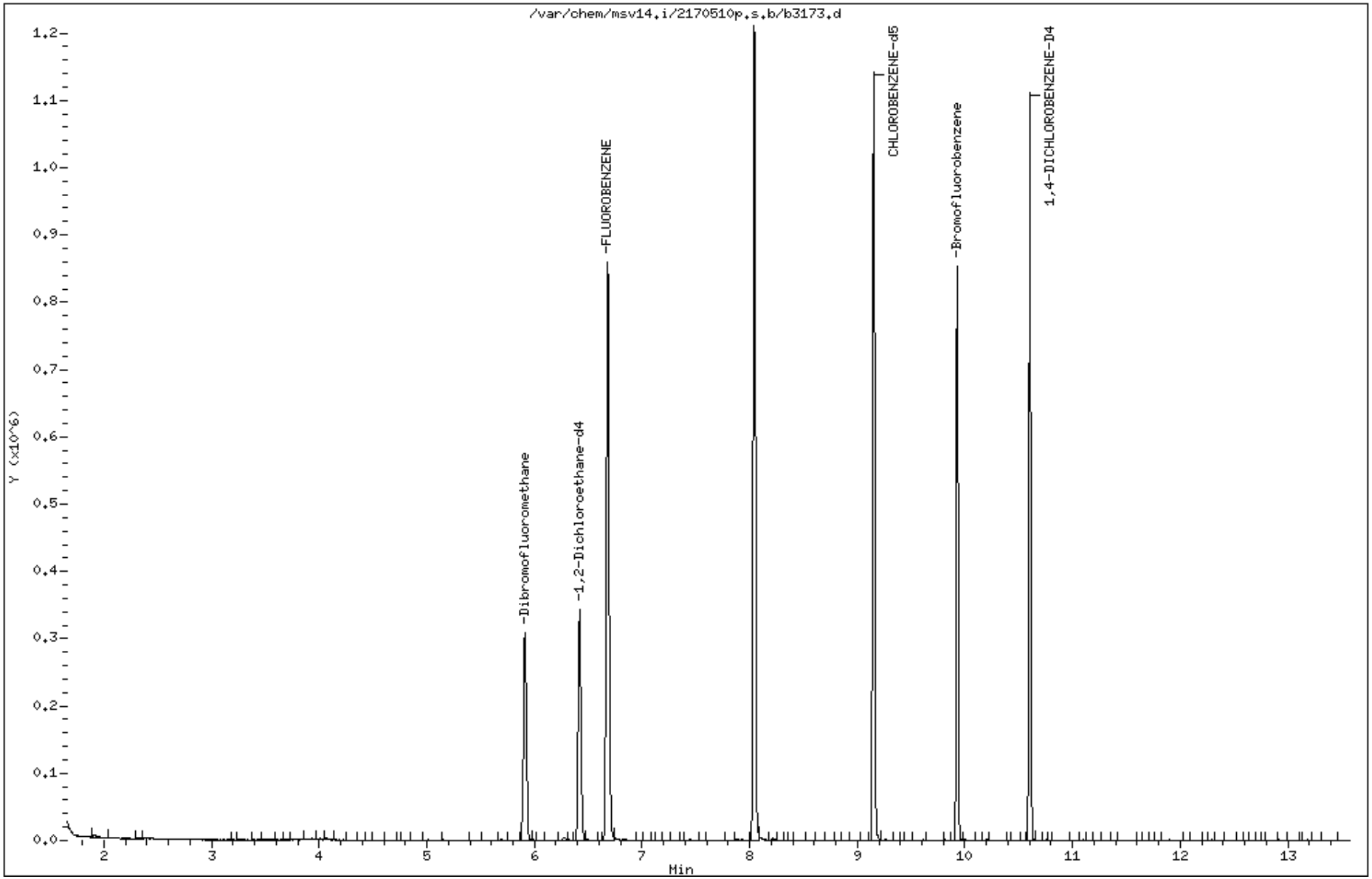
Sample Info: 21705080316*

Purge Volume: 5.0

Operator: JCK

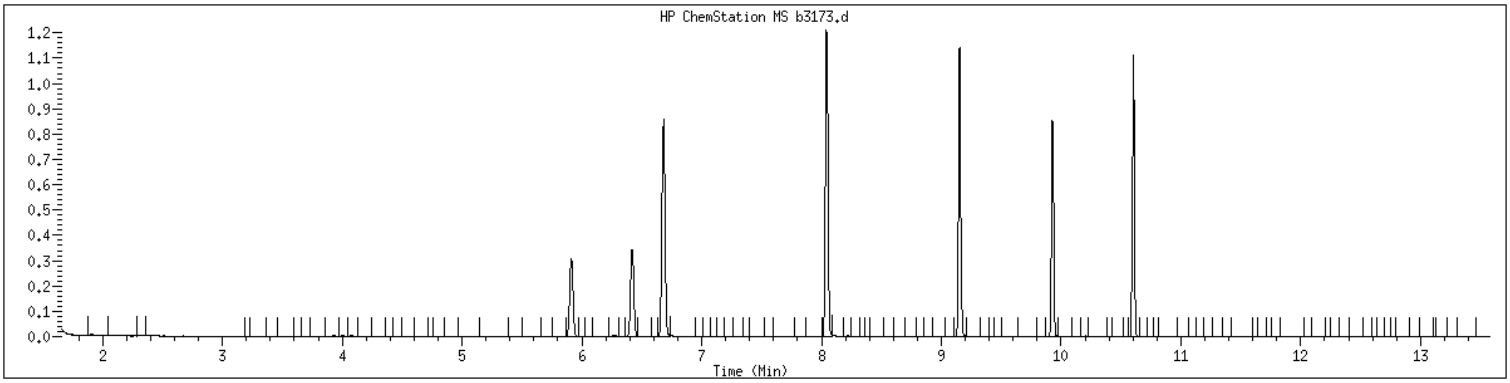
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080316 SampleType : SAMPLE
Injection Date: 05/10/2017 17:54 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080316*
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-5
Collect Date:	05/05/17	Time:	1408	GCAL Sample ID:	21705080317
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3177
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	2	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1928	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	1.00	U	0.400	1.00	2.00
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	0.400	1.00	2.00
79-00-5	1,1,2-Trichloroethane	1.00	U	0.400	1.00	2.00
75-34-3	1,1-Dichloroethane	1.00	U	0.400	1.00	2.00
75-35-4	1,1-Dichloroethene	1.29	J	0.400	1.00	2.00
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.400	1.00	2.00
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.400	1.00	2.00
96-12-8	1,2-Dibromo-3-chloropropane	1.00	U	0.400	1.00	2.00
106-93-4	1,2-Dibromoethane	1.00	U	0.400	1.00	2.00
95-50-1	1,2-Dichlorobenzene	1.00	U	0.400	1.00	2.00
107-06-2	1,2-Dichloroethane	1.00	U	0.400	1.00	2.00
78-87-5	1,2-Dichloropropane	1.00	U	0.400	1.00	2.00
541-73-1	1,3-Dichlorobenzene	1.00	U	0.400	1.00	2.00
106-46-7	1,4-Dichlorobenzene	1.00	U	0.400	1.00	2.00
78-93-3	2-Butanone	1.00	U	0.400	1.00	10.0
591-78-6	2-Hexanone	2.00	U	1.00	2.00	10.0
108-10-1	4-Methyl-2-pentanone	1.00	U	0.400	1.00	10.0
67-64-1	Acetone	2.00	U	1.00	2.00	10.0
71-43-2	Benzene	1.00	U	0.400	1.00	2.00
74-97-5	Bromochloromethane	1.00	U	0.400	1.00	2.00
75-27-4	Bromodichloromethane	1.00	U	0.400	1.00	2.00
75-25-2	Bromoform	1.00	U	0.500	1.00	2.00
74-83-9	Bromomethane	2.00	U	1.00	2.00	2.00
75-15-0	Carbon disulfide	1.00	U	0.400	1.00	2.00
56-23-5	Carbon tetrachloride	1.00	U	0.500	1.00	2.00
108-90-7	Chlorobenzene	1.00	U	0.400	1.00	2.00
75-00-3	Chloroethane	1.00	U	0.500	1.00	2.00
67-66-3	Chloroform	1.00	U	0.400	1.00	2.00
74-87-3	Chloromethane	1.00	U	0.400	1.00	2.00
156-59-2	cis-1,2-Dichloroethene	103		0.400	1.00	2.00
10061-01-5	cis-1,3-Dichloropropene	1.00	U	0.400	1.00	2.00
110-82-7	Cyclohexane	2.00	U	1.00	2.00	4.00
124-48-1	Dibromochloromethane	1.00	U	0.400	1.00	2.00
75-71-8	Dichlorodifluoromethane	1.00	U	0.400	1.00	2.00
100-41-4	Ethylbenzene	1.00	U	0.400	1.00	2.00
98-82-8	Isopropylbenzene (Cumene)	1.00	U	0.400	1.00	2.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-5
Collect Date:	05/05/17	Time:	1408	GCAL Sample ID:	21705080317
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3177
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	2	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1928	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	4.00	U	2.00	4.00	10.0
108-87-2	Methylcyclohexane	1.00	U	0.400	1.00	2.00
75-09-2	Methylene chloride	1.00	U	0.400	1.00	10.0
100-42-5	Styrene	1.00	U	0.400	1.00	2.00
1634-04-4	tert-Butyl methyl ether (MTBE)	1.00	U	0.400	1.00	2.00
127-18-4	Tetrachloroethene	154		0.400	1.00	2.00
108-88-3	Toluene	1.00	U	0.400	1.00	2.00
156-60-5	trans-1,2-Dichloroethene	31.6		0.400	1.00	2.00
10061-02-6	trans-1,3-Dichloropropene	1.00	U	0.400	1.00	2.00
79-01-6	Trichloroethene	246		0.400	1.00	2.00
75-69-4	Trichlorofluoromethane	1.00	U	0.400	1.00	2.00
76-13-1	Trichlorotrifluoroethane	1.00	U	0.400	1.00	2.00
1330-20-7	Xylene (total)	2.00	U	0.800	2.00	6.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3177.d
Lab Smp Id: 21705080317 Client Smp ID: 21705080317
Inj Date : 10-MAY-2017 19:28
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080317*
Misc Info : MSV~38307~*2*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 2.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	2.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	11 1,1-Dichloroethene +	96	3.258	3.262	(0.488)	1441	0.64546	1.29	
	19 trans-1,2-Dichloroethene	61	4.187	4.188	(0.627)	74082	15.8097	31.6	
M	48 Total 1,2-Dichloroethene	61				315127	67.3067	135	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	241045	51.4970	103	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	185540	52.2854	105	6890
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	121339	51.4592	103	
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	698545	50.0000		
	49 Trichloroethene	130	6.834	6.830	(1.023)	432693	123.059	246	
$	60 Toluene-d8	98	8.041	8.041	(0.878)	664492	51.2385	102	
	66 Tetrachloroethene	164	8.371	8.371	(0.914)	190893	77.0020	154	
*	71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	274884	50.0000		
$	80 Bromofluorobenzene	174	9.930	9.927	(1.085)	160017	48.4038	96.8	
*	97 1,4-DICHLOROBENZENE-D4	152	10.605	10.601	(1.000)	195941	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3177.d

Page 1

Date : 10-MAY-2017 19:28

Client ID: 21705080317

Instrument: msv14.i

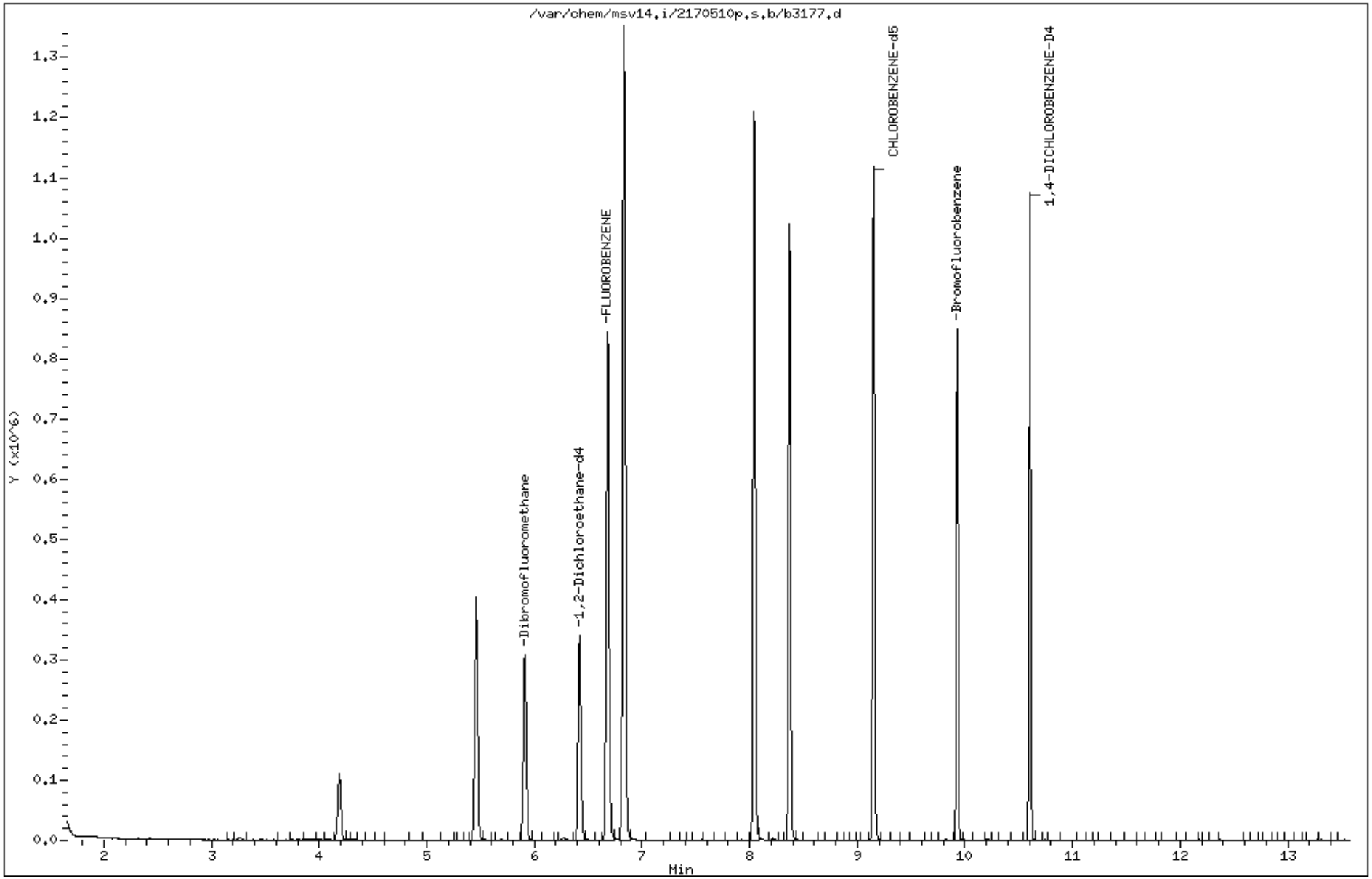
Sample Info: 21705080317*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170510p.s.b/b3177.d

Date : 10-MAY-2017 19:28

Client ID: 21705080317

Instrument: msv14.i

Sample Info: 21705080317*

Purge Volume: 5.0

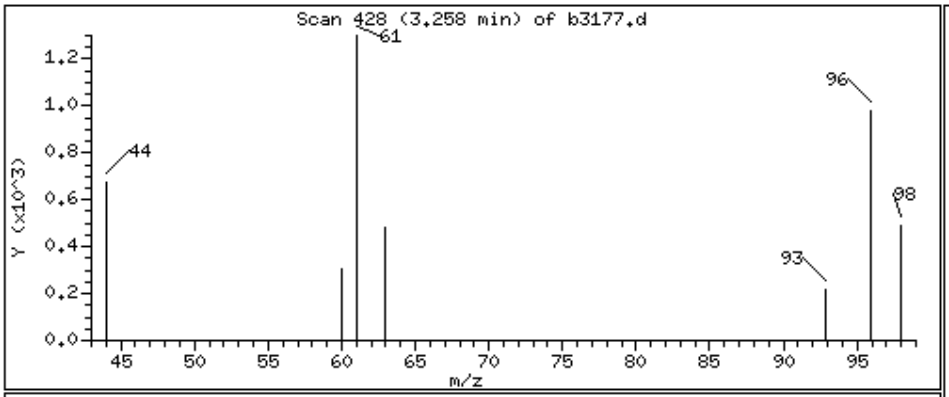
Operator: JCK

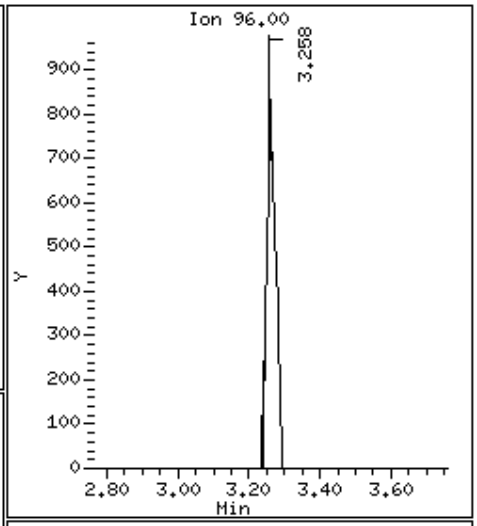
Column phase: RTX-VMS-30M

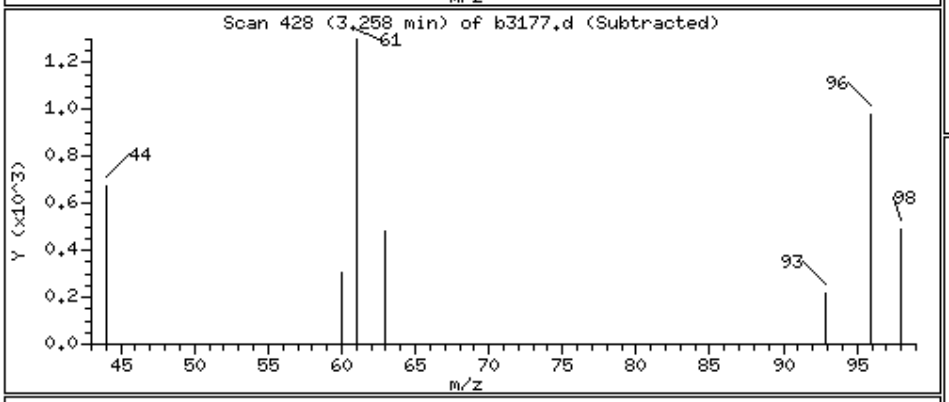
Column diameter: 0.25

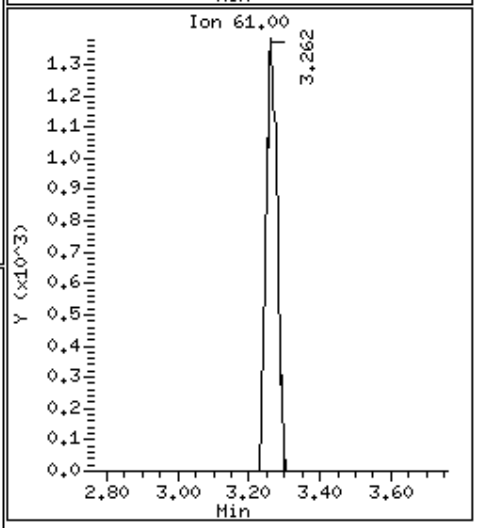
11 1,1-Dichloroethene +

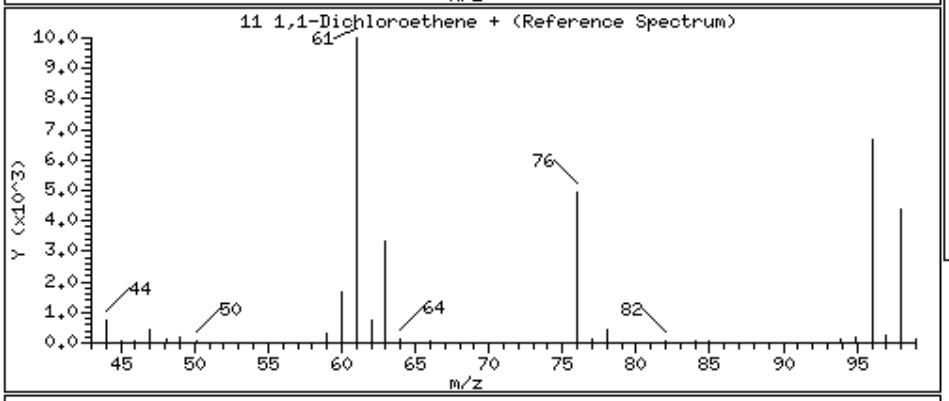
Concentration: 1.29 ug/L

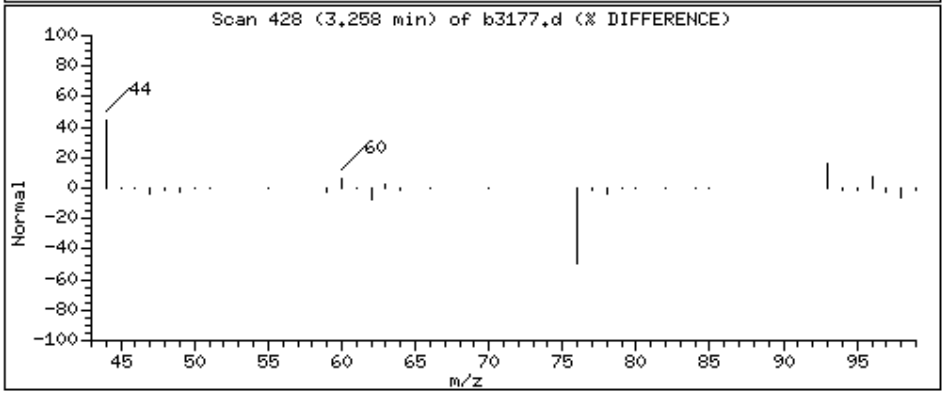












Data File: /var/chem/msv14.i/2170510p.s.b/b3177.d

Date : 10-MAY-2017 19:28

Client ID: 21705080317

Instrument: msv14.i

Sample Info: 21705080317*

Purge Volume: 5.0

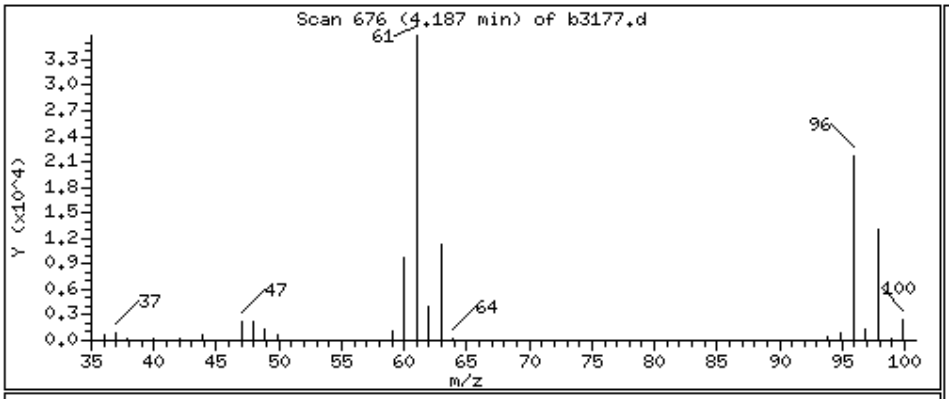
Operator: JCK

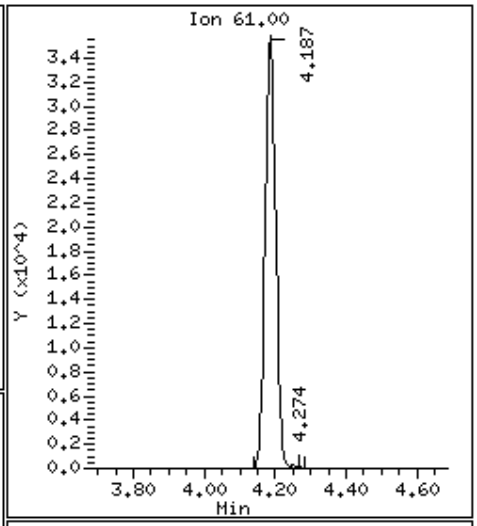
Column phase: RTX-VMS-30M

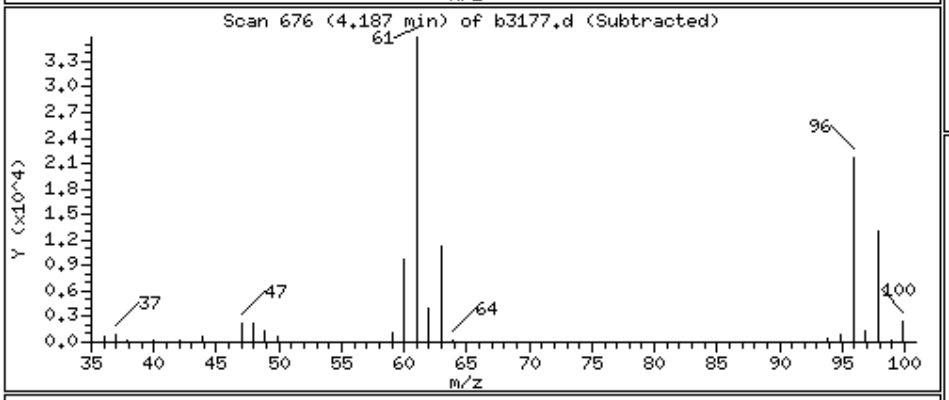
Column diameter: 0.25

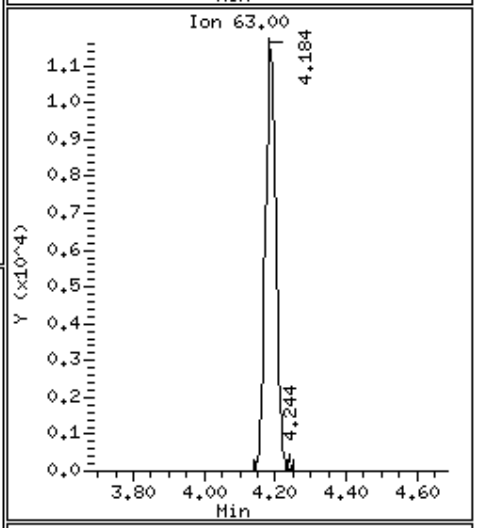
19 trans-1,2-Dichloroethene

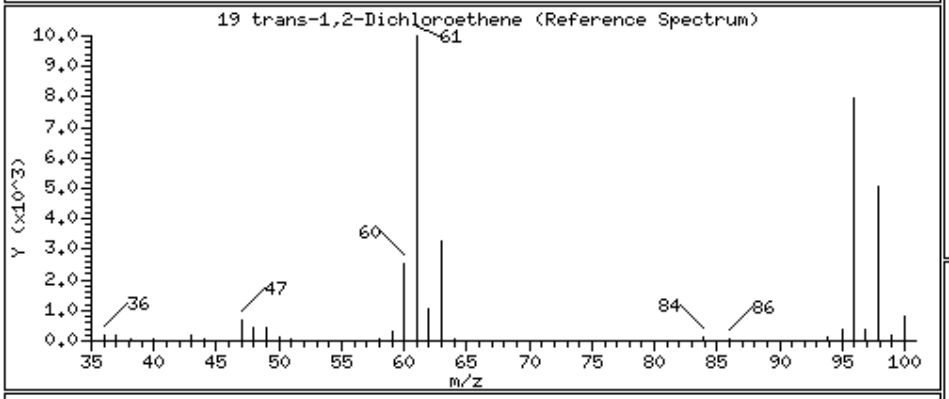
Concentration: 31.6 ug/L

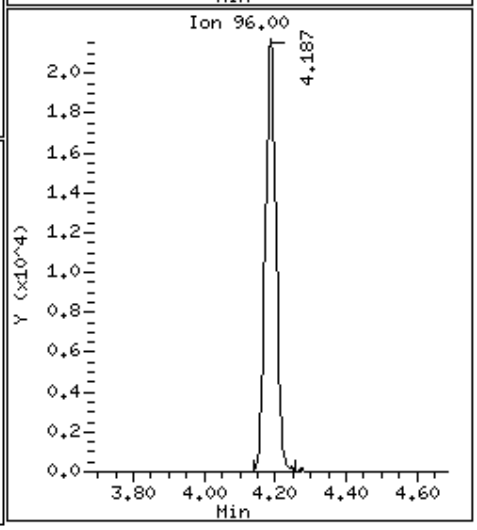


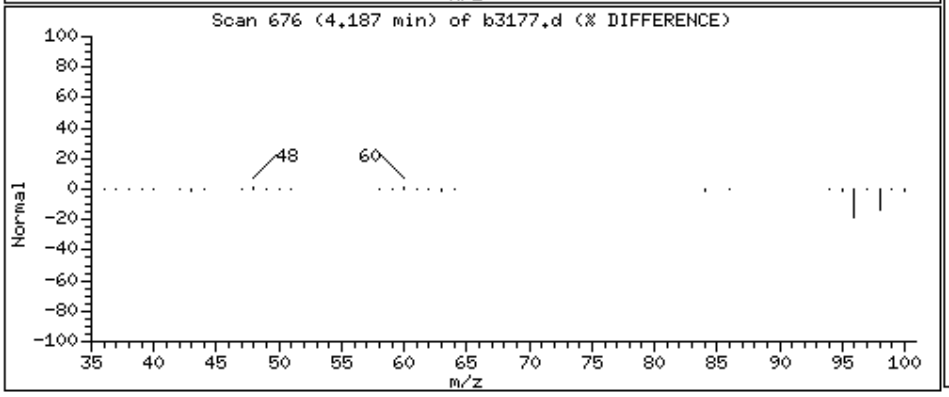












Data File: /var/chem/msv14.i/2170510p.s.b/b3177.d

Date : 10-MAY-2017 19:28

Client ID: 21705080317

Instrument: msv14.i

Sample Info: 21705080317*

Purge Volume: 5.0

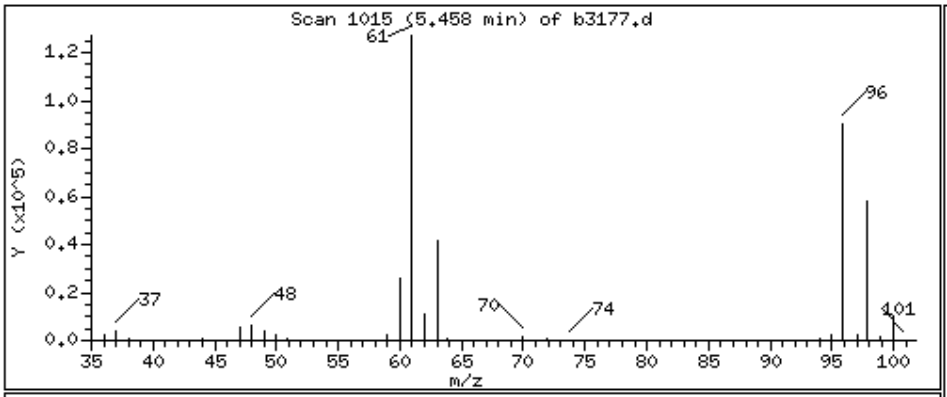
Operator: JCK

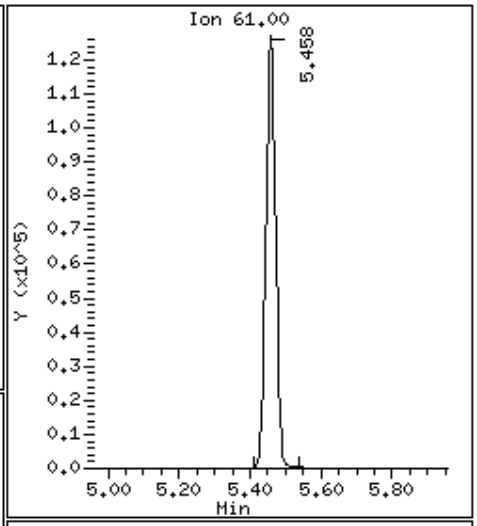
Column phase: RTX-VMS-30M

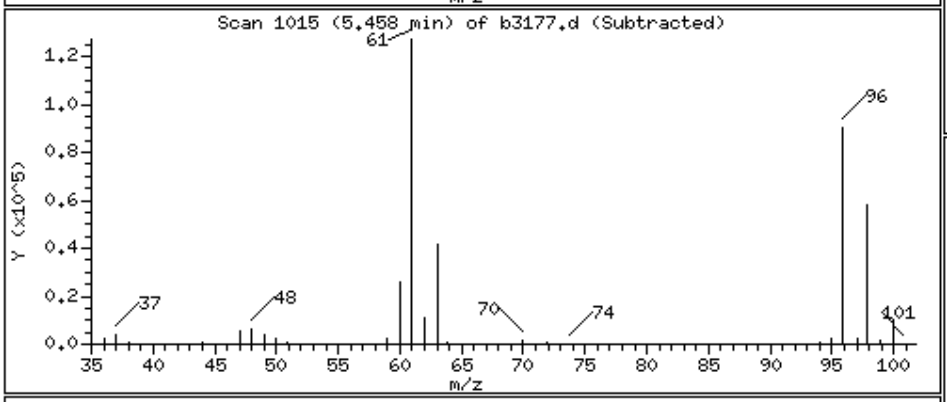
Column diameter: 0.25

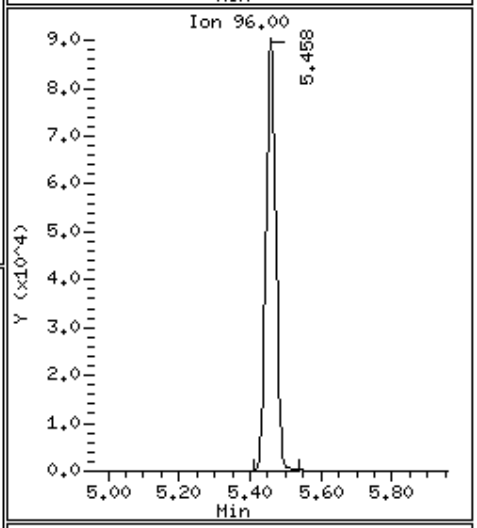
30 cis-1,2-Dichloroethene

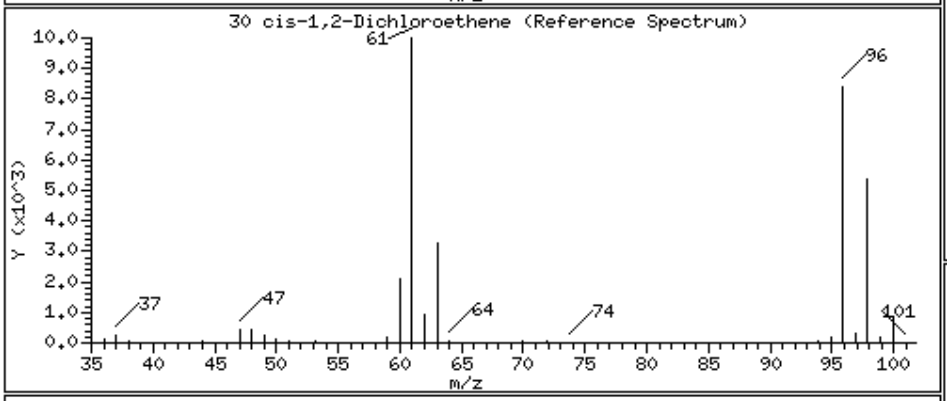
Concentration: 103 ug/L

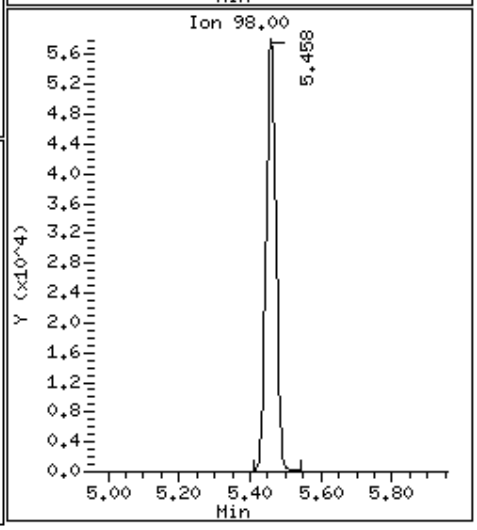


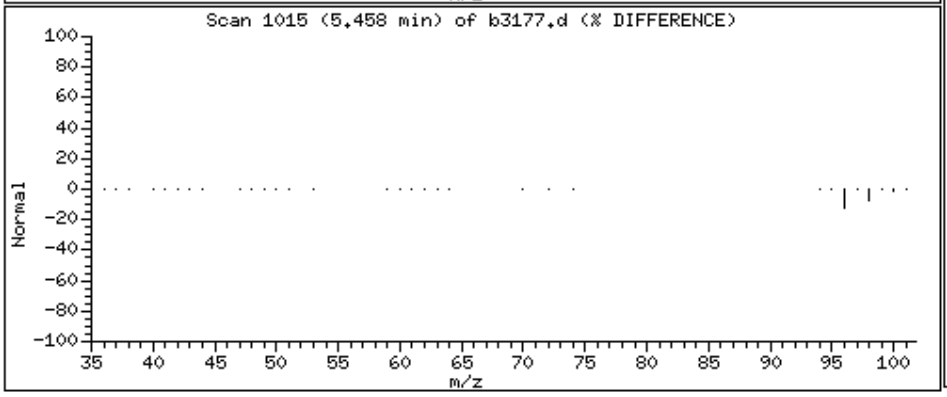












Data File: /var/chem/msv14.i/2170510p.s.b/b3177.d

Date : 10-MAY-2017 19:28

Client ID: 21705080317

Instrument: msv14.i

Sample Info: 21705080317x

Purge Volume: 5.0

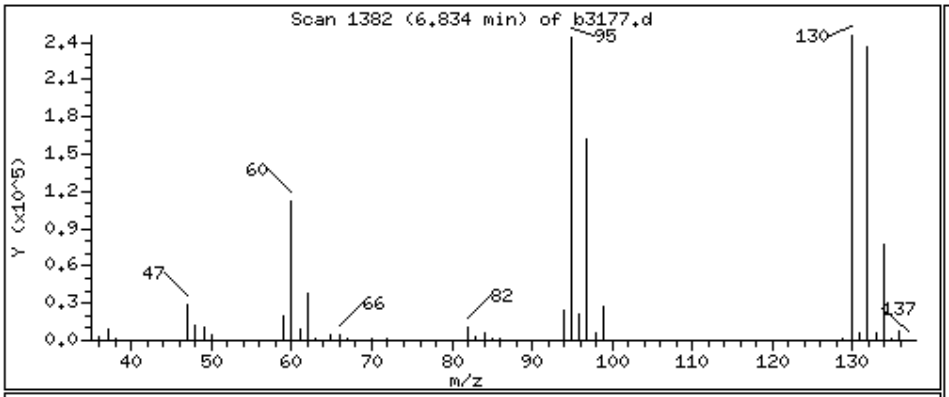
Operator: JCK

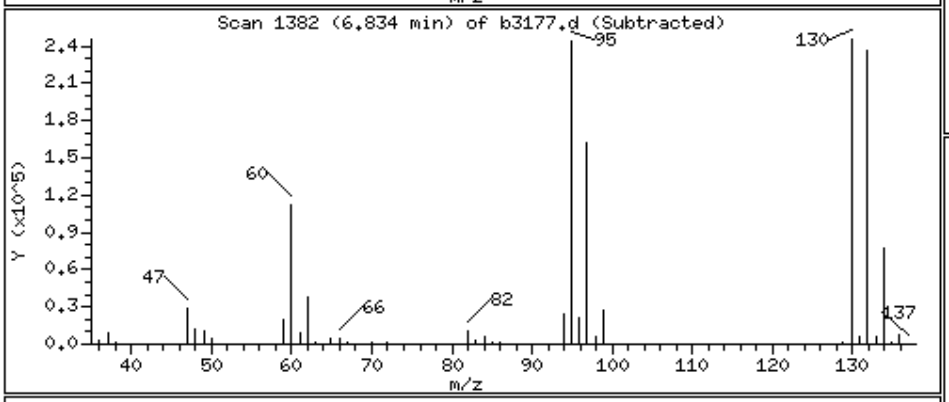
Column phase: RTX-VMS-30M

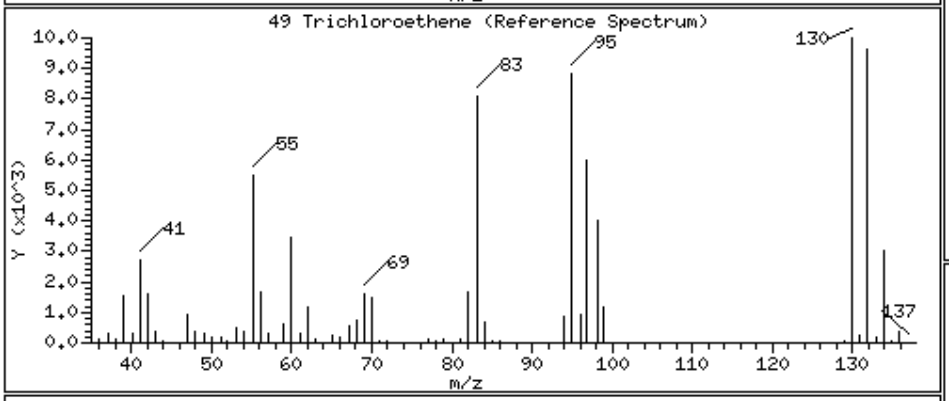
Column diameter: 0.25

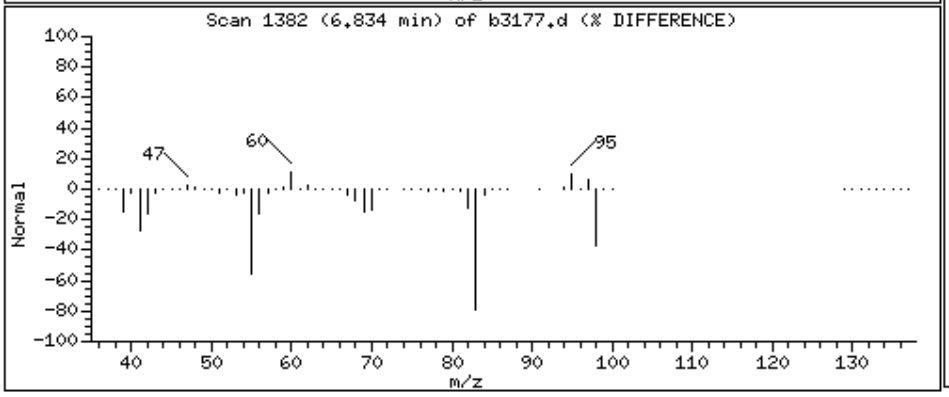
49 Trichloroethene

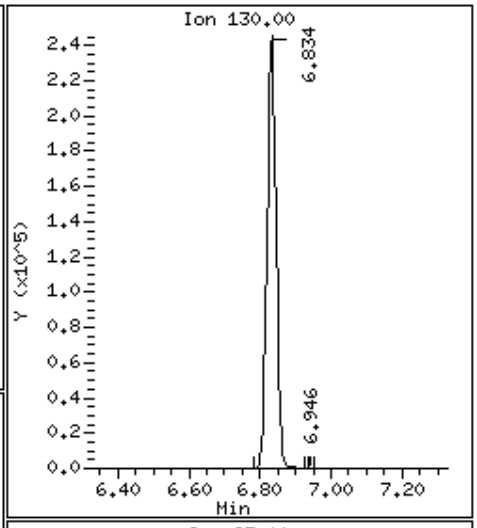
Concentration: 246 ug/L

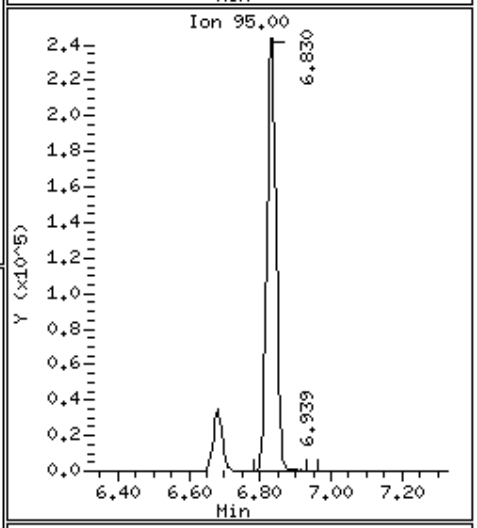


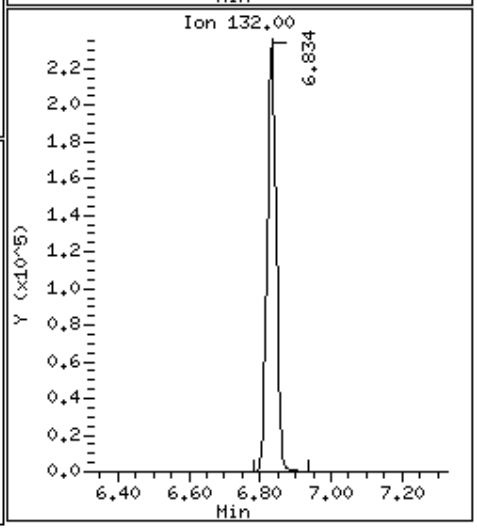












Data File: /var/chem/msv14.i/2170510p.s.b/b3177.d

Date : 10-MAY-2017 19:28

Client ID: 21705080317

Instrument: msv14.i

Sample Info: 21705080317*

Purge Volume: 5.0

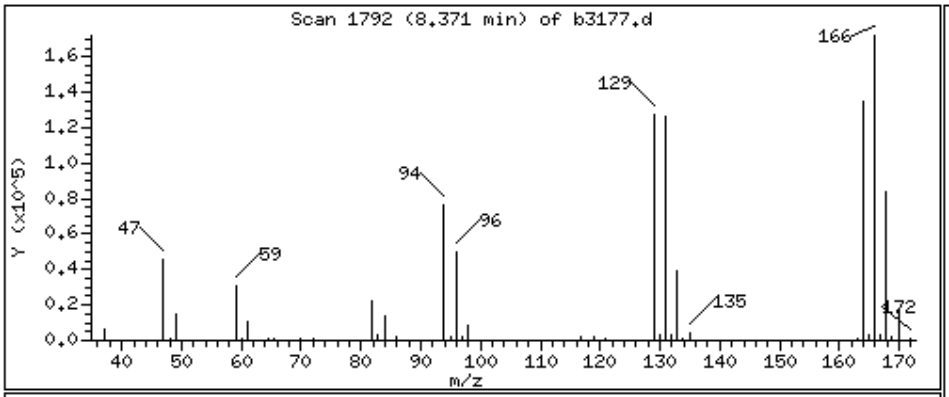
Operator: JCK

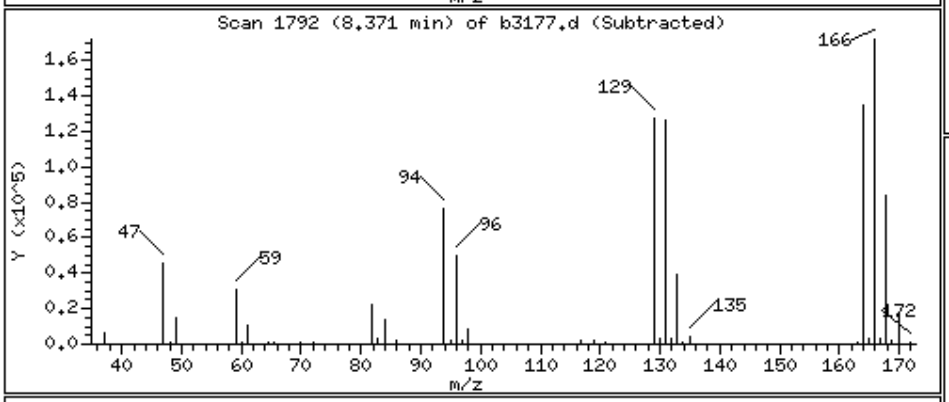
Column phase: RTX-VMS-30M

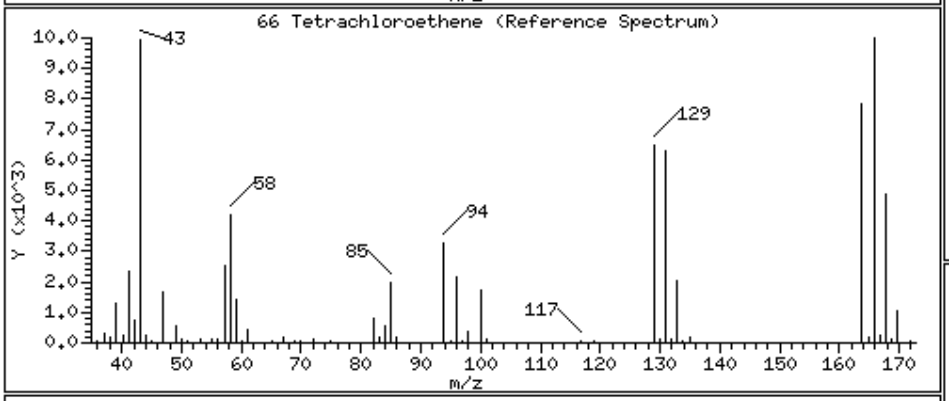
Column diameter: 0.25

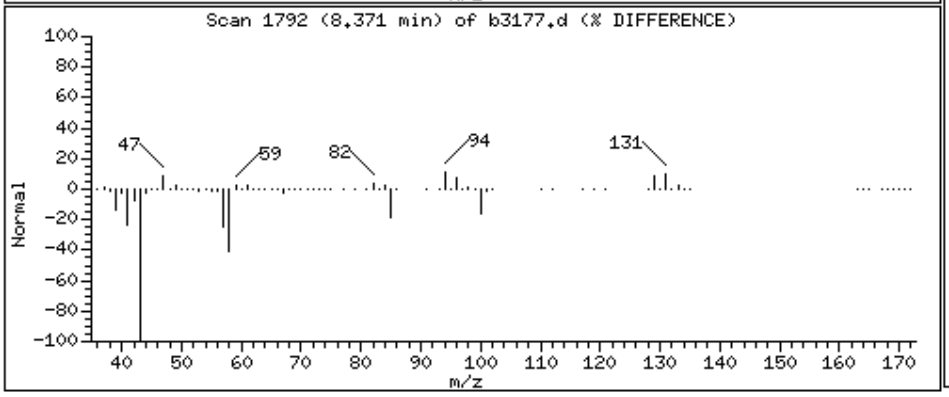
66 Tetrachloroethene

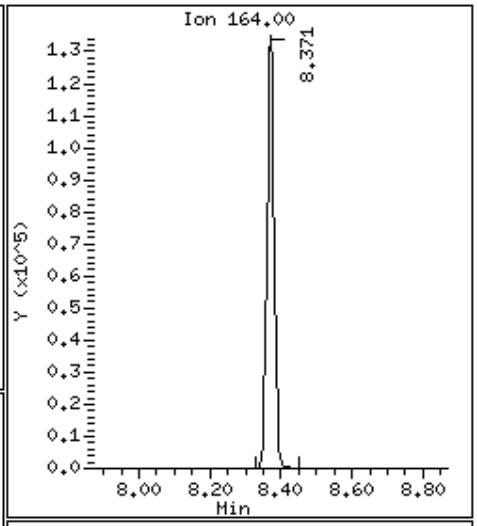
Concentration: 154 ug/L

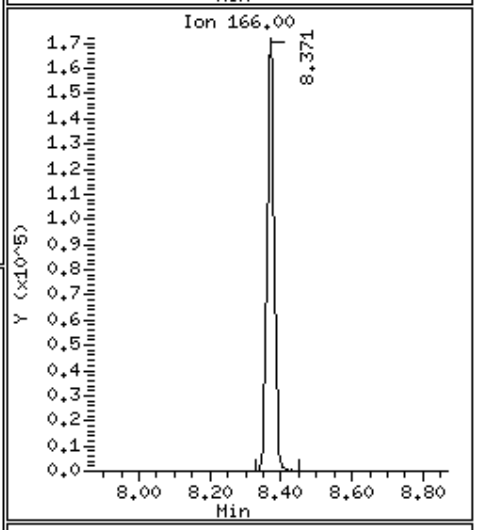


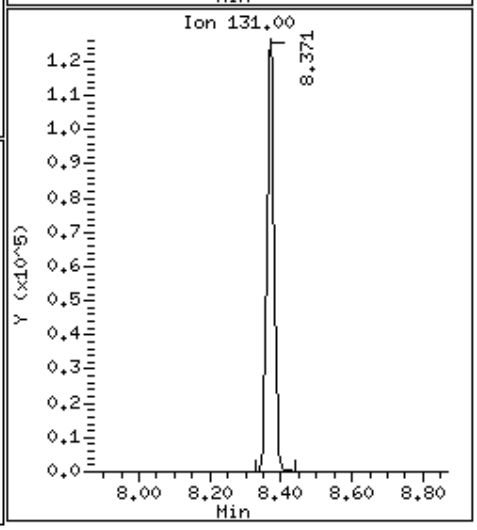






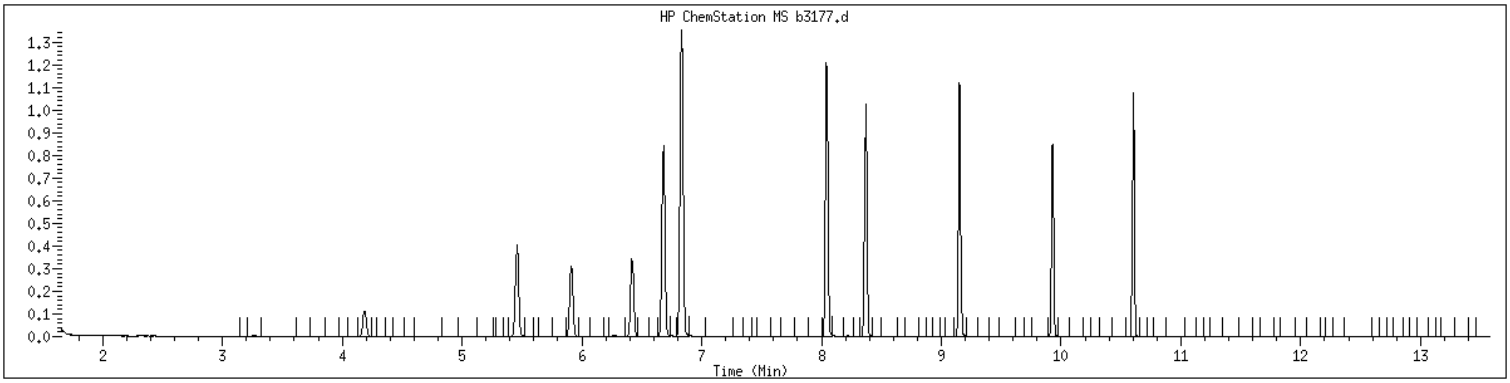






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080317 SampleType : SAMPLE
Injection Date: 05/10/2017 19:28 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080317*
Misc Info : MSV~38307~*2*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 2.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-5-a
Collect Date:	05/05/17 Time: 1408	GCAL Sample ID:	21705080318
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3178
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	2 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1953	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	1.00	U	0.400	1.00	2.00
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	0.400	1.00	2.00
79-00-5	1,1,2-Trichloroethane	1.00	U	0.400	1.00	2.00
75-34-3	1,1-Dichloroethane	1.00	U	0.400	1.00	2.00
75-35-4	1,1-Dichloroethene	1.60	J	0.400	1.00	2.00
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.400	1.00	2.00
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.400	1.00	2.00
96-12-8	1,2-Dibromo-3-chloropropane	1.00	U	0.400	1.00	2.00
106-93-4	1,2-Dibromoethane	1.00	U	0.400	1.00	2.00
95-50-1	1,2-Dichlorobenzene	1.00	U	0.400	1.00	2.00
107-06-2	1,2-Dichloroethane	1.00	U	0.400	1.00	2.00
78-87-5	1,2-Dichloropropane	1.00	U	0.400	1.00	2.00
541-73-1	1,3-Dichlorobenzene	1.00	U	0.400	1.00	2.00
106-46-7	1,4-Dichlorobenzene	1.00	U	0.400	1.00	2.00
78-93-3	2-Butanone	1.00	U	0.400	1.00	10.0
591-78-6	2-Hexanone	2.00	U	1.00	2.00	10.0
108-10-1	4-Methyl-2-pentanone	1.00	U	0.400	1.00	10.0
67-64-1	Acetone	2.00	U	1.00	2.00	10.0
71-43-2	Benzene	1.00	U	0.400	1.00	2.00
74-97-5	Bromochloromethane	1.00	U	0.400	1.00	2.00
75-27-4	Bromodichloromethane	1.00	U	0.400	1.00	2.00
75-25-2	Bromoform	1.00	U	0.500	1.00	2.00
74-83-9	Bromomethane	2.00	U	1.00	2.00	2.00
75-15-0	Carbon disulfide	1.00	U	0.400	1.00	2.00
56-23-5	Carbon tetrachloride	1.00	U	0.500	1.00	2.00
108-90-7	Chlorobenzene	1.00	U	0.400	1.00	2.00
75-00-3	Chloroethane	1.00	U	0.500	1.00	2.00
67-66-3	Chloroform	1.00	U	0.400	1.00	2.00
74-87-3	Chloromethane	1.00	U	0.400	1.00	2.00
156-59-2	cis-1,2-Dichloroethene	102		0.400	1.00	2.00
10061-01-5	cis-1,3-Dichloropropene	1.00	U	0.400	1.00	2.00
110-82-7	Cyclohexane	2.00	U	1.00	2.00	4.00
124-48-1	Dibromochloromethane	1.00	U	0.400	1.00	2.00
75-71-8	Dichlorodifluoromethane	1.00	U	0.400	1.00	2.00
100-41-4	Ethylbenzene	1.00	U	0.400	1.00	2.00
98-82-8	Isopropylbenzene (Cumene)	1.00	U	0.400	1.00	2.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-5-a
Collect Date:	05/05/17	Time:	1408	GCAL Sample ID:	21705080318
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3178
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	2	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1953	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	4.00	U	2.00	4.00	10.0
108-87-2	Methylcyclohexane	1.00	U	0.400	1.00	2.00
75-09-2	Methylene chloride	1.00	U	0.400	1.00	10.0
100-42-5	Styrene	1.00	U	0.400	1.00	2.00
1634-04-4	tert-Butyl methyl ether (MTBE)	1.00	U	0.400	1.00	2.00
127-18-4	Tetrachloroethene	145		0.400	1.00	2.00
108-88-3	Toluene	1.00	U	0.400	1.00	2.00
156-60-5	trans-1,2-Dichloroethene	33.8		0.400	1.00	2.00
10061-02-6	trans-1,3-Dichloropropene	1.00	U	0.400	1.00	2.00
79-01-6	Trichloroethene	247		0.400	1.00	2.00
75-69-4	Trichlorofluoromethane	1.00	U	0.400	1.00	2.00
76-13-1	Trichlorotrifluoroethane	1.00	U	0.400	1.00	2.00
1330-20-7	Xylene (total)	2.00	U	0.800	2.00	6.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3178.d
Lab Smp Id: 21705080318 Client Smp ID: 21705080318
Inj Date : 10-MAY-2017 19:53
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080318*
Misc Info : MSV~38307~*2*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 2.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	2.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	11 1,1-Dichloroethene +	96	3.262	3.262	(0.488)	1757	0.80097	1.60	
	19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	77857	16.9102	33.8	
M	48 Total 1,2-Dichloroethene	61				312856	68.0064	136	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	234999	51.0963	102	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	178840	51.2917	103	6901
$	43 1,2-Dichloroethane-d4	67	6.422	6.418	(0.961)	118668	51.2196	102	
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	686365	50.0000		
	49 Trichloroethene	130	6.834	6.830	(1.023)	427231	123.662	247	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	652806	50.8440	102	
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	178063	72.5496	145	
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	272145	50.0000		
$	80 Bromofluorobenzene	174	9.930	9.927	(1.085)	159494	48.7312	97.5	
*	97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	195764	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3178.d

Date : 10-MAY-2017 19:53

Client ID: 21705080318

Instrument: msv14.i

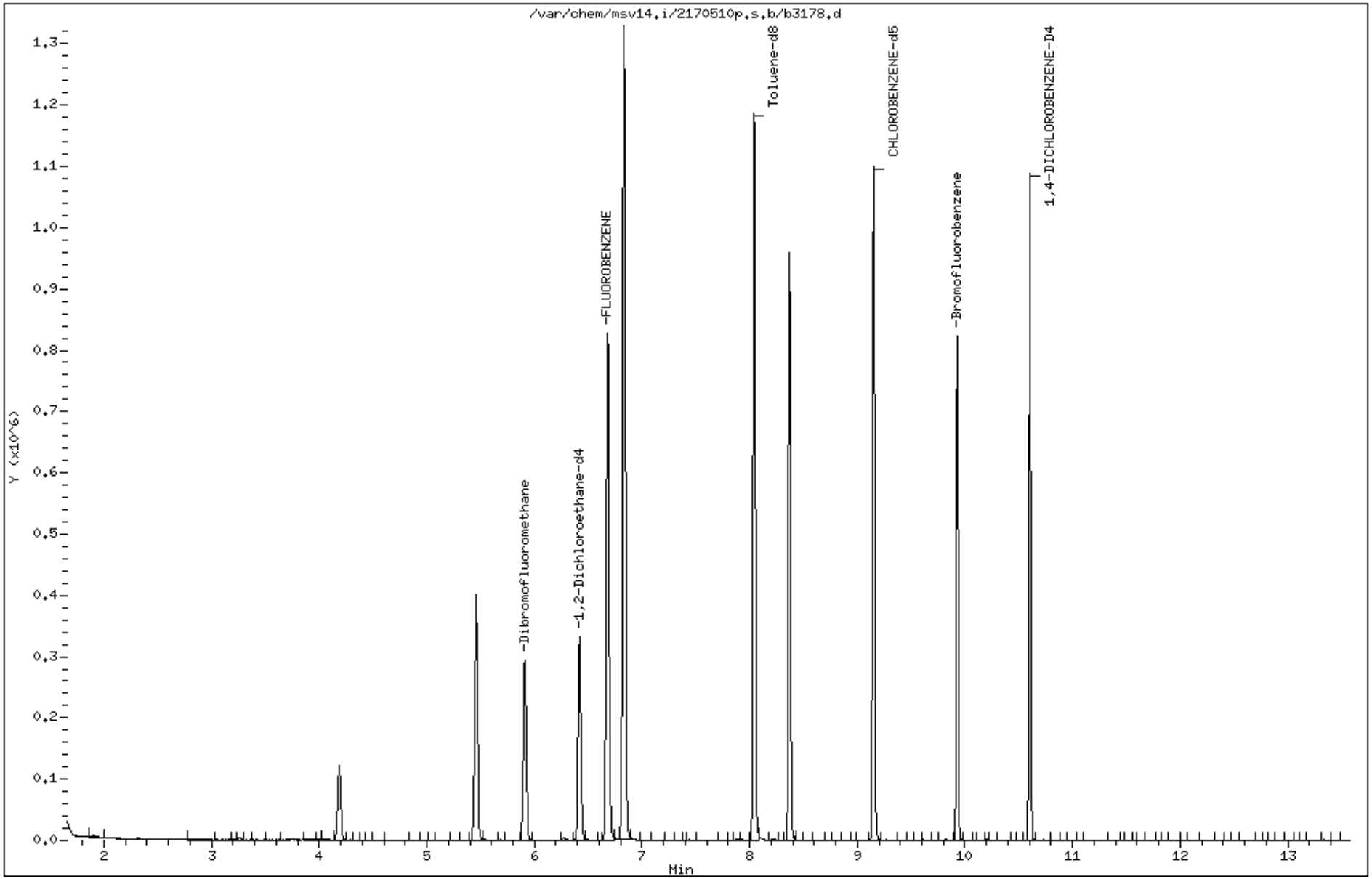
Sample Info: 21705080318*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170510p.s.b/b3178.d

Date : 10-MAY-2017 19:53

Client ID: 21705080318

Instrument: msv14.i

Sample Info: 21705080318x

Purge Volume: 5.0

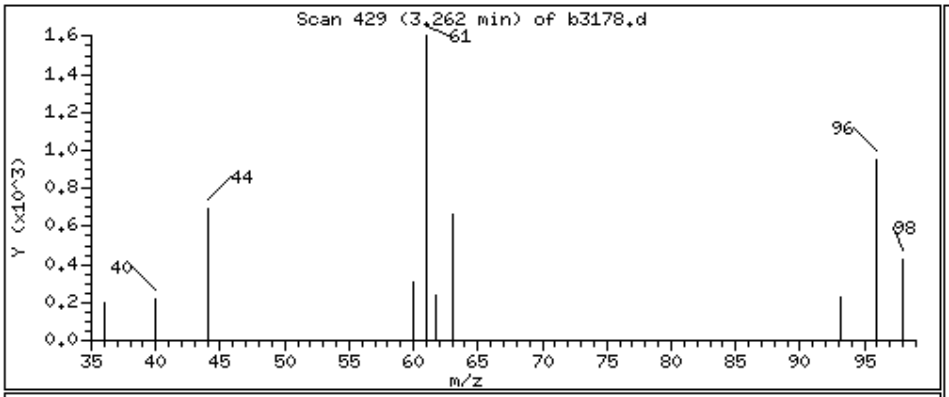
Operator: JCK

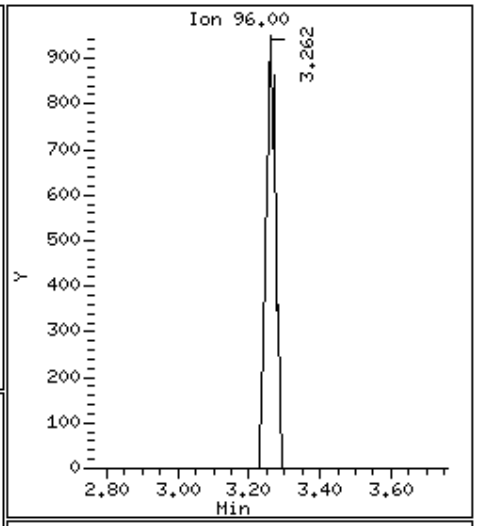
Column phase: RTX-VMS-30M

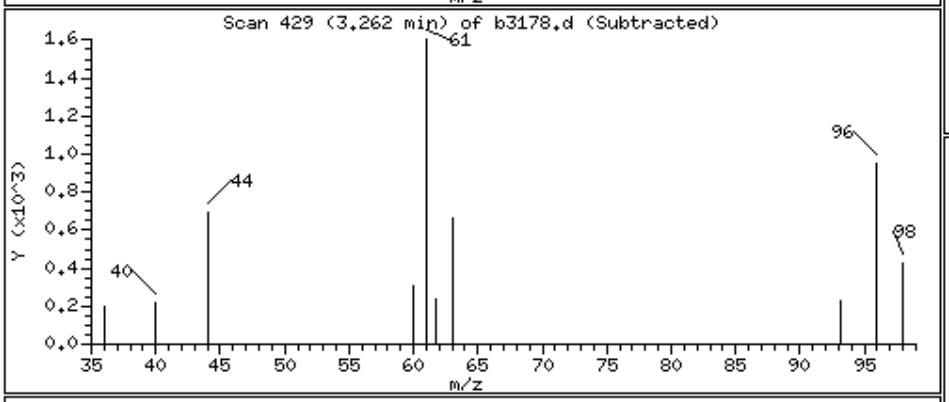
Column diameter: 0.25

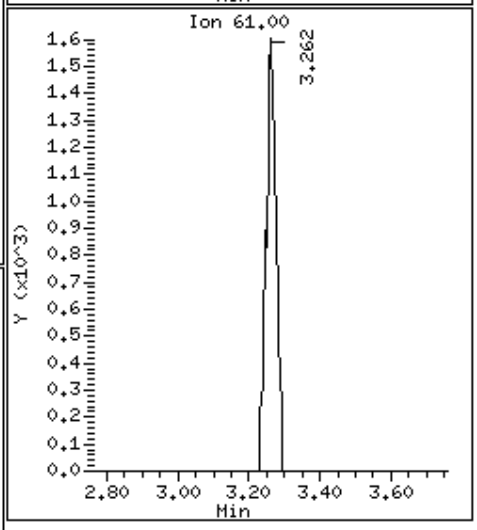
11 1,1-Dichloroethene +

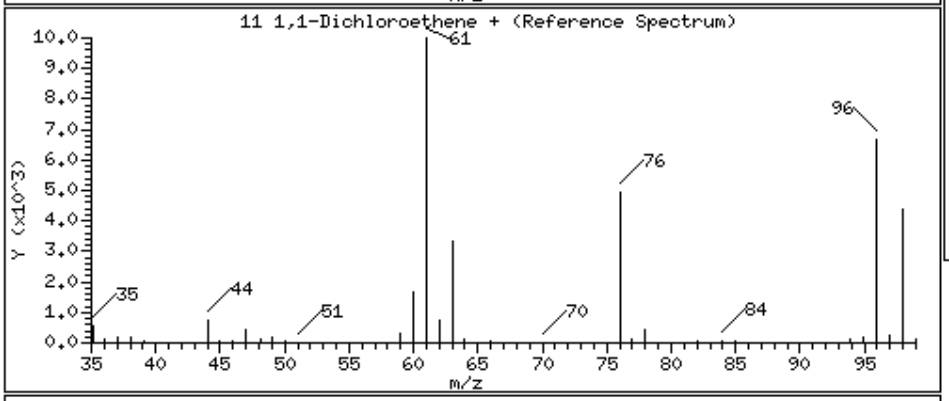
Concentration: 1.60 ug/L

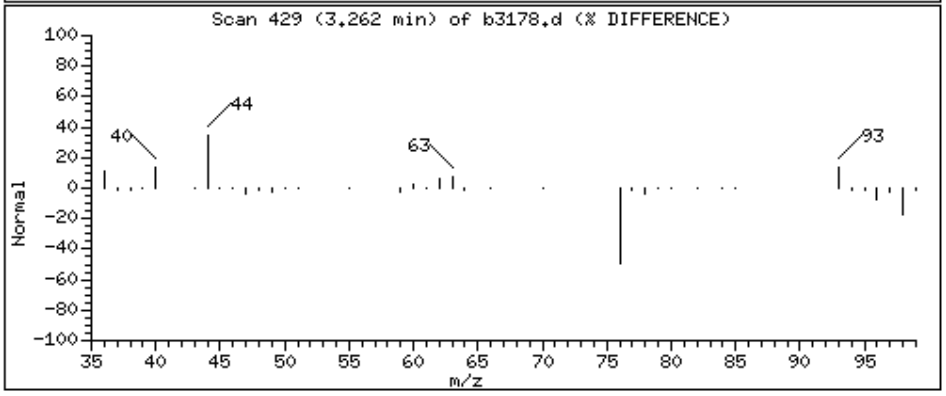












Data File: /var/chem/msv14.i/2170510p.s.b/b3178.d

Date : 10-MAY-2017 19:53

Client ID: 21705080318

Instrument: msv14.i

Sample Info: 21705080318x

Purge Volume: 5.0

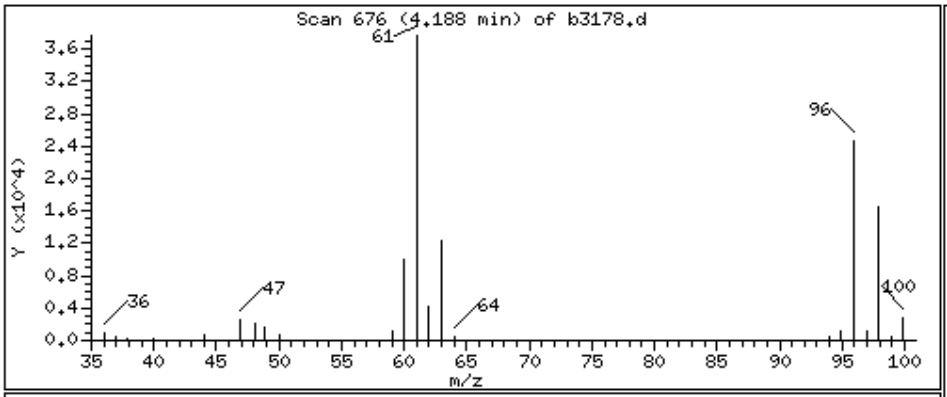
Operator: JCK

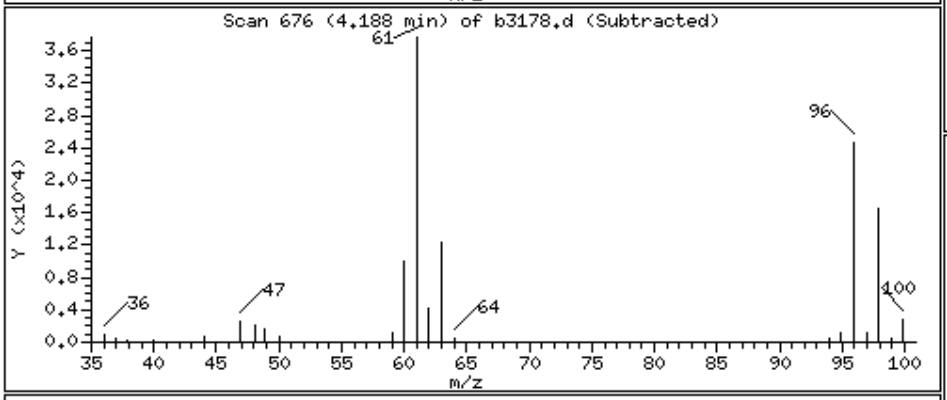
Column phase: RTX-VMS-30M

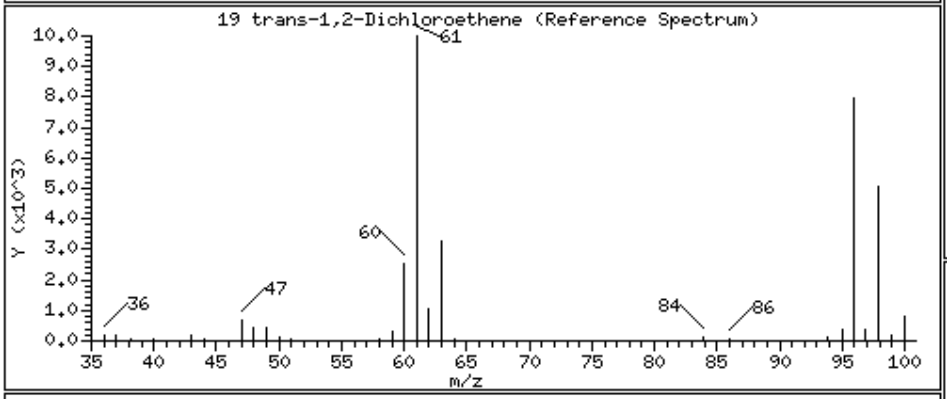
Column diameter: 0.25

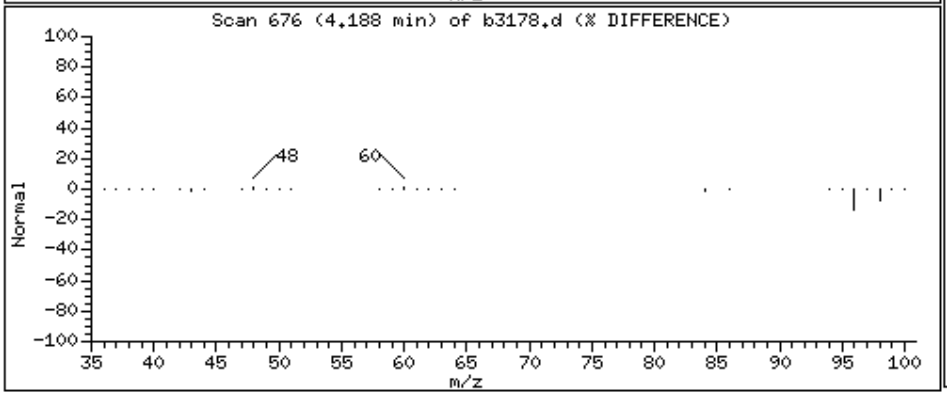
19 trans-1,2-Dichloroethene

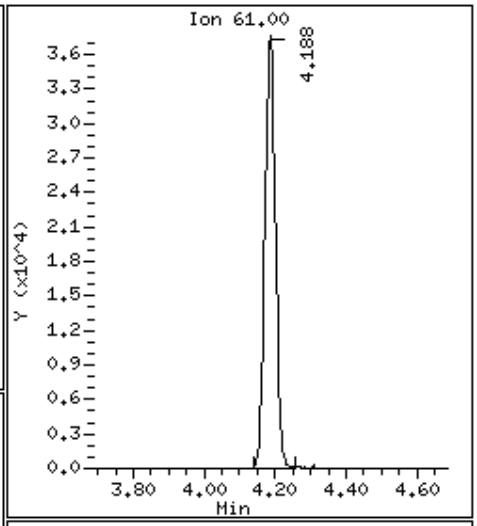
Concentration: 33.8 ug/L

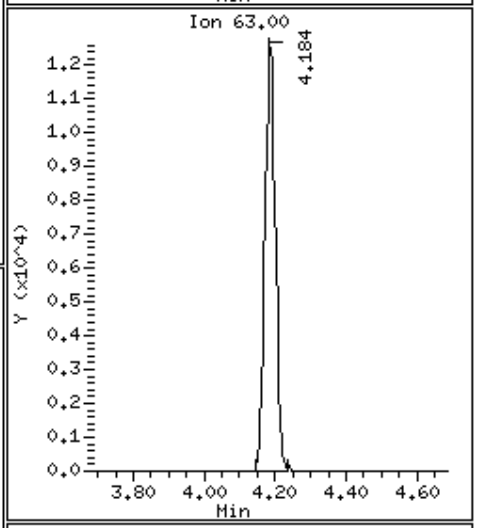


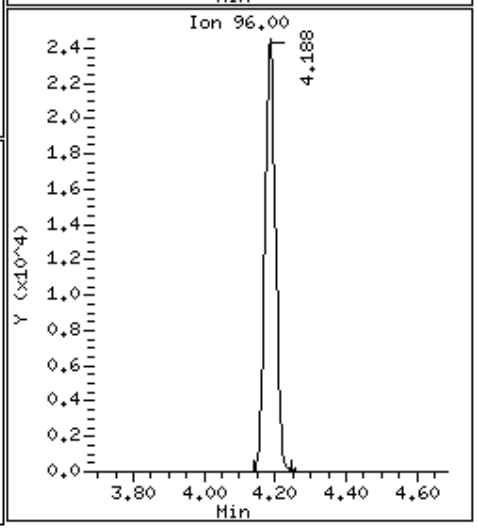












Data File: /var/chem/msv14.i/2170510p.s.b/b3178.d

Date : 10-MAY-2017 19:53

Client ID: 21705080318

Instrument: msv14.i

Sample Info: 21705080318x

Purge Volume: 5.0

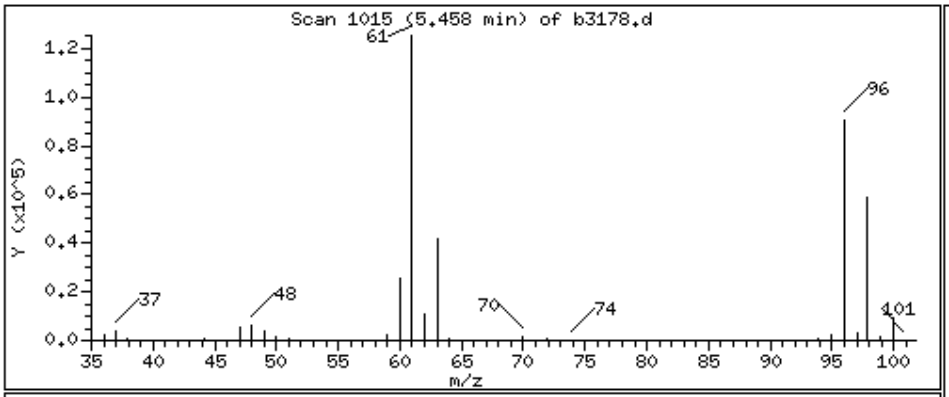
Operator: JCK

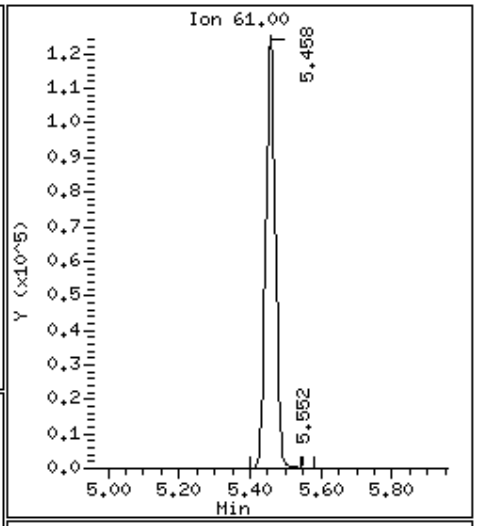
Column phase: RTX-VMS-30M

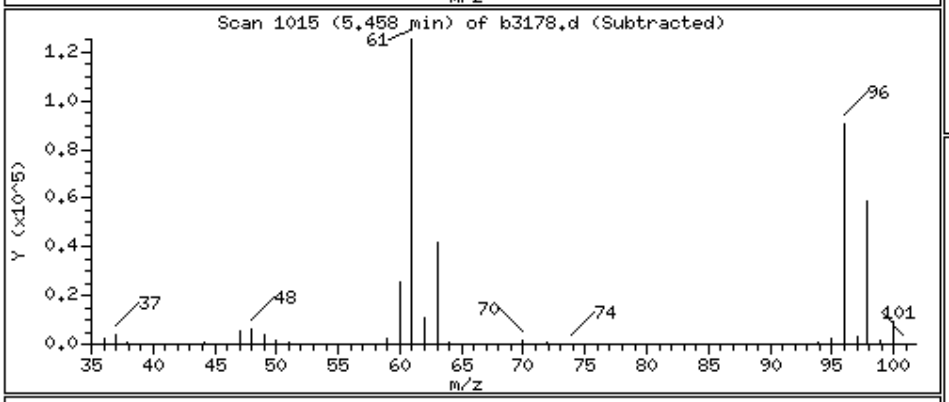
Column diameter: 0.25

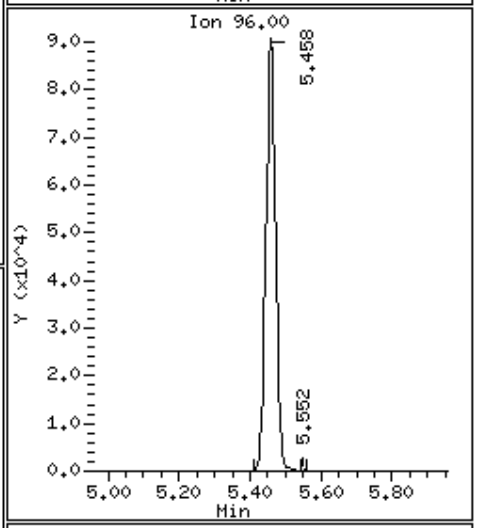
30 cis-1,2-Dichloroethene

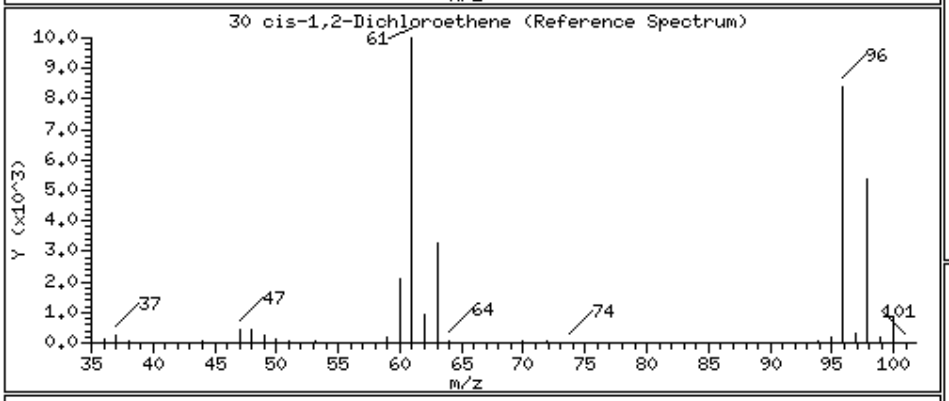
Concentration: 102 ug/L

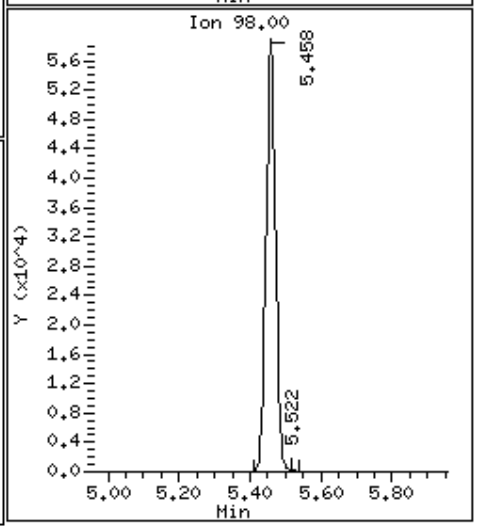


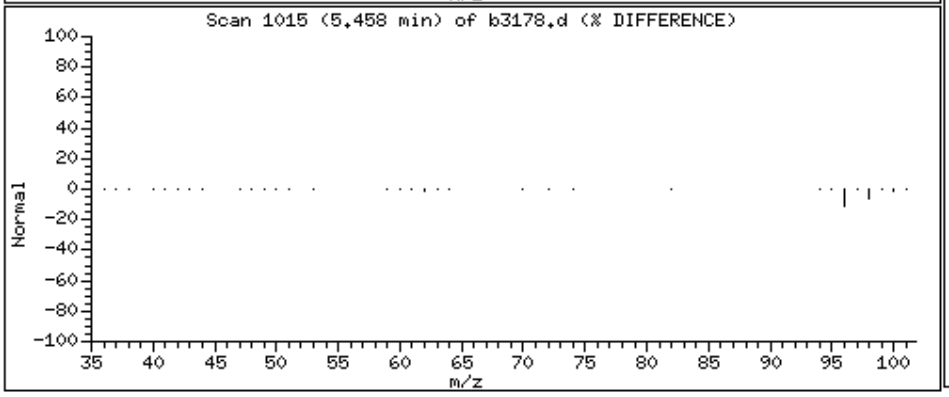












Data File: /var/chem/msv14.i/2170510p.s.b/b3178.d

Date : 10-MAY-2017 19:53

Client ID: 21705080318

Instrument: msv14.i

Sample Info: 21705080318x

Purge Volume: 5.0

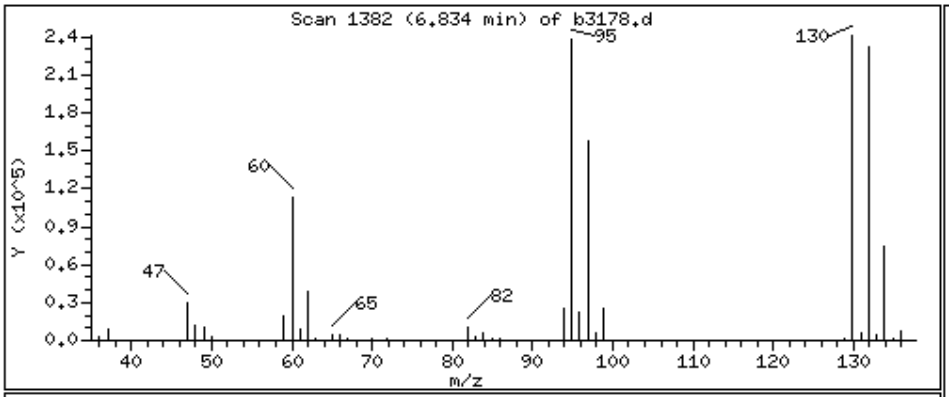
Operator: JCK

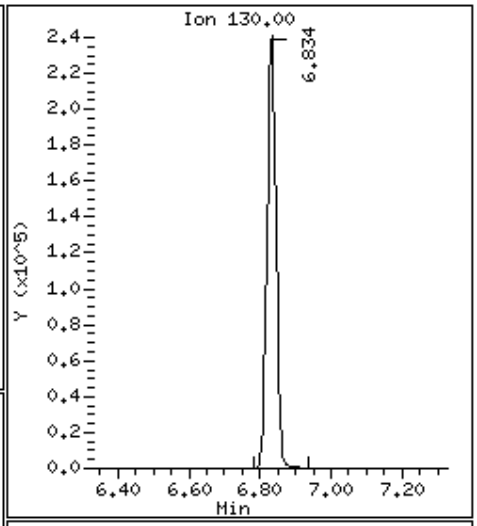
Column phase: RTX-VMS-30M

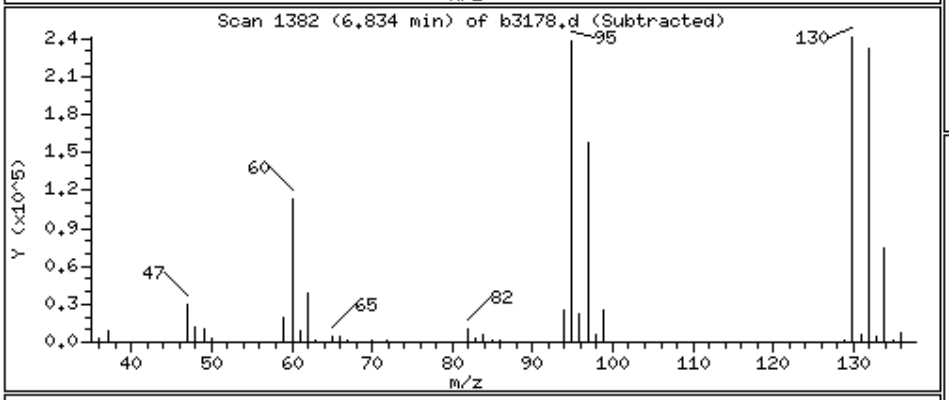
Column diameter: 0.25

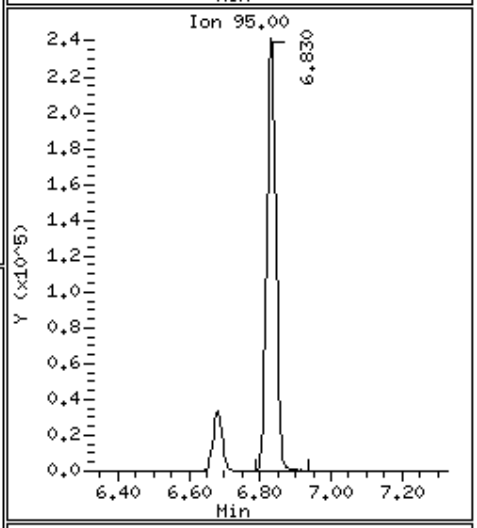
49 Trichloroethene

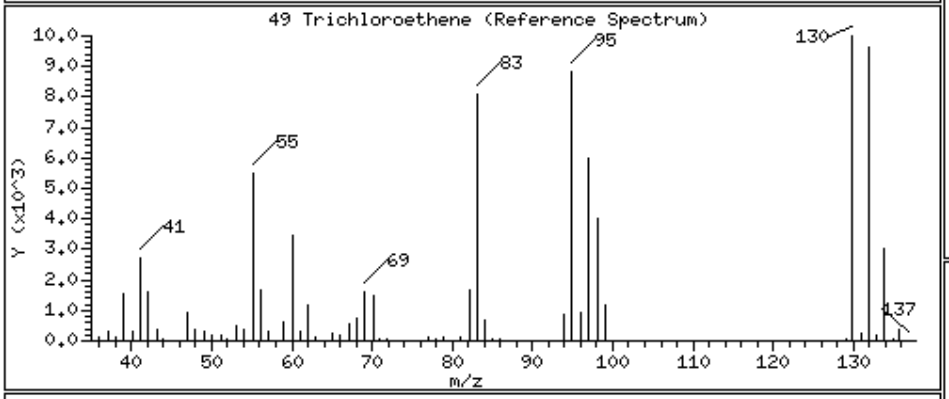
Concentration: 247 ug/L

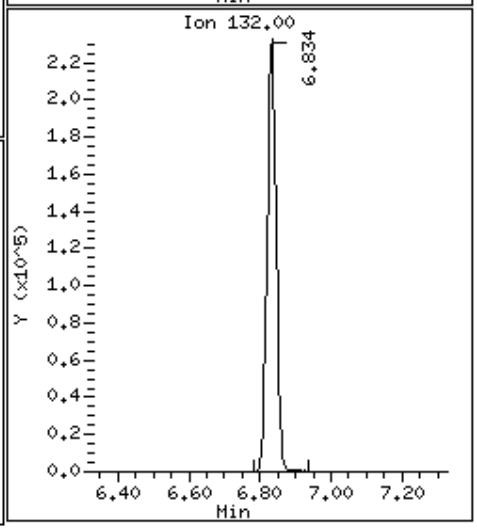


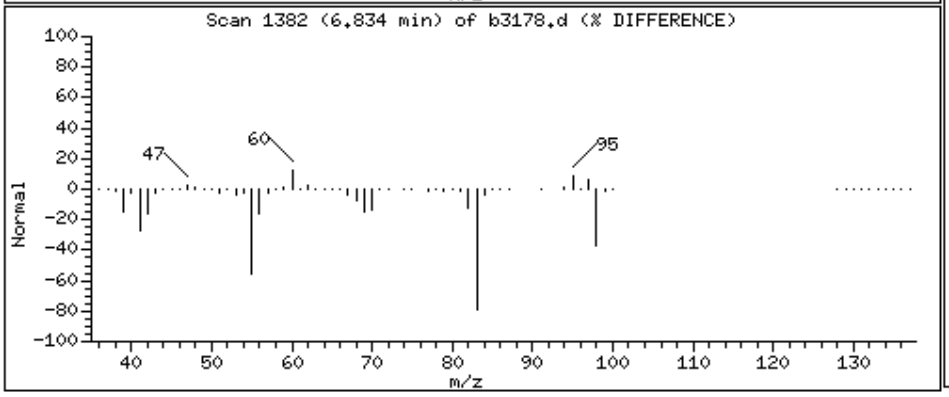












Data File: /var/chem/msv14.i/2170510p.s.b/b3178.d

Date : 10-MAY-2017 19:53

Client ID: 21705080318

Instrument: msv14.i

Sample Info: 21705080318x

Purge Volume: 5.0

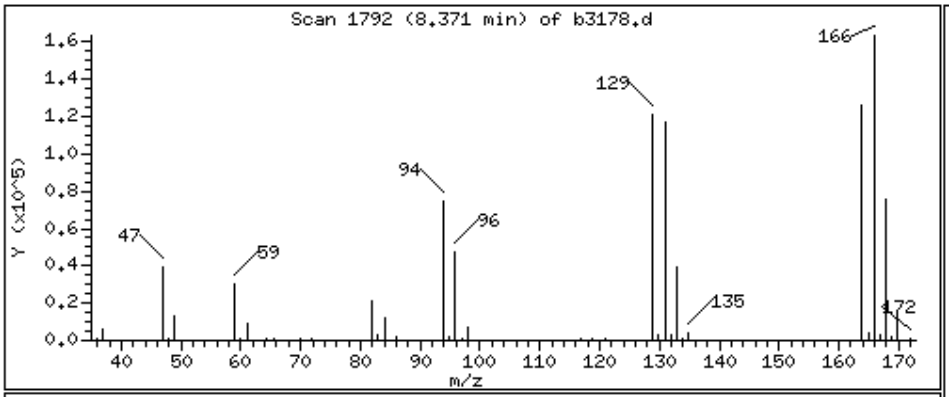
Operator: JCK

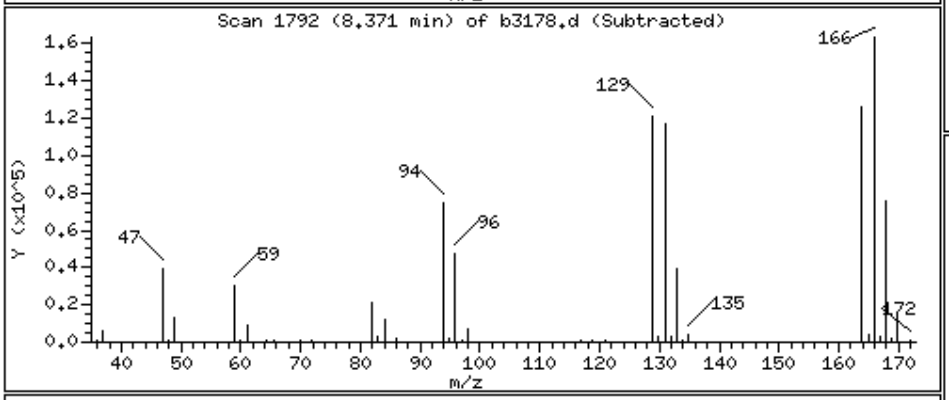
Column phase: RTX-VMS-30M

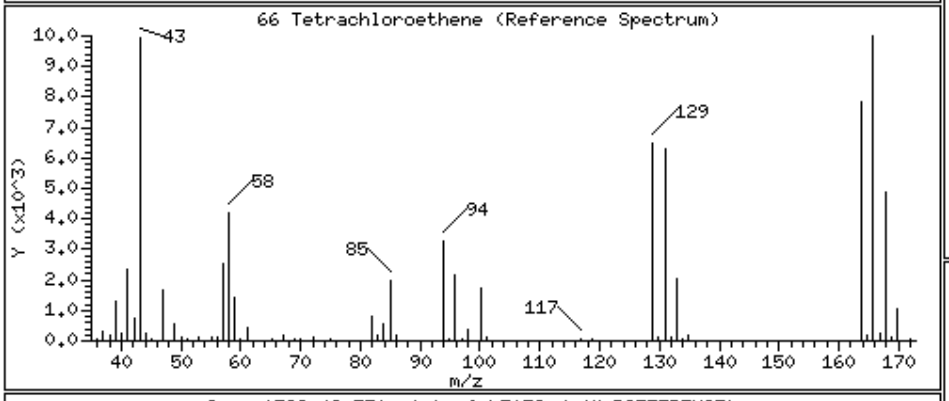
Column diameter: 0.25

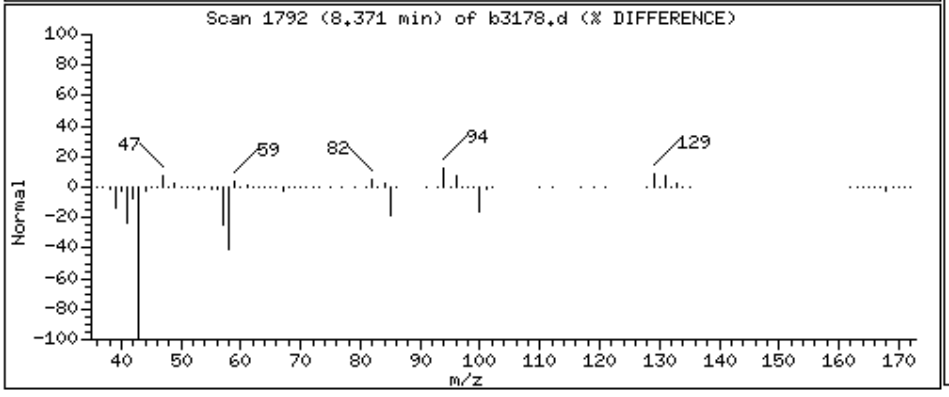
66 Tetrachloroethene

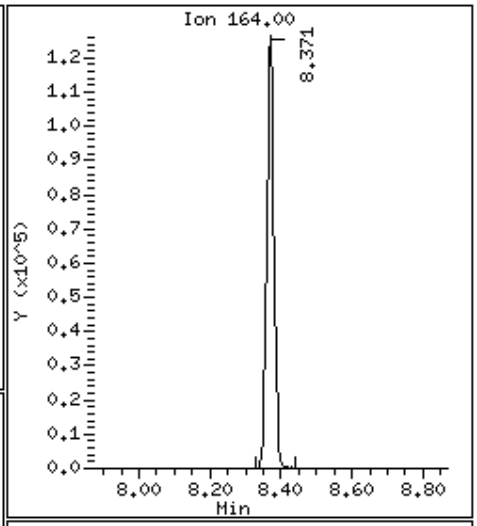
Concentration: 145 ug/L

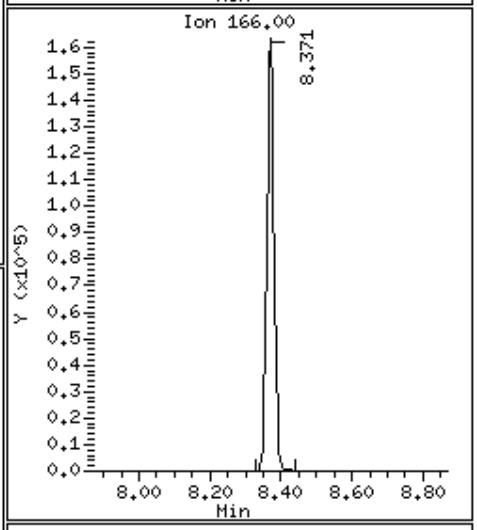


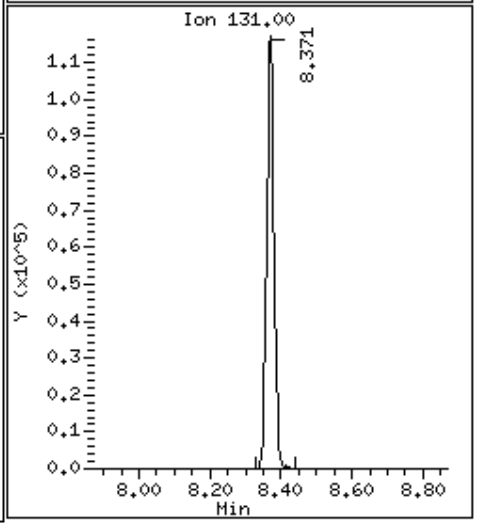






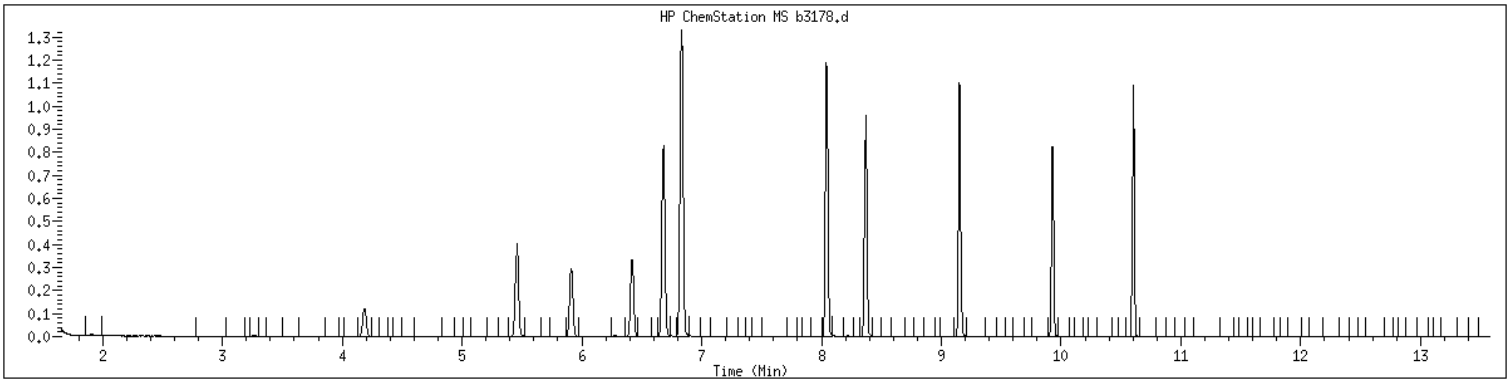






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080318 SampleType : SAMPLE
Injection Date: 05/10/2017 19:53 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080318*
Misc Info : MSV~38307~*2*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 2.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-4
Collect Date:	05/05/17 Time: 1515	GCAL Sample ID:	21705080319
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3174
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1816	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-4
Collect Date:	05/05/17	Time:	1515	GCAL Sample ID:	21705080319
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3174
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1816	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3174.d
Lab Smp Id: 21705080319 Client Smp ID: 21705080319
Inj Date : 10-MAY-2017 18:16
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080319*
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.884)	185522	51.3173	51.3	6895
$ 43 1,2-Dichloroethane-d4	67	6.422	6.418	(0.961)	123623	51.4621	51.5	
* 47 FLUOROBENZENE	96	6.684	6.680	(1.000)	711654	50.0000		
$ 60 Toluene-d8	98	8.045	8.041	(0.879)	669928	50.8841	50.9	
* 71 CHLOROBENZENE-d5	82	9.155	9.151	(1.000)	279063	50.0000		
$ 80 Bromofluorobenzene	174	9.927	9.927	(1.084)	165889	49.4286	49.4	
* 97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	201819	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3174.d

Page 1

Date : 10-MAY-2017 18:16

Client ID: 21705080319

Instrument: msv14.i

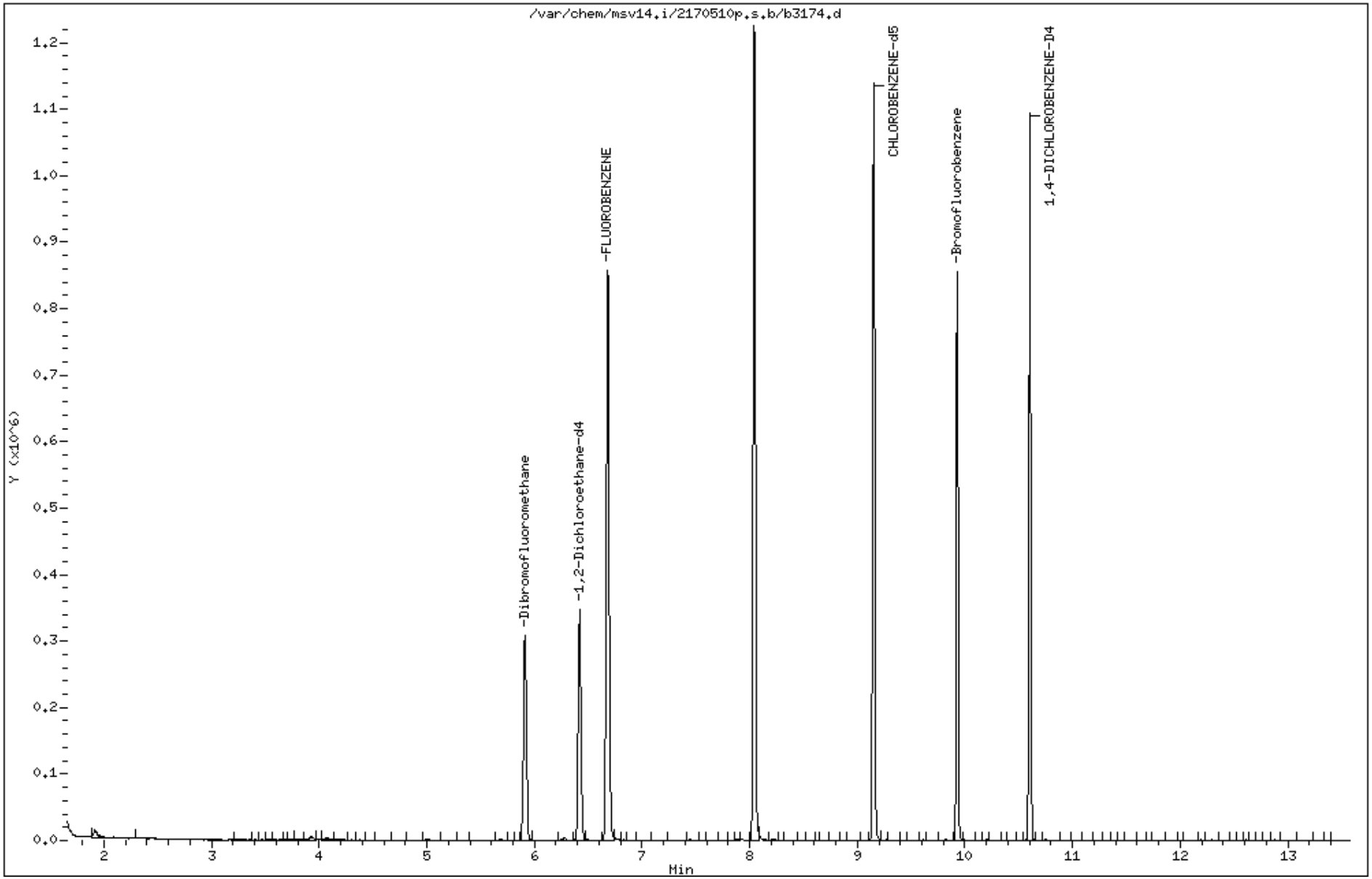
Sample Info: 21705080319*

Purge Volume: 5.0

Operator: JCK

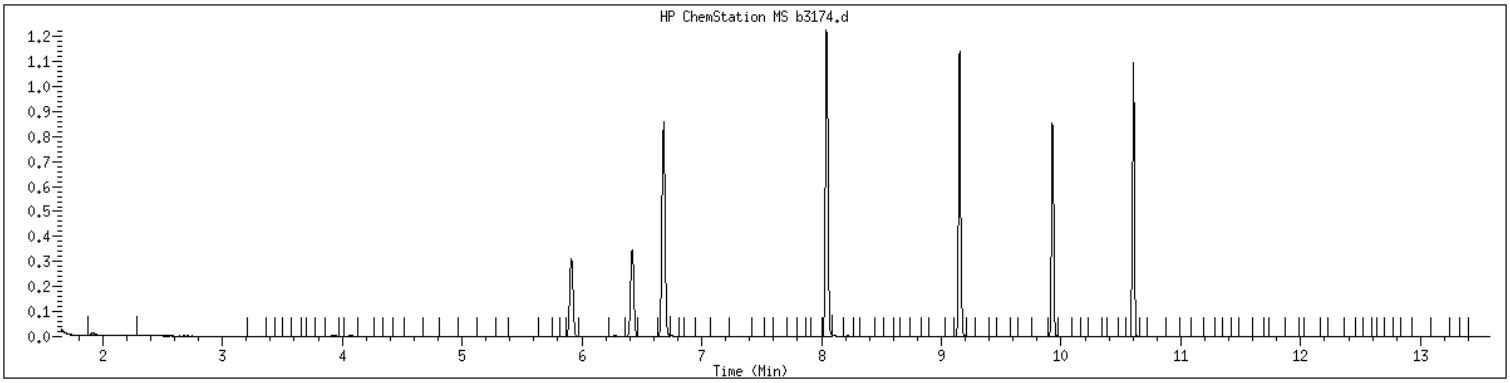
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080319 SampleType : SAMPLE
Injection Date: 05/10/2017 18:16 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080319*
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	OMS-28-2
Collect Date:	05/05/17 Time: 1700	GCAL Sample ID:	21705080320
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3175
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1839	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	OMS-28-2
Collect Date:	05/05/17	Time:	1700	GCAL Sample ID:	21705080320
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3175
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1839	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3175.d
Lab Smp Id: 21705080320 Client Smp ID: 21705080320
Inj Date : 10-MAY-2017 18:39
Operator : JCK Inst ID: msv14.i
Smp Info : 21705080320*
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	187236	51.3213	51.3	6888
$ 43 1,2-Dichloroethane-d4	67	6.422	6.418	(0.961)	122901	50.6972	50.7	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	718173	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	678543	51.1879	51.2	
* 71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	280974	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	164242	48.6050	48.6	
* 97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	203719	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3175.d

Page 1

Date : 10-MAY-2017 18:39

Client ID: 21705080320

Instrument: msv14.i

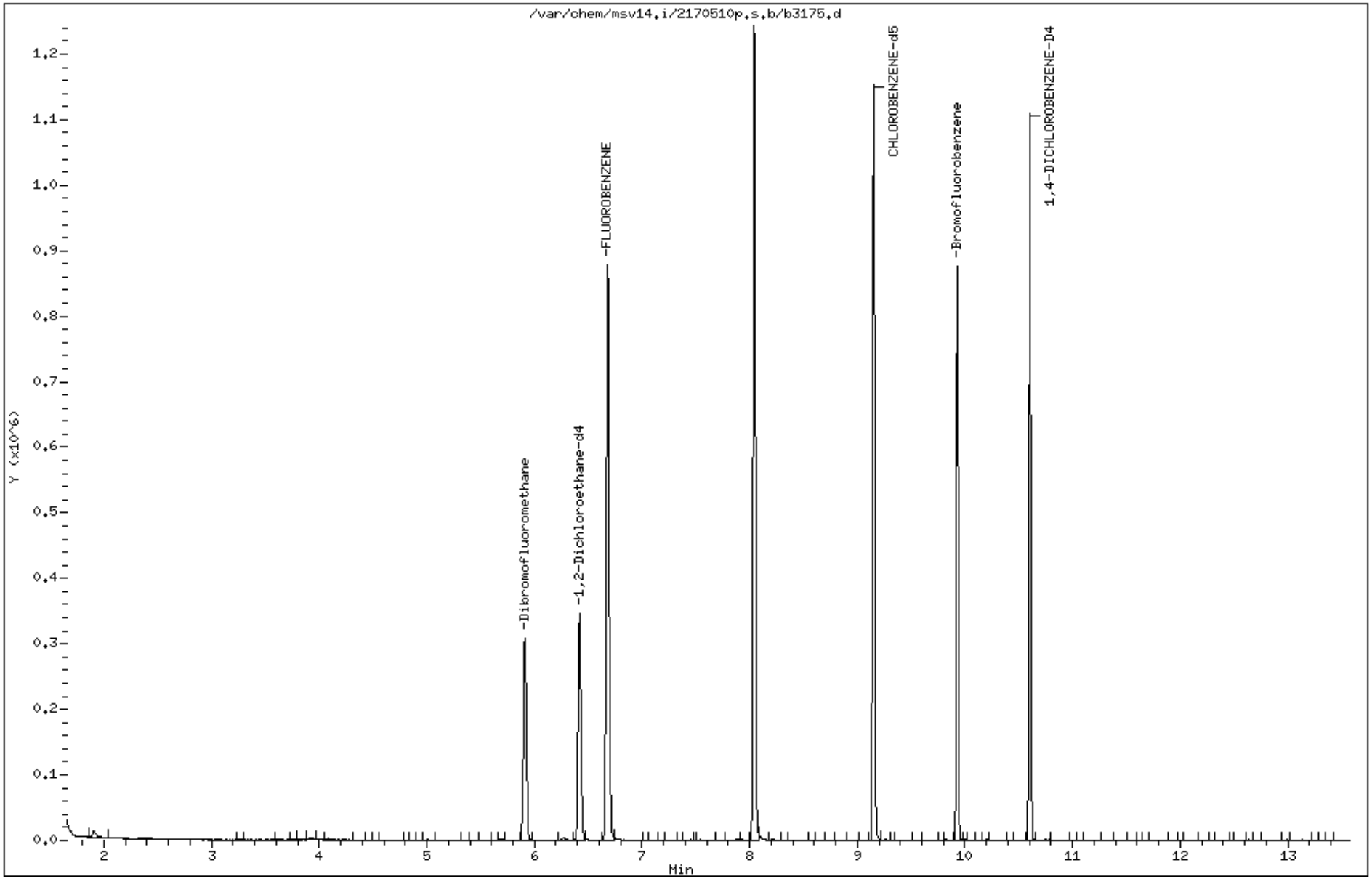
Sample Info: 21705080320x

Purge Volume: 5.0

Operator: JCK

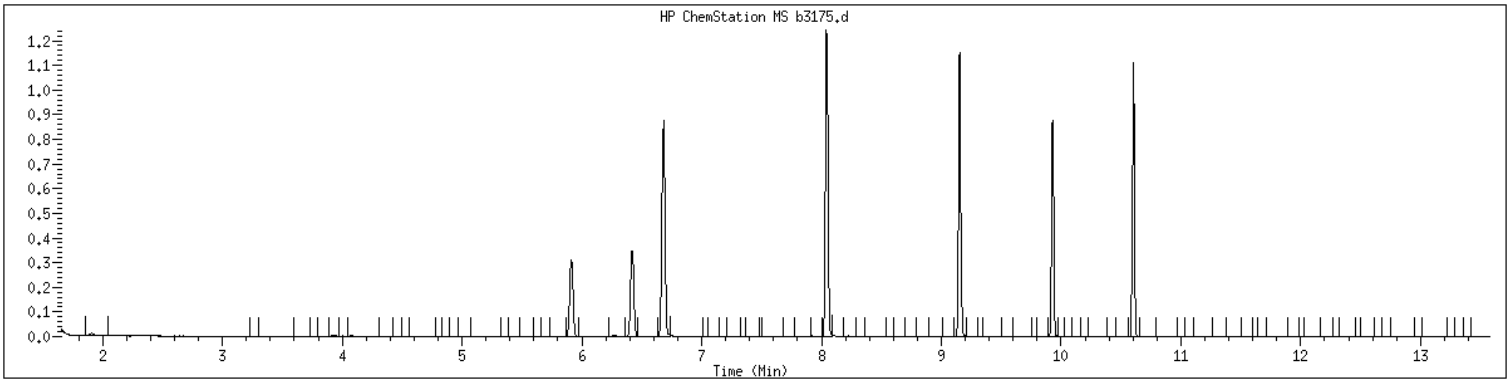
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705080320 SampleType : SAMPLE
Injection Date: 05/10/2017 18:39 Instrument : msv14.i
Operator : JCK
Sample Info : 21705080320*
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	MB1682370
Collect Date:	NA Time: NA	GCAL Sample ID:	1682370
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3080
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1217	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	MB1682370
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1682370
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3080
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1217	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3080.d
Lab Smp Id: 1682370 Client Smp ID: MB
Inj Date : 08-MAY-2017 12:17
Operator : JMC2 Inst ID: msv14.i
Smp Info : 1682370*MB
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.908	(0.885)	200628	51.7299	51.7	6904
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	131584	51.0591	51.1	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	763461	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	710220	50.1824	50.2	
* 71 CHLOROBENZENE-d5	82	9.155	9.151	(1.000)	299984	50.0000		
$ 80 Bromofluorobenzene	174	9.931	9.927	(1.085)	176600	48.9503	49.0	
* 97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	216661	50.0000		

Data File: /var/chem/msv14.i/2170508.s.b/b3080.d

Date : 08-MAY-2017 12:17

Client ID: MB

Instrument: msv14.i

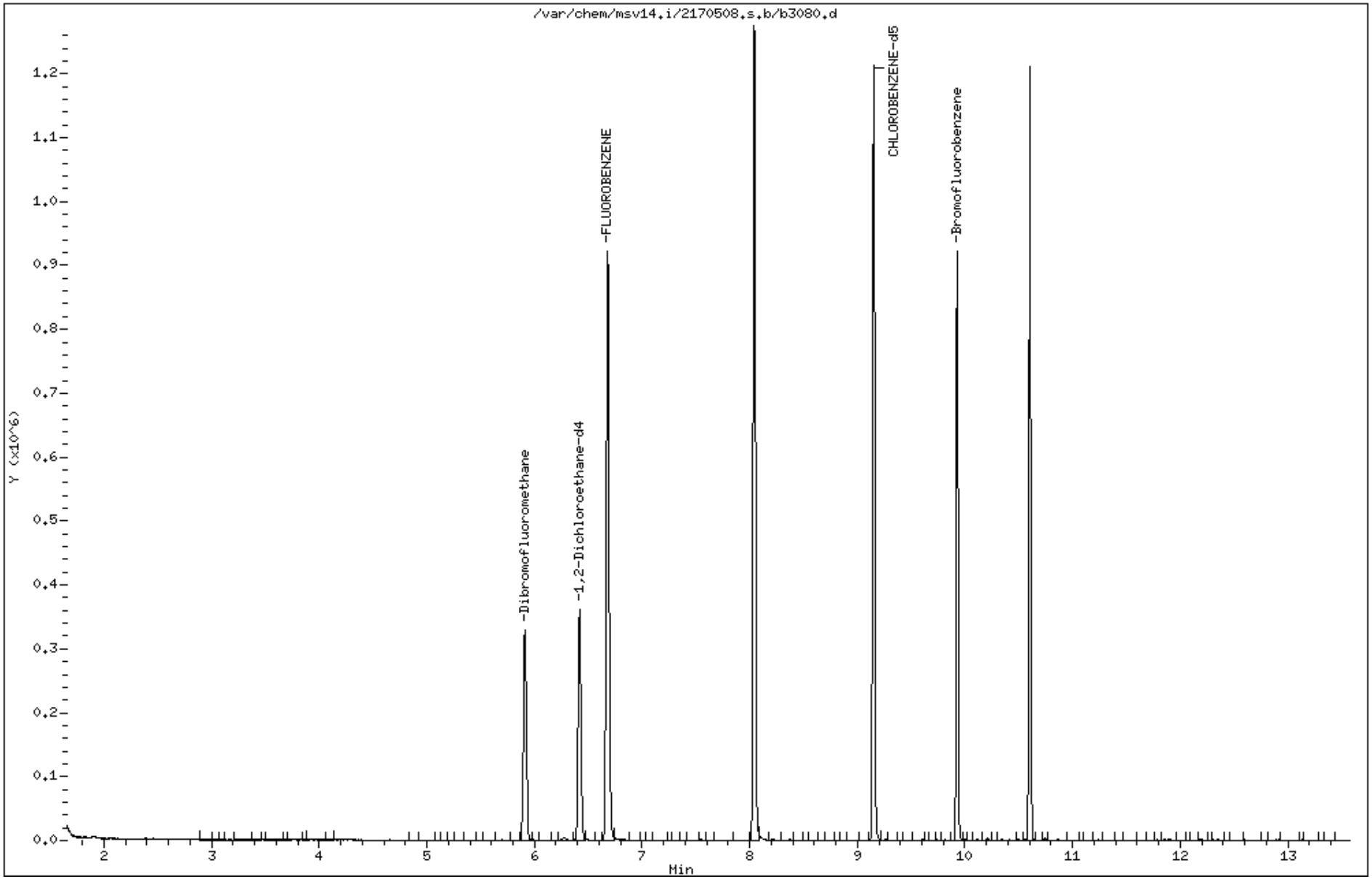
Sample Info: 1682370*MB

Purge Volume: 5.0

Operator: JMC2

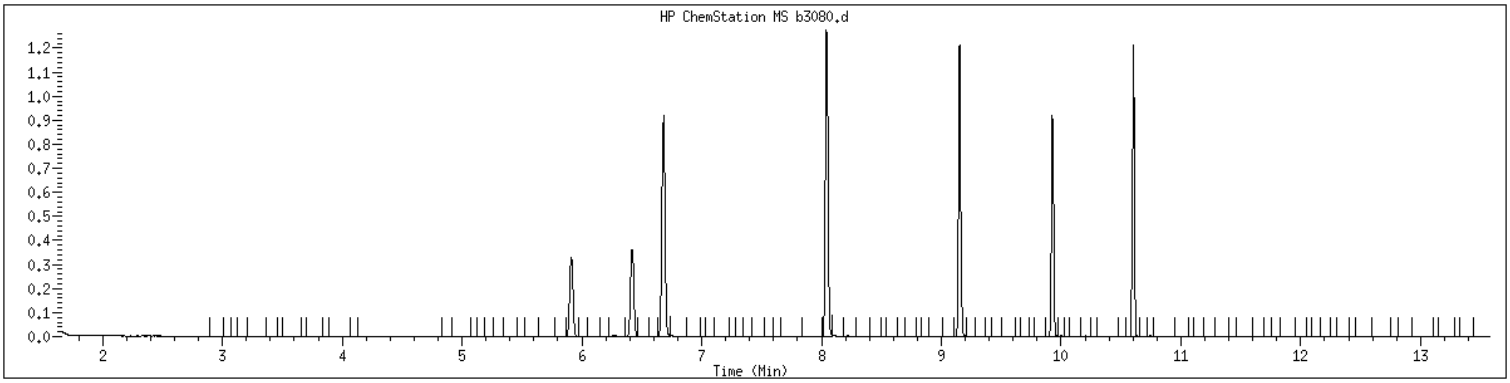
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1682370 SampleType : BLANK
Injection Date: 05/08/2017 12:17 Instrument : msv14.i
Operator : JMC2
Sample Info : 1682370*MB
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	LCS1682371
Collect Date:	NA Time: NA	GCAL Sample ID:	1682371
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3076L
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1033	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	52.2		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	51.8		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	50.0		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	53.8		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	53.4		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	49.3		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	47.7		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	52.2		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	51.5		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	52.2		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	50.4		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	52.0		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	53.1		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	51.0		0.200	0.500	1.00
78-93-3	2-Butanone	52.4		0.200	0.500	5.00
591-78-6	2-Hexanone	52.8		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	52.7		0.200	0.500	5.00
67-64-1	Acetone	52.0		0.500	1.00	5.00
71-43-2	Benzene	53.2		0.200	0.500	1.00
74-97-5	Bromochloromethane	52.7		0.200	0.500	1.00
75-27-4	Bromodichloromethane	52.9		0.200	0.500	1.00
75-25-2	Bromoform	51.9		0.250	0.500	1.00
74-83-9	Bromomethane	56.5		0.500	1.00	1.00
75-15-0	Carbon disulfide	53.3		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	53.4		0.250	0.500	1.00
108-90-7	Chlorobenzene	51.5		0.200	0.500	1.00
75-00-3	Chloroethane	51.5		0.250	0.500	1.00
67-66-3	Chloroform	52.8		0.200	0.500	1.00
74-87-3	Chloromethane	58.7		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	54.7		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	55.3		0.200	0.500	1.00
110-82-7	Cyclohexane	47.1		0.500	1.00	2.00
124-48-1	Dibromochloromethane	52.3		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	47.7		0.200	0.500	1.00
100-41-4	Ethylbenzene	53.3		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	51.5		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	LCS1682371
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1682371
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3076L
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1033	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	50.5		1.00	2.00	5.00
108-87-2	Methylcyclohexane	54.2		0.200	0.500	1.00
75-09-2	Methylene chloride	51.2		0.200	0.500	5.00
100-42-5	Styrene	51.1		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	49.4		0.200	0.500	1.00
127-18-4	Tetrachloroethene	51.3		0.200	0.500	1.00
108-88-3	Toluene	51.1		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	50.3		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	55.2		0.200	0.500	1.00
79-01-6	Trichloroethene	52.2		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	53.6		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	53.1		0.200	0.500	1.00
1330-20-7	Xylene (total)	157		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3076L.d
Lab Smp Id: 1682371 Client Smp ID: LCS
Inj Date : 08-MAY-2017 10:33
Operator : JMC2 Inst ID: msv14.i
Smp Info : 1682371*LCS
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	191976	47.6875	47.7	
2 Chloromethane ++	50	1.950	1.950	(0.292)	187916	58.7308	58.7	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	208278	51.9106	51.9	
5 Bromomethane	94	2.373	2.373	(0.355)	83194	56.4519	56.5	
6 Chloroethane	64	2.516	2.516	(0.377)	133392	51.4505	51.5	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	250708	53.6359	53.6	
11 1,1-Dichloroethene +	96	3.265	3.265	(0.489)	139718	53.3590	53.4	
14 Carbon Disulfide	76	3.295	3.295	(0.493)	454523	53.2881	53.3	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	143535	53.1109	53.1	
13 Methyl Iodide	142	3.438	3.438	(0.515)	86303	53.1776	53.2	
9 Acrolein	56	3.700	3.700	(0.554)	71130	314.848	315	
17 Methylene Chloride	49	3.996	3.996	(0.598)	247758	51.2018	51.2	
12 Acetone	43	4.064	4.064	(0.608)	136276	52.0325	52.0	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	276633	50.3345	50.3	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.218	4.218	(0.631)	180511	50.4615	50.5	9164
	23 Hexane	57	4.289	4.289	(0.642)	230076	46.8075	46.8	9328(M2)
	21 MTBE	73	4.330	4.330	(0.648)	556635	49.4445	49.4	9588
	26 tert-Butyl Alcohol	59	4.461	4.461	(0.668)	22577	46.8926	46.9	9449
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	619483	50.5212	50.5	9860
	29 Chloroprene	53	4.866	4.866	(0.728)	254528	42.4096	42.4	8665
	24 1,1-Dichloroethane ++	63	4.889	4.889	(0.732)	410042	53.7624	53.8	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	437324	278.652	279	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	136764	54.5008	54.5	
M	48 Total 1,2-Dichloroethene	61				576707	104.994	105	
	30 cis-1,2-Dichloroethene	61	5.455	5.455	(0.817)	300074	54.6592	54.7	
	31 2,2-Dichloropropane	77	5.563	5.563	(0.833)	330079	53.2538	53.3	
	38 Cyclohexane	56	5.653	5.653	(0.846)	327538	47.0596	47.1	8984
	34 Bromochloromethane	128	5.661	5.661	(0.847)	91883	52.6739	52.7	
	41 Chloroform +	83	5.732	5.732	(0.858)	386376	52.8141	52.8	
	39 Carbon Tetrachloride	117	5.859	5.859	(0.877)	274913	53.3952	53.4	
$	36 Dibromofluoromethane	111	5.908	5.908	(0.884)	210126	50.4863	50.5	6919
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	327472	52.2172	52.2	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	276667	54.5284	54.5	
	32 2-Butanone	43	6.043	6.043	(0.905)	150276	52.3911	52.4	
	44 Benzene	78	6.291	6.291	(0.942)	850748	53.1889	53.2	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	140128	50.6686	50.7	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	313952	50.3751	50.4	
	45 Isobutyl Alcohol	43	6.504	6.504	(0.974)	46350	268.341	268	9331
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	819301	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	297314	54.1647	54.2	8620
	49 Trichloroethene	130	6.830	6.830	(1.022)	215420	52.2362	52.2	
	52 Dibromomethane	93	7.216	7.216	(1.080)	138526	51.6503	51.7	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	219299	52.0287	52.0	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	303585	52.8598	52.9	
	55 1,4- Dioxane	58	7.539	7.539	(1.128)	42465	1220.93	1220	9452
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	320096	51.8882	51.9	9658
	58 cis-1,3-Dichloropropene	75	7.891	7.891	(1.181)	353185	55.3144	55.3	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	782116	49.1582	49.2	
	61 Toluene +	91	8.082	8.082	(0.883)	868474	51.1236	51.1	
M	145 1-3 Dichloropropene total	100				693439	110.468	110	0
	66 Tetrachloroethene	164	8.367	8.367	(0.914)	156130	51.3354	51.3	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	233479	52.6742	52.7	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	340254	55.1540	55.2	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	201440	50.0222	50.0	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	258298	52.9577	53.0	9670
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	228682	52.3239	52.3	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	383950	53.2558	53.3	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	201930	51.4706	51.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	188391	52.8049	52.8	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	216613	45.1256	45.1	8766
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	337234	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	72 Chlorobenzene ++	112	9.166	9.166	(1.002)	534196	51.4884	51.5	
	73 Ethylbenzene +	106	9.173	9.173	(1.002)	278798	53.2953	53.3	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	200183	50.8990	50.9	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	649272	107.100	107	
M	99 TOTAL XYLENE	106				956896	157.241	157	
	76 o-Xylene	106	9.548	9.548	(1.043)	307624	50.1408	50.1	
	77 Styrene	104	9.582	9.582	(1.047)	531405	51.1177	51.1	
	78 Bromoform ++	173	9.608	9.608	(1.050)	158223	51.9332	51.9	
	79 Isopropylbenzene	105	9.743	9.743	(1.065)	803936	51.4727	51.5	
	161 cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	89486	48.1812	48.2	9535
$	80 Bromofluorobenzene	174	9.927	9.927	(1.085)	202068	49.8229	49.8	
	84 Bromobenzene	77	9.998	9.998	(0.943)	402515	52.6431	52.6	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	896672	54.3299	54.3	
	81 1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	269089	51.7678	51.8	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	635526	54.9562	55.0	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	628142	56.5829	56.6	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	352465	52.9699	53.0	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	79965	52.1541	52.2	
	90 4-Chlorotoluene	91	10.204	10.204	(0.963)	577239	54.5077	54.5	
	91 tert-butylbenzene	91	10.309	10.309	(0.972)	348137	56.4191	56.4	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	653375	56.3893	56.4	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	716669	56.8089	56.8	
	92 p-Isopropyltoluene	119	10.493	10.493	(0.990)	599715	57.2814	57.3	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	347063	53.1198	53.1	
*	97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	233697	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	341741	51.0239	51.0	
	100 n-Butylbenzene	91	10.748	10.748	(1.014)	531967	55.7432	55.7	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	324634	52.2212	52.2	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	44763	52.1575	52.2	
	109 Hexachlorobutadiene	225	11.857	11.857	(1.118)	74293	56.7476	56.7	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	173907	47.6637	47.7	
	110 Naphthalene	128	12.191	12.191	(1.150)	527973	47.2460	47.2	
	111 1,2,3-Trichlorobenzene	180	12.356	12.356	(1.165)	175959	49.3254	49.3	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170508.s.b/b3076L.d

Page 1

Date : 08-MAY-2017 10:33

Client ID: LCS

Instrument: msv14.i

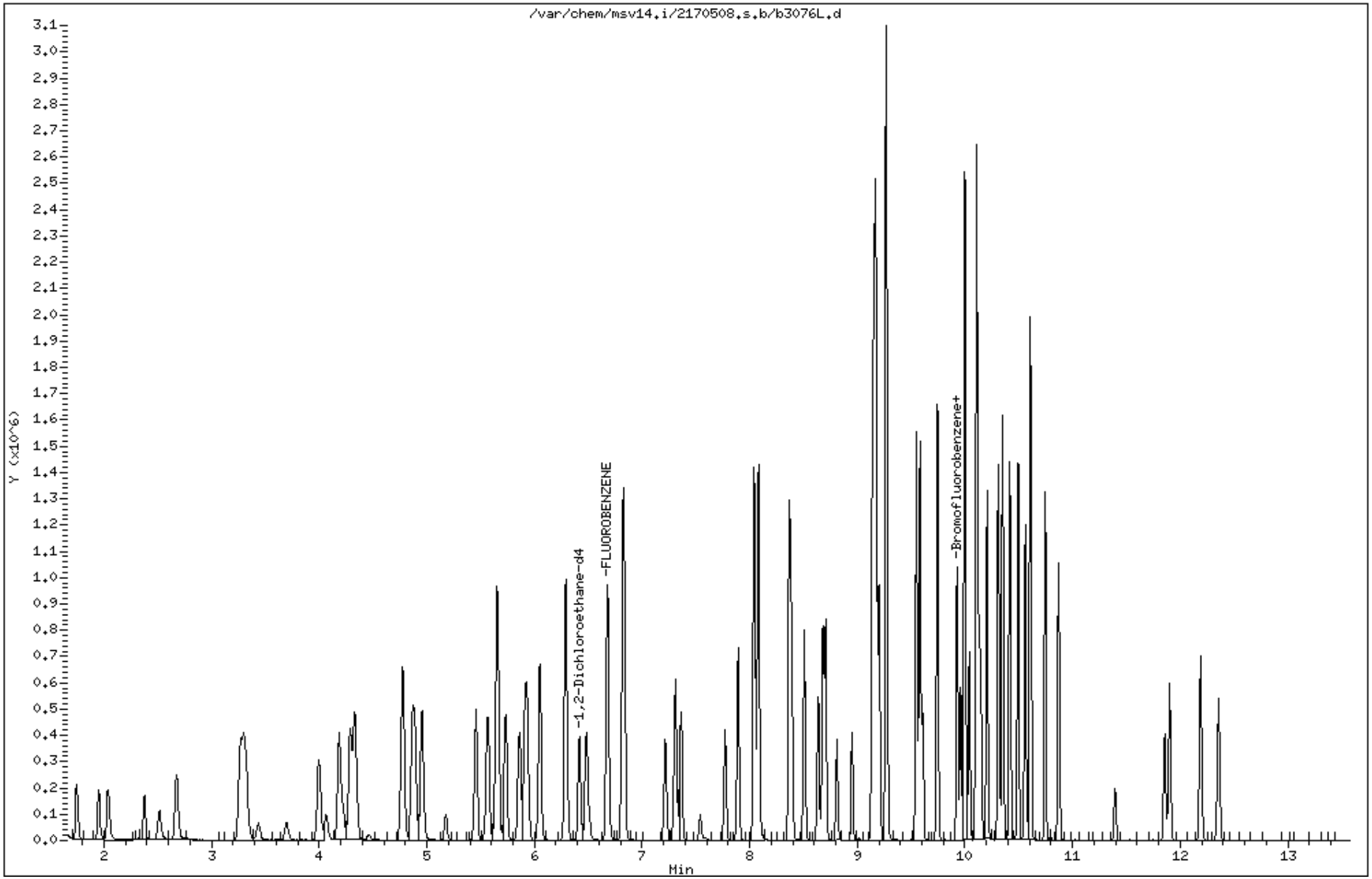
Sample Info: 1682371*LCS

Purge Volume: 5.0

Operator: JMC2

Column phase: RTX-VMS-30M

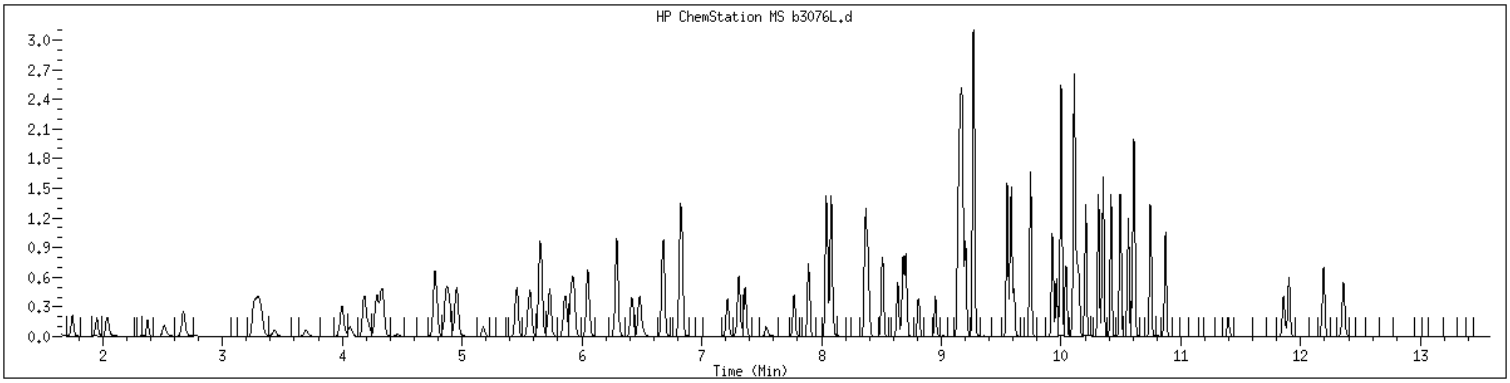
Column diameter: 0.25



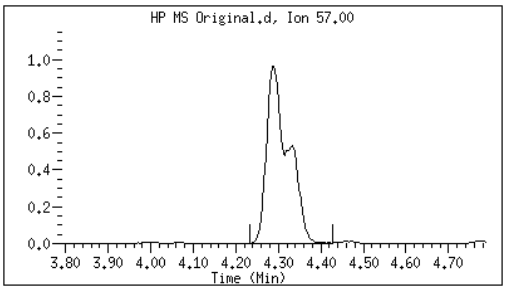
Report Date: 05/08/2017 14:08

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1682371 SampleType : LCS
Injection Date: 05/08/2017 10:33 Instrument : msv14.i
Operator : JMC2
Sample Info : 1682371*LCS
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1

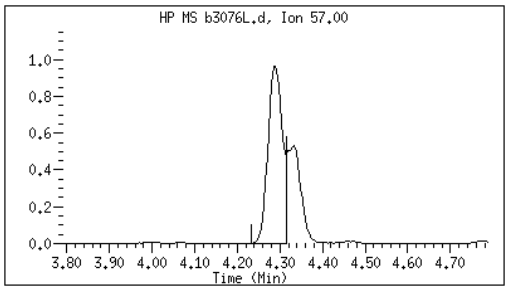


Original		Final
23 Hexane	CAS#: 110-54-3	Reason: M2



Electronic Signature Applied

User: jmc
Date: 05/08/2017 10:50



M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	LCSD1682372
Collect Date:	NA Time: NA	GCAL Sample ID:	1682372
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3077
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1055	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	51.2		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	52.4		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	50.2		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	52.9		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	52.6		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	48.0		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	46.1		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	55.7		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	52.3		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	51.3		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	50.3		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	52.1		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	51.6		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	49.8		0.200	0.500	1.00
78-93-3	2-Butanone	57.0		0.200	0.500	5.00
591-78-6	2-Hexanone	57.8		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	56.5		0.200	0.500	5.00
67-64-1	Acetone	54.2		0.500	1.00	5.00
71-43-2	Benzene	52.8		0.200	0.500	1.00
74-97-5	Bromochloromethane	51.3		0.200	0.500	1.00
75-27-4	Bromodichloromethane	52.3		0.200	0.500	1.00
75-25-2	Bromoform	52.9		0.250	0.500	1.00
74-83-9	Bromomethane	57.6		0.500	1.00	1.00
75-15-0	Carbon disulfide	52.8		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	52.3		0.250	0.500	1.00
108-90-7	Chlorobenzene	50.9		0.200	0.500	1.00
75-00-3	Chloroethane	47.8		0.250	0.500	1.00
67-66-3	Chloroform	52.1		0.200	0.500	1.00
74-87-3	Chloromethane	55.5		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	54.3		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	55.3		0.200	0.500	1.00
110-82-7	Cyclohexane	45.9		0.500	1.00	2.00
124-48-1	Dibromochloromethane	51.8		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	46.1		0.200	0.500	1.00
100-41-4	Ethylbenzene	52.0		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	50.3		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	LCSD1682372
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1682372
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170508/b3077
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17	Time:	1055	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	53.8		1.00	2.00	5.00
108-87-2	Methylcyclohexane	50.9		0.200	0.500	1.00
75-09-2	Methylene chloride	49.8		0.200	0.500	5.00
100-42-5	Styrene	50.7		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	51.4		0.200	0.500	1.00
127-18-4	Tetrachloroethene	50.4		0.200	0.500	1.00
108-88-3	Toluene	50.8		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	49.4		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	55.0		0.200	0.500	1.00
79-01-6	Trichloroethene	51.4		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	50.1		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	52.6		0.200	0.500	1.00
1330-20-7	Xylene (total)	154		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3077.d
Lab Smp Id: 1682372 Client Smp ID: LCSD
Inj Date : 08-MAY-2017 10:55
Operator : JMC2 Inst ID: msv14.i
Smp Info : 1682372*LCSD
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	185672	46.0860	46.1	
2 Chloromethane ++	50	1.953	1.950	(0.292)	177736	55.5063	55.5	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	198131	49.3434	49.3	
5 Bromomethane	94	2.377	2.373	(0.356)	84969	57.6124	57.6	
6 Chloroethane	64	2.516	2.516	(0.377)	123965	47.7775	47.8	
7 Trichlorofluoromethane	101	2.677	2.673	(0.401)	234269	50.0803	50.1	
11 1,1-Dichloroethene +	96	3.265	3.265	(0.489)	137737	52.5619	52.6	
14 Carbon Disulfide	76	3.295	3.295	(0.493)	450581	52.7844	52.8	
10 1,1,2Trichlotrifluoroethane	101	3.322	3.318	(0.497)	142279	52.6056	52.6	
13 Methyl Iodide	142	3.434	3.438	(0.514)	87520	53.7757	53.8	
9 Acrolein	56	3.700	3.700	(0.554)	74277	328.524	329	
17 Methylene Chloride	49	4.000	3.996	(0.599)	240930	49.7523	49.8	
12 Acetone	43	4.071	4.064	(0.609)	141932	54.1502	54.2	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	271734	49.4050	49.4	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.218	(0.632)	192682	53.8223	53.8	8743
	23 Hexane	57	4.289	4.289	(0.642)	219027	44.5412	44.5	9290(M2)
	21 MTBE	73	4.334	4.330	(0.649)	578721	51.3666	51.4	9644
	26 tert-Butyl Alcohol	59	4.461	4.461	(0.668)	26285	54.5520	54.6	9375
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	626795	51.0780	51.1	9864
	29 Chloroprene	53	4.866	4.866	(0.728)	250428	41.7071	41.7	8891
	24 1,1-Dichloroethane ++	63	4.889	4.889	(0.732)	404048	52.9356	52.9	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	455356	289.917	290	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	135954	54.1362	54.1	
M	48 Total 1,2-Dichloroethene	61				569989	103.691	104	
	30 cis-1,2-Dichloroethene	61	5.458	5.455	(0.817)	298255	54.2859	54.3	
	31 2,2-Dichloropropane	77	5.567	5.563	(0.833)	327022	52.7198	52.7	
	38 Cyclohexane	56	5.653	5.653	(0.846)	319355	45.8672	45.9	8978
	34 Bromochloromethane	128	5.661	5.661	(0.847)	89561	51.3031	51.3	
	41 Chloroform +	83	5.732	5.732	(0.858)	381764	52.1434	52.1	
	39 Carbon Tetrachloride	117	5.863	5.859	(0.878)	269666	52.3356	52.3	
$	36 Dibromofluoromethane	111	5.912	5.908	(0.885)	207157	49.7345	49.7	6922
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	321457	51.2185	51.2	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	270325	53.2373	53.2	
	32 2-Butanone	43	6.043	6.043	(0.905)	163737	57.0400	57.0	
	44 Benzene	78	6.291	6.291	(0.942)	845622	52.8276	52.8	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	138031	49.8718	49.9	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	313492	50.2625	50.3	
	45 Isobutyl Alcohol	43	6.508	6.504	(0.974)	49563	286.721	287	9547
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	819934	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	279340	50.8509	50.9	8616
	49 Trichloroethene	130	6.834	6.830	(1.023)	212190	51.4133	51.4	
	52 Dibromomethane	93	7.216	7.216	(1.080)	138705	51.6771	51.7	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	219708	52.0855	52.1	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	300523	52.2863	52.3	
	55 1,4- Dioxane	58	7.539	7.539	(1.129)	44122	1267.59	1270	9506
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	324720	52.5971	52.6	9600
	58 cis-1,3-Dichloropropene	75	7.891	7.891	(1.181)	353278	55.2862	55.3	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	779625	49.0814	49.1	
	61 Toluene +	91	8.082	8.082	(0.883)	861248	50.7807	50.8	
M	145 1-3 Dichloropropene total	100				692958	110.305	110	0
	66 Tetrachloroethene	164	8.371	8.367	(0.915)	152948	50.3710	50.4	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	250235	56.5464	56.5	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	339680	55.0185	55.0	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	201943	50.2287	50.2	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	253695	52.0986	52.1	9689
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	225944	51.7816	51.8	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	374943	52.0911	52.1	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	204906	52.3142	52.3	
	68 2-Hexanone	43	8.952	8.952	(0.978)	205986	57.8307	57.8	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	212207	44.2922	44.3	8801
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	336686	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	72 Chlorobenzene ++	112	9.162	9.166	(1.001)	526881	50.8660	50.9	
	73 Ethylbenzene +	106	9.177	9.173	(1.003)	271394	51.9644	52.0	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	197359	50.2627	50.3	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	629057	103.947	104	
M	99 TOTAL XYLENE	106				933769	153.699	154	
	76 o-Xylene	106	9.552	9.548	(1.044)	304712	49.7521	49.8	
	77 Styrene	104	9.582	9.582	(1.047)	525693	50.6559	50.7	
	78 Bromoform ++	173	9.608	9.608	(1.050)	160896	52.8965	52.9	
	79 Isopropylbenzene	105	9.743	9.743	(1.065)	783864	50.2824	50.3	
	161 cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	94085	50.5966	50.6	9552
$	80 Bromofluorobenzene	174	9.927	9.927	(1.085)	200845	49.6020	49.6	
	84 Bromobenzene	77	9.998	9.998	(0.943)	394496	51.5323	51.5	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	870124	52.6581	52.7	
	81 1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	272958	52.4491	52.4	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	623490	53.8507	53.9	
	88 1,3,5-Trimethylbenzene	105	10.110	10.114	(0.954)	608879	54.7818	54.8	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	365104	54.8035	54.8	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	83416	54.3395	54.3	
	90 4-Chlorotoluene	91	10.204	10.204	(0.963)	566263	53.4071	53.4	
	91 tert-butylbenzene	91	10.313	10.309	(0.973)	343843	55.6563	55.7	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	637473	54.9508	55.0	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	692460	54.8240	54.8	
	92 p-Isopropyltoluene	119	10.497	10.493	(0.990)	570759	54.4502	54.5	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	337662	51.6188	51.6	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.601	(1.000)	233978	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	333630	49.7530	49.8	
	100 n-Butylbenzene	91	10.744	10.748	(1.013)	509846	53.3611	53.4	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	319306	51.3024	51.3	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	47852	55.6899	55.7	
	109 Hexachlorobutadiene	225	11.857	11.857	(1.118)	71259	54.3648	54.4	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	167776	46.1437	46.1	
	110 Naphthalene	128	12.191	12.191	(1.150)	533640	47.6320	47.6	
	111 1,2,3-Trichlorobenzene	180	12.360	12.356	(1.166)	170672	47.9630	48.0	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170508.s.b/b3077.d

Page 1

Date : 08-MAY-2017 10:55

Client ID: LCSD

Instrument: msv14.i

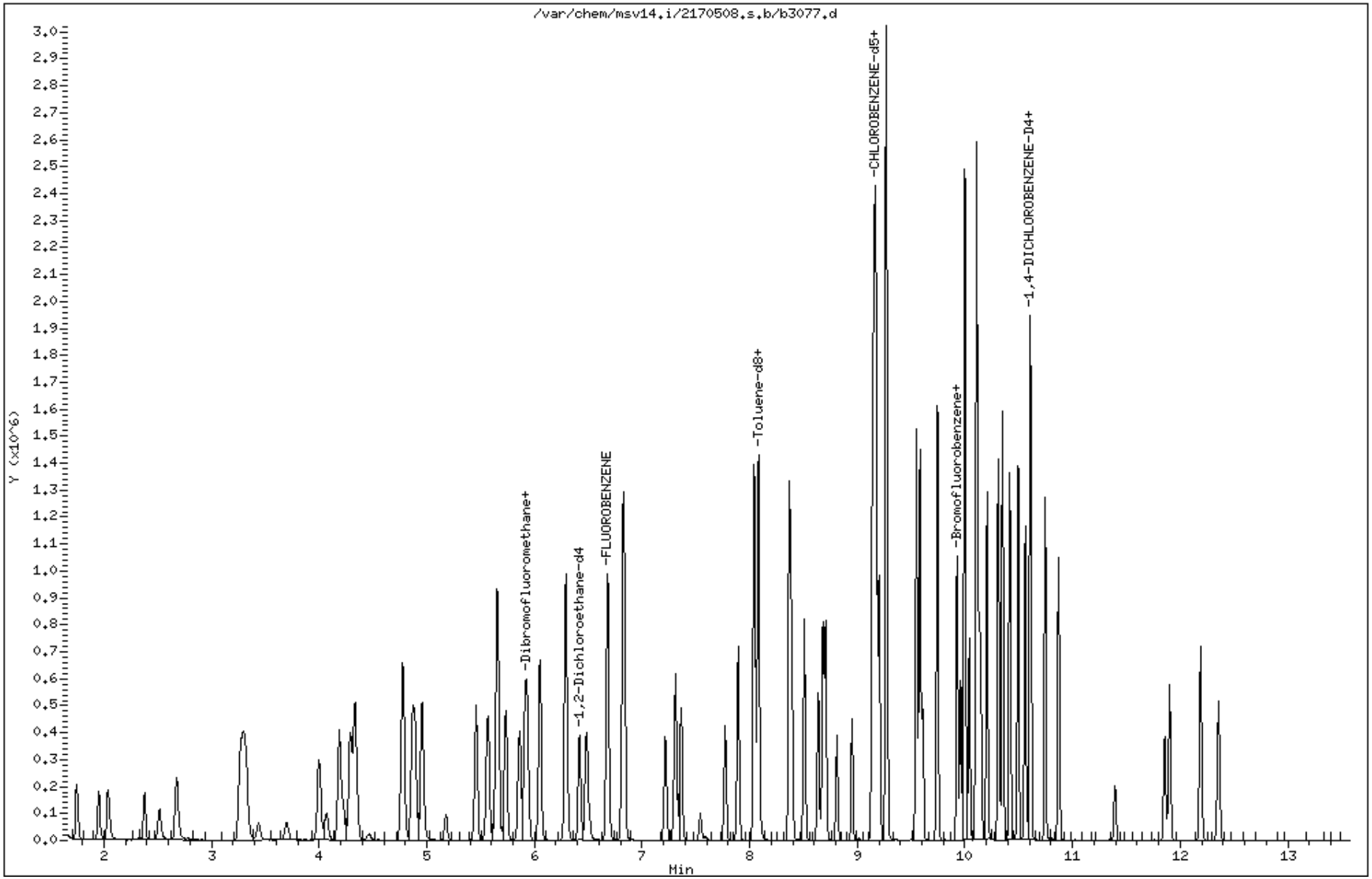
Sample Info: 1682372*LCSD

Purge Volume: 5.0

Operator: JMC2

Column phase: RTX-VMS-30M

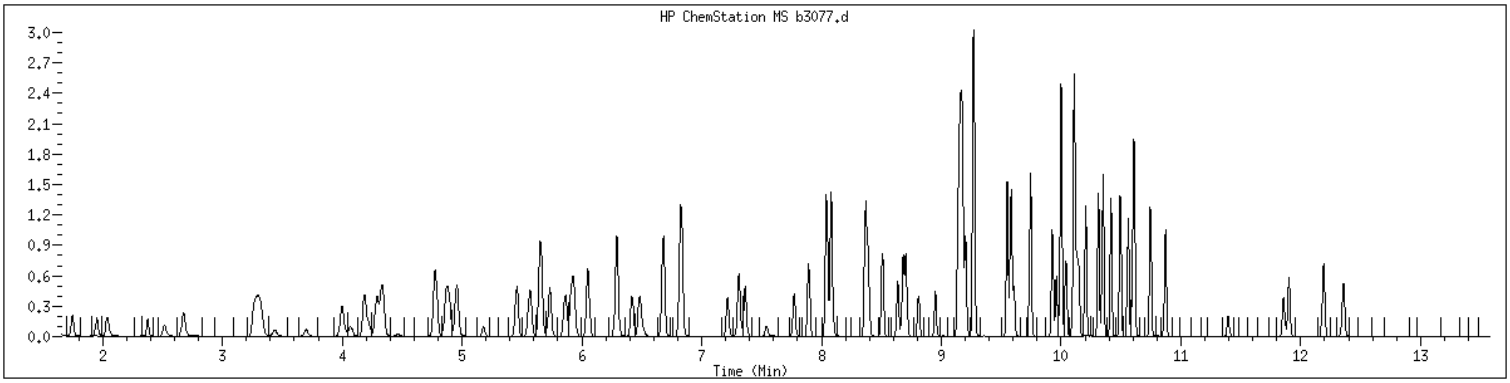
Column diameter: 0.25



Report Date: 05/08/2017 14:08

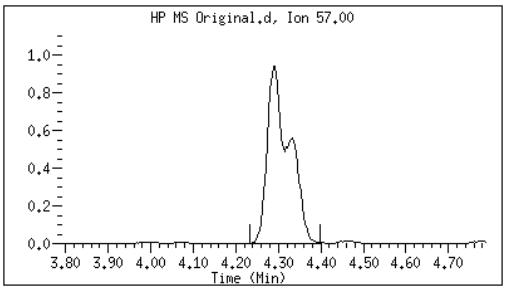
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1682372 SampleType : LCSD
Injection Date: 05/08/2017 10:55 Instrument : msv14.i
Operator : JMC2
Sample Info : 1682372*LCSD
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



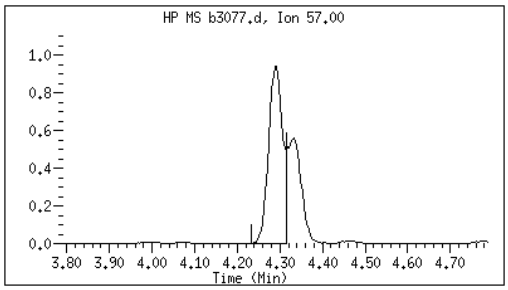
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jmc
Date: 05/08/2017 11:17



M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	MB1683252
Collect Date:	NA Time: NA	GCAL Sample ID:	1683252
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3167
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1541	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	MB1683252
Collect Date:	NA Time: NA	GCAL Sample ID:	1683252
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3167
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1541	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3167.d
Lab Smp Id: 1683252 Client Smp ID: MB
Inj Date : 10-MAY-2017 15:41
Operator : JCK Inst ID: msv14.i
Smp Info : 1683252*MB
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:54 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	190449	50.5964	50.6	6902
$ 43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	126577	50.6077	50.6	
* 47 FLUOROBENZENE	96	6.681	6.680	(1.000)	740962	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	692274	50.7334	50.7	
* 71 CHLOROBENZENE-d5	82	9.155	9.151	(1.000)	289228	50.0000		
$ 80 Bromofluorobenzene	174	9.931	9.927	(1.085)	172266	49.5248	49.5	
* 97 1,4-DICHLOROBENZENE-D4	152	10.602	10.601	(1.000)	208480	50.0000		

Data File: /var/chem/msv14.i/2170510p.s.b/b3167.d

Date : 10-MAY-2017 15:41

Client ID: MB

Instrument: msv14.i

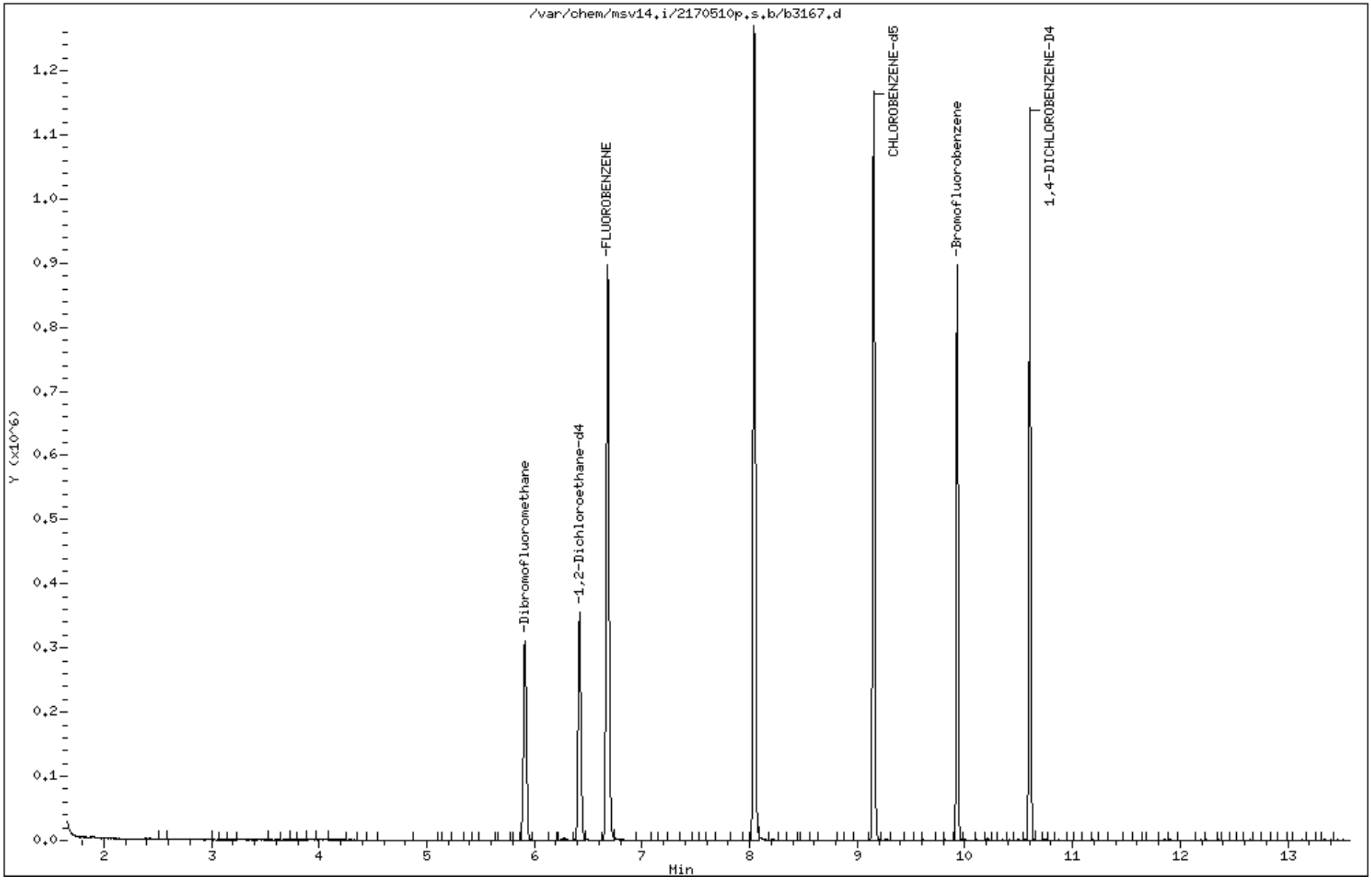
Sample Info: 1683252*MB

Purge Volume: 5.0

Operator: JCK

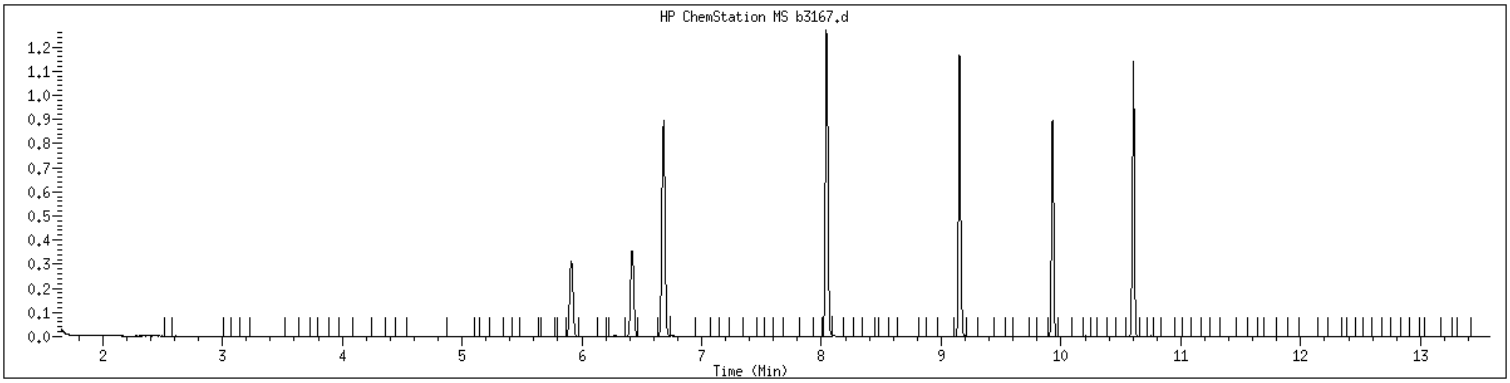
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1683252 SampleType : BLANK
Injection Date: 05/10/2017 15:41 Instrument : msv14.i
Operator : JCK
Sample Info : 1683252*MB
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	LCS1683253
Collect Date:	NA Time: NA	GCAL Sample ID:	1683253
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3163L
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1412	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	50.0		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	49.0		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	48.5		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	52.2		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	49.6		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	45.1		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	44.3		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	50.3		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	49.5		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	48.9		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	47.2		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	49.5		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	49.9		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	48.0		0.200	0.500	1.00
78-93-3	2-Butanone	49.8		0.200	0.500	5.00
591-78-6	2-Hexanone	50.8		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	50.8		0.200	0.500	5.00
67-64-1	Acetone	47.6		0.500	1.00	5.00
71-43-2	Benzene	50.6		0.200	0.500	1.00
74-97-5	Bromochloromethane	51.7		0.200	0.500	1.00
75-27-4	Bromodichloromethane	49.5		0.200	0.500	1.00
75-25-2	Bromoform	50.0		0.250	0.500	1.00
74-83-9	Bromomethane	51.9		0.500	1.00	1.00
75-15-0	Carbon disulfide	50.1		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	52.8		0.250	0.500	1.00
108-90-7	Chlorobenzene	49.0		0.200	0.500	1.00
75-00-3	Chloroethane	46.6		0.250	0.500	1.00
67-66-3	Chloroform	50.7		0.200	0.500	1.00
74-87-3	Chloromethane	46.6		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	52.8		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	52.3		0.200	0.500	1.00
110-82-7	Cyclohexane	49.8		0.500	1.00	2.00
124-48-1	Dibromochloromethane	49.9		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	49.6		0.200	0.500	1.00
100-41-4	Ethylbenzene	51.0		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	49.7		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	LCS1683253
Collect Date:	NA Time: NA	GCAL Sample ID:	1683253
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3163L
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1412	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	52.8		1.00	2.00	5.00
108-87-2	Methylcyclohexane	55.6		0.200	0.500	1.00
75-09-2	Methylene chloride	46.7		0.200	0.500	5.00
100-42-5	Styrene	49.3		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	53.5		0.200	0.500	1.00
127-18-4	Tetrachloroethene	50.0		0.200	0.500	1.00
108-88-3	Toluene	49.0		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	49.7		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	51.7		0.200	0.500	1.00
79-01-6	Trichloroethene	49.5		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	50.8		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	53.9		0.200	0.500	1.00
1330-20-7	Xylene (total)	152		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3163L.d
Lab Smp Id: 1683253 Client Smp ID: LCS
Inj Date : 10-MAY-2017 14:12
Operator : JCK Inst ID: msv14.i
Smp Info : 1683253*LCS
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:53 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	189577	49.6439	49.6	
2 Chloromethane ++	50	1.953	1.953	(0.292)	141305	46.5567	46.6	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	190312	50.0036	50.0	
5 Bromomethane	94	2.377	2.377	(0.356)	72575	51.9132	51.9	
6 Chloroethane	64	2.516	2.516	(0.377)	114679	46.6301	46.6	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	225069	50.7604	50.8	
11 1,1-Dichloroethene +	96	3.262	3.262	(0.488)	123245	49.6189	49.6	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	405031	50.0545	50.1	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	138183	53.9018	53.9	
13 Methyl Iodide	142	3.434	3.434	(0.514)	63740	43.2346	43.2	
9 Acrolein	56	3.696	3.696	(0.553)	59906	279.538	280	
17 Methylene Chloride	49	3.996	3.996	(0.598)	214451	46.7205	46.7	
12 Acetone	43	4.068	4.068	(0.609)	118241	47.5933	47.6	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	259160	49.7110	49.7	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	179178	52.8037	52.8	8590
	23 Hexane	57	4.289	4.289	(0.642)	242058	51.8784	51.9	9327(M2)
	21 MTBE	73	4.330	4.330	(0.648)	570879	53.4581	53.5	9669
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	22119	48.4313	48.4	9335
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	651928	56.0488	56.0	9858
	29 Chloroprene	53	4.866	4.866	(0.728)	293612	51.4081	51.4	9018
	24 1,1-Dichloroethane ++	63	4.888	4.888	(0.732)	377718	52.2084	52.2	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	400218	268.830	269	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	101321	42.5650	42.6	
M	48 Total 1,2-Dichloroethene	61				534268	102.539	103	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	275108	52.8276	52.8	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	306268	52.0903	52.1	
	38 Cyclohexane	56	5.653	5.653	(0.846)	328932	49.7786	49.8	9128
	34 Bromochloromethane	128	5.657	5.657	(0.847)	85628	51.7486	51.7	
	41 Chloroform +	83	5.732	5.732	(0.858)	351674	50.6760	50.7	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	257722	52.7692	52.8	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	201720	51.0934	51.1	6917
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	297697	50.0422	50.0	
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	252957	52.5575	52.6	
	32 2-Butanone	43	6.043	6.043	(0.905)	135524	49.8088	49.8	
	44 Benzene	78	6.290	6.290	(0.942)	767557	50.5887	50.6	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	130680	49.8133	49.8	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	278924	47.1803	47.2	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	44551	271.905	272	9496
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	777179	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	289692	55.6365	55.6	8398
	49 Trichloroethene	130	6.830	6.830	(1.022)	193446	49.4502	49.5	
	52 Dibromomethane	93	7.216	7.216	(1.080)	125661	49.3929	49.4	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	197865	49.4878	49.5	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	269837	49.5301	49.5	
	55 1,4- Dioxane	58	7.539	7.539	(1.129)	40892	1239.42	1240	9383
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	290879	49.7076	49.7	9648
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	316803	52.3055	52.3	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	735770	49.4427	49.4	
	61 Toluene +	91	8.082	8.082	(0.883)	777899	48.9579	49.0	
M	145 1-3 Dichloropropene total	100				619320	104.000	104	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	142300	50.0231	50.0	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	210682	50.8175	50.8	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	302517	51.6947	51.7	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	182729	48.5132	48.5	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	240425	52.7015	52.7	9695
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	204086	49.9248	49.9	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	339989	50.4188	50.4	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	181751	49.5302	49.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	169607	50.8269	50.8	
	140 1-Chlorohexane	91	9.139	9.139	(0.999)	201436	44.8692	44.9	8855
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	315425	50.0000		

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/L)	SIMILARITY
	72	Chlorobenzene ++	112	9.166	9.166	(1.002)	475542	49.0042	49.0	
	73	Ethylbenzene +	106	9.177	9.177	(1.003)	249503	50.9930	51.0	
	74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	181370	49.3041	49.3	
	75	p,m-Xylene	106	9.271	9.271	(1.013)	584957	103.179	103	
M	99	TOTAL XYLENE	106				862565	151.578	152	
	76	o-Xylene	106	9.552	9.552	(1.044)	277608	48.3998	48.4	
	77	Styrene	104	9.582	9.582	(1.047)	479555	49.3401	49.3	
	78	Bromoform ++	173	9.608	9.608	(1.050)	142502	50.0071	50.0	
	79	Isopropylbenzene	105	9.743	9.743	(1.065)	726317	49.7375	49.7	
	161	cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	84508	46.9039	46.9	9579
$	80	Bromofluorobenzene	174	9.927	9.927	(1.085)	192720	50.8035	50.8	
	84	Bromobenzene	77	9.998	9.998	(0.943)	359723	48.4971	48.5	
	86	n-Propylbenzene	91	10.002	10.002	(0.943)	815210	50.9171	50.9	
	81	1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	247124	49.0080	49.0	
	87	2-Chlorotoluene	91	10.107	10.107	(0.953)	572157	51.0020	51.0	
	88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	576282	53.5119	53.5	
	85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	320221	49.6080	49.6	
	83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	72724	48.8939	48.9	
	90	4-Chlorotoluene	91	10.208	10.208	(0.963)	520666	50.6815	50.7	
	91	tert-butylbenzene	91	10.313	10.313	(0.973)	314864	52.6002	52.6	
	93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	596109	53.0332	53.0	
	94	sec-Butylbenzene	105	10.418	10.418	(0.983)	660133	53.9408	53.9	
	92	p-Isopropyltoluene	119	10.496	10.496	(0.990)	549081	54.0622	54.1	
	96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	316100	49.8724	49.9	
*	97	1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	226707	50.0000		
	98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	312069	48.0303	48.0	
	100	n-Butylbenzene	91	10.748	10.748	(1.014)	489506	52.8754	52.9	
	102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	294595	48.8502	48.9	
	106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	41845	50.2608	50.3	
	109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	67051	52.7951	52.8	
	108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	155267	44.3385	44.3	
	110	Naphthalene	128	12.191	12.191	(1.150)	453347	42.5882	42.6	
	111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	154096	45.0805	45.1	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170510p.s.b/b3163L.d

Date : 10-MAY-2017 14:12

Client ID: LCS

Instrument: msv14.i

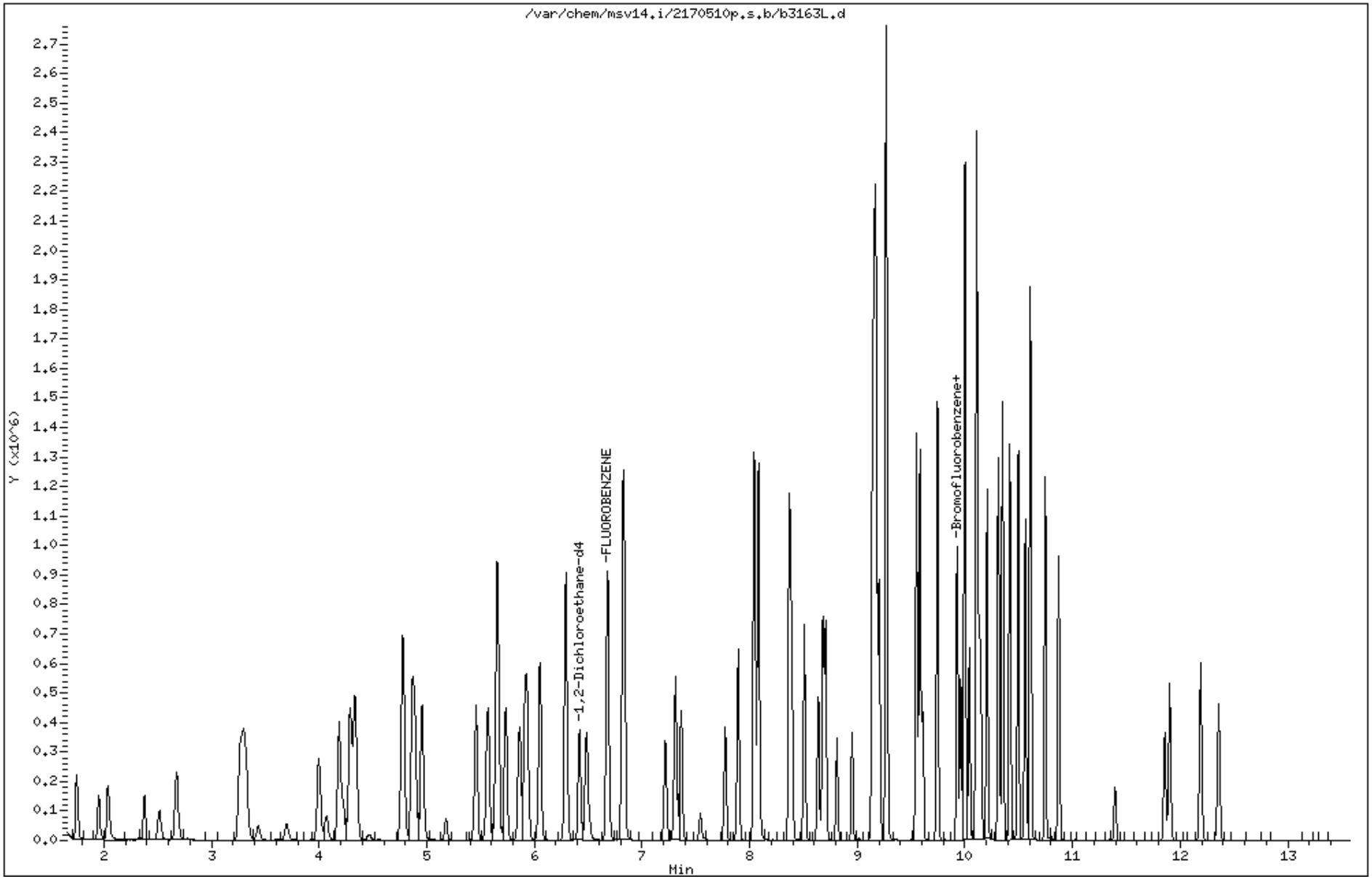
Sample Info: 1683253*LCS

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

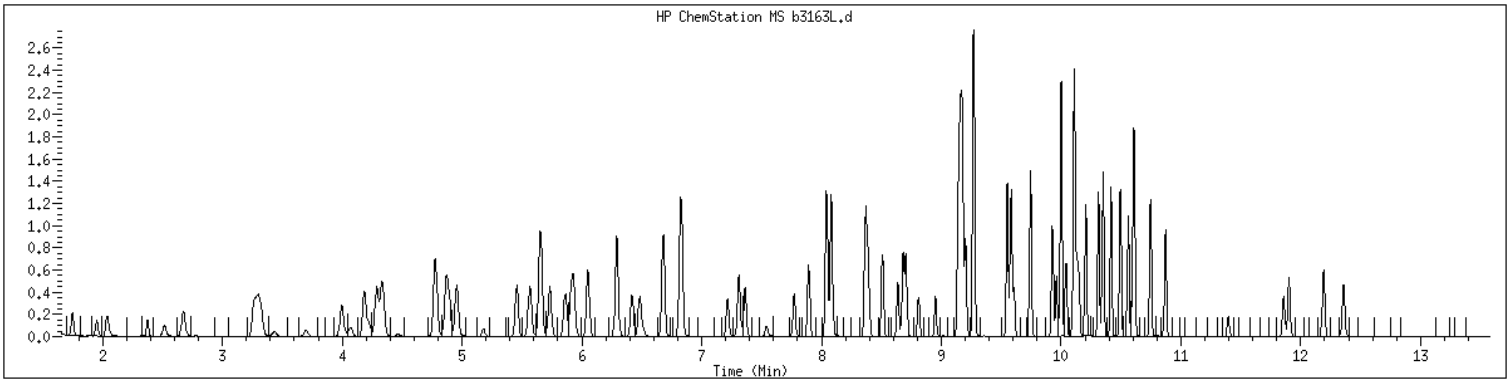
Column diameter: 0.25



Report Date: 05/10/2017 14:53

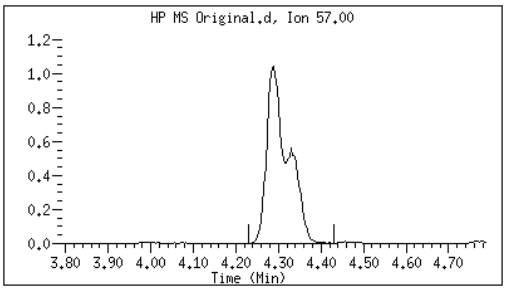
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1683253 SampleType : LCS
Injection Date: 05/10/2017 14:12 Instrument : msv14.i
Operator : JCK
Sample Info : 1683253*LCS
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



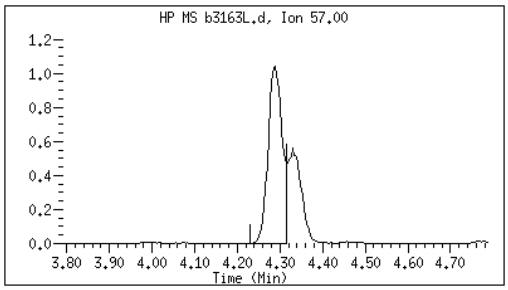
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/10/2017 14:29



M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803	Client Sample ID:	LCSD1683254
Collect Date:	NA Time: NA	GCAL Sample ID:	1683254
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3164
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1434	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	49.4		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	51.1		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	48.9		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	50.4		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	49.2		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	45.9		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	44.8		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	54.6		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	50.4		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	49.6		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	47.9		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	50.0		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	50.0		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	48.3		0.200	0.500	1.00
78-93-3	2-Butanone	54.9		0.200	0.500	5.00
591-78-6	2-Hexanone	55.5		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	54.5		0.200	0.500	5.00
67-64-1	Acetone	52.7		0.500	1.00	5.00
71-43-2	Benzene	50.4		0.200	0.500	1.00
74-97-5	Bromochloromethane	50.2		0.200	0.500	1.00
75-27-4	Bromodichloromethane	49.7		0.200	0.500	1.00
75-25-2	Bromoform	51.5		0.250	0.500	1.00
74-83-9	Bromomethane	52.9		0.500	1.00	1.00
75-15-0	Carbon disulfide	49.1		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	51.4		0.250	0.500	1.00
108-90-7	Chlorobenzene	49.0		0.200	0.500	1.00
75-00-3	Chloroethane	46.7		0.250	0.500	1.00
67-66-3	Chloroform	49.3		0.200	0.500	1.00
74-87-3	Chloromethane	45.6		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	50.4		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	52.8		0.200	0.500	1.00
110-82-7	Cyclohexane	47.4		0.500	1.00	2.00
124-48-1	Dibromochloromethane	50.2		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	46.1		0.200	0.500	1.00
100-41-4	Ethylbenzene	50.2		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	48.7		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217050803			Client Sample ID:	LCSD1683254
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1683254
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170510p/b3164
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17	Time:	1434	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	54.2		1.00	2.00	5.00
108-87-2	Methylcyclohexane	54.1		0.200	0.500	1.00
75-09-2	Methylene chloride	46.8		0.200	0.500	5.00
100-42-5	Styrene	48.9		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	54.2		0.200	0.500	1.00
127-18-4	Tetrachloroethene	48.8		0.200	0.500	1.00
108-88-3	Toluene	48.1		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	49.4		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	52.5		0.200	0.500	1.00
79-01-6	Trichloroethene	49.5		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	51.5		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	52.1		0.200	0.500	1.00
1330-20-7	Xylene (total)	148		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3164.d
Lab Smp Id: 1683254 Client Smp ID: LCSD
Inj Date : 10-MAY-2017 14:34
Operator : JCK Inst ID: msv14.i
Smp Info : 1683254*LCSD
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:53 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.743	1.747	(0.261)	175344	46.0543	46.1	
2 Chloromethane ++	50	1.953	1.953	(0.292)	138000	45.6040	45.6	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	182155	48.0037	48.0	
5 Bromomethane	94	2.377	2.377	(0.356)	73714	52.8864	52.9	
6 Chloroethane	64	2.512	2.516	(0.376)	114619	46.7453	46.7	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	227843	51.5400	51.5	
11 1,1-Dichloroethene +	96	3.265	3.262	(0.489)	121838	49.1994	49.2	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	396137	49.1005	49.1	
10 1,1,2Trichlotrifluoroethane	101	3.322	3.318	(0.497)	133288	52.1481	52.1	
13 Methyl Iodide	142	3.438	3.434	(0.515)	67963	45.6628	45.7	
9 Acrolein	56	3.697	3.696	(0.553)	63328	296.391	296	
17 Methylene Chloride	49	3.993	3.996	(0.598)	214390	46.8472	46.8	
12 Acetone	43	4.071	4.068	(0.609)	130522	52.6939	52.7	
19 trans-1,2-Dichloroethene	61	4.184	4.188	(0.626)	256577	49.3630	49.4	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	183245	54.1640	54.2	8610
	23 Hexane	57	4.289	4.289	(0.642)	240493	51.6985	51.7	9300(M2)
	21 MTBE	73	4.334	4.330	(0.649)	576994	54.1926	54.2	9768
	26 tert-Butyl Alcohol	59	4.461	4.465	(0.668)	24922	54.7322	54.7	9532
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	639792	55.1701	55.2	9855
	29 Chloroprene	53	4.866	4.866	(0.728)	281226	49.4170	49.4	9098
	24 1,1-Dichloroethane ++	63	4.889	4.888	(0.732)	363615	50.4096	50.4	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	414137	279.013	279	
	25 Vinyl Acetate	43	5.181	5.177	(0.776)	95571	40.2697	40.3	
M	48 Total 1,2-Dichloroethene	61				518296	99.7700	99.8	
	30 cis-1,2-Dichloroethene	61	5.455	5.458	(0.817)	261719	50.4071	50.4	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	292420	49.8840	49.9	
	38 Cyclohexane	56	5.653	5.653	(0.846)	312138	47.4137	47.4	9106
	34 Bromochloromethane	128	5.657	5.657	(0.847)	82873	50.2336	50.2	
	41 Chloroform +	83	5.736	5.732	(0.859)	341391	49.3416	49.3	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	250106	51.3632	51.4	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	197976	50.2953	50.3	6929
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	293094	49.4160	49.4	
	42 1,1-Dichloropropene	75	6.051	6.054	(0.906)	245803	51.2240	51.2	
	32 2-Butanone	43	6.047	6.043	(0.905)	148874	54.8792	54.9	
	44 Benzene	78	6.291	6.290	(0.942)	762290	50.3920	50.4	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	130435	49.8689	49.9	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	282131	47.8658	47.9	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	50083	306.584	307	9549
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	774858	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.827	(1.021)	280873	54.1043	54.1	8895
	49 Trichloroethene	130	6.834	6.830	(1.023)	192904	49.4594	49.5	
	52 Dibromomethane	93	7.216	7.216	(1.080)	125555	49.4990	49.5	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	199421	50.0264	50.0	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	269742	49.6610	49.7	
	55 1,4- Dioxane	58	7.543	7.539	(1.129)	44392	1349.53	1350	9498
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	294218	50.4288	50.4	9661
	58 cis-1,3-Dichloropropene	75	7.891	7.895	(1.181)	318579	52.7563	52.8	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	734282	49.0703	49.1	
	61 Toluene +	91	8.082	8.082	(0.883)	769199	48.1431	48.1	
M	145 1-3 Dichloropropene total	100				624902	105.258	105	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	139633	48.8146	48.8	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	227164	54.4905	54.5	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	306323	52.5019	52.5	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	185348	48.9368	48.9	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	244450	53.2879	53.3	9698
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	206424	50.2180	50.2	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	342901	50.5699	50.6	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	185828	50.3617	50.4	
	68 2-Hexanone	43	8.952	8.952	(0.978)	186159	55.4791	55.5	
	140 1-Chlorohexane	91	9.140	9.139	(0.999)	197004	43.6581	43.7	8843
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	317176	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	72 Chlorobenzene ++	112	9.166	9.166	(1.002)	477686	48.9534	49.0	
	73 Ethylbenzene +	106	9.177	9.177	(1.003)	247232	50.2499	50.2	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	181632	49.1028	49.1	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	571728	100.301	100	
M	99 TOTAL XYLENE	106				846627	147.974	148	
	76 o-Xylene	106	9.548	9.552	(1.043)	274899	47.6728	47.7	
	77 Styrene	104	9.582	9.582	(1.047)	478235	48.9375	48.9	
	78 Bromoform ++	173	9.608	9.608	(1.050)	147673	51.5356	51.5	
	79 Isopropylbenzene	105	9.743	9.743	(1.065)	714508	48.6708	48.7	
	161 cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	91486	51.7234	51.7	9525
$	80 Bromofluorobenzene	174	9.927	9.927	(1.085)	192251	50.4001	50.4	
	84 Bromobenzene	77	9.998	9.998	(0.943)	360491	49.5066	49.5	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	795113	50.5876	50.6	
	81 1,1,2,2-Tetrachloroethane++	83	10.043	10.039	(0.947)	252817	51.0717	51.1	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	565361	51.3357	51.3	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	563569	53.3070	53.3	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	336970	53.1759	53.2	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	75701	51.8442	51.8	
	90 4-Chlorotoluene	91	10.208	10.208	(0.963)	511474	50.7149	50.7	
	91 tert-butylbenzene	91	10.313	10.313	(0.973)	307689	52.3598	52.4	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	581859	52.7305	52.7	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	642668	53.4927	53.5	
	92 p-Isopropyltoluene	119	10.497	10.496	(0.990)	537154	53.8738	53.9	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	310960	49.9761	50.0	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.601	(1.000)	222558	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	308355	48.3434	48.3	
	100 n-Butylbenzene	91	10.748	10.748	(1.014)	476541	52.4346	52.4	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	293594	49.5918	49.6	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	44599	54.5674	54.6	
	109 Hexachlorobutadiene	225	11.861	11.857	(1.119)	66722	53.5154	53.5	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	154230	44.7934	44.8	
	110 Naphthalene	128	12.191	12.191	(1.150)	485496	45.8499	45.8	
	111 1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	154466	45.9115	45.9	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170510p.s.b/b3164.d

Date : 10-MAY-2017 14:34

Client ID: LCSD

Instrument: msv14.i

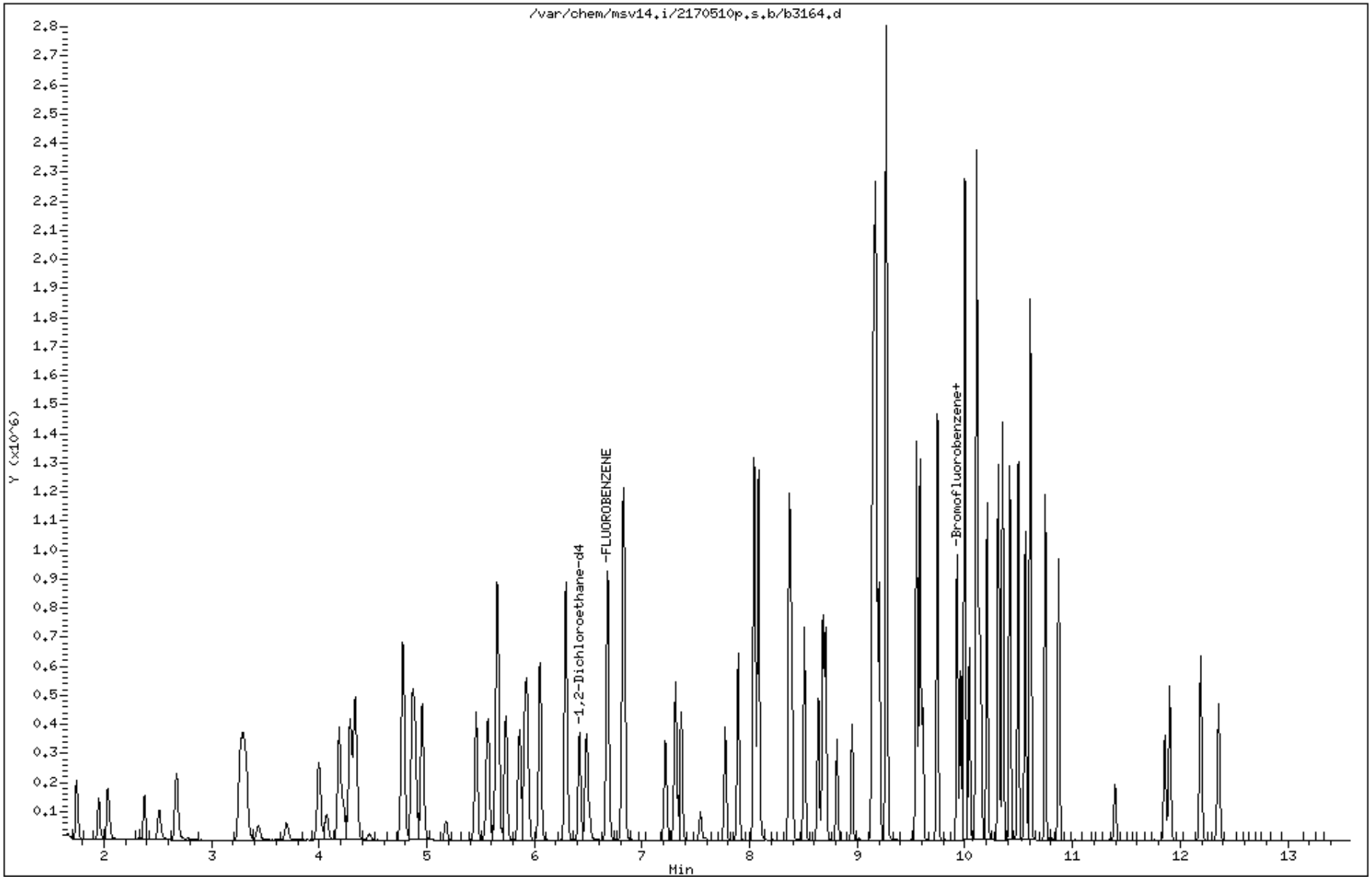
Sample Info: 1683254*LCSD

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

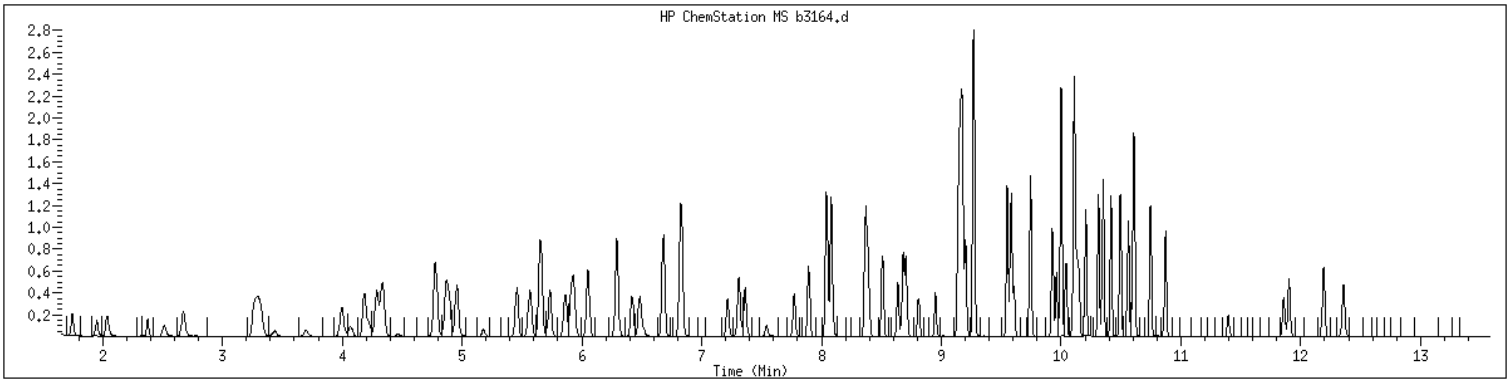
Column diameter: 0.25



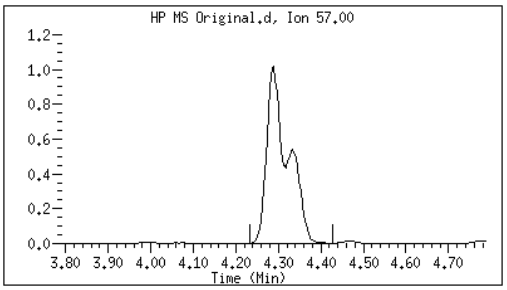
Report Date: 05/10/2017 14:53

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1683254 SampleType : LCSD
Injection Date: 05/10/2017 14:34 Instrument : msv14.i
Operator : JCK
Sample Info : 1683254*LCSD
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1

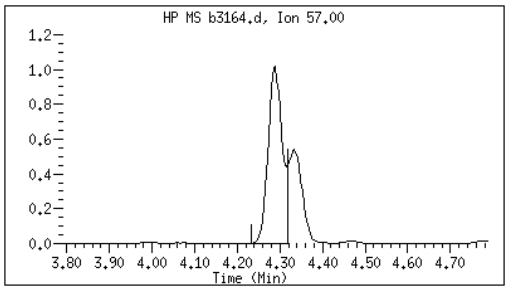


Original		Final
23 Hexane	CAS#: 110-54-3	Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/10/2017 14:52



M2 - Target system integrated incorrectly

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 217050803 Analytical Method: EPA 8260B

	Client Sample ID	GCALSample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1 .	OMS-28-7	21705080301	101		98		102		101		0
2 .	MW-12	21705080310	101		97		102		101		0
3 .	OMS-28-GW32-12-S	21705080311	102		98		102		102		0
4 .	OMS-28-GW02-19-S	21705080312	104		101		104		100		0
5 .	OMS-28-GW03-34-S	21705080313	102		98		102		102		0
6 .	OMS-28-GW20-12-S	21705080314	103		97		103		100		0
7 .	OMS-28-GW18-18-S	21705080315	103		99		102		102		0
8 .	MW-9	21705080316	103		98		101		102		0
9 .	OMS-28-5	21705080317	103		97		105		102		0
10 .	OMS-28-5-a	21705080318	102		98		103		102		0
11 .	OMS-28-4	21705080319	103		99		103		102		0
12 .	OMS-28-7-c	21705080302	103		97		105		101		0
13 .	OMS-28-2	21705080320	101		97		103		102		0
14 .	MB1682370	1682370	102		98		103		100		0
15 .	LCS1682371	1682371	101		100		101		98		0
16 .	LCSD1682372	1682372	100		99		99		98		0
17 .	MB1683252	1683252	101		99		101		101		0
18 .	LCS1683253	1683253	100		102		102		99		0
19 .	LCSD1683254	1683254	100		101		101		98		0
20 .	MW-8	21705080303	102		98		104		103		0
21 .	MW-5	21705080304	101		97		102		102		0
22 .	MW-6	21705080305	103		97		104		102		0
23 .	OMS-28-3	21705080306	102		98		102		102		0
24 .	OMS-28-3-MS	21705080307	102		98		102		97		0
25 .	OMS-28-3-MSD	21705080308	100		100		101		99		0
26 .	OMS-28-1	21705080309	102		97		102		101		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 217050803 Parent Sample ID: OMS-28-3

Analytical Method: EPA 8260B Analytical Batch: 610130

GCAL QC ID: 21705080307

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*MS RESULT*	*MS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	52.5	105		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	52.7	105		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	50	100		80 - 119
1,1-Dichloroethane	ug/L	50	0	53.4	107		77 - 125
1,1-Dichloroethene	ug/L	50	0	50.6	101		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	43.5	87		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	41.9	84		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	51.8	104		62 - 128
1,2-Dibromoethane	ug/L	50	0	50.6	101		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	49.7	99		80 - 119
1,2-Dichloroethane	ug/L	50	0	50.1	100		73 - 128
1,2-Dichloropropane	ug/L	50	0	52.4	105		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	50.3	101		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	48.9	98		79 - 118
2-Butanone	ug/L	50	0	40.6	81		56 - 143
2-Hexanone	ug/L	50	0	45.2	90		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	52.9	106		67 - 130
Acetone	ug/L	50	0	25.9	52		39 - 160
Benzene	ug/L	50	0	52.9	106		79 - 120
Bromochloromethane	ug/L	50	0	53.3	107		78 - 123
Bromodichloromethane	ug/L	50	0	52.4	105		79 - 125
Bromoform	ug/L	50	0	51.5	103		66 - 130
Bromomethane	ug/L	50	0	54.4	109		53 - 141
Carbon disulfide	ug/L	50	0	50.7	101		64 - 133
Carbon tetrachloride	ug/L	50	0	53.9	108		72 - 136
Chlorobenzene	ug/L	50	0	50.9	102		82 - 118
Chloroethane	ug/L	50	0	47.7	95		60 - 138
Chloroform	ug/L	50	0	52.6	105		79 - 124
Chloromethane	ug/L	50	0	50.6	101		50 - 139
Cyclohexane	ug/L	50	0	50.4	101		71 - 130
Dibromochloromethane	ug/L	50	0	50.3	101		74 - 126
Dichlorodifluoromethane	ug/L	50	0	50.4	101		32 - 152
Ethylbenzene	ug/L	50	0	51.9	104		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	50.2	100		72 - 131
Methyl Acetate	ug/L	50	0	52.5	105		56 - 136
Methylcyclohexane	ug/L	50	0	57	114		72 - 132
Methylene chloride	ug/L	50	0	47.6	95		74 - 124
Styrene	ug/L	50	0	48.9	98		78 - 123
Tetrachloroethene	ug/L	50	0	49.8	100		74 - 129

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 217050803 Parent Sample ID: OMS-28-3

Analytical Method: EPA 8260B Analytical Batch: 610130

Toluene	ug/L	50	0	50.1	100		80 - 121
Trichloroethene	ug/L	50	9.6	60.9	103		79 - 123
Trichlorofluoromethane	ug/L	50	0	52.6	105		65 - 141
Trichlorotrifluoroethane	ug/L	50	0	53.9	108		70 - 136
Xylene (total)	ug/L	150	0	152	101		79 - 121
cis-1,2-Dichloroethene	ug/L	50	1.26	54.4	106		78 - 123
cis-1,3-Dichloropropene	ug/L	50	0	54.2	108		75 - 124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	53.6	107		71 - 124
trans-1,2-Dichloroethene	ug/L	50	0	50.6	101		75 - 124
trans-1,3-Dichloropropene	ug/L	50	0	54.2	108		73 - 127

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 217050803 Parent Sample ID: OMS-28-3

Analytical Method: EPA 8260B Analytical Batch: 610130

GCAL QC ID: 21705080308

ANALYTE	*UNITS*	*SPIKE ADDED*	*MSD RESULT*	*MSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/L	50	51.3	103		2		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	51.8	104		2		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	49.8	100		.4		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	53.6	107		.4		77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	52.5	105		4		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	44.5	89		2		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	44.4	89		6		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	52.8	106		2		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	50.3	101		.6		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	50	100		.6		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	48.4	97		3		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	50.5	101		4		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	49.8	100		1		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	48.6	97		.6		79 - 118	0 - 20
2-Butanone	ug/L	50	40.3	81		.7		56 - 143	0 - 20
2-Hexanone	ug/L	50	45	90		.4		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	53	106		.2		67 - 130	0 - 20
Acetone	ug/L	50	26.9	54		4		39 - 160	0 - 20
Benzene	ug/L	50	51.6	103		2		79 - 120	0 - 20
Bromochloromethane	ug/L	50	52.4	105		2		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	50.8	102		3		79 - 125	0 - 20
Bromoform	ug/L	50	51.7	103		.4		66 - 130	0 - 20
Bromomethane	ug/L	50	56.1	112		3		53 - 141	0 - 20
Carbon disulfide	ug/L	50	51.5	103		2		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	53.2	106		1		72 - 136	0 - 20
Chlorobenzene	ug/L	50	50.1	100		2		82 - 118	0 - 20
Chloroethane	ug/L	50	47.9	96		.4		60 - 138	0 - 20
Chloroform	ug/L	50	51	102		3		79 - 124	0 - 20
Chloromethane	ug/L	50	48	96		5		50 - 139	0 - 20
Cyclohexane	ug/L	50	49	98		3		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	50.8	102		1		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	47.8	96		5		32 - 152	0 - 20
Ethylbenzene	ug/L	50	51.8	104		.2		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	49.2	98		2		72 - 131	0 - 20
Methyl Acetate	ug/L	50	53.7	107		2		56 - 136	0 - 20
Methylcyclohexane	ug/L	50	54	108		5		72 - 132	0 - 20
Methylene chloride	ug/L	50	48.8	98		2		74 - 124	0 - 20
Styrene	ug/L	50	48.6	97		.6		78 - 123	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 217050803 Parent Sample ID: OMS-28-3

Analytical Method: EPA 8260B Analytical Batch: 610130

Tetrachloroethene	ug/L	50	49.4	99		.8		74 - 129	0 - 20
Toluene	ug/L	50	49.5	99		1		80 - 121	0 - 20
Trichloroethene	ug/L	50	58.4	98		4		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	52.2	104		.8		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	54.3	109		.7		70 - 136	0 - 20
Xylene (total)	ug/L	150	151	101		.7		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	55.4	108		2		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	53.1	106		2		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	55.5	111		3		71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	51	102		.8		75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	53	106		2		73 - 127	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217050803

Analytical Method: EPA 8260B

Analytical Batch: 610130

GCAL QC ID: 1683253

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	50	100		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	49	98		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	48.5	97		80 - 119
1,1-Dichloroethane	ug/L	50	0	52.2	104		77 - 125
1,1-Dichloroethene	ug/L	50	0	49.6	99		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	45.1	90		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	44.3	89		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	50.3	101		62 - 128
1,2-Dibromoethane	ug/L	50	0	49.5	99		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	48.9	98		80 - 119
1,2-Dichloroethane	ug/L	50	0	47.2	94		73 - 128
1,2-Dichloropropane	ug/L	50	0	49.5	99		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	49.9	100		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	48	96		79 - 118
2-Butanone	ug/L	50	0	49.8	100		56 - 143
2-Hexanone	ug/L	50	0	50.8	102		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	50.8	102		67 - 130
Acetone	ug/L	50	0	47.6	95		39 - 160
Benzene	ug/L	50	0	50.6	101		79 - 120
Bromochloromethane	ug/L	50	0	51.7	103		78 - 123
Bromodichloromethane	ug/L	50	0	49.5	99		79 - 125
Bromoform	ug/L	50	0	50	100		66 - 130
Bromomethane	ug/L	50	0	51.9	104		53 - 141
Carbon disulfide	ug/L	50	0	50.1	100		64 - 133
Carbon tetrachloride	ug/L	50	0	52.8	106		72 - 136
Chlorobenzene	ug/L	50	0	49	98		82 - 118
Chloroethane	ug/L	50	0	46.6	93		60 - 138
Chloroform	ug/L	50	0	50.7	101		79 - 124
Chloromethane	ug/L	50	0	46.6	93		50 - 139
Cyclohexane	ug/L	50	0	49.8	100		71 - 130
Dibromochloromethane	ug/L	50	0	49.9	100		74 - 126
Dichlorodifluoromethane	ug/L	50	0	49.6	99		32 - 152
Ethylbenzene	ug/L	50	0	51	102		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	49.7	99		72 - 131
Methyl Acetate	ug/L	50	0	52.8	106		56 - 136
Methylcyclohexane	ug/L	50	0	55.6	111		72 - 132
Methylene chloride	ug/L	50	0	46.7	93		74 - 124
Styrene	ug/L	50	0	49.3	99		78 - 123
Tetrachloroethene	ug/L	50	0	50	100		74 - 129

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217050803

Analytical Method: EPA 8260B Analytical Batch: 610130

Toluene	ug/L	50	0	49	98		80 - 121
Trichloroethene	ug/L	50	0	49.5	99		79 - 123
Trichlorofluoromethane	ug/L	50	0	50.8	102		65 - 141
Trichlorotrifluoroethane	ug/L	50	0	53.9	108		70 - 136
Xylene (total)	ug/L	150	0	152	101		79 - 121
cis-1,2-Dichloroethene	ug/L	50	0	52.8	106		78 - 123
cis-1,3-Dichloropropene	ug/L	50	0	52.3	105		75 - 124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	53.5	107		71 - 124
trans-1,2-Dichloroethene	ug/L	50	0	49.7	99		75 - 124
trans-1,3-Dichloropropene	ug/L	50	0	51.7	103		73 - 127

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217050803

Analytical Method: EPA 8260B

Analytical Batch: 610130

GCAL QC ID: 1683254

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
1,1,1-Trichloroethane	ug/L	50	49.4	99		1		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	51.1	102		4		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	48.9	98		.8		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	50.4	101		4		77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	49.2	98		.8		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	45.9	92		2		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	44.8	90		1		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	54.6	109		8		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	50.4	101		2		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	49.6	99		1		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	47.9	96		1		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	50	100		1		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	50	100		.2		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	48.3	97		.6		79 - 118	0 - 20
2-Butanone	ug/L	50	54.9	110		10		56 - 143	0 - 20
2-Hexanone	ug/L	50	55.5	111		9		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	54.5	109		7		67 - 130	0 - 20
Acetone	ug/L	50	52.7	105		10		39 - 160	0 - 20
Benzene	ug/L	50	50.4	101		.4		79 - 120	0 - 20
Bromochloromethane	ug/L	50	50.2	100		3		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	49.7	99		.4		79 - 125	0 - 20
Bromoform	ug/L	50	51.5	103		3		66 - 130	0 - 20
Bromomethane	ug/L	50	52.9	106		2		53 - 141	0 - 20
Carbon disulfide	ug/L	50	49.1	98		2		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	51.4	103		3		72 - 136	0 - 20
Chlorobenzene	ug/L	50	49	98		0		82 - 118	0 - 20
Chloroethane	ug/L	50	46.7	93		.2		60 - 138	0 - 20
Chloroform	ug/L	50	49.3	99		3		79 - 124	0 - 20
Chloromethane	ug/L	50	45.6	91		2		50 - 139	0 - 20
Cyclohexane	ug/L	50	47.4	95		5		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	50.2	100		.6		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	46.1	92		7		32 - 152	0 - 20
Ethylbenzene	ug/L	50	50.2	100		2		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	48.7	97		2		72 - 131	0 - 20
Methyl Acetate	ug/L	50	54.2	108		3		56 - 136	0 - 20
Methylcyclohexane	ug/L	50	54.1	108		3		72 - 132	0 - 20
Methylene chloride	ug/L	50	46.8	94		.2		74 - 124	0 - 20
Styrene	ug/L	50	48.9	98		.8		78 - 123	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217050803

Analytical Method: EPA 8260B Analytical Batch: 610130

Tetrachloroethene	ug/L	50	48.8	98		2		74 - 129	0 - 20
Toluene	ug/L	50	48.1	96		2		80 - 121	0 - 20
Trichloroethene	ug/L	50	49.5	99		0		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	51.5	103		1		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	52.1	104		3		70 - 136	0 - 20
Xylene (total)	ug/L	150	148	99		3		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	50.4	101		5		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	52.8	106		1		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	54.2	108		1		71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	49.4	99		.6		75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	52.5	105		2		73 - 127	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217050803

Analytical Method: EPA 8260B Analytical Batch: 609939

GCAL QC ID: 1682371

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	52.2	104		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	51.8	104		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	50	100		80 - 119
1,1-Dichloroethane	ug/L	50	0	53.8	108		77 - 125
1,1-Dichloroethene	ug/L	50	0	53.4	107		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	49.3	99		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	47.7	95		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	52.2	104		62 - 128
1,2-Dibromoethane	ug/L	50	0	51.5	103		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	52.2	104		80 - 119
1,2-Dichloroethane	ug/L	50	0	50.4	101		73 - 128
1,2-Dichloropropane	ug/L	50	0	52	104		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	53.1	106		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	51	102		79 - 118
2-Butanone	ug/L	50	0	52.4	105		56 - 143
2-Hexanone	ug/L	50	0	52.8	106		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	52.7	105		67 - 130
Acetone	ug/L	50	0	52	104		39 - 160
Benzene	ug/L	50	0	53.2	106		79 - 120
Bromochloromethane	ug/L	50	0	52.7	105		78 - 123
Bromodichloromethane	ug/L	50	0	52.9	106		79 - 125
Bromoform	ug/L	50	0	51.9	104		66 - 130
Bromomethane	ug/L	50	0	56.5	113		53 - 141
Carbon disulfide	ug/L	50	0	53.3	107		64 - 133
Carbon tetrachloride	ug/L	50	0	53.4	107		72 - 136
Chlorobenzene	ug/L	50	0	51.5	103		82 - 118
Chloroethane	ug/L	50	0	51.5	103		60 - 138
Chloroform	ug/L	50	0	52.8	106		79 - 124
Chloromethane	ug/L	50	0	58.7	117		50 - 139
Cyclohexane	ug/L	50	0	47.1	94		71 - 130
Dibromochloromethane	ug/L	50	0	52.3	105		74 - 126
Dichlorodifluoromethane	ug/L	50	0	47.7	95		32 - 152
Ethylbenzene	ug/L	50	0	53.3	107		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	51.5	103		72 - 131
Methyl Acetate	ug/L	50	0	50.5	101		56 - 136
Methylcyclohexane	ug/L	50	0	54.2	108		72 - 132
Methylene chloride	ug/L	50	0	51.2	102		74 - 124
Styrene	ug/L	50	0	51.1	102		78 - 123
Tetrachloroethene	ug/L	50	0	51.3	103		74 - 129

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217050803

Analytical Method: EPA 8260B Analytical Batch: 609939

Toluene	ug/L	50	0	51.1	102		80	-	121
Trichloroethene	ug/L	50	0	52.2	104		79	-	123
Trichlorofluoromethane	ug/L	50	0	53.6	107		65	-	141
Trichlorotrifluoroethane	ug/L	50	0	53.1	106		70	-	136
Xylene (total)	ug/L	150	0	157	105		79	-	121
cis-1,2-Dichloroethene	ug/L	50	0	54.7	109		78	-	123
cis-1,3-Dichloropropene	ug/L	50	0	55.3	111		75	-	124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	49.4	99		71	-	124
trans-1,2-Dichloroethene	ug/L	50	0	50.3	101		75	-	124
trans-1,3-Dichloropropene	ug/L	50	0	55.2	110		73	-	127

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217050803

Analytical Method: EPA 8260B

Analytical Batch: 609939

GCAL QC ID: 1682372

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/L	50	51.2	102		2		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	52.4	105		1		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	50.2	100		.4		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	52.9	106		2		77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	52.6	105		2		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	48	96		3		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	46.1	92		3		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	55.7	111		6		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	52.3	105		2		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	51.3	103		2		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	50.3	101		.2		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	52.1	104		.2		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	51.6	103		3		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	49.8	100		2		79 - 118	0 - 20
2-Butanone	ug/L	50	57	114		8		56 - 143	0 - 20
2-Hexanone	ug/L	50	57.8	116		9		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	56.5	113		7		67 - 130	0 - 20
Acetone	ug/L	50	54.2	108		4		39 - 160	0 - 20
Benzene	ug/L	50	52.8	106		.8		79 - 120	0 - 20
Bromochloromethane	ug/L	50	51.3	103		3		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	52.3	105		1		79 - 125	0 - 20
Bromoform	ug/L	50	52.9	106		2		66 - 130	0 - 20
Bromomethane	ug/L	50	57.6	115		2		53 - 141	0 - 20
Carbon disulfide	ug/L	50	52.8	106		.9		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	52.3	105		2		72 - 136	0 - 20
Chlorobenzene	ug/L	50	50.9	102		1		82 - 118	0 - 20
Chloroethane	ug/L	50	47.8	96		7		60 - 138	0 - 20
Chloroform	ug/L	50	52.1	104		1		79 - 124	0 - 20
Chloromethane	ug/L	50	55.5	111		6		50 - 139	0 - 20
Cyclohexane	ug/L	50	45.9	92		3		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	51.8	104		1		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	46.1	92		3		32 - 152	0 - 20
Ethylbenzene	ug/L	50	52	104		2		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	50.3	101		2		72 - 131	0 - 20
Methyl Acetate	ug/L	50	53.8	108		6		56 - 136	0 - 20
Methylcyclohexane	ug/L	50	50.9	102		6		72 - 132	0 - 20
Methylene chloride	ug/L	50	49.8	100		3		74 - 124	0 - 20
Styrene	ug/L	50	50.7	101		.8		78 - 123	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217050803

Analytical Method: EPA 8260B Analytical Batch: 609939

Tetrachloroethene	ug/L	50	50.4	101		2		74 - 129	0 - 20
Toluene	ug/L	50	50.8	102		.6		80 - 121	0 - 20
Trichloroethene	ug/L	50	51.4	103		2		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	50.1	100		7		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	52.6	105		.9		70 - 136	0 - 20
Xylene (total)	ug/L	150	154	103		2		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	54.3	109		.7		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	55.3	111		0		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	51.4	103		4		71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	49.4	99		2		75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	55	110		.4		73 - 127	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	217050803	Method Blank ID:	1682370
Matrix:	Water	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170508/b3080
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1217	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1682371	1682371	2170508/b3076L	05/08/17	1033
2 .	LCSD1682372	1682372	2170508/b3077	05/08/17	1055
3 .	OMS-28-7-c	21705080302	2170508/b3092	05/08/17	1643
4 .	MW-8	21705080303	2170508/b3093	05/08/17	1705
5 .	MW-5	21705080304	2170508/b3094	05/08/17	1728
6 .	MW-6	21705080305	2170508/b3095	05/08/17	1750
7 .	OMS-28-7	21705080301	2170508/b3096	05/08/17	1812
8 .	OMS-28-1	21705080309	2170508/b3097	05/08/17	1834
9 .	MW-12	21705080310	2170508/b3098	05/08/17	1857

FORM IV VOA

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	217050803	Method Blank ID:	1683252
Matrix:	Water	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170510p/b3167
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1541	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1683253	1683253	2170510p/b3163L	05/10/17	1412
2 .	LCSD1683254	1683254	2170510p/b3164	05/10/17	1434
3 .	OMS-28-3	21705080306	2170510p/b3168	05/10/17	1603
4 .	OMS-28-GW02-19-S	21705080312	2170510p/b3169	05/10/17	1625
5 .	OMS-28-GW03-34-S	21705080313	2170510p/b3170	05/10/17	1648
6 .	OMS-28-GW20-12-S	21705080314	2170510p/b3171	05/10/17	1710
7 .	OMS-28-GW18-18-S	21705080315	2170510p/b3172	05/10/17	1732
8 .	MW-9	21705080316	2170510p/b3173	05/10/17	1754
9 .	OMS-28-4	21705080319	2170510p/b3174	05/10/17	1816
10 .	OMS-28-2	21705080320	2170510p/b3175	05/10/17	1839
11 .	OMS-28-GW32-12-S	21705080311	2170510p/b3176	05/10/17	1903
12 .	OMS-28-5	21705080317	2170510p/b3177	05/10/17	1928
13 .	OMS-28-5-a	21705080318	2170510p/b3178	05/10/17	1953
14 .	OMS-28-3-MS	21705080307	2170510p/b3179ms	05/10/17	2015
15 .	OMS-28-3-MSD	21705080308	2170510p/b3180msd	05/10/17	2038

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217050803	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170505/b2888d
Analyst:	LBH	Analytical Batch:	609837
Analysis Date:	05/05/17 Time: 0759	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	18.62	(	)	
75	30.0 - 60.0% of mass 95	50.63	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.36	(	)	
173	Less than 2.0% of mass 174	.73	(1.01	)	1
174	50.0 - 120.0% of mass 95	72.52	(	)	
175	5.0 - 9.0% of mass 174	5.14	(7.09	)	1
176	95.0 - 101.0% of mass 174	70.83	(97.68	)	1
177	5.0 - 9.0% of mass 176	4.48	(6.33	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V14STD005	1204	2170505/b2892d	05/05/17	0959
2 .	V14STD020	1206	2170505/b2894d	05/05/17	1043
3 .	V14STD050	1207	2170505/b2895d	05/05/17	1105
4 .	V14STD100	1208	2170505/b2896d	05/05/17	1127
5 .	V14STD200	1209	2170505/b2897d	05/05/17	1150
6 .	V14STD001	1203	2170505/b2900d	05/05/17	1310
7 .	V14STD010	1205	2170505/b2901d	05/05/17	1332
8 .	V14ICV050	1600	2170505/b2902d	05/05/17	1415

FORM V VOA

Data File: /var/chem/msv14.i/2170505.s.b/b2888d.d

Page 1

Date : 05-MAY-2017 07:59

Client ID: V14BFB

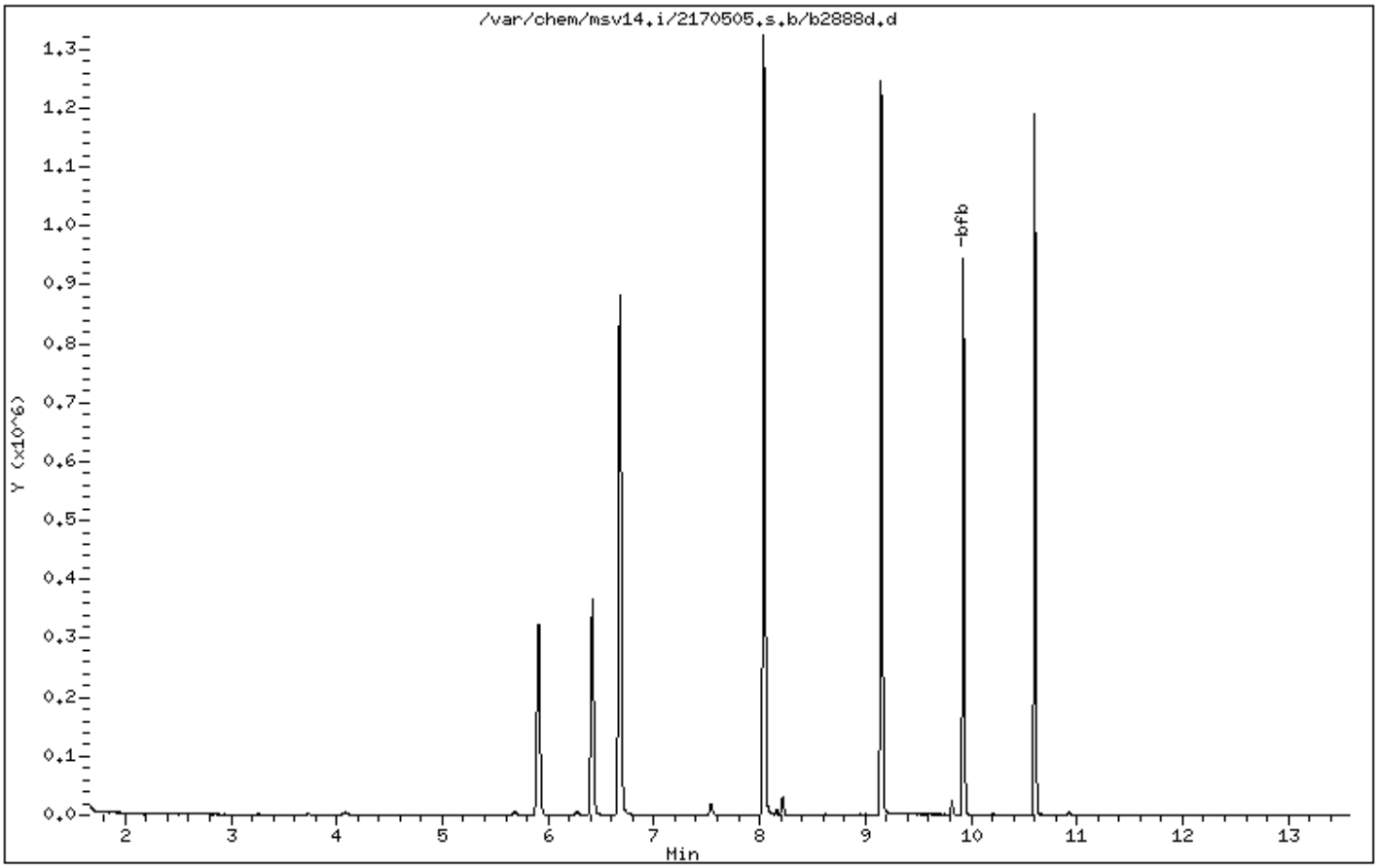
Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170505.s.b/b2888d.d

Date : 05-MAY-2017 07:59

Client ID: V14BFB

Instrument: msv14.i

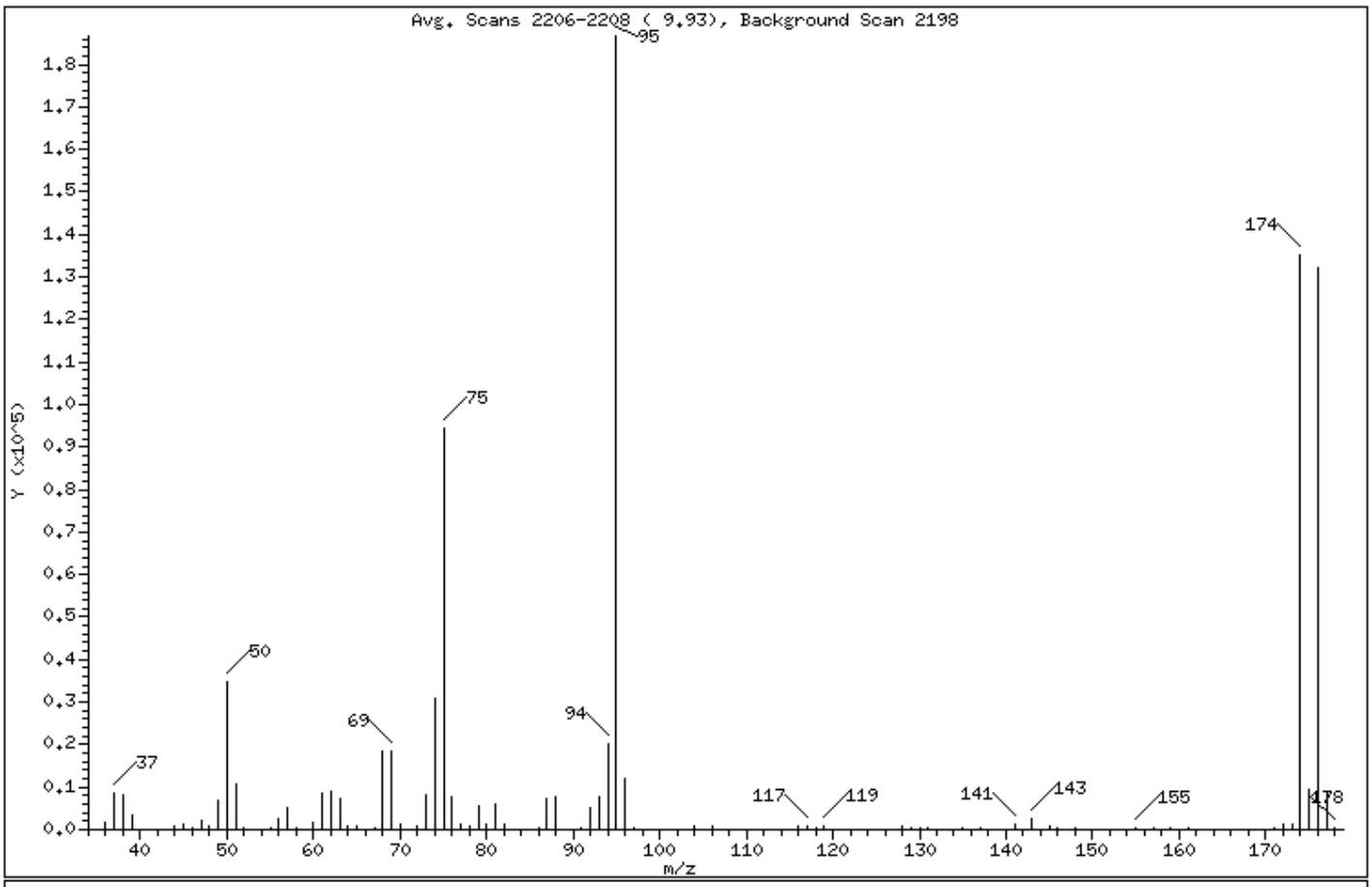
Sample Info: 1000*V14BFB

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.62
75	30.00 - 60.00% of mass 95	50.63
96	5.00 - 9.00% of mass 95	6.36
173	Less than 2.00% of mass 174	0.73 (1.01)
174	50.00 - 120.00% of mass 95	72.52
175	5.00 - 9.00% of mass 174	5.14 (7.09)
176	95.00 - 101.00% of mass 174	70.84 (97.68)
177	5.00 - 9.00% of mass 176	4.48 (6.33)

Date : 05-MAY-2017 07:59

Client ID: V14BFB Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: LBH

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b2888d.d
Spectrum: Avg. Scans 2206-2208 (9.93), Background Scan 2198
Location of Maximum: 95.00
Number of points: 97

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	60	65.00	862	95.00	186688	143.00	2363
36.00	1618	66.00	62	96.00	11882	144.00	185
37.00	8390	67.00	497	97.00	407	145.00	883
38.00	8214	68.00	18288	104.00	709	146.00	241
39.00	3288	69.00	18600	105.00	155	148.00	410
40.00	142	70.00	1328	106.00	685	149.00	55
44.00	801	72.00	922	107.00	120	150.00	132
45.00	1487	73.00	7984	110.00	50	153.00	51
46.00	289	74.00	30824	111.00	106	154.00	73
47.00	2273	75.00	94536	113.00	175	155.00	548
48.00	1043	76.00	7868	115.00	112	156.00	70
49.00	6838	77.00	1213	116.00	751	157.00	365
50.00	34760	78.00	822	117.00	1049	159.00	227
51.00	10909	79.00	5679	118.00	618	161.00	219
52.00	511	80.00	1436	119.00	1029	171.00	326
53.00	57	81.00	5800	124.00	56	172.00	1247
55.00	452	82.00	1076	128.00	677	173.00	1372
56.00	2629	83.00	146	129.00	300	174.00	135360
57.00	5060	86.00	248	130.00	619	175.00	9606
58.00	282	87.00	7320	131.00	296	176.00	132224
60.00	1893	88.00	7790	135.00	309	177.00	8369
61.00	8719	91.00	531	137.00	322	178.00	328
62.00	8884	92.00	5157	140.00	57		
63.00	7370	93.00	7928	141.00	1474		
64.00	1051	94.00	20192	142.00	126		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217050803	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170508/b3074
Analyst:	JMC2	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 0904	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	18.09	(	)	
75	30.0 - 60.0% of mass 95	49.51	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.42	(	)	
173	Less than 2.0% of mass 174	.93	(1.27	)	1
174	50.0 - 120.0% of mass 95	73.38	(	)	
175	5.0 - 9.0% of mass 174	5.51	(7.52	)	1
176	95.0 - 101.0% of mass 174	71.15	(96.97	)	1
177	5.0 - 9.0% of mass 176	4.58	(6.45	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V14STD050	1400	2170508/b3076	05/08/17	1033
2 .	LCS1682371	1682371	2170508/b3076L	05/08/17	1033
3 .	LCSD1682372	1682372	2170508/b3077	05/08/17	1055
4 .	MB1682370	1682370	2170508/b3080	05/08/17	1217
5 .	OMS-28-7-c	21705080302	2170508/b3092	05/08/17	1643
6 .	MW-8	21705080303	2170508/b3093	05/08/17	1705
7 .	MW-5	21705080304	2170508/b3094	05/08/17	1728
8 .	MW-6	21705080305	2170508/b3095	05/08/17	1750
9 .	OMS-28-7	21705080301	2170508/b3096	05/08/17	1812
10 .	OMS-28-1	21705080309	2170508/b3097	05/08/17	1834
11 .	MW-12	21705080310	2170508/b3098	05/08/17	1857
12 .	V14STD050	1440	2170508/b3101	05/08/17	2003

Data File: /var/chem/msv14.i/2170508.s.b/b3074.d

Page 1

Date : 08-MAY-2017 09:04

Client ID: V14BFB

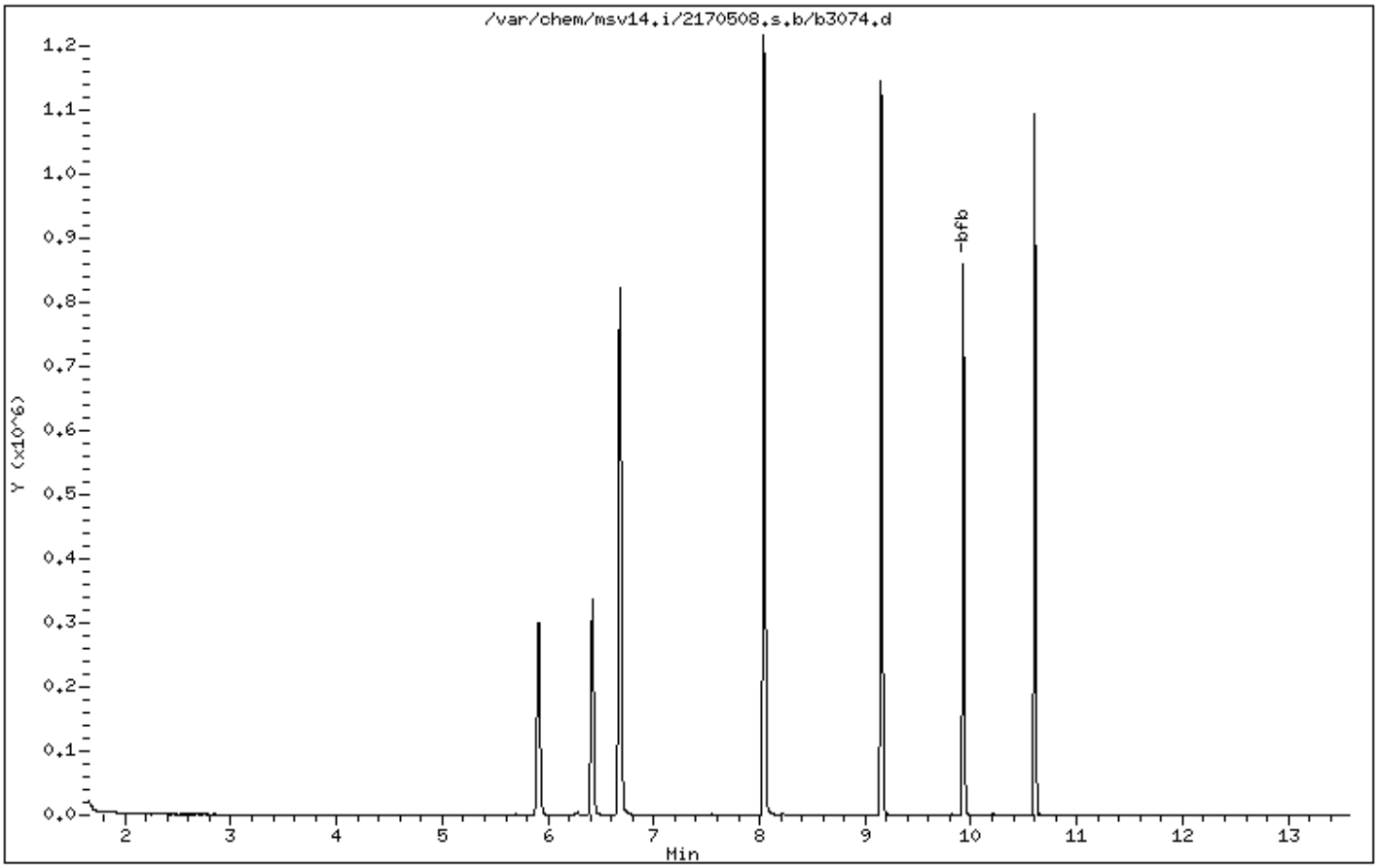
Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170508.s.b/b3074.d

Date : 08-MAY-2017 09:04

Client ID: V14BFB

Instrument: msv14.i

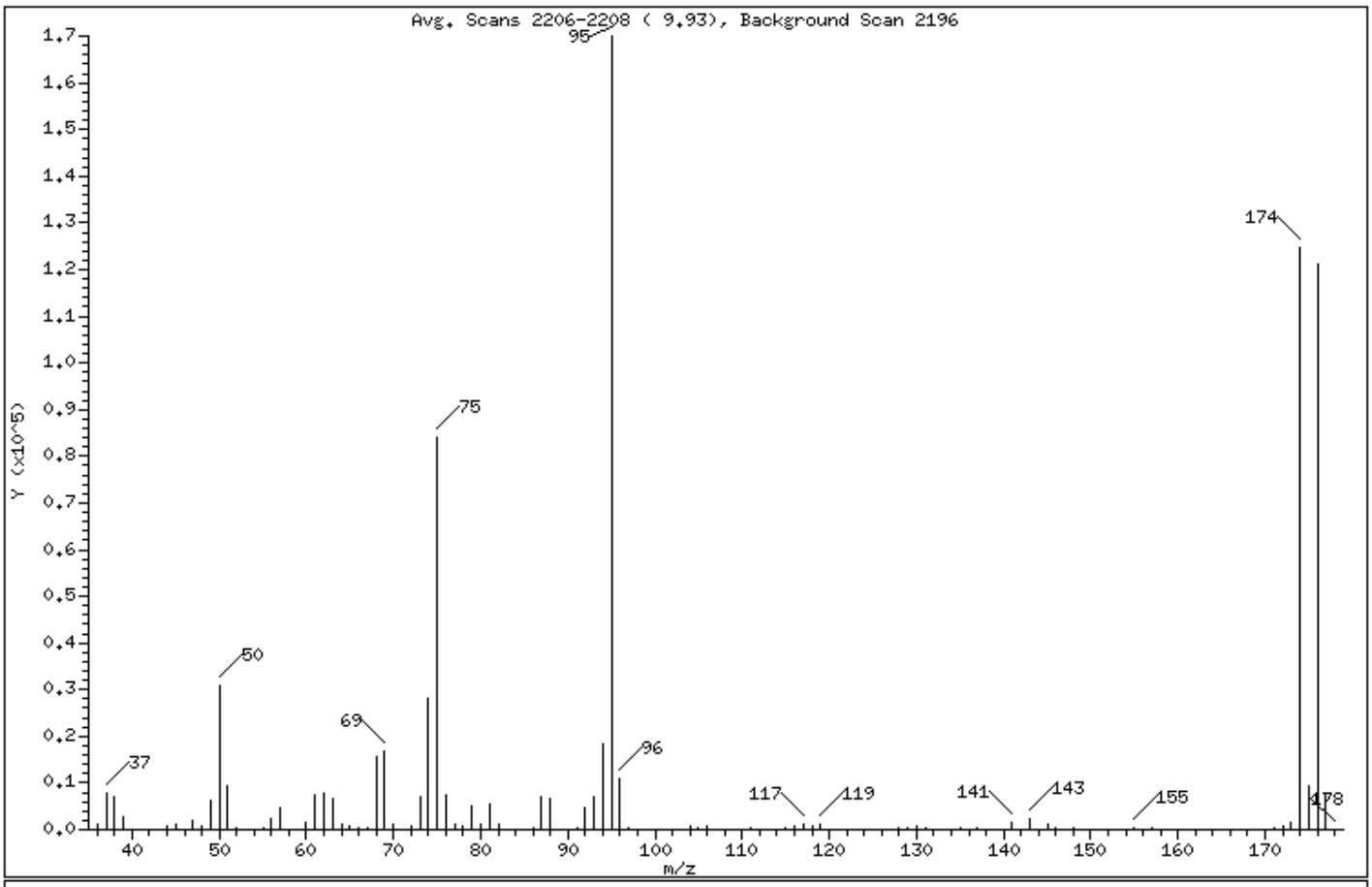
Sample Info: 1000*V14BFB

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.09
75	30.00 - 60.00% of mass 95	49.51
96	5.00 - 9.00% of mass 95	6.42
173	Less than 2.00% of mass 174	0.93 (1.27)
174	50.00 - 120.00% of mass 95	73.38
175	5.00 - 9.00% of mass 174	5.52 (7.52)
176	95.00 - 101.00% of mass 174	71.15 (96.97)
177	5.00 - 9.00% of mass 176	4.59 (6.45)

Date : 08-MAY-2017 09:04

Client ID: V14BFB Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: JMC2

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b3074.d
Spectrum: Avg. Scans 2206-2208 (9.93), Background Scan 2196
Location of Maximum: 95.00
Number of points: 93

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1362	64.00	1250	93.00	6994	142.00	137
37.00	7914	65.00	592	94.00	18552	143.00	2392
38.00	6949	66.00	202	95.00	170048	144.00	57
39.00	2803	67.00	426	96.00	10928	145.00	1004
40.00	122	68.00	15828	97.00	309	146.00	306
43.00	51	69.00	16784	104.00	620	148.00	330
44.00	834	70.00	1352	105.00	201	149.00	119
45.00	1260	72.00	951	106.00	655	150.00	166
46.00	74	73.00	6948	107.00	106	153.00	71
47.00	2090	74.00	28056	111.00	203	155.00	484
48.00	956	75.00	84208	112.00	62	157.00	387
49.00	6383	76.00	7262	113.00	52	159.00	162
50.00	30760	77.00	1041	115.00	202	161.00	134
51.00	9366	78.00	643	116.00	638	171.00	420
52.00	484	79.00	5262	117.00	1256	172.00	808
54.00	87	80.00	1338	118.00	688	173.00	1586
55.00	436	81.00	5315	119.00	1094	174.00	124808
56.00	2383	82.00	990	128.00	546	175.00	9386
57.00	4516	83.00	138	129.00	254	176.00	121024
58.00	63	86.00	243	130.00	641	177.00	7808
60.00	1468	87.00	6895	131.00	298	178.00	174
61.00	7569	88.00	6578	135.00	278		
62.00	7790	91.00	565	137.00	350		
63.00	6643	92.00	4684	141.00	1467		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217050803	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170510p/b3162
Analyst:	JCK	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1334	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	17.69	(	)	
75	30.0 - 60.0% of mass 95	49.4	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.46	(	)	
173	Less than 2.0% of mass 174	.79	(1.09	)	1
174	50.0 - 120.0% of mass 95	73	(	)	
175	5.0 - 9.0% of mass 174	5.24	(7.19	)	1
176	95.0 - 101.0% of mass 174	71.79	(98.35	)	1
177	5.0 - 9.0% of mass 176	4.55	(6.35	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V14STD050	1400	2170510p/b3163	05/10/17	1412
2 .	LCS1683253	1683253	2170510p/b3163L	05/10/17	1412
3 .	LCSD1683254	1683254	2170510p/b3164	05/10/17	1434
4 .	MB1683252	1683252	2170510p/b3167	05/10/17	1541
5 .	OMS-28-3	21705080306	2170510p/b3168	05/10/17	1603
6 .	OMS-28-GW02-19-S	21705080312	2170510p/b3169	05/10/17	1625
7 .	OMS-28-GW03-34-S	21705080313	2170510p/b3170	05/10/17	1648
8 .	OMS-28-GW20-12-S	21705080314	2170510p/b3171	05/10/17	1710
9 .	OMS-28-GW18-18-S	21705080315	2170510p/b3172	05/10/17	1732
10 .	MW-9	21705080316	2170510p/b3173	05/10/17	1754
11 .	OMS-28-4	21705080319	2170510p/b3174	05/10/17	1816
12 .	OMS-28-2	21705080320	2170510p/b3175	05/10/17	1839
13 .	OMS-28-GW32-12-S	21705080311	2170510p/b3176	05/10/17	1903
14 .	OMS-28-5	21705080317	2170510p/b3177	05/10/17	1928
15 .	OMS-28-5-a	21705080318	2170510p/b3178	05/10/17	1953
16 .	OMS-28-3-MS	21705080307	170510p/b3179m	05/10/17	2015
17 .	OMS-28-3-MSD	21705080308	170510p/b3180ms	05/10/17	2038
18 .	V14STD050	1440	2170510p/b3181	05/10/17	2100

FORM V VOA

Data File: /var/chem/msv14.i/2170510p.s.b/b3162.d

Date : 10-MAY-2017 13:34

Client ID: V14BFB

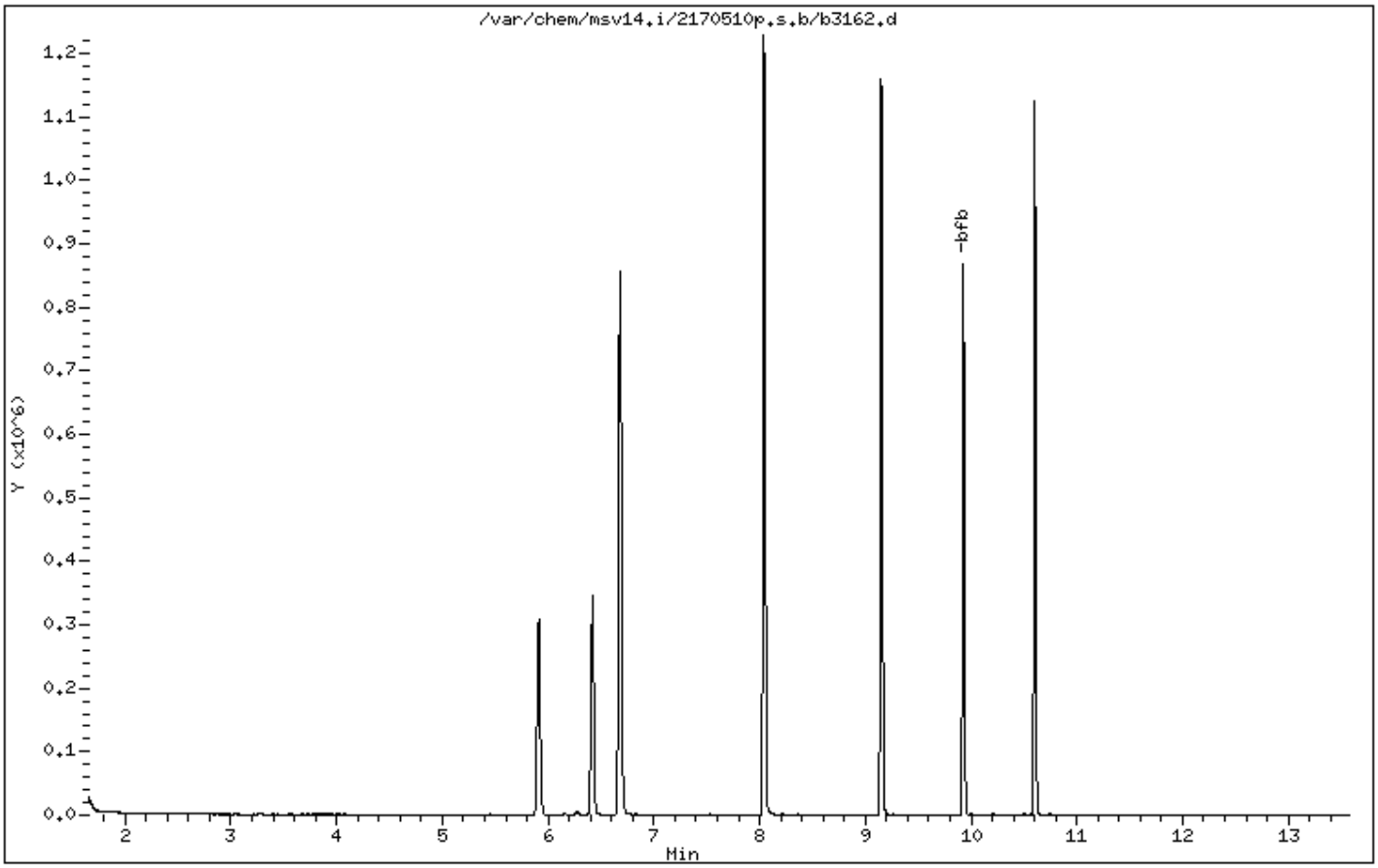
Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170510p.s.b/b3162.d

Date : 10-MAY-2017 13:34

Client ID: V14BFB

Instrument: msv14.i

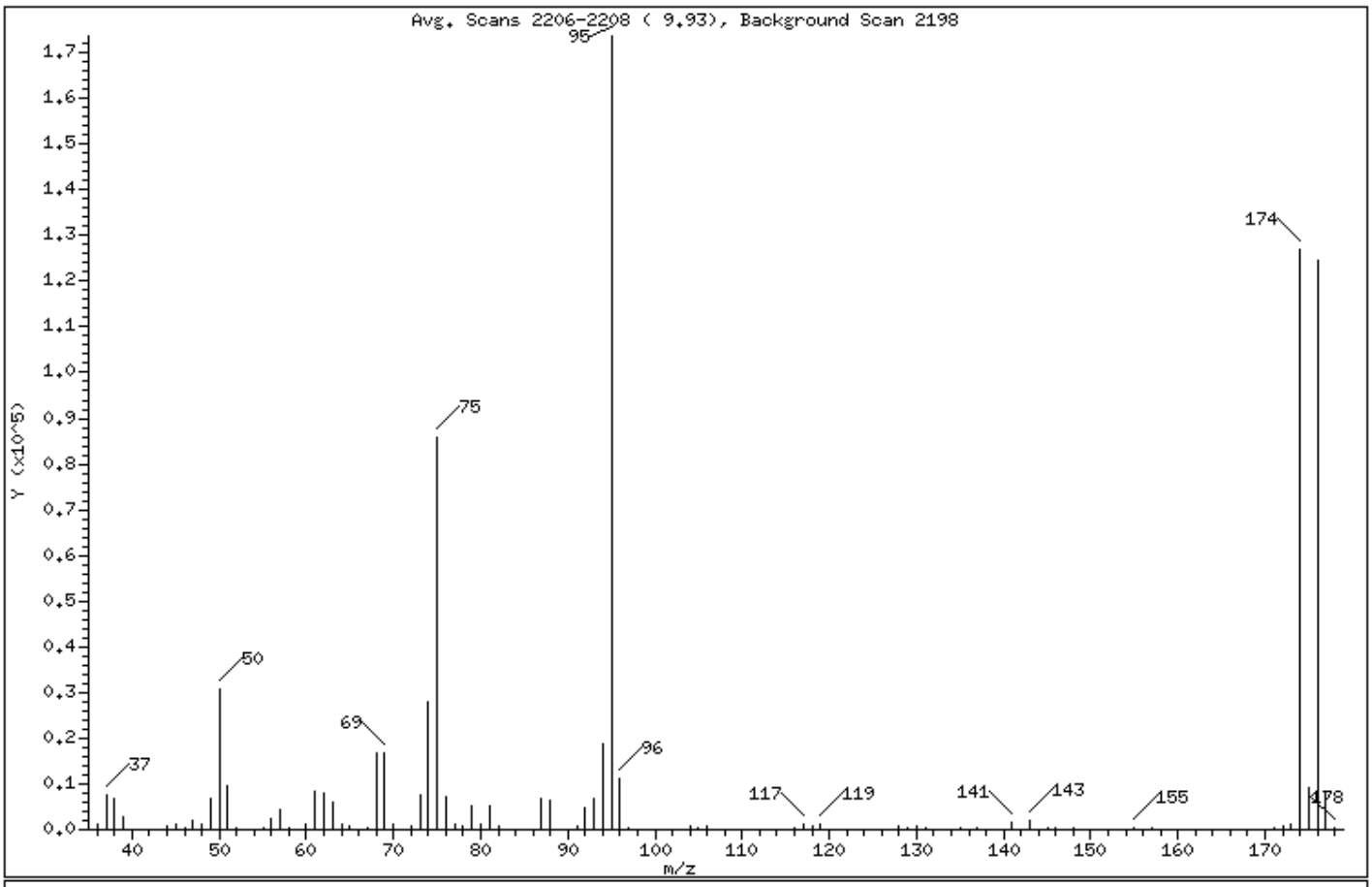
Sample Info: 1000*V14BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.69
75	30.00 - 60.00% of mass 95	49.40
96	5.00 - 9.00% of mass 95	6.46
173	Less than 2.00% of mass 174	0.80 (1.09)
174	50.00 - 120.00% of mass 95	73.00
175	5.00 - 9.00% of mass 174	5.25 (7.19)
176	95.00 - 101.00% of mass 174	71.80 (98.35)
177	5.00 - 9.00% of mass 176	4.56 (6.35)

Date : 10-MAY-2017 13:34

Client ID: V14BFB Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: JCK

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b3162.d
Spectrum: Avg. Scans 2206-2208 (9.93), Background Scan 2198
Location of Maximum: 95.00
Number of points: 92

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1233	65.00	762	95.00	173632	145.00	574
37.00	7515	66.00	58	96.00	11213	146.00	284
38.00	6966	67.00	356	97.00	282	147.00	50
39.00	2810	68.00	16776	104.00	760	148.00	285
40.00	161	69.00	16840	105.00	244	149.00	85
44.00	901	70.00	1262	106.00	612	150.00	136
45.00	1332	72.00	966	107.00	54	153.00	52
46.00	228	73.00	7778	111.00	53	155.00	335
47.00	2172	74.00	27776	113.00	57	156.00	65
48.00	1010	75.00	85768	115.00	178	157.00	330
49.00	6980	76.00	7070	116.00	539	159.00	67
50.00	30720	77.00	1199	117.00	1004	161.00	184
51.00	9494	78.00	880	118.00	635	171.00	267
52.00	417	79.00	4993	119.00	1047	172.00	828
53.00	64	80.00	1334	126.00	50	173.00	1386
55.00	377	81.00	5192	128.00	635	174.00	126752
56.00	2435	82.00	946	129.00	269	175.00	9109
57.00	4432	86.00	155	130.00	615	176.00	124664
58.00	244	87.00	6896	131.00	209	177.00	7921
60.00	1334	88.00	6581	135.00	331	178.00	239
61.00	8305	91.00	707	137.00	331		
62.00	8011	92.00	4699	141.00	1520		
63.00	6059	93.00	6860	142.00	169		
64.00	999	94.00	18936	143.00	1924		

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217050803		Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17	Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17	Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.635	0.520	0.570	0.561	0.601	0.583	0.612	0.583			6.460	A
1,1,1-Trichloroethane			0.388	0.316	0.388	0.387	0.405	0.393	0.403	0.383			7.872	A
1,1,2,2-Tetrachloroethane			1.204	1.087	1.124	1.081	1.103	1.088	1.098	1.112			3.852	A
1,1,2-Trichloroethane			0.621	0.550	0.570	0.578	0.606	0.601	0.654	0.597			5.848	A
1,1-Dichloroethane			0.480	0.410	0.472	0.479	0.504	0.477	0.436	0.465			6.836	A
1,1-Dichloroethene			0.183	0.135	0.166	0.160	0.164	0.151	0.160	0.160			9.152	A
1,1-Dichloropropene			0.306	0.220	0.297	0.305	0.343	0.343	0.355	0.310			14.77	A
1,2,3-Trichlorobenzene (RSP)			3345	11100	27878	60299	167545	341487	722816	0.862	0.114		0.992	L
1,2,3-Trichlorobenzene			0.691	0.474	0.579	0.604	0.681	0.711	0.863					
1,2,3-Trichloropropane			1.473	1.313	1.414	1.373	1.445	1.462	1.486	1.424			4.375	A
1,2,4-Trichlorobenzene (RSP)			3882	11133	28084	59851	168927	354038	745871	0.891	0.118		0.992	L
1,2,4-Trichlorobenzene			0.802	0.475	0.584	0.600	0.687	0.737	0.890					
1,2,4-Trimethylbenzene			2.247	1.903	2.556	2.570	2.734	2.650	2.692	2.479			12.09	A
1,2-Dibromo-3-chloropropane			0.159	0.176	0.185	0.175	0.183	0.189	0.218	0.184			9.765	A
1,2-Dibromoethane			0.554	0.509	0.575	0.565	0.605	0.603	0.660	0.582			8.173	A
1,2-Dichlorobenzene			1.442	1.177	1.333	1.293	1.348	1.326	1.392	1.330			6.246	A
1,2-Dichloroethane			0.429	0.364	0.373	0.366	0.382	0.371	0.378	0.380			5.860	A
1,2-Dichloroethane-d4			0.167	0.172	0.169	0.170	0.169	0.170	0.165	0.169			1.403	A
1,2-Dichloroethene (total)			0.356	0.271	0.337	0.331	0.362	0.360	0.330	0.335			9.384	A
1,2-Dichloropropane			0.253	0.221	0.258	0.253	0.273	0.269	0.274	0.257			7.058	A
1,3,5-Trimethylbenzene			2.287	1.836	2.411	2.461	2.621	2.512	2.498	2.375			10.89	A
1,3-Dichlorobenzene			1.545	1.200	1.426	1.351	1.422	1.402	1.439	1.398			7.491	A
1,3-Dichloropropane			0.973	0.942	1.060	1.052	1.129	1.110	1.217	1.069			8.777	A
1,3-Dichloropropylene			0.356	0.310	0.363	0.375	0.420	0.421	0.435	0.383			11.69	A
1,4 Dioxane				0.002	0.002	0.002	0.002	0.002	0.002	0.002			6.031	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217050803		Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17	Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17	Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,4-Dichlorobenzene			1.794	1.270	1.417	1.351	1.412	1.368	1.420	1.433			11.69	A
1-Bromo-2-Chloroethane			0.379	0.338	0.371	0.370	0.396	0.388	0.394	0.376			5.270	A
1-Chlorohexane (RSP)			4203	14315	40501	83069	237528	485734	971106	0.722	0.013		0.995	W
1-Chlorohexane			0.621	0.441	0.599	0.593	0.687	0.699	0.747					
2,2-Dichloropropane			0.386	0.297	0.378	0.375	0.404	0.400	0.408	0.378			10.02	A
2-Butanone			0.161	0.163	0.172	0.170	0.185	0.184	0.191	0.175			6.489	A
2-Chlorotoluene			2.553	1.948	2.435	2.474	2.666	2.599	2.644	2.474			9.989	A
2-Hexanone			0.460	0.456	0.493	0.499	0.565	0.588	0.641	0.529			13.29	A
4-Bromofluorobenzene			0.599	0.596	0.598	0.592	0.606	0.616	0.603	0.601			1.300	A
4-Chlorotoluene			2.290	1.830	2.220	2.191	2.386	2.406	2.538	2.266			9.973	A
4-Isopropyltoluene			2.072	1.669	2.263	2.268	2.465	2.442	2.501	2.240			13.08	A
4-Methyl-2-pentanone			0.614	0.574	0.595	0.615	0.694	0.721	0.788	0.657			11.92	A
Acetone			0.188	0.169	0.153	0.154	0.151	0.151	0.152	0.160			8.691	A
Acrolein			0.014	0.012	0.013	0.014	0.014	0.014	0.016	0.014			8.865	A
Acrylonitrile			0.090	0.092	0.092	0.101	0.102	0.098	0.096	0.096			4.849	A
Benzene			0.959	0.797	0.979	0.989	1.048	1.020	1.041	0.976			8.734	A
Bromobenzene			1.795	1.424	1.620	1.610	1.683	1.649	1.670	1.636			6.828	A
Bromochloromethane			0.111	0.099	0.115	0.111	0.109	0.101	0.099	0.106			6.332	A
Bromodichloromethane			0.345	0.316	0.350	0.346	0.368	0.360	0.367	0.350			5.088	A
Bromoform			0.478	0.426	0.436	0.430	0.461	0.461	0.470	0.452			4.632	A
Bromomethane (RSP)			2057	5130	15541	28202	79796	159518	329925	0.090	0.000		0.998	W
Bromomethane			0.121	0.064	0.093	0.083	0.092	0.090	0.090					
Carbon disulfide (RSP)			11996	32679	86485	172907	455635	894083	1937226	0.520	-0.002		0.998	W
Carbon disulfide			0.706	0.410	0.516	0.506	0.526	0.503	0.530					
Carbon tetrachloride			0.294	0.249	0.314	0.317	0.341	0.335	0.350	0.314			10.94	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217050803		Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17	Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17	Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Chlorobenzene			1.701	1.370	1.562	1.522	1.589	1.514	1.510	1.538			6.468	A
Chloroethane			0.146	0.183	0.181	0.157	0.154	0.143	0.144	0.158			10.79	A
Chloroform			0.447	0.408	0.449	0.453	0.471	0.451	0.446	0.446			4.248	A
Chloromethane			0.252	0.167	0.211	0.189	0.186	0.181	0.180	0.195			14.52	A
Chloroprene (RSP)			4533	18411	48580	105339	323501	658501	1377145	0.373	0.015		0.996	W
Chloroprene			0.267	0.231	0.290	0.308	0.373	0.370	0.377					
Cyclohexane (RSP)			5437	18392	60316	130128	375949	756009	1589625	0.431	0.015		0.997	W
Cyclohexane			0.320	0.231	0.360	0.381	0.434	0.425	0.435					
Dibromochloromethane			0.621	0.566	0.615	0.618	0.674	0.685	0.758	0.648			9.671	A
Dibromofluoromethane			0.254	0.263	0.257	0.260	0.257	0.255	0.232	0.254			3.954	A
Dibromomethane			0.166	0.155	0.163	0.163	0.170	0.165	0.165	0.164			2.740	A
Dichlorodifluoromethane			0.267	0.203	0.251	0.250	0.261	0.245	0.243	0.246			8.438	A
Ethylbenzene			0.804	0.647	0.782	0.779	0.833	0.793	0.791	0.776			7.663	A
Hexachlorobutadiene				0.221	0.281	0.270	0.281	0.287	0.340	0.280			13.62	A
Isobutyl alcohol				0.008	0.011	0.010	0.011	0.011	0.011	0.011			10.85	A
Isopropylbenzene (Cumene) (			12369	48453	138755	297649	828151	1628942	3032269	2.341	0.011		0.998	W
Isopropylbenzene (Cumene)			1.828	1.492	2.053	2.126	2.397	2.343	2.333					
Methyl Acetate			0.224	0.223	0.225	0.217	0.225	0.214	0.201	0.218			3.956	A
Methyl iodide (RSP)			805	2262	9589	18651	67934	169998	422952	0.117	0.165		0.990	L
Methyl iodide			0.047	0.028	0.057	0.055	0.078	0.096	0.116					
Methylcyclohexane			0.331	0.237	0.332	0.336	0.374	0.368	0.367	0.335			14.10	A
Methylene chloride			0.359	0.300	0.288	0.282	0.285	0.271	0.282	0.295			9.944	A
Naphthalene (RSP)			8192	28823	74077	168458	520416	1091856	2323190	2.786	0.134		0.991	L
Naphthalene			1.691	1.230	1.539	1.688	2.116	2.274	2.773					
Styrene (RSP)			7981	32589	91391	199707	545885	1078634	2028936	1.559	0.012		0.998	W

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

				GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217050803	Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17 Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Styrene			1.179	1.004	1.352	1.427	1.580	1.551	1.561					
Tetrachloroethene			0.529	0.360	0.439	0.436	0.465	0.449	0.478	0.451			11.39	A
Toluene			2.650	2.186	2.445	2.438	2.601	2.548	2.763	2.519			7.379	A
Toluene-d8			2.339	2.303	2.324	2.305	2.331	2.356	2.555	2.359			3.752	A
Trichloroethene			0.261	0.213	0.263	0.255	0.267	0.253	0.249	0.252			7.222	A
Trichlorofluoromethane			0.284	0.241	0.297	0.291	0.300	0.284	0.300	0.285			7.238	A
Trichlorotrifluoroethane			0.162	0.128	0.170	0.169	0.178	0.169	0.178	0.165			10.37	A
Vinyl acetate			0.140	0.125	0.143	0.150	0.166	0.174	0.174	0.153			12.21	A
Vinyl chloride			0.269	0.187	0.250	0.246	0.259	0.248	0.254	0.245			10.91	A
Xylene (total) (RSP)			16030	63921	171598	357948	982352	1897304	3510335	0.909	0.022		0.998	W
Xylene (total)			0.790	0.656	0.846	0.852	0.948	0.910	0.900					
cis-1,2-Dichloroethene			0.328	0.271	0.336	0.332	0.369	0.366	0.343	0.335			9.664	A
cis-1,3-Dichloropropene			0.346	0.305	0.368	0.380	0.433	0.438	0.457	0.390			14.20	A
diisopropyl Ether (DIPE)			0.776	0.582	0.691	0.690	0.823	0.834	0.842	0.748			13.01	A
m,p-Xylene (RSP)			11442	44293	119572	246346	660583	1263391	2303027	0.903	0.009		0.998	W
m,p-Xylene			0.845	0.682	0.885	0.880	0.956	0.908	0.886					
n-Butylbenzene			2.258	1.479	2.022	2.038	2.175	2.111	2.211	2.042			12.88	A
n-Hexane (RSP)			5412	15224	46012	89119	276985	581818	1045897	0.302	0.007		0.993	W
n-Hexane			0.318	0.191	0.274	0.261	0.320	0.327	0.286					
n-Propylbenzene			3.907	2.738	3.474	3.479	3.720	3.679	3.720	3.531			10.78	A
o-Xylene (RSP)			4588	19628	52026	111602	321769	633913	1207308	0.922	0.013		0.997	W
o-Xylene			0.678	0.604	0.770	0.797	0.931	0.912	0.929					
sec-Butylbenzene			2.558	2.047	2.679	2.719	2.955	2.930	3.007	2.699			12.28	A
t-Butanol (TBA)				0.029	0.033	0.028	0.029	0.028	0.029	0.029			6.460	A
tert-Butyl methyl ether (MTBE)			0.628	0.601	0.690	0.688	0.760	0.765	0.678	0.687			8.904	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

				GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217050803	Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17 Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
tert-Butylbenzene			1.307	0.983	1.253	1.294	1.445	1.451	1.509	1.320			13.38	A
trans-1,2-Dichloroethene			0.384	0.270	0.338	0.330	0.355	0.353	0.318	0.335			10.61	A
trans-1,3-Dichloropropene			0.367	0.315	0.359	0.369	0.407	0.405	0.413	0.376			9.270	A
trans-1,4-Dichloro-2-butene			0.356	0.308	0.325	0.306	0.321	0.332	0.349	0.328			5.835	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2900d.d
Lab Smp Id: 1203 Client Smp ID: V14STD001
Inj Date : 05-MAY-2017 13:10
Operator : LBH Inst ID: msv14.i
Smp Info : 1203*V14STD001
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 13:10 Cal File: b2900d.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.744	1.744	(0.261)	4540	1.00000	1.00	
2 Chloromethane ++	50	1.953	1.953	(0.292)	4289	1.00000	1.00	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	4580	1.00000	1.00	
5 Bromomethane	94	2.377	2.377	(0.356)	2057	1.00000	1.00	
6 Chloroethane	64	2.512	2.512	(0.376)	2488	1.00000	1.00	(M2)
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	4833	1.00000	1.00	
11 1,1-Dichloroethene +	96	3.254	3.254	(0.487)	3104	1.00000	1.00	
14 Carbon Disulfide	76	3.299	3.299	(0.494)	11996	1.00000	1.00	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	2756	1.00000	1.00	
13 Methyl Iodide	142	3.442	3.442	(0.515)	805	1.00000	1.00	
9 Acrolein	56	3.697	3.697	(0.553)	1227	5.00000	5.00	
17 Methylene Chloride	49	3.993	3.993	(0.598)	6100	1.00000	1.00	
12 Acetone	43	4.071	4.071	(0.609)	3191	1.00000	1.00	(M2)
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	6525	1.00000	1.00	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	3801	1.00000	1.00	7396
	23 Hexane	57	4.289	4.289	(0.642)	5412	1.00000	1.00	8500
	21 MTBE	73	4.330	4.330	(0.648)	10673	1.00000	1.00	8606
	26 tert-Butyl Alcohol	59	4.473	4.473	(0.669)	314	1.00000		0(M2)
	27 Isopropyl Ether	45	4.784	4.784	(0.716)	13184	1.00000	1.00	9069
	29 Chloroprene	53	4.862	4.862	(0.728)	4533	1.00000	1.00	8443
	24 1,1-Dichloroethane ++	63	4.885	4.885	(0.731)	8157	1.00000	1.00	
	22 Acrylonitrile	53	4.964	4.964	(0.743)	7626	5.00000	5.00	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	2376	1.00000	1.00	(M2)
M	48 Total 1,2-Dichloroethene	61				12107	2.00000	2.00	
	30 cis-1,2-Dichloroethene	61	5.455	5.455	(0.817)	5582	1.00000	1.00	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	6555	1.00000	1.00	
	38 Cyclohexane	56	5.650	5.650	(0.846)	5437	1.00000	1.00	8418
	34 Bromochloromethane	128	5.657	5.657	(0.847)	1889	1.00000	1.00	
	41 Chloroform +	83	5.732	5.732	(0.858)	7598	1.00000	1.00	
	39 Carbon Tetrachloride	117	5.860	5.860	(0.877)	4998	1.00000	1.00	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	215920	50.0000	50.0	6911
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	6587	1.00000	1.00	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	5201	1.00000	1.00	
	32 2-Butanone	43	6.047	6.047	(0.905)	2743	1.00000	1.00	
	44 Benzene	78	6.291	6.291	(0.942)	16302	1.00000	1.00	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	141971	50.0000	50.0	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	7289	1.00000	1.00	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	629	5.00000		6766
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	849937	50.0000		
	50 Methyl Cyclohexane	83	6.830	6.830	(1.022)	5632	1.00000	1.00	7438
	49 Trichloroethene	130	6.830	6.830	(1.022)	4437	1.00000	1.00	
	52 Dibromomethane	93	7.213	7.213	(1.080)	2816	1.00000	1.00	
	51 1,2-Dichloropropane +	63	7.306	7.306	(1.094)	4303	1.00000	1.00	
	54 Bromodichloromethane	83	7.359	7.359	(1.102)	5871	1.00000	1.00	
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	1640	25.0000		8228
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	6447	1.00000	1.00	8463
	58 cis-1,3-Dichloropropene	75	7.891	7.891	(1.181)	5881	1.00000	1.00	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	791386	50.0000	50.0	
	61 Toluene +	91	8.082	8.082	(0.883)	17936	1.00000	1.00	
M	145 1-3 Dichloropropene total	100				12118	2.00000	2.00	0
	66 Tetrachloroethene	164	8.375	8.375	(0.915)	3583	1.00000	1.00	
	59 4-methyl-2-pentanone	43	8.364	8.364	(0.914)	4152	1.00000	1.00	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	6237	1.00000	1.00	
	65 1,1,2-Trichloroethane	97	8.506	8.506	(0.930)	4201	1.00000	1.00	
	162 3,4-dichloro-1-butene	75	8.678	8.678	(0.948)	4953	1.00000	1.00	9319(a)
	69 Dibromochloromethane	129	8.634	8.634	(0.943)	4204	1.00000	1.00	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	6584	1.00000	1.00	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	3747	1.00000	1.00	
	68 2-Hexanone	43	8.952	8.952	(0.978)	3112	1.00000	1.00	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	4203	1.00000	1.00	2594(H)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	338382	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	72 Chlorobenzene ++	112	9.162	9.162	(1.001)	11509	1.00000	1.00	
	73 Ethylbenzene +	106	9.173	9.173	(1.002)	5442	1.00000	1.00	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	4299	1.00000	1.00	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	11442	2.00000	2.00	
M	99 TOTAL XYLENE	106				16030	3.00000	3.00	
	76 o-Xylene	106	9.552	9.552	(1.044)	4588	1.00000	1.00	
	77 Styrene	104	9.582	9.582	(1.047)	7981	1.00000	1.00	
	78 Bromoform ++	173	9.604	9.604	(1.050)	3238	1.00000	1.00	
	79 Isopropylbenzene	105	9.747	9.747	(1.065)	12369	1.00000	1.00	
	161 cis-1,4-dichloro-2-butene	53	9.964	9.964	(0.940)	2527	1.00000	1.00	9151(a)
$	80 Bromofluorobenzene	174	9.931	9.931	(1.085)	202599	50.0000	50.0	
	84 Bromobenzene	77	9.998	9.998	(0.943)	8696	1.00000	1.00	
	86 n-Propylbenzene	91	9.998	9.998	(0.943)	18924	1.00000	1.00	
	81 1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	5831	1.00000	1.00	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	12366	1.00000	1.00	
	88 1,3,5-Trimethylbenzene	105	10.110	10.110	(0.954)	11077	1.00000	1.00	
	85 1,2,3-Trichloropropane	75	10.137	10.137	(0.956)	7133	1.00000	1.00	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	1723	1.00000	1.00	
	90 4-Chlorotoluene	91	10.208	10.208	(0.963)	11091	1.00000	1.00	
	91 tert-butylbenzene	91	10.313	10.313	(0.973)	6331	1.00000	1.00	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	10884	1.00000	1.00	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	12387	1.00000	1.00	
	92 p-Isopropyltoluene	119	10.493	10.493	(0.990)	10035	1.00000	1.00	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	7482	1.00000	1.00	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	242170	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	8687	1.00000	1.00	
	100 n-Butylbenzene	91	10.748	10.748	(1.014)	10936	1.00000	1.00	
	102 1,2-Dichlorobenzene	146	10.868	10.868	(1.025)	6982	1.00000	1.00	
	106 1,2-Dibromo-3-Chloropropane	157	11.393	11.393	(1.075)	769	1.00000	1.00	
	109 Hexachlorobutadiene	225	11.857	11.857	(1.118)	2392	1.00000		
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	3882	1.00000	1.00	
	110 Naphthalene	128	12.191	12.191	(1.150)	8192	1.00000	1.00	
	111 1,2,3-Trichlorobenzene	180	12.356	12.356	(1.165)	3345	1.00000	1.00	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M2- Compound response manually integrated because
Target system integrated incorrectly.
H - Operator selected an alternate compound hit.

Data File: /var/chem/msv14.i/2170505.s.b/b2900d.d

Date : 05-MAY-2017 13:10

Client ID: V14STD001

Instrument: msv14.i

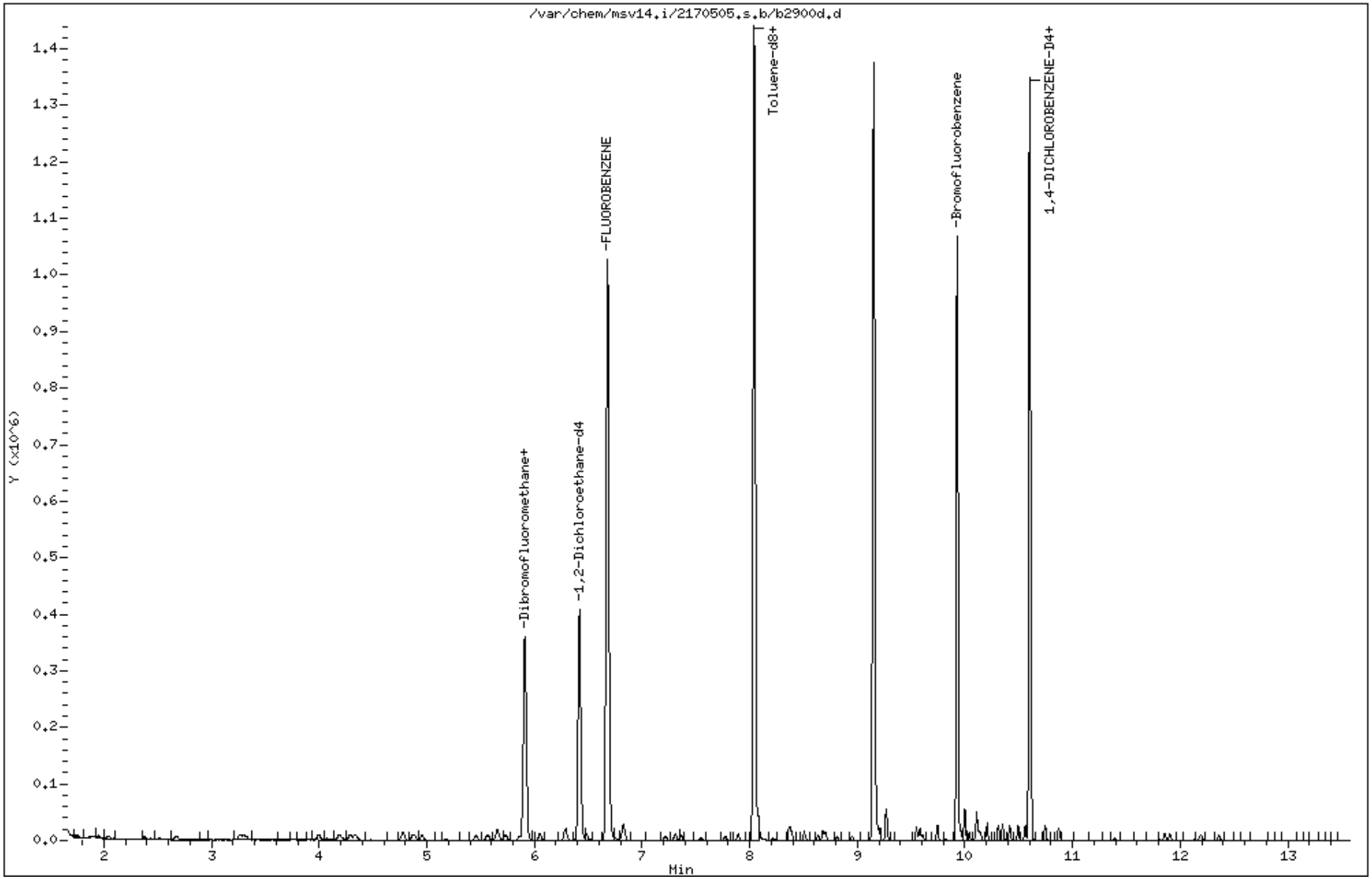
Sample Info: 1203*V14STD001

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

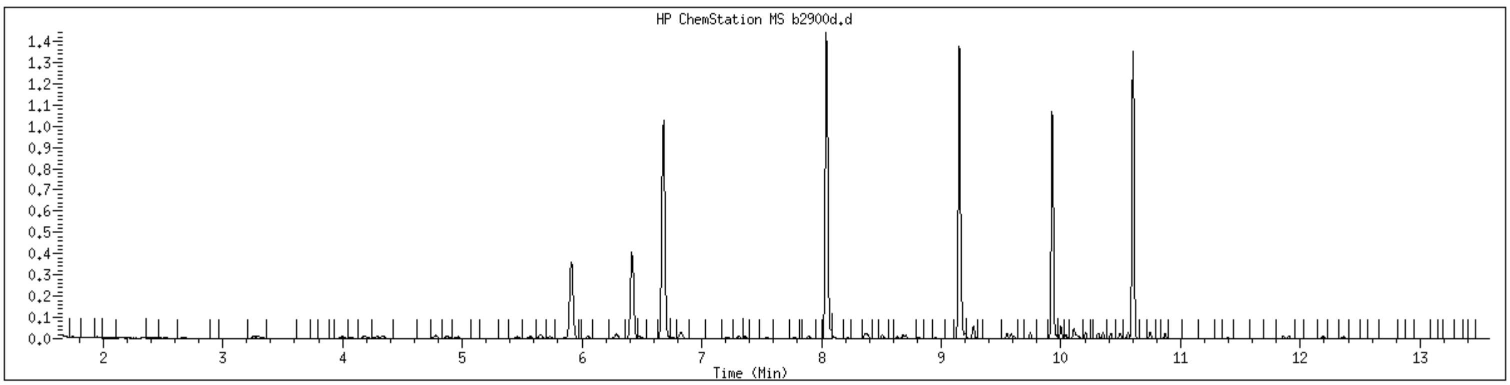
Column diameter: 0.25



Data file : /var/chem/msv14.i/2170505.s.b/b2900d.d   Page: 1
Report Date: 05/06/2017 11:41

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID   : 1203   SampleType   : CALIB_3
Injection Date: 05/05/2017 13:10   Instrument   : msv14.i
Operator   : LBH
Sample Info   : 1203*V14STD001
Misc Info   : MSV~38274~*1*LBH
Method   : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution   : 1.00
Matrix   : WATER
Integrator   : HP RTE   Compound Sublist: 8260b+AppIX1



Original   Final

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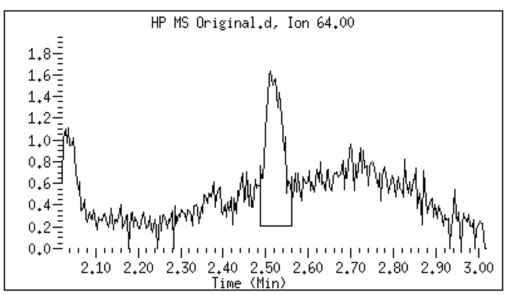
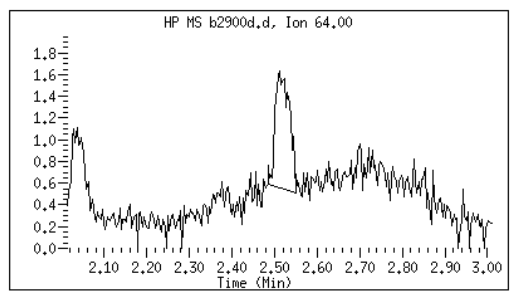
6 Chloroethane   CAS#: 75-00-3   Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:23



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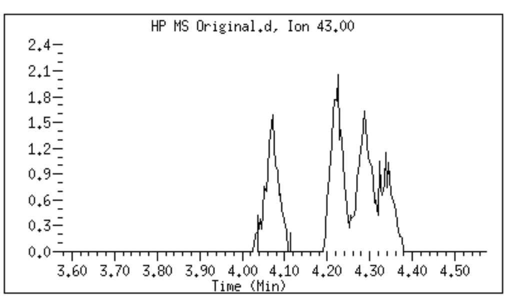
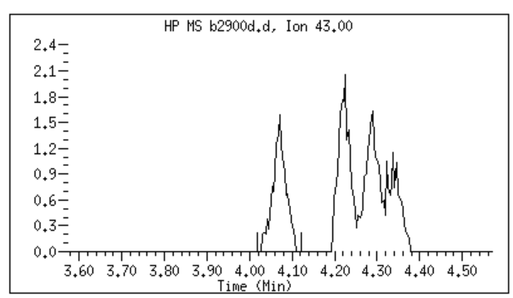
12 Acetone   CAS#: 67-64-1   Reason: M2



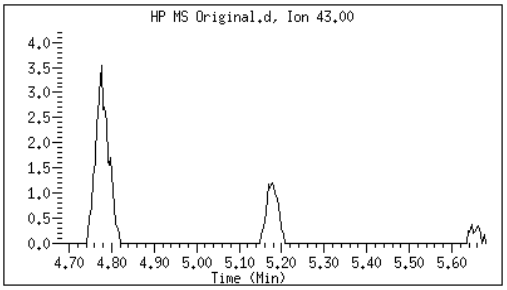
Electronic Signature Applied

User: lbh
Date: 05/05/2017 13:31



Original Final

25 Vinyl Acetate CAS#: 108-05-4 Reason: M2



Electronic Signature Applied

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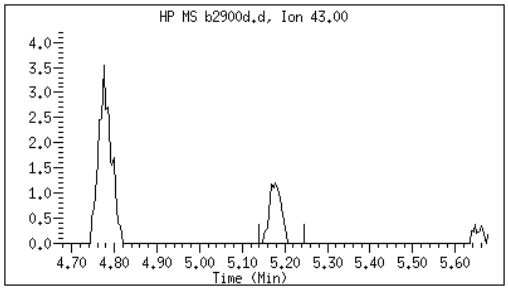
Date: 05/05/2017 13:31



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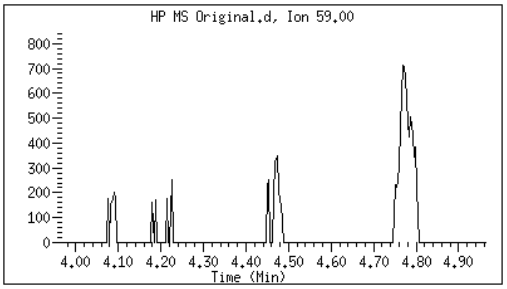
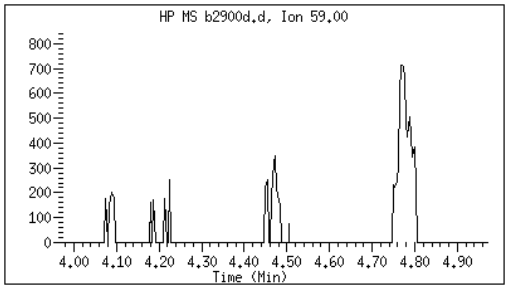
26 tert-Butyl Alcohol CAS#: 75-65-0 Reason: M2



Electronic Signature Applied

User: lbh
Date: 05/05/2017 13:31



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2892d.d
Lab Smp Id: 1204 Client Smp ID: V14STD005
Inj Date : 05-MAY-2017 09:59
Operator : LBH Inst ID: msv14.i
Smp Info : 1204*V14STD005
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 09:59 Cal File: b2892d.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	16178	5.00000	4.32	
2 Chloromethane ++	50	1.953	1.953	(0.292)	13336	5.00000	3.99	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	14909	5.00000	4.10	
5 Bromomethane	94	2.373	2.373	(0.355)	5130	5.00000	5.00	
6 Chloroethane	64	2.519	2.519	(0.377)	14584	5.00000	5.55	
7 Trichlorofluoromethane	101	2.677	2.677	(0.401)	19212	5.00000	4.59	
11 1,1-Dichloroethene +	96	3.265	3.265	(0.489)	10731	5.00000	4.24	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	32679	5.00000	5.00	
10 1,1,2Trichlotrifluoroethane	101	3.325	3.325	(0.498)	10227	5.00000	4.42	
13 Methyl Iodide	142	3.434	3.434	(0.514)	2262	5.00000	5.00	
9 Acrolein	56	3.700	3.700	(0.554)	4635	25.0000	22.3	
17 Methylene Chloride	49	3.996	3.996	(0.598)	23959	5.00000	4.56	
12 Acetone	43	4.075	4.075	(0.610)	13507	5.00000	4.74	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	21562	5.00000	4.13	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	17758	5.00000	4.99	8452
	23 Hexane	57	4.293	4.293	(0.643)	15224	5.00000	5.00	9093(M2)
	21 MTBE	73	4.338	4.338	(0.649)	47921	5.00000	4.89	9212
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	2341	5.00000	5.00	5029(M1)
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	46396	5.00000	4.29	9234
	29 Chloroprene	53	4.866	4.866	(0.728)	18411	5.00000	5.00	8785
	24 1,1-Dichloroethane ++	63	4.889	4.889	(0.732)	32659	5.00000	4.61	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	36776	25.0000	25.3	
	25 Vinyl Acetate	43	5.181	5.181	(0.776)	9986	5.00000	4.73	
M	48 Total 1,2-Dichloroethene	61				43192	10.0000	8.66	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	21630	5.00000	4.52	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	23704	5.00000	4.35	
	38 Cyclohexane	56	5.653	5.653	(0.846)	18392	5.00000	5.00	7874
	34 Bromochloromethane	128	5.653	5.653	(0.846)	7872	5.00000	4.70	
	41 Chloroform +	83	5.732	5.732	(0.858)	32522	5.00000	4.77	
	39 Carbon Tetrachloride	117	5.859	5.859	(0.877)	19840	5.00000	4.58	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	209855	50.0000	50.9	6900
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	25231	5.00000	4.50	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	17502	5.00000	4.18	
	32 2-Butanone	43	6.051	6.051	(0.906)	12998	5.00000	5.03	
	44 Benzene	78	6.291	6.291	(0.942)	63584	5.00000	4.54	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	137289	50.0000	50.8	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	29004	5.00000	4.59	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	3320	25.0000	25.0	8553
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	797336	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	18866	5.00000	4.17	8355
	49 Trichloroethene	130	6.830	6.830	(1.022)	16979	5.00000	4.49	
	52 Dibromomethane	93	7.217	7.217	(1.080)	12342	5.00000	4.83	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	17656	5.00000	4.67	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	25218	5.00000	4.78	
	55 1,4- Dioxane	58	7.546	7.546	(1.130)	4041	125.000	125	8800
	57 1-Bromo-2-chloroethane	63	7.775	7.775	(1.164)	26931	5.00000	4.71	9510
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	24348	5.00000	4.69	
$	60 Toluene-d8	98	8.041	8.041	(0.878)	747859	50.0000	49.6	
	61 Toluene +	91	8.082	8.082	(0.883)	70987	5.00000	4.52	
M	145 1-3 Dichloropropene total	100				49462	10.0000	9.31	0
	66 Tetrachloroethene	164	8.371	8.371	(0.914)	11676	5.00000	4.04	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	18645	5.00000	4.83	
	62 trans-1,3-Dichloropropene	75	8.394	8.394	(1.256)	25114	5.00000	4.62	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	17844	5.00000	4.70	
	162 3,4-dichloro-1-butene	75	8.678	8.678	(0.948)	18093	5.00000	4.32	9612(a)
	69 Dibromochloromethane	129	8.637	8.637	(0.943)	18366	5.00000	4.77	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	30596	5.00000	4.92	
	70 1,2-Dibromoethane(EDB)	107	8.813	8.813	(0.963)	16533	5.00000	4.79	
	68 2-Hexanone	43	8.952	8.952	(0.978)	14803	5.00000	4.98	
	140 1-Chlorohexane	91	9.140	9.140	(0.998)	14315	5.00000	5.00	3585(M2)
*	71 CHLOROBENZENE-d5	82	9.155	9.155	(1.000)	324732	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	72 Chlorobenzene ++	112	9.166	9.166	(1.001)	44493	5.00000	4.46	
	73 Ethylbenzene +	106	9.173	9.173	(1.002)	21015	5.00000	4.46	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.005)	16885	5.00000	4.50	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	44293	10.0000	10.0	
M	99 TOTAL XYLENE	106				63921	15.0000	15.0	
	76 o-Xylene	106	9.552	9.552	(1.043)	19628	5.00000	5.00	
	77 Styrene	104	9.582	9.582	(1.047)	32589	5.00000	5.00	
	78 Bromoform ++	173	9.608	9.608	(1.050)	13829	5.00000	4.71	
	79 Isopropylbenzene	105	9.747	9.747	(1.065)	48453	5.00000	5.00	
	161 cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	8618	5.00000	4.13	9486(a)
$	80 Bromofluorobenzene	174	9.927	9.927	(1.084)	193466	50.0000	49.9	
	84 Bromobenzene	77	10.002	10.002	(0.943)	33372	5.00000	4.42	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	64168	5.00000	4.12	
	81 1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	25470	5.00000	4.74	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	45641	5.00000	4.33	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	43025	5.00000	4.45	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	30763	5.00000	4.71	
	83 trans-1,4-Dichloro-2-Butene	53	10.152	10.152	(0.958)	7212	5.00000	4.64	
	90 4-Chlorotoluene	91	10.204	10.204	(0.963)	42882	5.00000	4.44	
	91 tert-butylbenzene	91	10.309	10.309	(0.972)	23036	5.00000	4.29	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	44608	5.00000	4.59	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	47975	5.00000	4.45	
	92 p-Isopropyltoluene	119	10.493	10.493	(0.990)	39110	5.00000	4.46	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	28132	5.00000	4.37	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	234349	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	29762	5.00000	4.15	
	100 n-Butylbenzene	91	10.744	10.744	(1.013)	34660	5.00000	3.96	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	27580	5.00000	4.49	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	4124	5.00000	5.26	
	109 Hexachlorobutadiene	225	11.861	11.861	(1.119)	5179	5.00000	5.00	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	11133	5.00000	5.00	
	110 Naphthalene	128	12.191	12.191	(1.150)	28823	5.00000	5.00	
	111 1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	11100	5.00000	5.00	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2892d.d

Page 1

Date : 05-MAY-2017 09:59

Client ID: V14STD005

Instrument: msv14.i

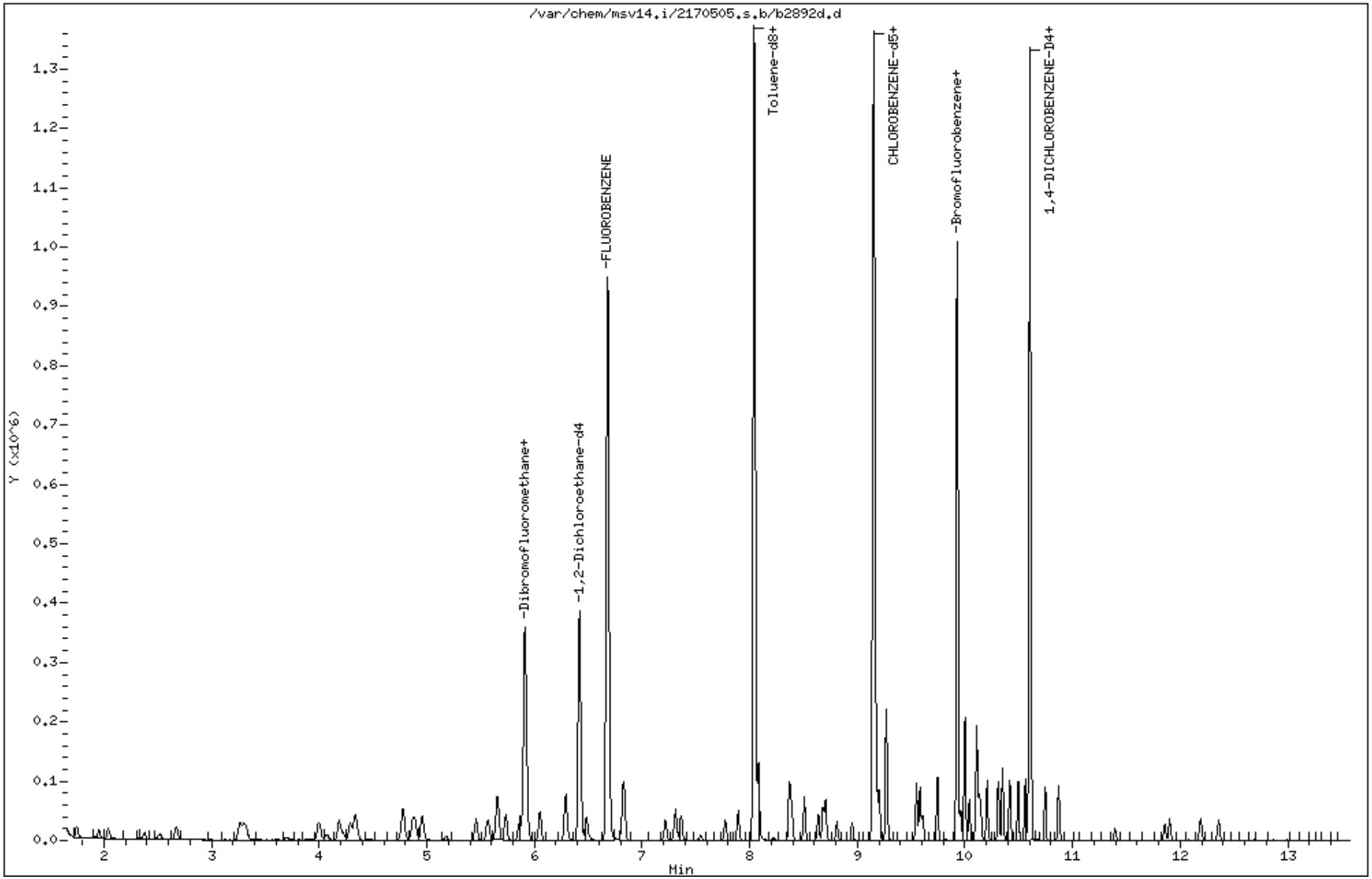
Sample Info: 1204*V14STD005

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

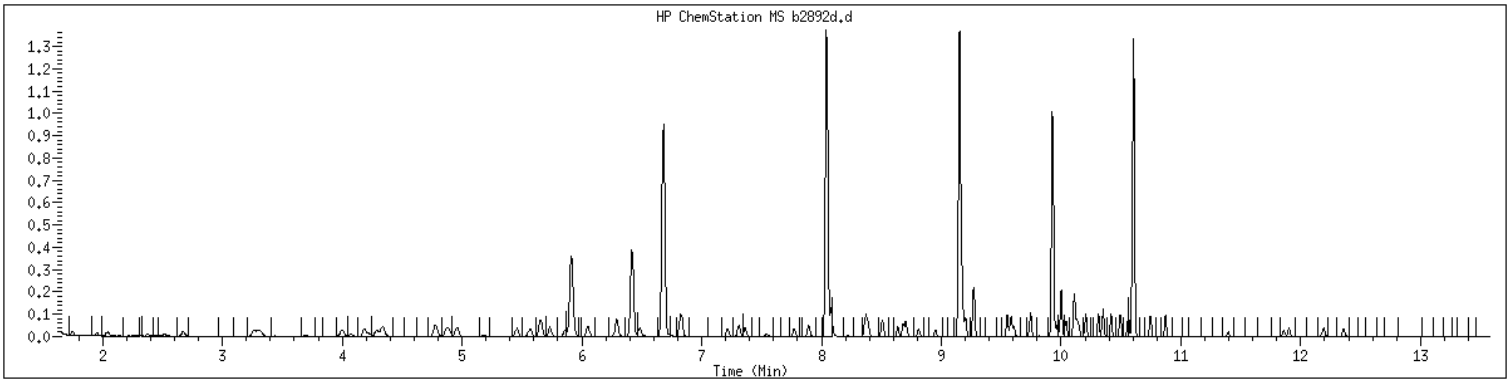
Column diameter: 0.25



Report Date: 05/06/2017 11:41

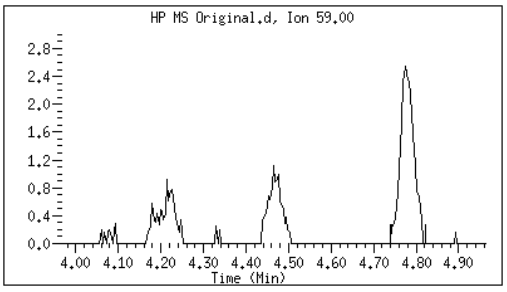
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1204 SampleType : CALIB_4
Injection Date: 05/05/2017 09:59 Instrument : msv14.i
Operator : LBH
Sample Info : 1204*V14STD005
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



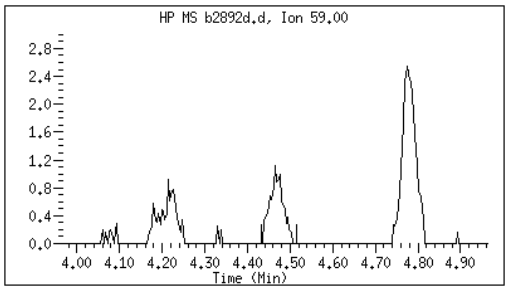
Original Final

26 tert-Butyl Alcohol CAS#: 75-65-0 Reason: M1

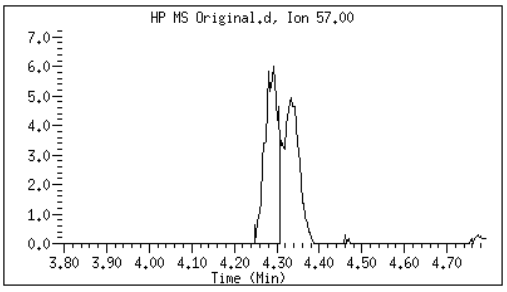


Electronic Signature Applied

User: lbh
Date: 05/05/2017 10:31

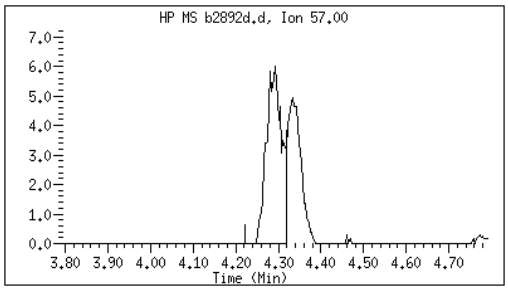


23 Hexane CAS#: 110-54-3 Reason: M2



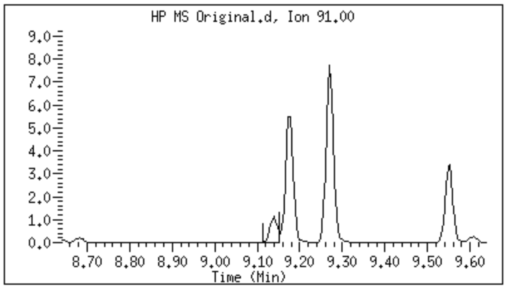
Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



Original   Final

140 1-Chlorohexane   CAS#: 544-10-5   Reason: M2



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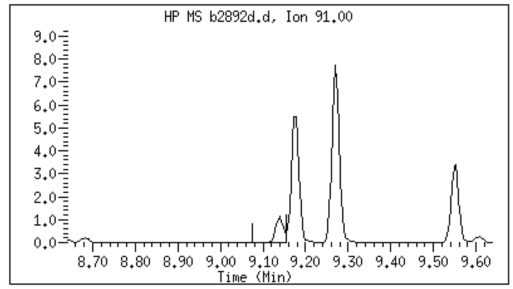
User: jck2
Date: 05/06/2017 11:35



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2901d.d
Lab Smp Id: 1205 Client Smp ID: V14STD010
Inj Date : 05-MAY-2017 13:32
Operator : LBH Inst ID: msv14.i
Smp Info : 1205*V14STD010
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 13:32 Cal File: b2901d.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	42080	10.0000	10.4	
2 Chloromethane ++	50	1.953	1.953	(0.292)	35346	10.0000	10.0	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	42017	10.0000	10.6	
5 Bromomethane	94	2.377	2.377	(0.356)	15541	10.0000	10.7	
6 Chloroethane	64	2.519	2.519	(0.377)	30368	10.0000	10.6	
7 Trichlorofluoromethane	101	2.669	2.669	(0.400)	49857	10.0000	10.8	
11 1,1-Dichloroethene +	96	3.262	3.262	(0.488)	27886	10.0000	10.3	
14 Carbon Disulfide	76	3.295	3.295	(0.493)	86485	10.0000	10.6	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	28466	10.0000	11.1	
13 Methyl Iodide	142	3.438	3.438	(0.515)	9589	10.0000	10.3	
9 Acrolein	56	3.693	3.693	(0.553)	11092	50.0000	50.5	
17 Methylene Chloride	49	3.996	3.996	(0.598)	48359	10.0000	9.13	
12 Acetone	43	4.075	4.075	(0.610)	25729	10.0000	9.01	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	56687	10.0000	10.2	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	37757	10.0000	10.1	8955
	23 Hexane	57	4.292	4.292	(0.643)	46012	10.0000	10.7	9249(M1)
	21 MTBE	73	4.337	4.337	(0.649)	115703	10.0000	10.8	9487
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	5565	10.0000	10.6	8479
	27 Isopropyl Ether	45	4.780	4.780	(0.716)	115936	10.0000	10.1	9626
	29 Chloroprene	53	4.866	4.866	(0.728)	48580	10.0000	10.5	8798
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	79126	10.0000	10.4	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	76922	50.0000	50.3	
	25 Vinyl Acetate	43	5.181	5.181	(0.776)	24032	10.0000	10.5	
M	48 Total 1,2-Dichloroethene	61				113129	20.0000	21.0	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	56442	10.0000	10.8	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	63482	10.0000	10.7	
	38 Cyclohexane	56	5.657	5.657	(0.847)	60316	10.0000	10.7	8531
	34 Bromochloromethane	128	5.657	5.657	(0.847)	19327	10.0000	10.6	
	41 Chloroform +	83	5.736	5.736	(0.859)	75378	10.0000	10.3	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	52749	10.0000	11.0	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	215978	50.0000	49.9	6922
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	65034	10.0000	10.7	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	49768	10.0000	10.8	
	32 2-Butanone	43	6.047	6.047	(0.905)	28805	10.0000	10.4	
	44 Benzene	78	6.290	6.290	(0.942)	164257	10.0000	10.7	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	141603	50.0000	49.8	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	62559	10.0000	9.60	
	45 Isobutyl Alcohol	43	6.515	6.515	(0.975)	9322	50.0000	57.2	9114
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	838837	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	55626	10.0000	11.1	8080
	49 Trichloroethene	130	6.834	6.834	(1.023)	44185	10.0000	10.7	
	52 Dibromomethane	93	7.220	7.220	(1.081)	27368	10.0000	10.1	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	43253	10.0000	10.6	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	58772	10.0000	10.4	
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	9497	250.000	264	9297
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	62312	10.0000	10.2	9629
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	61683	10.0000	10.8	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	785306	50.0000	50.0	
	61 Toluene +	91	8.082	8.082	(0.883)	165234	10.0000	10.1	
M	145 1-3 Dichloropropene total	100				121923	20.0000	21.2	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	29659	10.0000	9.92	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	40206	10.0000	10.0	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	60240	10.0000	10.3	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	38521	10.0000	9.83	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	47868	10.0000	10.6	9603
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	41531	10.0000	10.2	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	71664	10.0000	10.7	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	38867	10.0000	10.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	33341	10.0000	10.5	
	140 1-Chlorohexane	91	9.139	9.139	(0.999)	40501	10.0000	10.6	5157(M2)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	337912	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	105576	10.0000	10.1	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	52844	10.0000	10.5	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	38496	10.0000	9.91	
75	p,m-Xylene	106	9.271	9.271	(1.013)	119572	20.0000	21.1	
M 99	TOTAL XYLENE	106				171598	30.0000	31.6	
76	o-Xylene	106	9.552	9.552	(1.044)	52026	10.0000	10.5	
77	Styrene	104	9.582	9.582	(1.047)	91391	10.0000	10.6	
78	Bromoform ++	173	9.608	9.608	(1.050)	29461	10.0000	9.76	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	138755	10.0000	10.6	
161	cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	19649	10.0000	9.44	9716
$ 80	Bromofluorobenzene	174	9.930	9.930	(1.085)	202021	50.0000	50.0	
84	Bromobenzene	77	9.998	9.998	(0.943)	77956	10.0000	10.0	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	167194	10.0000	10.3	
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	54083	10.0000	9.87	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	117180	10.0000	10.5	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	116043	10.0000	11.1	
85	1,2,3-Trichloropropane	75	10.137	10.137	(0.956)	68041	10.0000	10.1	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	15651	10.0000	9.87	
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	106829	10.0000	10.5	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	60292	10.0000	10.6	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	123013	10.0000	11.4	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	128924	10.0000	11.0	
92	p-Isopropyltoluene	119	10.496	10.496	(0.990)	108917	10.0000	11.3	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	68649	10.0000	10.3	
* 97	1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	240641	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	68186	10.0000	9.49	
100	n-Butylbenzene	91	10.744	10.744	(1.013)	97300	10.0000	10.5	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	64136	10.0000	10.1	
106	1,2-Dibromo-3-Chloropropane	157	11.392	11.392	(1.075)	8923	10.0000	10.7	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	13526	10.0000	11.2	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	28084	10.0000	10.2	
110	Naphthalene	128	12.191	12.191	(1.150)	74077	10.0000	10.2	
111	1,2,3-Trichlorobenzene	180	12.356	12.356	(1.165)	27878	10.0000	10.2	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2901d.d

Page 1

Date : 05-MAY-2017 13:32

Client ID: V14STD010

Instrument: msv14.i

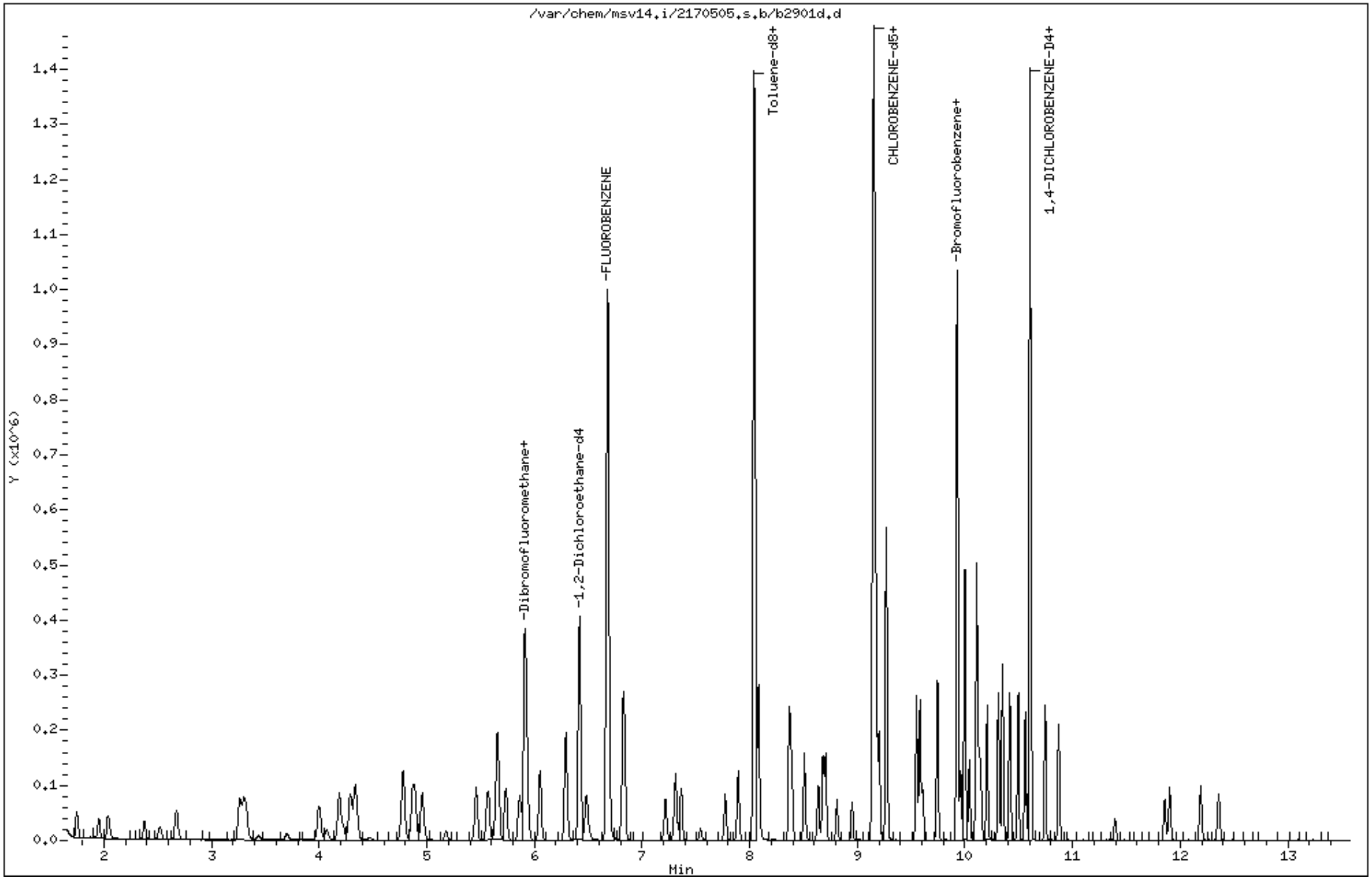
Sample Info: 1205*V14STD010

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

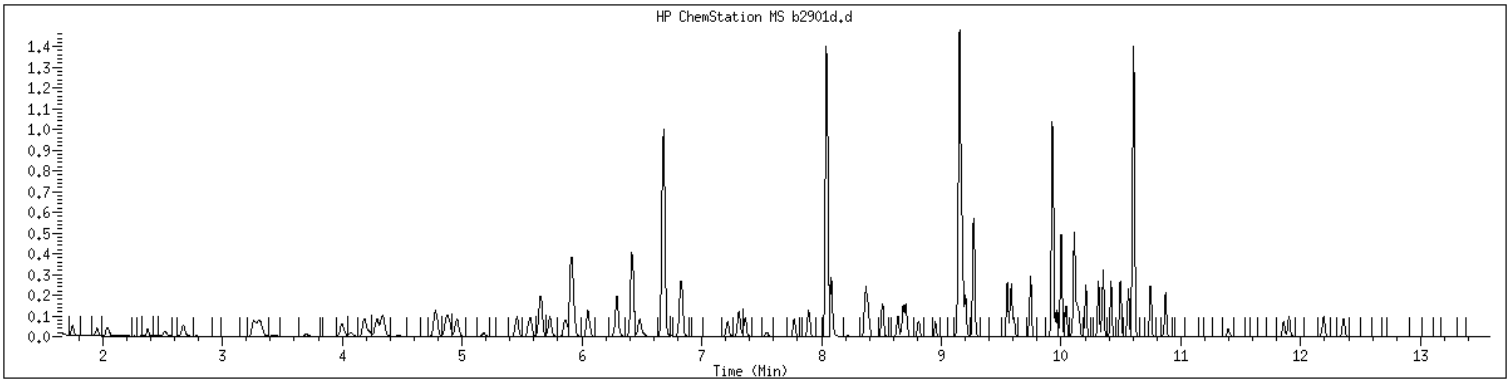
Column diameter: 0.25



Report Date: 05/06/2017 11:41

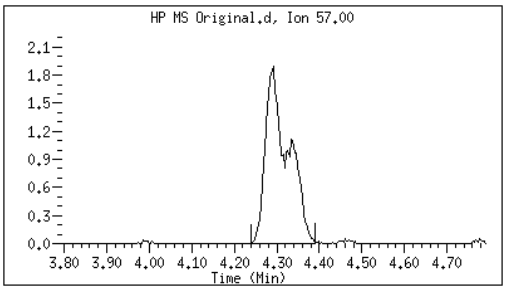
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1205 SampleType : CALIB_5
Injection Date: 05/05/2017 13:32 Instrument : msv14.i
Operator : LBH
Sample Info : 1205*V14STD010
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



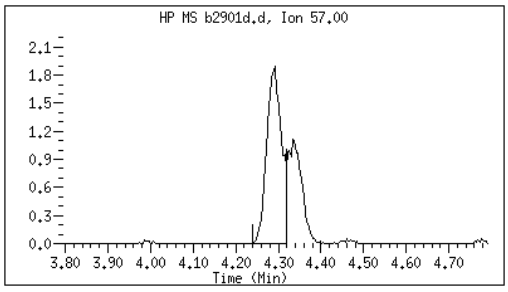
Original Final

23 Hexane CAS#: 110-54-3 Reason: M1

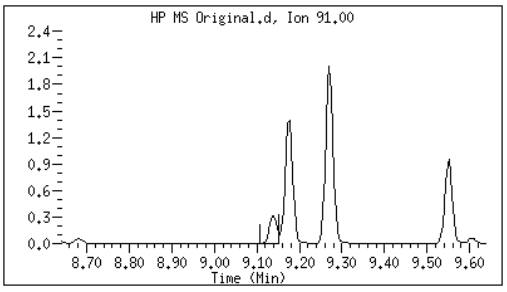


Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35

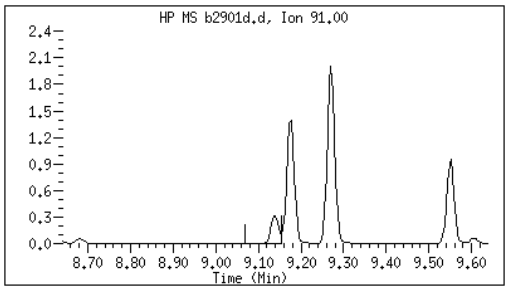


140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



M1 - Target system integrated incorrectly
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2894d.d
Lab Smp Id: 1206 Client Smp ID: V14STD020
Inj Date : 05-MAY-2017 10:43
Operator : LBH Inst ID: msv14.i
Smp Info : 1206*V14STD020
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 10:43 Cal File: b2894d.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.747	1.747	(0.262)	85385	20.0000	20.6	
2	Chloromethane ++	50	1.953	1.953	(0.292)	64622	20.0000	18.5	
3	Vinyl Chloride +	62	2.036	2.036	(0.305)	84113	20.0000	20.7	
5	Bromomethane	94	2.377	2.377	(0.356)	28202	20.0000	19.7	
6	Chloroethane	64	2.519	2.519	(0.377)	53701	20.0000	18.8	
7	Trichlorofluoromethane	101	2.669	2.669	(0.400)	99304	20.0000	20.9	
11	1,1-Dichloroethene +	96	3.262	3.262	(0.488)	54802	20.0000	19.9	
14	Carbon Disulfide	76	3.292	3.292	(0.493)	172907	20.0000	20.4	
10	1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	57809	20.0000	21.5	
13	Methyl Iodide	142	3.434	3.434	(0.514)	18651	20.0000	19.7	
9	Acrolein	56	3.696	3.696	(0.553)	23215	100.000	103	
17	Methylene Chloride	49	4.000	4.000	(0.599)	96269	20.0000	18.3	
12	Acetone	43	4.068	4.068	(0.609)	52766	20.0000	18.6	
19	trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	112654	20.0000	19.9	

		QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	74004	20.0000	19.5	8273
	23 Hexane	57	4.289	4.289	(0.642)	89119	20.0000	20.1	9274(M2)
	21 MTBE	73	4.334	4.334	(0.649)	235030	20.0000	21.1	9563
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	9676	20.0000	18.7	8914
	27 Isopropyl Ether	45	4.780	4.780	(0.715)	235852	20.0000	20.2	9692
	29 Chloroprene	53	4.866	4.866	(0.728)	105339	20.0000	20.7	9017
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	163829	20.0000	20.8	
	22 Acrylonitrile	53	4.960	4.960	(0.742)	172327	100.000	108	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	51211	20.0000	21.5	
M	48 Total 1,2-Dichloroethene	61				226006	40.0000	40.9	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	113352	20.0000	20.9	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	128100	20.0000	20.9	
	38 Cyclohexane	56	5.653	5.653	(0.846)	130128	20.0000	20.7	8965
	34 Bromochloromethane	128	5.661	5.661	(0.847)	37851	20.0000	20.3	
	41 Chloroform +	83	5.732	5.732	(0.858)	154793	20.0000	20.6	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	108255	20.0000	21.6	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	221955	50.0000	50.2	6895
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	132208	20.0000	20.9	
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	104278	20.0000	21.7	
	32 2-Butanone	43	6.043	6.043	(0.905)	58238	20.0000	20.5	
	44 Benzene	78	6.290	6.290	(0.942)	338045	20.0000	21.2	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	144916	50.0000	50.1	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	125088	20.0000	19.1	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	17653	100.000	104	9374
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	854503	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	114730	20.0000	21.7	8286
	49 Trichloroethene	130	6.834	6.834	(1.023)	87021	20.0000	20.5	
	52 Dibromomethane	93	7.216	7.216	(1.080)	55706	20.0000	20.2	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	86327	20.0000	20.5	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	118222	20.0000	20.4	
	55 1,4- Dioxane	58	7.546	7.546	(1.130)	18309	500.000	500	9442
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	126460	20.0000	20.3	9583
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	129981	20.0000	21.7	
$	60 Toluene-d8	98	8.045	8.045	(0.879)	806647	50.0000	49.7	
	61 Toluene +	91	8.082	8.082	(0.883)	341235	20.0000	20.1	
M	145 1-3 Dichloropropene total	100				256263	40.0000	42.7	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	61058	20.0000	19.8	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	86150	20.0000	20.5	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	126282	20.0000	21.0	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	80881	20.0000	19.9	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	92215	20.0000	19.8	9662
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	86538	20.0000	20.4	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	147210	20.0000	20.9	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	79104	20.0000	20.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	69895	20.0000	20.9	
	140 1-Chlorohexane	91	9.139	9.139	(0.999)	83069	20.0000	20.3	6854(M2)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	349979	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	213118	20.0000	19.8	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	109051	20.0000	20.7	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	78543	20.0000	19.6	
75	p,m-Xylene	106	9.271	9.271	(1.013)	246346	40.0000	40.6	
M 99	TOTAL XYLENE	106				357948	60.0000	61.1	
76	o-Xylene	106	9.552	9.552	(1.044)	111602	20.0000	20.5	
77	Styrene	104	9.582	9.582	(1.047)	199707	20.0000	20.6	
78	Bromoform ++	173	9.608	9.608	(1.050)	60161	20.0000	19.4	
79	Isopropylbenzene	105	9.747	9.747	(1.065)	297649	20.0000	20.5	
161	cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	35530	20.0000	17.2	9627
$ 80	Bromofluorobenzene	174	9.930	9.930	(1.085)	207258	50.0000	49.7	
84	Bromobenzene	77	9.998	9.998	(0.943)	160630	20.0000	20.0	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	347183	20.0000	20.5	
81	1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	107872	20.0000	19.2	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	246892	20.0000	21.0	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	245548	20.0000	21.9	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	136968	20.0000	19.7	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	30496	20.0000	18.9	
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	218651	20.0000	20.5	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	129090	20.0000	21.4	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	256452	20.0000	22.2	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	271314	20.0000	21.7	
92	p-Isopropyltoluene	119	10.496	10.496	(0.990)	226272	20.0000	21.9	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	134834	20.0000	19.6	
* 97	1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	249455	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	134807	20.0000	18.5	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	203306	20.0000	20.9	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	129008	20.0000	19.7	
106	1,2-Dibromo-3-Chloropropane	157	11.392	11.392	(1.075)	17507	20.0000	20.2	
109	Hexachlorobutadiene	225	11.861	11.861	(1.119)	26962	20.0000	21.0	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	59851	20.0000	20.1	
110	Naphthalene	128	12.191	12.191	(1.150)	168458	20.0000	20.2	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	60299	20.0000	20.1	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2894d.d

Page 1

Date : 05-MAY-2017 10:43

Client ID: V14STD020

Instrument: msv14.i

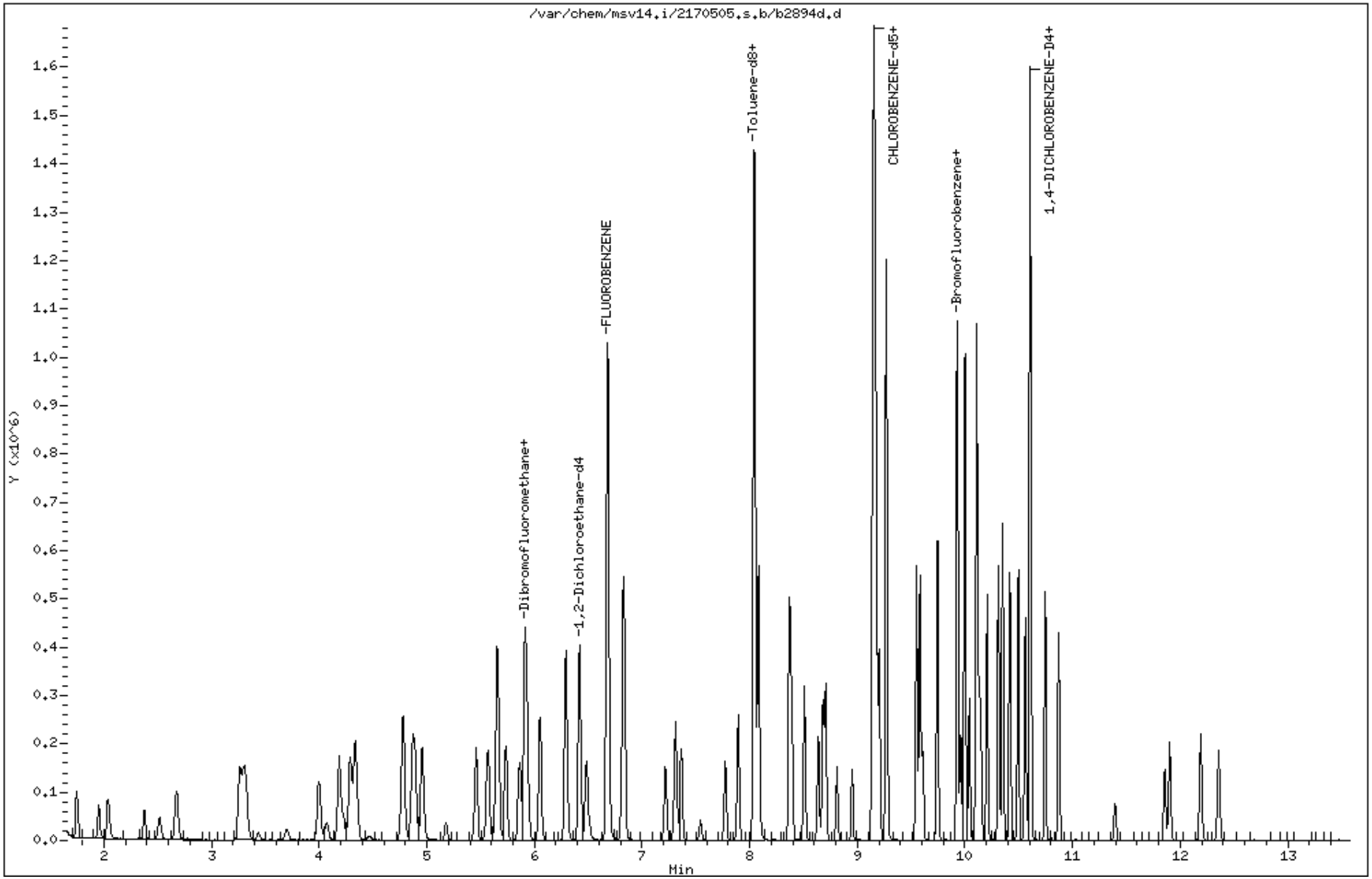
Sample Info: 1206*V14STD020

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25

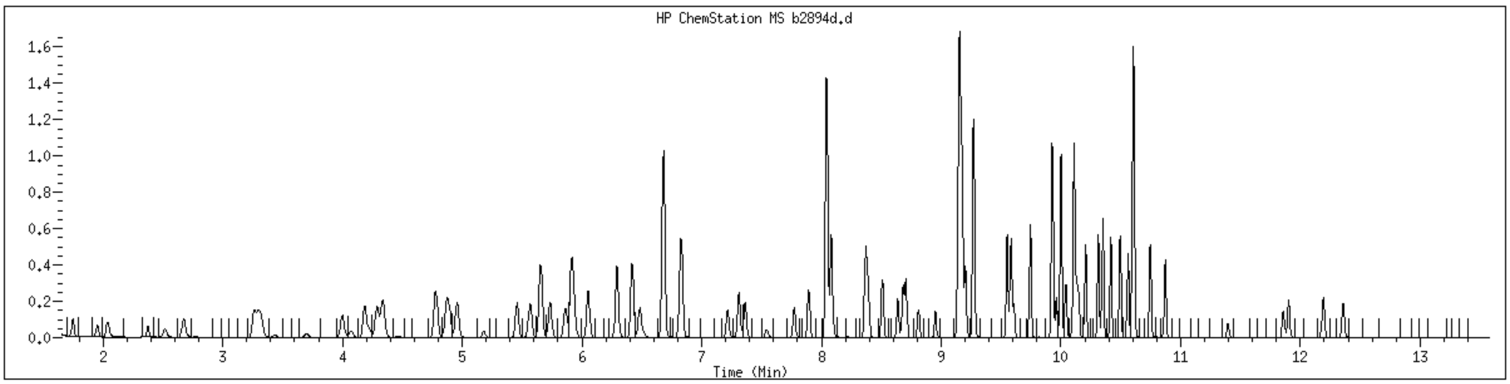


Data file : /var/chem/msv14.i/2170505.s.b/b2894d.d
Report Date: 05/06/2017 11:41

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1206
Injection Date: 05/05/2017 10:43
Operator : LBH
Sample Info : 1206*V14STD020
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE

SampleType : CALIB_6
Instrument : msv14.i
Compound Sublist: 8260b+AppIX1



Original | Final

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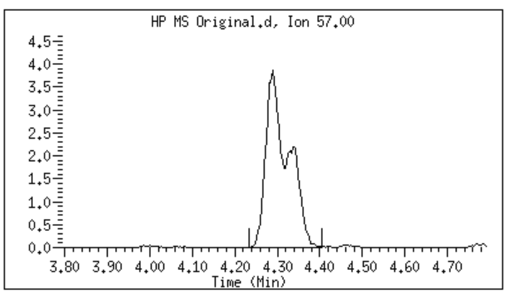
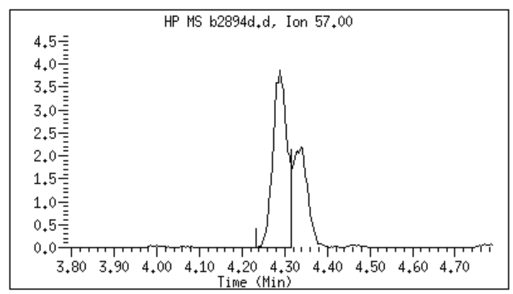
23 Hexane | CAS#: 110-54-3 | Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



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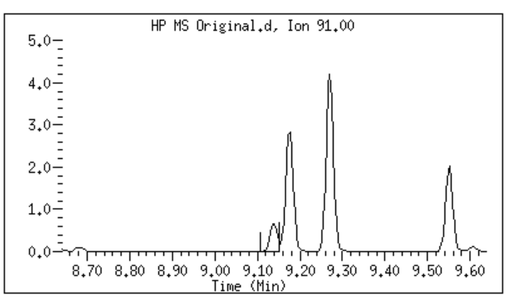
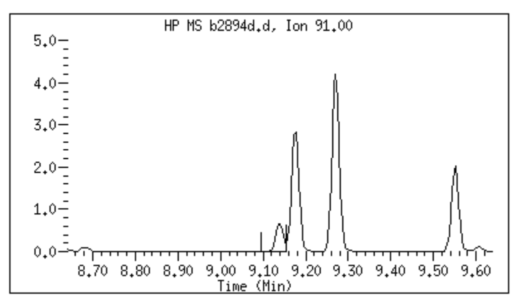
140 1-Chlorohexane | CAS#: 544-10-5 | Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2895d.d
Lab Smp Id: 1207 Client Smp ID: V14STD050
Inj Date : 05-MAY-2017 11:05
Operator : LBH Inst ID: msv14.i
Smp Info : 1207*V14STD050
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:05 Cal File: b2895d.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	226282	50.0000	53.0	
2 Chloromethane ++	50	1.953	1.953	(0.292)	161243	50.0000	46.3	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	224477	50.0000	53.4	
5 Bromomethane	94	2.373	2.373	(0.355)	79796	50.0000	51.6	
6 Chloroethane	64	2.512	2.512	(0.376)	133514	50.0000	46.9	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	259664	50.0000	53.0	
11 1,1-Dichloroethene +	96	3.265	3.265	(0.489)	141833	50.0000	50.7	
14 Carbon Disulfide	76	3.295	3.295	(0.493)	455635	50.0000	51.1	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	154455	50.0000	55.2	
13 Methyl Iodide	142	3.438	3.438	(0.515)	67934	50.0000	51.0	
9 Acrolein	56	3.693	3.693	(0.553)	60570	250.000	261	
17 Methylene Chloride	49	3.996	3.996	(0.598)	246548	50.0000	47.0	
12 Acetone	43	4.068	4.068	(0.609)	130879	50.0000	46.3	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	307651	50.0000	52.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	194771	50.0000	50.5	8700
	23 Hexane	57	4.289	4.289	(0.642)	276985	50.0000	53.0	9305(M2)
	21 MTBE	73	4.334	4.334	(0.649)	658406	50.0000	56.4	9719
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	24812	50.0000	47.9	9359
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	713077	50.0000	57.8	9882
	29 Chloroprene	53	4.866	4.866	(0.728)	323501	50.0000	53.1	9053
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	436914	50.0000	53.8	
	22 Acrylonitrile	53	4.960	4.960	(0.742)	439660	250.000	267	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	143693	50.0000	57.3	
M	48 Total 1,2-Dichloroethene	61				627248	100.000	109	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	319597	50.0000	56.4	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	349939	50.0000	54.9	
	38 Cyclohexane	56	5.653	5.653	(0.846)	375949	50.0000	52.3	9195
	34 Bromochloromethane	128	5.657	5.657	(0.847)	94788	50.0000	50.2	
	41 Chloroform +	83	5.732	5.732	(0.858)	407996	50.0000	52.8	
	39 Carbon Tetrachloride	117	5.859	5.859	(0.877)	295305	50.0000	56.3	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	222322	50.0000	49.7	6913
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	350493	50.0000	53.7	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	297028	50.0000	58.3	
	32 2-Butanone	43	6.047	6.047	(0.905)	159914	50.0000	54.2	
	44 Benzene	78	6.291	6.291	(0.942)	907887	50.0000	54.9	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	146288	50.0000	49.9	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	331013	50.0000	49.9	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	47281	250.000	268	9363
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	866312	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	324043	50.0000	58.1	8787
	49 Trichloroethene	130	6.834	6.834	(1.023)	231527	50.0000	53.1	
	52 Dibromomethane	93	7.217	7.217	(1.080)	146875	50.0000	51.9	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	236689	50.0000	54.3	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	319111	50.0000	53.3	
	55 1,4- Dioxane	58	7.539	7.539	(1.129)	47547	1250.00	1270	9430
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	342840	50.0000	53.4	9587
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	375211	50.0000	59.1	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	805356	50.0000	50.2	
	61 Toluene +	91	8.082	8.082	(0.883)	898726	50.0000	52.8	
M	145 1-3 Dichloropropene total	100				727976	100.000	115	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	160780	50.0000	52.2	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	239664	50.0000	56.1	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	352765	50.0000	56.0	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	209391	50.0000	51.8	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	264205	50.0000	55.9	9684
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	232953	50.0000	54.5	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	389962	50.0000	54.7	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	209109	50.0000	53.9	
	68 2-Hexanone	43	8.952	8.952	(0.978)	195373	50.0000	57.1	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	237528	50.0000	52.4	9022(M2)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	345523	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	548987	50.0000	51.3	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	287800	50.0000	54.2	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	207751	50.0000	52.1	
75	p,m-Xylene	106	9.271	9.271	(1.013)	660583	100.000	103	
M 99	TOTAL XYLENE	106				982352	150.000	155	
76	o-Xylene	106	9.552	9.552	(1.044)	321769	50.0000	52.5	
77	Styrene	104	9.582	9.582	(1.047)	545885	50.0000	51.9	
78	Bromoform ++	173	9.608	9.608	(1.050)	159257	50.0000	51.7	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	828151	50.0000	52.1	
161	cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	86579	50.0000	43.9	9533
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	209409	50.0000	50.7	
84	Bromobenzene	77	9.998	9.998	(0.943)	414018	50.0000	51.7	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	914970	50.0000	53.7	
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	271209	50.0000	49.2	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	655761	50.0000	55.2	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	644685	50.0000	56.4	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	355465	50.0000	51.5	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	78911	50.0000	49.7	
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	586805	50.0000	54.6	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	355409	50.0000	57.5	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	672478	50.0000	56.9	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	726686	50.0000	57.0	
92	p-Isopropyltoluene	119	10.497	10.497	(0.990)	606247	50.0000	57.4	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	349689	50.0000	51.2	
* 97	1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	245954	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	347316	50.0000	48.7	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	534869	50.0000	54.5	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	331615	50.0000	51.1	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	44954	50.0000	52.0	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	69112	50.0000	53.4	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	168927	50.0000	50.5	
110	Naphthalene	128	12.191	12.191	(1.150)	520416	50.0000	50.8	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	167545	50.0000	50.5	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2895d.d

Page 1

Date : 05-MAY-2017 11:05

Client ID: V14STD050

Instrument: msv14.i

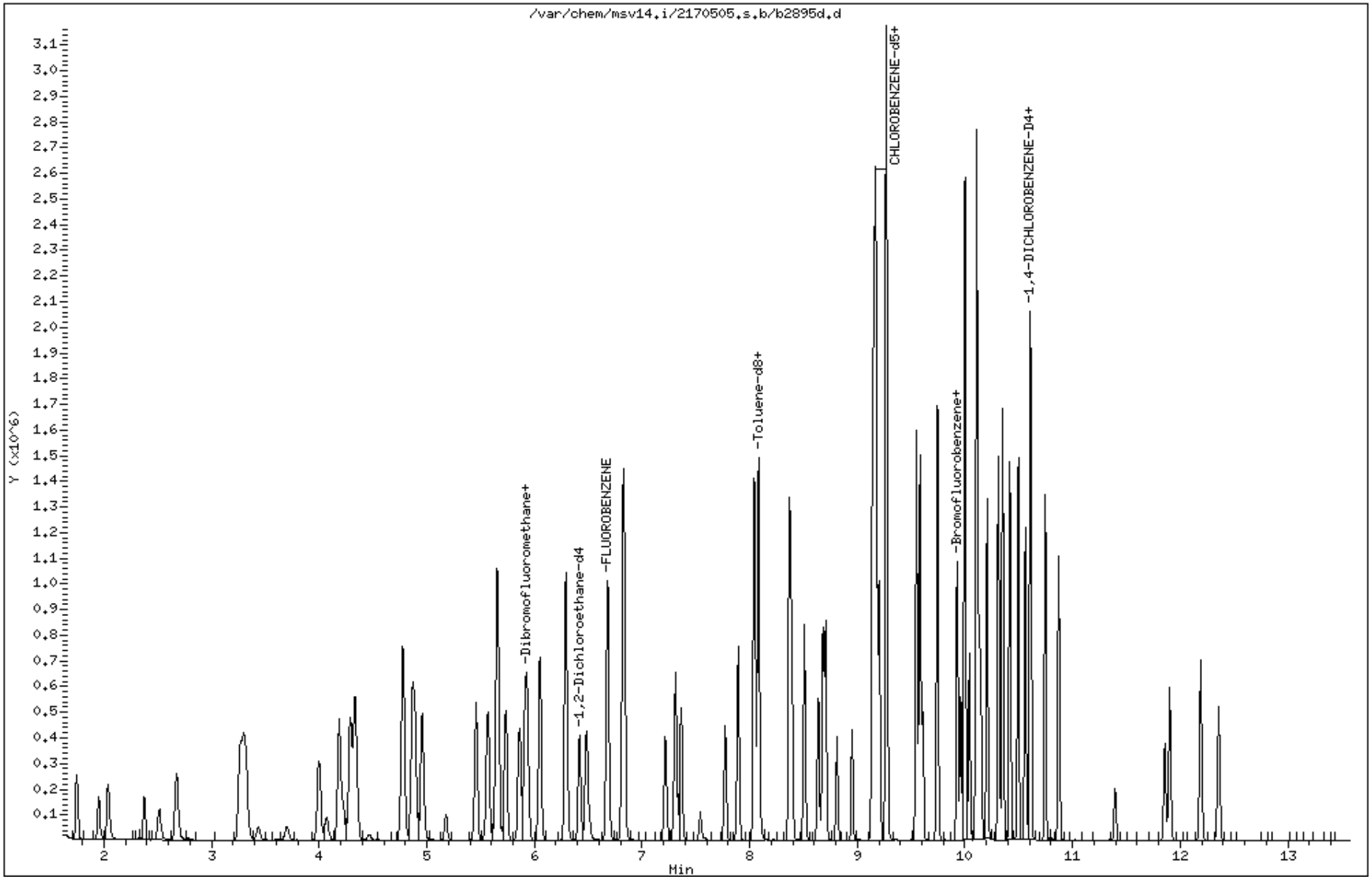
Sample Info: 1207*V14STD050

Purge Volume: 5.0

Operator: LBH

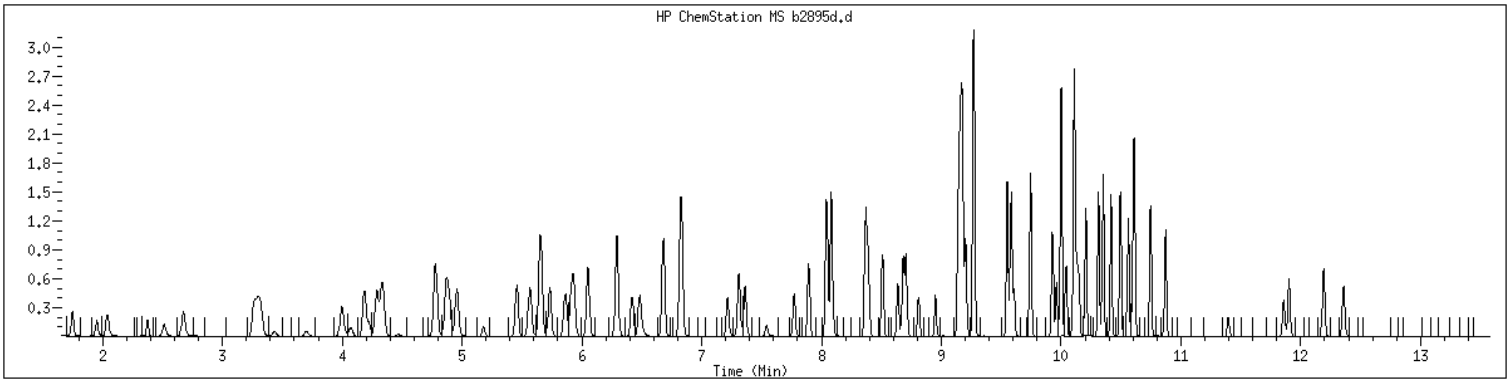
Column phase: RTX-VMS-30M

Column diameter: 0.25



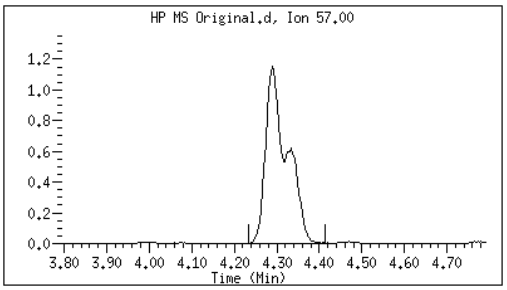
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1207 SampleType : CALIB_7
Injection Date: 05/05/2017 11:05 Instrument : msv14.i
Operator : LBH
Sample Info : 1207*V14STD050
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



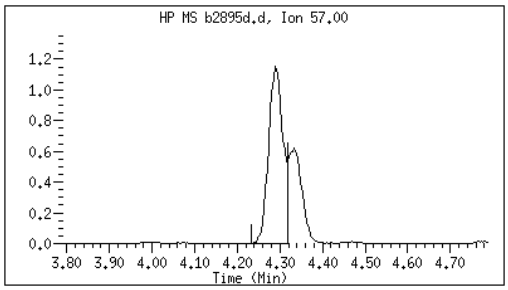
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2

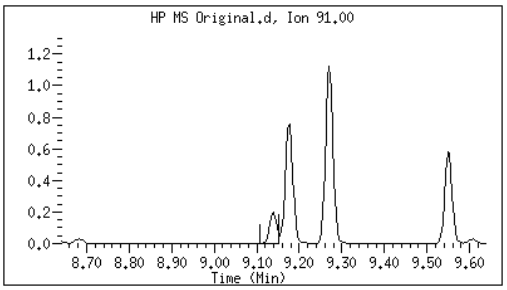


Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35

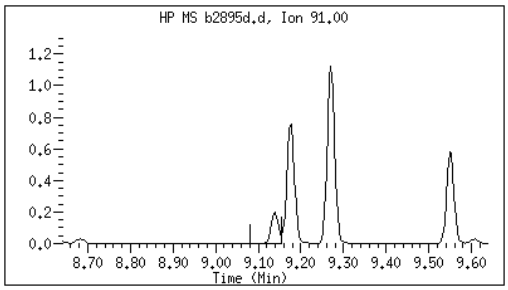


140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2896d.d
Lab Smp Id: 1208 Client Smp ID: V14STD100
Inj Date : 05-MAY-2017 11:27
Operator : LBH Inst ID: msv14.i
Smp Info : 1208*V14STD100
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:27 Cal File: b2896d.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	434782	100.000	99.4	
2 Chloromethane ++	50	1.953	1.953	(0.292)	321871	100.000	91.6	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	440682	100.000	102	
5 Bromomethane	94	2.373	2.373	(0.355)	159518	100.000	100	
6 Chloroethane	64	2.505	2.505	(0.375)	253346	100.000	88.7	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	505185	100.000	100	
11 1,1-Dichloroethene +	96	3.269	3.269	(0.489)	269048	100.000	94.7	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	894083	100.000	99.1	
10 1,1,2Trichlotrifluoroethane	101	3.314	3.314	(0.496)	300694	100.000	104	
13 Methyl Iodide	142	3.434	3.434	(0.514)	169998	100.000	102	
9 Acrolein	56	3.700	3.700	(0.554)	124609	500.000	520	
17 Methylene Chloride	49	3.996	3.996	(0.598)	481777	100.000	91.1	
12 Acetone	43	4.071	4.071	(0.609)	268958	100.000	93.9	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	627308	100.000	104	

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	20	Methyl Acetate	43	4.225	4.225	(0.632)	380761	100.000	96.9	8297
	23	Hexane	57	4.289	4.289	(0.642)	581818	100.000	103	9387(M1)
	21	MTBE	73	4.334	4.334	(0.649)	1360315	100.000	111	9838
	26	tert-Butyl Alcohol	59	4.469	4.469	(0.669)	50195	100.000	95.6	9421
	27	Isopropyl Ether	45	4.776	4.776	(0.715)	1482352	100.000	114	9849
	29	Chloroprene	53	4.862	4.862	(0.728)	658501	100.000	102	9461
	24	1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	848454	100.000	101	
	22	Acrylonitrile	53	4.956	4.956	(0.742)	870910	500.000	512	
	25	Vinyl Acetate	43	5.177	5.177	(0.775)	308759	100.000	116	
M	48	Total 1,2-Dichloroethene	61				1277976	200.000	214	
	30	cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	650668	100.000	110	
	31	2,2-Dichloropropane	77	5.567	5.567	(0.833)	710381	100.000	107	
	38	Cyclohexane	56	5.653	5.653	(0.846)	756009	100.000	101	9380
	34	Bromochloromethane	128	5.657	5.657	(0.847)	180192	100.000	94.1	
	41	Chloroform +	83	5.732	5.732	(0.858)	801694	100.000	101	
	39	Carbon Tetrachloride	117	5.863	5.863	(0.878)	595092	100.000	109	
$	36	Dibromofluoromethane	111	5.912	5.912	(0.885)	226217	50.0000	49.4	6932
	37	1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	699363	100.000	104	
	42	1,1-Dichloropropene	75	6.051	6.051	(0.906)	609203	100.000	113	
	32	2-Butanone	43	6.043	6.043	(0.905)	326259	100.000	106	
	44	Benzene	78	6.291	6.291	(0.942)	1812603	100.000	106	
$	43	1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	151264	50.0000	50.2	
	46	1,2-Dichloroethane	62	6.482	6.482	(0.970)	659435	100.000	97.4	
	45	Isobutyl Alcohol	43	6.508	6.508	(0.974)	101575	500.000	548	9602
*	47	FLUOROBENZENE	96	6.681	6.681	(1.000)	888686	50.0000		
	50	Methyl Cyclohexane	83	6.827	6.827	(1.022)	654473	100.000	112	8383
	49	Trichloroethene	130	6.834	6.834	(1.023)	449873	100.000	100	
	52	Dibromomethane	93	7.217	7.217	(1.080)	292580	100.000	101	
	51	1,2-Dichloropropane +	63	7.310	7.310	(1.094)	477807	100.000	106	
	54	Bromodichloromethane	83	7.363	7.363	(1.102)	639838	100.000	104	
	55	1,4- Dioxane	58	7.543	7.543	(1.129)	97299	2500.00	2530	9450
	57	1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	688838	100.000	104	9631
	58	cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	778640	100.000	116	
$	60	Toluene-d8	98	8.041	8.041	(0.879)	819042	50.0000	50.6	
	61	Toluene +	91	8.082	8.082	(0.883)	1771791	100.000	103	
M	145	1-3 Dichloropropene total	100				1497962	200.000	225	0
	66	Tetrachloroethene	164	8.371	8.371	(0.915)	312114	100.000	101	
	59	4-methyl-2-pentanone	43	8.367	8.367	(0.914)	501248	100.000	113	
	62	trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	719322	100.000	109	
	65	1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	417915	100.000	102	
	162	3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	549729	100.000	113	9702
	69	Dibromochloromethane	129	8.637	8.637	(0.944)	476115	100.000	109	
	67	1,3-Dichloropropane	76	8.705	8.705	(0.951)	771730	100.000	106	
	70	1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	419505	100.000	106	
	68	2-Hexanone	43	8.952	8.952	(0.978)	408541	100.000	115	
	140	1-Chlorohexane	91	9.140	9.140	(0.999)	485734	100.000	102	9551(M2)
*	71	CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	347670	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	1052415	100.000	98.1	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	551421	100.000	103	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	405437	100.000	101	
75	p,m-Xylene	106	9.271	9.271	(1.013)	1263391	200.000	198	
M 99	TOTAL XYLENE	106				1897304	300.000	299	
76	o-Xylene	106	9.552	9.552	(1.044)	633913	100.000	101	
77	Styrene	104	9.582	9.582	(1.047)	1078634	100.000	101	
78	Bromoform ++	173	9.608	9.608	(1.050)	320444	100.000	103	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	1628942	100.000	101	
161	cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	181473	100.000	95.1	9497
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	214092	50.0000	51.2	
84	Bromobenzene	77	9.998	9.998	(0.943)	791728	100.000	101	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	1766465	100.000	105	
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	522507	100.000	97.6	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	1247893	100.000	106	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	1206294	100.000	107	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	702143	100.000	103	
83	trans-1,4-Dichloro-2-Butene	53	10.152	10.152	(0.958)	159471	100.000	102	
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	1155215	100.000	108	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	696517	100.000	113	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	1272417	100.000	108	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	1406629	100.000	111	
92	p-Isopropyltoluene	119	10.497	10.497	(0.990)	1172653	100.000	111	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	673139	100.000	101	
* 97	1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	240077	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	656694	100.000	95.3	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	1013377	100.000	105	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	636901	100.000	101	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	90964	100.000	106	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	137785	100.000	107	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	354038	100.000	101	
110	Naphthalene	128	12.191	12.191	(1.150)	1091856	100.000	101	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	341487	100.000	101	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2896d.d

Page 1

Date : 05-MAY-2017 11:27

Client ID: V14STD100

Instrument: msv14.i

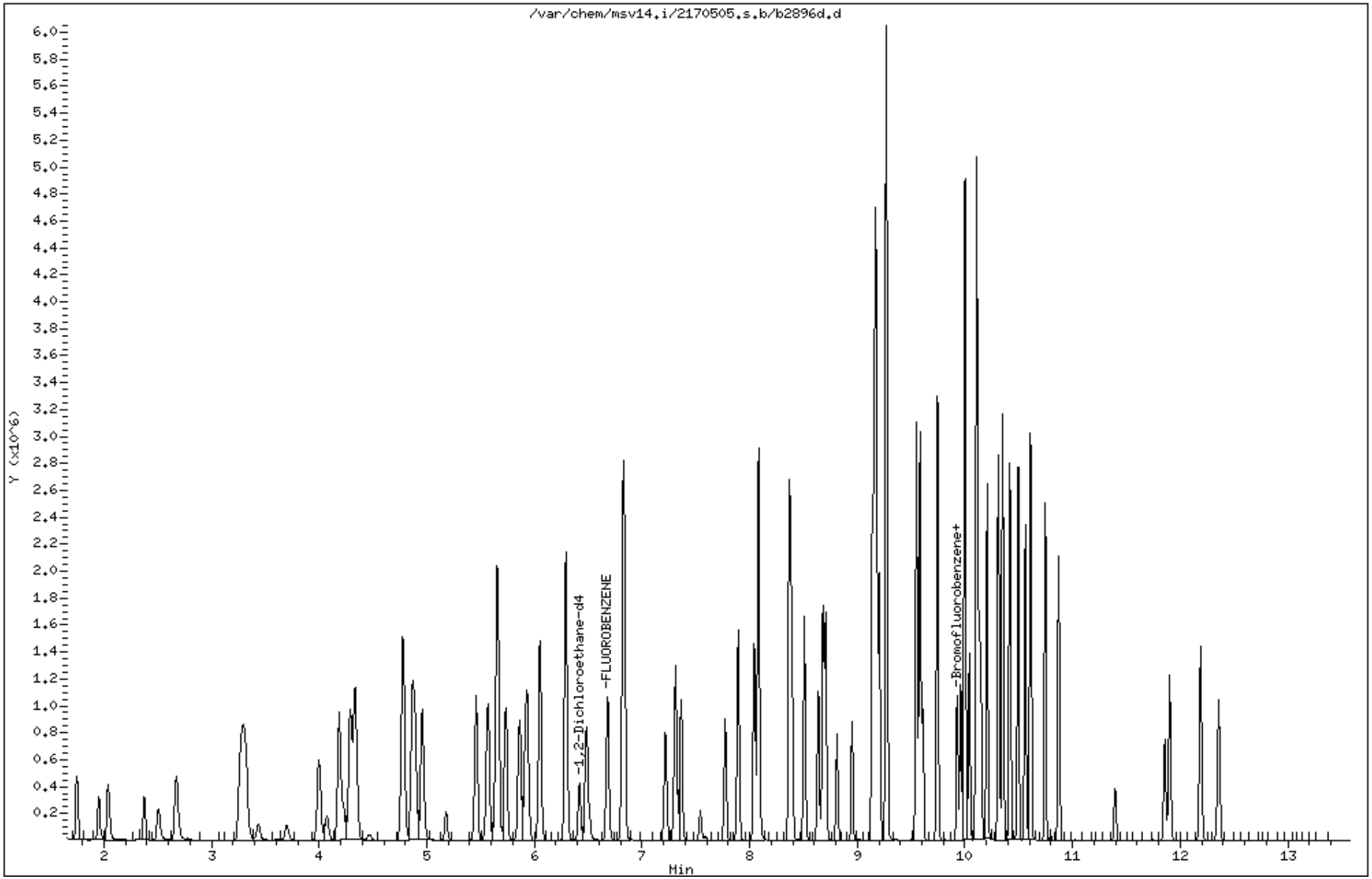
Sample Info: 1208*V14STD100

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

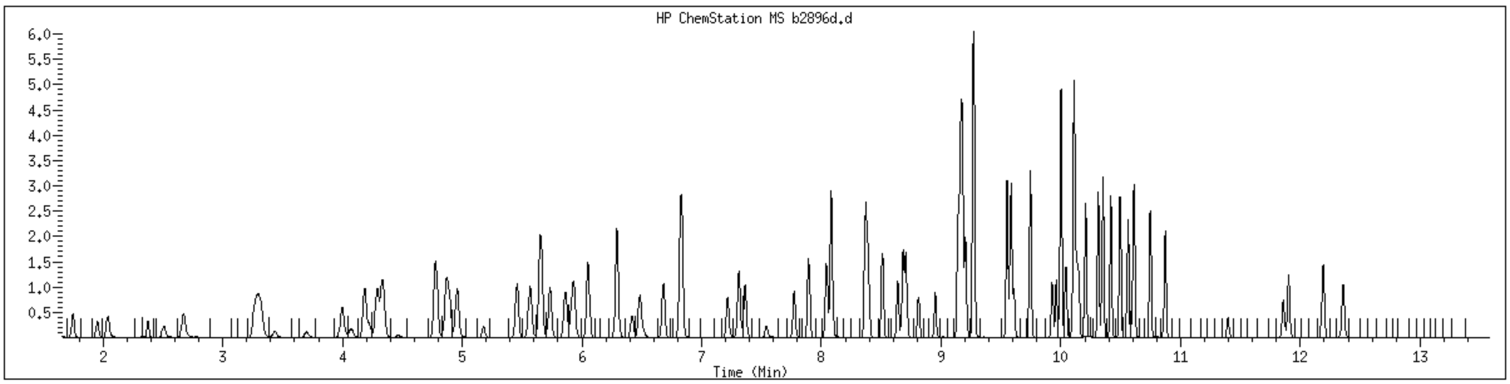
Column diameter: 0.25



Data file : /var/chem/msv14.i/2170505.s.b/b2896d.d
Report Date: 05/06/2017 11:41

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1208 SampleType : CALIB_8
Injection Date: 05/05/2017 11:27 Instrument : msv14.i
Operator : LBH
Sample Info : 1208*V14STD100
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



Original Final

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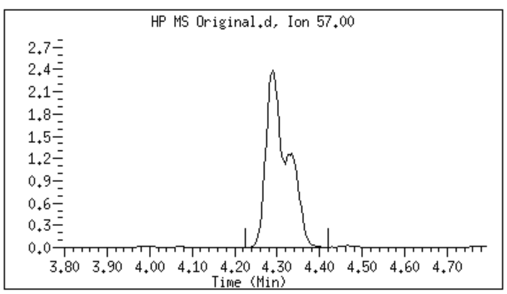
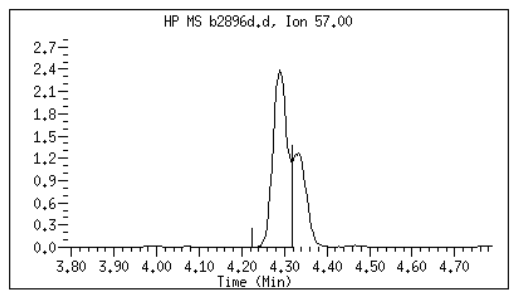
23 Hexane CAS#: 110-54-3 Reason: M1



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:34



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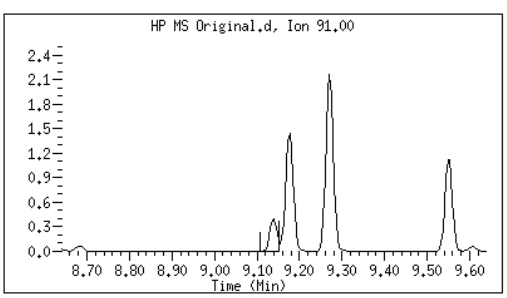
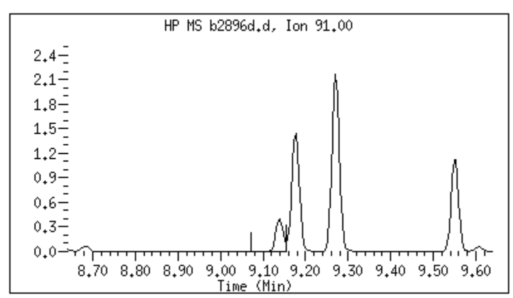
140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:34



M1 - Target system integrated incorrectly
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2897d.d
Lab Smp Id: 1209 Client Smp ID: V14STD200
Inj Date : 05-MAY-2017 11:50
Operator : LBH Inst ID: msv14.i
Smp Info : 1209*V14STD200
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	889333	200.000	198	
2 Chloromethane ++	50	1.950	1.950	(0.292)	659054	200.000	185	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	928345	200.000	207	(A)
5 Bromomethane	94	2.373	2.373	(0.355)	329925	200.000	201	(A)
6 Chloroethane	64	2.501	2.501	(0.374)	524484	200.000	181	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	1096008	200.000	210	(A)
11 1,1-Dichloroethene +	96	3.269	3.269	(0.489)	583888	200.000	200	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	1937226	200.000	204	(A)
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	650009	200.000	216	(A)
13 Methyl Iodide	142	3.438	3.438	(0.515)	422952	200.000	206	(AM1)
9 Acrolein	56	3.700	3.700	(0.554)	285751	1000.00	1130	(A)
17 Methylene Chloride	49	4.000	4.000	(0.599)	1031544	200.000	191	
12 Acetone	43	4.068	4.068	(0.609)	554038	200.000	190	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	1162213	200.000	190	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	735425	200.000	184	9120
	23 Hexane	57	4.289	4.289	(0.642)	1045897	200.000	190	9359(M1)
	21 MTBE	73	4.330	4.330	(0.648)	2477043	200.000	197	9706
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	104432	200.000	194	9380
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	3079307	200.000	225	9793(A)
	29 Chloroprene	53	4.866	4.866	(0.728)	1377145	200.000	203	9488(A)
	24 1,1-Dichloroethane ++	63	4.896	4.896	(0.733)	1593783	200.000	187	
	22 Acrylonitrile	53	4.960	4.960	(0.742)	1762446	1000.00	1010	(A)
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	637147	200.000	228	(A)
M	48 Total 1,2-Dichloroethene	61				2414169	400.000	394	
	30 cis-1,2-Dichloroethene	61	5.462	5.462	(0.818)	1251956	200.000	204	(A)
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	1491743	200.000	216	(A)
	38 Cyclohexane	56	5.653	5.653	(0.846)	1589625	200.000	202	9497(A)
	34 Bromochloromethane	128	5.661	5.661	(0.847)	360355	200.000	185	
	41 Chloroform +	83	5.736	5.736	(0.859)	1630864	200.000	200	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	1278476	200.000	223	(A)
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	212313	50.0000	45.7	6957
	37 1,1,1-Trichloroethane	97	5.935	5.935	(0.888)	1471606	200.000	210	(A)
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	1296341	200.000	229	(A)
	32 2-Butanone	43	6.043	6.043	(0.905)	697083	200.000	218	(A)
	44 Benzene	78	6.291	6.291	(0.942)	3803066	200.000	213	(A)
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	150532	50.0000	48.8	
	46 1,2-Dichloroethane	62	6.486	6.486	(0.971)	1381080	200.000	199	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	203428	1000.00	1060	9660(A)
*	47 FLUOROBENZENE	96	6.681	6.681	(1.000)	913743	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	1343066	200.000	219	8418(A)
	49 Trichloroethene	130	6.834	6.834	(1.023)	911653	200.000	198	
	52 Dibromomethane	93	7.217	7.217	(1.080)	603142	200.000	202	(A)
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	1000025	200.000	213	(A)
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	1342324	200.000	210	(A)
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	175099	5000.00	4510	9442
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	1438616	200.000	209	9638(A)
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	1670934	200.000	235	(A)
$	60 Toluene-d8	98	8.041	8.041	(0.879)	830261	50.0000	54.2	
	61 Toluene +	91	8.082	8.082	(0.883)	3590948	200.000	219	(A)
M	145 1-3 Dichloropropene total	100				3180799	400.000	454	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	621664	200.000	212	(A)
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	1023930	200.000	240	(A)
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	1509865	200.000	219	(A)
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	850562	200.000	219	(A)
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	1105776	200.000	235	9714(A)
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	984612	200.000	234	(A)
	67 1,3-Dichloropropane	76	8.709	8.709	(0.952)	1581698	200.000	228	(A)
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	858136	200.000	227	(A)
	68 2-Hexanone	43	8.952	8.952	(0.978)	833683	200.000	243	(A)
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	971106	200.000	208	8959(AM2)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	324924	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	1962736	200.000	196	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	1028171	200.000	204	(A)
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	794912	200.000	210	(A)
75	p,m-Xylene	106	9.271	9.271	(1.013)	2303027	400.000	393	
M 99	TOTAL XYLENE	106				3510335	600.000	595	
76	o-Xylene	106	9.552	9.552	(1.044)	1207308	200.000	202	(A)
77	Styrene	104	9.582	9.582	(1.047)	2028936	200.000	201	(A)
78	Bromoform ++	173	9.608	9.608	(1.050)	611181	200.000	208	(A)
79	Isopropylbenzene	105	9.747	9.747	(1.065)	3032269	200.000	200	
161	cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	333314	200.000	200	9472(A)
$ 80	Bromofluorobenzene	174	9.931	9.931	(1.085)	195879	50.0000	50.1	
84	Bromobenzene	77	9.998	9.998	(0.943)	1399347	200.000	204	(A)
86	n-Propylbenzene	91	10.002	10.002	(0.943)	3117022	200.000	211	(A)
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	920358	200.000	198	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	2215727	200.000	214	(A)
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	2092706	200.000	210	(A)
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	1245220	200.000	209	(A)
83	trans-1,4-Dichloro-2-Butene	53	10.152	10.152	(0.958)	292440	200.000	213	(A)
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	2126455	200.000	224	(A)
91	tert-butylbenzene	91	10.313	10.313	(0.973)	1264553	200.000	229	(A)
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	2255891	200.000	217	(A)
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	2519626	200.000	223	(A)
92	p-Isopropyltoluene	119	10.497	10.497	(0.990)	2095889	200.000	223	(A)
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	1205368	200.000	206	(A)
* 97	1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	209473	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	1189589	200.000	198	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	1852735	200.000	217	(A)
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	1166016	200.000	209	(A)
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	182252	200.000	237	(A)
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	285230	200.000	243	(A)
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	745871	200.000	206	(A)
110	Naphthalene	128	12.191	12.191	(1.150)	2323190	200.000	206	(A)
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	722816	200.000	206	(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M1- Compound response manually integrated because Target system did not integrate.
M2- Compound response manually integrated because Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2897d.d

Page 1

Date : 05-MAY-2017 11:50

Client ID: V14STD200

Instrument: msv14.i

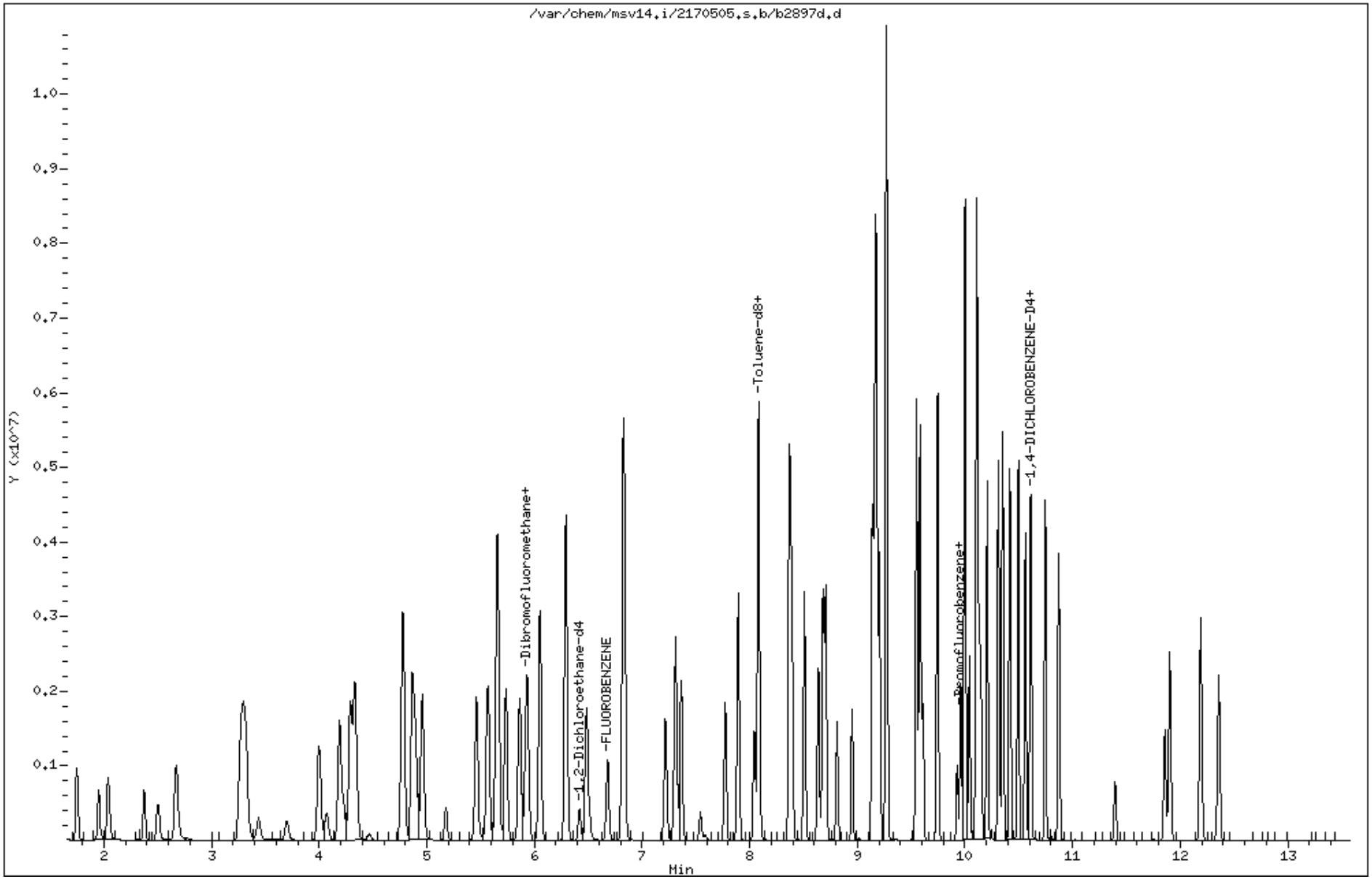
Sample Info: 1209*V14STD200

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

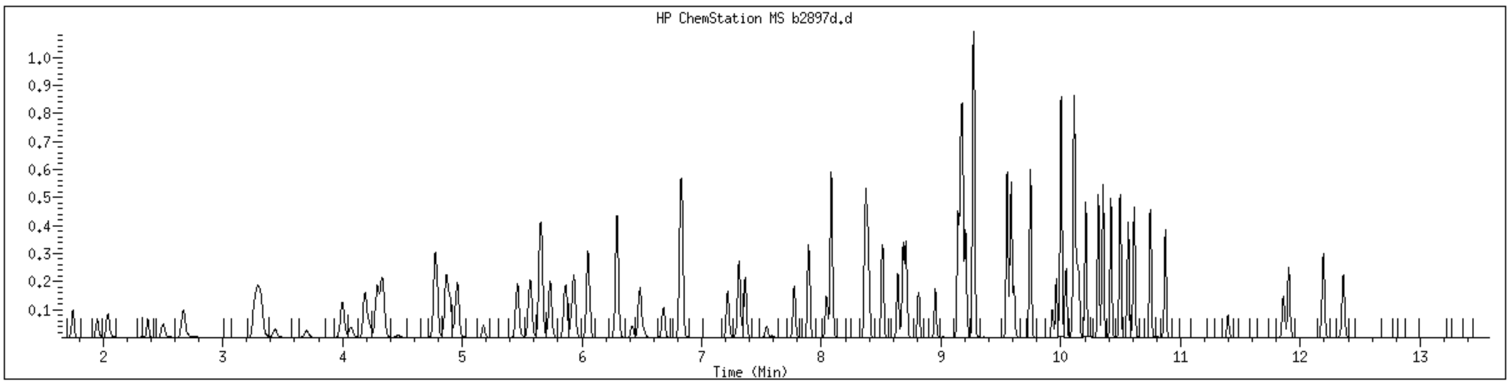
Column diameter: 0.25



Report Date: 05/06/2017 11:41

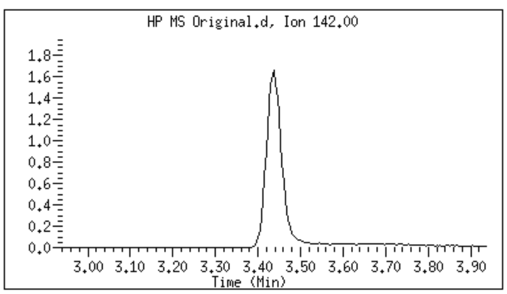
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID   : 1209   SampleType   : CALIB_9
Injection Date: 05/05/2017 11:50   Instrument   : msv14.i
Operator   : LBH
Sample Info   : 1209*V14STD200
Misc Info   : MSV~38274~*1*LBH
Method   : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution   : 1.00
Matrix   : WATER
Integrator   : HP RTE   Compound Sublist: 8260b+AppIX1



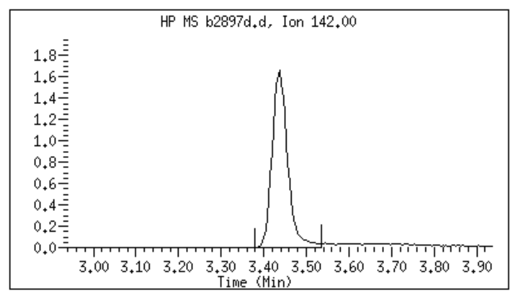
Original   Final

13 Methyl Iodide   CAS#: 74-88-4   Reason: M1

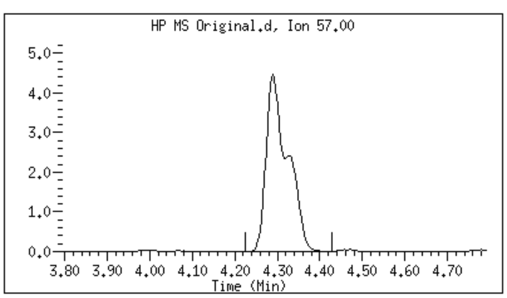


Electronic Signature Applied

User: lbh
Date: 05/05/2017 13:43

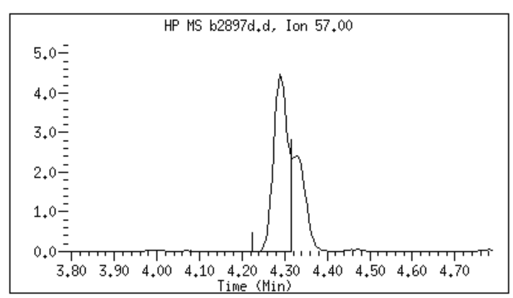


23 Hexane   CAS#: 110-54-3   Reason: M1



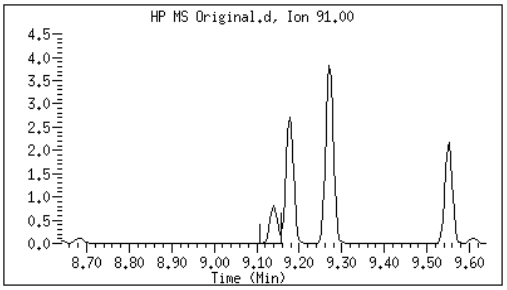
Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:33



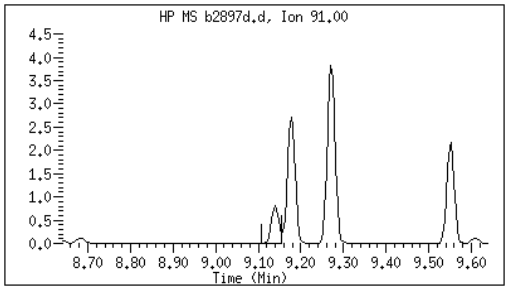
Original Final

140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:33



M1 - Target system integrated incorrectly
M2 - Target system integrated incorrectly

Form 6I

ICAL Verifications

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217050803	Instrument ID:	MSV14
Analysis Date:	05/05/17 1415	Lab File ID:	2170505/b2902d
Analysis Method:	EPA 8260B	Analytical Batch:	609837

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
1,1,1-Trichloroethane	ug/L	50.0	49.0	98	80	120	
1,1,2,2-Tetrachloroethane	ug/L	50.0	47.4	95	80	120	
1,1,2-Trichloroethane	ug/L	50.0	48.5	97	80	120	
1,1-Dichloroethane	ug/L	50.0	51.4	103	80	120	
1,1-Dichloroethene	ug/L	50.0	49.4	99	80	120	
1,2,3-Trichlorobenzene	ug/L	50.0	45.1	90	80	120	
1,2,4-Trichlorobenzene	ug/L	50.0	45.3	91	80	120	
1,2-Dibromo-3-chloropropane	ug/L	50.0	44.9	90	80	120	
1,2-Dibromoethane	ug/L	50.0	49.5	99	80	120	
1,2-Dichlorobenzene	ug/L	50.0	49.5	99	80	120	
1,2-Dichloroethane	ug/L	50.0	47.8	96	80	120	
1,2-Dichloropropane	ug/L	50.0	51.5	103	80	120	
1,3-Dichlorobenzene	ug/L	50.0	50.5	101	80	120	
1,4-Dichlorobenzene	ug/L	50.0	48.6	97	80	120	
2-Butanone	ug/L	50.0	48.6	97	80	120	
2-Hexanone	ug/L	50.0	48.9	98	80	120	
4-Methyl-2-pentanone	ug/L	50.0	50.1	100	80	120	
Acetone	ug/L	50.0	42.2	84	80	120	
Benzene	ug/L	50.0	49.4	99	80	120	
Bromochloromethane	ug/L	50.0	48.4	97	80	120	
Bromodichloromethane	ug/L	50.0	51.3	103	80	120	
Bromoform	ug/L	50.0	48.7	97	80	120	
Bromomethane	ug/L	50.0	48.5	97	80	120	
Carbon disulfide	ug/L	50.0	49.9	100	80	120	
Carbon tetrachloride	ug/L	50.0	51.0	102	80	120	
Chlorobenzene	ug/L	50.0	50.5	101	80	120	
Chloroethane	ug/L	50.0	44.7	89	80	120	
Chloroform	ug/L	50.0	49.9	100	80	120	
Chloromethane	ug/L	50.0	45.8	92	80	120	
cis-1,2-Dichloroethene	ug/L	50.0	52.4	105	80	120	
cis-1,3-Dichloropropene	ug/L	50.0	53.5	107	80	120	
Cyclohexane	ug/L	50.0	50.0	100	80	120	
Dibromochloromethane	ug/L	50.0	51.3	103	80	120	
Dichlorodifluoromethane	ug/L	50.0	41.4	83	80	120	

FORM 6I - ORG

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217050803	Instrument ID:	MSV14
Analysis Date:	05/05/17 1415	Lab File ID:	2170505/b2902d
Analysis Method:	EPA 8260B	Analytical Batch:	609837

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
Ethylbenzene	ug/L	50.0	51.1	102	80	120	
Isopropylbenzene (Cumene)	ug/L	50.0	49.8	100	80	120	
Methyl Acetate	ug/L	50.0	46.6	93	80	120	
Methylcyclohexane	ug/L	50.0	56.1	112	80	120	
Methylene chloride	ug/L	50.0	44.4	89	80	120	
Styrene	ug/L	50.0	49.2	98	80	120	
tert-Butyl methyl ether (MTBE)	ug/L	50.0	54.3	109	80	120	
Tetrachloroethene	ug/L	50.0	49.6	99	80	120	
Toluene	ug/L	50.0	49.4	99	80	120	
trans-1,2-Dichloroethene	ug/L	50.0	49.1	98	80	120	
trans-1,3-Dichloropropene	ug/L	50.0	53.5	107	80	120	
Trichloroethene	ug/L	50.0	48.9	98	80	120	
Trichlorofluoromethane	ug/L	50.0	49.4	99	80	120	
Trichlorotrifluoroethane	ug/L	50.0	53.4	107	80	120	
Xylene (total)	ug/L	150	151	101	80	120	

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2902d.d
Lab Smp Id: 1600 Client Smp ID: V14ICV050
Inj Date : 05-MAY-2017 14:15
Operator : LBH Inst ID: msv14.i
Smp Info : 1600*V14ICV050
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	175550	41.4060	41.4	
2 Chloromethane ++	50	1.953	1.950	(0.292)	154350	45.8050	45.8	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	202927	48.0238	48.0	
5 Bromomethane	94	2.373	2.373	(0.355)	75210	48.4543	48.5	
6 Chloroethane	64	2.516	2.501	(0.377)	122093	44.7152	44.7	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	243315	49.4266	49.4	
11 1,1-Dichloroethene +	96	3.262	3.269	(0.488)	136324	49.4347	49.4	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	448128	49.8811	49.9	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	151963	53.3910	53.4	
13 Methyl Iodide	142	3.438	3.438	(0.515)	70317	43.0123	43.0	
9 Acrolein	56	3.697	3.700	(0.553)	63266	265.902	266	
17 Methylene Chloride	49	3.996	4.000	(0.598)	226484	44.4426	44.4	
12 Acetone	43	4.068	4.068	(0.609)	116431	42.2112	42.2	
19 trans-1,2-Dichloroethene	61	4.184	4.188	(0.626)	283917	49.0521	49.1	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	175673	46.6301	46.6	8254
	23 Hexane	57	4.293	4.289	(0.643)	286506	55.2857	55.3	9264(M2)
	21 MTBE	73	4.334	4.330	(0.649)	643497	54.2748	54.3	9779
	26 tert-Butyl Alcohol	59	4.461	4.465	(0.668)	22355	44.0877	44.1	9332
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	761543	58.9715	59.0	9868
	29 Chloroprene	53	4.866	4.866	(0.728)	332273	52.3856	52.4	9001
	24 1,1-Dichloroethane ++	63	4.889	4.896	(0.732)	412628	51.3704	51.4	
	22 Acrylonitrile	53	4.956	4.960	(0.742)	424528	256.844	257	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	156175	59.0944	59.1	
M	48 Total 1,2-Dichloroethene	61				586975	101.468	101	
	30 cis-1,2-Dichloroethene	61	5.455	5.462	(0.817)	303058	52.4161	52.4	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	333930	51.1555	51.2	
	38 Cyclohexane	56	5.653	5.653	(0.846)	366985	50.0190	50.0	9217
	34 Bromochloromethane	128	5.657	5.661	(0.847)	88839	48.3580	48.4	
	41 Chloroform +	83	5.732	5.736	(0.858)	384363	49.8868	49.9	
	39 Carbon Tetrachloride	117	5.860	5.863	(0.877)	276671	51.0240	51.0	
$	36 Dibromofluoromethane	111	5.908	5.912	(0.884)	220748	50.3610	50.4	6915
	37 1,1,1-Trichloroethane	97	5.931	5.935	(0.888)	323655	49.0034	49.0	
	42 1,1-Dichloropropene	75	6.051	6.054	(0.906)	276636	51.7700	51.8	
	32 2-Butanone	43	6.043	6.043	(0.905)	146827	48.6047	48.6	
	44 Benzene	78	6.291	6.291	(0.942)	831913	49.3858	49.4	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	143874	49.3970	49.4	
	46 1,2-Dichloroethane	62	6.482	6.486	(0.970)	313906	47.8252	47.8	
	45 Isobutyl Alcohol	43	6.508	6.512	(0.974)	43218	237.578	238	9594
*	47 FLUOROBENZENE	96	6.681	6.681	(1.000)	862858	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.827	(1.021)	324304	56.0993	56.1	8846
	49 Trichloroethene	130	6.830	6.834	(1.022)	212371	48.8973	48.9	
	52 Dibromomethane	93	7.213	7.217	(1.080)	138607	49.0717	49.1	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	228562	51.4890	51.5	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	310228	51.2897	51.3	
	55 1,4- Dioxane	58	7.539	7.543	(1.128)	44951	1227.16	1230	9449
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	339174	52.2054	52.2	9605
	58 cis-1,3-Dichloropropene	75	7.891	7.895	(1.181)	359869	53.5161	53.5	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	813067	49.6792	49.7	
	61 Toluene +	91	8.082	8.082	(0.883)	862431	49.3528	49.4	
M	145 1-3 Dichloropropene total	100				707329	106.995	107	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	155122	49.5823	49.6	
	59 4-methyl-2-pentanone	43	8.364	8.367	(0.914)	228366	50.0847	50.1	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	347460	53.4789	53.5	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	201071	48.5389	48.5	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	271168	54.0467	54.0	9672
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	230451	51.2590	51.3	
	67 1,3-Dichloropropane	76	8.705	8.709	(0.951)	377220	50.8639	50.9	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	199638	49.4681	49.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	179294	48.8543	48.9	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	241712	48.8941	48.9	8920
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	346903	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	72 Chlorobenzene ++	112	9.162	9.166	(1.001)	538835	50.4880	50.5	
	73 Ethylbenzene +	106	9.177	9.177	(1.003)	275053	51.1139	51.1	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	200242	49.4950	49.5	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	638206	102.360	102	
M	99 TOTAL XYLENE	106				944604	150.930	151	
	76 o-Xylene	106	9.552	9.552	(1.044)	306398	48.5697	48.6	
	77 Styrene	104	9.582	9.582	(1.047)	526135	49.2220	49.2	
	78 Bromoform ++	173	9.608	9.608	(1.050)	152531	48.6695	48.7	
	79 Isopropylbenzene	105	9.743	9.747	(1.065)	800127	49.8192	49.8	
	161 cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	88707	45.4259	45.4	9554
$	80 Bromofluorobenzene	174	9.931	9.931	(1.085)	210419	50.4359	50.4	
	84 Bromobenzene	77	9.998	9.998	(0.943)	401426	49.9330	49.9	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	887935	51.1694	51.2	
	81 1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	258793	47.3522	47.4	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	628749	51.7112	51.7	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	638530	54.7056	54.7	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	329863	47.1488	47.1	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.152	(0.957)	72004	44.6651	44.7	
	90 4-Chlorotoluene	91	10.208	10.208	(0.963)	587261	52.7420	52.7	
	91 tert-butylbenzene	91	10.313	10.313	(0.973)	344749	53.1377	53.1	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	668355	54.8611	54.9	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	713757	53.8111	53.8	
	92 p-Isopropyltoluene	119	10.497	10.497	(0.990)	603823	54.8532	54.9	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	346914	50.5002	50.5	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	245714	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	342373	48.6182	48.6	
	100 n-Butylbenzene	91	10.748	10.748	(1.014)	530386	52.8595	52.9	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	323574	49.5050	49.5	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	40542	44.9290	44.9	
	109 Hexachlorobutadiene	225	11.861	11.857	(1.119)	71526	51.9622	52.0	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	172339	45.2642	45.3	
	110 Naphthalene	128	12.191	12.191	(1.150)	488024	42.3449	42.3	
	111 1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	166898	45.0529	45.1	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2902d.d

Date : 05-MAY-2017 14:15

Client ID: V14ICV050

Instrument: msv14.i

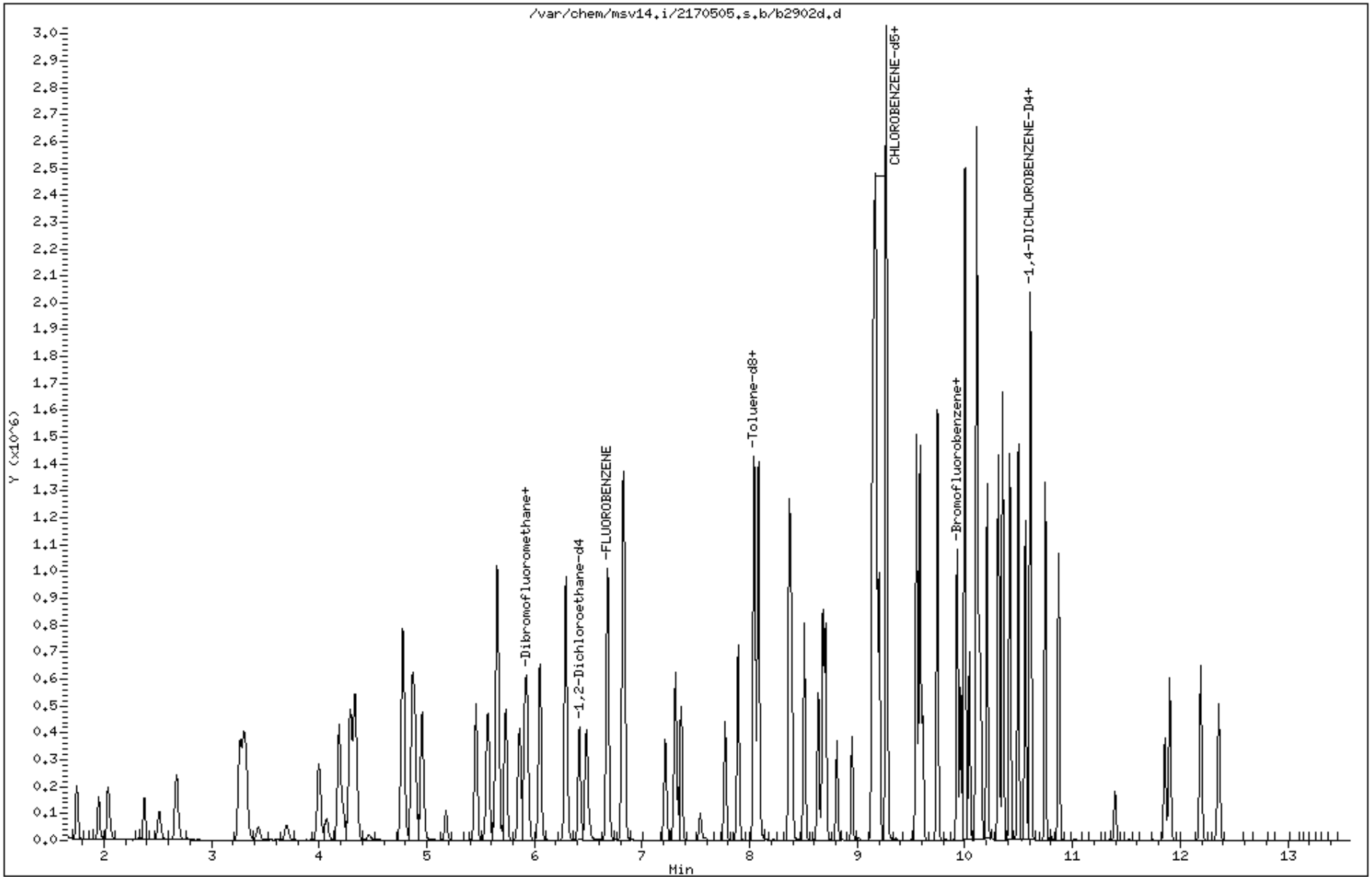
Sample Info: 1600*V14ICV050

Purge Volume: 5.0

Operator: LBH

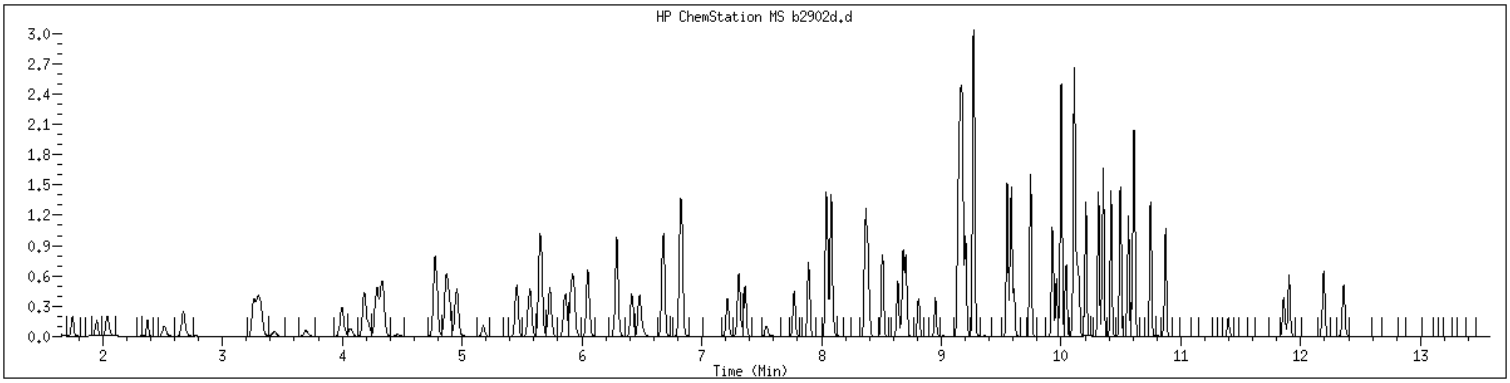
Column phase: RTX-VMS-30M

Column diameter: 0.25



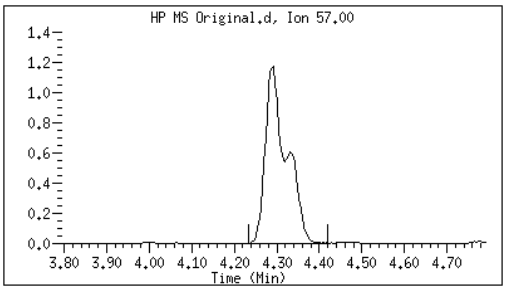
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1600 SampleType : LCS
Injection Date: 05/05/2017 14:15 Instrument : msv14.i
Operator : LBH
Sample Info : 1600*V14ICV050
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



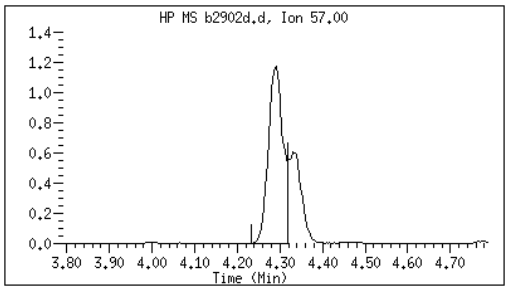
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: lbh
Date: 05/05/2017 14:32



M2 - Target system integrated incorrectly

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170508/b3076
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JMC2
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1033	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.583	0.594	.01	1.8	20	A	
1,1,1-Trichloroethane	0.383	0.400	.01	4.43	20	A	
1,1,2,2-Tetrachloroethane	1.112	1.151	.3	3.54	20	A	
1,1,2-Trichloroethane	0.597	0.597	.01	.04	20	A	
1,1-Dichloroethane	0.465	0.500	.1	7.52	20	A	
1,1-Dichloroethene	0.160	0.171	.01	6.72	20	A	
1,1-Dichloropropene	0.310	0.338	.01	9.06	20	A	
1,2,3-Trichlorobenzene	0.862	0.753	.01	-1.4	20	L	
1,2,3-Trichloropropane	1.424	1.508	.01	5.94	20	A	
1,2,4-Trichlorobenzene	0.891	0.744	.01	-4.6	20	L	
1,2,4-Trimethylbenzene	2.479	2.796	.01	12.8	20	A	
1,2-Dibromo-3-chloropropane	0.184	0.192	.01	4.32	20	A	
1,2-Dibromoethane	0.582	0.599	.01	2.94	20	A	
1,2-Dichlorobenzene	1.330	1.389	.01	4.44	20	A	
1,2-Dichloroethane	0.380	0.383	.01	.75	20	A	
1,2-Dichloroethane-d4	0.169	0.171	.01	1.34	20	A	
1,2-Dichloroethene (total)	0.335	0.352	.01	4.99	20	A	
1,2-Dichloropropane	0.257	0.268	.01	4.06	20	A	
1,3,5-Trimethylbenzene	2.375	2.688	.01	13.2	20	A	
1,3-Dichlorobenzene	1.398	1.485	.01	6.24	20	A	
1,3-Dichloropropane	1.069	1.139	.01	6.51	20	A	
1,3-Dichloropropylene	0.383	0.423	.01	10.5	20	A	
1,4 Dioxane	0.002	0.002	.001	-2.33	20	A	
1,4-Dichlorobenzene	1.433	1.462	.01	2.05	20	A	
1-Bromo-2-Chloroethane	0.376	0.391	.01	3.78	20	A	
1-Chlorohexane	0.722	0.642	.01	-9.8	20	W	
2,2-Dichloropropane	0.378	0.403	.01	6.51	20	A	
2-Butanone	0.175	0.183	.01	4.78	20	A	
2-Chlorotoluene	2.474	2.719	.01	9.91	20	A	
2-Hexanone	0.529	0.559	.01	5.61	20	A	
4-Bromofluorobenzene	0.601	0.599	.01	-.35	20	A	
4-Chlorotoluene	2.266	2.470	.01	9.02	20	A	
4-Isopropyltoluene	2.240	2.566	.01	14.6	20	A	
4-Methyl-2-pentanone	0.657	0.692	.01	5.35	20	A	
Acetone	0.160	0.166	.01	4.07	20	A	
Acrolein	0.014	0.017	.01	25.9	20	A	*
Acrylonitrile	0.096	0.107	.01	11.5	20	A	
Benzene	0.976	1.038	.01	6.38	20	A	
Bromobenzene	1.636	1.722	.01	5.29	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170508/b3076
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JMC2
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1033	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.106	0.112	.01	5.35	20	A	
Bromodichloromethane	0.350	0.371	.01	5.72	20	A	
Bromoform	0.452	0.469	.1	3.87	20	A	
Bromomethane	0.090	0.102	.01	13	20	W	
Carbon disulfide	0.520	0.555	.01	6.6	20	W	
Carbon tetrachloride	0.314	0.336	.01	6.79	20	A	
Chlorobenzene	1.538	1.584	.3	2.98	20	A	
Chloroethane	0.158	0.163	.01	2.9	20	A	
Chloroform	0.446	0.472	.01	5.63	20	A	
Chloromethane	0.195	0.229	.1	17.5	20	A	
Chloroprene	0.373	0.311	.01	-15.2	20	W	
Cyclohexane	0.431	0.400	.01	-5.8	20	W	
Dibromochloromethane	0.648	0.678	.01	4.65	20	A	
Dibromofluoromethane	0.254	0.256	.01	.97	20	A	
Dibromomethane	0.164	0.169	.01	3.3	20	A	
Dichlorodifluoromethane	0.246	0.234	.01	-4.62	20	A	
Ethylbenzene	0.776	0.827	.01	6.59	20	A	
Hexachlorobutadiene	0.280	0.318	.01	13.5	20	A	
Isobutyl alcohol	0.011	0.011	.01	7.34	20	A	
Isopropylbenzene (Cumene)	2.341	2.384	.01	3	20	W	
Methyl Acetate	0.218	0.220	.01	.92	20	A	
Methyl iodide	0.117	0.105	.01	6.4	20	L	
Methylcyclohexane	0.335	0.363	.01	8.33	20	A	
Methylene chloride	0.295	0.302	.01	2.4	20	A	
Naphthalene	2.786	2.259	.01	-5.6	20	L	
Styrene	1.559	1.576	.01	2.2	20	W	
Tetrachloroethene	0.451	0.463	.01	2.67	20	A	
Toluene	2.519	2.575	.01	2.25	20	A	
Toluene-d8	2.359	2.319	.01	-1.68	20	A	
Trichloroethene	0.252	0.263	.01	4.47	20	A	
Trichlorofluoromethane	0.285	0.306	.01	7.27	20	A	
Trichlorotrifluoroethane	0.165	0.175	.01	6.22	20	A	
Vinyl acetate	0.153	0.167	.01	9	20	A	
Vinyl chloride	0.245	0.254	.01	3.82	20	A	
Xylene (total)	0.909	0.946	.01	4.67	20	W	
cis-1,2-Dichloroethene	0.335	0.366	.01	9.32	20	A	
cis-1,3-Dichloropropene	0.390	0.431	.01	10.6	20	A	
diisopropyl Ether (DIPE)	0.748	0.756	.01	1.04	20	A	
m,p-Xylene	0.903	0.963	.01	7	20	W	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170508/b3076
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JMC2
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 1033	Analytical Method:	EPA 8260B

ANALYTE	$\overline{RRF}$	RRF CCV	Min RRF	%D/%Drift	Max %D/ %Drift	TYPE	Q
n-Butylbenzene	2.042	2.276	.01	11.5	20	A	
n-Hexane	0.302	0.281	.01	-6.4	20	W	
n-Propylbenzene	3.531	3.837	.01	8.66	20	A	
o-Xylene	0.922	0.912	.01	.2	20	W	
sec-Butylbenzene	2.699	3.067	.01	13.6	20	A	
t-Butanol (TBA)	0.029	0.028	.01	-6.21	20	A	
tert-Butyl methyl ether (MTBE)	0.687	0.679	.01	-1.11	20	A	
tert-Butylbenzene	1.320	1.490	.01	12.8	20	A	
trans-1,2-Dichloroethene	0.335	0.338	.01	.67	20	A	
trans-1,3-Dichloropropene	0.376	0.415	.01	10.3	20	A	
trans-1,4-Dichloro-2-butene	0.328	0.342	.01	4.31	20	A	

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3076.d
Lab Smp Id: 1400 Client Smp ID: V14STD050
Inj Date : 08-MAY-2017 10:33
Operator : JMC2 Inst ID: msv14.i
Smp Info : 1400*V14STD050
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Meth Date : 08-May-2017 14:07 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.747	1.747	(0.262)	191976	50.0000	47.7	
2	Chloromethane ++	50	1.950	1.950	(0.292)	187916	50.0000	58.7	
3	Vinyl Chloride +	62	2.036	2.036	(0.305)	208278	50.0000	51.9	
5	Bromomethane	94	2.373	2.373	(0.355)	83194	50.0000	56.5	
6	Chloroethane	64	2.516	2.516	(0.377)	133392	50.0000	51.5	
7	Trichlorofluoromethane	101	2.673	2.673	(0.400)	250708	50.0000	53.6	
11	1,1-Dichloroethene +	96	3.265	3.265	(0.489)	139718	50.0000	53.4	
14	Carbon Disulfide	76	3.295	3.295	(0.493)	454523	50.0000	53.3	
10	1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	143535	50.0000	53.1	
13	Methyl Iodide	142	3.438	3.438	(0.515)	86303	50.0000	53.2	
9	Acrolein	56	3.700	3.700	(0.554)	71130	250.000	315	
17	Methylene Chloride	49	3.996	3.996	(0.598)	247758	50.0000	51.2	
12	Acetone	43	4.064	4.064	(0.608)	136276	50.0000	52.0	
19	trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	276633	50.0000	50.3	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.218	4.218	(0.631)	180511	50.0000	50.5	9164
	23 Hexane	57	4.289	4.289	(0.642)	230076	50.0000	46.8	9328(M2)
	21 MTBE	73	4.330	4.330	(0.648)	556635	50.0000	49.4	9588
	26 tert-Butyl Alcohol	59	4.461	4.461	(0.668)	22577	50.0000	46.9	9449
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	619483	50.0000	50.5	9860
	29 Chloroprene	53	4.866	4.866	(0.728)	254528	50.0000	42.4	8665
	24 1,1-Dichloroethane ++	63	4.889	4.889	(0.732)	410042	50.0000	53.8	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	437324	250.000	279	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	136764	50.0000	54.5	
M	48 Total 1,2-Dichloroethene	61				576707	100.000	105	
	30 cis-1,2-Dichloroethene	61	5.455	5.455	(0.817)	300074	50.0000	54.7	
	31 2,2-Dichloropropane	77	5.563	5.563	(0.833)	330079	50.0000	53.3	
	38 Cyclohexane	56	5.653	5.653	(0.846)	327538	50.0000	47.1	8984
	34 Bromochloromethane	128	5.661	5.661	(0.847)	91883	50.0000	52.7	
	41 Chloroform +	83	5.732	5.732	(0.858)	386376	50.0000	52.8	
	39 Carbon Tetrachloride	117	5.859	5.859	(0.877)	274913	50.0000	53.4	
$	36 Dibromofluoromethane	111	5.908	5.908	(0.884)	210126	50.0000	50.5	6919
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	327472	50.0000	52.2	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	276667	50.0000	54.5	
	32 2-Butanone	43	6.043	6.043	(0.905)	150276	50.0000	52.4	
	44 Benzene	78	6.291	6.291	(0.942)	850748	50.0000	53.2	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	140128	50.0000	50.7	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	313952	50.0000	50.4	
	45 Isobutyl Alcohol	43	6.504	6.504	(0.974)	46350	250.000	268	9331
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	819301	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	297314	50.0000	54.2	8620
	49 Trichloroethene	130	6.830	6.830	(1.022)	215420	50.0000	52.2	
	52 Dibromomethane	93	7.216	7.216	(1.080)	138526	50.0000	51.7	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	219299	50.0000	52.0	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	303585	50.0000	52.9	
	55 1,4- Dioxane	58	7.539	7.539	(1.128)	42465	1250.00	1220	9452
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	320096	50.0000	51.9	9658
	58 cis-1,3-Dichloropropene	75	7.891	7.891	(1.181)	353185	50.0000	55.3	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	782116	50.0000	49.2	
	61 Toluene +	91	8.082	8.082	(0.883)	868474	50.0000	51.1	
M	145 1-3 Dichloropropene total	100				693439	100.000	110	0
	66 Tetrachloroethene	164	8.367	8.367	(0.914)	156130	50.0000	51.3	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	233479	50.0000	52.7	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	340254	50.0000	55.2	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	201440	50.0000	50.0	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	258298	50.0000	53.0	9670
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	228682	50.0000	52.3	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	383950	50.0000	53.3	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	201930	50.0000	51.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	188391	50.0000	52.8	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	216613	50.0000	45.1	8766
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	337234	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	72 Chlorobenzene ++	112	9.166	9.166	(1.002)	534196	50.0000	51.5	
	73 Ethylbenzene +	106	9.173	9.173	(1.002)	278798	50.0000	53.3	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	200183	50.0000	50.9	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	649272	100.000	107	
M	99 TOTAL XYLENE	106				956896	150.000	157	
	76 o-Xylene	106	9.548	9.548	(1.043)	307624	50.0000	50.1	
	77 Styrene	104	9.582	9.582	(1.047)	531405	50.0000	51.1	
	78 Bromoform ++	173	9.608	9.608	(1.050)	158223	50.0000	51.9	
	79 Isopropylbenzene	105	9.743	9.743	(1.065)	803936	50.0000	51.5	
	161 cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	89486	50.0000	48.2	9535
$	80 Bromofluorobenzene	174	9.927	9.927	(1.085)	202068	50.0000	49.8	
	84 Bromobenzene	77	9.998	9.998	(0.943)	402515	50.0000	52.6	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	896672	50.0000	54.3	
	81 1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	269089	50.0000	51.8	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	635526	50.0000	55.0	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	628142	50.0000	56.6	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	352465	50.0000	53.0	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	79965	50.0000	52.2	
	90 4-Chlorotoluene	91	10.204	10.204	(0.963)	577239	50.0000	54.5	
	91 tert-butylbenzene	91	10.309	10.309	(0.972)	348137	50.0000	56.4	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	653375	50.0000	56.4	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	716669	50.0000	56.8	
	92 p-Isopropyltoluene	119	10.493	10.493	(0.990)	599715	50.0000	57.3	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	347063	50.0000	53.1	
*	97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	233697	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	341741	50.0000	51.0	
	100 n-Butylbenzene	91	10.748	10.748	(1.014)	531967	50.0000	55.7	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	324634	50.0000	52.2	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	44763	50.0000	52.2	
	109 Hexachlorobutadiene	225	11.857	11.857	(1.118)	74293	50.0000	56.7	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	173907	50.0000	47.7	
	110 Naphthalene	128	12.191	12.191	(1.150)	527973	50.0000	47.2	
	111 1,2,3-Trichlorobenzene	180	12.356	12.356	(1.165)	175959	50.0000	49.3	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170508.s.b/b3076.d

Page 1

Date : 08-MAY-2017 10:33

Client ID: V14STD050

Instrument: msv14.i

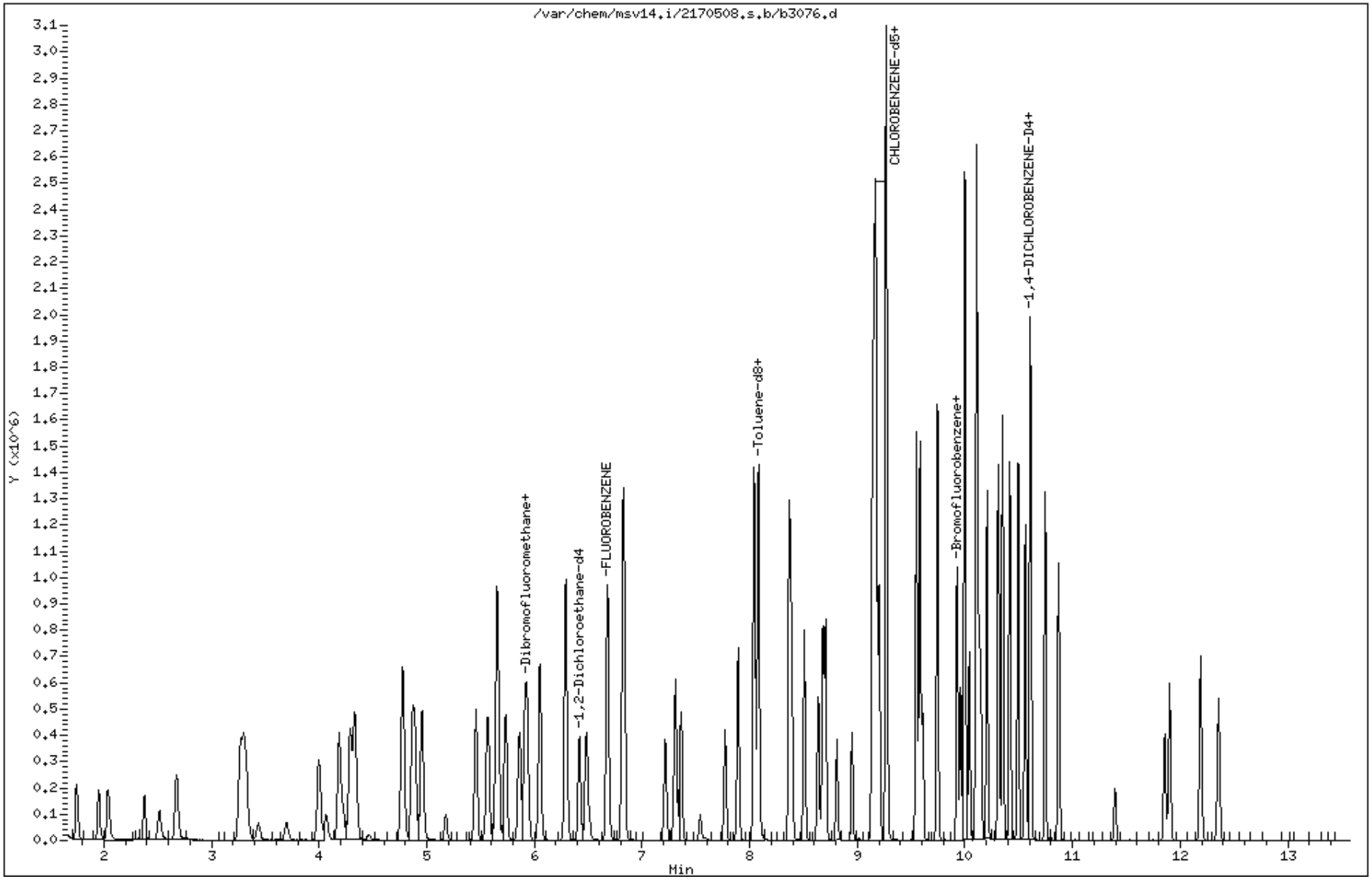
Sample Info: 1400*V14STD050

Purge Volume: 5.0

Operator: JMC2

Column phase: RTX-VMS-30M

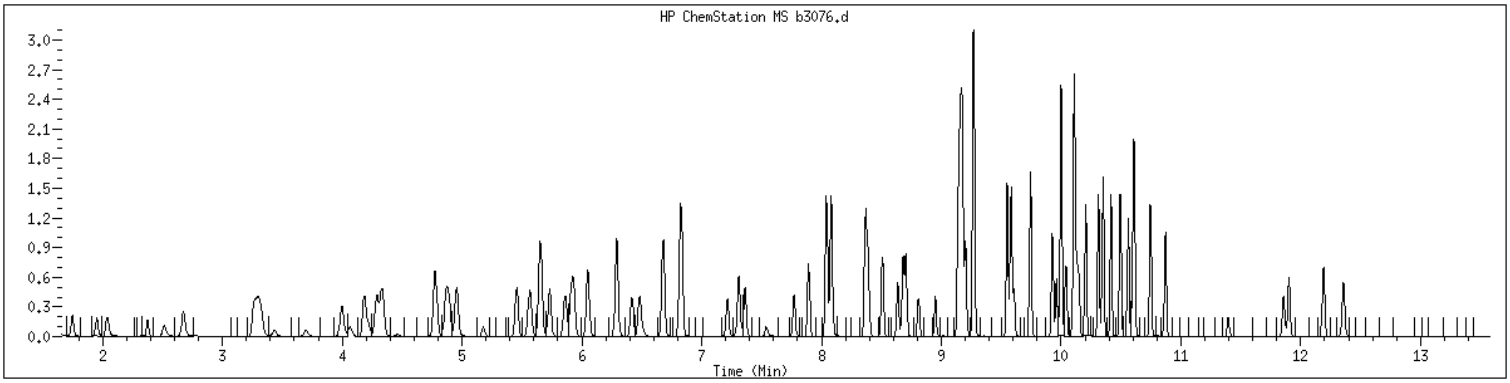
Column diameter: 0.25



Report Date: 05/08/2017 14:07

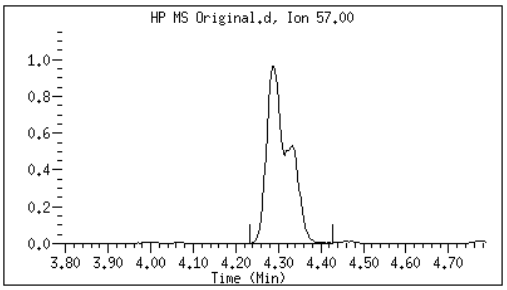
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1400 SampleType : CCALIB_7
Injection Date: 05/08/2017 10:33 Instrument : msv14.i
Operator : JMC2
Sample Info : 1400*V14STD050
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



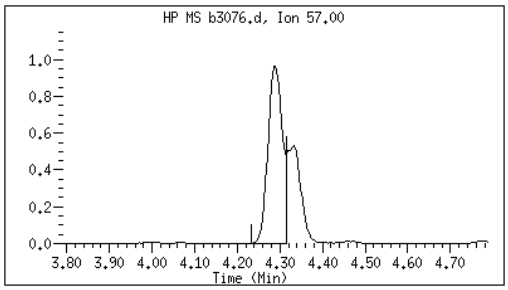
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jmc
Date: 05/08/2017 10:50



M2 - Target system integrated incorrectly

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170508/b3101
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JMC2
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 2003	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.583	0.615	.01	5.41	50	A	
1,1,1-Trichloroethane	0.383	0.406	.01	6.01	50	A	
1,1,2,2-Tetrachloroethane	1.112	1.188	.3	6.85	50	A	
1,1,2-Trichloroethane	0.597	0.623	.01	4.39	50	A	
1,1-Dichloroethane	0.465	0.509	.1	9.33	50	A	
1,1-Dichloroethene	0.160	0.161	.01	1.02	50	A	
1,1-Dichloropropene	0.310	0.339	.01	9.48	50	A	
1,2,3-Trichlorobenzene	0.862	0.742	.01	-2.6	50	L	
1,2,3-Trichloropropane	1.424	1.548	.01	8.76	50	A	
1,2,4-Trichlorobenzene	0.891	0.752	.01	-3.8	50	L	
1,2,4-Trimethylbenzene	2.479	2.828	.01	14.1	50	A	
1,2-Dibromo-3-chloropropane	0.184	0.211	.01	15	50	A	
1,2-Dibromoethane	0.582	0.625	.01	7.38	50	A	
1,2-Dichlorobenzene	1.330	1.420	.01	6.77	50	A	
1,2-Dichloroethane	0.380	0.390	.01	2.43	50	A	
1,2-Dichloroethane-d4	0.169	0.166	.01	-1.38	50	A	
1,2-Dichloroethene (total)	0.335	0.374	.01	11.7	50	A	
1,2-Dichloropropane	0.257	0.277	.01	7.51	50	A	
1,3,5-Trimethylbenzene	2.375	2.723	.01	14.6	50	A	
1,3-Dichlorobenzene	1.398	1.501	.01	7.4	50	A	
1,3-Dichloropropane	1.069	1.149	.01	7.45	50	A	
1,3-Dichloropropylene	0.383	0.429	.01	12	50	A	
1,4 Dioxane	0.002	0.002	.001	-11.4	50	A	
1,4-Dichlorobenzene	1.433	1.487	.01	3.75	50	A	
1-Bromo-2-Chloroethane	0.376	0.405	.01	7.55	50	A	
1-Chlorohexane	0.722	0.649	.01	-8.8	50	W	
2,2-Dichloropropane	0.378	0.409	.01	8.18	50	A	
2-Butanone	0.175	0.188	.01	7.6	50	A	
2-Chlorotoluene	2.474	2.740	.01	10.7	50	A	
2-Hexanone	0.529	0.600	.01	13.4	50	A	
4-Bromofluorobenzene	0.601	0.608	.01	1.14	50	A	
4-Chlorotoluene	2.266	2.509	.01	10.8	50	A	
4-Isopropyltoluene	2.240	2.564	.01	14.5	50	A	
4-Methyl-2-pentanone	0.657	0.743	.01	13.1	50	A	
Acetone	0.160	0.155	.01	-3.31	50	A	
Acrolein	0.014	0.019	.01	34.4	50	A	
Acrylonitrile	0.096	0.109	.01	14.2	50	A	
Benzene	0.976	1.059	.01	8.5	50	A	
Bromobenzene	1.636	1.714	.01	4.78	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170508/b3101
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JMC2
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 2003	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.106	0.114	.01	7.41	50	A	
Bromodichloromethane	0.350	0.378	.01	7.73	50	A	
Bromoform	0.452	0.496	.1	9.74	50	A	
Bromomethane	0.090	0.109	.01	20.8	50	W	
Carbon disulfide	0.520	0.537	.01	3.2	50	W	
Carbon tetrachloride	0.314	0.337	.01	7.13	50	A	
Chlorobenzene	1.538	1.625	.3	5.66	50	A	
Chloroethane	0.158	0.154	.01	-2.73	50	A	
Chloroform	0.446	0.478	.01	7.17	50	A	
Chloromethane	0.195	0.210	.1	7.52	50	A	
Chloroprene	0.373	0.300	.01	-18.2	50	W	
Cyclohexane	0.431	0.397	.01	-6.4	50	W	
Dibromochloromethane	0.648	0.700	.01	7.95	50	A	
Dibromofluoromethane	0.254	0.255	.01	.25	50	A	
Dibromomethane	0.164	0.173	.01	5.88	50	A	
Dichlorodifluoromethane	0.246	0.221	.01	-10.1	50	A	
Ethylbenzene	0.776	0.839	.01	8.19	50	A	
Hexachlorobutadiene	0.280	0.316	.01	12.6	50	A	
Isobutyl alcohol	0.011	0.010	.01	-1.09	50	A	
Isopropylbenzene (Cumene)	2.341	2.462	.01	6.2	50	W	
Methyl Acetate	0.218	0.247	.01	13.2	50	A	
Methyl iodide	0.117	0.119	.01	17.6	50	L	
Methylcyclohexane	0.335	0.351	.01	4.67	50	A	
Methylene chloride	0.295	0.300	.01	1.6	50	A	
Naphthalene	2.786	2.298	.01	-4.2	50	L	
Styrene	1.559	1.620	.01	5	50	W	
Tetrachloroethene	0.451	0.470	.01	4.34	50	A	
Toluene	2.519	2.659	.01	5.57	50	A	
Toluene-d8	2.359	2.343	.01	-.67	50	A	
Trichloroethene	0.252	0.266	.01	5.82	50	A	
Trichlorofluoromethane	0.285	0.282	.01	-1.29	50	A	
Trichlorotrifluoroethane	0.165	0.160	.01	-2.79	50	A	
Vinyl acetate	0.153	0.165	.01	8.06	50	A	
Vinyl chloride	0.245	0.250	.01	2.22	50	A	
Xylene (total)	0.909	0.965	.01	6.67	50	W	
cis-1,2-Dichloroethene	0.335	0.377	.01	12.5	50	A	
cis-1,3-Dichloropropene	0.390	0.441	.01	13.2	50	A	
diisopropyl Ether (DIPE)	0.748	0.755	.01	.9	50	A	
m,p-Xylene	0.903	0.976	.01	9	50	W	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170508/b3101
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JMC2
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	609939
Analysis Date:	05/08/17 Time: 2003	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
n-Butylbenzene	2.042	2.261	.01	10.7	50	A	
n-Hexane	0.302	0.290	.01	-3.4	50	W	
n-Propylbenzene	3.531	3.841	.01	8.78	50	A	
o-Xylene	0.922	0.943	.01	3.6	50	W	
sec-Butylbenzene	2.699	3.057	.01	13.3	50	A	
t-Butanol (TBA)	0.029	0.027	.01	-7.16	50	A	
tert-Butyl methyl ether (MTBE)	0.687	0.812	.01	18.2	50	A	
tert-Butylbenzene	1.320	1.515	.01	14.7	50	A	
trans-1,2-Dichloroethene	0.335	0.372	.01	11	50	A	
trans-1,3-Dichloropropene	0.376	0.417	.01	10.8	50	A	
trans-1,4-Dichloro-2-butene	0.328	0.359	.01	9.45	50	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170508.s.b/b3101.d
Lab Smp Id: 1440 Client Smp ID: V14STD050
Inj Date : 08-MAY-2017 20:03
Operator : JMC2 Inst ID: msv14.i
Smp Info : 1440*V14STD050
Misc Info : MSV~38290~*1*JMC2
Comment :
Method : /var/chem/msv14.i/2170508.s.b/8260bdod5w14.m
Meth Date : 08-May-2017 20:33 jmc Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	178315	50.0000	44.9	
2 Chloromethane ++	50	1.954	1.954	(0.292)	169556	50.0000	53.8	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	202138	50.0000	51.1	
5 Bromomethane	94	2.377	2.377	(0.356)	87673	50.0000	60.4	
6 Chloroethane	64	2.516	2.516	(0.377)	124293	50.0000	48.6	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	227415	50.0000	49.4	
11 1,1-Dichloroethene +	96	3.266	3.266	(0.489)	130374	50.0000	50.5	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	433944	50.0000	51.6	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	129491	50.0000	48.6	
13 Methyl Iodide	142	3.438	3.438	(0.515)	95708	50.0000	58.8	
9 Acrolein	56	3.697	3.697	(0.553)	74836	250.000	336	
17 Methylene Chloride	49	3.997	3.997	(0.598)	242321	50.0000	50.8	
12 Acetone	43	4.071	4.071	(0.609)	124815	50.0000	48.3	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	300534	50.0000	55.5	

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	20	Methyl Acetate	43	4.225	4.225	(0.632)	199543	50.0000	56.6	8277
	23	Hexane	57	4.289	4.289	(0.642)	234090	50.0000	48.3	9352(M2)
	21	MTBE	73	4.334	4.334	(0.649)	655936	50.0000	59.1	9671
	26	tert-Butyl Alcohol	59	4.465	4.465	(0.668)	22032	50.0000	46.4	9505
	27	Isopropyl Ether	45	4.780	4.780	(0.716)	609778	50.0000	50.4	9904
	29	Chloroprene	53	4.866	4.866	(0.728)	242082	50.0000	40.9	8834
	24	1,1-Dichloroethane ++	63	4.889	4.889	(0.732)	410971	50.0000	54.7	
	22	Acrylonitrile	53	4.956	4.956	(0.742)	441812	250.000	286	
	25	Vinyl Acetate	43	5.177	5.177	(0.775)	133654	50.0000	54.0	
M	48	Total 1,2-Dichloroethene	61				604838	100.000	112	
	30	cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	304304	50.0000	56.2	
	31	2,2-Dichloropropane	77	5.567	5.567	(0.833)	330473	50.0000	54.1	
	38	Cyclohexane	56	5.653	5.653	(0.846)	320843	50.0000	46.8	9023
	34	Bromochloromethane	128	5.661	5.661	(0.847)	92348	50.0000	53.7	
	41	Chloroform +	83	5.732	5.732	(0.858)	386434	50.0000	53.6	
	39	Carbon Tetrachloride	117	5.863	5.863	(0.878)	271858	50.0000	53.6	
$	36	Dibromofluoromethane	111	5.912	5.912	(0.885)	205658	50.0000	50.1	6913
	37	1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	327662	50.0000	53.0	
	42	1,1-Dichloropropene	75	6.051	6.051	(0.906)	273776	50.0000	54.7	
	32	2-Butanone	43	6.043	6.043	(0.905)	152114	50.0000	53.8	
	44	Benzene	78	6.291	6.291	(0.942)	855346	50.0000	54.2	
$	43	1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	134429	50.0000	49.3	
	46	1,2-Dichloroethane	62	6.482	6.482	(0.970)	314643	50.0000	51.2	
	45	Isobutyl Alcohol	43	6.512	6.512	(0.975)	42102	250.000	247	9571
*	47	FLUOROBENZENE	96	6.681	6.681	(1.000)	807628	50.0000		
	50	Methyl Cyclohexane	83	6.823	6.823	(1.021)	283181	50.0000	52.3	8587
	49	Trichloroethene	130	6.830	6.830	(1.022)	215081	50.0000	52.9	
	52	Dibromomethane	93	7.217	7.217	(1.080)	139963	50.0000	52.9	
	51	1,2-Dichloropropane +	63	7.310	7.310	(1.094)	223345	50.0000	53.8	
	54	Bromodichloromethane	83	7.363	7.363	(1.102)	304954	50.0000	53.9	
	55	1,4- Dioxane	58	7.543	7.543	(1.129)	37943	1250.00	1110	9449
	57	1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	327007	50.0000	53.8	9616
	58	cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	356371	50.0000	56.6	
$	60	Toluene-d8	98	8.041	8.041	(0.879)	759537	50.0000	49.7	
	61	Toluene +	91	8.083	8.083	(0.883)	861908	50.0000	52.8	
M	145	1-3 Dichloropropene total	100				693181	100.000	112	0
	66	Tetrachloroethene	164	8.371	8.371	(0.915)	152506	50.0000	52.2	
	59	4-methyl-2-pentanone	43	8.367	8.367	(0.914)	240945	50.0000	56.6	
	62	trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	336810	50.0000	55.4	
	65	1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	202027	50.0000	52.2	
	162	3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	233201	50.0000	49.7	9653
	69	Dibromochloromethane	129	8.637	8.637	(0.944)	226746	50.0000	54.0	
	67	1,3-Dichloropropane	76	8.705	8.705	(0.951)	372284	50.0000	53.7	
	70	1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	202468	50.0000	53.7	
	68	2-Hexanone	43	8.952	8.952	(0.978)	194514	50.0000	56.7	
	140	1-Chlorohexane	91	9.140	9.140	(0.999)	210446	50.0000	45.6	8837
*	71	CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	324142	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.162	9.162	(1.001)	526823	50.0000	52.8	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	271990	50.0000	54.1	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	199245	50.0000	52.7	
75	p,m-Xylene	106	9.271	9.271	(1.013)	632556	100.000	109	
M 99	TOTAL XYLENE	106				938346	150.000	160	
76	o-Xylene	106	9.552	9.552	(1.044)	305790	50.0000	51.8	
77	Styrene	104	9.582	9.582	(1.047)	525196	50.0000	52.5	
78	Bromoform ++	173	9.608	9.608	(1.050)	160674	50.0000	54.9	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	798173	50.0000	53.1	
161	cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	80479	50.0000	44.6	9567
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	197139	50.0000	50.6	
84	Bromobenzene	77	9.998	9.998	(0.943)	389247	50.0000	52.4	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	872270	50.0000	54.4	
81	1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	269851	50.0000	53.4	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	622243	50.0000	55.4	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	618330	50.0000	57.3	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	351635	50.0000	54.4	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	81535	50.0000	54.7	
90	4-Chlorotoluene	91	10.204	10.204	(0.963)	569846	50.0000	55.4	
91	tert-butylbenzene	91	10.309	10.309	(0.972)	343986	50.0000	57.4	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	642192	50.0000	57.0	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	694267	50.0000	56.6	
92	p-Isopropyltoluene	119	10.497	10.497	(0.990)	582367	50.0000	57.2	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	340939	50.0000	53.7	
* 97	1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	227095	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	337631	50.0000	51.9	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	513419	50.0000	55.4	
102	1,2-Dichlorobenzene	146	10.872	10.872	(1.025)	322500	50.0000	53.4	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	47944	50.0000	57.5	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	71655	50.0000	56.3	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	170885	50.0000	48.1	
110	Naphthalene	128	12.191	12.191	(1.150)	521795	50.0000	47.9	
111	1,2,3-Trichlorobenzene	180	12.356	12.356	(1.165)	168480	50.0000	48.7	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170508.s.b/b3101.d

Page 1

Date : 08-MAY-2017 20:03

Client ID: V14STD050

Instrument: msv14.i

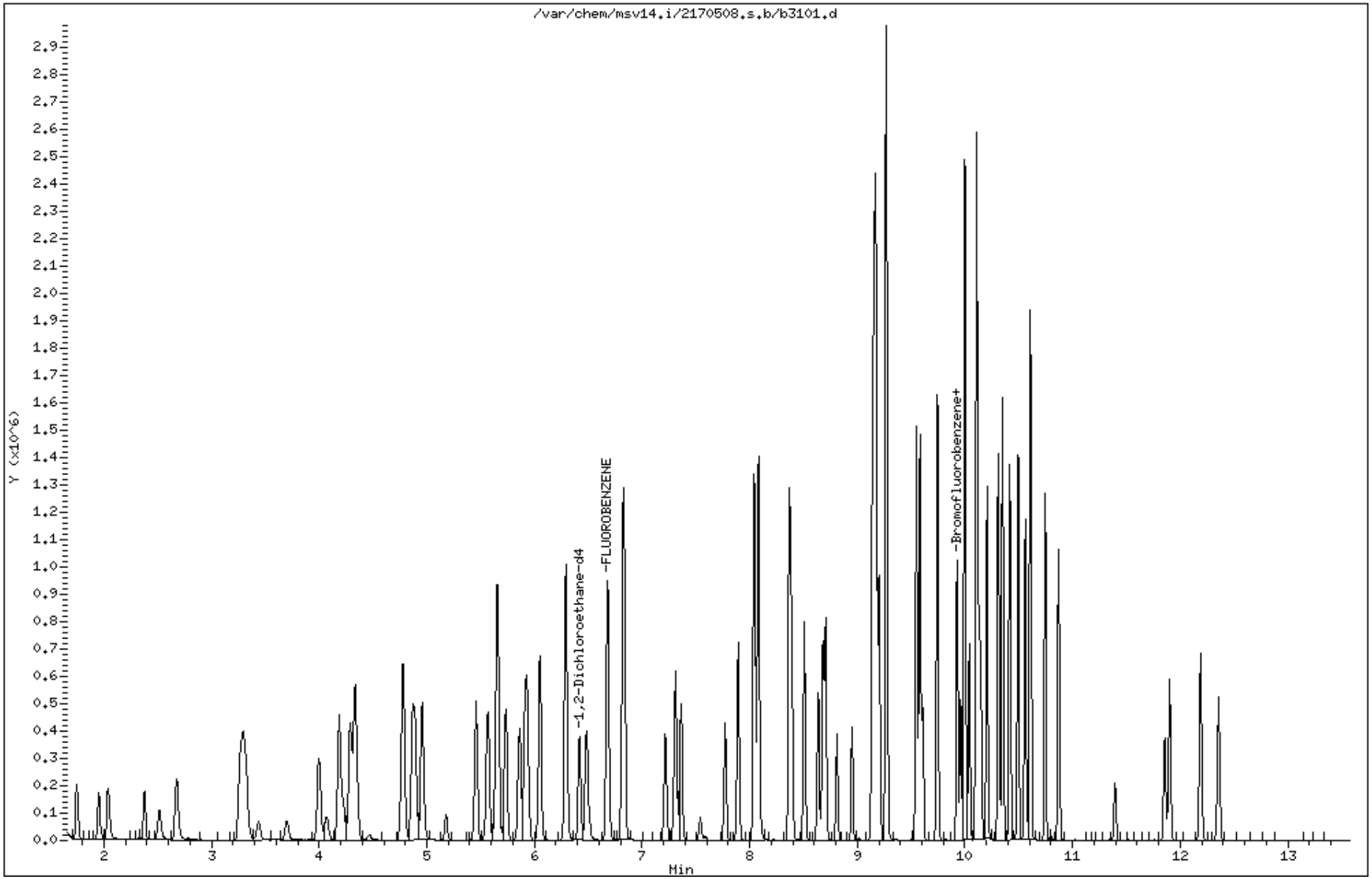
Sample Info: 1440*V14STD050

Purge Volume: 5.0

Operator: JMC2

Column phase: RTX-VMS-30M

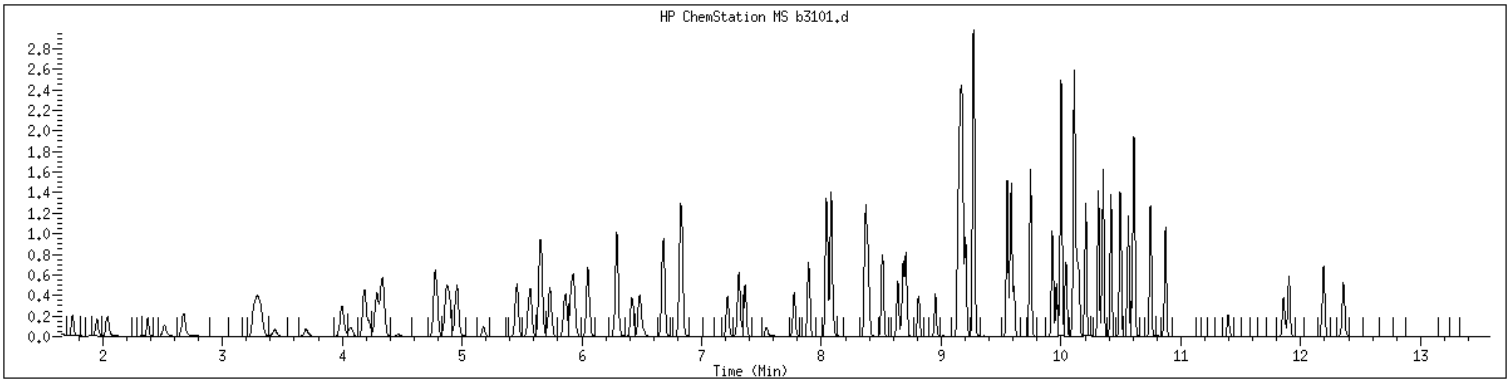
Column diameter: 0.25



Report Date: 05/08/2017 20:33

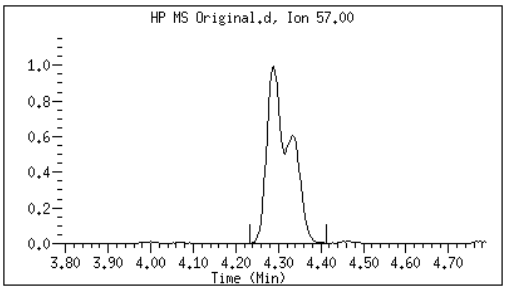
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1440 SampleType : CCALIB_7
Injection Date: 05/08/2017 20:03 Instrument : msv14.i
Operator : JMC2
Sample Info : 1440*V14STD050
Misc Info : MSV~38290~*1*JMC2
Method : /var/chem/msv14.i/2170508.s.b/8260bdod5w14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



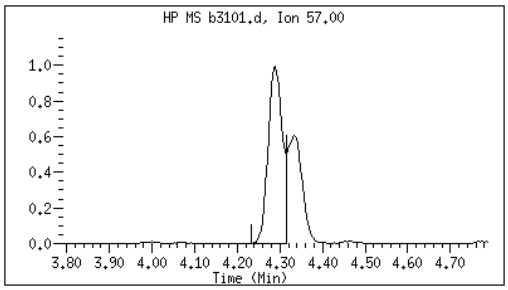
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jmc
Date: 05/08/2017 20:32



M2 - Target system integrated incorrectly

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170510p/b3163
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JCK
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1412	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.583	0.575	.01	-1.39	20	A	
1,1,1-Trichloroethane	0.383	0.383	.01	.08	20	A	
1,1,2,2-Tetrachloroethane	1.112	1.090	.3	-1.98	20	A	
1,1,2-Trichloroethane	0.597	0.579	.01	-2.97	20	A	
1,1-Dichloroethane	0.465	0.486	.1	4.42	20	A	
1,1-Dichloroethene	0.160	0.159	.01	-.76	20	A	
1,1-Dichloropropene	0.310	0.325	.01	5.11	20	A	
1,2,3-Trichlorobenzene	0.862	0.680	.01	-9.8	20	L	
1,2,3-Trichloropropane	1.424	1.412	.01	-.78	20	A	
1,2,4-Trichlorobenzene	0.891	0.685	.01	-11.4	20	L	
1,2,4-Trimethylbenzene	2.479	2.629	.01	6.07	20	A	
1,2-Dibromo-3-chloropropane	0.184	0.185	.01	.52	20	A	
1,2-Dibromoethane	0.582	0.576	.01	-.94	20	A	
1,2-Dichlorobenzene	1.330	1.299	.01	-2.3	20	A	
1,2-Dichloroethane	0.380	0.359	.01	-5.64	20	A	
1,2-Dichloroethane-d4	0.169	0.168	.01	-.37	20	A	
1,2-Dichloroethene (total)	0.335	0.344	.01	2.54	20	A	
1,2-Dichloropropane	0.257	0.255	.01	-1.02	20	A	
1,3,5-Trimethylbenzene	2.375	2.542	.01	7.02	20	A	
1,3-Dichlorobenzene	1.398	1.394	.01	-.26	20	A	
1,3-Dichloropropane	1.069	1.078	.01	.84	20	A	
1,3-Dichloropropylene	0.383	0.398	.01	4.01	20	A	
1,4 Dioxane	0.002	0.002	.001	-.85	20	A	
1,4-Dichlorobenzene	1.433	1.377	.01	-3.94	20	A	
1-Bromo-2-Chloroethane	0.376	0.374	.01	-.58	20	A	
1-Chlorohexane	0.722	0.639	.01	-10.2	20	W	
2,2-Dichloropropane	0.378	0.394	.01	4.18	20	A	
2-Butanone	0.175	0.174	.01	-.38	20	A	
2-Chlorotoluene	2.474	2.524	.01	2	20	A	
2-Hexanone	0.529	0.538	.01	1.65	20	A	
4-Bromofluorobenzene	0.601	0.611	.01	1.61	20	A	
4-Chlorotoluene	2.266	2.297	.01	1.36	20	A	
4-Isopropyltoluene	2.240	2.422	.01	8.12	20	A	
4-Methyl-2-pentanone	0.657	0.668	.01	1.63	20	A	
Acetone	0.160	0.152	.01	-4.81	20	A	
Acrolein	0.014	0.015	.01	11.8	20	A	
Acrylonitrile	0.096	0.103	.01	7.53	20	A	
Benzene	0.976	0.988	.01	1.18	20	A	
Bromobenzene	1.636	1.587	.01	-3.01	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170510p/b3163
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JCK
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1412	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.106	0.110	.01	3.5	20	A	
Bromodichloromethane	0.350	0.347	.01	-.94	20	A	
Bromoform	0.452	0.452	.1	.01	20	A	
Bromomethane	0.090	0.093	.01	3.8	20	W	
Carbon disulfide	0.520	0.521	.01	.2	20	W	
Carbon tetrachloride	0.314	0.332	.01	5.54	20	A	
Chlorobenzene	1.538	1.508	.3	-1.99	20	A	
Chloroethane	0.158	0.148	.01	-6.74	20	A	
Chloroform	0.446	0.452	.01	1.35	20	A	
Chloromethane	0.195	0.182	.1	-6.89	20	A	
Chloroprene	0.373	0.378	.01	2.8	20	W	
Cyclohexane	0.431	0.423	.01	-.4	20	W	
Dibromochloromethane	0.648	0.647	.01	-.15	20	A	
Dibromofluoromethane	0.254	0.260	.01	2.19	20	A	
Dibromomethane	0.164	0.162	.01	-1.21	20	A	
Dichlorodifluoromethane	0.246	0.244	.01	-.71	20	A	
Ethylbenzene	0.776	0.791	.01	1.99	20	A	
Hexachlorobutadiene	0.280	0.296	.01	5.59	20	A	
Isobutyl alcohol	0.011	0.011	.01	8.76	20	A	
Isopropylbenzene (Cumene)	2.341	2.303	.01	-.6	20	W	
Methyl Acetate	0.218	0.231	.01	5.61	20	A	
Methyl iodide	0.117	0.082	.01	-13.6	20	L	
Methylcyclohexane	0.335	0.373	.01	11.3	20	A	
Methylene chloride	0.295	0.276	.01	-6.56	20	A	
Naphthalene	2.786	2.000	.01	-14.8	20	L	
Styrene	1.559	1.520	.01	-1.4	20	W	
Tetrachloroethene	0.451	0.451	.01	.05	20	A	
Toluene	2.519	2.466	.01	-2.08	20	A	
Toluene-d8	2.359	2.333	.01	-1.11	20	A	
Trichloroethene	0.252	0.249	.01	-1.1	20	A	
Trichlorofluoromethane	0.285	0.290	.01	1.52	20	A	
Trichlorotrifluoroethane	0.165	0.178	.01	7.8	20	A	
Vinyl acetate	0.153	0.130	.01	-14.8	20	A	
Vinyl chloride	0.245	0.245	.01	0	20	A	
Xylene (total)	0.909	0.912	.01	1.33	20	W	
cis-1,2-Dichloroethene	0.335	0.354	.01	5.66	20	A	
cis-1,3-Dichloropropene	0.390	0.408	.01	4.61	20	A	
diisopropyl Ether (DIPE)	0.748	0.839	.01	12.1	20	A	
m,p-Xylene	0.903	0.927	.01	3	20	W	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170510p/b3163
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JCK
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 1412	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
n-Butylbenzene	2.042	2.159	.01	5.75	20	A	
n-Hexane	0.302	0.311	.01	3.8	20	W	
n-Propylbenzene	3.531	3.596	.01	1.83	20	A	
o-Xylene	0.922	0.880	.01	-3.2	20	W	
sec-Butylbenzene	2.699	2.912	.01	7.88	20	A	
t-Butanol (TBA)	0.029	0.028	.01	-3.14	20	A	
tert-Butyl methyl ether (MTBE)	0.687	0.735	.01	6.92	20	A	
tert-Butylbenzene	1.320	1.389	.01	5.2	20	A	
trans-1,2-Dichloroethene	0.335	0.333	.01	-.58	20	A	
trans-1,3-Dichloropropene	0.376	0.389	.01	3.39	20	A	
trans-1,4-Dichloro-2-butene	0.328	0.321	.01	-2.21	20	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3163.d
Lab Smp Id: 1400 Client Smp ID: V14STD050
Inj Date : 10-MAY-2017 14:12
Operator : JCK Inst ID: msv14.i
Smp Info : 1400*V14STD050
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Meth Date : 10-May-2017 14:53 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	189577	50.0000	49.6	
2 Chloromethane ++	50	1.953	1.953	(0.292)	141305	50.0000	46.6	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	190312	50.0000	50.0	
5 Bromomethane	94	2.377	2.377	(0.356)	72575	50.0000	51.9	
6 Chloroethane	64	2.516	2.516	(0.377)	114679	50.0000	46.6	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	225069	50.0000	50.8	
11 1,1-Dichloroethene +	96	3.262	3.262	(0.488)	123245	50.0000	49.6	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	405031	50.0000	50.1	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	138183	50.0000	53.9	
13 Methyl Iodide	142	3.434	3.434	(0.514)	63740	50.0000	43.2	
9 Acrolein	56	3.696	3.696	(0.553)	59906	250.000	280	
17 Methylene Chloride	49	3.996	3.996	(0.598)	214451	50.0000	46.7	
12 Acetone	43	4.068	4.068	(0.609)	118241	50.0000	47.6	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	259160	50.0000	49.7	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	179178	50.0000	52.8	8590
	23 Hexane	57	4.289	4.289	(0.642)	242058	50.0000	51.9	9327(M2)
	21 MTBE	73	4.330	4.330	(0.648)	570879	50.0000	53.5	9669
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	22119	50.0000	48.4	9335
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	651928	50.0000	56.0	9858
	29 Chloroprene	53	4.866	4.866	(0.728)	293612	50.0000	51.4	9018
	24 1,1-Dichloroethane ++	63	4.888	4.888	(0.732)	377718	50.0000	52.2	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	400218	250.000	269	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	101321	50.0000	42.6	
M	48 Total 1,2-Dichloroethene	61				534268	100.000	103	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	275108	50.0000	52.8	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	306268	50.0000	52.1	
	38 Cyclohexane	56	5.653	5.653	(0.846)	328932	50.0000	49.8	9128
	34 Bromochloromethane	128	5.657	5.657	(0.847)	85628	50.0000	51.7	
	41 Chloroform +	83	5.732	5.732	(0.858)	351674	50.0000	50.7	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	257722	50.0000	52.8	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	201720	50.0000	51.1	6917
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	297697	50.0000	50.0	
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	252957	50.0000	52.6	
	32 2-Butanone	43	6.043	6.043	(0.905)	135524	50.0000	49.8	
	44 Benzene	78	6.290	6.290	(0.942)	767557	50.0000	50.6	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	130680	50.0000	49.8	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	278924	50.0000	47.2	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	44551	250.000	272	9496
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	777179	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	289692	50.0000	55.6	8398
	49 Trichloroethene	130	6.830	6.830	(1.022)	193446	50.0000	49.5	
	52 Dibromomethane	93	7.216	7.216	(1.080)	125661	50.0000	49.4	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	197865	50.0000	49.5	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	269837	50.0000	49.5	
	55 1,4- Dioxane	58	7.539	7.539	(1.129)	40892	1250.00	1240	9383
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	290879	50.0000	49.7	9648
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	316803	50.0000	52.3	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	735770	50.0000	49.4	
	61 Toluene +	91	8.082	8.082	(0.883)	777899	50.0000	49.0	
M	145 1-3 Dichloropropene total	100				619320	100.000	104	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	142300	50.0000	50.0	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	210682	50.0000	50.8	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	302517	50.0000	51.7	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	182729	50.0000	48.5	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	240425	50.0000	52.7	9695
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	204086	50.0000	49.9	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	339989	50.0000	50.4	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	181751	50.0000	49.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	169607	50.0000	50.8	
	140 1-Chlorohexane	91	9.139	9.139	(0.999)	201436	50.0000	44.9	8855
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	315425	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	475542	50.0000	49.0	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	249503	50.0000	51.0	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	181370	50.0000	49.3	
75	p,m-Xylene	106	9.271	9.271	(1.013)	584957	100.000	103	
M 99	TOTAL XYLENE	106				862565	150.000	152	
76	o-Xylene	106	9.552	9.552	(1.044)	277608	50.0000	48.4	
77	Styrene	104	9.582	9.582	(1.047)	479555	50.0000	49.3	
78	Bromoform ++	173	9.608	9.608	(1.050)	142502	50.0000	50.0	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	726317	50.0000	49.7	
161	cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	84508	50.0000	46.9	9579
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	192720	50.0000	50.8	
84	Bromobenzene	77	9.998	9.998	(0.943)	359723	50.0000	48.5	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	815210	50.0000	50.9	
81	1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	247124	50.0000	49.0	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	572157	50.0000	51.0	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	576282	50.0000	53.5	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	320221	50.0000	49.6	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	72724	50.0000	48.9	
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	520666	50.0000	50.7	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	314864	50.0000	52.6	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	596109	50.0000	53.0	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	660133	50.0000	53.9	
92	p-Isopropyltoluene	119	10.496	10.496	(0.990)	549081	50.0000	54.1	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	316100	50.0000	49.9	
* 97	1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	226707	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	312069	50.0000	48.0	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	489506	50.0000	52.9	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	294595	50.0000	48.9	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	41845	50.0000	50.3	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	67051	50.0000	52.8	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	155267	50.0000	44.3	
110	Naphthalene	128	12.191	12.191	(1.150)	453347	50.0000	42.6	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	154096	50.0000	45.1	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170510p.s.b/b3163.d

Date : 10-MAY-2017 14:12

Client ID: V14STD050

Instrument: msv14.i

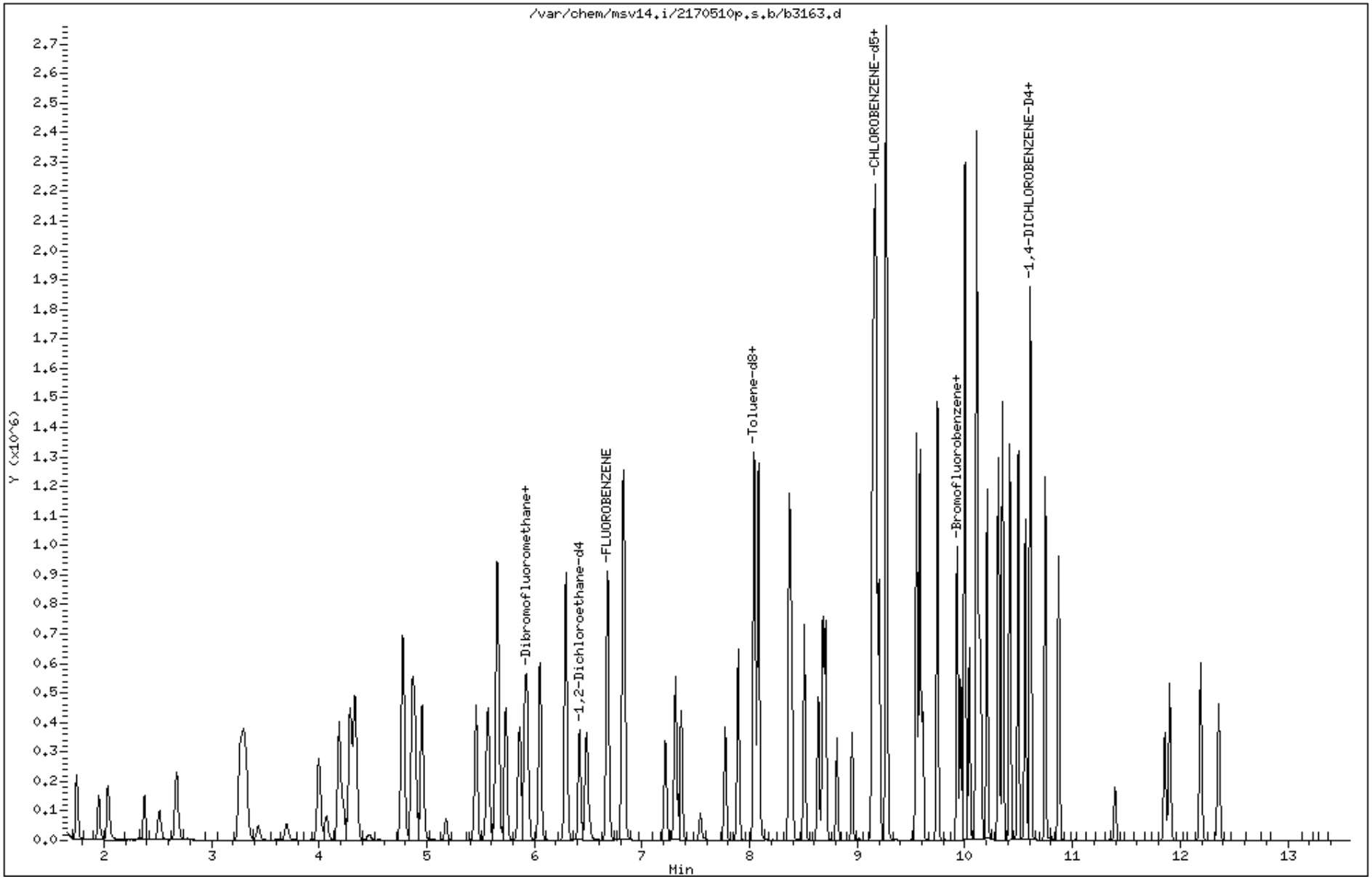
Sample Info: 1400*V14STD050

Purge Volume: 5.0

Operator: JCK

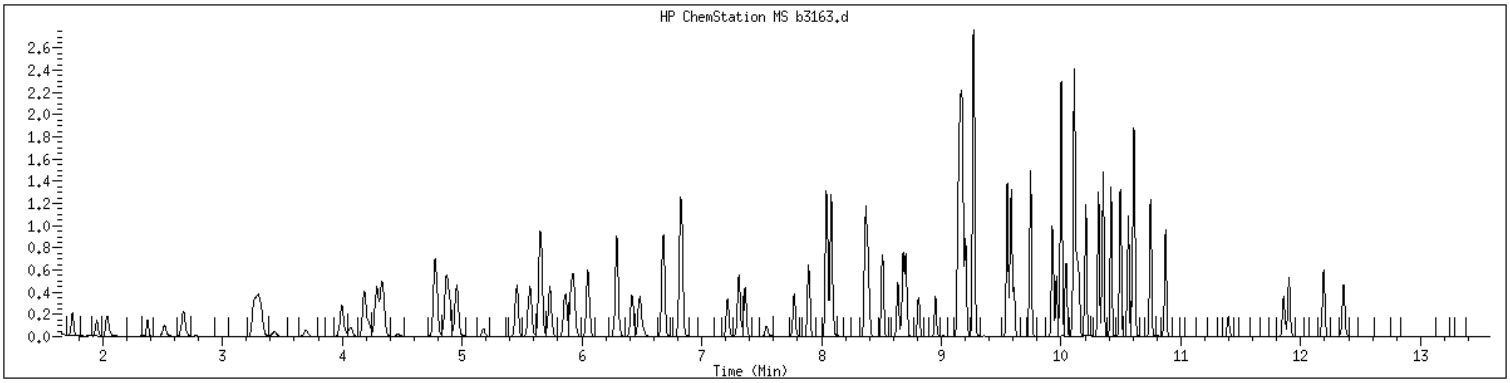
Column phase: RTX-VMS-30M

Column diameter: 0.25



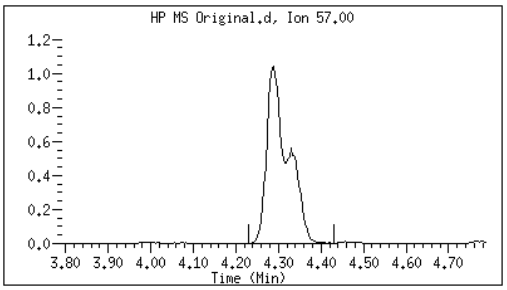
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1400 SampleType : CCALIB_7
Injection Date: 05/10/2017 14:12 Instrument : msv14.i
Operator : JCK
Sample Info : 1400*V14STD050
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



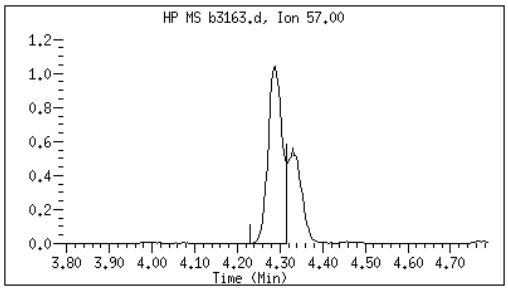
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/10/2017 14:29



M2 - Target system integrated incorrectly

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170510p/b3181
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JCK
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 2100	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.583	0.574	.01	-1.62	50	A	
1,1,1-Trichloroethane	0.383	0.381	.01	-.55	50	A	
1,1,2,2-Tetrachloroethane	1.112	1.045	.3	-6.06	50	A	
1,1,2-Trichloroethane	0.597	0.582	.01	-2.57	50	A	
1,1-Dichloroethane	0.465	0.473	.1	1.68	50	A	
1,1-Dichloroethene	0.160	0.160	.01	.15	50	A	
1,1-Dichloropropene	0.310	0.317	.01	2.26	50	A	
1,2,3-Trichlorobenzene	0.862	0.682	.01	-9.6	50	L	
1,2,3-Trichloropropane	1.424	1.439	.01	1.05	50	A	
1,2,4-Trichlorobenzene	0.891	0.679	.01	-12	50	L	
1,2,4-Trimethylbenzene	2.479	2.584	.01	4.24	50	A	
1,2-Dibromo-3-chloropropane	0.184	0.189	.01	3.06	50	A	
1,2-Dibromoethane	0.582	0.577	.01	-.82	50	A	
1,2-Dichlorobenzene	1.330	1.314	.01	-1.24	50	A	
1,2-Dichloroethane	0.380	0.365	.01	-4	50	A	
1,2-Dichloroethane-d4	0.169	0.169	.01	.4	50	A	
1,2-Dichloroethene (total)	0.335	0.339	.01	1.13	50	A	
1,2-Dichloropropane	0.257	0.257	.01	.1	50	A	
1,3,5-Trimethylbenzene	2.375	2.502	.01	5.33	50	A	
1,3-Dichlorobenzene	1.398	1.380	.01	-1.25	50	A	
1,3-Dichloropropane	1.069	1.070	.01	.05	50	A	
1,3-Dichloropropylene	0.383	0.401	.01	4.7	50	A	
1,4 Dioxane	0.002	0.002	.001	-8.57	50	A	
1,4-Dichlorobenzene	1.433	1.362	.01	-4.97	50	A	
1-Bromo-2-Chloroethane	0.376	0.379	.01	.54	50	A	
1-Chlorohexane	0.722	0.611	.01	-14.2	50	W	
2,2-Dichloropropane	0.378	0.357	.01	-5.58	50	A	
2-Butanone	0.175	0.176	.01	.47	50	A	
2-Chlorotoluene	2.474	2.535	.01	2.47	50	A	
2-Hexanone	0.529	0.550	.01	3.93	50	A	
4-Bromofluorobenzene	0.601	0.606	.01	.75	50	A	
4-Chlorotoluene	2.266	2.265	.01	-.05	50	A	
4-Isopropyltoluene	2.240	2.371	.01	5.85	50	A	
4-Methyl-2-pentanone	0.657	0.689	.01	4.91	50	A	
Acetone	0.160	0.152	.01	-4.68	50	A	
Acrolein	0.014	0.016	.01	18.7	50	A	
Acrylonitrile	0.096	0.104	.01	8.42	50	A	
Benzene	0.976	0.989	.01	1.31	50	A	
Bromobenzene	1.636	1.600	.01	-2.21	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170510p/b3181
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JCK
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 2100	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.106	0.108	.01	1.25	50	A	
Bromodichloromethane	0.350	0.351	.01	.19	50	A	
Bromoform	0.452	0.464	.1	2.74	50	A	
Bromomethane	0.090	0.095	.01	6	50	W	
Carbon disulfide	0.520	0.517	.01	-.6	50	W	
Carbon tetrachloride	0.314	0.323	.01	2.69	50	A	
Chlorobenzene	1.538	1.507	.3	-2.01	50	A	
Chloroethane	0.158	0.145	.01	-8.26	50	A	
Chloroform	0.446	0.440	.01	-1.49	50	A	
Chloromethane	0.195	0.182	.1	-6.91	50	A	
Chloroprene	0.373	0.292	.01	-20	50	W	
Cyclohexane	0.431	0.399	.01	-6.2	50	W	
Dibromochloromethane	0.648	0.642	.01	-.91	50	A	
Dibromofluoromethane	0.254	0.256	.01	.9	50	A	
Dibromomethane	0.164	0.162	.01	-1.07	50	A	
Dichlorodifluoromethane	0.246	0.224	.01	-9	50	A	
Ethylbenzene	0.776	0.779	.01	.48	50	A	
Hexachlorobutadiene	0.280	0.293	.01	4.64	50	A	
Isobutyl alcohol	0.011	0.011	.01	.44	50	A	
Isopropylbenzene (Cumene)	2.341	2.240	.01	-3.2	50	W	
Methyl Acetate	0.218	0.225	.01	2.89	50	A	
Methyl iodide	0.117	0.095	.01	-2.8	50	L	
Methylcyclohexane	0.335	0.350	.01	4.34	50	A	
Methylene chloride	0.295	0.281	.01	-4.82	50	A	
Naphthalene	2.786	2.102	.01	-11.2	50	L	
Styrene	1.559	1.495	.01	-3	50	W	
Tetrachloroethene	0.451	0.441	.01	-2.26	50	A	
Toluene	2.519	2.444	.01	-2.95	50	A	
Toluene-d8	2.359	2.315	.01	-1.86	50	A	
Trichloroethene	0.252	0.262	.01	3.94	50	A	
Trichlorofluoromethane	0.285	0.287	.01	.46	50	A	
Trichlorotrifluoroethane	0.165	0.170	.01	3	50	A	
Vinyl acetate	0.153	0.089	.01	-42.0	50	A	
Vinyl chloride	0.245	0.236	.01	-3.58	50	A	
Xylene (total)	0.909	0.889	.01	-1.33	50	W	
cis-1,2-Dichloroethene	0.335	0.345	.01	2.96	50	A	
cis-1,3-Dichloropropene	0.390	0.410	.01	5.21	50	A	
diisopropyl Ether (DIPE)	0.748	0.715	.01	-4.4	50	A	
m,p-Xylene	0.903	0.897	.01	-.1	50	W	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217050803	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170510p/b3181
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	JCK
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610130
Analysis Date:	05/10/17 Time: 2100	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
n-Butylbenzene	2.042	2.069	.01	1.32	50	A	
n-Hexane	0.302	0.293	.01	-2.4	50	W	
n-Propylbenzene	3.531	3.525	.01	-.17	50	A	
o-Xylene	0.922	0.874	.01	-3.8	50	W	
sec-Butylbenzene	2.699	2.840	.01	5.21	50	A	
t-Butanol (TBA)	0.029	0.026	.01	-10.3	50	A	
tert-Butyl methyl ether (MTBE)	0.687	0.743	.01	8.17	50	A	
tert-Butylbenzene	1.320	1.388	.01	5.12	50	A	
trans-1,2-Dichloroethene	0.335	0.333	.01	-.69	50	A	
trans-1,3-Dichloropropene	0.376	0.392	.01	4.17	50	A	
trans-1,4-Dichloro-2-butene	0.328	0.313	.01	-4.68	50	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170510p.s.b/b3181.d
Lab Smp Id: 1440 Client Smp ID: V14STD050
Inj Date : 10-MAY-2017 21:00
Operator : JCK Inst ID: msv14.i
Smp Info : 1440*V14STD050
Misc Info : MSV~38307~*1*JCK
Comment :
Method : /var/chem/msv14.i/2170510p.s.b/8260bdod5w14.m
Meth Date : 11-May-2017 09:56 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	172064	50.0000	45.5	
2 Chloromethane ++	50	1.954	1.954	(0.292)	139886	50.0000	46.5	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	181702	50.0000	48.2	
5 Bromomethane	94	2.377	2.377	(0.356)	73376	50.0000	53.0	
6 Chloroethane	64	2.512	2.512	(0.376)	111709	50.0000	45.9	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	220536	50.0000	50.2	
11 1,1-Dichloroethene +	96	3.266	3.266	(0.489)	123171	50.0000	50.1	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	397875	50.0000	49.7	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	130735	50.0000	51.5	
13 Methyl Iodide	142	3.434	3.434	(0.514)	72841	50.0000	48.6	
9 Acrolein	56	3.697	3.697	(0.553)	62972	250.000	297	
17 Methylene Chloride	49	3.997	3.997	(0.598)	216302	50.0000	47.6	
12 Acetone	43	4.071	4.071	(0.609)	117252	50.0000	47.7	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	256346	50.0000	49.7	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	172866	50.0000	51.4	8593
	23 Hexane	57	4.289	4.289	(0.642)	225591	50.0000	48.8	9333(M2)
	21 MTBE	73	4.334	4.334	(0.649)	571963	50.0000	54.1	9712
	26 tert-Butyl Alcohol	59	4.469	4.469	(0.669)	20263	50.0000	44.8	9319
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	550552	50.0000	47.8	9851
	29 Chloroprene	53	4.866	4.866	(0.728)	225072	50.0000	40.0	8922
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	364232	50.0000	50.8	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	399579	250.000	271	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	68285	50.0000	29.0	
M	48 Total 1,2-Dichloroethene	61				521816	100.000	101	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	265470	50.0000	51.5	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	274854	50.0000	47.2	
	38 Cyclohexane	56	5.653	5.653	(0.846)	306908	50.0000	46.9	9071
	34 Bromochloromethane	128	5.657	5.657	(0.847)	82952	50.0000	50.6	
	41 Chloroform +	83	5.732	5.732	(0.858)	338492	50.0000	49.3	
	39 Carbon Tetrachloride	117	5.860	5.860	(0.877)	248333	50.0000	51.3	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	197230	50.0000	50.4	6928
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	292927	50.0000	49.7	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	243683	50.0000	51.1	
	32 2-Butanone	43	6.047	6.047	(0.905)	135349	50.0000	50.2	
	44 Benzene	78	6.291	6.291	(0.942)	761057	50.0000	50.7	
$	43 1,2-Dichloroethane-d4	67	6.422	6.422	(0.961)	130409	50.0000	50.2	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	280994	50.0000	48.0	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	40741	250.000	251	9527
*	47 FLUOROBENZENE	96	6.681	6.681	(1.000)	769601	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	268993	50.0000	52.2	8216
	49 Trichloroethene	130	6.834	6.834	(1.023)	201326	50.0000	52.0	
	52 Dibromomethane	93	7.217	7.217	(1.080)	124612	50.0000	49.5	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	198165	50.0000	50.1	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	270244	50.0000	50.1	
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	37337	1250.00	1140	9433
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	291312	50.0000	50.3	9655
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	315507	50.0000	52.6	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	735027	50.0000	49.1	
	61 Toluene +	91	8.083	8.083	(0.883)	776102	50.0000	48.5	
M	145 1-3 Dichloropropene total	100				617332	100.000	105	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	139931	50.0000	48.9	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	218896	50.0000	52.5	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	301825	50.0000	52.1	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	184693	50.0000	48.7	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	223557	50.0000	48.7	9659
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	203860	50.0000	49.5	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	339576	50.0000	50.0	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	183171	50.0000	49.6	
	68 2-Hexanone	43	8.952	8.952	(0.978)	174554	50.0000	52.0	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	193851	50.0000	42.9	8780
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	317506	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	478599	50.0000	49.0	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	247448	50.0000	50.2	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	182152	50.0000	49.2	
75	p,m-Xylene	106	9.271	9.271	(1.013)	569742	100.000	99.9	
M 99	TOTAL XYLENE	106				847177	150.000	148	
76	o-Xylene	106	9.548	9.548	(1.043)	277435	50.0000	48.1	
77	Styrene	104	9.582	9.582	(1.047)	474658	50.0000	48.5	
78	Bromoform ++	173	9.608	9.608	(1.050)	147354	50.0000	51.4	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	711182	50.0000	48.4	
161	cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	78717	50.0000	44.2	9562
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	192364	50.0000	50.4	
84	Bromobenzene	77	9.998	9.998	(0.943)	358094	50.0000	48.9	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	789068	50.0000	49.9	
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	233857	50.0000	47.0	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	567520	50.0000	51.2	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	559977	50.0000	52.7	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	322002	50.0000	50.5	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	69991	50.0000	47.7	
90	4-Chlorotoluene	91	10.204	10.204	(0.963)	506909	50.0000	50.0	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	310658	50.0000	52.6	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	578446	50.0000	52.1	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	635633	50.0000	52.6	
92	p-Isopropyltoluene	119	10.493	10.493	(0.990)	530758	50.0000	52.9	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	308998	50.0000	49.4	
* 97	1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	223840	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	304804	50.0000	47.5	
100	n-Butylbenzene	91	10.744	10.744	(1.013)	463050	50.0000	50.7	
102	1,2-Dichlorobenzene	146	10.872	10.872	(1.025)	294024	50.0000	49.4	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	42361	50.0000	51.5	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	65609	50.0000	52.3	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	152048	50.0000	44.0	
110	Naphthalene	128	12.191	12.191	(1.150)	470611	50.0000	44.4	
111	1,2,3-Trichlorobenzene	180	12.356	12.356	(1.165)	152630	50.0000	45.2	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170510p.s.b/b3181.d

Date : 10-MAY-2017 21:00

Client ID: V14STD050

Instrument: msv14.i

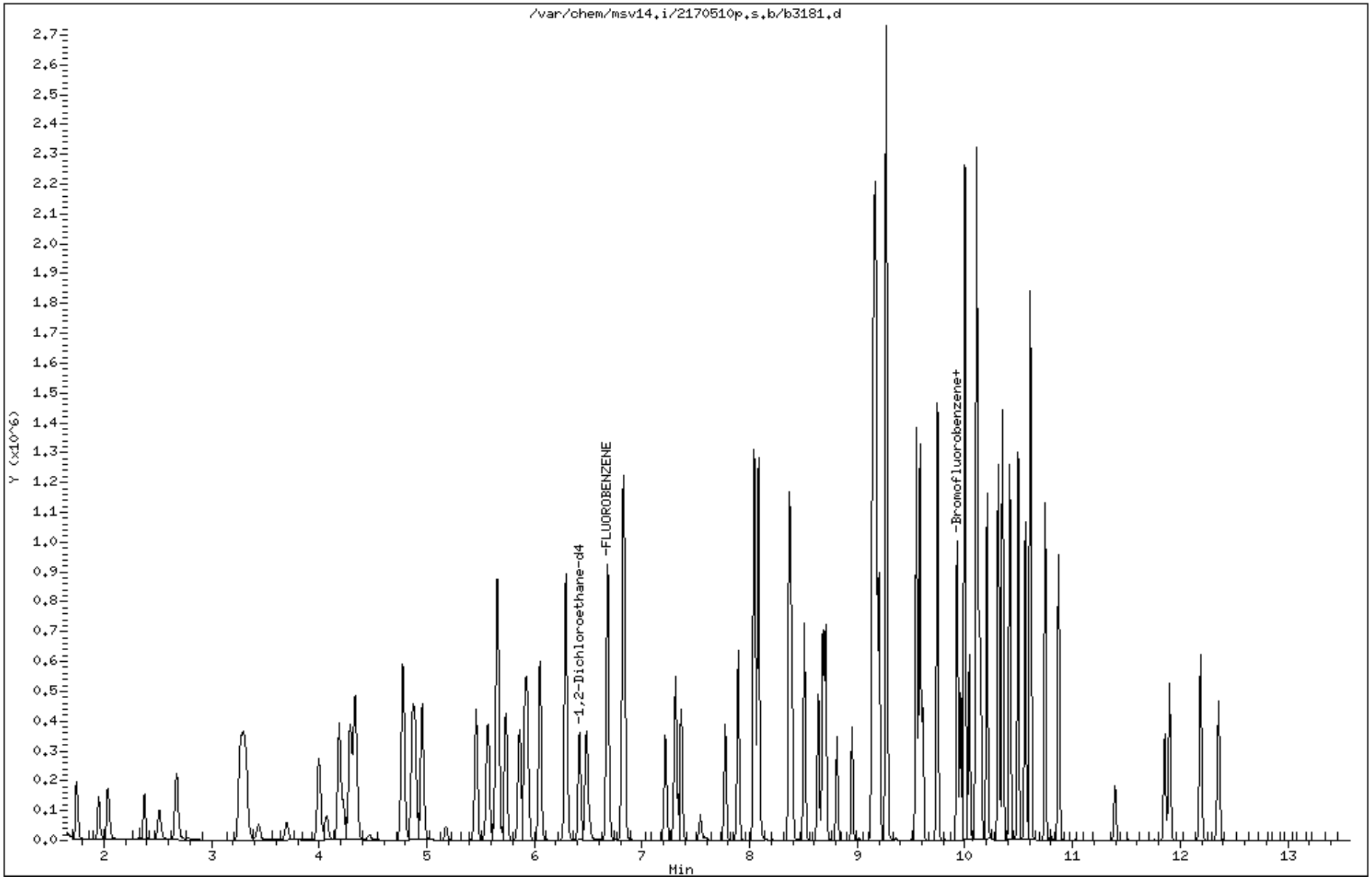
Sample Info: 1440*V14STD050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

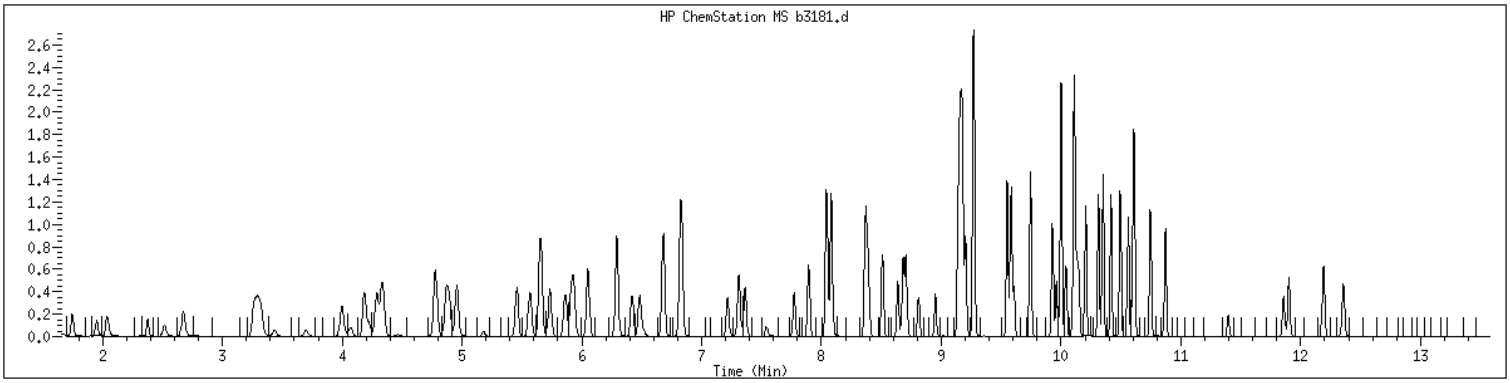
Column diameter: 0.25



Report Date: 05/11/2017 09:56

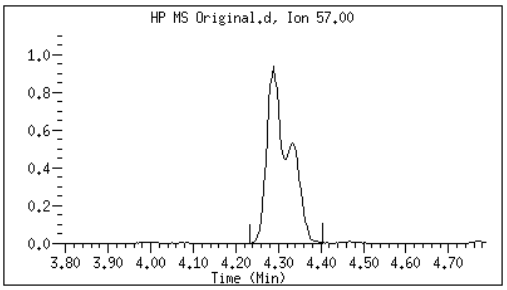
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1440 SampleType : CCALIB_7
Injection Date: 05/10/2017 21:00 Instrument : msv14.i
Operator : JCK
Sample Info : 1440*V14STD050
Misc Info : MSV~38307~*1*JCK
Method : /var/chem/msv14.i/2170510p.s.b/8260bdod5w14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



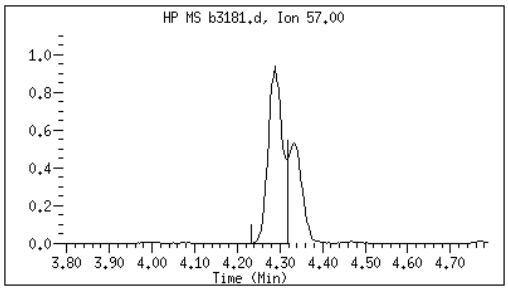
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 09:43



M2 - Target system integrated incorrectly

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	217050803			Standard ID:	1207
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV14
Injection Vol.:	1.0	(µL)		Lab File ID:	2170505/b2895d
Analyst:	LBH			Analytical Batch:	609837
Analysis Date:	05/05/17	Time: 1105		Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	345523	9.15	245954	10.6	866312	6.68

CLIENT SAMPLE ID	GCAL SAMP ID		#		#		#		#		#	
LCS1682371	1682371	337234		9.15		233697		10.6		819301		6.68	
MW-12	21705080310	296610		9.15		211110		10.6		742391		6.68	
LCS1683253	1683253	315425		9.15		226707		10.6		777179		6.68	
LCSD1683254	1683254	317176		9.15		222558		10.6		774858		6.68	
MB1683252	1683252	289228		9.16		208480		10.6		740962		6.68	
OMS-28-3	21705080306	282778		9.15		205564		10.6		721377		6.68	
OMS-28-GW02-19-S	21705080312	291424		9.15		207660		10.6		721021		6.68	
OMS-28-GW03-34-S	21705080313	284552		9.15		205683		10.6		721420		6.68	
OMS-28-GW20-12-S	21705080314	278867		9.15		202474		10.6		697542		6.68	
OMS-28-GW18-18-S	21705080315	280867		9.15		208454		10.6		721025		6.68	
MW-9	21705080316	277840		9.15		202880		10.6		707786		6.68	
LCSD1682372	1682372	336686		9.15		233978		10.6		819934		6.68	
OMS-28-4	21705080319	279063		9.16		201819		10.6		711654		6.68	
OMS-28-2	21705080320	280974		9.15		203719		10.6		718173		6.68	
OMS-28-GW32-12-S	21705080311	271180		9.15		194446		10.6		687654		6.68	
OMS-28-5	21705080317	274884		9.15		195941		10.6		698545		6.68	
OMS-28-5-a	21705080318	272145		9.15		195764		10.6		686365		6.68	
OMS-28-3-MS	21705080307	316589		9.15		225369		10.6		759720		6.68	
OMS-28-3-MSD	21705080308	306501		9.15		216677		10.6		751558		6.68	
MB1682370	1682370	299984		9.16		216661		10.6		763461		6.68	
OMS-28-7-c	21705080302	289847		9.15		205571		10.6		737349		6.68	
MW-8	21705080303	289966		9.15		207377		10.6		740643		6.68	
MW-5	21705080304	292025		9.15		208462		10.6		745448		6.68	
MW-6	21705080305	291245		9.15		208970		10.6		741638		6.68	
OMS-28-7	21705080301	296589		9.15		209992		10.6		752244		6.68	
OMS-28-1	21705080309	290522		9.15		203995		10.6		732200		6.68	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 05-MAY-2017
Instrument: msv14.i
Analyst(s): LBH

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b2888.d	0.00 ml	05-MAY-2017 07:59	1.0	LBH	2
1000		b2888d.d	0.00 ml	05-MAY-2017 07:59	1.0	LBH	2
1202		b2889.d	5.00 ml	05-MAY-2017 08:52	1.0	LBH	1
1203		b2890.d	5.00 ml	05-MAY-2017 09:15	1.0	LBH	1
2PPB		b2891.d	5.00 ml	05-MAY-2017 09:37	1.0	LBH	1
1204		b2892.d	5.00 ml	05-MAY-2017 09:59	1.0	LBH	1
1204		b2892d.d	5.00 ml	05-MAY-2017 09:59	1.0	LBH	1
1205		b2893.d	5.00 ml	05-MAY-2017 10:21	1.0	LBH	1
1206		b2894.d	5.00 ml	05-MAY-2017 10:43	1.0	LBH	1
1206		b2894d.d	5.00 ml	05-MAY-2017 10:43	1.0	LBH	1
1207		b2895.d	5.00 ml	05-MAY-2017 11:05	1.0	LBH	1
1207		b2895d.d	5.00 ml	05-MAY-2017 11:05	1.0	LBH	1
1208		b2896.d	5.00 ml	05-MAY-2017 11:27	1.0	LBH	1
1208		b2896d.d	5.00 ml	05-MAY-2017 11:27	1.0	LBH	1
1209		b2897.d	5.00 ml	05-MAY-2017 11:50	1.0	LBH	1
1209		b2897d.d	5.00 ml	05-MAY-2017 11:50	1.0	LBH	1
BLANK		b2898.d	5.00 ml	05-MAY-2017 12:12	1.0	LBH	1
BLANK		b2899.d	5.00 ml	05-MAY-2017 12:34	1.0	LBH	1
1203		b2900.d	5.00 ml	05-MAY-2017 13:10	1.0	LBH	1
1203		b2900d.d	5.00 ml	05-MAY-2017 13:10	1.0	LBH	1
1205		b2901.d	5.00 ml	05-MAY-2017 13:32	1.0	LBH	1
1205		b2901d.d	5.00 ml	05-MAY-2017 13:32	1.0	LBH	1
1600		b2902.d	5.00 ml	05-MAY-2017 14:15	1.0	LBH	1
1600		b2902d.d	5.00 ml	05-MAY-2017 14:15	1.0	LBH	1

REVISED 1-28-15 Supervisor Review: TUNE TIME: :

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 08-MAY-2017
Instrument: msv14.i
Analyst(s): JMC2

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1400 (CCV)	8260	250	126-73-12	05/14/17
	Ac/Ac/VA	MC	126-74-5	07/31/17
	APP9-1	250	126-72-4	10/01/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b3074.d	0.00 ml	08-MAY-2017 09:04	1.0	JMC2	2
CONDITION PURG		b3075.d	5.00 ml	08-MAY-2017 09:47	1.0	JMC2	1
1400		b3076.d	5.00 ml	08-MAY-2017 10:33	1.0	JMC2	1
1682371		b3076L.d	5.00 ml	08-MAY-2017 10:33	1.0	JMC2	1
1682372		b3077.d	5.00 ml	08-MAY-2017 10:55	1.0	JMC2	1
BLANK		b3078.d	5.00 ml	08-MAY-2017 11:33	1.0	JMC2	1
BLANK		b3079.d	5.00 ml	08-MAY-2017 11:55	1.0	JMC2	1
1682370 pH		b3080.d	5.00 ml	08-MAY-2017 12:17	1.0	JMC2	1
21705031517 1		b3081.d	5.00 ml	08-MAY-2017 12:39	1.0	JCK	1
21705031501 1		b3082.d	5.00 ml	08-MAY-2017 13:01	1.0	JCK	1
21705031506 1		b3083.d	5.00 ml	08-MAY-2017 13:24	1.0	JCK	1
21705031507 1		b3084.d	5.00 ml	08-MAY-2017 13:46	1.0	JCK	1
21705031508 1		b3085.d	5.00 ml	08-MAY-2017 14:08	1.0	JMC2	1
21705031509 1		b3086.d	5.00 ml	08-MAY-2017 14:30	1.0	JMC2	1
21705031510 1		b3087.d	5.00 ml	08-MAY-2017 14:52	1.0	JMC2	1
21705031513 1		b3088.d	5.00 ml	08-MAY-2017 15:15	1.0	JMC2	1
21705031514 1		b3089.d	5.00 ml	08-MAY-2017 15:37	1.0	JMC2	1
21705031515 1		b3090.d	5.00 ml	08-MAY-2017 15:59	1.0	JMC2	1
21705031516 1		b3091.d	5.00 ml	08-MAY-2017 16:21	1.0	JMC2	1
21705080302 1		b3092.d	5.00 ml	08-MAY-2017 16:43	1.0	JMC2	1
21705080303 1		b3093.d	5.00 ml	08-MAY-2017 17:05	1.0	JMC2	1
21705080304 1		b3094.d	5.00 ml	08-MAY-2017 17:28	1.0	JMC2	1
21705080305 1		b3095.d	5.00 ml	08-MAY-2017 17:50	1.0	JMC2	1
21705080301 1		b3096.d	5.00 ml	08-MAY-2017 18:12	1.0	JMC2	1
21705080309 1		b3097.d	5.00 ml	08-MAY-2017 18:34	1.0	JMC2	1
21705080310 1		b3098.d	5.00 ml	08-MAY-2017 18:57	1.0	JMC2	1
21705031511 1		b3099ms.d	5.00 ml	08-MAY-2017 19:19	1.0	JMC2	1
21705031512 1		b3100msd.d	5.00 ml	08-MAY-2017 19:41	1.0	JMC2	1
1440		b3101.d	5.00 ml	08-MAY-2017 20:03	1.0	JMC2	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 21:04

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 10-MAY-2017
Instrument: msv14.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1400 (CCV)	8260	250	126-73-12	05/14/17
	Ac/Ac/VA	MC	126-74-5	07/31/17
	APP9-1	250	126-72-4	10/01/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b3162.d	0.00 ml	10-MAY-2017 13:34	1.0	JCK	2
1400		b3163.d	5.00 ml	10-MAY-2017 14:12	1.0	JCK	1
1683253		b3163L.d	5.00 ml	10-MAY-2017 14:12	1.0	JCK	1
1683254		b3164.d	5.00 ml	10-MAY-2017 14:34	1.0	JCK	1
MB		b3165.d	5.00 ml	10-MAY-2017 14:56	1.0	JCK	1
MB		b3166.d	5.00 ml	10-MAY-2017 15:19	1.0	JCK	1
1683252 pH		b3167.d	5.00 ml	10-MAY-2017 15:41	1.0	JCK	1
21705080306 1		b3168.d	5.00 ml	10-MAY-2017 16:03	1.0	JCK	1
21705080312 1		b3169.d	5.00 ml	10-MAY-2017 16:25	1.0	JCK	1
21705080313 1		b3170.d	5.00 ml	10-MAY-2017 16:48	1.0	JCK	1
21705080314 1		b3171.d	5.00 ml	10-MAY-2017 17:10	1.0	JCK	1
21705080315 1		b3172.d	5.00 ml	10-MAY-2017 17:32	1.0	JCK	1
21705080316 1		b3173.d	5.00 ml	10-MAY-2017 17:54	1.0	JCK	1
21705080319 1		b3174.d	5.00 ml	10-MAY-2017 18:16	1.0	JCK	1
21705080320 1		b3175.d	5.00 ml	10-MAY-2017 18:39	1.0	JCK	1
21705080311 1		b3176.d	5.00 ml	10-MAY-2017 19:03	2.0	JCK	1
21705080317 1		b3177.d	5.00 ml	10-MAY-2017 19:28	2.0	JCK	1
21705080318 1		b3178.d	5.00 ml	10-MAY-2017 19:53	2.0	JCK	1
21705080307 1		b3179ms.d	5.00 ml	10-MAY-2017 20:15	1.0	JCK	1
21705080308 1		b3180msd.d	5.00 ml	10-MAY-2017 20:38	1.0	JCK	1
1440		b3181.d	5.00 ml	10-MAY-2017 21:00	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 01:34

Client ID: 4838 - AECOM
SDG: 217050803
PM: AMK

AECOM

Chain of Custody and Analytical Reque

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Number of containers	TCL VOCs (8260B)								Comments	Cooler ID
						Sample Analysis Requested										
OMS-28-7	5-1-17	1127	-	N	WG	3	X									1
OMS-28-7-c	5-1-17		-	TB	WQ	3	X									2
MW-8	5-1-17	1225	-	N	WG	3	X									3
MW-5	5-1-17	1315	-	N	WG	3	X									4
MW-6	5-1-17	1420	-	N	WG	3	X									5
OMS-28-3	5-1-17	1513	-	N	WG	3	X									6
OMS-28-3-MS	5-1-17	1513	-	MS	WG	3	X									7
OMS-28-3-MSD	5-1-17	1513	-	SD	WG	3	X									8
OMS-28-1	5-1-17	1640	-	N	WG	3	X									9
MW-12	5-1-17	1757	-	N	WG	3	X									10
OMS-28-GW32-12-S	5-2-17	1430	-	Split	WG	3	X									11
OMS-28-GW02-19-S	5-3-17	1000	-	Split	WG	3	X									12
OMS-28-GW03-34-S	5-4-17	1030	-	Split	WG	3	X									13

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5/5/17	1600	1. Fed Ex		
2. Fed Ex	5/6/17	0922	2. [signature]	5/6/17	0922
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: [redacted]
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:
Shipped: XX
Airbill #:
Location: Baton Rouge LA
Date: Time:

1) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

#8020 4594 6886
30 CPM
1.7°C E26

Page 1 of 2

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 70775

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

Client ID: 4838 - AECOM
SDG: 217050803
PM: AMK

AECOM

Chain of Custody and Analytical Requ

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	TCL VOCs (8260B)								Comments	Cooler ID
OMS-28-GW20-12-S	5/5/17	1615	-	Split	WG	3	X									14
OMS-28-GW18-18-S	5/5/17	1045	-	Split	WG	3	X									15
MW-9	5/5/17	1235	-	N	WG	3	X									16
OMS-28-5	5/5/17	1408	-	N	WG	3	X									17
OMS-28-5-Q	5/5/17	1408	-	FD	WG	3	X									18
OMS-28-4	5/5/17	1575	-	N	WG	3	X									19
OMS-28-2	5/5/17	1700	-	N	WG	3	X									20
			-													
			-													
			-													
			-													
			-													
			-													

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5/5/17	1800	Fed Ex		
2.	Fed Ex	5/6/17	09:22		5/6/17	09:22
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX
Method of Shipment: Fed Ex
Analytical Lab: GCAL
Lab Receipient:
Shipped:
Airbill #:
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

#8020 4594 6886

30 CPM
1.7°C E26

Page 2 of 2

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 70775

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

SAMPLE RECEIVING CHECKLIST

217050803

SAMPLE DELIVERY GROUP 217050803	
Client PM AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** Reese, Sean M.
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 05/06/17

CHECKLIST	YES	NO	NA
Samples received with proper thermal and chemical preservation?	☑	☐	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐	☐
When used, were custody seals intact?	☑	☐	☐
COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	☑	☐	☐
Short holds or RUSH samples received?	☐	☑	☐
All containers received in good condition and within hold time?	☑	☐	☐
All sample labels and containers received match the chain of custody?	☑	☐	☐
Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	☐	☐	☑
Preservative added to any containers?	☐	☐	☑
VOC water containers received with headspace < 6mm?	☑	☐	☐
Received filtered sample volume for dissolved analysis?	☐	☐	☑
Trip blank present in all coolers containing VOC waters?	☑	☐	☐
Samples collected in containers provided by GCAL?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E29	Temp(°C)
8020 4594 6886		1.7

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Page 1 of 1

1/1

Appendix B4
Columbia Technologies, LLC Laboratory Report dated August 14, 2017

Columbia Technologies, LLC

One Research Court, Suite 450
Rockville, MD 20850
Phone: 410-536-9911
Toll Free: 888-344-2704
Fax: 410-536-0222
Ring Central Main: 888-344-2704

August 14, 2017

Steve Holt
AECOM
10 Patewood Drive.
Bldg. VI. Suite 500
Greenville. SC 29615
TEL: 864-234-2260

RE: REVISED: ARMY NATIONAL GUARD - OMS #28 MOBILE, ALABAMA
Project Number: W90FYQ-10-D-0010 contract, task order CK02

Dear Steve:

Enclosed is the REVISION to the final report of the on-site analysis performed by Columbia Technologies, LLC at the above referenced site. Samples were collected May 2nd through the 19th, 2017

Columbia Technologies' mobile laboratory is DOD-ELAP and ISO/IEC 17025:2005 Accredited. Our personnel, methodology, proficiency testing, and quality assurance requirements comply with the guidelines and with the consensus standards adopted at the National Environmental Laboratory Accreditation Conference (NELAC). Data for the site referenced above were determined in accordance with published procedures under Test Methods for Evaluating Solid Waste (EPA SW-846, Update III Revised May 1997). Unless otherwise indicated on the quality control narrative accompanying the data report, the quality assurance and quality control procedures performed in conjunction with analysis of groundwater samples and soils demonstrated that the reported data met our requirements for accuracy and precision under NELAC Standards.

This report shall not be reproduced except in full without written approval of the laboratory.

If you have any questions, please do not hesitate to call me at (321) 213-9078.

Sincerely,

Melanie Penny
Laboratory Manager
Columbia Technologies, LLC

Table of Contents

Narratives

PROJECT NARRATIVE

Project Scope

On May 2nd through the 19th, 2017 water and soil samples were analyzed by method 8260B at the Army National Guard - OMS #28 Mobile, Alabama

Laboratory Certification

Columbia Technologies Mobile Unit 10 is DOD-ELAP and ISO/IEC 17025:2005 Accredited.

Analytical Procedure

All water samples were analyzed using SW846 Method 5030a/8260b. Ten (10) milliliters (mL) of water was purged with helium and the volatile organic compounds (VOCs) were collected on a solid-phase adsorption trap. The adsorption trap was heated and back-purged with helium. The components were then separated by capillary column gas chromatography and measured with a mass spectrometer (GC/MS) operated in the electron impact full-scan mode. The individual VOCs in the samples were measured against corresponding VOC standards.

The soil samples were analyzed using SW846 Method 5035/8260B. Five (5) grams (g) of soil sample was added to 10 mL of laboratory reagent water, heated and purged with helium. Analysis then continued as for waters.

The soil samples needing dilution were analyzed using SW846 5030a/8260b. Five (5) grams of soil was added to 10 mL of Methanol. 100 µL or less of the methanol extract was added to 10 mL of laboratory water, heated and purged with helium. The analysis then continued as for waters.

Analytical Results

Laboratory results were provided to the client on an as-completed or next-day basis. Final results of the on-site analyses are provided in a hardcopy report and the results relate only to the actual samples received and analyzed in the laboratory. The data produced and reported in the field has been reviewed and approved for this final report by the Client Services Manager.

Data Qualifiers:

U Analyte was analyzed for but not detected.
J Estimated values.
E Result exceeds upper calibration curve.

Uncertainty of Reported Values

All measurement data presented in this report are subject to a degree of uncertainty and the degree of uncertainty varies with each compound of interest. Columbia Technologies estimates the uncertainty of each measurement using a statistical evaluation of the standard deviation from the mean percent recovery of several trials of a given measurement. More specifically, Columbia Technologies maintains historical percent recovery control limits at the 99% confidence level for each analyte of interest. These are calculated as ± 3 times the standard deviation from the mean of historical measurements of the percent recovery of spikes of the analytes of interest into actual and control sample matrices. For example, if the lower and upper percent recovery control limits for a specific analyte of interest have been determined to be 70 and 130 percent respectively, a reported value of 10.0 ug/L will be with 99% confidence 7.0 to 13.0 ug/L. For more information about Columbia Technologies estimation of uncertainty, contact Columbia Technologies' Quality Assurance Officer and/or request a copy of Columbia Technologies' SOP for determining measurement uncertainty.

Quality Control (QC) Results

Tables detailing QC results are included with this report. Please see attached.

ANALYTICAL REPORT NARRATIVE

1. All sample data have been reviewed and, if required, updated in the Final Report for rounding and significant figures.
2. Sample OMS-28-GW17-18 result was corrected on the finalized sample report to 6.7 ug/L from 6.8 ug/L.
3. Sample OMS-28-GW31-31 was ran on May 2nd, 2017 as an unsettled sample. The sample was allowed to settle overnight and reanalyzed on May 3rd, 2017. Both results are reported.
4. The time analyzed was corrected for several samples on the Final Report.
5. When necessary, manual integrations were performed on samples in accordance with the laboratory procedures.
6. When necessary, the chain of custody forms were corrected to reflect correct laboratory sample ids.
7. The correct sample identification for the sample collected on 5/11/17 at 09:05 was OMS-28-GW38-18. The chain of custody was corrected to reflect the ID.

8. The correct sample identification for the sample collected on 5/19/17 at 12:40 is OMS-28-GW71-30. The chain of custody was corrected to reflect the ID.
9. Samples with associated quality control samples that were out of laboratory acceptable range were qualified.
10. Matrix interference issues were observed in surrogates for soil samples primarily collected in the 1 to 2-foot range. Selected samples were re-analyzed to confirm the matrix interference.
11. The report was updated to include results from OMS28-GW30-11, OMS28-GW30-20 and OMS28-GW60-16.

RESULTS

Columbia Technologies LLC
1795 Cogswell Street
Suite 01
Rockledge, FL 32955
Phone: 888-344-2704

REVISED Report
AECOM
ARNG - OMS#28

REVISION 1
8/14/2017

COLUMBIA TECHNOLOGIES	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW01-10	OMS-28-GW01-19	OMS-28-GW01-19	OMS-28-GW01-32	OMS-28-GW02-12	OMS-28-GW02-19
Laboratory ID			10050217-01A	10050217-02A	10050217-02A	10050217-03A	0050317-04	0050317-05A
Receipt Date			5/2/17	5/2/17	5/2/17	5/2/17	5/3/17	5/3/17
Analysis Date			5/2/17	5/2/17	5/2/17	5/2/17	5/3/17	5/3/17
Analysis Time			15:42	16:12	16:31	19:17	12:25	12:43
Matrix			Water	Water	Water	Water	Water	Water
Depth			10	19	19	32	12	19
Dilution			1	10	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**82.2**	**35**	**38**	1.0 U	**0.63 J**	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		100%	100%	105%	102%	103%	101%
1,2-Dichloroethane-d4	*66-139%*		101%	104%	103%	107%	102%	100%
Toluene-d8	*88-116%*		101%	101%	100%	102%	101%	102%
4-Bromofluorobenzene	*77-122%*		95%	95%	96%	100%	95%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW02-19-a	OMS-28-GW02-31	OMS-28-GW03-12	OMS-28-GW03-20	OMS-28-GW03-34	OMS-28-GW03-34-a
Laboratory ID			10050317-06A	10050317-11A	10050417-01A	10050417-02A	10050417-03A	10050417-04A
Receipt Date			5/3/17	5/3/17	5/4/17	5/4/17	5/4/17	5/4/17
Analysis Date			5/3/17	5/3/17	5/4/17	5/4/17	5/5/17	5/5/17
Analysis Time			13:01	16:43	13:18	13:36	9:53	10:11
Matrix			Water	Water	Water	Water	Water	Water
Depth			19	31	12	20	34	34
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		104%	101%	102%	102%	106%	104%
1,2-Dichloroethane-d4	*66-139%*		105%	101%	104%	105%	106%	104%
Toluene-d8	*88-116%*		100%	101%	100%	100%	101%	101%
4-Bromofluorobenzene	*77-122%*		95%	96%	95%	95%	96%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW04-10	OMS-28-GW04-17	OMS-28-GW04-17	OMS-28-GW04-17	OMS-28-GW04-31	OMS-28-GW05-11
Laboratory ID			10050317-01A	10050317-02A	10050317-02A	10050317-02A	10050317-03A	10050217-04A
Receipt Date			5/3/17	5/3/17	5/3/17	5/3/17	5/3/17	5/2/17
Analysis Date			5/3/17	5/3/17	5/3/17	5/3/17	5/4/17	5/2/17
Analysis Time			11:49	12:04	13:19	13:37	12:16	16:50
Matrix			Water	Water	Water	Water	Water	Water
Depth			10	17	17	17	31	11
Dilution			1	50	10	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**1.4**	50 U	10 U	1.0 U	1.0 U	**16.1**
Tetrachloroethene	1.0	0.51	1.0 U	50 U	10 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		102%	105%	103%	101%	106%	102%
1,2-Dichloroethane-d4	*66-139%*		98%	117%	108%	106%	105%	108%
Toluene-d8	*88-116%*		101%	96%	99%	100%	101%	100%
4-Bromofluorobenzene	*77-122%*		96%	94%	94%	95%	98%	95%

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			OMS-28-GW05-19	OMS-28-GW05-33	OMS-28-GW06-11	OMS-28-GW06-17	OMS-28-GW06-32	OMS-28-GW06-32a
Laboratory ID			10050217-05A	10050217-06A	10051717-18A	10051717-21A	10051717-19A	10051717-20A
Receipt Date			5/2/17	5/2/17	5/17/17	5/17/17	5/17/17	5/17/17
Analysis Date			5/2/17	5/2/17	5/17/17	5/18/17	5/18/17	5/18/17
Analysis Time			18:03	17:06	18:28	10:26	13:43	14:01
Matrix			Water	Water	Water	Water	Water	Water
Depth			19	33	11	17	32	32
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**3.1**	1.0 U	**0.63 J**	**66**	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		96%	105%	105%	104%	97%	102%
1,2-Dichloroethane-d4	*66-139%*		97%	103%	103%	102%	98%	99%
Toluene-d8	*88-116%*		101%	102%	99%	101%	103%	102%
4-Bromofluorobenzene	*77-122%*		100%	97%	96%	95%	97%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW07-11	OMS-28-GW07-18	OMS-28-GW07-18	OMS-28-GW07-31	OMS-28-GW07-31a	OMS-28-GW08-10
Laboratory ID			10051917-06A	10051917-07A	10051917-07A	10051917-08A	10051917-09A	0050317-07
Receipt Date			5/19/17	5/19/17	5/19/17	5/19/17	5/19/17	5/3/17
Analysis Date			5/19/17	5/19/17	5/19/17	5/19/17	5/19/17	5/3/17
Analysis Time			12:01	12:18	13:32	14:58	15:19	14:04
Matrix			Water	Water	Water	Water	Water	Water
Depth			11	18	18	31	31	10
Dilution			1	1	10	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**204 E**	**310**	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		105%	105%	100%	106%	103%	101%
1,2-Dichloroethane-d4	*66-139%*		102%	102%	103%	107%	103%	106%
Toluene-d8	*88-116%*		101%	101%	99%	101%	101%	101%
4-Bromofluorobenzene	*77-122%*		97%	96%	95%	96%	97%	94%

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			OMS-28-GW08-17	OMS-28-GW08-31	OMS-28-GW09-10	OMS-28-GW09-16	OMS-28-GW09-33	OMS-28-GW10-10
Laboratory ID			10050317-08A	10050317-12A	10050317-09A	10050317-10A	10050317-13A	0050917-02
Receipt Date			5/3/17	5/3/17	5/3/17	5/3/17	5/3/17	5/9/17
Analysis Date			5/3/17	5/4/17	5/3/17	5/3/17	5/4/17	5/9/17
Analysis Time			14:57	12:36	15:50	16:07	13:00	11:03
Matrix			Water	Water	Water	Water	Water	Water
Depth			17	31	10	10	33	10
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**71**	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		104%	106%	101%	101%	105%	98%
1,2-Dichloroethane-d4	*66-139%*		103%	105%	103%	105%	105%	98%
Toluene-d8	*88-116%*		102%	102%	100%	100%	101%	102%
4-Bromofluorobenzene	*77-122%*		100%	96%	95%	95%	95%	95%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW10-16	OMS-28-GW10-33	OMS-28-GW11-11	OMS-28-GW11-19	OMS-28-GW11-19a	OMS-28-GW11-30
Laboratory ID			10050917-03A	10050917-04A	10051317-08A	10051317-09A	10051317-10A	10051317-11A
Receipt Date			5/9/17	5/9/17	5/13/17	5/13/17	5/13/17	5/13/17
Analysis Date			5/9/17	5/9/17	5/13/17	5/13/17	5/13/17	5/15/17
Analysis Time			11:20	15:38	12:36	12:54	13:15	9:50
Matrix			Water	Water	Water	Water	Water	Water
Depth			16	33	11	19	19	30
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**69**	1.0 U	1.0 U	**24**	**24**	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		104%	102%	90%	91%	96%	103%
1,2-Dichloroethane-d4	*66-139%*		105%	103%	92%	96%	103%	101%
Toluene-d8	*88-116%*		101%	102%	101%	101%	101%	101%
4-Bromofluorobenzene	*77-122%*		94%	96%	96%	94%	95%	97%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW12-12	OMS-28-GW12-12a	OMS-28-GW12-18	OMS-28-GW12-32	OMS-28-GW13-12	OMS-28-GW13-18
Laboratory ID			10051917-02A	10051917-03A	10051917-04A	10051917-05A	10050917-05A	0050917-06A
Receipt Date			5/19/17	5/19/17	5/19/17	5/19/17	5/9/17	5/9/17
Analysis Date			5/19/17	5/19/17	5/19/17	5/19/17	5/9/17	5/9/17
Analysis Time			10:28	10:28	11:04	13:14	11:48	12:06
Matrix			Water	Water	Water	Water	Water	Water
Depth			12	12	18	32	12	18
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	**24**	1.0 U	**1.5**	**37**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		97%	99%	104%	98%	109%	104%
1,2-Dichloroethane-d4	*66-139%*		96%	97%	102%	102%	107%	103%
Toluene-d8	*88-116%*		102%	102%	101%	102%	102%	101%
4-Bromofluorobenzene	*77-122%*		96%	95%	95%	99%	95%	95%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW13-32	OMS-28-GW14-11	OMS-28-GW14-20	OMS-28-GW14-30	OMS-28-GW15-12	OMS-28-GW15-19
Laboratory ID			10050917-07A	10051317-05A	10051317-06A	10051317-07A	0050517-04	0050517-05
Receipt Date			5/9/17	5/13/17	5/13/17	5/13/17	5/5/17	5/5/17
Analysis Date			5/9/17	5/13/17	5/13/17	5/15/17	5/5/17	5/5/17
Analysis Time			15:59	11:10	11:28	9:32	13:17	13:35
Matrix			Water	Water	Water	Water	Water	Water
Depth			32	11	20	30	12	19
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	**3.6**	1.0 U	**2.8**	**7.1**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		103%	88%	89%	102%	102%	104%
1,2-Dichloroethane-d4	*66-139%*		102%	89%	92%	100%	102%	103%
Toluene-d8	*88-116%*		103%	101%	101%	101%	100%	101%
4-Bromofluorobenzene	*77-122%*		95%	95%	95%	96%	95%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW15-30	OMS-28-GW16-12	OMS-28-GW16-19	OMS-28-GW16-30	OMS-28-GW17-12	OMS-28-GW17-19
Laboratory ID			10050517-06A	0050417-07A	0050417-08A	0050417-09A	0050417-10A	0050417-11A
Receipt Date			5/5/17	5/4/17	5/4/17	5/4/17	5/4/17	5/4/17
Analysis Date			5/8/17	5/4/17	5/4/17	5/5/17	5/4/17	5/4/17
Analysis Time			11:13	15:11	15:32	10:29	16:24	16:50
Matrix			Water	Water	Water	Water	Water	Water
Depth			30	12	19	30	12	19
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**0.52 J**	**6.0**	1.0 U	**1.6**	**6.7**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		102%	102%	102%	103%	102%	103%
1,2-Dichloroethane-d4	*66-139%*		96%	98%	103%	103%	103%	105%
Toluene-d8	*88-116%*		99%	100%	101%	102%	102%	101%
4-Bromofluorobenzene	*77-122%*		98%	97%	95%	95%	95%	94%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW17-28	OMS-28-GW18-12	OMS-28-GW18-18	OMS-28-GW18-18-a	OMS-28-GW18-30	OMS-28-GW19-12
Laboratory ID			10050417-12A	10050517-07A	10050517-08A	10050517-09A	10050517-10A	0050917-08A
Receipt Date			5/4/17	5/5/17	5/5/17	5/5/17	5/5/17	5/9/17
Analysis Date			5/5/17	5/5/17	5/5/17	5/5/17	5/8/17	5/9/17
Analysis Time			10:47	13:53	14:11	14:30	11:31	13:41
Matrix			Water	Water	Water	Water	Water	Water
Depth			28	12	18	18	30	12
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**1.6**	**2.7**	**2.8**	1.0 U	**3.3**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.2**
Surrogates								
Dibromofluoromethane	*84-121%*		102%	102%	100%	100%	110%	99%
1,2-Dichloroethane-d4	*66-139%*		101%	103%	100%	101%	102%	103%
Toluene-d8	*88-116%*		102%	100%	101%	101%	99%	102%
4-Bromofluorobenzene	*77-122%*		96%	95%	95%	94%	97%	93%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW19-19	OMS-28-GW19-19a	OMS-28-GW19-30	OMS-28-GW20-12	OMS-28-GW20-12-a	OMS-28-GW20-19
Laboratory ID			10050917-09A	10050917-10A	10050917-11A	10050417-13A	10050417-14A	0050417-16A
Receipt Date			5/9/17	5/9/17	5/9/17	5/4/17	5/4/17	5/4/17
Analysis Date			5/9/17	5/9/17	5/10/17	5/4/17	5/4/17	5/5/17
Analysis Time			13:59	14:19	10:12	17:42	18:00	11:08
Matrix			Water	Water	Water	Water	Water	Water
Depth			19	19	30	12	12	19
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**39**	**44**	1.0 U	**16**	**18**	1.0 U
Tetrachloroethene	1.0	0.51	**96**	**100**	1.0 U	**13**	**13**	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		99%	104%	103%	104%	103%	103%
1,2-Dichloroethane-d4	*66-139%*		104%	104%	101%	103%	100%	104%
Toluene-d8	*88-116%*		103%	102%	102%	102%	102%	101%
4-Bromofluorobenzene	*77-122%*		95%	96%	97%	95%	95%	97%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW20-28	OMS-28-GW21-12	OMS-28-GW21-12	OMS-28-GW21-18	OMS-28-GW21-18	OMS-28-GW21-30
Laboratory ID			10050417-17A	10050517-01A	10050517-01A	10050517-02A	10050517-02A	10050517-03A
Receipt Date			5/4/17	5/5/17	5/5/17	5/5/17	5/5/17	5/5/17
Analysis Date			5/5/17	5/5/17	5/5/17	5/5/17	5/5/17	5/8/17
Analysis Time			12:02	12:21	14:48	12:59	15:06	10:55
Matrix			Water	Water	Water	Water	Water	Water
Depth			28	12	12	18	18	30
Dilution			1	1	10	1	5	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**290 E**	**510**	**120 E**	**230**	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	**290 E**	**460**	**7.7**	**12**	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		102%	107%	106%	104%	112%	102%
1,2-Dichloroethane-d4	*66-139%*		103%	109%	110%	105%	129%	96%
Toluene-d8	*88-116%*		101%	101%	99%	101%	94%	99%
4-Bromofluorobenzene	*77-122%*		102%	96%	95%	95%	92%	100%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW22-11	OMS-28-GW22-11	OMS-28-GW22-20	OMS-28-GW22-28	OMS-28-GW23-12	OMS-28-GW23-20
Laboratory ID			10050917-12A	10050917-12A	10050917-13A	10050917-14A	0051017-32A	0051017-33A
Receipt Date			5/9/17	5/9/17	5/9/17	5/9/17	5/10/17	5/10/17
Analysis Date			5/9/17	5/9/17	5/12/17	5/10/17	5/11/17	5/11/17
Analysis Time			14:55	15:21	19:37	9:36	9:39	10:01
Matrix			Water	Water	Water	Water	Water	Water
Depth			11	11	20	28	12	20
Dilution			100	400	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	100 U	400 U	**0.82 J**	**0.92 J**	**0.63 J**	1.0 U
Tetrachloroethene	1.0	0.51	**23,500 E**	**40,000**	**74**	**77**	**0.72 J**	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		104%	112%	85%	104%	106%	99%
1,2-Dichloroethane-d4	*66-139%*		101%	124%	83%	101%	113%	98%
Toluene-d8	*88-116%*		102%	98%	101%	102%	99%	102%
4-Bromofluorobenzene	*77-122%*		96%	94%	98%	97%	97%	98%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW23-28	OMS-28-GW23-28a	OMS-28-GW24-12	OMS-28-GW24-19	OMS-28-GW24-30	OMS-28-GW25-12
Laboratory ID			10051017-34A	10051017-35A	10051217-12A	0050917-15A	0050917-16A	10051617-13A
Receipt Date			5/10/17	5/10/17	5/12/17	5/9/17	5/9/17	5/16/17
Analysis Date			5/12/17	5/12/17	5/12/17	5/9/17	5/10/17	5/16/17
Analysis Time			18:23	19:17	13:46	16:41	9:54	9:37
Matrix			Water	Water	Water	Water	Water	Water
Depth			28	28	12	19	30	12
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	**14**	**36**	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	**38**	**100**	**1.2**	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		87%	88%	100%	103%	103%	95%
1,2-Dichloroethane-d4	*66-139%*		88%	86%	101%	104%	100%	92%
Toluene-d8	*88-116%*		100%	100%	99%	103%	102%	101%
4-Bromofluorobenzene	*77-122%*		97%	99%	95%	96%	97%	97%

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COLUMBIA TECHNOLOGIES	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW25-19	OMS-28-GW25-28	OMS-28-GW26-31	OMS-28-GW30-11	OMS-28-GW30-20	OMS-28-GW30-33
Laboratory ID			10050917-17A	10050917-18A	10050917-01A	10050417-05A	10050417-06A	10050417-15A
Receipt Date			5/9/17	5/9/17	5/9/17	5/4/17	5/4/17	5/4/17
Analysis Date			5/9/17	5/10/17	5/10/17	5/4/17	5/4/17	5/4/17
Analysis Time			17:40	9:15	10:29	13:54	14:12	18:18
Matrix			Water	Water	Water	Water	Water	Water
Depth			19	28	31	11	20	33
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**0.80** **J**	**0.89** **J**	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	**1.4**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		100%	98%	101%	100%	101%	102%
1,2-Dichloroethane-d4	*66-139%*		100%	99%	100%	101%	102%	103%
Toluene-d8	*88-116%*		102%	102%	102%	101%	100%	101%
4-Bromofluorobenzene	*77-122%*		95%	97%	97%	95%	94%	95%

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COLUMBIA TECHNOLOGIES	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW31-12	OMS-28-GW31-19	OMS-28-GW31-31	OMS-28-GW31-31	OMS-28-GW32-12	OMS-28-GW32-12
Laboratory ID			10050217-14A	10050217-15A	10050217-16A	10050217-16A	0050217-10	0050217-10
Receipt Date			5/2/17	5/2/17	5/2/17	5/2/17	5/2/17	5/2/17
Analysis Date			5/2/17	5/2/17	5/2/17	5/3/17	5/2/17	5/3/17
Analysis Time			20:50	21:08	21:25	15:30	19:35	11:11
Matrix			Water	Water	Water	Water	Water	Water
Depth			12	19	31	19	12	12
Dilution			1	1	1	1	1	10
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	**10.8**	**13**	**120 E**	**140**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Surrogates								
Dibromofluoromethane	*84-121%*		102%	102%	104%	100%	103%	102%
1,2-Dichloroethane-d4	*66-139%*		100%	103%	107%	101%	102%	100%
Toluene-d8	*88-116%*		101%	101%	102%	100%	101%	101%
4-Bromofluorobenzene	*77-122%*		97%	96%	103%	96%	96%	95%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW32-12-a	OMS-28-GW32-12-a	OMS-28-GW32-19	OMS-28-GW32-31	OMS-28-GW33-12	OMS-28-GW33-19
Laboratory ID			10050217-11A	10050217-11B	10050217-12A	10050217-13A	10050217-07A	10050217-08A
Receipt Date			5/2/17	5/2/17	5/2/17	5/2/17	5/2/17	5/2/17
Analysis Date			5/2/17	5/3/17	5/2/17	5/2/17	5/2/17	5/2/17
Analysis Time			19:56	11:28	20:32	20:14	18:25	18:59
Matrix			Water	Water	Water	Water	Water	Water
Depth			12	12	19	31	12	19
Dilution			1	10	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**120** **E**	**180**	**6.3**	**15.6**	1.0 U	**38.2**
Tetrachloroethene	1.0	0.51	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		102%	102%	101%	101%	105%	100%
1,2-Dichloroethane-d4	*66-139%*		105%	104%	104%	100%	101%	102%
Toluene-d8	*88-116%*		101%	100%	101%	102%	102%	101%
4-Bromofluorobenzene	*77-122%*		96%	95%	96%	97%	96%	95%

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			OMS-28-GW33-33	OMS-28-GW34-19	OMS-28-GW34-31	OMS-28-GW36-12	OMS-28-GW36-18	OMS-28-GW36-29
Laboratory ID			10050217-09A	10051717-07A	10051717-08A	10051117-08A	10051117-09A	10051117-10A
Receipt Date			5/2/17	5/17/17	5/17/17	5/11/17	5/11/17	5/11/17
Analysis Date			5/2/17	5/17/17	5/17/17	5/11/17	5/11/17	5/12/17
Analysis Time			18:41	13:26	14:03	17:15	17:33	17:44
Matrix			Water	Water	Water	Water	Water	Water
Depth			33	19	31	12	18	29
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**2.6**	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		105%	100%	105%	104%	105%	82%
1,2-Dichloroethane-d4	*66-139%*		102%	97%	100%	103%	102%	79%
Toluene-d8	*88-116%*		102%	99%	100%	101%	101%	100%
4-Bromofluorobenzene	*77-122%*		96%	96%	95%	95%	95%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW37-12	OMS-28-GW37-19	OMS-28-GW37-28	OMS-28-GW38-12	OMS-28-GW38-12a	OMS-28-GW38-18
Laboratory ID			10051117-05A	10051117-06A	10051117-07A	0051117-01	0051117-02	0051117-03
Receipt Date			5/11/17	5/11/17	5/11/17	5/11/17	5/11/17	5/11/17
Analysis Date			5/11/17	5/11/17	5/12/17	5/11/17	5/11/17	5/11/17
Analysis Time			16:36	16:57	18:05	15:15	15:33	15:51
Matrix			Water	Water	Water	Water	Water	Water
Depth			12	19	28	12	12	18
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	**12**	**12**	**1.5**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	**60**	**57**	**14**
Surrogates								
Dibromofluoromethane	*84-121%*		113%	107%	87%	105%	105%	104%
1,2-Dichloroethane-d4	*66-139%*		105%	105%	85%	104%	104%	103%
Toluene-d8	*88-116%*		100%	101%	100%	102%	101%	102%
4-Bromofluorobenzene	*77-122%*		96%	96%	97%	97%	96%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW38-30	OMS-28-GW39-13	OMS-28-GW39-20	OMS-28-GW39-28	OMS-28-GW40-13	OMS-28-GW40-20
Laboratory ID			10051117-04A	10051017-39A	10051017-40A	10051017-41A	0051117-11A	0051117-12A
Receipt Date			5/11/17	5/10/17	5/10/17	5/10/17	5/11/17	5/11/17
Analysis Date			5/11/17	5/11/17	5/11/17	5/11/17	5/11/17	5/11/17
Analysis Time			16:12	11:13	11:34	11:54	17:51	18:08
Matrix			Water	Water	Water	Water	Water	Water
Depth			30	13	20	28	13	20
Dilution			1	10	2	1	20	20
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**15**	**5.9**	1.0 U	**35**	**46**
Tetrachloroethene	1.0	0.51	1.0 U	**1,000**	**120**	1.0 U	**1,800**	**1,500**
Surrogates								
Dibromofluoromethane	*84-121%*		104%	100%	105%	103%	105%	109%
1,2-Dichloroethane-d4	*66-139%*		102%	99%	104%	102%	99%	115%
Toluene-d8	*88-116%*		101%	102%	103%	101%	102%	99%
4-Bromofluorobenzene	*77-122%*		96%	98%	98%	95%	96%	97%

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COLUMBIA TECHNOLOGIES	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW40-28	OMS-28-GW41-12	OMS-28-GW41-20	OMS-28-GW41-28	OMS-28-GW41-28a	OMS-28-GW42-12
Laboratory ID			10051117-13A	10051117-14A	10051117-16A	10051117-17A	10051117-18A	0051017-36A
Receipt Date			5/11/17	5/11/17	5/11/17	5/11/17	5/11/17	5/10/17
Analysis Date			5/11/17	5/11/17	5/11/17	5/12/17	5/12/17	5/11/17
Analysis Time			18:27	18:27	19:05	17:08	17:26	10:19
Matrix			Water	Water	Water	Water	Water	Water
Depth			28	12	20	28	28	12
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**6.5**	1.0 U	1.0 U	1.0 U	**1.7**
Tetrachloroethene	1.0	0.51	1.0 U	**32**	**0.61 J**	1.0 U	1.0 U	**3.6**
Surrogates								
Dibromofluoromethane	*84-121%*		105%	103%	100%	93%	89%	105%
1,2-Dichloroethane-d4	*66-139%*		104%	103%	100%	93%	88%	105%
Toluene-d8	*88-116%*		101%	101%	100%	100%	101%	102%
4-Bromofluorobenzene	*77-122%*		97%	95%	95%	97%	97%	98%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW42-20	OMS-28-GW42-28	OMS-28-GW43-12	OMS-28-GW43-20	OMS-28-GW43-28	OMS-28-GW44-28
Laboratory ID			10051017-37A	10051017-38A	10051217-13A	10051217-14A	10051217-15A	10051617-14A
Receipt Date			5/10/17	5/10/17	5/12/17	5/12/17	5/12/17	5/16/17
Analysis Date			5/11/17	5/11/17	5/12/17	5/12/17	5/12/17	5/16/17
Analysis Time			10:37	10:55	14:04	14:22	14:40	11:16
Matrix			Water	Water	Water	Water	Water	Water
Depth			20	28	12	20	28	28
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**1.8**	1.0 U	1.0 U	1.0 U	**10**	**4.4**
Tetrachloroethene	1.0	0.51	**1.6**	**1.3**	**0.56 J**	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		104%	104%	102%	100%	95%	104%
1,2-Dichloroethane-d4	*66-139%*		103%	101%	99%	99%	92%	102%
Toluene-d8	*88-116%*		102%	102%	100%	100%	100%	100%
4-Bromofluorobenzene	*77-122%*		98%	98%	97%	96%	96%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW45-18	OMS-28-GW45-32	OMS-28-GW46-16	OMS-28-GW46-33	OMS-28-GW46-33a	OMS-28-GW47-19
Laboratory ID			10051217-16A	10051217-17A	10051217-18A	10051217-19A	10051217-20A	10051717-16A
Receipt Date			5/12/17	5/12/17	5/12/17	5/12/17	5/12/17	5/17/17
Analysis Date			5/12/17	5/12/17	5/12/17	5/12/17	5/12/17	5/17/17
Analysis Time			14:58	15:19	15:36	15:54	16:12	17:08
Matrix			Water	Water	Water	Water	Water	Water
Depth			18	32	16	33	33	19
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**1.0**	**0.62 J**	**8.1**	**1.3**	**1.3**	**3.3**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		99%	97%	97%	101%	96%	104%
1,2-Dichloroethane-d4	*66-139%*		95%	94%	95%	99%	95%	101%
Toluene-d8	*88-116%*		100%	100%	100%	101%	100%	98%
4-Bromofluorobenzene	*77-122%*		97%	96%	95%	97%	97%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW47-32	OMS-28-GW49-12	OMS-28-GW49-18	OMS-28-GW49-30	OMS-28-GW49-30a	OMS-28-GW50-13
Laboratory ID			10051717-17A	10051517-11A	10051517-12A	10051517-13A	10051517-14A	10051517-08A
Receipt Date			5/17/17	5/15/17	5/15/17	5/15/17	5/15/17	5/15/17
Analysis Date			5/18/17	5/15/17	5/15/17	5/16/17	5/16/17	5/15/17
Analysis Time			13:25	15:47	16:05	15:57	15:53	13:54
Matrix			Water	Water	Water	Water	Water	Water
Depth			32	12	18	30	30	13
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		103%	96%	104%	101%	99%	99%
1,2-Dichloroethane-d4	*66-139%*		100%	94%	106%	103%	97%	101%
Toluene-d8	*88-116%*		102%	101%	100%	99%	100%	101%
4-Bromofluorobenzene	*77-122%*		100%	96%	96%	98%	97%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW50-18	OMS-28-GW50-30	OMS-28-GW51-30	OMS-28-GW52-19	OMS-28-GW52-31	OMS-28-GW53-12
Laboratory ID			10051517-09A	10051517-10A	10051317-19A	10051517-07A	10051317-01A	10051317-02A
Receipt Date			5/15/17	5/15/17	5/13/17	5/15/17	5/13/17	5/13/17
Analysis Date			5/15/17	5/16/17	5/15/17	5/15/17	5/13/17	5/13/17
Analysis Time			15:05	14:41	10:46	12:54	12:19	10:06
Matrix			Water	Water	Water	Water	Water	Water
Depth			18	30	30	19	31	12
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**21**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		97%	100%	105%	99%	91%	84%
1,2-Dichloroethane-d4	*66-139%*		98%	98%	102%	98%	94%	83%
Toluene-d8	*88-116%*		102%	101%	102%	100%	102%	101%
4-Bromofluorobenzene	*77-122%*		95%	97%	101%	95%	95%	95%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW53-19	OMS-28-GW53-31	OMS-28-GW54-12	OMS-28-GW54-19	OMS-28-GW54-32	OMS-28-GW55-12
Laboratory ID			10051317-03A	0051317-04A	10051317-13A	10051317-14A	10051317-15A	10051317-16A
Receipt Date			5/13/17	5/13/17	5/13/17	5/13/17	5/13/17	5/13/17
Analysis Date			5/13/17	5/15/17	5/13/17	5/13/17	5/13/17	5/13/17
Analysis Time			10:24	9:14	14:15	14:32	14:50	15:08
Matrix			Water	Water	Water	Water	Water	Water
Depth			19	31	12	19	32	12
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**31**	1.0 U	1.0 U	**7.5**	1.0 U	**0.65 J**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		96%	101%	96%	90%	86%	92%
1,2-Dichloroethane-d4	*66-139%*		99%	98%	101%	96%	94%	96%
Toluene-d8	*88-116%*		101%	100%	101%	101%	100%	102%
4-Bromofluorobenzene	*77-122%*		95%	96%	94%	94%	94%	95%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW55-19	OMS-28-GW55-32	OMS-28-GW56-18	OMS-28-GW56-31	OMS-28-GW57-12	OMS-28-GW57-16
Laboratory ID			10051317-17A	10051317-18A	10051517-05A	10051517-06A	10051717-15A	10051217-21A
Receipt Date			5/13/17	5/13/17	5/15/17	5/15/17	5/17/17	5/12/17
Analysis Date			5/13/17	5/13/17	5/15/17	5/16/17	5/17/17	5/12/17
Analysis Time			15:39	15:50	12:18	14:23	16:50	16:33
Matrix			Water	Water	Water	Water	Water	Water
Depth			19	32	18	31	12	16
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**2.9**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		88%	89%	99%	100%	104%	99%
1,2-Dichloroethane-d4	*66-139%*		88%	92%	104%	100%	103%	101%
Toluene-d8	*88-116%*		101%	101%	100%	100%	87%	99%
4-Bromofluorobenzene	*77-122%*		94%	94%	95%	95%	91%	96%

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			OMS-28-GW57-33	OMS-28-GW58-12	OMS-28-GW58-12a	OMS-28-GW58-19	OMS-28-GW58-31	OMS-28-GW59-10
Laboratory ID			10051217-22A	10051517-01A	10051517-02A	10051517-03A	10051517-04A	10051617-17A
Receipt Date			5/12/17	5/15/17	5/15/17	5/15/17	5/15/17	5/16/17
Analysis Date			5/12/17	5/15/17	5/15/17	5/15/17	5/15/17	5/16/17
Analysis Time			16:51	11:05	11:21	11:42	12:00	13:44
Matrix			Water	Water	Water	Water	Water	Water
Depth			33	12	12	19	31	10
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**5.3**	**4.9**	**48**	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.9**
Surrogates								
Dibromofluoromethane	*84-121%*		98%	100%	94%	99%	98%	97%
1,2-Dichloroethane-d4	*66-139%*		98%	100%	98%	98%	98%	96%
Toluene-d8	*88-116%*		99%	100%	100%	99%	101%	101%
4-Bromofluorobenzene	*77-122%*		97%	97%	97%	96%	96%	96%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW59-18	OMS-28-GW59-30	OMS-28-GW60-16	OMS-28-GW60-33	OMS-28-GW61-12	OMS-28-GW61-19
Laboratory ID			10051617-18A	10051617-19A	10051617-15A	10051617-16A	10051717-04A	10051717-05A
Receipt Date			5/16/17	5/16/17	5/16/17	5/16/17	5/17/17	5/17/17
Analysis Date			5/16/17	5/17/17	5/16/17	5/16/17	5/17/17	5/17/17
Analysis Time			14:16	8:53	11:34	11:52	10:43	11:01
Matrix			Water	Water	Water	Water	Water	Water
Depth			18	30	16	33	12	19
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.0**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		99%	98%	97%	99%	105%	103%
1,2-Dichloroethane-d4	*66-139%*		100%	95%	95%	99%	102%	100%
Toluene-d8	*88-116%*		99%	100%	100%	100%	101%	99%
4-Bromofluorobenzene	*77-122%*		95%	97%	95%	96%	95%	95%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW61-31	OMS-28-GW62-12	OMS-28-GW62-12a	OMS-28-GW62-19	OMS-28-GW62-30	OMS-28-GW63-12
Laboratory ID			10051717-06A	10051617-20A	10051617-21A	10051617-22A	10051617-23A	10051717-01A
Receipt Date			5/17/17	5/16/17	5/16/17	5/16/17	5/16/17	5/17/17
Analysis Date			5/18/17	5/16/17	5/16/17	5/16/17	5/17/17	5/17/17
Analysis Time			11:02	14:59	15:17	16:11	9:11	9:32
Matrix			Water	Water	Water	Water	Water	Water
Depth			31	12	12	19	30	12
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	**3.5**	**3.4**	**20**	1.0 U	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		104%	100%	98%	105%	100%	103%
1,2-Dichloroethane-d4	*66-139%*		103%	98%	97%	103%	96%	100%
Toluene-d8	*88-116%*		102%	100%	99%	100%	100%	100%
4-Bromofluorobenzene	*77-122%*		95%	96%	96%	96%	89%	95%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW63-19	OMS-28-GW63-30	OMS-28-GW64-16	OMS-28-GW64-33	OMS-28-GW65-12	OMS-28-GW65-12a
Laboratory ID			10051717-02A	10051717-03A	10051717-13A	10051717-14A	0051717-09A	0051717-10A
Receipt Date			5/17/17	5/17/17	5/17/17	5/17/17	5/17/17	5/17/17
Analysis Date			5/17/17	5/18/17	5/17/17	5/17/17	5/17/17	5/17/17
Analysis Time			9:50	10:44	16:11	16:29	15:17	15:35
Matrix			Water	Water	Water	Water	Water	Water
Depth			19	30	16	33	12	12
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**2.4**	1.0 U	1.0 U	**27**	**5.5**	**6.8**
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	**38**	**48**
Surrogates								
Dibromofluoromethane	*84-121%*		105%	103%	107%	107%	102%	102%
1,2-Dichloroethane-d4	*66-139%*		100%	101%	101%	103%	99%	98%
Toluene-d8	*88-116%*		99%	102%	99%	98%	99%	100%
4-Bromofluorobenzene	*77-122%*		96%	96%	95%	97%	95%	97%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW65-19	OMS-28-GW65-29	OMS-28-GW66-26	OMS-28-GW66-49	OMS-28-GW67-26	OMS-28-GW67-52
Laboratory ID			10051717-11A	10051717-12A	0051817-01	0051817-02	10051817-03A	10051817-04A
Receipt Date			5/17/17	5/17/17	5/18/17	5/18/17	5/18/17	5/18/17
Analysis Date			5/17/17	5/18/17	5/18/17	5/18/17	5/19/17	5/18/17
Analysis Time			15:53	11:22	14:18	14:36	8:56	14:54
Matrix			Water	Water	Water	Water	Water	Water
Depth			19	29	26	49	26	52
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	**2.0**	1.0 U	1.0 U	1.0 U	**0.91 J**	1.0 U
Tetrachloroethene	1.0	0.51	**31**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		105%	104%	97%	104%	102%	103%
1,2-Dichloroethane-d4	*66-139%*		101%	103%	99%	103%	100%	103%
Toluene-d8	*88-116%*		100%	102%	102%	101%	101%	103%
4-Bromofluorobenzene	*77-122%*		94%	96%	96%	96%	97%	95%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-GW68-26	OMS-28-GW68-57	OMS-28-GW69-26	OMS-28-GW69-49	OMS-28-GW71-19	OMS-28-GW71-30
Laboratory ID			10051817-05A	10051817-06A	10051817-07A	10051917-01A	10051917-11A	10051917-12A
Receipt Date			5/18/17	5/18/17	5/18/17	5/19/17	5/19/17	5/19/17
Analysis Date			5/19/17	5/19/17	5/19/17	5/19/17	5/19/17	5/19/17
Analysis Time			9:14	9:32	9:49	10:10	13:52	14:10
Matrix			Water	Water	Water	Water	Water	Water
Depth			26	57	26	49	19	30
Dilution			1	1	1	1	1	1
Units			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trichloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	**4.7**	1.0 U
Tetrachloroethene	1.0	0.51	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Surrogates								
Dibromofluoromethane	*84-121%*		105%	106%	104%	104%	94%	105%
1,2-Dichloroethane-d4	*66-139%*		102%	105%	103%	103%	94%	106%
Toluene-d8	*88-116%*		102%	92%	101%	101%	100%	102%
4-Bromofluorobenzene	*77-122%*		97%	96%	96%	95%	95%	96%

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	PQL	MDL	Sample ID: OMS-28-GW72-33	
Laboratory ID			10051917-10A	
Receipt Date			5/19/17	
Analysis Date			5/19/17	
Analysis Time			16:19	
Matrix			Water	
Depth			33	
Dilution			1	
Units			ug/L	
Trichloroethene	1.0	0.51	1.0	U
Tetrachloroethene	1.0	0.51	1.0	U
Surrogates				
Dibromofluoromethane	*84-121%*		102%	
1,2-Dichloroethane-d4	*66-139%*		108%	
Toluene-d8	*88-116%*		103%	
4-Bromofluorobenzene	*77-122%*		104%	

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB01-1	OMS-28-SB10-1	OMS-28-SB01-2	OMS-28-SB01-2a	OMS-28-SB01-3
Laboratory ID			10050817-20A	10050817-25A	10050817-22A	10050817-23A	10050817-24A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Time			18:13	21:04	20:07	20:28	20:46
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	1	2	2	3
Dilution			1	1	1	1	1
% solids			90.2	90.2	86.0	85.4	85.5
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		113%	108%	101%	101%	103%
1,2-Dichloroethane-d4	*66-139%*		110%	104%	98%	98%	103%
Toluene-d8	*88-116%*		105%	124%	100%	100%	98%
4-Bromofluorobenzene	*77-122%*		107%	140%	100%	98%	99%

Dry Weight Corrected Results

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB02-1	OMS-28-SB02-3	OMS-28-SB02-5	OMS-28-SB03-1	OMS-28-SB03-3
Laboratory ID			10050817-17A	10050817-18A	10050817-19A	10050817-14A	10050817-15A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Time			17:07	17:25	17:46	16:09	16:27
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	3	5	1	3
Dilution			1	1	1	1	1
% solids			86.8	88.4	84.4	90.3	90.3
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		115%	108%	109%	109%	110%
1,2-Dichloroethane-d4	*66-139%*		112%	107%	107%	107%	105%
Toluene-d8	*88-116%*		123%	102%	99%	105%	98%
4-Bromofluorobenzene	*77-122%*		134%	105%	100%	115%	98%

Dry Weight Corrected Results

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB03-5	OMS-28-SB04-1	OMS-28-SB04-1a	OMS-28-SB04-2	OMS-28-SB04-5
Laboratory ID			10050817-16A	10050817-10A	10050817-11A	10050817-12A	10050817-13A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Time			16:45	14:57	15:15	15:33	15:51
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			5	1	1	2	5
Dilution			1	1	1	1	1
% solids			80.2	91.3	88.1	89.2	87.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		104%	105%	113%	108%	105%
1,2-Dichloroethane-d4	*66-139%*		99%	103%	116%	105%	101%
Toluene-d8	*88-116%*		99%	99%	113%	99%	98%
4-Bromofluorobenzene	*77-122%*		99%	99%	137%	99%	97%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB05-1	OMS-28-SB05-2	OMS-28-SB05-5	OMS-28-SB06-1	OMS-28-SB06-3
Laboratory ID			10050817-01A	10050817-03A	10050817-02A	10050817-04A	10050817-05A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Time			11:55	12:32	12:13	12:48	13:07
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	2	5	1	3
Dilution			1	1	1	1	1
% solids			92.2	89.5	85.4	90.7	88.1
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		109%	110%	103%	108%	107%
1,2-Dichloroethane-d4	*66-139%*		105%	107%	100%	108%	104%
Toluene-d8	*88-116%*		103%	100%	98%	98%	99%
4-Bromofluorobenzene	*77-122%*		110%	105%	98%	102%	99%

Dry Weight Corrected Results

Columbia Technologies LLC
1795 Cogswell Street
Suite 01
Rockledge, FL 32955
Phone: 888-344-2704

REVISED Report
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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB06-6	OMS-28-SB07-1	OMS-28-SB07-3	OMS-28-SB07-6	OMS-28-SB08-1
Laboratory ID			10050817-06A	10050817-07A	10050817-08A	10050817-09A	10050817-35A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/8/17	5/9/17	5/8/17	5/8/17	5/9/17
Analysis Time			13:26	6:37	14:18	14:39	0:09
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			6	1	3	6	1
Dilution			1	1	1	1	1
% solids			83.0	87.1	82.8	82.1	85.2
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		111%	95%	105%	107%	106%
1,2-Dichloroethane-d4	*66-139%*		108%	96%	103%	103%	103%
Toluene-d8	*88-116%*		98%	104%	99%	99%	117%
4-Bromofluorobenzene	*77-122%*		99%	99%	99%	100%	138%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB08-3	OMS-28-SB08-6	OMS-28-SB09-1	OMS-28-SB09-2	OMS-28-SB09-3
Laboratory ID			10050817-36A	10050817-37A	10050817-28A	10050817-29A	10050817-30A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/9/17	5/9/17	5/8/17	5/8/17	5/8/17
Analysis Time			0:27	0:44	22:00	22:18	22:36
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			3	6	1	2	3
Dilution			1	1	1	1	1
% solids			84.5	85.0	85.8	85.8	84.9
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		101%	106%	105%	102%	101%
1,2-Dichloroethane-d4	*66-139%*		98%	101%	102%	100%	9%
Toluene-d8	*88-116%*		101%	103%	127%	101%	101%
4-Bromofluorobenzene	*77-122%*		100%	102%	136%	100%	100%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB10-1	OMS-28-SB10-1	OMS-28-SB10-2	OMS-28-SB10-3	OMS-28-SB11-1
Laboratory ID			10050817-25A	10050817-25A	10050817-26A	10050817-27A	10050817-31A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/8/17	5/9/17	5/8/17	5/8/17	5/8/17
Analysis Time			21:04	10:06	21:21	21:39	22:54
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	1	2	3	1
Dilution			1	1	1	1	1
% solids			87.0	87.0	84.8	84.8	85.6
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		108%	100%	96%	102%	105%
1,2-Dichloroethane-d4	*66-139%*		104%	98%	103%	100%	104%
Toluene-d8	*88-116%*		124%	116%	94%	100%	119%
4-Bromofluorobenzene	*77-122%*		140%	123%	93%	99%	136%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB11-1	OMS-28-SB11-4	OMS-28-SB11-6	OMS-28-SB11-6a	OMS-28-SB12-1
Laboratory ID			10050817-31A	10050817-32A	10050817-33A	10050817-34A	10050817-38A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/9/17	5/8/17	5/8/17	5/8/17	5/9/17
Analysis Time			10:24	23:12	23:33	23:51	1:02
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	4	6	6	1
Dilution			1	1	1	1	1
% solids			85.6	84.1	81.6	82.2	85.4
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		103%	103%	102%	106%	104%
1,2-Dichloroethane-d4	*66-139%*		104%	99%	97%	103%	101%
Toluene-d8	*88-116%*		115%	101%	100%	98%	110%
4-Bromofluorobenzene	*77-122%*		121%	101%	98%	100%	116%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB12-3	OMS-28-SB12-6	OMS-28-SB13-1	OMS-28-SB13-3	OMS-28-SB13-5
Laboratory ID			10050817-39A	10050817-40A	10050817-41A	10050817-42A	10050817-43A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/9/17	5/9/17	5/9/17	5/9/17	5/9/17
Analysis Time			1:23	1:41	1:59	3:14	3:32
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			3	6	1	3	5
Dilution			1	1	1	1	1
% solids			83.9	81.3	85.3	81.1	84.4
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		105%	104%	107%	104%	101%
1,2-Dichloroethane-d4	*66-139%*		103%	99%	107%	100%	98%
Toluene-d8	*88-116%*		99%	99%	136%	109%	101%
4-Bromofluorobenzene	*77-122%*		99%	99%	152%	113%	100%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB14-1	OMS-28-SB14-1	OMS-28-SB14-1a	OMS-28-SB14-3	OMS-28-SB14-5
Laboratory ID			10050817-44A	10050817-44A	10050817-45A	10050817-46A	10050817-48A
Receipt Date			5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
Analysis Date			5/9/17	5/9/17	5/9/17	5/9/17	5/9/17
Analysis Time			3:50	10:42	4:07	4:25	5:22
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	1	1	3	5
Dilution			1	1	1	1	1
% solids			83.7	83.7	84.6	88.8	82.2
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		103%	102%	110%	106%	101%
1,2-Dichloroethane-d4	*66-139%*		110%	102%	117%	109%	100%
Toluene-d8	*88-116%*		136%	135%	121%	109%	105%
4-Bromofluorobenzene	*77-122%*		153%	158%	293%	119%	104%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB15-1	OMS-28-SB15-3	OMS-28-SB15-5	OMS-28-SB16-1	OMS-28-SB16-1a
Laboratory ID			10050817-49A	10050817-50A	10050817-51A	10051017-14A	10051017-15A
Receipt Date			5/8/17	5/8/17	5/8/17	5/10/17	5/10/17
Analysis Date			5/9/17	5/9/17	5/9/17	5/10/17	5/10/17
Analysis Time			5:40	5:58	6:16	16:57	17:15
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	3	5	1	1
Dilution			1	1	1	1	1
% solids			84.7	83.9	80.6	86.8	87.6
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		116%	99%	97%	103%	97%
1,2-Dichloroethane-d4	*66-139%*		120%	101%	97%	101%	98%
Toluene-d8	*88-116%*		153%	110%	106%	108%	109%
4-Bromofluorobenzene	*77-122%*		153%	112%	103%	106%	110%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB16-2.5	OMS-28-SB16-4	OMS-28-SB17-1	OMS-28-SB17-2.5	OMS-28-SB17-5
Laboratory ID			10051017-16A	10051017-18A	10051017-19A	10051017-20A	10051017-21A
Receipt Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Time			17:33	18:33	18:50	19:08	18:50
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			2.5	4	1	2.5	5
Dilution			1	1	1	1	1
% solids			79.9	81.4	91.8	80.2	80.4
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	**0.002**	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		96%	99%	103%	102%	103%
1,2-Dichloroethane-d4	*66-139%*		96%	97%	103%	105%	100%
Toluene-d8	*88-116%*		108%	106%	122%	119%	108%
4-Bromofluorobenzene	*77-122%*		109%	101%	125%	118%	112%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB18-1	OMS-28-SB18-2.5	OMS-28-SB18-5	OMS-28-SB19-1	OMS-28-SB19-1 (RERUN)
Laboratory ID			10051017-22A	10051017-23A	10051017-24A	10051017-25A	10051017-25A
Receipt Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Date			5/10/17	5/11/17	5/11/17	5/11/17	5/11/17
Analysis Time			20:41	12:47	13:08	13:26	14:58
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	2.5	5	1	1
Dilution			1	1	1	1	1
% solids			82.1	84.0	86.3	88.1	88.1
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	**0.033**	**0.023**	0.002 U	**0.057**	**0.040**
Surrogates							
Dibromofluoromethane	*84-121%*		110%	100%	104%	122%	114%
1,2-Dichloroethane-d4	*66-139%*		109%	101%	101%	133%	120%
Toluene-d8	*88-116%*		127%	110%	105%	162%	159%
4-Bromofluorobenzene	*77-122%*		124%	114%	102%	172%	183%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB19-2.5	OMS-28-SB19-5	OMS-28-SB19-5a	OMS-28-SB20-1	OMS-28-SB20-1.5
Laboratory ID			10051017-26A	10051017-27A	10051017-28A	10051017-11A	10051017-12A
Receipt Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Date			5/11/17	5/11/17	5/11/17	5/10/17	5/10/17
Analysis Time			14:02	14:22	14:38	15:39	16:15
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			2.5	5	5	1	1.5
Dilution			1	1	1	1	1
% solids			81.1	79.6	96.0	83.2	86.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	**0.0025**	**0.002**	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	**0.0012 J**	**0.0264**	**0.022**	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		102%	104%	103%	109%	110%
1,2-Dichloroethane-d4	*66-139%*		99%	105%	103%	111%	110%
Toluene-d8	*88-116%*		104%	109%	112%	170%	135%
4-Bromofluorobenzene	*77-122%*		98%	112%	116%	155%	134%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB20-2	OMS-28-SB21-1	OMS-28-SB21-1.5	OMS-28-SB21-2	OMS-28-SB22-1
Laboratory ID			10051017-13A	10051017-08A	10051017-09A	10051017-10A	10051017-04A
Receipt Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Time			16:49	15:04	15:21	15:39	12:20
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			2	1	1.5	2	1
Dilution			1	1	1	1	1
% solids			76.6	83.4	85.2	78.7	82.8
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		105%	120%	109%	103%	110%
1,2-Dichloroethane-d4	*66-139%*		106%	134%	110%	103%	109%
Toluene-d8	*88-116%*		141%	146%	126%	113%	130%
4-Bromofluorobenzene	*77-122%*		137%	144%	126%	114%	131%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB22-1a	OMS-28-SB22-1.5	OMS-28-SB22-2	OMS-28-SB23-1	OMS-28-SB23-1.5
Laboratory ID			10051017-05A	10051017-06A	10051017-07A	10051017-01A	10051017-02A
Receipt Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Time			12:38	12:56	13:14	11:23	11:44
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	1.5	2	1	1.5
Dilution			1	1	1	1	1
% solids			81.9	82.4	80.6	81.4	86.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		112%	100%	99%	104%	102%
1,2-Dichloroethane-d4	*66-139%*		112%	98%	97%	107%	100%
Toluene-d8	*88-116%*		141%	111%	109%	127%	122%
4-Bromofluorobenzene	*77-122%*		134%	110%	105%	134%	125%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB23-2	OMS-28-SB24-1	OMS-28-SB24-1	OMS-28-SB24-3	OMS-28-SB24-5
Laboratory ID			10051017-03A	10051017-29A	10051017-29A	10051017-30A	10051017-31A
Receipt Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Date			5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
Analysis Time			12:02	14:16	14:43	13:53	13:32
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			2	5	5	3	5
Dilution			1	400	1000	200	200
% solids			86.2	87.2	87.2	82.1	82.1
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.80 U	2.0 U	0.40 U	0.40 U
Tetrachloroethene	0.002	0.0005	0.002 U	**150 E**	**180**	**23**	**5.4**
Surrogates							
Dibromofluoromethane	*84-121%*		102%	99%	100%	98%	99%
1,2-Dichloroethane-d4	*66-139%*		103%	98%	99%	97%	100%
Toluene-d8	*88-116%*		133%	103%	103%	106%	106%
4-Bromofluorobenzene	*77-122%*		134%	96%	96%	92%	92%

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	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB25-1	OMS-28-SB25-3	OMS-28-SB25-5	OMS-28-SB26-1	OMS-28-SB26-3
Laboratory ID			10051217-01A	10051217-02A	10051217-03A	10051217-04A	10051217-05A
Receipt Date			5/12/17	5/12/17	5/12/17	5/12/17	5/12/17
Analysis Date			5/12/17	5/12/17	5/12/17	5/12/17	5/12/17
Analysis Time			10:58	9:25	9:43	13:28	10:19
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	3	5	1	3
Dilution			1	1	1	1	1
% solids			80.7	82.9	81.4	86.0	83.5
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	**0.021**	0.002 U	**0.0025**	0.002 U	0.002 U
Surrogates							
Dibromofluoromethane	*84-121%*		100%	103%	98%	96%	94%
1,2-Dichloroethane-d4	*66-139%*		98%	100%	94%	92%	91%
Toluene-d8	*88-116%*		141%	102%	102%	107%	101%
4-Bromofluorobenzene	*77-122%*		141%	98%	97%	107%	97%

Dry Weight Corrected Results

Columbia Technologies LLC
1795 Cogswell Street
Suite 01
Rockledge, FL 32955
Phone: 888-344-2704

REVISED Report
AECOM
ARNG - OMS#28

REVISION 1
8/14/2017

	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB26-5	OMS-28-SB27-1	OMS-28-SB27-1a	OMS-28-SB27-3	OMS-28-SB27-5
Laboratory ID			10051217-06A	10051217-07A	10051217-08A	10051217-09A	10051217-11A
Receipt Date			5/12/17	5/12/17	5/12/17	5/12/17	5/12/17
Analysis Date			5/12/17	5/12/17	5/12/17	5/12/17	5/12/17
Analysis Time			10:37	11:16	11:34	11:53	13:07
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			5	1	1	3	5
Dilution			1	1	1	1	1
% solids			83.1	86.3	86.2	81.2	82.0
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.002	0.0005	0.002 U	**0.0012 J**	0.002 U	0.002 U	**0.0024**
Surrogates							
Dibromofluoromethane	*84-121%*		99%	103%	102%	102%	104%
1,2-Dichloroethane-d4	*66-139%*		96%	100%	100%	100%	100%
Toluene-d8	*88-116%*		102%	116%	109%	103%	104%
4-Bromofluorobenzene	*77-122%*		98%	124%	110%	101%	101%

Dry Weight Corrected Results

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REVISED Report
AECOM
ARNG - OMS#28

REVISION 1
8/14/2017

	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB28-1	OMS-28-SB28-1	OMS-28-SB28-3	OMS-28-SB28-5	OMS-28-SB29-1
Laboratory ID			10051617-01A	10051617-01A	10051617-02A	10051617-03A	10051617-04A
Receipt Date			5/16/17	5/16/17	5/16/17	5/16/17	5/16/17
Analysis Date			5/16/17	5/18/17	5/16/17	5/16/17	5/16/17
Analysis Time			9:55	9:12	12:49	13:05	18:32
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	1	3	5	1
Dilution			1	100	1	1	1
% solids			89.2	89.2	86.0	84.4	87.5
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	0.002 U	0.20 U	**0.0024**	**0.0017**	**0.014**
Tetrachloroethene	0.002	0.0005	**0.46 E**	**5.8**	**0.15**	**0.24**	**1.08 E**
Surrogates							
Dibromofluoromethane	*84-121%*		110%	104%	99%	100%	113%
1,2-Dichloroethane-d4	*66-139%*		110%	112%	98%	99%	112%
Toluene-d8	*88-116%*		139%	101%	104%	104%	160%
4-Bromofluorobenzene	*77-122%*		155%	91%	106%	96%	163%

Dry Weight Corrected Results

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REVISED Report
AECOM
ARNG - OMS#28

REVISION 1
8/14/2017

	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB29-1	OMS-28-SB29-3	OMS-28-SB29-5	OMS-28-SB29-5	OMS-28-SB30-1
Laboratory ID			10051617-04A	10051617-05A	10051617-06A	10051617-06A	10051617-07A
Receipt Date			5/16/17	5/16/17	5/16/17	5/16/17	5/16/17
Analysis Date			5/18/17	5/16/17	5/16/17	5/17/17	5/16/17
Analysis Time			9:30	18:50	19:08	19:25	20:58
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	3	5	5	1
Dilution			1000	1	1	1	1
% solids			87.5	82.2	86.4	86.4	84.2
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	2.0 U	**0.0086**	0.002 U	0.002 U	**0.0034**
Tetrachloroethene	0.002	0.0005	**16.3**	**0.12**	**0.088**	**0.0065**	**1.5 E**
Surrogates							
Dibromofluoromethane	*84-121%*		110%	97%	68%	103%	116%
1,2-Dichloroethane-d4	*66-139%*		120%	97%	70%	101%	114%
Toluene-d8	*88-116%*		97%	105%	104%	104%	164%
4-Bromofluorobenzene	*77-122%*		94%	103%	102%	104%	175%

Dry Weight Corrected Results

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REVISED Report
AECOM
ARNG - OMS#28

REVISION 1
8/14/2017

	PQL	MDL	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
			OMS-28-SB30-1	OMS-28-SB30-3	OMS-28-SB30-5	OMS-28-SB31-1	OMS-28-SB31-1
Laboratory ID			10051617-07A	10051617-08A	10051617-09A	10051617-10A	10051617-10A
Receipt Date			5/16/17	5/16/17	5/16/17	5/16/17	5/16/17
Analysis Date			5/18/17	5/16/17	5/16/17	5/16/17	5/18/17
Analysis Time			9:50	19:29	19:47	20:05	11:40
Matrix			Soil	Soil	Soil	Soil	Soil
Depth			1	3	5	1	1
Dilution			1000	1	1	1	100
% solids			84.2	81.0	81.0	86.3	86.3
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trichloroethene	0.002	0.0006	2.0 U	**0.0068**	0.002 U	**0.01**	0.20 U
Tetrachloroethene	0.002	0.0005	**19.8**	**0.053**	**0.046**	**0.77 E**	**8.9**
Surrogates							
Dibromofluoromethane	*84-121%*		106%	93%	95%	106%	100%
1,2-Dichloroethane-d4	*66-139%*		112%	92%	93%	104%	107%
Toluene-d8	*88-116%*		99%	105%	103%	146%	103%
4-Bromofluorobenzene	*77-122%*		95%	106%	101%	149%	90%

Dry Weight Corrected Results

Columbia Technologies LLC
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Suite 01
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Phone: 888-344-2704

REVISED Report
AECOM
ARNG - OMS#28

REVISION 1
8/14/2017

	PQL	MDL	Sample ID	Sample ID
			OMS-28-SB31-3	OMS-28-SB31-5
Laboratory ID			10051617-11A	10051617-12A
Receipt Date			5/16/17	5/16/17
Analysis Date			5/16/17	5/16/17
Analysis Time			20:23	20:41
Matrix			Soil	Soil
Depth			3	5
Dilution			1	1
% solids			84.0	84.3
Units			mg/kg	mg/kg
Trichloroethene	0.002	0.0006	**0.0051**	0.002 U
Tetrachloroethene	0.002	0.0005	**0.042**	**0.089**
Surrogates				
Dibromofluoromethane	*84-121%*		94%	102%
1,2-Dichloroethane-d4	*66-139%*		91%	100%
Toluene-d8	*88-116%*		104%	103%
4-Bromofluorobenzene	*77-122%*		101%	100%

Dry Weight Corrected Results

Chain of Custody

&

Sample Receipt Logs

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: R Morgan / O. Henry

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)								Comments	Cooler ID
							Sample Analysis Requested									
OMS-28-GW01-10	5-2-17	0850	6 - 10	N	WG	2	X								Lab ID 10050217 -07 A,B	
OMS-28-GW01-19	5-2-17	0955	15 - 19	N	WG	2	X								-02 A,B	
OMS-28-GW01-32	5-2-17	1020	28-32	N	WG	2	X								-03 A,B	
OMS-28-GW05-11	5-2-17	1120	7 - 11	N	WG	2	X								-04 A,B	
OMS-28-GW05-19	5-2-17	1200	15-19	N	WG	2	X								-05 A,B	
OMS-28-GW05-33	5-2-17	1235	29-33	N	WG	2	X								-06 A,B	
OMS-28-GW33-12	5-2-17	1300	8 - 12	N	WG	2	X								-07 A,B	
OMS-28-GW33-19	5-2-17	1320	15 - 19	N	WG	2	X								-08 A,B	
OMS-28-GW33-33	5-2-17	1355	29 - 33	N	WG	2	X								-09 A,B	
OMS-28-GW32-12	5-2-17	1430	8 - 12	N	WG	2	X								-10 A,B	
OMS-28-GW32-12-a	5-2-17	1430	8 - 12	FD	WG	2	X								-11 A,B	
OMS-28-GW32-19	5-2-17	1450	15 - 19	N	WG	2	X								-12 A,B	
OMS-28-GW32-31	5-2-17	1543	27 31	N	WG	2	X								-13 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5-2-17	1715	1.	5/2/17	1715
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: X
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: On Site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: R Morgan / D. Henry

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code[2]	Sample Matrix[2]	Number of containers	PCE & TCE (8260B)								Comments	Cooler ID
															Lab ID 1005021 7 -	
OMS-28-GW31-12	5/2/17	1605	8 - 12	N	WG	2	X								-14 A,B	
OMS-28-GW31-19	5/2/17	1635	15-19	N	WG	2	X								-15 A,B	
OMS-28-GW31-31	5/2/17	1710	27-31	N	WG	2	X								-16 A,B	
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5/2/17	1715	1. [signature]	5/5/17	1705
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped: _____

Method of Shipment: _____ Airbill #: _____

Analytical Lab: _____ Location: _____

Lab Receipient: _____ Date: _____ Time: _____

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by:

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
								Lab ID 1005031 7 -	
OMS-28-GW04-10	5/3/17	0750	6.10	N	WG	2	X	-01 A,B	
OMS-28-GW04-17	5/3/17	0825	13.17	N	WG	2	X	-02 A,B	
OMS-28-GW04-31	5/3/17	0900	27.31	N	WG	3	X	-03 A,B	
OMS-28-GW02-12	5/3/17	0935	8.12	N	WG	2	X	-04 A,B	
OMS-28-GW02-19	5/3/17	1000	15.19	N	WG	2	X	-05 A,B	
OMS-28-GW02-19-a	5/3/17	1000	15.19	FD	WG	2	X	-06 A,B	
OMS-28-GW08-10	5/3/17	1145	6.10	N	WG	2	X	-07 A,B	
OMS-28-GW08-10-MS/MSD	5/3/17	1145	6.10	MS/SD	WG	2	X	~~-08 A,B~~ MP 5/3/17	
OMS-28-GW08-17	5/3/17	1210	13.19	N	WG	2	X	~~-09 A,B~~ -08 A,B	
OMS-28-GW09-10	5/3/17	1250	6.10	N	WG	2	X	~~-10 A,B~~ -09 A,B	
OMS-28-GW09-16	5/3/17	1315	12.16	N	WG	2	X	~~-11 A,B~~ -10 A,B	
OMS-28-GW02-31	5/3/17	1430	27.31	N	WG	3	X	~~-12 A,B~~ -11 A,B	
OMS-28-GW08-31	5/3/17	1515	27.31	N	WG	3	X	~~-13 A,B~~ -12 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5-3-17	1610	[illegible]	5/3/17	1610
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped: _____

Method of Shipment: _____ Airbill #: _____

Analytical Lab: _____ Location: _____

Lab Receipient: _____ Date: _____ Time: _____

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 81895

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: R Morris

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
								Lab ID 1005037 -	
OMS-28-GW09-33	5317	1605	29.33	N	WG	3	X	~~-14A,B~~ WP 5/31/17 -13A,B	
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morris	5-317	1610	[illegible]	5/4/17	1610
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped: _____

Method of Shipment: _____ Airbill #: _____

Analytical Lab: _____ Location: _____

Lab Receipient: _____ Date: _____ Time: _____

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
								Lab ID 1005047-	
OMS-28-GW03-12	5/4/17	0915	8-12	N	WG	2	X	-01 A,B	
OMS-28-GW03-20	5/4/17	0940	16-20	N	WG	2	X	-02 A,B	
OMS-28-GW03-34	5/4/17	1030	30-34	N	WG	3	X	-03 A,B	
OMS-28-GW03-34a	5/4/17	1030	30-34	FD	WG	3	X	-04 A,B	
OMS-28-GW30-11	5/4/17	1110	7-11	N	WG	2	X	-05 A,B	
OMS-28-GW30-20	5/4/17	1145	16-20	N	WG	2	X	-06 A,B MR 5/31/17	
OMS-28-GW30-33	5/4/17	1245	29-33	N	WG	3	X	~~-07 A,B~~ -15 A,B	
OMS-28-GW16-12	5/4/17	1345	8-12	N	WG	2	X	~~-08 A,B~~ -07 A,B	
OMS-28-GW16-19	5/4/17	1400	15-19	N	WG	2	X	~~-09 A,B~~ -08 A,B	
OMS-28-GW16-30	5/4/17	1420	26-30	N	WG	2	X	~~-10 A,B~~ -09 A,B	
OMS-28-GW17-12	5/4/17	1505	8-12	N	WG	2	X	~~-11 A,B~~ -10 A,B	
OMS-28-GW17-18	5-4-17	1530	15-18	N	WG	2	X	~~-12 A,B~~ -11 A,B	
OMS-28-GW17-28	5-4-17	1530	24-28	N	WG	2	X	~~-13 A,B~~ -12 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5-4-17	1710	1. [illegible]	5/4/17	1710
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: On site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Mercer

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
								Lab ID 1005047 -	
OMS-28-GW20-12	5/4/17	1615	8.12	N	WG	2	X	~~-14 AB~~ -13A,B	5/31/17
OMS-28-GW20-12-a	5/4/17	1615	8.12	FD	WG	2	X	~~-15 A,B~~ -14 A,B	
OMS-28-GW20-19	5/4/17	1645	15.19	N	WG	2	X	-16 A,B	
OMS-28-GW20-19-MS/SD	5/4/17	1645	15.19	MS/SD	WG	2	X	~~-17 A,B~~	
OMS28-GW20-28	5-4-17	1700	24.28	N	WG	2	X	~~-18 A,B~~ -17 A,B	
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Mercer	5-4-17	1710	1. [signature]	5/4/17	1716
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped: _____

Method of Shipment: _____ Airbill #: _____

Analytical Lab: _____ Location: _____

Lab Receipient: _____ Date: _____ Time: _____

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page _____ of _____

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 81895

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
OMS-28-GW21-12	5/5/17	0820	8-12	N	WG	2	X	Lab ID 1005057 -01 A,B	
OMS-28-GW21-18	5/5/17	0840	14-18	N	WG	2	X	-02 A,B	
OMS-28-GW21-30	5/5/17	0900	26-30	N	WG	2	X	-03 A,B	
OMS-28-GW15-12	5/5/17	0930	8-12	N	WG	2	X	-04 A,B	
OMS-28-GW15-19	5/5/17	0940	15-19	N	WG	2	X	-05 A,B	
OMS-28-GW15-30	5/5/17	1005	26-30	N	WG	2	X	-06 A,B	
OMS-28-GW18-12	5/5/17	1035	8-12	N	WG	2	X	-07 A,B	
OMS-28-GW18-18	5/5/17	1045	14-18	N	WG	2	X	-08 A,B	
OMS-28-GW18-18-a	5/5/17	1045	14-18	FD	WG	2	X	-09 A,B	
OMS-28-GW18-30	5/5/17	1120	26-30	N	WG	2	X	-10 A,B	
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5/5/17	1125	1. [illegible]	5/5/17	1725
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX — Shipped:

Method of Shipment: — Airbill #:

Analytical Lab: Columbia Technologies — Location: On Site

Lab Receipient: — Date: — Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 81895

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: R Morgan / V. Kourlas

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)								Comments	Cooler ID
															Lab ID 1005017 -	
OMS-28-SB05-1	5/8/17	0805	-	N	SO	1	X								-01A	
OMS-28-SB05-2	5/8/17	0809	-	N	SO	1	X								-02A	
OMS-28-SB05-5	5/8/17	0807	-	N	SO	1	X								-03A	
OMS-28-SB06-1	5/8/17	0825	-	N	SO	1	X								-04A	
OMS-28-SB06-3	5/8/17	0830	-	N	SO	1	X								-05A	
OMS-28-SB06-6	5/8/17	0832	-	N	SO	1	X								-06A	
OMS-28-SB07-1	5/8/17	0847	-	N	SO	1	X								-07A	
OMS-28-SB07-3	5/8/17	0848	-	N	SO	1	X								-08A	
OMS-28-SB07-6	5/8/17	0857	-	N	SO	1	X								-09A	
OMS-28-SB04-1	5/8/17	0910	-	N	SO	1	X								-10A	
OMS-28-SB04-1a	5/8/17	0910	-	FD	SO	1	X								-11A	
OMS-28-SB04-2	5/8/17	0915	-	N	SO	1	X								-12A	
OMS-28-SB04-5	5/8/17	0918	-	N	SO	1	X								-13A	

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	R Morgan	5/8/17	1550	BMJ	5/8/17	1550
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX — Shipped:

Method of Shipment: — Airbill #:

Analytical Lab: Columbia Technologies — Location: On Site

Lab Receipient: — Date: — Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 4

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by:

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	Comments: Lab ID 10050817	Cooler ID
OMS-28-SB03-1	5/8/17	1058	-	N	SO	1	X	-14A	
OMS-28-SB03-3	5/8/17	1100	-	N	SO	1	X	-15A	
OMS-28-SB03-5	5/8/17	1102	-	N	SO	1	X	-16A	
OMS-28-SB02-1	5/8/17	1117	-	N	SO	1	X	-17A	
OMS-28-SB02-3	5/8/17	1119	-	N	SO	1	X	-18A	
OMS-28-SB02-5	5/8/17	1121	-	N	SO	1	X	-19A	
OMS-28-SB01-1	5/8/17	1135	-	N	SO	1	X	-20A	
OMS-28-SB01-1-MS/MSD	5/8/17	1135	-	MS/SD	SO	1	X	-21A	
OMS-28-SB01-2	5/8/17	1136	-	N	SO	1	X	-22A	
OMS-28-SB01-2-a	5/8/17	1136	-	FD	SO	1	X	-23A	
OMS-28-SB01-3	5/8/17	1140	-	N	SO	1	X	-24A	
OMS-28-SB10-1	5/8/17	1235	-	N	SO	1	X	-25A	
OMS-28-SB10-2	5/8/17	1237	-	N	SO	1	X	-26A	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Mey	5/8/17	1637	1. [illegible]	5/8/17	1648
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Shipped:
Method of Shipment:
Airbill #:
Analytical Lab: Columbia Technologies
Location: On site
Lab Receipient:
Date:
Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 81895

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Merga

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
						Sample Analysis Requested		Lab ID 1005087 -	
OMS-28-SB10-3	5/8/17	1239	-	N	SO	1	X	-27A	
OMS-28-SB09-1	5/8/17	1252	-	N	SO	1	X	-28A	
OMS-28-SB09-2	5/8/17	1254	-	N	SO	1	X	-29A	
OMS-28-SB09-3	5/8/17	1256	-	N	SO	1	X	-30A	
OMS-28-SB11-1	5/8/17	1309	-	N	SO	1	X	-31A	
OMS-28-SB11-4	5/8/17	1311	-	N	SO	1	X	-32A	
OMS-28-SB11-6	5/8/17	1315	-	N	SO	1	X	-33A	
OMS-28-SB11-6-a	5/8/17	1315	-	FD	SO	1	X	-34A	
OMS-28-SB08-1	5/8/17	1335	-	N	SO	1	X	-35A	
OMS-28-SB08-3	5/8/17	1337	-	N	SO	1	X	-36A	
OMS-28-SB08-6	5/8/17	1339	-	N	SO	1	X	-37A	
OMS-28-SB12-1	5/8/17	1410	-	N	SO	1	X	-38A	
OMS-28-SB12-3	5/8/17	1412	-	N	SO	1		-39A	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Merga	5/8/17	1550	1.	5/8/17	1550
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Shipped:
Method of Shipment:
Airbill #:
Analytical Lab: Columbia Technologies
Location: On Site
Lab Recipient:
Date:
Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 3 of 4

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by:

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
OMS-28-SB12-6	5/8/17	1414	-	N	SO	1	X	CAS ID 10050617- -40 A	
OMS-28-SB13-1	5/8/17	1433	-	N	SO	1	X	-41 A	
OMS-28-SB13-3	5/8/17	1435	-	N	SO	1	X	-42 A	
OMS-28-SB13-5	5/8/17	1439	-	N	SO	1	X	-43 A	
OMS-28-SB14-1	5/8/17	1520	-	N	SO	1	X	-44 A	
OMS-28-SB14-1a	5/8/17	1520	-	N	SO	1	X	-45 A	
OMS-28-SB14-3	5/8/17	1525	-	N	SO	1	X	-46 A	
OMS-28-SB14-3-MS/MSD	5/8/17	1525	-	MS/MSD	SO	1	X	-47 A	
OMS-28-SB14-5	5/8/17	1528	-	N	SO	1	X	-48 A	
OMS-28-SB15-1	5/8/17	1542	-	N	SO	1	X	-49 A	
OMS-28-SB15-3	5/8/17	1544	-	N	SO	1	X	-50 A	
OMS-28-SB15-5	5/8/17	1546	-	N	SO	1	X	-51 A	
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Mercer	5/8/17	1550		5/8/17	1550
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: On Site
Date:
Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 4 of 4

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
								(Lab ID 10050917	
OMS-28-GW26-31	5/9/17	0805	27-31	N	WG	2	X	-01 A,B	
OMS-28-GW10-10	5/9/17	0845	6-10	N	WG	2	X	-02 A,B	
OMS-28-GW10-16	5/9/17	0905	12-16	N	WG	2	X	-03 A,B	
OMS-28-GW10-33	5/9/17	0930	29-33	N	WG	2	X	-04 A,B	
OMS-28-GW13-12	5/9/17	1000	8-12	N	WG	2	X	-05 A,B	
OMS-28-GW13-18	5/9/17	1015	14-18	N	WG	2	X	-06 A,B	
OMS-28-GW13-32	5/9/17	1045	28-32	N	WG	2	X	-07 A,B	
OMS-28-GW19-12	5/9/17	1125	8-12	N	WG	2	X	-08 A,B MP 5/31/17	
OMS-28-GW19-12-MS/MSD	5/9/17	1125	8-12	MS SD	WG	2	X	~~-09 A,B~~	
OMS-28-GW19-19	5/9/17	1140	15-19	N	WG	2	X	~~-10 A,B~~ -09 A,B	
OMS-28-GW19-19-a	5/9/17	1140	15-19	FD	WG	2	X	~~-11 A,B~~ -10 A,B	
OMS-28-GW19-30	5/9/17	1210	26-30	N	WG	2	X	~~-12 A,B~~ -11 A,B	
OMS-28-GW22-11	5/9/17	1315	7-11	N	WG	2	X	~~-13 A,B~~ -12 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5/9/17	1615	1. [signature]	05/9/17	1615
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX — Shipped:

Method of Shipment: — Airbill #:

Analytical Lab: Columbia Technologies — Location: ONSITE

Lab Receipient: — Date: — Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
								Lab ID 10050917 - WP 5/31/17	
OMS-28-GW22-20	5/9/17	1345	16-20	N	WG	2	X	~~-14 A,B~~ -13 A,B	
OMS-28-GW22-28	5/9/17	1415	24-28	N	WG	2	X	~~-15 A,B~~ -14 A,B	
OMS-28-GW24-19	5/9/17	1455	15-19	N	WG	2	X	~~-16 A,B~~ -15 A,B	
OMS-28-GW24-30	5/9/17	1525	26-30	N	WG	2	X	~~-17 A,B~~ -16 A,B	
OMS-28-GW25-19	5/9/17	1545	15-19	N	WG	2	X	~~-18 A,B~~ -17 A,B	
OMS-28-GW25-28	5/9/17	1605	24-28	N	WG	2	X	~~-19 A,B~~ -18 A,B	
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			-						
			-						
			-						
			-						
			-						
			-						

Sample Analysis Requested

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5/9/17	1615	1. BJ B	5/9/17	1615
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX — Shipped:

Method of Shipment: — Airbill #:

Analytical Lab: Columbia Technologies — Location: Onsite

Lab Receipient: — Date: — Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
								Lab Sample ID 1005107	
OMS-28-SB23-1	5/10/17	0800	.5 - 1.0	N	SO	1	X	-01 A	
OMS-28-SB23-1.5	5/10/17	0801	1.0 - 1.5	N	SO	1	X	-02 A	
OMS-28-SB23-2	5/10/17	0802	1.5 - 2.0	N	SO	1	X	-03 A	
OMS-28-SB22-1	5/10/17	0820	.5 - 1.0	N	SO	1	X	-04 A	
OMS-28-SB22-1-a	5/10/17	0820	.5 - 1.0	FD	SO	1	X	-05 A	
OMS-28-SB22-1.5	5/10/17	0821	1.0 - 1.5	N	SO	1	X	-06 A	
OMS-28-SB22-2	5/10/17	0822	1.5 - 2.0	N	SO	1	X	-07 A	
OMS-28-SB21-1	5/10/17	0833	.5 - 1.0	N	SO	1	X	-08 A	
OMS-28-SB21-1.5	5/10/17	0834	1.0 - 1.5	N	SO	1	X	-09 A	
OMS-28-SB21-2	5/10/17	0835	1.5 - 2.0	N	SO	1	X	-10 A	
OMS-28-SB20-1	5/10/17	0842	.5 - 1.0	N	SO	1	X	-11 A	
OMS-28-SB20-1.5	5/10/17	0843	1.0 - 1.5	N	SO	1	X	-12 A	
OMS-28-SB20-2	5/10/17	0844	1.5 - 2.0	N	SO	1	X	-13 A	

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5/10/17	1640	[illegible]	5/10	1640
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: On Site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 4

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 81895

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Sample Analysis Requested

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
								Lab ID 10051017	
OMS-28-SB16-1	5/10/17	0910	.5 - 1.0	N	SO	1	X	-14A	
OMS-28-SB16-1-a	5/10/17	0910	.5 - 1.0	FD	SO	1	X	-15A	
OMS-28-SB16-2.5	5/10/17	0912	2.0 2.5	N	SO	1	X	-16A	
OMS-28-SB16-2.5-MS/MSD	5/10/17	0912	2.0 2.5	MS/SD	SO	1	X	-17A	
OMS-28 SB16-4	5/10/17	0914	3.5 - 4.0	N	SO	1	X	-18A	
OMS-28-SB17-1	5-10-17	0929	.5 - 1.0	N	SO	1	X	-19A	
OMS-28-SB-17-2.5	5-10-17	0930	2.0 2.5	N	SO	1	X	-20A	
OMS28-SB17-5	5-10-17	0931	4.5 5.0	N	SO	1	X	-21A	
OMS-28-SB18-1	5-10-17	0953	.5 - 1.0	N	SO	1	X	-22A	
OMS-28-SB18-2.5	5-10-17	0954	2.0 2.5	N	SO	1	X	-23A	
OMS-28-SB18-5	5-10-17	0955	4.5 5.0	N	SO	1	X	-24A	
OMS-28-SB19-1	5-10-17	1008	.5 - 1.0	N	SO	1	X	-25A	
OMS-28-SB19-2.5	5-10-17	1009	-	N	SO	1	X	-26A	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5-10-17	1640	1. [illegible]	5/10	1640
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX

Method of Shipment:

Analytical Lab: Columbia Technologies

Lab Receipient:

Shipped:

Airbill #:

Location: On Site

Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 4

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code[1]	Sample Matrix[2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
								Lab ID 1005017-	
OMS-28-SB19-5	5/10/17	1010	4.5-5.0	N	SO	1	X	-27A	
OMS-28-SB19-5-a	5/10/17	1010	4.5-5.0	FD	SO	1	X	-28A	
OMS-28-SB24-1	5/10/17	1040	1.5-1.0	N	SO	1	X	-29A	
OMS-28-SB24-3	5/10/17	1045	2.5-3.0	N	SO	1	X	-30A	
OMS-28-SB24-5	5/10/17	1050	4.5-5.0	N	SO	1	X	-31A	
OMS-28-GW28-12 23	5/10/17	1205	8-12	N	WG	2	X	-32A,B	ID changed to GW23
OMS-28-GW28-20 23	5/10/17	1250	16-20	N	WG	2	X	-33A,B	
OMS-28-GW28-28 23	5/10/17	1315	24-28	FD	WG	2	X	-34A,B	Neg
OMS-28-GW28-28 23	5/10/17	1315	24-28	N	WG	2	X	-35A,B	5/11
OMS-28-GW42-12	5/10/17	1355	8-12	N	WG	2	X	-36 AB	
OMS-28-GW42-20	5/10/17	1415	16-20	N	WG	2	X	-37 A,B	
OMS-28-GW42-28	5/10/17	1445	24-28	N	WG	2	X	-38 A,B	
OMS-28-GW39-13	5/10/17	1540	9-13	N	WG	2	X	-39 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5/10/17	1640		5/10	1640
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: On Site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 3 of 4

AECOM Project Number 60439687 / 2.3

Purchase Order Number 81895

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
OMS28-GW39-20	5/10/17	1610	16-20	N	WG	2	X	Lab ID 1005701? - 40 A,B	
OMS-28-GW39-28	5/10/17	1630	24-28	N	WG	2	X	- 41 A,B	
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5/10/17	1640		5/10	1640
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: On Site
Date:
Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 4 of 4

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
OMS-28-GW38-12	5/11/17	0825	8.12	N	WG	2	X	Lab ID 1005117 -01 A,B	
OMS-28-GW38-12-a	5/11/17	0825	8.12	FD	WG	2	X	-02 A,B	
OMS28-GW38-20	5/11/17	0905	16 20	N	WG	2	X	-03 A,B	sample id is OMS-GW-38-18 per client 5/31/17 VV
OMS-28-GW38-30	5/11/17	0940	26 30	N	WG	2	X	-04 A,B	
OMS-28-GW37-12	5-11-17	1020	8.12	N	WG	2	X	-05 A,B	
OMS28-GW37-19	5-11-17	1040	15.19	N	WG	2	X	-06 A,B	
OMS28-GW37-28	5-11-17	1110	24.28	N	WG	2	X	-07 A,B	
OMS-28-GW36-12	5-11-17	1145	8.12	N	WG	2	X	-08 A,B	
OMS-28-GW36-18	5-11-17	1210	14.18	N	WG	2	X	-09 A,B	
OMS-28-GW36-29	5-11-17	1235	25.29	N	WG	2	X	-10 A,B	
OMS-28-GW40-13	5-11-17	1340	9.13	N	WG	2	X	-11 A,B	
OMS-28-GW40-20	5-11-17	1400	16.20	N	WG	2	X	-12 A,B	
OMS-28-GW40-28	5-11-17	1420	24.28	N	WG	2	X	-13 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5-11-17	1645	1.	5/11/17	1645
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:

Shipped:
Airbill #:
Location: On Site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 81895

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
								Lab ID 10051117 -	
OMS-28-GW41-12	5/11/17	1505	8-12	N	WG	2	X	-14 A,B	
OMS-28-GW41-12 MS/MSD	5/11/17	1505	8-12	MS/MSD	WG	2	X	-15 A,B	
OMS-28-GW41-20	5/11/17	1530	16-20	N	WG	2	X	-16 A,B	
OMS-28-GW41-28	5/11/17	1635	24-28	N	WG	2	X	-17 A,B	
OMS-28-GW41-28-a	5/11/17	1635	24-28	FD	WG	2	X	-18 A,B	
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5-11-17	1645	[signature]	5/11/17	1645
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: On site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Number 60439687 / 2.3

Purchase Order Number 81895

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by:

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
						Sample Analysis Requested		Lab ID 1005/217 -	
OMS-28-SB25-1	5/12/17	0741	.5-1.0	N	SO	1	X	01 A	
OMS-28-SB25-3	5/12/17	0742	2.5-3.0	N	SO	1	X	02 A	
OMS-28-SB25-5	5/12/17	0743	4.5-5.0	N	SO	1	X	03 A	
OMS-28-SB26-1	5/12/17	0750	0.5-1.0	N	SO	1	X	04 A	
OMS-28-SB26-3	5/12/17	0751	2.5-3.0	N	SO	1	X	05 A	
OMS-28-SB26-5	5/12/17	0752	4.5-5.0	N	SO	1	X	06 A	
OMS-28-SB27-1	5/12/17	0800	0.5-1.0	N	SO	1	X	07 A	
OMS-28-SB27-1-a	5/12/17	0800	0.5-1.0	FD	SO	1	X	08 A	
OMS-28-SB27-3	5/12/17	0802	2.5-3.0	N	SO	1	X	09 A	
OMS-28-SB27-3-MS/MSD	5/12/17	0802	2.5-3.0	MS/MSD	SO	1	X	10 A	
OMS-28-SB27-5	5/12/17	0804	4.5-5.0	N	SO	1	X	11 A	
OMS-28-GW24-12	5/12/17	0808	8-12	N	WG	2	X	12 A,B	
OMS-28-GW43-12	5/12/17	0850	8-12	N	WG	2	X	13 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Mauge	5-12-17	1245	1. Parks	5/12/17	1245
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: X
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:

Shipped:
Airbill #:
Location: On Site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Number 60439687 / 2.3

Purchase Order Number 81895

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Moya

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Number of containers	PCE & TCE (8260B)								Comments	Cooler ID
															Lab ID	
OMS-28-GW43-20	5/12/17	0905	16.20	N	WG	2	X								14 A,B	
OMS-28-GW43-28	5/12/17	0925	24.28	N	WG	2	X								15 A,B	
OMS-28-GW45-18	5/12/17	0950	14.18	N	WG	2	X								16 A,B	
OMS-28-GW45-32	5/12/17	1015	28.32	N	WG	2	X								17 A,B	
OMS-28-GW46-16	5/12/17	1045	12.16	N	WG	2	X								18 A,B	
OMS-28-GW46-33	5/12/17	1105	29.33	N	WG	2	X								19 A,B	
OMS-28-GW46-33-a	5/12/17	1105	29.33	FD	WG	2	X								20 A,B	
OMS-28-GW57-16	5/12/17	1145	12.16	N	WG	2	X								21 A,B	
OMS-28-GW57-33	5/12/17	1230	29.33	N	WG	2	X								22 A,B	
~~OMS-28-GW59-33-a~~	~~5/12/17~~		~~29.33~~	~~FD~~	~~WG~~	~~2~~	~~X~~	~~TBM~~								
			Chain of Custody and Analytical Request												Laboratory Information	

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Moya	5-12-17	1245	[illegible]	5/12/17	1245
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX — Shipped:

Method of Shipment: — Airbill #:

Analytical Lab: Columbia Technologies — Location: On Site

Lab Receipient: — Date: — Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
						Sample Analysis Requested		Lab ID 100 51317 5/31/17	
OMS-28-GW52-31	5-13-17	0800	27.31	N	WG	2	X	-01 A,B	
OMS-28-GW53-12	5-13-17	0843	8.12	N	WG	2	X	-02 A,B	
OMS-28-GW53-19	5-13-17	0905	15.19	N	WG	2	X	-03 A,B	
OMS-28-GW53-31	5-13-17	0935	27.31	N	WG	2	X	-04 A,B	
OMS-28-GW14-11	5-13-17	1038	7.11	N	WG	2	X	-05 A,B	
OMS-28-GW14-20	5-13-17	1050	16.20	N	WG	2	X	-06 A,B	
OMS-28-GW14-30	5-13-17	1115	26.30	N	WG	2	X	-07 A,B	
OMS-28-GW11-11	5-13-17	1150	7.11	N	WG	2	X	-08 A,B	
OMS-28-GW11-19	5-13-17	1215	15.19	N	WG	2	X	-09 A,B	
OMS-28-GW11-19-Q	5-13-17	1215	15.19	FD	WG	2	X	-10 A,B	
OMS-28-GW11-30	5-13-17	1245	26.30	N	WG	2	X	-11 A,B	
OMS-28-GW11-30 MS/MSD	5-13-17	1245	26.30	MS SD	WG	2	X	-12 A,B	
OMS-28-GW54-12	5-13-17	1320	8.12	N	WG	2	X	-13 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5-13-17	1610	1. [illegible]	5/13/17	1610
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: X — Shipped:

Method of Shipment: — Airbill #:

Analytical Lab: Columbia Technologies — Location: On Site

Lab Receipient: — Date: — Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code[2]	Sample Matrix[2]	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
OMS-28-GW54-19	5/13/17	1333	15.19	N	WG	2	X	Lab ID -14 A,B	
OMS-28-GW54-32	5/13/17	1405	28.32	N	WG	2	X	-15 A,B	
OMS-28-GW55-12	5/13/17	1438	8.12	N	WG	2	X	-16 A,B	
OMS-28-GW55-19	5/13/17	1455	15.19	N	WG	2	X	-17 A,B	
OMS-28-GW55-32	5/13/17	1515	28.32	N	WG	2	X	-18 A,B	
OMS-28-GW51-30	5/13/17	1600	26.30	N	WG	2	X	-19 A,B	
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5/13/17	1610	Bob Jr	5/13/17	1610
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: on site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
								LAB ID 10051517	
OMS-28-GW58-12	5/15/17	0800	8.12	N	WG	2	X	-01A,B	
OMS-28-GW58-12-a	5/15/17	0800	8.12	FD	WG	2	X	-02A,B	
OMS-28-GW58-19	5/15/17	0823	15.19	N	WG	2	X	-03A,B	
OMS-28-GW58-31	5/15/17	0850	27.31	N	WG	2	X	-04A,B	
OMS-28-GW56-18	5/15/17	1015	15.19	N	WG	2	X	-05A,B	
OMS-28-GW56-31	5/15/17	1045	27.31	N	WG	2	X	-06A,B	
OMS-28-GW52-19	5/15/17	1135	15.19	N	WG	2	X	-07A,B	
OMS-28-GW50-13	5/15/17	1255	8.12	N	WG	2	X	-08A,B	
OMS-28-GW50-18	5/15/17	1320	14.18	N	WG	2	X	-09A,B	
OMS-28-GW50-30	5/15/17	1400	26.30	N	WG	2	X	-10A,B	
OMS-28-GW49-12	5/15/17	1445	8.12	N	WG	2	X	-11A,B	
OMS-28-GW49-18	5/15/17	1515	14.18	N	WG	2	X	-12A,B	
OMS-28-GW49-18 MS/MSD	5/15/17	1515	14.18	MS/SD	WG	2	X	"	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5-15-17	1630	1.	5/15/17	1630
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX

Method of Shipment:

Analytical Lab: Columbia Technologies

Lab Receipient:

Shipped:

Airbill #:

Location: On site

Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Moya

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)								Comments	Cooler ID
															LAB ID: 10051517	
OMS-28-GW49-30	5/15/17	1600	26 30	N	WG	2	X								-13 A,B	
OMS-28-GW49-30a	5/15/17	1600	26 30	FD	WG	2	X								-14 A,B	
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Moya	5/15/17	1630	1.	5/15/17	1630
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: X

Method of Shipment: Columbia Technologies

Analytical Lab: Columbia Technologies

Lab Receipient:

Shipped:

Airbill #:

Location: on site

Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Moya

Sample Analysis Requested

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code[1]	Sample Matrix[2]	Number of containers	PCE & TCE (8260B)	Comments / LAB ID 1005161 7	Cooler ID
OMS-28-SB28-1	5/16/17	0750	0.5 - 1.0	N	SO	1	X	01A	
OMS-28-SB28-3	5/16/17	0751	2.5 - 3.0	N	SO	1	X	02A	
OMS-28-SB28-5	5/16/17	0752	4.5 - 5.0	N	SO	1	X	03A	
OMS-28-SB29-1	5/16/17	0757	0.5 - 1.0	N	SO	1	X	~~MS~~ 04A	
OMS-28-SB29-3	5/16/17	0758	2.5 - 3.0	N	SO	1	X	05A	
OMS-28-SB29-5	5/16/17	0759	4.5 - 5.0	N	SO	1	X	06A	
OMS-28-SB30-1	5/16/17	0805	0.5 - 1.0	N	SO	1	X	07A	
OMS-28-SB30-3	5/16/17	0806	2.5 - 3.0	N	SO	1	X	08A	
OMS-28-SB30-5	5/16/17	0807	4.5 - 5.0	N	SO	1	X	09A	
OMS-28-SB31-1	5/16/17	0813	0.5 - 1.0	N	SO	1	X	10A	
OMS-28-SB31-3	5/16/17	0814	2.5 - 3.0	N	SO	1	X	11A	
OMS-28-SB31-5	5/16/17	0815	4.5 - 5.0	N	SO	1	X	12A	
OMS-28-GW25-12	5/16/17	0830	8 - 12	N	WG	2	X	13A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Moya	5/16/17	1620	1. [illegible]	5/16/17	1625
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: X

Method of Shipment:

Analytical Lab: Columbia Technologies

Lab Receipient:

Shipped:

Airbill #:

Location: On Site

Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Number 60439687 / 2.3

Purchase Order Number 81895

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Mauga

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
								LAB ID: 100516117	
OMS-28-GW44-28	5-16-17	0905	24.28	N	WG	2	X	14A,B	
OMS-28-GW60-16	5-16-17	0940	12.16	N	WG	2	X	15A,B	
OMS-28-GW60-33	5-16-17	1015	29.33	N	WG	2	X	16A,B	
OMS-28-GW-59-10	5-16-17	1135	8.12	N	WG	2	X	17A,B	
OMS-28-GW-59-18	5-16-17	1200	14.18	N	WG	2	X	18A,B	
OMS-28-GW59-30	5-16-17	1245	26.30	N	WG	2	X	19A,B	
OMS-28-GW62-12	5/16/17	1400	8.12	N	WG	2	X	20A,B	
OMS-28-GW62-12-a	5/16/17	1400	8.12	FD	WG	2	X	21A,B	
OMS-28-GW62-19	5/16/17	1430	15.19	N	WG	2	X	22A,B	
OMS-28-GW62-30	5/16/17	1605	26.30	N	WG	2	X	23A,B	
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Mauga	5-16-17	1620		5/16/17	1625
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: X

Method of Shipment:

Analytical Lab: Columbia Technologies

Lab Receipient:

Shipped:

Airbill #:

Location: On Site

Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Number 60439687 / 2.3

Purchase Order Number 81895

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code[1]	Sample Matrix[2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
								LAB ID - 100517-17	
OMS-28-GW63-12	5/17/17	0735	8.12	N	WG	2	X	01 A,B	
OMS-28-GW63-19	5/17/17	0750	15.19	N	WG	2	X	02 A,B	
OMS-28-GW6330	5/17/17	0810	26.30	N	WG	2	X	03 A,B	
OMS-28-GW61-12	5/17/17	0845	8.12	N	WG	2	X	04 A,B	
OMS-28-GW61-19	5/17/17	0910	15.19	N	WG	2	X	05 A,B	
OMS28-GW61-31	5/17/17	0935	27.31	N	WG	2	X	06 A,B	
OMS-28-GW34-19	5/17/17	1010	15.19	N	WG	2	X	07 A,B	
OMS-28-GW34-32	5/17/17	1100	28.32	N	WG	2	X	08 A,B	
OMS-28-GW65-12	5/17/17	1155	8.12	N	WG	2	X	09 A,B	
OMS-28-GW65-12-a	5/17/17	1155	8.12	FD	WG	2	X	10 A,B	
OMS-28-GW65-19	5/17/17	1215	15.19	N	WG	2	X	11 A,B + MS/MSD	
OMS-28-GW65-19MS/MSD	5/17/17	1215	15.19	MS/SD	WG	2	X	11 C,D	
OMS-28-GW65-29	5/17/17	1240	25.29	N	WG	2	X	12 A,B	

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5-17-17	1655	[illegible]	5/18/17	1655
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: X

Method of Shipment:

Analytical Lab: Columbia Technologies

Lab Receipient:

Shipped:

Airbill #:

Location: On site

Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Comments	Cooler ID
								LAB ID: 10051717	
OMS-28-GW64-16	5/17/17	1315	12-16	N	WG	2	X	13 A,B	
OMS-28-GW64-33	5/17/17	1340	29-33	N	WG	2	X	14 A,B	
OMS-28-GW47-19	5/17/17	1440	15-19	N	WG	2	X	16 A,B	
OMS-28-GW47-32	5/17/17	1505	28-32	N	WG	2	X	17 A,B	
OMS-28-GW57-12	5/17/17	1410	8-12	N	WG	2	X	15 A,B	
OMS-28-GW06-11	5/17/17	1600	7-11	N	WG	2	X	18 A,B	
OMS-28-GW06-17	5/17/17	1615	13-17	N	WG	2	X	21 A,B - RECEIVED 5/18/17	
OMS-28-GW06-32	5/17/17	1645	28-32	N	WG	2	X	19 A,B	
OMS-28-GW06-32a	5/17/17	1645	28-32	FD	WG	2	X	20 A,B	
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5-17-17	1655	[illegible]	5/17/17	1655
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Method of Shipment:
Analytical Lab: Columbia Technologies
Lab Receipient:
Shipped:
Airbill #:
Location: On site
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)									Comments	Cooler ID
																LAB ID: 10051817	
OMS-28-GW66-26	5/18/17	0938	22-26	N	WG	2	X									01 A,B	
OMS-28-GW66-49	5/18/17	1100	45-49	N	WG	2	X									02 A,B	
OMS-28-GW67-26	5/18/17	1250	22-26	N	WG	2	X									03 A,B	
OMS-28-GW67-52	5/18/17	1400	48-52	N	WG	2	X									04 A,B	
OMS-28-GW68-26	5/18/17	1450	22-26	N	WG	2	X									05 A,B	
OMS-28-GW68-57	5/18/17	1620	53-57	N	WG	2	X									06 A only	
OMS-28-GW69-26	5/18/17	1710	22-26	N	WG	2	X									07 A,B	
~~OMS-28-GW69-~~	~~5/18/17~~		-	N	WG	2	X	RM									
			-														
			-														
			-														
			-														
			-														

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished by (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5/18/17	1815	[illegible]	5/19/17	1820
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX
Method of Shipment: Columbia Technologies
Analytical Lab:
Lab Receipient:
Shipped:
Airbill #:
Location: On site
Date:
Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 81895

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

REVISION 1
8/14/2017

AECOM

Chain of Custody and Analytical Request

Laboratory: Columbia Technologies

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)	Comments	Cooler ID
OMS-28-GW69-49	5/19/17	0730	45.49	N	WG	2	X		01 A,B
OMS-28-GW12-12	5/19/17	0825	8.12		WG	2	X		02 A,B
OMS-28-GW12-12-a	5/19/17	0825	8.12	FD	WG	2	X		03 A,B
OMS-28-GW12-18	5/19/17	0845	14.18	N	WG	2	X		04 A,B
OMS-28-GW12-18-MS/MSD	5/19/17	0845	14.18	MS/MSD	WG	2	X		C,D MS/MSD
OMS-28-GW12-32	5/19/17	0910	28.32	N	WG	2	X		05 A,B
OMS-28-GW07-11	5/19/17	0945	7.11	N	WG	2	X		06 A,B
OMS-28-GW07-18	5/19/17	1000	14.18	N	WG	2	X		07 A,B
OMS-28-GW07-31	5/19/17	1020	27.31	N	WG	2	X	5/31/17	08 A,B
OMS-28-GW72-33	5/19/17	1110	29.33	N	WG	2	X	(1110) Time -10A,B	~~09 A,B~~
OMS-28-GW71-19	5/19/17	1145	15.19	N	WG	2	X		11 A,B
OMS-28-GW71-33	5/19/17	1240	29.33	N	WG	2	X	sample id is per client OMS-28-GW71-30	12 A,B
OMS-28-GW07-31-a	5/19/17	1020	27.31	FD	WG	2	X	-09 A,B	~~10 A,B~~

Comments

IWD 5/31/17

Ice ids 10051917-

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5/19/17	1500		5/19/17	1350
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX

Method of Shipment:

Analytical Lab: Columbia Technologies

Lab Receipient:

Shipped:

Airbill #:

Location: On Site

Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 81895

Analytical Data To: Vasi Kourlas and Dwight Parks

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW01-10	10050217-01	5/2/17	8:50	5/2/17	9:00	5/2/17	
OMS-28-GW01-19	10050217-02	5/2/17	9:55	5/2/17	10:00	5/2/17	
OMS-28-GW01-32	10050217-03	5/2/17	10:20	5/2/17	10:30	5/2/17	
OMS-28-GW05-11	10050217-04	5/2/17	11:30	5/2/17	12:25	5/2/17	
OMS-28-GW05-19	10050217-05	5/2/17	12:00	5/2/17	13:00	5/2/17	
OMS-28-GW05-33	10050217-06	5/2/17	12:35	5/2/17	13:00	5/2/17	
OMS-28-GW33-12	10050217-07	5/2/17	13:00	5/2/17	14:20	5/2/17	
OMS-28-GW33-19	10050217-08	5/2/17	13:20	5/2/17	14:20	5/2/17	
OMS-28-GW33-33	10050217-09	5/2/17	13:55	5/2/17	14:20	5/2/17	
OMS-28-GW32-12	10050217-10	5/2/17	14:30	5/2/17	16:00	5/2/17	
OMS-28-GW32-12-a	10050217-11	5/2/17	14:30	5/2/17	16:00	5/2/17	FD
OMS-28-GW32-19	10050217-12	5/2/17	14:50	5/2/17	16:00	5/2/17	
OMS-28-GW32-31	10050217-13	5/2/17	15:43	5/2/17	16:00	5/2/17	
OMS-28-GW31-12	10050217-14	5/2/17	16:05	5/2/17	16:50	5/2/17	
OMS-28-GW31-19	10050217-15	5/2/17	16:35	5/2/17	16:50	5/2/17	
OMS-28-GW31-31	10050217-16	5/2/17	17:10	5/2/17	17:15	5/2/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW04-10	10050317-01	5/3/17	7:50	5/3/17	8:25	5/3/17	
OMS-28-GW04-17	10050317-02	5/3/17	8:25	5/3/17	9:15	5/3/17	
OMS-28-GW04-31	10050317-03	5/3/17	9:00	5/3/17	9:15	5/4/17	
OMS-28-GW02-12	10050317-04	5/3/17	9:35	5/3/17	10:55	5/3/17	
OMS-28-GW02-19	10050317-05	5/3/17	10:00	5/3/17	10:55	5/3/17	
OMS-28-GW02-19-a	10050317-06	5/3/17	10:00	5/3/17	10:55	5/3/17	FD
OMS-28-GW08-10	10050317-07	5/3/17	11:45	5/3/17	12:05	5/3/17	MS/MSD
OMS-28-GW08-17	10050317-08	5/3/17	12:10	5/3/17	12:40	5/3/17	
OMS-28-GW09-10	10050317-09	5/3/17	12:50	5/3/17	13:30	5/3/17	
OMS-28-GW09-16	10050317-10	5/3/17	13:15	5/3/17	13:30	5/3/17	
OMS-28-GW02-31	10050317-11	5/3/17	14:30	5/3/17	15:25	5/3/17	
OMS-28-GW08-31	10050317-12	5/3/17	15:15	5/3/17	15:25	5/4/17	
OMS-28-GW09-33	10050317-13	5/3/17	16:05	5/3/17	16:15	5/4/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW03-12	10050417-01	5/4/17	9:15	5/4/17	9:30	5/4/17	
OMS-28-GW03-20	10050417-02	5/4/17	9:40	5/4/17	10:45	5/4/17	
OMS-28-GW03-34	10050417-03	5/4/17	10:30	5/4/17	10:45	5/5/17	
OMS-28-GW03-34-a	10050417-04	5/4/17	10:30	5/4/17	10:45	5/5/17	
OMS-28-GW30-11	10050417-05	5/4/17	11:10	5/4/17	12:15	5/4/17	
OMS-28-GW30-20	10050417-06	5/4/17	11:45	5/4/17	12:15	5/4/17	
OMS-28-GW16-12	10050417-07	5/4/17	13:45	5/4/17	13:45	5/4/17	
OMS-28-GW16-19	10050417-08	5/4/17	14:00	5/4/17	14:05	5/4/17	
OMS-28-GW16-30	10050417-09	5/4/17	14:20	5/4/17	14:25	5/5/17	
OMS-28-GW17-12	10050417-10	5/4/17	15:05	5/4/17	15:10	5/4/17	
OMS-28-GW17-19	10050417-11	5/4/17	15:30	5/4/17	15:35	5/4/17	
OMS-28-GW17-28	10050417-12	5/4/17	15:50	5/4/17	15:55	5/5/17	
OMS-28-GW20-12	10050417-13	5/4/17	16:15	5/4/17	16:20	5/4/17	
OMS-28-GW20-12-a	10050417-14	5/4/17	16:15	5/4/17	16:20	5/4/17	FD
OMS-28-GW30-22	10050417-15	5/4/17	12:45	5/4/17	16:55	5/4/17	
OMS-28-GW20-19	10050417-16	5/4/17	16:45	5/4/17	16:55	5/5/17	MD/MSD
OMS-28-GW20-28	10050417-17	5/4/17	17:00	5/4/17	17:10	5/5/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW21-12	10050517-01	5/5/17	8:20	5/5/17	9:10	5/5/17	
OMS-28-GW21-18	10050517-02	5/5/17	8:40	5/5/17	9:10	5/5/17	
OMS-28-GW21-30	10050517-03	5/5/17	9:00	5/5/17	9:10	5/8/17	
OMS-28-GW15-12	10050517-04	5/5/17	9:30	5/5/17	10:15	5/5/17	
OMS-28-GW15-19	10050517-05	5/5/17	9:40	5/5/17	10:15	5/5/17	
OMS-28-GW15-30	10050517-06	5/5/17	10:05	5/5/17	10:15	5/8/17	
OMS-28-GW18-12	10050517-07	5/5/17	10:35	5/5/17	10:45	5/5/17	
OMS-28-GW18-18	10050517-08	5/5/17	10:45	5/5/17	11:30	5/5/17	
OMS-28-GW18-18-a	10050517-09	5/5/17	10:45	5/5/17	11:30	5/5/17	FD
OMS-28-GW18-30	10050517-10	5/5/17	11:20	5/5/17	11:30	5/8/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-SB05-1	10050817-01A	5/8/17	8:05	5/8/17	8:15	5/8/17	
OMS-28-SB05-2	10050817-02A	5/8/17	8:07	5/8/17	8:15	5/8/17	
OMS-28-SB05-5	10050817-03A	5/8/17	8:09	5/8/17	8:15	5/8/17	
OMS-28-SB06-1	10050817-04A	5/8/17	8:25	5/8/17	8:35	5/8/17	
OMS-28-SB06-3	10050817-05A	5/8/17	8:30	5/8/17	8:35	5/8/17	
OMS-28-SB06-6	10050817-06A	5/8/17	8:32	5/8/17	8:35	5/8/17	
OMS-28-SB07-1	10050817-07A	5/8/17	8:47	5/8/17	9:05	5/8/17	
OMS-28-SB07-3	10050817-08A	5/8/17	8:48	5/8/17	9:05	5/8/17	
OMS-28-SB07-6	10050817-09A	5/8/17	8:57	5/8/17	9:05	5/8/17	
OMS-28-SB04-1	10050817-10A	5/8/17	9:10	5/8/17	9:25	5/8/17	
OMS-28-SB04-1a	10050817-11A	5/8/17	9:10	5/8/17	9:25	5/8/17	FD
OMS-28-SB04-2	10050817-12A	5/8/17	9:15	5/8/17	9:25	5/8/17	
OMS-28-SB04-5	10050817-13A	5/8/17	9:17	5/8/17	9:25	5/8/17	
OMS-28-SB03-1	10050817-14A	5/8/17	10:58	5/8/17	11:05	5/8/17	
OMS-28-SB03-3	10050817-15A	5/8/17	11:00	5/8/17	11:05	5/8/17	
OMS-28-SB03-5	10050817-16A	5/8/17	11:02	5/8/17	11:05	5/8/17	
OMS-28-SB02-1	10050817-17A	5/8/17	11:17	5/8/17	11:30	5/8/17	
OMS-28-SB02-3	10050817-18A	5/8/17	11:19	5/8/17	11:30	5/8/17	
OMS-28-SB02-5	10050817-19A	5/8/17	11:21	5/8/17	11:30	5/8/17	
OMS-28-SB01-1	10050817-20A	5/8/17	11:35	5/8/17	11:50	5/8/17	
OMS-28-SB01-1 MS/MSD	10050817-21A	5/8/17	11:35	5/8/17	11:50	5/8/17	MS/MSD
OMS-28-SB01-2	10050817-22A	5/8/17	11:38	5/8/17	11:50	5/8/17	
OMS-28-SB01-2a	10050817-23A	5/8/17	11:38	5/8/17	11:50	5/8/17	FD
OMS-28-SB01-3	10050817-24A	5/8/17	11:40	5/8/17	11:50	5/8/17	
OMS-28-SB10-1	10050817-25A	5/8/17	12:35	5/8/17	12:43	5/8/17	
OMS-28-SB10-2	10050817-26A	5/8/17	12:37	5/8/17	12:43	5/8/17	
OMS-28-SB10-3	10050817-27A	5/8/17	12:39	5/8/17	12:43	5/8/17	
OMS-28-SB09-1	10050817-28A	5/8/17	12:52	5/8/17	13:05	5/8/17	
OMS-28-SB09-2	10050817-29A	5/8/17	12:54	5/8/17	13:05	5/8/17	
OMS-28-SB09-3	10050817-30A	5/8/17	12:56	5/8/17	13:05	5/8/17	
OMS-28-SB11-1	10050817-31A	5/8/17	13:09	5/8/17	13:20	5/8/17	
OMS-28-SB11-4	10050817-32A	5/8/17	13:11	5/8/17	13:20	5/8/17	
OMS-28-SB11-6	10050817-33A	5/8/17	13:15	5/8/17	13:20	5/8/17	
OMS-28-SB11-6a	10050817-34A	5/8/17	13:15	5/8/17	13:20	5/8/17	FD
OMS-28-SB08-1	10050817-35A	5/8/17	13:35	5/8/17	13:45	5/9/17	
OMS-28-SB08-3	10050817-36A	5/8/17	13:37	5/8/17	13:45	5/9/17	
OMS-28-SB08-6	10050817-37A	5/8/17	13:39	5/8/17	13:45	5/9/17	
OMS-28-SB12-1	10050817-38A	5/8/17	14:10	5/8/17	14:20	5/9/17	
OMS-28-SB12-3	10050817-39A	5/8/17	14:12	5/8/17	14:20	5/9/17	
OMS-28-SB12-6	10050817-40A	5/8/17	14:14	5/8/17	14:20	5/9/17	
OMS-28-SB13-1	10050817-41A	5/8/17	14:33	5/8/17	14:45	5/9/17	
OMS-28-SB13-3	10050817-42A	5/8/17	14:35	5/8/17	14:45	5/9/17	
OMS-28-SB13-5	10050817-43A	5/8/17	14:37	5/8/17	14:45	5/9/17	
OMS-28-SB14-1	10050817-44A	5/8/17	15:20	5/8/17	15:35	5/9/17	
OMS-28-SB14-1a	10050817-45A	5/8/17	15:20	5/8/17	15:35	5/9/17	FD
OMS-28-SB14-3	10050817-46A	5/8/17	15:25	5/8/17	15:35	5/9/17	
OMS-28-SB14-3 MS/MSD	10050817-47A	5/8/17	15:25	5/8/17	15:35	5/9/17	MS/MSD
OMS-28-SB14-5	10050817-48A	5/8/17	15:28	5/8/17	15:35	5/9/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-SB15-1	10050817-9A	5/8/17	15:42	5/8/17	16:00	5/9/17	
OMS-28-SB15-3	10050817-50A	5/8/17	15:44	5/8/17	16:00	5/9/17	
OMS-28-SB15-5	10050817-51A	5/8/17	15:46	5/8/17	16:00	5/9/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW26-31	10050917-01A	5/9/17	8:05	5/9/17	8:19	5/10/17	
OMS-28-GW10-10	10050917-02A	5/9/17	8:45	5/9/17	9:11	5/9/17	
OMS-28-GW10-16	10050917-03A	5/9/17	9:05	5/9/17	9:11	5/9/17	
OMS-28-GW10-33	10050917-04A	5/9/17	9:30	5/9/17	9:38	5/9/17	
OMS-28-GW13-13	10050917-05A	5/9/17	10:00	5/9/17	10:05	5/9/17	
OMS-28-GW13-18	10050917-06A	5/9/17	10:15	5/9/17	10:35	5/9/17	
OMS-28-GW13-32	10050917-07A	5/9/17	10:45	5/9/17	11:02	5/9/17	
OMS-28-GW19-12	10050917-08A	5/9/17	11:25	5/9/17	11:50	5/9/17	
OMS-28-GW19-12 MS/MSD	10050917-08A	5/9/17	11:25	5/9/17	11:50	5/9/17	MS/MSD
OMS-28-GW19-19	10050917-09A	5/9/17	11:40	5/9/17	11:50	5/9/17	
OMS-28-GW19-19a	10050917-10A	5/9/17	11:40	5/9/17	11:50	5/9/17	FD
OMS-28-GW19-30	10050917-11A	5/9/17	12:10	5/9/17	12:20	5/10/17	
OMS-28-GW22-11	10050917-12A	5/9/17	13:15	5/9/17	13:30	5/9/17	
OMS-28-GW22-20	10050917-13A	5/9/17	13:45	5/9/17	14:02	5/12/17	
OMS-28-GW22-28	10050917-14A	5/9/17	14:15	5/9/17	14:35	5/10/17	
OMS-28-GW24-19	10050917-15A	5/9/17	14:55	5/9/17	15:03	5/9/17	
OMS-28-GW24-30	10050917-16A	5/9/17	15:25	5/9/17	15:33	5/10/17	
OMS-28-GW25-19	10050917-17A	5/9/17	15:45	5/9/17	16:20	5/9/17	
OMS-28-GW25-28	10050917-18A	5/9/17	16:05	5/9/17	16:20	5/10/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-SB23-1	10051017-01A	5/10/17	8:00	5/10/17	8:13	5/10/17	
OMS-28-SB23-1.5	10051017-02A	5/10/17	8:01	5/10/17	8:13	5/10/17	
OMS-28-SB23-2	10051017-03A	5/10/17	8:02	5/10/17	8:13	5/10/17	
OMS-28-SB22-1	10051017-4A	5/10/17	8:20	5/10/17	8:26	5/10/17	
OMS-28-SB22-1a	10051017-05A	5/10/17	8:20	5/10/17	8:26	5/10/17	FD
OMS-28-SB22-1.5	10051017-06A	5/10/17	8:21	5/10/17	8:26	5/10/17	
OMS-28-SB22-2	10051017-07A	5/10/17	8:22	5/10/17	8:26	5/10/17	
OMS-28-SB21-1	10051017-08A	5/10/17	8:33	5/10/17	8:40	5/10/17	
OMS-28-SB21-1.5	10051017-09A	5/10/17	8:34	5/10/17	8:40	5/10/17	
OMS-28-SB22-2	10051017-10A	5/10/17	8:35	5/10/17	8:40	5/10/17	
OMS-28-SB20-1	10051017-11A	5/10/17	8:42	5/10/17	8:48	5/10/17	
OMS-28-SB20-1.5	10051017-12A	5/10/17	8:43	5/10/17	8:48	5/10/17	
OMS-28-SB20-2	10051017-13A	5/10/17	8:44	5/10/17	8:48	5/10/17	
OMS-28-SB16-1	10051017-14A	5/10/17	9:10	5/10/17	9:17	5/10/17	
OMS-28-SB16-1a	10051017-5A	5/10/17	9:10	5/10/17	9:17	5/10/17	FD
OMS-28-SB16-2.5	10051017-16A	5/10/17	9:12	5/10/17	9:17	5/10/17	
OMS-28-SB16-2.5	10051017-17A	5/10/17	9:12	5/10/17	9:17	5/10/17	MS/MSD
OMS-28-SB16-4	10051017-18A	5/10/17	9:14	5/10/17	9:17	5/10/17	
OMS-28-SB17-1	10051017-19A	5/10/17	9:29	5/10/17	9:40	5/10/17	
OMS-28-SB17-2.5	10051017-20A	5/10/17	9:30	5/10/17	9:40	5/10/17	
OMS-28-SB17-5	10051017-21A	5/10/17	9:31	5/10/17	9:40	5/10/17	
OMS-28-SB18-1	10051017-22A	5/10/17	9:53	5/10/17	9:59	5/10/17	
OMS-28-SB18-2.5	10051017-23A	5/10/17	9:54	5/10/17	9:59	5/11/17	
OMS-28-SB18-5	10051017-24A	5/10/17	9:55	5/10/17	9:59	5/11/17	
OMS-28-SB19-1	10051017-25A	5/10/17	10:08	5/10/17	10:20	5/11/17	
OMS-28-SB19-2.5	10051017-26A	5/10/17	10:09	5/10/17	10:20	5/11/17	
OMS-28-SB19-5	10051017-27A	5/10/17	10:10	5/10/17	10:20	5/11/17	
OMS-28-SB19-5a	10051017-28A	5/10/17	10:10	5/10/17	10:20	5/11/17	FD
OMS-28-SB24-1	10051017-29A	5/10/17	10:40	5/10/17	10:55	5/10/17	
OMS-28-SB24-3	10051017-30A	5/10/17	10:45	5/10/17	10:55	5/10/17	
OMS-28-SB24-5	10051017-31A	5/10/17	10:50	5/10/17	10:55	5/10/17	
OMS-28-GW23-12	10051017-32A	5/10/17	12:05	5/10/17	12:12	5/11/17	
OMS-28-GW23-20	10051017-33A	5/10/17	12:50	5/10/17	12:57	5/11/17	
OMS-28-GW23-28	10051017-34A	5/10/17	13:15	5/10/17	14:05	5/12/17	
OMS-28-GW23-28a	10051017-35A	5/10/17	13:15	5/10/17	14:05	5/12/17	FD
OMS-28-GW42-12	10051017-36A	5/10/17	13:55	5/10/17	14:05	5/11/17	
OMS-28-GW42-20	10051017-37A	5/10/17	14:15	5/10/17	15:00	5/11/17	
OMS-28-GW42-28	10051017-38A	5/10/17	14:45	5/10/17	15:00	5/11/17	
OMS-28-GW39-13	10051017-39A	5/10/17	15:40	5/10/17	15:48	5/11/17	
OMS-28-GW39-20	10051017-40A	5/10/17	16:10	5/10/17	16:36	5/11/17	
OMS-28-GW39-28	10051017-41A	5/10/17	16:30	5/10/17	16:36	5/11/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW38-12	10051117-01A	5/11/17	8:25	5/11/17	10:15	5/11/17	
OMS-28-GW38-12a	10051117-02A	5/11/17	8:25	5/11/17	10:15	5/11/17	
OMS-28-GW38-20	10051117-03A	5/11/17	9:05	5/11/17	10:15	5/11/17	
OMS-28-GW38-30	10051117-04A	5/11/17	9:40	5/11/17	10:15	5/11/17	
OMS-28-GW37-12	10051117-05A	5/11/17	10:20	5/11/17	11:20	5/11/17	
OMS-28-GW37-19	10051117-06A	5/11/17	10:40	5/11/17	11:20	5/11/17	
OMS-28-GW37-28	10051117-07A	5/11/17	11:10	5/11/17	11:20	5/12/17	
OMS-28-GW36-12	10051117-08A	5/11/17	11:45	5/11/17	13:12	5/11/17	
OMS-28-GW36-18	10051117-09A	5/11/17	12:10	5/11/17	13:12	5/11/17	
OMS-28-GW36-29	10051117-10A	5/11/17	12:35	5/11/17	13:12	5/12/17	
OMS-28-GW40-13	10051117-11A	5/11/17	13:40	5/11/17	14:30	5/11/17	
OMS-28-GW40-20	10051117-12A	5/11/17	14:00	5/11/17	14:30	5/11/17	
OMS-28-GW40-28	10051117-13A	5/11/17	14:20	5/11/17	14:30	5/11/17	
OMS-28-GW41-12	10051117-14A	5/11/17	15:05	5/11/17	16:10	5/11/17	
OMS-28-GW41-12 MS	10051117-15A	5/11/17	15:05	5/11/17	16:10	5/11/17	
OMS-28-GW41-20	10051117-16A	5/11/17	15:30	5/11/17	16:10	5/11/17	
OMS-28-GW41-28	10051117-17A	5/11/17	16:35	5/11/17	16:45	5/12/17	
OMS-28-GW41-28a	10051117-18A	5/11/17	16:35	5/11/17	16:45	5/12/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-SB25-1	10051217-01A	5/12/17	7:41	5/12/17	8:30	5/12/17	
OMS-28-SB25-3	10051217-02A	5/12/17	7:42	5/12/17	8:30	5/12/17	
OMS-28-SB25-5	10051217-03A	5/12/17	7:43	5/12/17	8:30	5/12/17	
OMS-28-SB26-1	10051217-04A	5/12/17	7:50	5/12/17	8:30	5/12/17	
OMS-28-SB26-3	10051217-05A	5/12/17	7:51	5/12/17	8:30	5/12/17	
OMS-28-SB26-5	10051217-06A	5/12/17	7:52	5/12/17	8:30	5/12/17	
OMS-28-SB27-1	10051217-07A	5/12/17	8:00	5/12/17	8:30	5/12/17	
OMS-28-SB27-1a	10051217-08A	5/12/17	8:00	5/12/17	8:30	5/12/17	FD
OMS-28-SB27-3	10051217-09A	5/12/17	8:02	5/12/17	8:30	5/12/17	
OMS-28-SB27-3 MS	10051217-010A	5/12/17	8:02	5/12/17	8:30	5/12/17	MS/MSD
OMS-28-SB27-5	10051217-11A	5/12/17	8:04	5/12/17	8:30	5/12/17	
OMS-28-GW24-12	10051217-12A	5/12/17	8:08	5/12/17	8:30	5/12/17	
OMS-28-GW43-12	10051217-13A	5/12/17	8:50	5/12/17	9:30	5/12/17	
OMS-28-GW43-20	10051217-14A	5/12/17	9:05	5/12/17	9:30	5/12/17	
OMS-28-GW43-28	10051217-15A	5/12/17	9:25	5/12/17	9:30	5/12/17	
OMS-28-GW45-18	10051217-16A	5/12/17	9:50	5/12/17	10:24	5/12/17	
OMS-28-GW45-32	10051217-17A	5/12/17	10:15	5/12/17	10:24	5/12/17	
OMS-28-GW46-16	10051217-18A	5/12/17	10:45	5/12/17	11:20	5/12/17	
OMS-28-GW46-33	10051217-19A	5/12/17	11:05	5/12/17	11:20	5/12/17	
OMS-28-GW46-33a	10051217-20A	5/12/17	11:05	5/12/17	11:20	5/12/17	FD
OMS-28-GW57-16	10051217-21A	5/12/17	11:45	5/12/17	12:45	5/12/17	
OMS-28-GW57-33	10051217-22A	5/12/17	12:30	5/12/17	12:45	5/12/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW52-31	10051317-01A	5/13/17	8:00	5/13/17	8:02	5/13/17	
OMS-28-GW53-13	10051317-02A	5/13/17	8:43	5/13/17	9:44	5/13/17	
OMS-28-GW53-19	10051317-03A	5/13/17	9:05	5/13/17	9:44	5/13/17	
OMS-28-GW53-31	10051317-04A	5/13/17	9:35	5/13/17	9:44	5/15/17	
OMS-28-GW14-11	10051317-05A	5/13/17	10:38	5/13/17	10:49	5/13/17	
OMS-28-GW14-20	10051317-06A	5/13/17	10:50	5/13/17	10:56	5/13/17	
OMS-28-GW14-30	10051317-07A	5/13/17	11:15	5/13/17	11:25	5/15/17	
OMS-28-GW11-11	10051317-08A	5/13/17	11:50	5/13/17	11:59	5/13/17	
OMS-28-GW11-19	10051317-09A	5/13/17	12:15	5/13/17	12:24	5/13/17	
OMS-28-GW11-19a	10051317-10A	5/13/17	12:15	5/13/17	12:24	5/13/17	FD
OMS-28-GW11-30	10051317-11A	5/13/17	12:45	5/13/17	12:49	5/15/17	
OMS-28-GW11-30 MS	10051317-12A	5/13/17	12:45	5/13/17	12:49	5/15/17	MS/MSD
OMS-28-GW54-12	10051317-13A	5/13/17	13:20	5/13/17	13:25	5/13/17	
OMS-28-GW54-19	10051317-14A	5/13/17	13:33	5/13/17	13:40	5/13/17	
OMS-28-GW54-32	10051317-15A	5/13/17	14:05	5/13/17	14:10	5/13/17	
OMS-28-GW55-12	10051317-16A	5/13/17	14:38	5/13/17	14:45	5/13/17	
OMS-28-GW55-19	10051317-17A	5/13/17	14:55	5/13/17	15:00	5/13/17	
OMS-28-GW55-32	10051317-18A	5/13/17	15:15	5/13/17	15:27	5/13/17	
OMS-28-GW51-30	10051317-19A	5/13/17	16:00	5/13/17	16:11	5/15/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW58-12	10051517-01	5/15/17	8:00	5/15/17	8:30	5/15/17	
OMS-28-GW58-12a	10051517-02	5/15/17	8:00	5/15/17	8:30	5/15/17	FD
OMS-28-GW58-19	10051517-03	5/15/17	8:23	5/15/17	8:30	5/15/17	
OMS-28-GW58-31	10051517-04	5/15/17	8:50	5/15/17	9:20	5/15/17	
OMS-28-GW56-18	10051517-05	5/15/17	10:15	5/15/17	10:20	5/15/17	
OMS-28-GW56-31	10051517-06	5/15/17	10:45	5/15/17	10:55	5/16/17	
OMS-28-GW52-19	10051517-07	5/15/17	11:35	5/15/17	12:35	5/15/17	
OMS-28-GW50-13	10051517-08	5/15/17	12:55	5/15/17	13:30	5/15/17	
OMS-28-GW50-18	10051517-09	5/15/17	13:20	5/15/17	13:30	5/15/17	
OMS-28-GW50-30	10051517-10	5/15/17	14:00	5/15/17	14:15	5/16/17	
OMS-28-GW49-12	10051517-11	5/15/17	14:45	5/15/17	15:30	5/15/17	
OMS-28-GW49-18	10051517-12	5/15/17	15:15	5/15/17	15:30	5/15/17	MS/MSD
OMS-28-GW49-30	10051517-13	5/15/17	16:00	5/15/17	16:35	5/16/17	
OMS-28-GW49-30a	10051517-14	5/15/17	16:00	5/15/17	16:35	5/16/17	FD

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-SB28-1	10051617-01	5/16/17	7:50	5/16/17	8:45	5/18/17	
OMS-28-SB28-3	10051617-02	5/16/17	7:51	5/16/17	8:45	5/16/17	
OMS-28-SB28-5	10051617-03	5/16/17	7:52	5/16/17	8:45	5/16/17	
OMS-28-SB29-1	10051617-04	5/16/17	7:57	5/16/17	8:45	5/18/17	
OMS-28-SB29-3	10051617-05	5/16/17	7:58	5/16/17	8:45	5/16/17	
OMS-28-SB29-5	10051617-06	5/16/17	7:59	5/16/17	8:45	5/17/17	
OMS-28-SB30-1	10051617-07	5/16/17	8:05	5/16/17	8:45	5/18/17	
OMS-28-SB30-3	10051617-08	5/16/17	8:06	5/16/17	8:45	5/16/17	
OMS-28-SB30-5	10051617-09	5/16/17	8:07	5/16/17	8:45	5/16/17	
OMS-28-SB31-1	10051617-10	5/16/17	8:13	5/16/17	8:45	5/18/17	
OMS-28-SB31-3	10051617-11	5/16/17	8:14	5/16/17	8:45	5/16/17	
OMS-28-SB31-5	10051617-12	5/16/17	8:15	5/16/17	8:45	5/16/17	
OMS-28-GW25-12	10051617-13	5/16/17	8:30	5/16/17	8:45	5/16/17	
OMS-28-GW44-28	10051617-14	5/16/17	9:05	5/16/17	10:25	5/16/17	
OMS-28-GW60-16	10051617-15	5/16/17	9:40	5/16/17	10:25	5/16/17	
OMS-28-GW60.33	10051617-16	5/16/17	10:15	5/16/17	10:25	5/16/17	
OMS-28-GW59-10	10051617-17	5/16/17	11:35	5/16/17	12:25	5/16/17	
OMS-28-GW59-18	10051617-18	5/16/17	12:00	5/16/17	12:25	5/16/17	
OMS-28-GW59-30	10051617-19	5/16/17	12:45	5/16/17	13:35	5/17/17	
OMS-28-GW62-12	10051617-20	5/16/17	14:00	5/16/17	14:05	5/16/17	
OMS-28-GW62-12a	10051617-21	5/16/17	14:00	5/16/17	14:05	5/16/17	
OMS-28-GW62-19	10051617-22	5/16/17	14:30	5/16/17	15:05	5/16/17	
OMS-28-GW-62-30	10051617-23	5/16/17	16:05	5/16/17	16:25	5/17/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW63-12	10051717-01	5/17/17	7:35	5/17/17	8:20	5/17/17	
OMS-28-GW63-19	10051717-02	5/17/17	7:50	5/17/17	8:20	5/17/17	
OMS-28-GW63-30	10051717-03	5/17/17	8:10	5/17/17	8:20	5/18/17	
OMS-28-GW62-12	10051717-04	5/17/17	8:45	5/17/17	9:45	5/17/17	
OMS-28-GW61-19	10051717-05	5/17/17	9:10	5/17/17	9:45	5/17/17	
OMS-28-GW61-31	10051717-06	5/17/17	9:35	5/17/17	9:45	5/18/17	
OMS-28-GW34-19	10051717-07	5/17/17	10:10	5/17/17	11:20	5/17/17	
OMS-28-GW34-31	10051717-08	5/17/17	11:00	5/17/17	11:20	5/17/17	
OMS-28-GW65-12	10051717-09	5/17/17	11:55	5/17/17	12:50	5/17/17	
OMS-28-GW65-12a	10051717-10	5/17/17	11:55	5/17/17	12:50	5/17/17	
OMS-28-GW65-19	10051717-11	5/17/17	12:15	5/17/17	12:50	5/17/17	MS/MSD
OMS-28-GW65-29	10051717-12	5/17/17	12:40	5/17/17	12:50	5/18/17	
OMS-28-GW64-16	10051717-13	5/17/17	13:15	5/17/17	14:20	5/17/17	
OMS-28-GW64-33	10051717-14	5/17/17	13:40	5/17/17	14:20	5/17/17	
OMS-28-GW57-12	10051717-15	5/17/17	14:10	5/17/17	14:20	5/17/17	
OMS-28-GW47-19	10051717-16	5/17/17	14:40	5/17/17	15:20	5/17/17	
OMS-28-GW47-32	10051717-17	5/17/17	15:05	5/17/17	15:20	5/18/17	
OMS-28-GW06-11	10051717-18	5/17/17	16:00	5/17/17	16:10	5/17/17	
OMS-28-GW06-32	10051717-19	5/17/17	16:45	5/17/17	16:55	5/18/17	
OMS-28-GW06-32a	10051717-20	5/17/17	16:45	5/17/17	16:55	5/18/17	
OMS-28-GW06-17	10051717-21	5/17/17	16:15	5/18/17	7:40	5/18/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW66-26	10051817-01	5/18/17	9:38	5/18/17	9:50	5/18/17	
OMS-28-GW66-49	10051817-02	5/18/17	11:00	5/18/17	11:10	5/18/17	
OMS-28-GW67-26	10051817-03	5/18/17	12:50	5/18/17	13:45	5/19/17	
OMS-28-GW67-52	10051817-04	5/18/17	14:00	5/18/17	14:20	5/18/17	
OMS-28-GW68-26	10051817-05	5/18/17	14:50	5/18/17	16:30	5/19/17	
OMS-28-GW68-57	10051817-06	5/18/17	16:20	5/18/17	16:30	5/19/17	
OMS-28-GW69-26	10051817-07	5/18/17	17:10	5/18/17	17:35	5/19/17	

COLUMBIA TECHNOLOGIES

Mobile Laboratory Sample Receipt Log

Client: AECOM
Site Name: Brookley
Martix: Water

Sample ID	Lab ID	Collection Date	Collection Time	Received Date	Received Time	Run Date	Notes
OMS-28-GW69-49	10051917-01	5/19/17	7:30	5/19/17	7:55	5/19/17	
OMS-28-GW12-12	10051917-02	5/19/17	8:25	5/19/17	8:30	5/19/17	
OMS-28-GW12-12a	10051917-03	5/19/17	8:25	5/19/17	8:30	5/19/17	
OMS-28-GW12-18	10051917-04	5/19/17	8:45	5/19/17	8:50	5/19/17	MS/MSD
OMS-28-GW12-32	10051917-05	5/19/17	9:10	5/19/17	10:30	5/19/17	
OMS-28-GW07-11	10051917-06	5/19/17	9:45	5/19/17	10:30	5/19/17	
OMS-28-GW07-18	10051917-07	5/19/17	10:00	5/19/17	10:30	5/19/17	
OMS-28-GW07-31	10051917-08	5/19/17	10:20	5/19/17	10:30	5/19/17	
OMS-28-GW07-31a	10051917-09	5/19/17	10:20	5/19/17	10:30	5/19/17	FD
OMS-28-GW72-33	10051917-10	5/19/17	11:10	5/19/17	11:35	5/19/17	
OMS-28-GW71-19	10051917-11	5/19/17	11:45	5/19/17	12:55	5/19/17	
OMS-28-GW71-30	10051917-12	5/19/17	12:40	5/19/17	12:55	5/19/17	

LABORATORY CONTROL SAMPLES

COLUMBIA TECHNOLOGIES

Table 1: VOC Spike Compound Percent Recoveries

Client: AECOM	**Sampler: AECOM**	**Analyst: R. Costa and R. George**
Site: Brookley	**Columbia Technologies PM:** Melanie Penny	**Project No.: 60439687**
Dates: May 2 - 19, 2017	**Client Project Manager: Steve Holt**	**Matrix**: **Soil and Water**

Laboratory Control Spikes (LCS):

Samples: LCS 1 - WATER, LCS 2 - WATER, LCS 3 - WATER — **Date of Analysis:** 5/2/17, 5/3/17, 5/4/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 1	LCS 2	LCS 3	LCS 1	LCS 2	LCS 3
Trichloroethene	55	to	145	97	122	109	Pass	Pass	Pass
Tetrachloroethene	53	to	147	92	112	103	Pass	Pass	Pass

Samples: LCS 4 - WATER, LCS 5 - WATER, LCS 6 - SOIL — **Date of Analysis:** 5/5/17, 5/8/17, 5/8/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 4	LCS 5	LCS 6	LCS 4	LCS 5	LCS 6
Trichloroethene	55	to	145	94	122	96	Pass	Pass	Pass
Tetrachloroethene	53	to	147	90	111	88	Pass	Pass	Pass

Samples: LCS 7 - SOIL, LCS 8 - SOIL, LCS 9 - WATER — **Date of Analysis:** 5/8/17, 5/9/17, 5/9/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 7	LCS 8	LCS 9	LCS 7	LCS 8	LCS 9
Trichloroethene	55	to	145	126	88	85	Pass	Pass	Pass
Tetrachloroethene	53	to	147	110	81	80	Pass	Pass	Pass

Samples: LCS 10 - SOIL, LCS 11 - WATER, LCS 12 - SOIL — **Date of Analysis:** 5/9/17, 5/10/17, 5/10/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 10	LCS 11	LCS 12	LCS 10	LCS 11	LCS 12
Trichloroethene	55	to	145	87	102	106	Pass	Pass	Pass
Tetrachloroethene	53	to	147	78	100	95	Pass	Pass	Pass

Samples: LCS 13 - SOIL, LCS 14 - WATER, LCS 15 - SOIL — **Date of Analysis:** 5/11/17, 5/11/17, 5/11/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 13	LCS 14	LCS 15	LCS 13	LCS 14	LCS 15
Trichloroethene	55	to	145	107	89	99	Pass	Pass	Pass
Tetrachloroethene	53	to	147	101	88	93	Pass	Pass	Pass

Samples: LCS 16 - SOIL, LCS 17 - WATER, LCS 18 - WATER — **Date of Analysis:** 5/12/17, 5/12/17, 5/13/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 16	LCS 17	LCS 18	LCS 16	LCS 17	LCS 18
Trichloroethene	55	to	145	92	112	88	Pass	Pass	Pass
Tetrachloroethene	53	to	147	91	102	88	Pass	Pass	Pass

Samples: LCS 19 - WATER, LCS 20 - WATER, LCS 21 - SOIL — **Date of Analysis:** 5/15/17, 5/16/17, 5/16/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 19	LCS 20	LCS 21	LCS 19	LCS 20	LCS 21
Trichloroethene	55	to	145	94	111	95	Pass	Pass	Pass
Tetrachloroethene	53	to	147	91	103	90	Pass	Pass	Pass

COLUMBIA TECHNOLOGIES

Table 1: VOC Spike Compound Percent Recoveries

Client: AECOM	**Sampler: AECOM**	**Analyst: R. Costa and R. George**
Site: Brookley	**Columbia Technologies PM:** Melanie Penny	**Project No.: 60439687**
Dates: May 2 - 19, 2017	**Client Project Manager: Steve Holt**	**Matrix**: **Soil and Water**

Samples: LCS 22 - WATER — **Date of Analysis:** 5/17/17
LCS 23 - SOIL — 5/17/17
LCS 24 - WATER — 5/18/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 22	LCS 23	LCS 24	LCS 22	LCS 23	LCS 24
Trichloroethene	55	to	145	108	89	120	Pass	Pass	Pass
Tetrachloroethene	53	to	147	103	85	105	Pass	Pass	Pass

Samples: LCS 25 - WATER — **Date of Analysis:** 5/19/17

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS 25			LCS 25		
Trichloroethene	55	to	145	108			Pass		
Tetrachloroethene	53	to	147	97			Pass		

Note: Control Limits are based on annual evaluation of mobile unit.

MATRIX / MATRIX SPIKE RESULTS

COLUMBIA TECHNOLOGIES

Table 2: VOC Spike Compound Percent Recoveries

Client: AECOM	**Sampler: AECOM**	**Analyst: R. Costa and R. George**
Site: Brookley	**Columbia Technologies PM:** Melanie Penny	**Project No.: 60439687**
Dates: May 2 - 19, 2017	**Client Project Manager: Steve Holt**	**Matrix**: **Soil and Water**

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Samples: OMS-28-GW01-19 **Date of Analysis:** 5/2/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	120	125	4	Pass	Pass	Pass
Tetrachloroethene	46	147	20	80	85	6	Pass	Pass	Pass

Samples: OMS-28-GW08-10 **Date of Analysis:** 5/3/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	115	100	14	Pass	Pass	Pass
Tetrachloroethene	46	147	20	105	95	10	Pass	Pass	Pass

Samples: OMS-28-GW03-12 **Date of Analysis:** 5/4/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	85	90	6	Pass	Pass	Pass
Tetrachloroethene	46	147	20	85	85	0	Pass	Pass	Pass

Samples: OMS-28-GW20-19 **Date of Analysis:** 5/5/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	80	85	6	Pass	Pass	Pass
Tetrachloroethene	46	147	20	80	80	0	Pass	Pass	Pass

Samples: OMS-28-SB01-1 **Date of Analysis:** 5/8/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	80	80	0	Pass	Pass	Pass
Tetrachloroethene	46	147	20	75	80	6	Pass	Pass	Pass

Samples: OMS-28-SB14-3 **Date of Analysis:** 5/9/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	75	80	6	Pass	Pass	Pass
Tetrachloroethene	46	147	20	70	70	0	Pass	Pass	Pass

Samples: OMS-28-GW18-30 **Date of Analysis:** 5/9/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	85	90	6	Pass	Pass	Pass
Tetrachloroethene	46	147	20	75	80	6	Pass	Pass	Pass

Samples: OMS-28-GW19-12 **Date of Analysis:** 5/9/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	114	99	14	Pass	Pass	Pass
Tetrachloroethene	46	147	20	104	99	5	Pass	Pass	Pass

Samples: OMS-28-SB16-2.5 **Date of Analysis:** 5/10/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	95	100	5	Pass	Pass	Pass
Tetrachloroethene	46	147	20	95	95	0	Pass	Pass	Pass

COLUMBIA TECHNOLOGIES

Table 2: VOC Spike Compound Percent Recoveries

Client: AECOM	**Sampler: AECOM**	**Analyst: R. Costa and R. George**
Site: Brookley	**Columbia Technologies PM:** Melanie Penny	**Project No.: 60439687**
Dates: May 2 - 19, 2017	**Client Project Manager: Steve Holt**	**Matrix**: **Soil and Water**

Samples: OMS-28-GW41-12 **Date of Analysis:** 5/11/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	108	88	21	Pass	Pass	Pass
Tetrachloroethene	46	147	20	93	88	6	Pass	Pass	Pass

Samples: OMS-28-SB18-5 **Date of Analysis:** 5/11/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	119	109	9	Pass	Pass	Pass
Tetrachloroethene	46	147	20	98	88	11	Pass	Pass	Pass

Samples: OMS-28-GW25-28 **Date of Analysis:** 5/11/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	91	86	6	Pass	Pass	Pass
Tetrachloroethene	46	147	20	90	80	12	Pass	Pass	Pass

Samples: OMS-28-SB27-3 **Date of Analysis:** 5/12/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	86	86	0	Pass	Pass	Pass
Tetrachloroethene	46	147	20	90	85	6	Pass	Pass	Pass

Samples: OMS-28-GW43-20 **Date of Analysis:** 5/12/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	95	90	5	Pass	Pass	Pass
Tetrachloroethene	46	147	20	95	90	5	Pass	Pass	Pass

Samples: OMS-28-GW11-11 **Date of Analysis:** 5/13/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	85	80	6	Pass	Pass	Pass
Tetrachloroethene	46	147	20	85	80	6	Pass	Pass	Pass

Samples: OMS-28-GW49-18 **Date of Analysis:** 5/15/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	90	85	6	Pass	Pass	Pass
Tetrachloroethene	46	147	20	85	85	0	Pass	Pass	Pass

Samples: OMS-28-GW11-30 **Date of Analysis:** 5/15/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	105	95	10	Pass	Pass	Pass
Tetrachloroethene	46	147	20	95	85	11	Pass	Pass	Pass

Samples: OMS-28-SB28-3 **Date of Analysis:** 5/16/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
Trichloroethene	54	139	20	120	120	0	Pass	Pass	Pass
Tetrachloroethene	46	147	20	109	184	51	Pass	> UCL	> RPDL

Samples: OMS-28-GW52-12 **Date of Analysis:** 5/16/17

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD

COLUMBIA TECHNOLOGIES

Table 2: VOC Spike Compound Percent Recoveries

Client: AECOM	**Sampler: AECOM**						**Analyst: R. Costa and R. George**		
Site: Brookley	**Columbia Technologies PM:** Melanie Penny						**Project No.: 60439687**		
Dates: May 2 - 19, 2017	**Client Project Manager: Steve Holt**						**Matrix**: **Soil and Water**		
Trichloroethene	54	139	20	95	110	15	Pass	Pass	Pass
Tetrachloroethene	46	147	20	90	100	11	Pass	Pass	Pass

Samples: OMS-28-GW65-19				**Date of Analysis:** 5/17/17					
Matrix Spike Compounds	**Control Limits**			**Percent Recoveries**			**Control Limit Checks**		
	Lower	**Upper**	**RPD**	**MS**	**MSD**	**RPD**	**MS**	**MSD**	**RPD**
Trichloroethene	54	139	20	115	115	0	Pass	Pass	Pass
Tetrachloroethene	46	147	20	127	107	17	Pass	Pass	Pass

Samples: OMS-28-GW34-31				**Date of Analysis:** 5/17/17					
Matrix Spike Compounds	**Control Limits**			**Percent Recoveries**			**Control Limit Checks**		
	Lower	**Upper**	**RPD**	**MS**	**MSD**	**RPD**	**MS**	**MSD**	**RPD**
Trichloroethene	54	139	20	90	90	0	Pass	Pass	Pass
Tetrachloroethene	46	147	20	90	85	6	Pass	Pass	Pass

Samples: OMS-28-GW06-17				**Date of Analysis:** 5/18/17					
Matrix Spike Compounds	**Control Limits**			**Percent Recoveries**			**Control Limit Checks**		
	Lower	**Upper**	**RPD**	**MS**	**MSD**	**RPD**	**MS**	**MSD**	**RPD**
Trichloroethene	54	139	20	146	116	23	> UCL	Pass	Pass
Tetrachloroethene	46	147	20	90	85	6	Pass	Pass	Pass

Samples: OMS-28-GW12-18				**Date of Analysis:** 5/19/17					
Matrix Spike Compounds	**Control Limits**			**Percent Recoveries**			**Control Limit Checks**		
	Lower	**Upper**	**RPD**	**MS**	**MSD**	**RPD**	**MS**	**MSD**	**RPD**
Trichloroethene	54	139	20	97	112	14	Pass	Pass	Pass
Tetrachloroethene	46	147	20	90	90	0	Pass	Pass	Pass

Note: Control Limits are based on annual evaluation of mobile unit.

METHOD BLANKS

Columbia Technologies LLC
1795 Cogswell Street
Suite 01
Rockledge, FL 32955
Phone: 888-344-2704

Method Blank Report
AECOM

		Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
		Method Blank	Method Blank	Method Blank	Method Blank	Method Blank	Method Blank	Method Blank
Analysis Date		05/02/17	05/03/17	05/04/17	05/05/17	05/08/17	05/08/17	05/08/17
Analysis Time		15:09	9:34	11:55	9:33	9:38	10:38	19:49
Matrix		Water	Water	Water	Water	Water	Soil	Soil
Dilution		1	1	1	1	1	1	1
Units		ug/L	ug/L	ug/L	ug/L	ug/L	mg/kg	mg/kg
Trichloroethene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.002 U	0.002 U
Tetrachloroethene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.002 U	0.002 U
*Surrogate Compounds:								
S1 = Dibromofluoromethane	*84-121%*	106%	103%	103%	104%	110%	104%	104%
S2 = 1,2- Dichloroethane-D4	*66-139%*	102%	103%	102%	102%	110%	98%	104%
S3 = Toluene-D8	*88-116%*	102%	100%	102%	101%	96%	99%	98%
S4 = 4-Bromofluorobenzene	*77-122%*	101%	103%	102%	105%	100%	99%	97%

Columbia Technologies LLC
1795 Cogswell Street
Suite 01
Rockledge, FL 32955
Phone: 888-344-2704

Method Blank Report
AECOM

		Sample ID		Sample ID		Sample ID		Sample ID		Sample ID		Sample ID		Sample ID	
		Method Blank		Method Blank		Method Blank		Method Blank		Method Blank		Method Blank		Method Blank	
Analysis Date		05/09/17		05/09/17		05/09/17		05/10/17		05/10/17		05/10/17		05/11/17	
Analysis Time		2:53		9:06		9:48		8:57		11:05		20:05		9:22	
Matrix		Soil		Water		Soil		Water		Soil		Soil		Water	
Dilution		1		1		1		1		1		1		1	
Units		mg/kg		ug/L		mg/kg		ug/L		mg/kg		mg/kg		ug/L	
Trichloroethene		0.002	U	1.0	U	0.002	U	1.0	U	0.002	U	0.002	U	1.0	U
Tetrachloroethene		0.002	U	1.0	U	0.002	U	1.0	U	0.002	U	0.002	U	1.0	U
*Surrogate Compounds:															
S1 = Dibromofluoromethane	*84-121%*	96%		102%		102%		105%		103%		97%		101%	
S2 = 1,2- Dichloroethane-D4	*66-139%*	94%		104%		101%		108%		100%		96%		96%	
S3 = Toluene-D8	*88-116%*	103%		102%		103%		99%		102%		102%		101%	
S4 = 4-Bromofluorobenzene	*77-122%*	103%		95%		95%		96%		101%		100%		96%	

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Rockledge, FL 32955
Phone: 888-344-2704

Method Blank Report
AECOM

		Sample ID		Sample ID		Sample ID		Sample ID	
		Method Blank		Method Blank		Method Blank		Method Blank	
Analysis Date		05/11/17		05/12/17		05/12/17		05/12/17	
Analysis Time		12:30		8:09		8:47		18:59	
Matrix		Soil		Soil		Water		Water	
Dilution		1		1		1		1	
Units		mg/kg		mg/kg		ug/L		ug/L	
Trichloroethene		0.002	U	0.002	U	1.0	U	1.0	U
Tetrachloroethene		0.002	U	0.002	U	1.0	U	1.0	U
*Surrogate Compounds:									
S1 = Dibromofluoromethane	*84-121%*	103%		101%		107%		84%	
S2 = 1,2- Dichloroethane-D4	*66-139%*	100%		95%		101%		84%	
S3 = Toluene-D8	*88-116%*	102%		101%		102%		101%	
S4 = 4-Bromofluorobenzene	*77-122%*	100%		96%		97%		101%	

Appendix B5
GCAL Report 217051316 dated May 28, 2017

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 05/18/2017

GCAL Report 217051316

Project ARNG OMS 28/ 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____

Authorized Signature
GCAL Report 217051316

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 217051316

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

No anomalies were found for the analyzed sample(s).

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21705131601	OMS-28-GW38-30-S	Water	05/11/2017 09:40	05/13/2017 10:30
21705131602	OMS-28-GW38-30-c	Water	05/11/2017 00:01	05/13/2017 10:30
21705131603	OMS-28-GW41-20-S	Water	05/11/2017 15:30	05/13/2017 10:30
21705131604	OMS-28-GW57-16-S	Water	05/12/2017 11:45	05/13/2017 10:30
21705131605	OMS-28-GW57-16-S-a	Water	05/12/2017 11:45	05/13/2017 10:30

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21705131601	OMS-28-GW38-30-S	W	EPA 8260B DOD Water
21705131602	OMS-28-GW38-30-c	W	EPA 8260B DOD Water
21705131603	OMS-28-GW41-20-S	W	EPA 8260B DOD Water
21705131604	OMS-28-GW57-16-S	W	EPA 8260B DOD Water
21705131605	OMS-28-GW57-16-S-a	W	EPA 8260B DOD Water

Manual Integrations

No Manual Integrations Performed By GCAL.

Summary of Compounds Detected

No analytes were detected for analyses performed by GCAL.

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Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	OMS-28-GW38-30-S
Collect Date:	05/11/17 Time: 0940	GCAL Sample ID:	21705131601
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4226
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1046	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	OMS-28-GW38-30-S
Collect Date:	05/11/17 Time: 0940	GCAL Sample ID:	21705131601
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4226
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1046	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4226.d
Lab Smp Id: 21705131601
Inj Date : 15-MAY-2017 10:46
Operator : LBH Inst ID: msv13.i
Smp Info : 21705131601*
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	105643	48.7238	48.7	9534
$ 50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	66121	51.0608	51.1	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	456540	50.0000		
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	429116	49.0630	49.1	
* 84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	179186	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	125911	43.5044	43.5	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	147069	50.0000		

Data File: /var/chem/msv13.i/2170515.s.b/d4226.d

Page 1

Date : 15-MAY-2017 10:46

Client ID:

Instrument: msv13.i

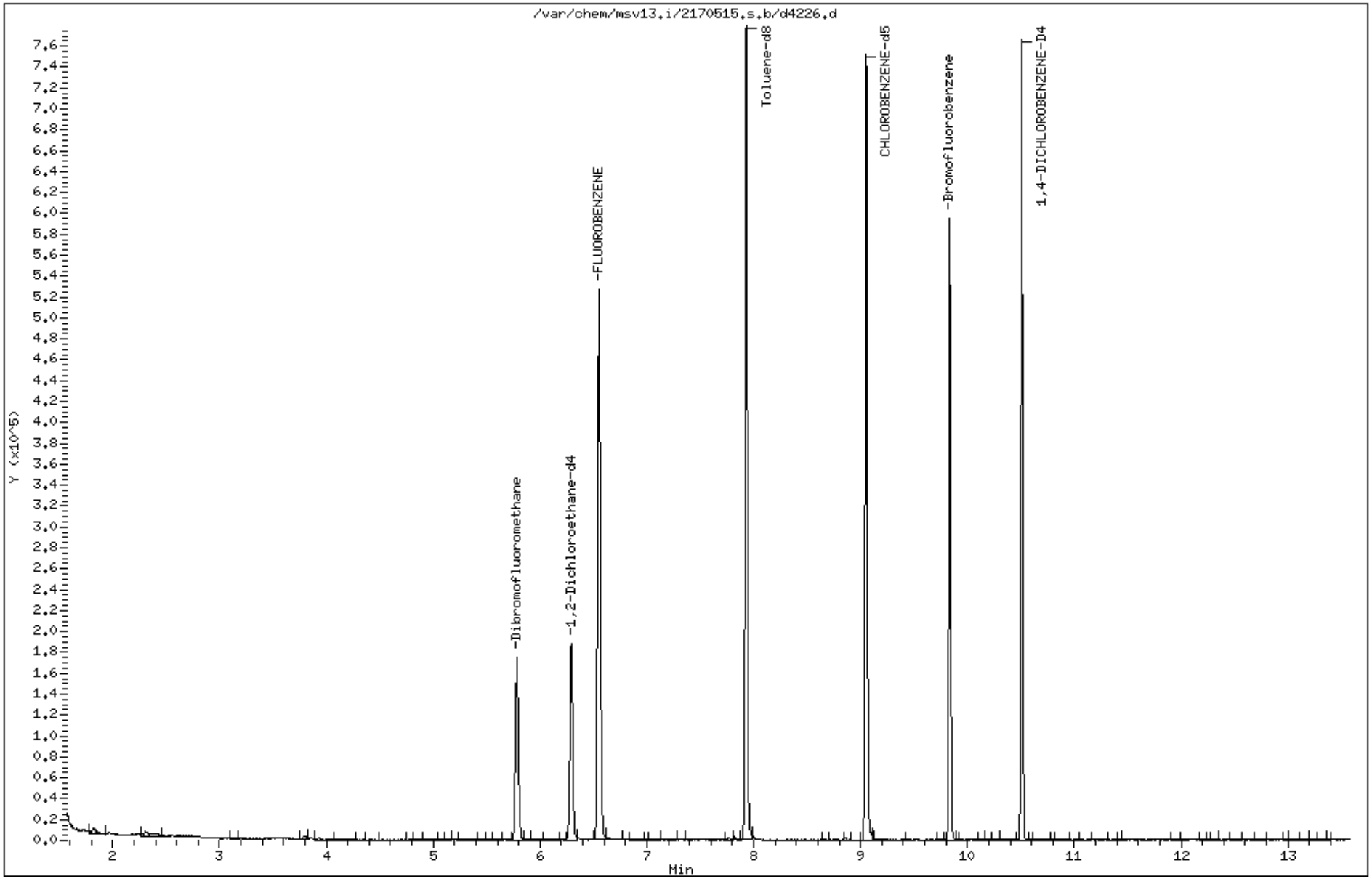
Sample Info: 21705131601*

Purge Volume: 5.0

Operator: LBH

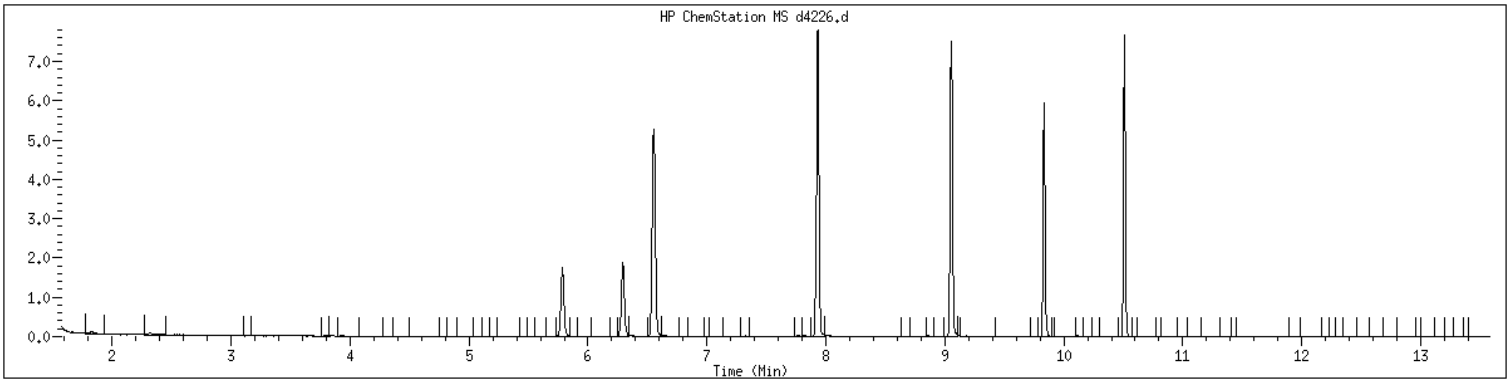
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705131601 SampleType : SAMPLE
Injection Date: 05/15/2017 10:46 Instrument : msv13.i
Operator : LBH
Sample Info : 21705131601*
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	OMS-28-GW38-30-c
Collect Date:	05/11/17 Time: 0001	GCAL Sample ID:	21705131602
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4227
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1108	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	OMS-28-GW38-30-c
Collect Date:	05/11/17 Time: 0001	GCAL Sample ID:	21705131602
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4227
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1108	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4227.d
Lab Smp Id: 21705131602
Inj Date : 15-MAY-2017 11:08
Operator : LBH Inst ID: msv13.i
Smp Info : 21705131602*
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.787	5.784	(0.883)	106154	48.2541	48.3	9532
$ 50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	67076	51.0520	51.1	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	463214	50.0000		
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	439354	50.4642	50.5	
* 84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	178367	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	126124	43.7781	43.8	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	145603	50.0000		

Data File: /var/chem/msv13.i/2170515.s.b/d4227.d

Page 1

Date : 15-MAY-2017 11:08

Client ID:

Instrument: msv13.i

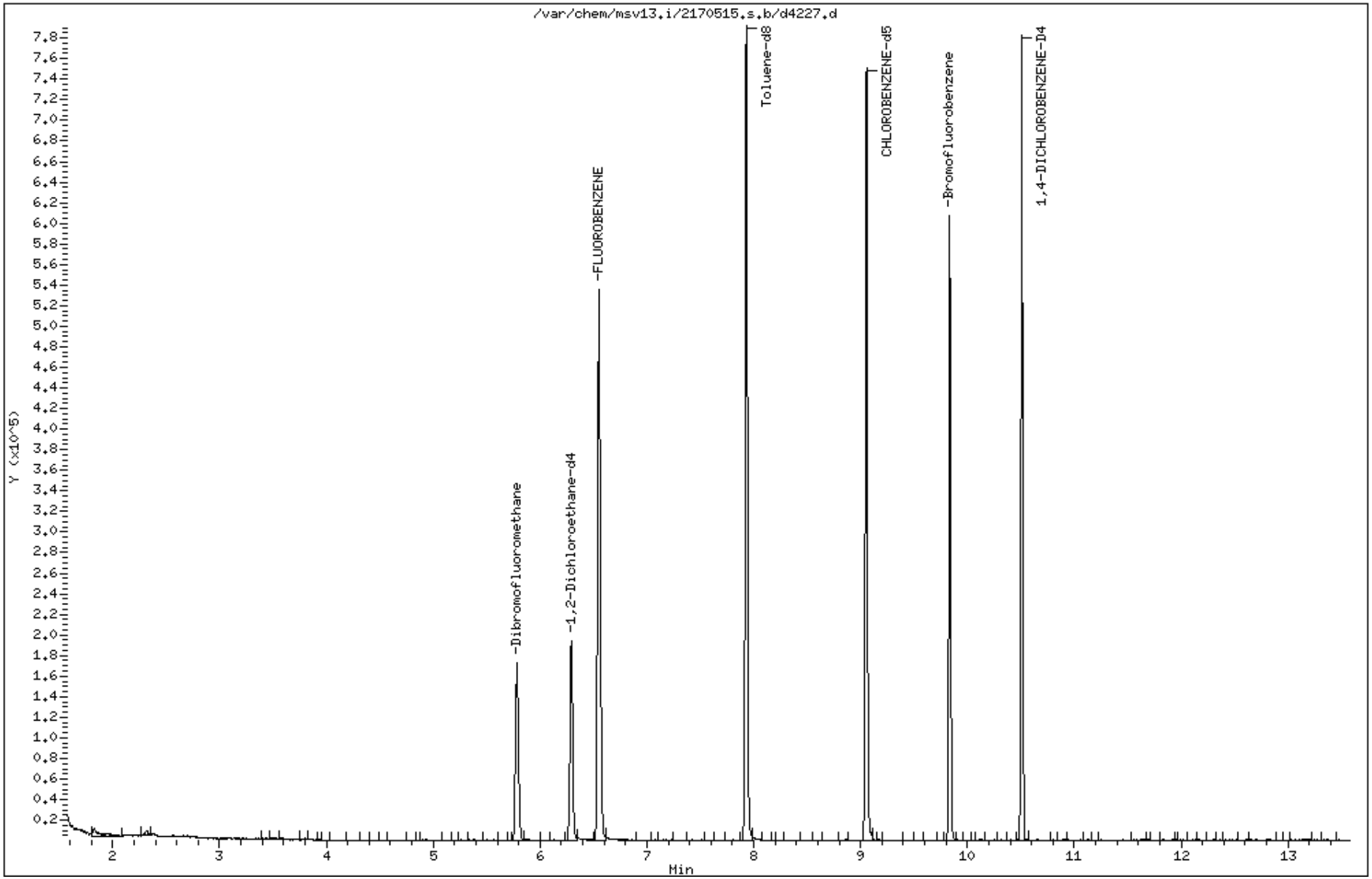
Sample Info: 21705131602*

Purge Volume: 5.0

Operator: LBH

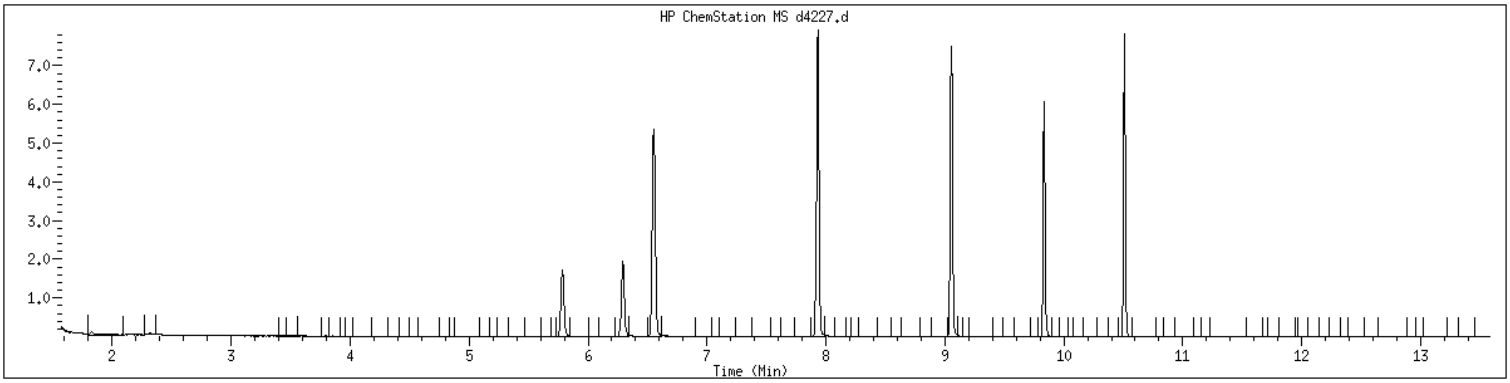
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705131602 SampleType : SAMPLE
Injection Date: 05/15/2017 11:08 Instrument : msv13.i
Operator : LBH
Sample Info : 21705131602*
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	OMS-28-GW41-20-S
Collect Date:	05/11/17 Time: 1530	GCAL Sample ID:	21705131603
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4228
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1131	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316			Client Sample ID:	OMS-28-GW41-20-S
Collect Date:	05/11/17	Time:	1530	GCAL Sample ID:	21705131603
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170515/d4228
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	LBH	Analytical Batch:	610372
Analysis Date:	05/15/17	Time:	1131	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4228.d
Lab Smp Id: 21705131603
Inj Date : 15-MAY-2017 11:31
Operator : LBH Inst ID: msv13.i
Smp Info : 21705131603*
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.787	5.784	(0.883)	105494	48.3052	48.3	9569
$ 50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	65846	50.4828	50.5	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	459847	50.0000		
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	430456	49.3211	49.3	
* 84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	178805	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	126191	43.6941	43.7	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	146727	50.0000		

Data File: /var/chem/msv13.i/2170515.s.b/d4228.d

Date : 15-MAY-2017 11:31

Client ID:

Instrument: msv13.i

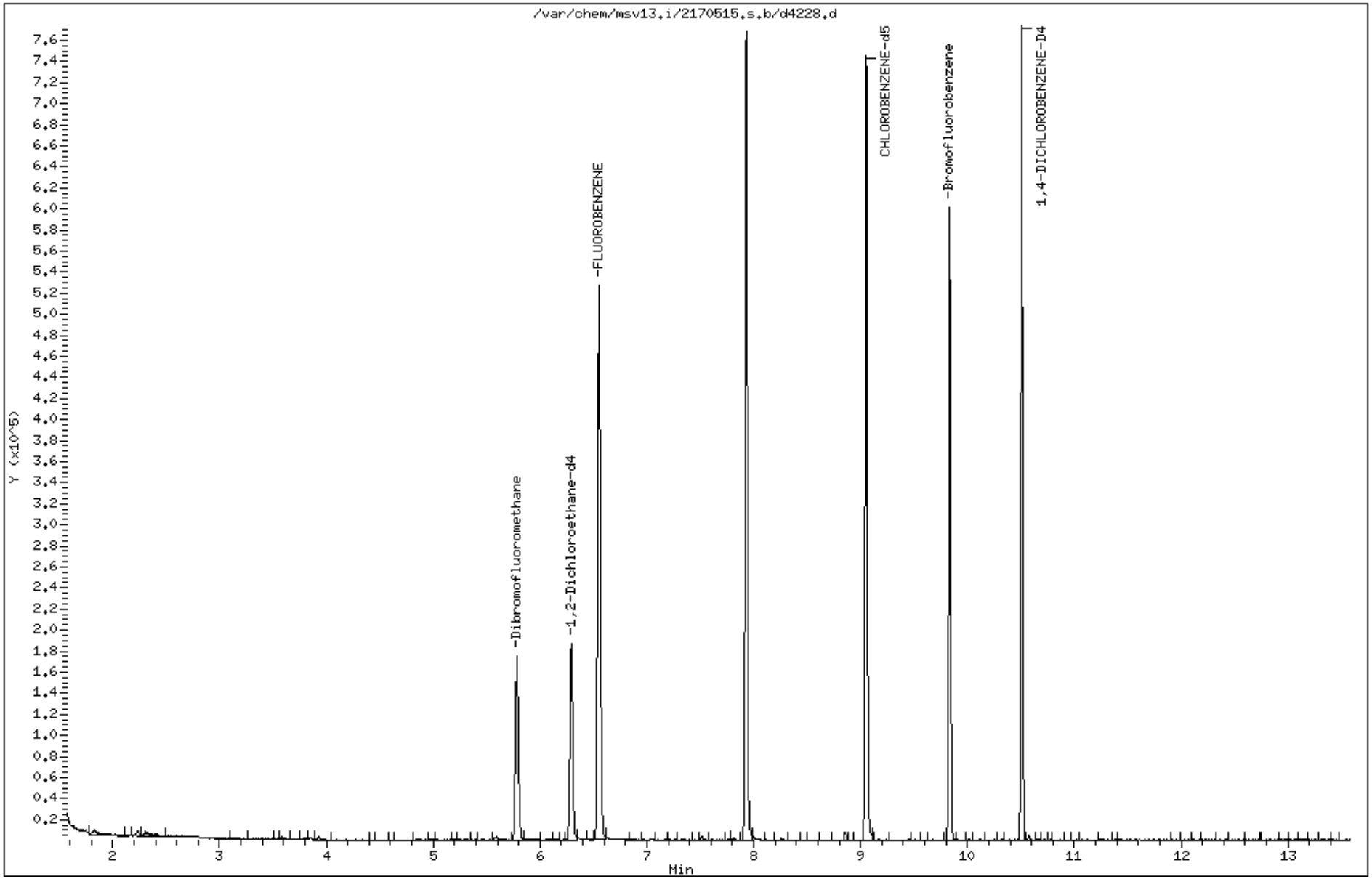
Sample Info: 21705131603*

Purge Volume: 5.0

Operator: LBH

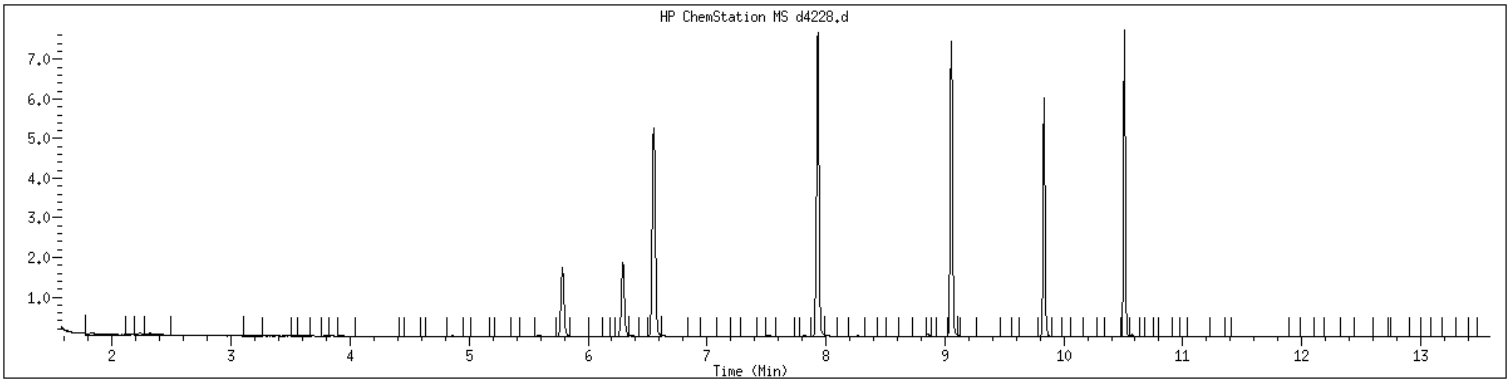
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705131603 SampleType : SAMPLE
Injection Date: 05/15/2017 11:31 Instrument : msv13.i
Operator : LBH
Sample Info : 21705131603*
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	OMS-28-GW57-16-S
Collect Date:	05/12/17 Time: 1145	GCAL Sample ID:	21705131604
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4229
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1153	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	OMS-28-GW57-16-S
Collect Date:	05/12/17 Time: 1145	GCAL Sample ID:	21705131604
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4229
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1153	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4229.d
Lab Smp Id: 21705131604
Inj Date : 15-MAY-2017 11:53
Operator : LBH Inst ID: msv13.i
Smp Info : 21705131604*
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	102721	47.7612	47.8	9499
$ 50 1,2-Dichloroethane-d4	67	6.294	6.293	(0.961)	65299	50.8358	50.8	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	452860	50.0000		
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	422396	49.9586	50.0	
* 84 CHLOROBENZENE-d5	82	9.053	9.052	(1.000)	173218	50.0000		
$ 95 Bromofluorobenzene	174	9.832	9.832	(1.086)	123834	44.2610	44.3	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	143234	50.0000		

Data File: /var/chem/msv13.i/2170515.s.b/d4229.d

Date : 15-MAY-2017 11:53

Client ID:

Instrument: msv13.i

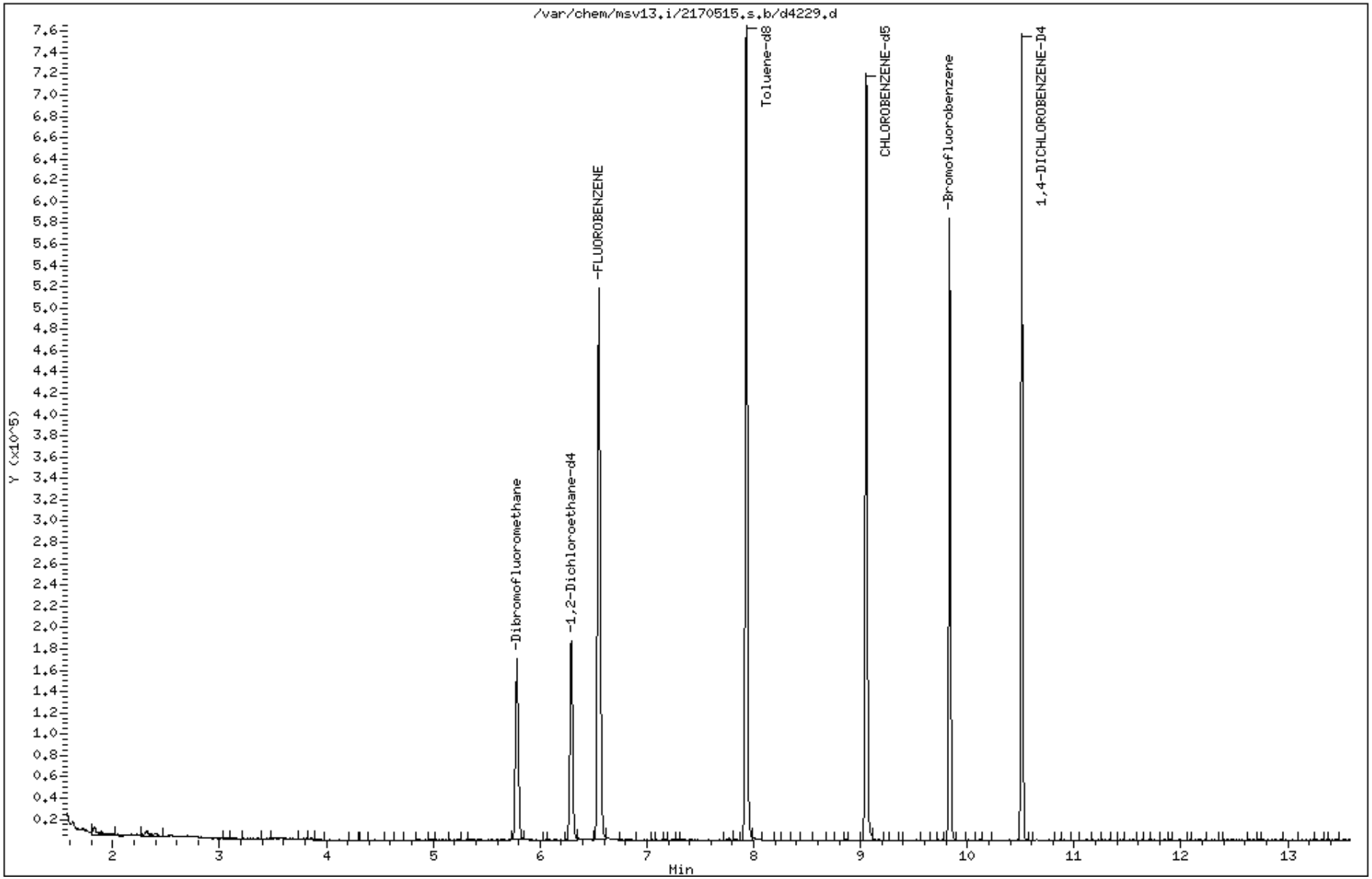
Sample Info: 21705131604*

Purge Volume: 5.0

Operator: LBH

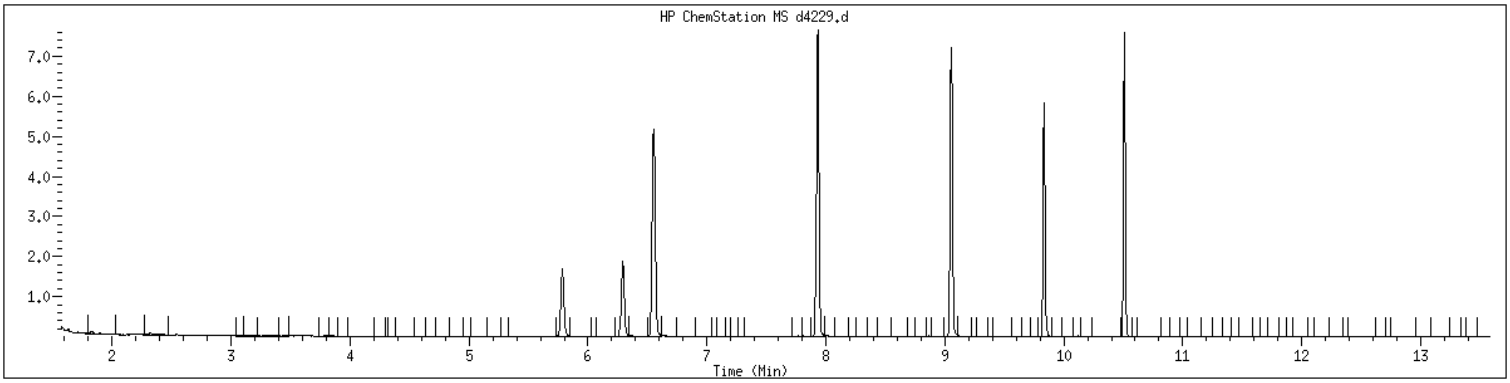
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705131604 SampleType : SAMPLE
Injection Date: 05/15/2017 11:53 Instrument : msv13.i
Operator : LBH
Sample Info : 21705131604*
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	OMS-28-GW57-16-S-a
Collect Date:	05/12/17 Time: 1145	GCAL Sample ID:	21705131605
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4230
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1215	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316			Client Sample ID:	OMS-28-GW57-16-S-a
Collect Date:	05/12/17	Time:	1145	GCAL Sample ID:	21705131605
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170515/d4230
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	LBH	Analytical Batch:	610372
Analysis Date:	05/15/17	Time:	1215	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4230.d
Lab Smp Id: 21705131605
Inj Date : 15-MAY-2017 12:15
Operator : LBH Inst ID: msv13.i
Smp Info : 21705131605*
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	103676	48.5008	48.5	9596
$ 50 1,2-Dichloroethane-d4	67	6.294	6.293	(0.961)	64212	50.2961	50.3	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	450100	50.0000		
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	419938	49.6538	49.7	
* 84 CHLOROBENZENE-d5	82	9.053	9.052	(1.000)	173267	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	123084	43.9804	44.0	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	142062	50.0000		

Data File: /var/chem/msv13.i/2170515.s.b/d4230.d

Date : 15-MAY-2017 12:15

Client ID:

Instrument: msv13.i

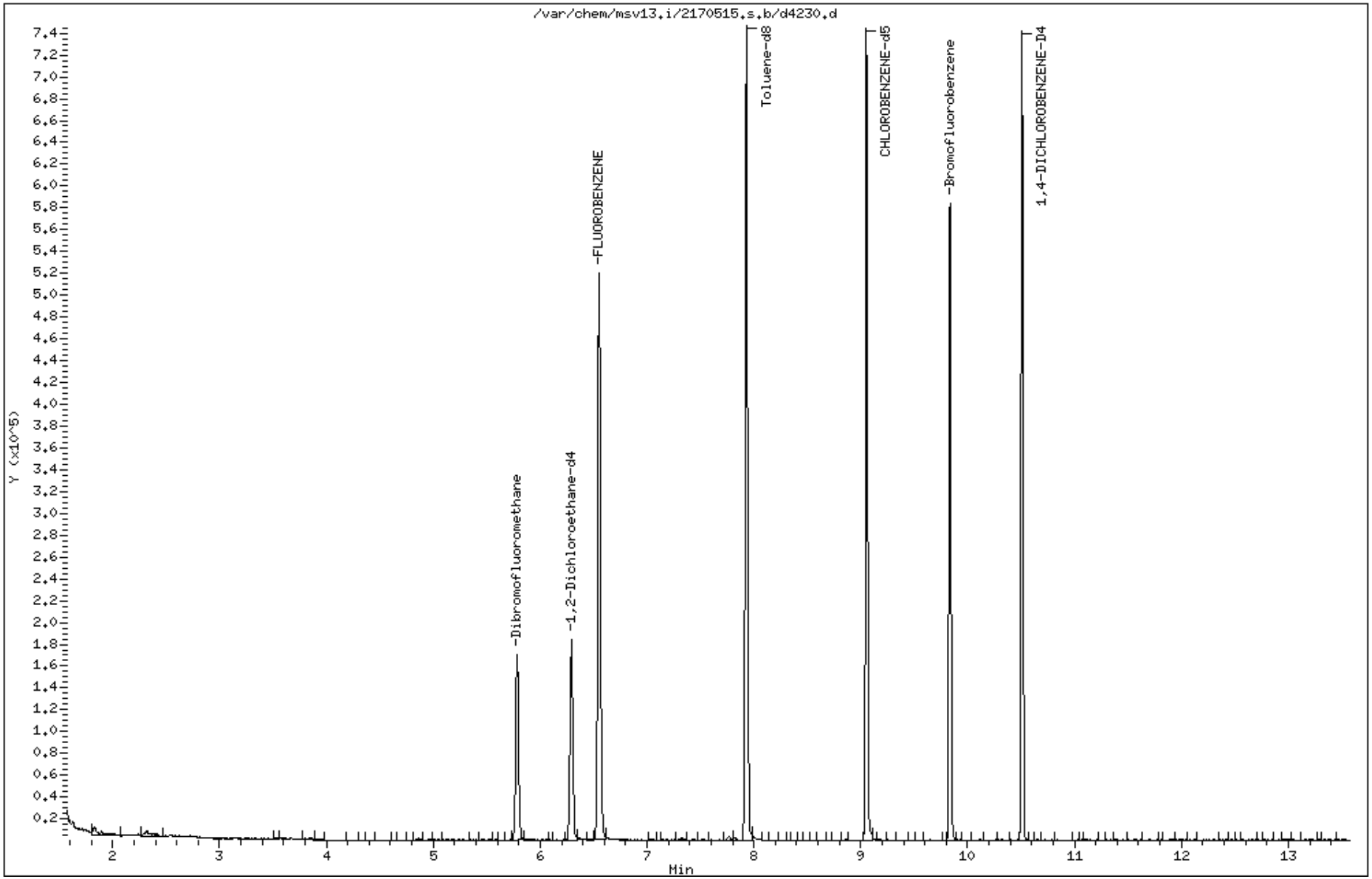
Sample Info: 21705131605*

Purge Volume: 5.0

Operator: LBH

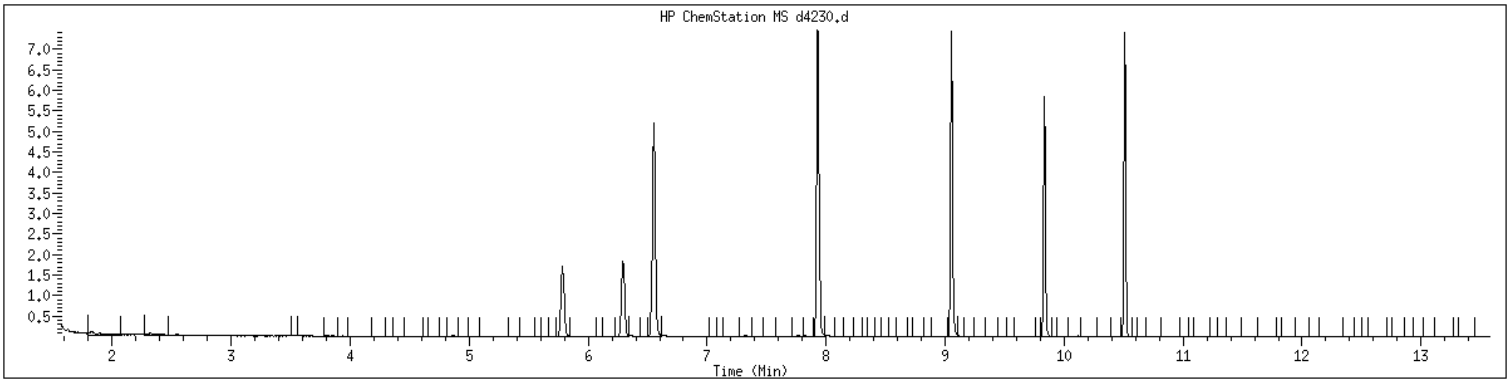
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705131605 SampleType : SAMPLE
Injection Date: 05/15/2017 12:15 Instrument : msv13.i
Operator : LBH
Sample Info : 21705131605*
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	MB1684504
Collect Date:	NA Time: NA	GCAL Sample ID:	1684504
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4225
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1024	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316			Client Sample ID:	MB1684504
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1684504
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170515/d4225
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	LBH	Analytical Batch:	610372
Analysis Date:	05/15/17	Time:	1024	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4225.d
Lab Smp Id: 1684504 Client Smp ID: MB
Inj Date : 15-MAY-2017 10:24
Operator : LBH Inst ID: msv13.i
Smp Info : 1684504*MB
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	107788	48.6289	48.6	9512
$ 50 1,2-Dichloroethane-d4	67	6.290	6.293	(0.960)	68090	51.4346	51.4	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	466719	50.0000		
$ 68 Toluene-d8	98	7.931	7.928	(0.876)	439540	49.7971	49.8	
* 84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	180833	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	126688	43.3742	43.4	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	147906	50.0000		

Data File: /var/chem/msv13.i/2170515.s.b/d4225.d

Date : 15-MAY-2017 10:24

Client ID: MB

Instrument: msv13.i

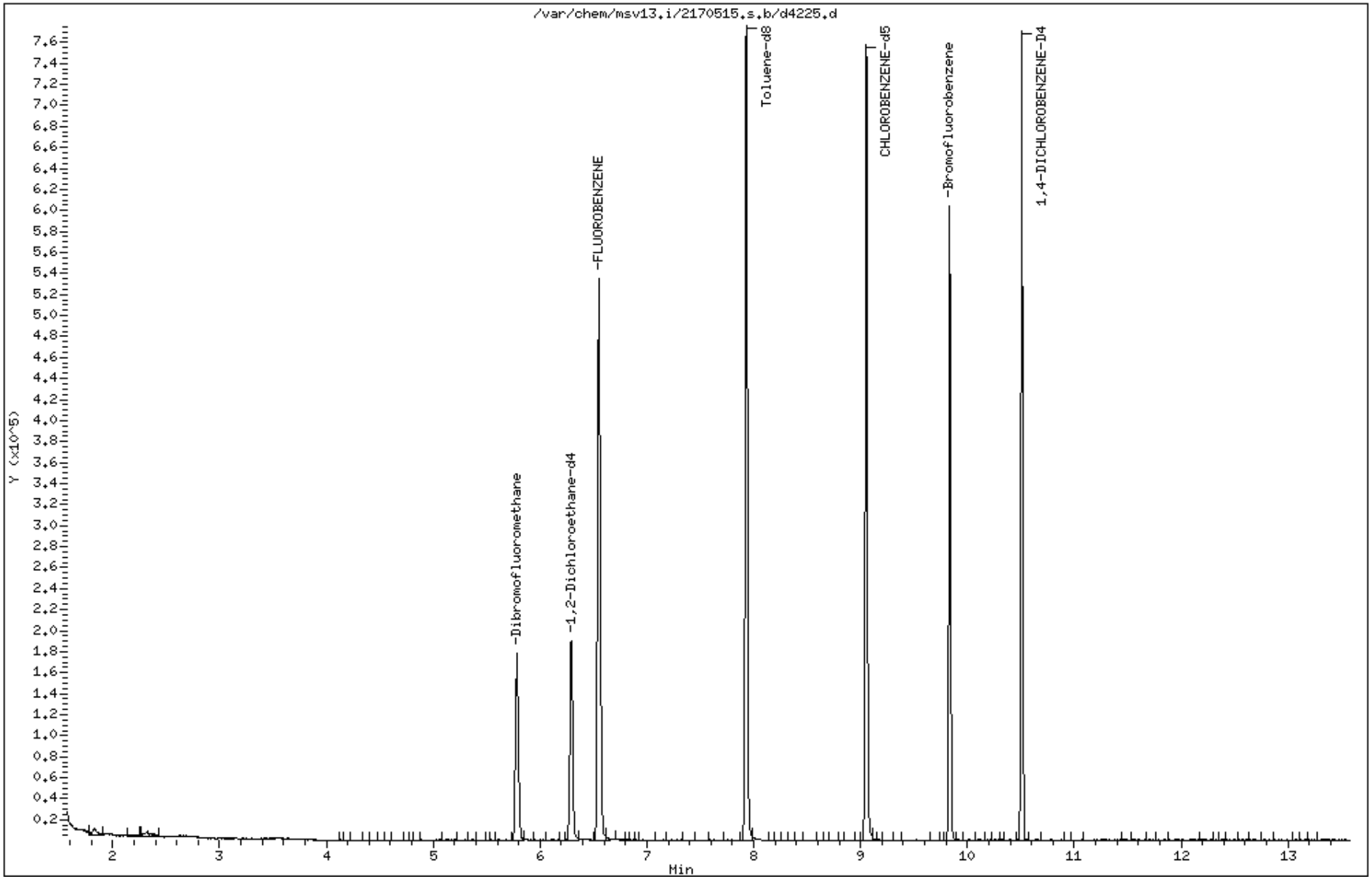
Sample Info: 1684504*MB

Purge Volume: 5.0

Operator: LBH

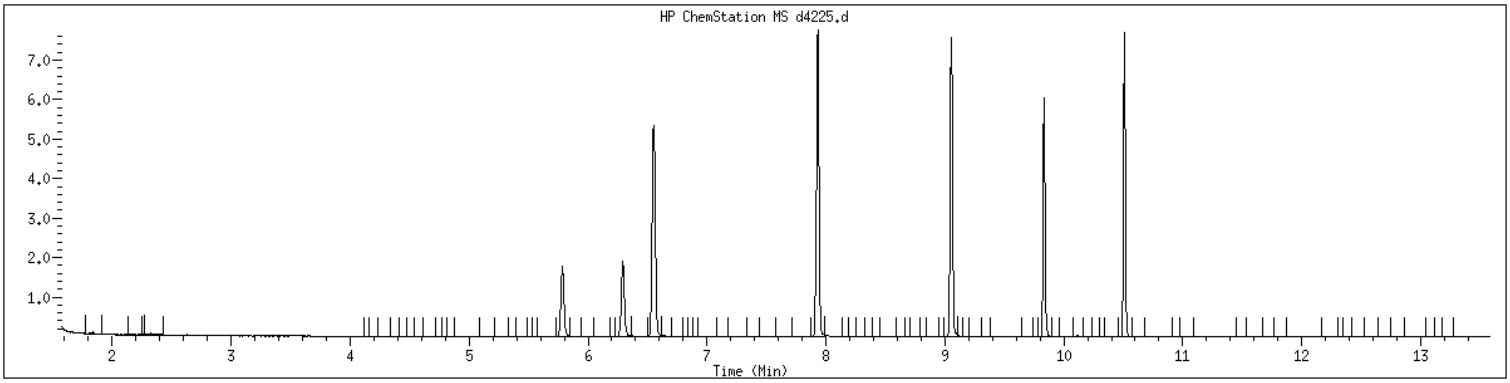
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684504 SampleType : BLANK
Injection Date: 05/15/2017 10:24 Instrument : msv13.i
Operator : LBH
Sample Info : 1684504*MB
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	LCS1684505
Collect Date:	NA Time: NA	GCAL Sample ID:	1684505
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4221L
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 0855	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	50.5		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	52.6		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	48.6		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	55.0		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	50.8		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	51.9		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	53.1		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	47.4		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	48.4		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	51.2		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	49.8		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	54.6		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	51.9		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	50.9		0.200	0.500	1.00
78-93-3	2-Butanone	47.9		0.200	0.500	5.00
591-78-6	2-Hexanone	46.3		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	45.9		0.200	0.500	5.00
67-64-1	Acetone	46.5		0.500	1.00	5.00
71-43-2	Benzene	53.0		0.200	0.500	1.00
74-97-5	Bromochloromethane	48.9		0.200	0.500	1.00
75-27-4	Bromodichloromethane	52.7		0.200	0.500	1.00
75-25-2	Bromoform	46.3		0.250	0.500	1.00
74-83-9	Bromomethane	44.1		0.500	1.00	1.00
75-15-0	Carbon disulfide	57.0		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	51.5		0.250	0.500	1.00
108-90-7	Chlorobenzene	49.8		0.200	0.500	1.00
75-00-3	Chloroethane	55.8		0.250	0.500	1.00
67-66-3	Chloroform	52.1		0.200	0.500	1.00
74-87-3	Chloromethane	50.4		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	55.1		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	53.9		0.200	0.500	1.00
110-82-7	Cyclohexane	58.6		0.500	1.00	2.00
124-48-1	Dibromochloromethane	50.1		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	51.2		0.200	0.500	1.00
100-41-4	Ethylbenzene	50.7		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	50.8		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316			Client Sample ID:	LCS1684505
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1684505
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170515/d4221L
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	LBH	Analytical Batch:	610372
Analysis Date:	05/15/17	Time:	0855	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	45.9		1.00	2.00	5.00
108-87-2	Methylcyclohexane	55.5		0.200	0.500	1.00
75-09-2	Methylene chloride	51.6		0.200	0.500	5.00
100-42-5	Styrene	50.9		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	46.0		0.200	0.500	1.00
127-18-4	Tetrachloroethene	48.8		0.200	0.500	1.00
108-88-3	Toluene	49.8		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	55.5		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	51.9		0.200	0.500	1.00
79-01-6	Trichloroethene	48.7		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	51.0		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	53.7		0.200	0.500	1.00
1330-20-7	Xylene (total)	151		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4221L.d
Lab Smp Id: 1684505 Client Smp ID: LCS
Inj Date : 15-MAY-2017 08:55
Operator : LBH Inst ID: msv13.i
Smp Info : 1684505*LCS
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	120164	51.2101	51.2	
2 Chloromethane ++	50	1.866	1.866	(0.285)	108444	50.3806	50.4	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	137663	56.6868	56.7	
6 Bromomethane	94	2.279	2.279	(0.348)	76381	44.1335	44.1	
7 Chloroethane	64	2.410	2.410	(0.368)	90970	55.7712	55.8	(M1)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	167500	50.9549	51.0	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	104314	50.7678	50.8	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	334077	56.9819	57.0	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.175	(0.484)	103512	53.6994	53.7	
13 Methyl Iodide	142	3.291	3.291	(0.502)	48266	32.0463	32.0	
14 Acrolein	56	3.549	3.549	(0.542)	51589	259.636	260	
16 Methylene Chloride	49	3.849	3.849	(0.587)	152876	51.6387	51.6	
17 Acetone	43	3.924	3.924	(0.599)	79901	46.4850	46.5	
18 trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	158972	55.4832	55.5	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	99297	45.8968	45.9	9188
	20 Hexane	57	4.134	4.134	(0.631)	156596	59.2679	59.3	9666
	21 MTBE	73	4.187	4.187	(0.639)	334977	46.0087	46.0	9658
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	213361	55.0144	55.0	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	257569	282.544	283	
	28 Vinyl Acetate	43	5.038	5.038	(0.769)	79691	53.2926	53.3	
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	162962	55.0791	55.1	
M	75 Total 1,2-Dichloroethene	61				321934	110.562	111	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	156451	47.8225	47.8	
	32 Cyclohexane	56	5.514	5.514	(0.842)	204564	58.5924	58.6	9720
	34 Bromochloromethane	128	5.521	5.521	(0.843)	57949	48.8975	48.9	
	35 Chloroform +	83	5.604	5.604	(0.855)	200138	52.0929	52.1	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	140204	51.4806	51.5	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	114024	48.9285	48.9	9582
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	169077	50.4960	50.5	
	44 2-Butanone	43	5.915	5.915	(0.903)	85614	47.8668	47.9	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	160938	55.1177	55.1	
	46 Benzene	78	6.159	6.159	(0.940)	498412	52.9668	53.0	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	71597	51.4408	51.4	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	160775	49.7512	49.8	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	490698	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	199535	55.5337	55.5	9691
	56 Trichloroethene	130	6.706	6.706	(1.023)	123658	48.7422	48.7	
	57 Dibromomethane	93	7.096	7.096	(1.083)	73754	50.6875	50.7	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	126085	54.6247	54.6	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	156183	52.7034	52.7	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	177536	54.5025	54.5	9799
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	61813	44.8454	44.8	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	196188	53.9450	53.9	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	463496	47.2687	47.3	
	69 Toluene +	91	7.969	7.969	(0.880)	527161	49.7632	49.8	
	71 Tetrachloroethene	164	8.261	8.261	(0.913)	100805	48.8278	48.8	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	142133	45.9489	45.9	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	165077	51.9291	51.9	
M	82 1-3 Dichloropropene total	100				361265	105.874	106	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	113879	48.5851	48.6	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	121040	50.0568	50.1	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	202025	50.9113	50.9	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	112870	48.3911	48.4	
	83 2-Hexanone	43	8.854	8.854	(0.978)	113828	46.2752	46.3	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	155857	51.9693	52.0	9516
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	200889	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	342313	49.7744	49.8	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	187390	50.6841	50.7	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	113984	49.3571	49.4	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	462586	101.303	101	
	90 o-Xylene	106	9.454	9.454	(1.044)	223631	49.2639	49.3	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
M 121 TOTAL XYLENE	106				686217	150.567	151	
91 Styrene	104	9.487	9.487	(1.048)	370112	50.9132	50.9	
92 Bromoform ++	173	9.514	9.514	(1.051)	88052	46.2694	46.3	
93 Isopropylbenzene	105	9.649	9.649	(1.066)	575407	50.8471	50.8	
$ 95 Bromofluorobenzene	174	9.832	9.832	(1.086)	148217	45.6789	45.7	
96 Bromobenzene	77	9.903	9.903	(0.942)	255543	53.5103	53.5	
97 n-Propylbenzene	91	9.903	9.903	(0.942)	682676	55.1783	55.2	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	168203	52.5863	52.6	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	458867	53.2885	53.3	
102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	475452	54.2528	54.3	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	189260	50.5179	50.5	
101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	39556	51.0693	51.1	
104 4-Chlorotoluene	91	10.110	10.110	(0.962)	406652	53.0161	53.0	
105 tert-butylbenzene	91	10.215	10.215	(0.972)	257397	52.6029	52.6	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	468116	53.2880	53.3	
108 sec-Butylbenzene	105	10.319	10.319	(0.982)	587436	54.3164	54.3	
110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	493838	54.1488	54.1	
113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	273421	51.9096	51.9	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	185404	50.0000		
115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	269782	50.8816	50.9	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	446105	58.0300	58.0	
118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	264498	51.1512	51.2	
119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	35214	47.4228	47.4	
120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	76457	52.2061	52.2	
122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	166573	53.0771	53.1	
124 Naphthalene	128	12.055	12.055	(1.147)	446932	48.2212	48.2	
125 1,2,3-Trichlorobenzene	180	12.216	12.216	(1.162)	162075	51.9386	51.9	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.

Data File: /var/chem/msv13.i/2170515.s.b/d4221L.d

Date : 15-MAY-2017 08:55

Client ID: LCS

Instrument: msv13.i

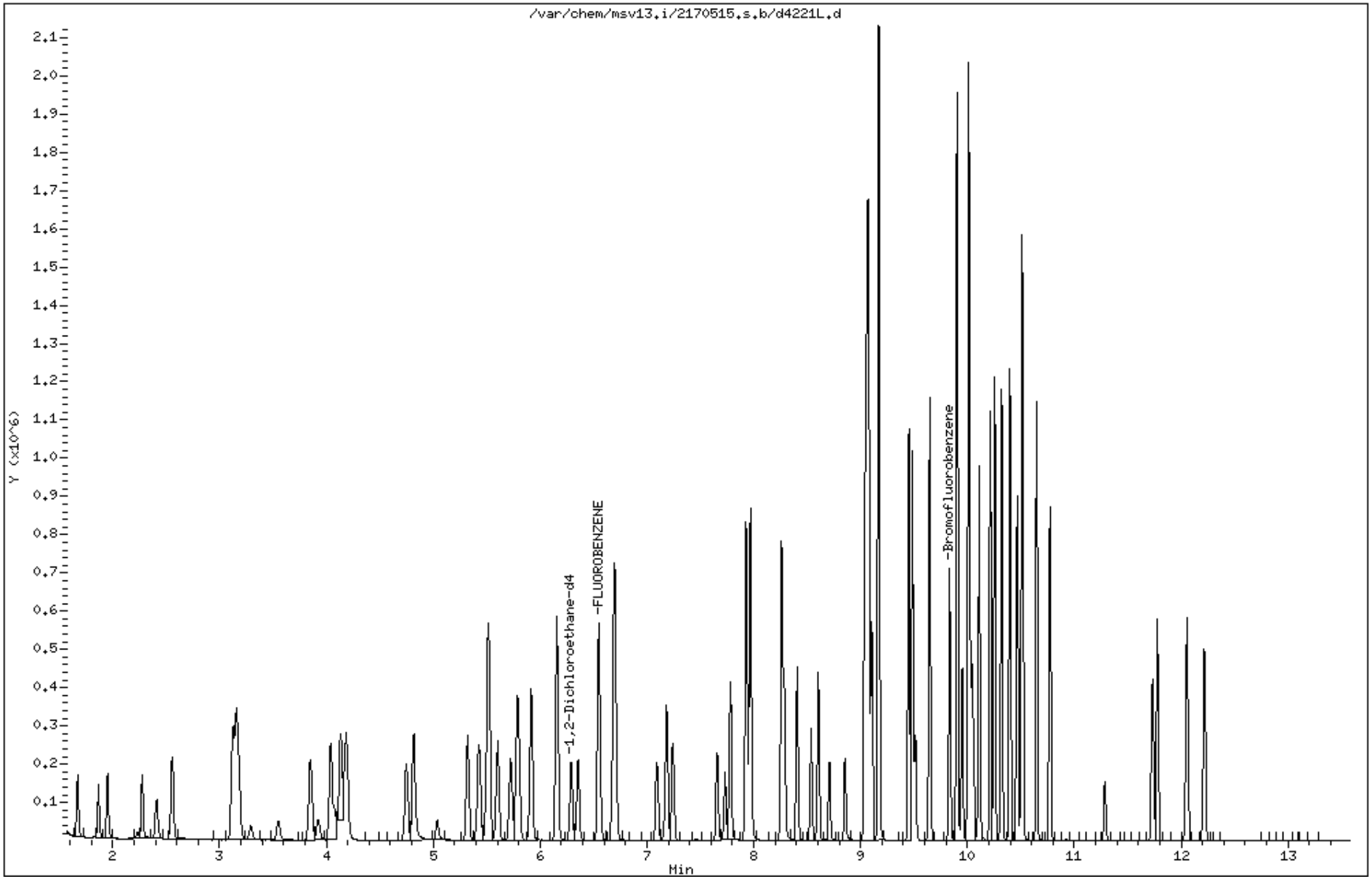
Sample Info: 1684505×LCS

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

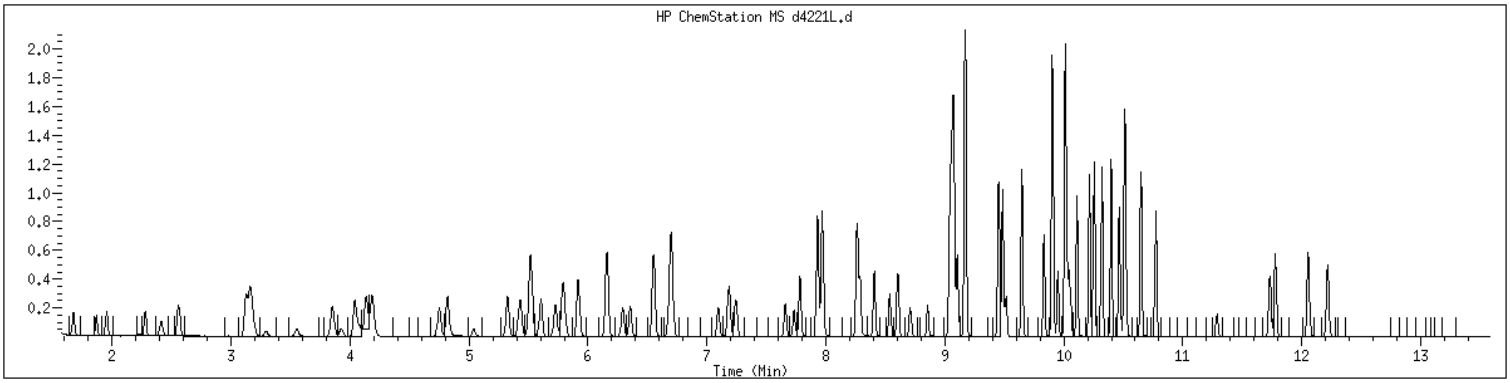
Column diameter: 0.25



Report Date: 05/17/2017 13:19

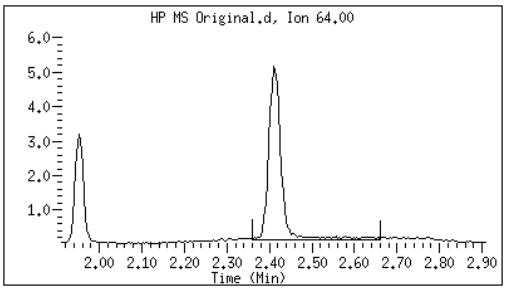
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684505 SampleType : LCS
Injection Date: 05/15/2017 08:55 Instrument : msv13.i
Operator : LBH
Sample Info : 1684505*LCS
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



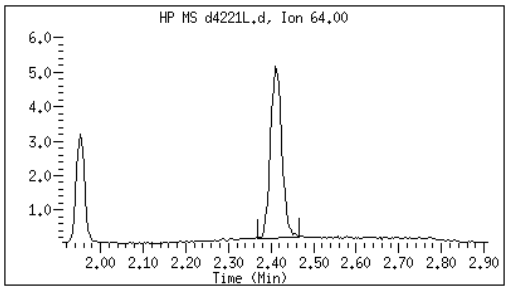
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M1



Electronic Signature Applied

User: lbh
Date: 05/15/2017 09:12



M1 - Target system did not integrate

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	LCSD1684506
Collect Date:	NA Time: NA	GCAL Sample ID:	1684506
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4222
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 0917	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	50.5		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	52.3		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	49.4		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	54.4		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	50.6		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	51.6		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	52.6		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	50.6		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	48.5		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	50.2		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	50.6		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	55.8		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	50.8		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	50.2		0.200	0.500	1.00
78-93-3	2-Butanone	51.7		0.200	0.500	5.00
591-78-6	2-Hexanone	49.8		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	50.1		0.200	0.500	5.00
67-64-1	Acetone	51.9		0.500	1.00	5.00
71-43-2	Benzene	53.3		0.200	0.500	1.00
74-97-5	Bromochloromethane	50.1		0.200	0.500	1.00
75-27-4	Bromodichloromethane	52.6		0.200	0.500	1.00
75-25-2	Bromoform	48.6		0.250	0.500	1.00
74-83-9	Bromomethane	48.2		0.500	1.00	1.00
75-15-0	Carbon disulfide	57.2		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	52.1		0.250	0.500	1.00
108-90-7	Chlorobenzene	48.9		0.200	0.500	1.00
75-00-3	Chloroethane	57.1		0.250	0.500	1.00
67-66-3	Chloroform	51.8		0.200	0.500	1.00
74-87-3	Chloromethane	52.1		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	54.9		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	54.1		0.200	0.500	1.00
110-82-7	Cyclohexane	57.6		0.500	1.00	2.00
124-48-1	Dibromochloromethane	50.4		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	51.8		0.200	0.500	1.00
100-41-4	Ethylbenzene	50.0		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	49.9		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051316	Client Sample ID:	LCSD1684506
Collect Date:	NA Time: NA	GCAL Sample ID:	1684506
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4222
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 0917	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	49.0		1.00	2.00	5.00
108-87-2	Methylcyclohexane	53.7		0.200	0.500	1.00
75-09-2	Methylene chloride	53.6		0.200	0.500	5.00
100-42-5	Styrene	50.6		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	47.7		0.200	0.500	1.00
127-18-4	Tetrachloroethene	47.4		0.200	0.500	1.00
108-88-3	Toluene	49.4		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	55.6		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	53.2		0.200	0.500	1.00
79-01-6	Trichloroethene	49.4		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	50.8		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	52.0		0.200	0.500	1.00
1330-20-7	Xylene (total)	149		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4222.d
Lab Smp Id: 1684506 Client Smp ID: LCSD
Inj Date : 15-MAY-2017 09:17
Operator : LBH Inst ID: msv13.i
Smp Info : 1684506*LCSD
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	119603	51.8428	51.8	
2 Chloromethane ++	50	1.866	1.866	(0.285)	110303	52.1208	52.1	
3 Vinyl Chloride +	62	1.952	1.953	(0.298)	137534	57.6024	57.6	
6 Bromomethane	94	2.275	2.279	(0.347)	81979	48.1783	48.2	
7 Chloroethane	64	2.414	2.410	(0.368)	91577	57.1157	57.1	(M1)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	164087	50.7704	50.8	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	102212	50.5957	50.6	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	329764	57.2083	57.2	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.175	(0.484)	98573	52.0119	52.0	
13 Methyl Iodide	142	3.295	3.291	(0.503)	57432	37.8449	37.8	
14 Acrolein	56	3.553	3.549	(0.542)	55376	283.462	283	
16 Methylene Chloride	49	3.853	3.849	(0.588)	156012	53.5994	53.6	
17 Acetone	43	3.924	3.924	(0.599)	87675	51.8803	51.9	
18 trans-1,2-Dichloroethene	61	4.044	4.041	(0.617)	156573	55.5806	55.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.078	(0.623)	104256	49.0132	49.0	9601
	20 Hexane	57	4.138	4.134	(0.632)	146505	56.3971	56.4	9691
	21 MTBE	73	4.187	4.187	(0.639)	341744	47.7410	47.7	9693
	26 1,1-Dichloroethane ++	63	4.753	4.749	(0.725)	207503	54.4191	54.4	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	268746	299.848	300	
	28 Vinyl Acetate	43	5.041	5.038	(0.769)	76555	52.0711	52.1	
	29 cis-1,2-Dichloroethene	61	5.322	5.323	(0.812)	159641	54.8795	54.9	
M	75 Total 1,2-Dichloroethene	61				316214	110.460	110	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	152125	47.2955	47.3	
	32 Cyclohexane	56	5.514	5.514	(0.842)	197864	57.6428	57.6	9605
	34 Bromochloromethane	128	5.525	5.521	(0.843)	58419	50.1372	50.1	
	35 Chloroform +	83	5.607	5.604	(0.856)	195567	51.7738	51.8	
	36 Carbon Tetrachloride	117	5.724	5.727	(0.874)	139621	52.1435	52.1	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	115481	50.4013	50.4	9562
	41 1,1,1-Trichloroethane	97	5.799	5.795	(0.885)	166292	50.5137	50.5	
	44 2-Butanone	43	5.915	5.915	(0.903)	90905	51.6943	51.7	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	155196	54.0603	54.1	
	46 Benzene	78	6.158	6.159	(0.940)	492817	53.2680	53.3	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	71434	52.2016	52.2	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	160687	50.5744	50.6	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	482446	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	189723	53.7061	53.7	9657
	56 Trichloroethene	130	6.706	6.706	(1.023)	123224	49.4019	49.4	
	57 Dibromomethane	93	7.096	7.096	(1.083)	74535	52.1004	52.1	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	126545	55.7617	55.8	
	60 Bromodichloromethane	83	7.246	7.242	(1.106)	153137	52.5595	52.6	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	177884	55.5434	55.5	9811
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	62075	45.8058	45.8	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	193441	54.0995	54.1	
$	68 Toluene-d8	98	7.932	7.928	(0.876)	462051	47.4767	47.5	
	69 Toluene +	91	7.969	7.969	(0.880)	519252	49.3863	49.4	
	71 Tetrachloroethene	164	8.261	8.261	(0.913)	97111	47.3933	47.4	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	153807	50.0980	50.1	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	166226	53.1849	53.2	
M	82 1-3 Dichloropropene total	100				359667	107.284	107	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	114966	49.4189	49.4	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	120966	50.4035	50.4	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	201586	51.1839	51.2	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	112334	48.5246	48.5	
	83 2-Hexanone	43	8.854	8.854	(0.978)	121503	49.7679	49.8	
	86 1-Chlorohexane	91	9.041	9.037	(0.999)	156818	52.6842	52.7	3276(M2)
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	199385	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	333931	48.9219	48.9	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	183658	50.0494	50.0	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	111329	48.5711	48.6	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	451846	99.6973	99.7	
	90 o-Xylene	106	9.454	9.454	(1.044)	221633	49.1921	49.2	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
M	121 TOTAL XYLENE	106				673479	148.889	149	
	91 Styrene	104	9.487	9.487	(1.048)	364812	50.5627	50.6	
	92 Bromoform ++	173	9.513	9.514	(1.051)	91858	48.6335	48.6	
	93 Isopropylbenzene	105	9.648	9.649	(1.066)	560153	49.8725	49.9	
$	95 Bromofluorobenzene	174	9.836	9.832	(1.087)	146841	45.5962	45.6	
	96 Bromobenzene	77	9.903	9.903	(0.942)	253015	52.8041	52.8	
	97 n-Propylbenzene	91	9.903	9.903	(0.942)	663700	53.4654	53.5	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	167708	52.2565	52.3	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	445241	51.5335	51.5	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	461946	52.5357	52.5	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	192233	51.1401	51.1	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	41032	52.7981	52.8	
	104 4-Chlorotoluene	91	10.110	10.110	(0.962)	396435	51.5116	51.5	
	105 tert-butylbenzene	91	10.214	10.215	(0.972)	248314	50.5772	50.6	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	457654	51.9231	51.9	
	108 sec-Butylbenzene	105	10.319	10.319	(0.982)	565067	52.0736	52.1	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	478048	52.2424	52.2	
	113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	268314	50.7699	50.8	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	186025	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	266917	50.1732	50.2	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	426502	55.2948	55.3	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	260420	50.1944	50.2	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.287	(1.074)	37726	50.6361	50.6	
	120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	75166	51.1533	51.2	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	165549	52.5812	52.6	
	124 Naphthalene	128	12.055	12.055	(1.147)	464261	49.8861	49.9	
	125 1,2,3-Trichlorobenzene	180	12.216	12.216	(1.162)	161506	51.5882	51.6	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170515.s.b/d4222.d

Date : 15-MAY-2017 09:17

Client ID: LCSD

Instrument: msv13.i

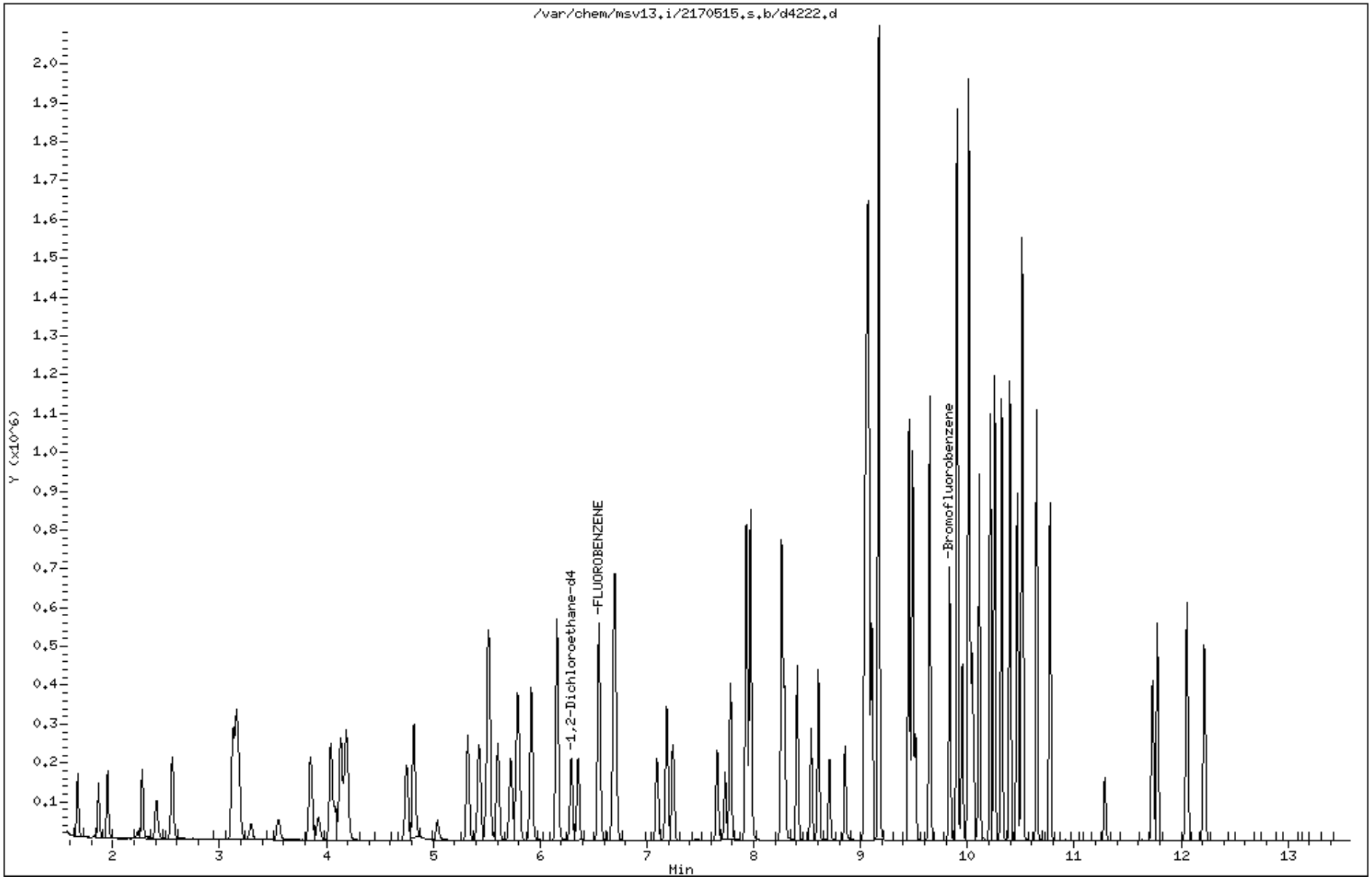
Sample Info: 1684506*LCSD

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

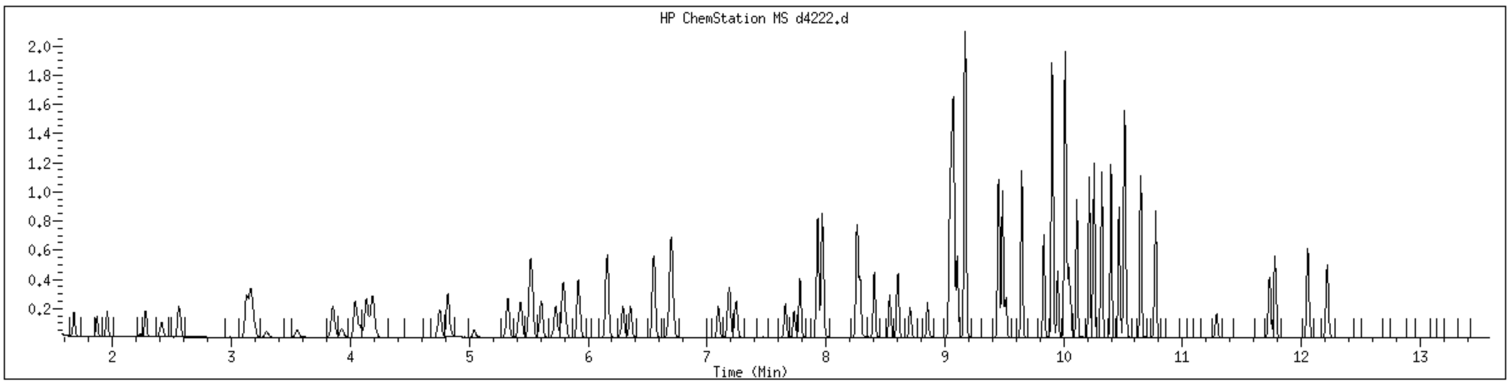
Column diameter: 0.25



Data file : /var/chem/msv13.i/2170515.s.b/d4222.d Page: 1
Report Date: 05/17/2017 13:19

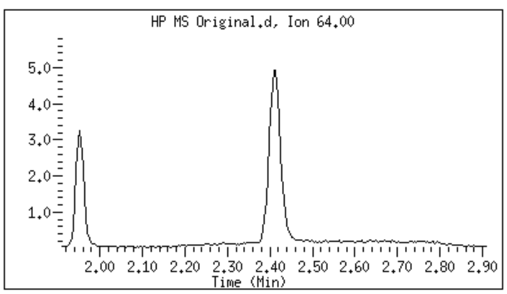
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684506 SampleType : LCSD
Injection Date: 05/15/2017 09:17 Instrument : msv13.i
Operator : LBH
Sample Info : 1684506*LCSD
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



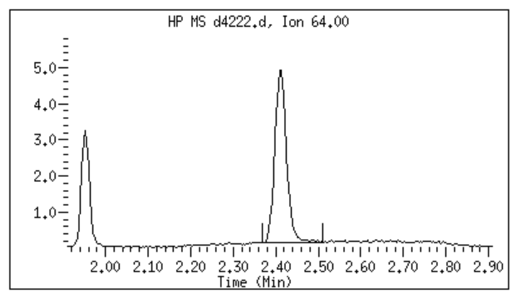
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M1

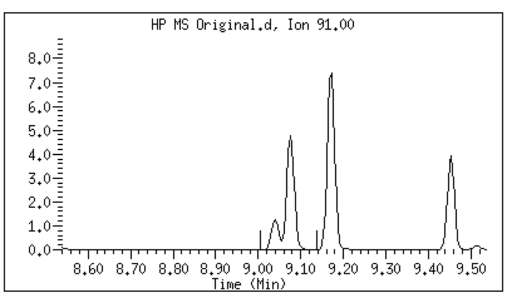


Electronic Signature Applied

User: lbh
Date: 05/15/2017 09:48

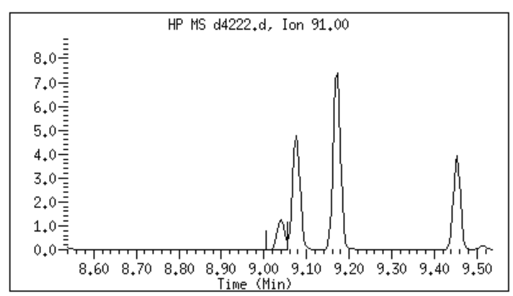


86 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: lbh
Date: 05/15/2017 09:48



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 217051316 Analytical Method: EPA 8260B

	Client Sample ID	GCALSample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1 .	OMS-28-GW38-30-S	21705131601	102		87		97		98		0
2 .	OMS-28-GW38-30-c	21705131602	102		88		97		101		0
3 .	OMS-28-GW41-20-S	21705131603	101		87		97		99		0
4 .	OMS-28-GW57-16-S	21705131604	102		89		96		100		0
5 .	OMS-28-GW57-16-S-a	21705131605	101		88		97		99		0
6 .	MB1684504	1684504	103		87		97		100		0
7 .	LCS1684505	1684505	103		91		98		95		0
8 .	LCSD1684506	1684506	104		91		101		95		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217051316

Analytical Method: EPA 8260B

Analytical Batch: 610372

GCAL QC ID: 1684505

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	50.5	101		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	52.6	105		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	48.6	97		80 - 119
1,1-Dichloroethane	ug/L	50	0	55	110		77 - 125
1,1-Dichloroethene	ug/L	50	0	50.8	102		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	51.9	104		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	53.1	106		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	47.4	95		62 - 128
1,2-Dibromoethane	ug/L	50	0	48.4	97		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	51.2	102		80 - 119
1,2-Dichloroethane	ug/L	50	0	49.8	100		73 - 128
1,2-Dichloropropane	ug/L	50	0	54.6	109		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	51.9	104		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	50.9	102		79 - 118
2-Butanone	ug/L	50	0	47.9	96		56 - 143
2-Hexanone	ug/L	50	0	46.3	93		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	45.9	92		67 - 130
Acetone	ug/L	50	0	46.5	93		39 - 160
Benzene	ug/L	50	0	53	106		79 - 120
Bromochloromethane	ug/L	50	0	48.9	98		78 - 123
Bromodichloromethane	ug/L	50	0	52.7	105		79 - 125
Bromoform	ug/L	50	0	46.3	93		66 - 130
Bromomethane	ug/L	50	0	44.1	88		53 - 141
Carbon disulfide	ug/L	50	0	57	114		64 - 133
Carbon tetrachloride	ug/L	50	0	51.5	103		72 - 136
Chlorobenzene	ug/L	50	0	49.8	100		82 - 118
Chloroethane	ug/L	50	0	55.8	112		60 - 138
Chloroform	ug/L	50	0	52.1	104		79 - 124
Chloromethane	ug/L	50	0	50.4	101		50 - 139
Cyclohexane	ug/L	50	0	58.6	117		71 - 130
Dibromochloromethane	ug/L	50	0	50.1	100		74 - 126
Dichlorodifluoromethane	ug/L	50	0	51.2	102		32 - 152
Ethylbenzene	ug/L	50	0	50.7	101		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	50.8	102		72 - 131
Methyl Acetate	ug/L	50	0	45.9	92		56 - 136
Methylcyclohexane	ug/L	50	0	55.5	111		72 - 132
Methylene chloride	ug/L	50	0	51.6	103		74 - 124
Styrene	ug/L	50	0	50.9	102		78 - 123
Tetrachloroethene	ug/L	50	0	48.8	98		74 - 129

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217051316

Analytical Method: EPA 8260B Analytical Batch: 610372

Toluene	ug/L	50	0	49.8	100		80 - 121
Trichloroethene	ug/L	50	0	48.7	97		79 - 123
Trichlorofluoromethane	ug/L	50	0	51	102		65 - 141
Trichlorotrifluoroethane	ug/L	50	0	53.7	107		70 - 136
Xylene (total)	ug/L	150	0	151	101		79 - 121
cis-1,2-Dichloroethene	ug/L	50	0	55.1	110		78 - 123
cis-1,3-Dichloropropene	ug/L	50	0	53.9	108		75 - 124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	46	92		71 - 124
trans-1,2-Dichloroethene	ug/L	50	0	55.5	111		75 - 124
trans-1,3-Dichloropropene	ug/L	50	0	51.9	104		73 - 127

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217051316

Analytical Method: EPA 8260B

Analytical Batch: 610372

GCAL QC ID: 1684506

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/L	50	50.5	101		0		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	52.3	105		.6		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	49.4	99		2		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	54.4	109		1		77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	50.6	101		.4		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	51.6	103		.6		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	52.6	105		.9		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	50.6	101		7		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	48.5	97		.2		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	50.2	100		2		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	50.6	101		2		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	55.8	112		2		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	50.8	102		2		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	50.2	100		1		79 - 118	0 - 20
2-Butanone	ug/L	50	51.7	103		8		56 - 143	0 - 20
2-Hexanone	ug/L	50	49.8	100		7		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	50.1	100		9		67 - 130	0 - 20
Acetone	ug/L	50	51.9	104		11		39 - 160	0 - 20
Benzene	ug/L	50	53.3	107		.6		79 - 120	0 - 20
Bromochloromethane	ug/L	50	50.1	100		2		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	52.6	105		.2		79 - 125	0 - 20
Bromoform	ug/L	50	48.6	97		5		66 - 130	0 - 20
Bromomethane	ug/L	50	48.2	96		9		53 - 141	0 - 20
Carbon disulfide	ug/L	50	57.2	114		.4		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	52.1	104		1		72 - 136	0 - 20
Chlorobenzene	ug/L	50	48.9	98		2		82 - 118	0 - 20
Chloroethane	ug/L	50	57.1	114		2		60 - 138	0 - 20
Chloroform	ug/L	50	51.8	104		.6		79 - 124	0 - 20
Chloromethane	ug/L	50	52.1	104		3		50 - 139	0 - 20
Cyclohexane	ug/L	50	57.6	115		2		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	50.4	101		.6		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	51.8	104		1		32 - 152	0 - 20
Ethylbenzene	ug/L	50	50	100		1		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	49.9	100		2		72 - 131	0 - 20
Methyl Acetate	ug/L	50	49	98		7		56 - 136	0 - 20
Methylcyclohexane	ug/L	50	53.7	107		3		72 - 132	0 - 20
Methylene chloride	ug/L	50	53.6	107		4		74 - 124	0 - 20
Styrene	ug/L	50	50.6	101		.6		78 - 123	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217051316

Analytical Method: EPA 8260B

Analytical Batch: 610372

Tetrachloroethene	ug/L	50	47.4	95		3		74 - 129	0 - 20
Toluene	ug/L	50	49.4	99		.8		80 - 121	0 - 20
Trichloroethene	ug/L	50	49.4	99		1		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	50.8	102		.4		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	52	104		3		70 - 136	0 - 20
Xylene (total)	ug/L	150	149	99		1		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	54.9	110		.4		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	54.1	108		.4		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	47.7	95		4		71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	55.6	111		.2		75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	53.2	106		2		73 - 127	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	217051316	Method Blank ID:	1684504
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170515/d4225
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1024	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1684505	1684505	2170515/d4221L	05/15/17	0855
2 .	LCSD1684506	1684506	2170515/d4222	05/15/17	0917
3 .	OMS-28-GW38-30-S	21705131601	2170515/d4226	05/15/17	1046
4 .	OMS-28-GW38-30-c	21705131602	2170515/d4227	05/15/17	1108
5 .	OMS-28-GW41-20-S	21705131603	2170515/d4228	05/15/17	1131
6 .	OMS-28-GW57-16-S	21705131604	2170515/d4229	05/15/17	1153
7 .	OMS-28-GW57-16-S-a	21705131605	2170515/d4230	05/15/17	1215

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217051316	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170511p/d4099bfbD
Analyst:	JCK	Analytical Batch:	610278
Analysis Date:	05/11/17 Time: 1307	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	18.94	(	)	
75	30.0 - 60.0% of mass 95	48.13	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.52	(	)	
173	Less than 2.0% of mass 174	.79	(.86	)	1
174	50.0 - 120.0% of mass 95	92.2	(	)	
175	5.0 - 9.0% of mass 174	6.78	(7.36	)	1
176	95.0 - 101.0% of mass 174	89.43	(97	)	1
177	5.0 - 9.0% of mass 176	5.66	(6.34	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2170511p/d4102D	05/11/17	1420
2 .	V13STD005	1204	2170511p/d4104D	05/11/17	1505
3 .	V13STD010	1205	2170511p/d4105D	05/11/17	1527
4 .	V13STD020	1206	2170511p/d4106D	05/11/17	1549
5 .	V13STD050	1207	2170511p/d4107D	05/11/17	1612
6 .	V13STD100	1208	2170511p/d4108D	05/11/17	1634
7 .	V13STD200	1209	2170511p/d4109D	05/11/17	1656
8 .	ICV050	1600	2170511p/d4111D	05/11/17	1741

FORM V VOA

Data File: /var/chem/msv13.i/2170511p.s.b/d4099bfbD.d

Date : 11-MAY-2017 13:07

Client ID: V13BFB

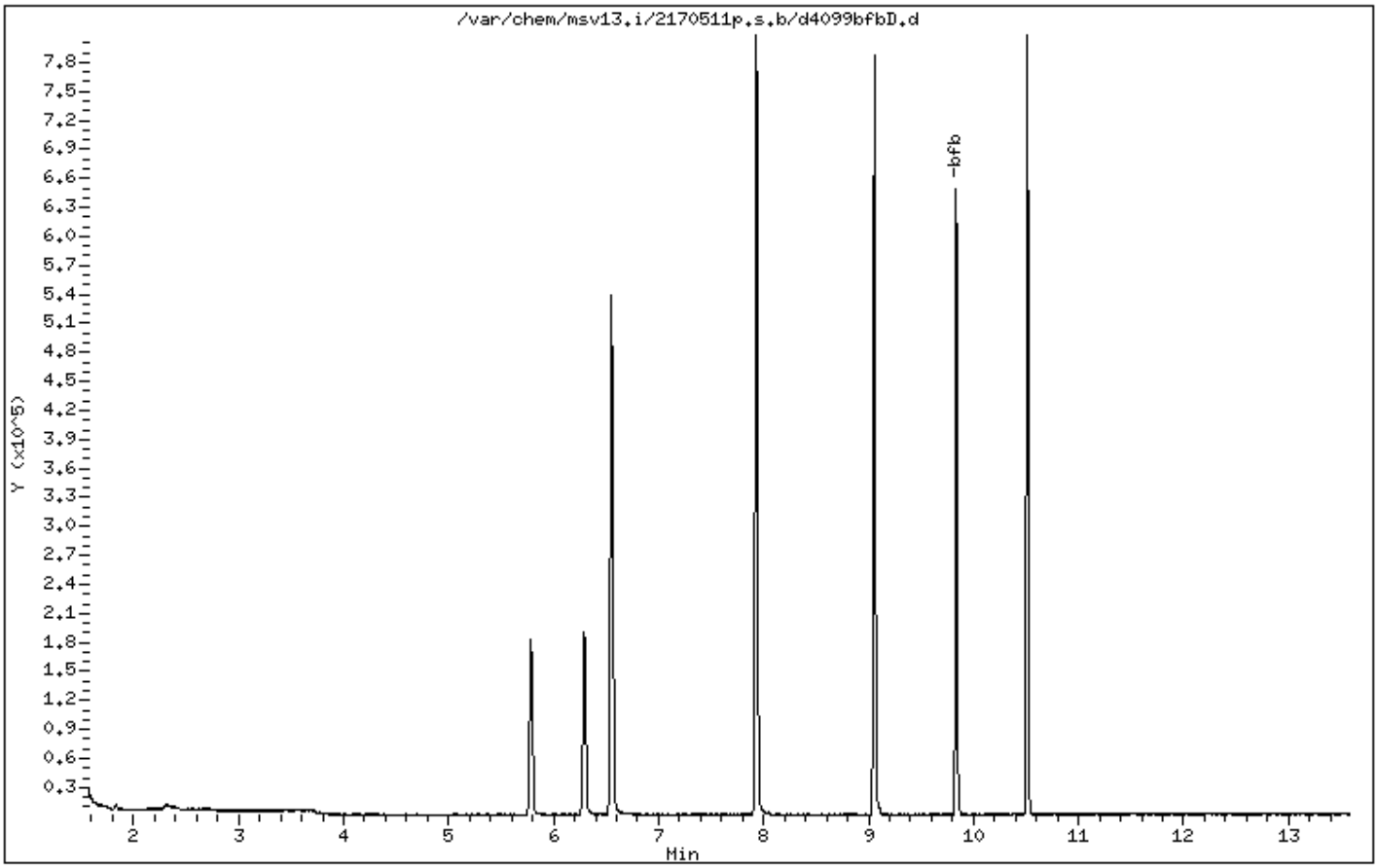
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170511p.s.b/d4099bfbD.d

Date : 11-MAY-2017 13:07

Client ID: V13BFB

Instrument: msv13.i

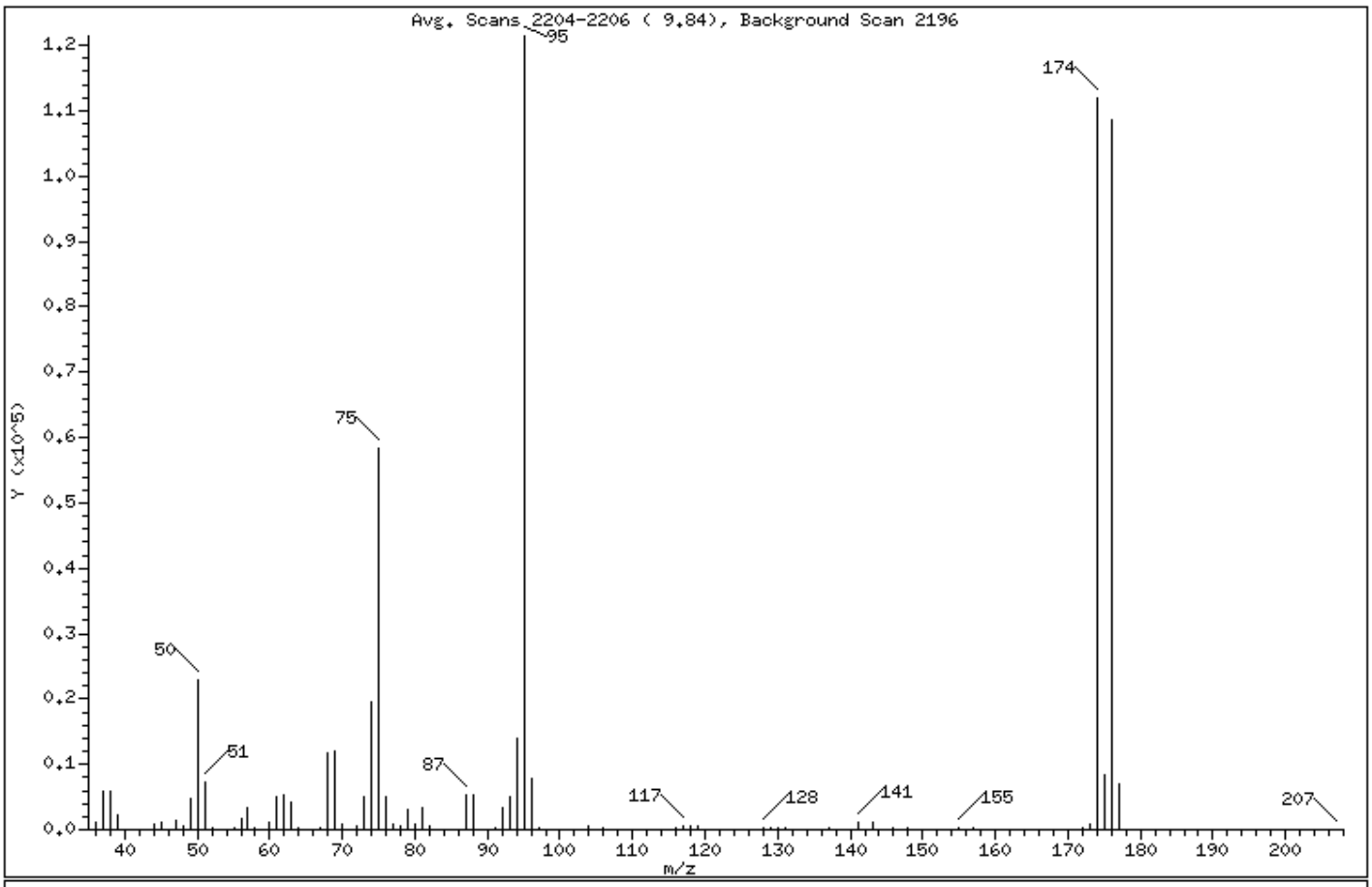
Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.94
75	30.00 - 60.00% of mass 95	48.13
96	5.00 - 9.00% of mass 95	6.52
173	Less than 2.00% of mass 174	0.79 (0.86)
174	50.00 - 120.00% of mass 95	92.20
175	5.00 - 9.00% of mass 174	6.78 (7.36)
176	95.00 - 101.00% of mass 174	89.44 (97.00)
177	5.00 - 9.00% of mass 176	5.67 (6.34)

Date : 11-MAY-2017 13:07

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: d4099bfbD.d
Spectrum: Avg. Scans 2204-2206 (9.84), Background Scan 2196
Location of Maximum: 95.00
Number of points: 81

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1086	62.00	5272	91.00	392	137.00	220
37.00	5951	63.00	4088	92.00	3423	140.00	66
38.00	5725	64.00	323	93.00	5025	141.00	1024
39.00	2135	67.00	332	94.00	13913	143.00	979
40.00	32	68.00	11800	95.00	121416	146.00	215
43.00	70	69.00	12050	96.00	7911	148.00	273
44.00	935	70.00	913	97.00	257	149.00	53
45.00	1061	72.00	606	104.00	460	155.00	257
46.00	60	73.00	5020	105.00	67	157.00	224
47.00	1367	74.00	19664	106.00	360	159.00	50
48.00	689	75.00	58432	107.00	54	172.00	150
49.00	4690	76.00	5069	113.00	52	173.00	965
50.00	22992	77.00	725	116.00	334	174.00	111944
51.00	7197	78.00	470	117.00	659	175.00	8235
52.00	293	79.00	3000	118.00	445	176.00	108584
55.00	352	80.00	884	119.00	571	177.00	6887
56.00	1808	81.00	3228	128.00	351	178.00	121
57.00	3332	82.00	623	129.00	216	207.00	55
58.00	200	86.00	70	130.00	321		
60.00	1092	87.00	5363	131.00	182		
61.00	4978	88.00	5194	135.00	127		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217051316	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170515/d4220
Analyst:	LBH	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 0812	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	19.22	(	)	
75	30.0 - 60.0% of mass 95	49.27	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.58	(	)	
173	Less than 2.0% of mass 174	.82	(1.02	)	1
174	50.0 - 120.0% of mass 95	80.78	(	)	
175	5.0 - 9.0% of mass 174	6.06	(7.51	)	1
176	95.0 - 101.0% of mass 174	79.91	(98.93	)	1
177	5.0 - 9.0% of mass 176	5.16	(6.46	)	2

1- Value is % mass 174

2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2170515/d4221	05/15/17	0855
2 .	LCS1684505	1684505	2170515/d4221L	05/15/17	0855
3 .	LCSD1684506	1684506	2170515/d4222	05/15/17	0917
4 .	MB1684504	1684504	2170515/d4225	05/15/17	1024
5 .	OMS-28-GW38-30-S	21705131601	2170515/d4226	05/15/17	1046
6 .	OMS-28-GW38-30-c	21705131602	2170515/d4227	05/15/17	1108
7 .	OMS-28-GW41-20-S	21705131603	2170515/d4228	05/15/17	1131
8 .	OMS-28-GW57-16-S	21705131604	2170515/d4229	05/15/17	1153
9 .	OMS-28-GW57-16-S-a	21705131605	2170515/d4230	05/15/17	1215
10 .	V13STD050	1440	2170515/d4249	05/15/17	1937

FORM V VOA

Data File: /var/chem/msv13.i/2170515.s.b/d4220.d

Page 1

Date : 15-MAY-2017 08:12

Client ID: V13BFB

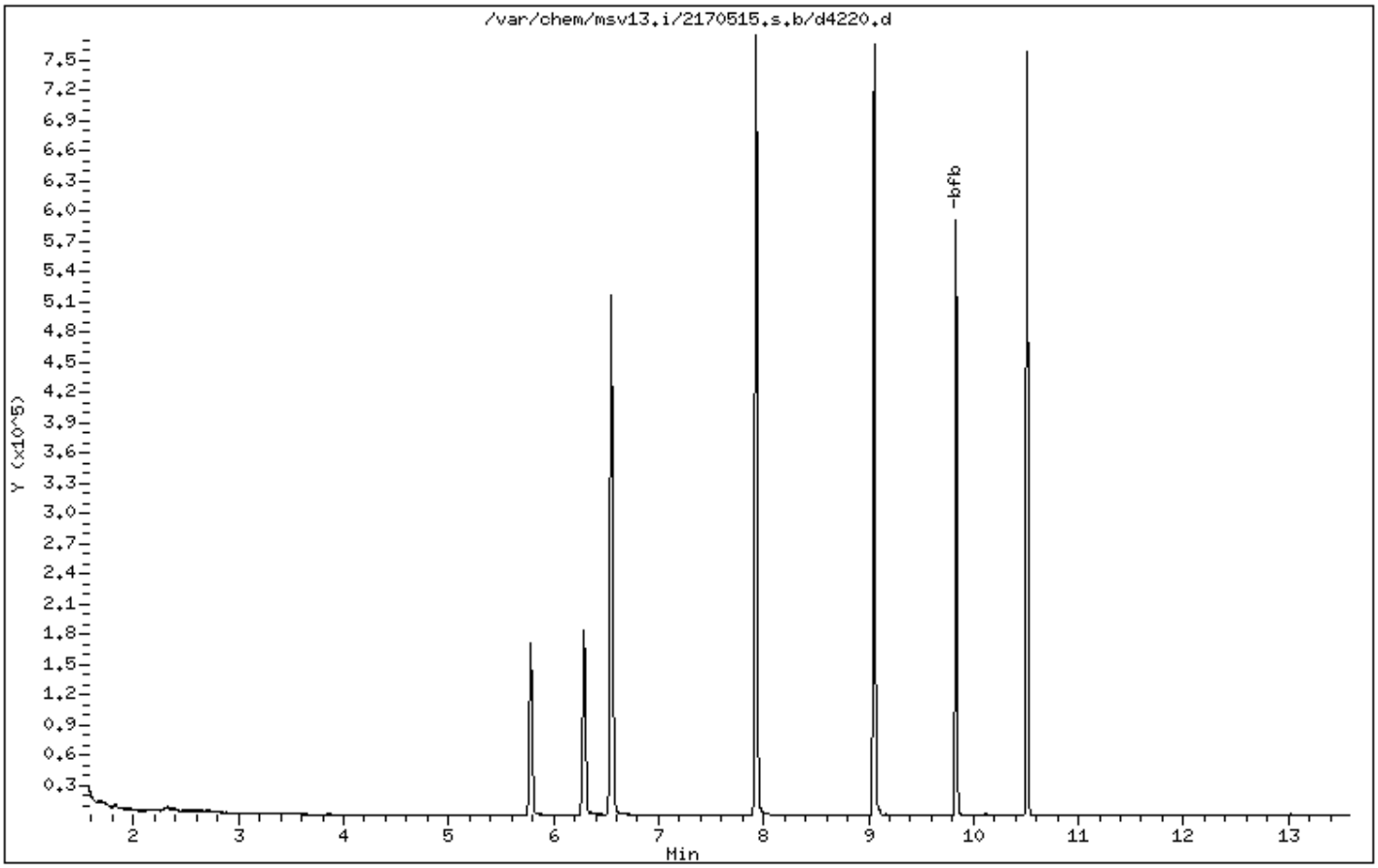
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170515.s.b/d4220.d

Date : 15-MAY-2017 08:12

Client ID: V13BFB

Instrument: msv13.i

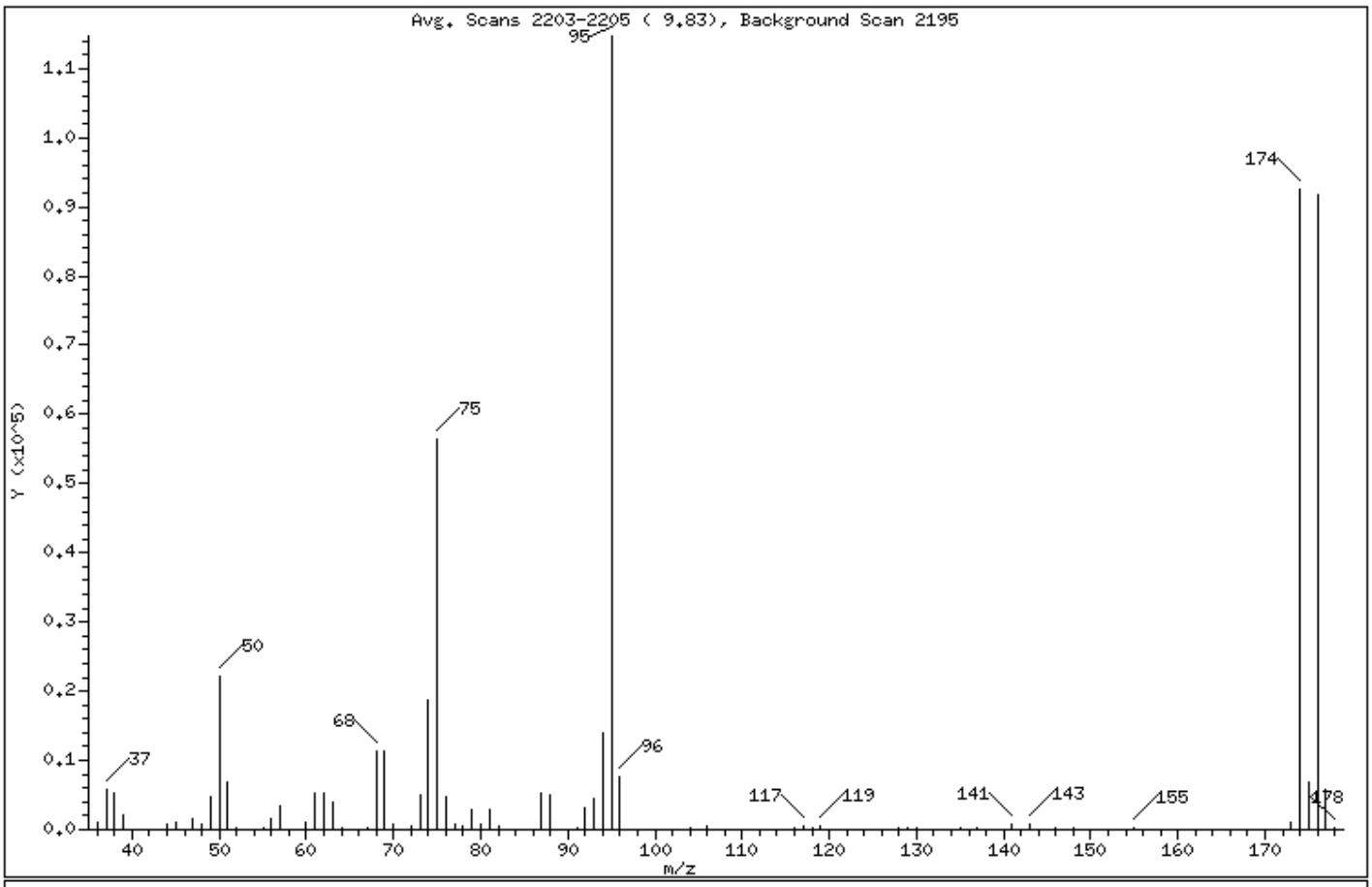
Sample Info: 1000*V13BFB

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.22
75	30.00 - 60.00% of mass 95	49.27
96	5.00 - 9.00% of mass 95	6.58
173	Less than 2.00% of mass 174	0.82 (1.02)
174	50.00 - 120.00% of mass 95	80.78
175	5.00 - 9.00% of mass 174	6.07 (7.51)
176	95.00 - 101.00% of mass 174	79.91 (98.93)
177	5.00 - 9.00% of mass 176	5.17 (6.46)

Date : 15-MAY-2017 08:12

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: LBH

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: d4220.d
Spectrum: Avg. Scans 2203-2205 (9.83), Background Scan 2195
Location of Maximum: 95.00
Number of points: 75

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1059	62.00	5385	87.00	5158	130.00	368
37.00	5915	63.00	3952	88.00	4903	135.00	175
38.00	5175	64.00	377	91.00	288	137.00	157
39.00	2085	67.00	333	92.00	3155	141.00	850
44.00	829	68.00	11456	93.00	4416	143.00	879
45.00	1023	69.00	11445	94.00	14071	145.00	51
46.00	61	70.00	886	95.00	114680	146.00	162
47.00	1580	72.00	588	96.00	7551	148.00	230
48.00	705	73.00	5113	97.00	109	155.00	259
49.00	4740	74.00	18616	104.00	349	157.00	122
50.00	22040	75.00	56504	105.00	50	171.00	55
51.00	6909	76.00	4746	106.00	427	172.00	83
52.00	323	77.00	680	115.00	51	173.00	941
55.00	282	78.00	613	116.00	362	174.00	92632
56.00	1678	79.00	2814	117.00	587	175.00	6956
57.00	3351	80.00	834	118.00	309	176.00	91640
58.00	61	81.00	3000	119.00	414	177.00	5924
60.00	1045	82.00	498	128.00	359	178.00	155
61.00	5401	86.00	130	129.00	186		

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

				GCALID - FileID - Conc	1203 ~ 2170511p/d4102D ~ 1	
Report No:	217051316	Instrument ID:	MSV13	1204 ~ 2170511p/d4104D ~ 5	1205 ~ 2170511p/d4105D ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)	Analyst:	JCK	1206 ~ 2170511p/d4106D ~ 20	1207 ~ 2170511p/d4107D ~ 50	
Calib. Date 1:	05/11/17 Time 1: 1420	Analytical Batch:	610278	1208 ~ 2170511p/d4108D ~ 100	1209 ~ 2170511p/d4109D ~ 200	
Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.556	0.599	0.536	0.573	0.604	0.584	0.571	0.575			4.093	A
1,1,1-Trichloroethane			0.329	0.362	0.333	0.332	0.353	0.339	0.340	0.341			3.573	A
1,1,2,2-Tetrachloroethane			0.971	0.936	0.836	0.855	0.836	0.813	0.790	0.863			7.697	A
1,1,2-Trichloroethane			0.610	0.606	0.556	0.571	0.595	0.577	0.570	0.583			3.499	A
1,1-Dichloroethane			0.413	0.421	0.380	0.388	0.400	0.384	0.379	0.395			4.206	A
1,1-Dichloroethene			0.214	0.228	0.202	0.209	0.211	0.202	0.200	0.209			4.567	A
1,1-Dichloropropene			0.287	0.317	0.290	0.295	0.305	0.294	0.294	0.298			3.450	A
1,2,3-Trichlorobenzene (RSP)			1468	11537	24732	55259	161568	352746	724250	0.853	0.014		0.999	W
1,2,3-Trichlorobenzene			0.453	0.692	0.701	0.767	0.831	0.851	0.859					
1,2,3-Trichloropropane			1.120	1.107	0.925	0.953	1.013	0.982	0.973	1.010			7.479	A
1,2,4-Trichlorobenzene (RSP)			1535	11346	24995	54417	164162	357563	724566	0.857	0.014		0.998	W
1,2,4-Trichlorobenzene			0.474	0.680	0.709	0.755	0.845	0.863	0.860					
1,2,4-Trimethylbenzene			2.425	2.548	2.283	2.338	2.391	2.332	2.267	2.369			4.063	A
1,2-Dibromo-3-chloropropane			0.170	0.201	0.183	0.200	0.209	0.217	0.221	0.200			9.142	A
1,2-Dibromoethane			0.566	0.567	0.552	0.575	0.610	0.595	0.598	0.581			3.589	A
1,2-Dichlorobenzene			1.409	1.516	1.356	1.379	1.407	1.360	1.335	1.394			4.308	A
1,2-Dichloroethane			0.366	0.354	0.313	0.318	0.326	0.317	0.311	0.329			6.611	A
1,2-Dichloroethane-d4			0.139	0.141	0.142	0.142	0.143	0.142	0.144	0.142			1.057	A
1,2-Dichloroethene (total)			0.299	0.311	0.288	0.290	0.305	0.293	0.292	0.297			2.827	A
1,2-Dichloropropane			0.254	0.238	0.227	0.228	0.238	0.232	0.230	0.235			4.020	A
1,3,5-Trimethylbenzene			2.357	2.584	2.320	2.371	2.376	2.316	2.220	2.363			4.689	A
1,3-Dichlorobenzene			1.463	1.521	1.340	1.409	1.436	1.411	1.364	1.420			4.277	A
1,3-Dichloropropane			0.998	1.030	0.940	0.971	1.020	0.982	0.973	0.988			3.108	A
1,3-Dichloropropylene			0.300	0.338	0.318	0.339	0.378	0.375	0.381	0.347			9.189	A
1,4-Dichlorobenzene			1.503	1.561	1.358	1.399	1.440	1.390	1.359	1.430			5.364	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

				GCALID - FileID - Conc	1203 ~ 2170511p/d4102D ~ 1	
Report No:	217051316	Instrument ID:	MSV13	1204 ~ 2170511p/d4104D ~ 5	1205 ~ 2170511p/d4105D ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)	Analyst:	JCK	1206 ~ 2170511p/d4106D ~ 20	1207 ~ 2170511p/d4107D ~ 50	
Calib. Date 1:	05/11/17 Time 1: 1420	Analytical Batch:	610278	1208 ~ 2170511p/d4108D ~ 100	1209 ~ 2170511p/d4109D ~ 200	
Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1-Bromo-2-Chloroethane			0.315	0.348	0.321	0.321	0.346	0.337	0.335	0.332			3.941	A
1-Chlorohexane			0.709	0.847	0.678	0.724	0.733	0.733	0.801	0.746			7.775	A
2,2-Dichloropropane			0.348	0.348	0.315	0.324	0.336	0.331	0.330	0.333			3.652	A
2-Butanone			0.201	0.182	0.183	0.181	0.179	0.177	0.173	0.182			4.826	A
2-Chloroethylvinyl ether			0.126	0.142	0.123	0.146	0.152	0.148	0.146	0.140			8.120	A
2-Chlorotoluene			2.503	2.581	2.294	2.269	2.270	2.196	2.142	2.322			6.911	A
2-Hexanone			0.665	0.628	0.582	0.601	0.611	0.599	0.601	0.612			4.397	A
4-Bromofluorobenzene			0.774	0.780	0.783	0.813	0.831	0.828	0.845	0.808			3.556	A
4-Chlorotoluene			2.292	2.258	2.007	2.021	2.046	1.958	1.897	2.069			7.224	A
4-Isopropyltoluene			2.464	2.635	2.364	2.460	2.483	2.452	2.359	2.460			3.732	A
4-Methyl-2-pentanone			0.865	0.780	0.740	0.762	0.762	0.744	0.737	0.770			5.770	A
Acetone				0.215	0.190	0.166	0.165	0.162	0.154	0.175			13.07	A
Acrolein			0.026	0.019	0.019	0.020	0.018	0.019	0.020	0.020			13.76	A
Acrylonitrile			0.092	0.088	0.095	0.095	0.095	0.092	0.094	0.093			2.932	A
Benzene			1.026	0.994	0.909	0.934	0.978	0.939	0.931	0.959			4.330	A
Bromobenzene			1.433	1.427	1.259	1.240	1.243	1.210	1.203	1.288			7.699	A
Bromochloromethane			0.121	0.130	0.122	0.121	0.122	0.117	0.113	0.121			4.277	A
Bromodichloromethane			0.303	0.305	0.282	0.289	0.313	0.309	0.312	0.302			4.015	A
Bromoform			0.444	0.436	0.419	0.449	0.513	0.523	0.531	0.474			9.890	A
Bromomethane			0.219	0.189	0.171	0.166	0.168	0.159	0.162	0.176			12.06	A
Carbon disulfide			0.580	0.600	0.568	0.587	0.629	0.606	0.613	0.597			3.498	A
Carbon tetrachloride			0.241	0.289	0.269	0.271	0.293	0.288	0.291	0.278			6.754	A
Chlorobenzene			1.812	1.779	1.655	1.693	1.749	1.672	1.623	1.712			4.058	A
Chloroethane (RSP)			2526	8696	14956	30204	81144	167828	337855	0.165	-0.010		0.999	W
Chloroethane			0.267	0.184	0.157	0.161	0.169	0.166	0.166					

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170511p/d4102D ~ 1		
Report No:	217051316		Instrument ID:	MSV13	1204 ~ 2170511p/d4104D ~ 5	1205 ~ 2170511p/d4105D ~ 10		
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2170511p/d4106D ~ 20	1207 ~ 2170511p/d4107D ~ 50		
Calib. Date 1:	05/11/17	Time 1: 1420	Analytical Batch:	610278	1208 ~ 2170511p/d4108D ~ 100	1209 ~ 2170511p/d4109D ~ 200		
Calib. Date 2:	05/11/17	Time 2: 1656	Analytical Method:	EPA 8260B				

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
Chloroform			0.405	0.417	0.379	0.377	0.398	0.383	0.381	0.391			3.981	A
Chloromethane			0.262	0.230	0.213	0.213	0.218	0.200	0.198	0.219			9.922	A
Cyclohexane			0.296	0.394	0.356	0.360	0.370	0.360	0.355	0.356			8.350	A
Dibromochloromethane			0.515	0.603	0.544	0.588	0.653	0.650	0.660	0.602			9.458	A
Dibromofluoromethane			0.233	0.236	0.240	0.236	0.237	0.240	0.240	0.237			1.172	A
Dibromomethane			0.150	0.150	0.139	0.146	0.155	0.150	0.148	0.148			3.188	A
Dichlorodifluoromethane			0.188	0.271	0.244	0.246	0.251	0.239	0.236	0.239			10.57	A
Ethylbenzene			0.900	0.965	0.879	0.929	0.956	0.918	0.893	0.920			3.494	A
Hexachlorobutadiene			0.390	0.427	0.384	0.390	0.387	0.399	0.387	0.395			3.803	A
Isopropylbenzene (Cumene)			2.651	2.979	2.711	2.823	2.926	2.850	2.776	2.817			4.093	A
Methyl Acetate			0.258	0.251	0.212	0.206	0.207	0.206	0.203	0.220			10.69	A
Methyl iodide (RSP)			615	3804	8055	19717	73719	174743		0.178	0.089		0.994	L
Methyl iodide			0.065	0.080	0.084	0.105	0.153	0.173						
Methylcyclohexane			0.295	0.408	0.362	0.377	0.376	0.377	0.368	0.366			9.420	A
Methylene chloride			0.323	0.333	0.313	0.278	0.303	0.295	0.266	0.302			7.988	A
Naphthalene (RSP)			3509	26403	63242	150894	473159	1050981	2192258	2.556	0.021		0.996	W
Naphthalene			1.082	1.583	1.793	2.093	2.435	2.536	2.602					
Styrene			1.678	1.778	1.698	1.807	1.943	1.891	1.870	1.809			5.477	A
Tetrachloroethene			0.513	0.541	0.478	0.508	0.525	0.517	0.514	0.514			3.710	A
Toluene			2.785	2.769	2.538	2.609	2.673	2.553	2.530	2.637			4.091	A
Toluene-d8			2.477	2.444	2.440	2.480	2.424	2.408	2.412	2.441			1.187	A
Trichloroethene			0.264	0.270	0.250	0.252	0.266	0.253	0.253	0.259			3.197	A
Trichlorofluoromethane			0.285	0.376	0.335	0.340	0.352	0.330	0.327	0.335			8.300	A
Trichlorotrifluoroethane			0.140	0.228	0.207	0.202	0.206	0.197	0.195	0.196			13.76	A
Vinyl acetate			0.174	0.136	0.140	0.160	0.150	0.154	0.153	0.152			8.250	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170511p/d4102D ~ 1	
Report No:	217051316		Instrument ID:	MSV13	1204 ~ 2170511p/d4104D ~ 5	1205 ~ 2170511p/d4105D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2170511p/d4106D ~ 20	1207 ~ 2170511p/d4107D ~ 50	
Calib. Date 1:	05/11/17	Time 1: 1420	Analytical Batch:	610278	1208 ~ 2170511p/d4108D ~ 100	1209 ~ 2170511p/d4109D ~ 200	
Calib. Date 2:	05/11/17	Time 2: 1656	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
Vinyl chloride			0.237	0.270	0.244	0.249	0.255	0.241	0.236	0.247			4.870	A
Xylene (total)			1.137	1.162	1.091	1.139	1.182	1.131	1.098	1.134			2.850	A
cis-1,2-Dichloroethene			0.300	0.312	0.294	0.296	0.311	0.299	0.298	0.301			2.414	A
cis-1,3-Dichloropropene			0.337	0.366	0.342	0.362	0.399	0.391	0.396	0.371			6.933	A
m,p-Xylene			1.150	1.156	1.097	1.137	1.188	1.132	1.096	1.137			2.875	A
n-Butylbenzene			1.913	2.221	2.034	2.103	2.105	2.097	2.039	2.073			4.518	A
n-Hexane			0.222	0.295	0.261	0.274	0.274	0.283	0.275	0.269			8.574	A
n-Propylbenzene			3.377	3.714	3.292	3.350	3.305	3.209	3.109	3.337			5.683	A
o-Xylene			1.113	1.174	1.078	1.141	1.170	1.131	1.102	1.130			3.111	A
sec-Butylbenzene			2.868	3.244	2.899	2.942	2.912	2.837	2.714	2.917			5.559	A
tert-Butyl methyl ether (MTBE)			0.813	0.769	0.711	0.722	0.746	0.720	0.712	0.742			5.058	A
tert-Butylbenzene			1.439	1.477	1.303	1.298	1.285	1.236	1.199	1.320			7.738	A
trans-1,2-Dichloroethene			0.298	0.309	0.282	0.284	0.298	0.286	0.286	0.292			3.435	A
trans-1,3-Dichloropropene			0.263	0.310	0.295	0.317	0.358	0.359	0.366	0.324			11.89	A
trans-1,4-Dichloro-2-butene			0.214	0.197	0.195	0.197	0.212	0.220	0.228	0.209			6.143	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4102D.d
Lab Smp Id: 1203 Client Smp ID: V13STD001
Inj Date : 11-MAY-2017 14:20
Operator : JCK Inst ID: msv13.i
Smp Info : 1203*V13STD001
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 14:20 Cal File: d4102D.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	1779	1.00000	0.787	
2	Chloromethane ++	50	1.866	1.866	(0.285)	2478	1.00000	1.19	
3	Vinyl Chloride +	62	1.956	1.956	(0.299)	2239	1.00000	0.957	
6	Bromomethane	94	2.283	2.283	(0.348)	2075	1.00000	1.24	
7	Chloroethane	64	2.414	2.414	(0.368)	2526	1.00000	1.12	(M2)
8	Trichlorofluoromethane	101	2.556	2.556	(0.390)	2694	1.00000	0.850	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	2020	1.00000	1.02	
11	Carbon Disulfide	76	3.152	3.152	(0.481)	5485	1.00000	0.971	
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	1328	1.00000	0.715	
13	Methyl Iodide	142	3.295	3.295	(0.503)	615	1.00000	4.83	
14	Acrolein	56	3.576	3.576	(0.546)	1250	5.00000	6.53	
16	Methylene Chloride	49	3.857	3.857	(0.589)	3053	1.00000	1.07	
17	Acetone	43	3.928	3.928	(0.600)	2746	1.00000	1.66	
18	trans-1,2-Dichloroethene	61	4.044	4.044	(0.617)	2822	1.00000	1.02	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.086	4.086	(0.624)	2442	1.00000	1.17	5361(M2)
	20 Hexane	57	4.127	4.127	(0.630)	2103	1.00000	0.826	6610(M2)
	21 MTBE	73	4.191	4.191	(0.640)	7688	1.00000	1.10	8123
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	3909	1.00000	1.05	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	4350	5.00000	4.95	
	28 Vinyl Acetate	43	5.045	5.045	(0.770)	1642	1.00000	1.14	(M1)
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	2837	1.00000	0.995	
M	75 Total 1,2-Dichloroethene	61				5659	2.00000	2.02	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	3295	1.00000	1.05	
	32 Cyclohexane	56	5.514	5.514	(0.842)	2796	1.00000	0.831	8598
	34 Bromochloromethane	128	5.529	5.529	(0.844)	1143	1.00000	1.00	
	35 Chloroform +	83	5.604	5.604	(0.855)	3830	1.00000	1.03	
	36 Carbon Tetrachloride	117	5.724	5.724	(0.874)	2281	1.00000	0.869	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	110314	50.0000	49.1	7899
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	3108	1.00000	0.963	
	44 2-Butanone	43	5.922	5.922	(0.904)	1900	1.00000	1.10	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	2716	1.00000	0.965	
	46 Benzene	78	6.162	6.162	(0.941)	9704	1.00000	1.07	
$	50 1,2-Dichloroethane-d4	67	6.294	6.294	(0.961)	65786	50.0000	49.0	
	51 1,2-Dichloroethane	62	6.361	6.361	(0.971)	3460	1.00000	1.11	(M3)
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	472936	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.695	(1.022)	2793	1.00000	0.807	8620
	56 Trichloroethene	130	6.706	6.706	(1.023)	2501	1.00000	1.02	
	57 Dibromomethane	93	7.103	7.103	(1.084)	1415	1.00000	1.01	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	2403	1.00000	1.08	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	2868	1.00000	1.00	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	2980	1.00000	0.949	7540
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	1190	1.00000	0.896	
	67 cis-1,3-Dichloropropene	75	7.786	7.786	(1.188)	3185	1.00000	0.909	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	456900	50.0000	50.7	
	69 Toluene +	91	7.977	7.977	(0.881)	10275	1.00000	1.06	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	1893	1.00000	0.998	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.912)	3190	1.00000	1.12	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	2489	1.00000	0.812	
M	82 1-3 Dichloropropene total	100				5674	2.00000	1.72	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	2252	1.00000	1.05	
	78 Dibromochloromethane	129	8.535	8.535	(0.942)	1899	1.00000	0.855	
	79 1,3-Dichloropropane	76	8.603	8.603	(0.950)	3681	1.00000	1.01	
	80 1,2-Dibromoethane(EDB)	107	8.715	8.715	(0.962)	2090	1.00000	0.976	
	83 2-Hexanone	43	8.854	8.854	(0.978)	2453	1.00000	1.09	
	86 1-Chlorohexane	91	9.045	9.045	(0.999)	2615	1.00000	0.950	4122(H)
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	184479	50.0000		
	85 Chlorobenzene ++	112	9.068	9.068	(1.001)	6685	1.00000	1.06	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	3319	1.00000	0.978	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	2052	1.00000	0.968	
	89 p,m-Xylene	106	9.173	9.173	(1.013)	8483	2.00000	2.02	
	90 o-Xylene	106	9.457	9.457	(1.044)	4105	1.00000	0.985	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				12588	3.00000	3.01	
91 Styrene	104	9.491	9.491	(1.048)	6192	1.00000	0.928	
92 Bromoform ++	173	9.521	9.521	(1.051)	1640	1.00000	0.938	
93 Isopropylbenzene	105	9.649	9.649	(1.065)	9782	1.00000	0.941	
$ 95 Bromofluorobenzene	174	9.836	9.836	(1.086)	142748	50.0000	47.9	
96 Bromobenzene	77	9.907	9.907	(0.943)	4646	1.00000	1.11	
97 n-Propylbenzene	91	9.904	9.904	(0.942)	10947	1.00000	1.01	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	3149	1.00000	1.13	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	8113	1.00000	1.08	
102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	7641	1.00000	0.997	
100 1,2,3-Trichloropropane	75	10.046	10.046	(0.956)	3631	1.00000	1.11	
101 trans-1,4-Dichloro-2-Butene	53	10.065	10.065	(0.958)	694	1.00000	1.02	
104 4-Chlorotoluene	91	10.113	10.113	(0.962)	7429	1.00000	1.11	
105 tert-butylbenzene	91	10.218	10.218	(0.972)	4666	1.00000	1.09	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	7860	1.00000	1.02	
108 sec-Butylbenzene	105	10.320	10.320	(0.982)	9296	1.00000	0.983	
110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	7988	1.00000	1.00	
113 1,3-Dichlorobenzene	146	10.470	10.470	(0.996)	4743	1.00000	1.03	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	162080	50.0000		
115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	4873	1.00000	1.05	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	6201	1.00000	0.923	
118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	4566	1.00000	1.01	
119 1,2-Dibromo-3-Chloropropane	157	11.294	11.294	(1.075)	552	1.00000	0.850	
120 Hexachlorobutadiene	225	11.737	11.737	(1.117)	1264	1.00000	0.987	
122 1,2,4-Trichlorobenzene	180	11.782	11.782	(1.121)	1535	1.00000	1.24	
124 Naphthalene	128	12.063	12.063	(1.148)	3509	1.00000	1.49	
125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	1468	1.00000	1.22	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.
M3- Compound response manually integrated because
Target system integrated incorrect peak.
H - Operator selected an alternate compound hit.

Data File: /var/chem/msv13.i/2170511p.s.b/d4102D.d

Date : 11-MAY-2017 14:20

Client ID: V13STD001

Instrument: msv13.i

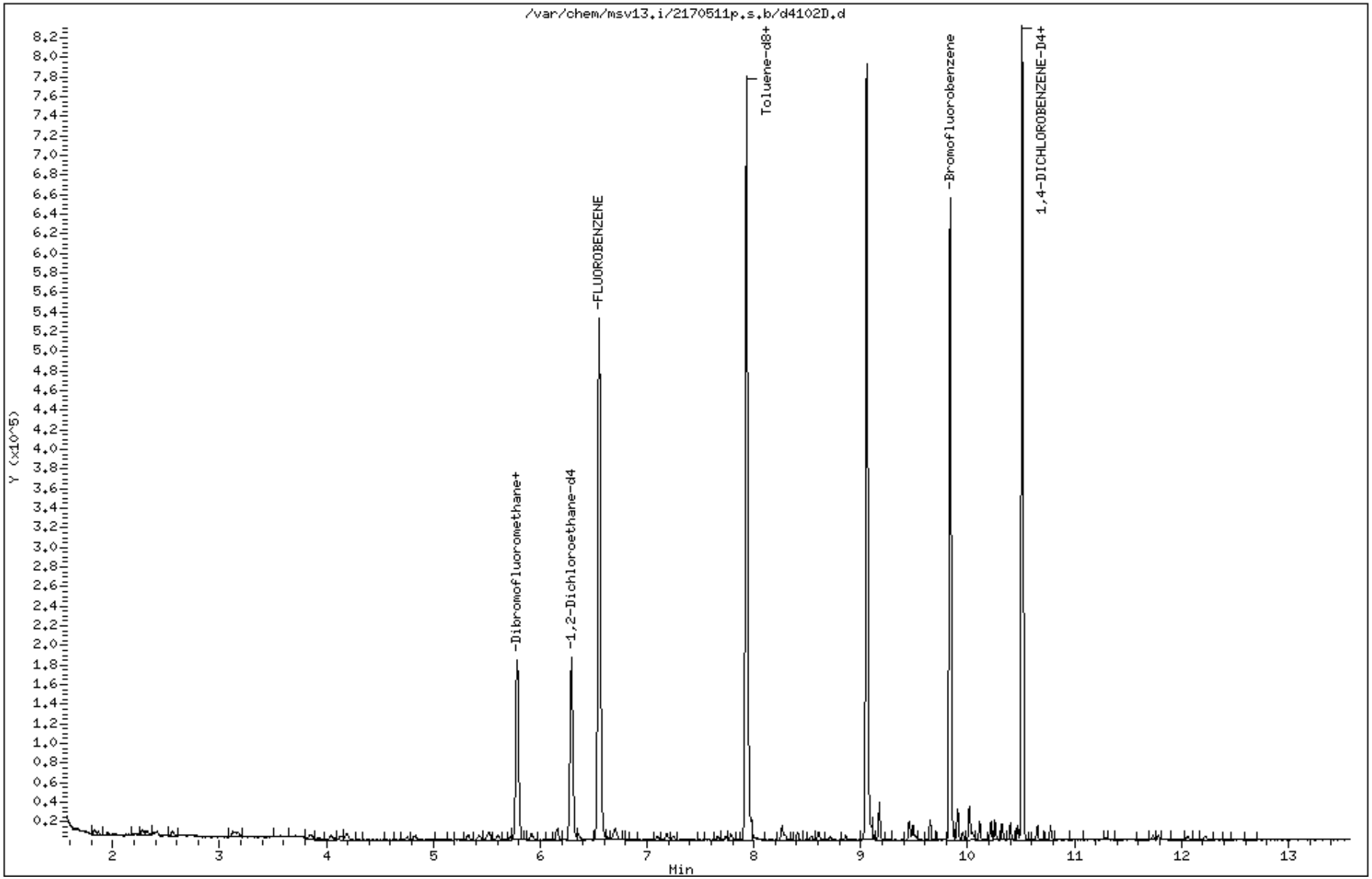
Sample Info: 1203*V13STD001

Purge Volume: 5.0

Operator: JCK

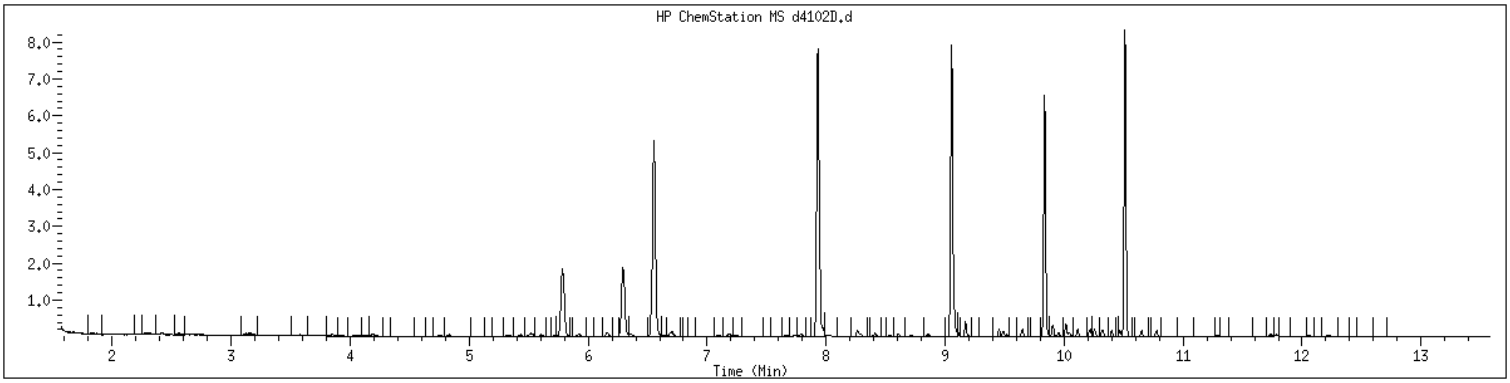
Column phase: RTX-VMS-30M

Column diameter: 0.25



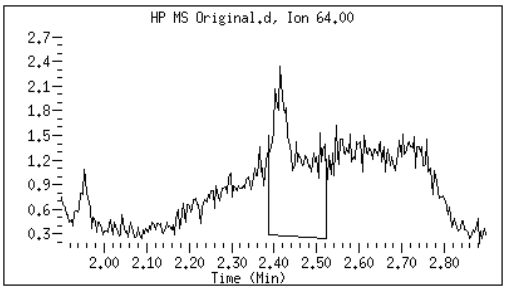
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1203 SampleType : CALIB_3
Injection Date: 05/11/2017 14:20 Instrument : msv13.i
Operator : JCK
Sample Info : 1203*V13STD001
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



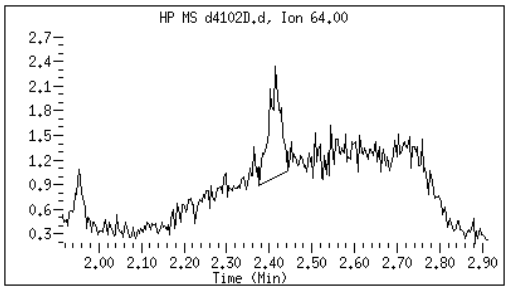
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2

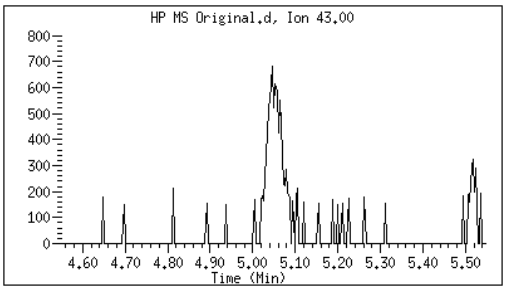


Electronic Signature Applied

User: jck2
Date: 05/11/2017 14:37



28 Vinyl Acetate CAS#: 108-05-4 Reason: M1



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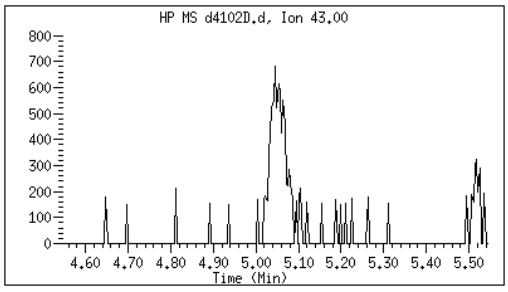
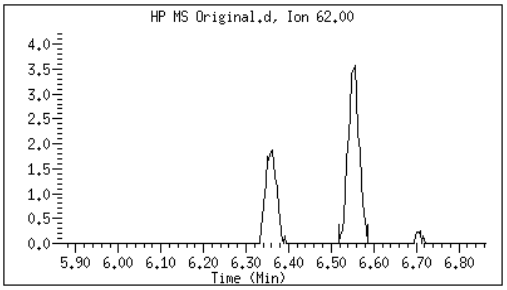
Date: 05/11/2017 14:37



Original Final

51 1,2-Dichloroethane CAS#: 107-06-2 Reason: M3



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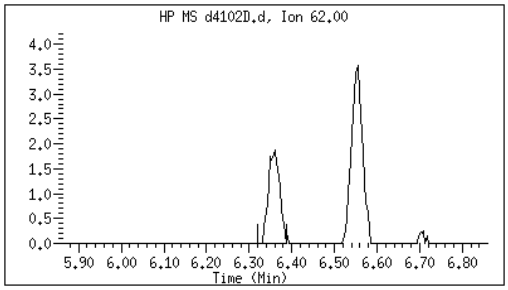

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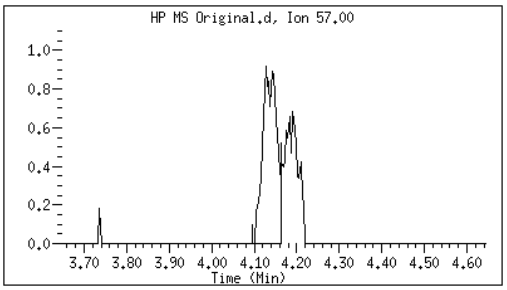
20 Hexane CAS#: 110-54-3 Reason: M2



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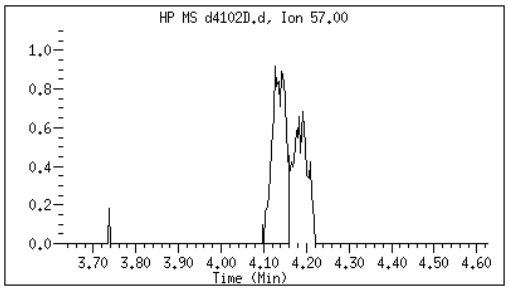
Date: 05/11/2017 14:36



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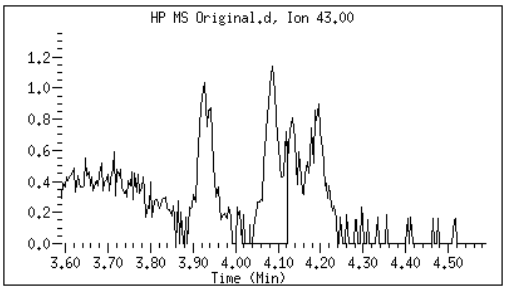
19 Methyl Acetate CAS#: 79-20-9 Reason: M2



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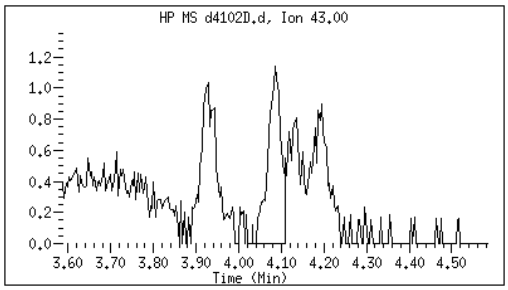


M1 - Target system did not integrate
M2 - Target system integrated incorrectly
M3 - Target system integrated incorrect peak

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4104D.d
Lab Smp Id: 1204 Client Smp ID: V13STD005
Inj Date : 11-MAY-2017 15:05
Operator : JCK Inst ID: msv13.i
Smp Info : 1204*V13STD005
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 15:05 Cal File: d4104D.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	12848	5.00000	5.67	
2	Chloromethane ++	50	1.870	1.870	(0.285)	10918	5.00000	5.25	
3	Vinyl Chloride +	62	1.956	1.956	(0.299)	12808	5.00000	5.46	
6	Bromomethane	94	2.279	2.279	(0.348)	8963	5.00000	5.36	
7	Chloroethane	64	2.414	2.414	(0.368)	8696	5.00000	5.06	(M2)
8	Trichlorofluoromethane	101	2.560	2.560	(0.391)	17831	5.00000	5.62	
10	1,1-Dichloroethene +	96	3.122	3.122	(0.476)	10792	5.00000	5.44	
11	Carbon Disulfide	76	3.160	3.160	(0.482)	28427	5.00000	5.02	
12	1,1,2Trichlotrifluoroethane	101	3.182	3.182	(0.486)	10823	5.00000	5.81	
13	Methyl Iodide	142	3.295	3.295	(0.503)	3804	5.00000	6.72	
14	Acrolein	56	3.549	3.549	(0.542)	4503	25.0000	23.5	
16	Methylene Chloride	49	3.853	3.853	(0.588)	15800	5.00000	5.53	
17	Acetone	43	3.928	3.928	(0.600)	10186	5.00000	6.14	
18	trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	14654	5.00000	5.30	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.089	4.089	(0.624)	11895	5.00000	5.69	8445
	20 Hexane	57	4.142	4.142	(0.632)	13984	5.00000	5.48	9088
	21 MTBE	73	4.187	4.187	(0.639)	36419	5.00000	5.18	8794
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	19942	5.00000	5.32	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	20749	25.0000	23.6	
	28 Vinyl Acetate	43	5.045	5.045	(0.770)	6442	5.00000	4.46	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	14791	5.00000	5.18	
M	75 Total 1,2-Dichloroethene	61				29445	10.0000	10.5	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	16508	5.00000	5.23	
	32 Cyclohexane	56	5.514	5.514	(0.842)	18662	5.00000	5.53	9281
	34 Bromochloromethane	128	5.521	5.521	(0.843)	6139	5.00000	5.36	
	35 Chloroform +	83	5.607	5.607	(0.856)	19778	5.00000	5.33	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	13704	5.00000	5.21	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	111627	50.0000	49.6	8462
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	17160	5.00000	5.31	
	44 2-Butanone	43	5.922	5.922	(0.904)	8618	5.00000	4.99	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	15029	5.00000	5.33	
	46 Benzene	78	6.159	6.159	(0.940)	47113	5.00000	5.18	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	66948	50.0000	49.8	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	16794	5.00000	5.38	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	473880	50.0000		
	55 Methyl Cyclohexane	83	6.698	6.698	(1.022)	19335	5.00000	5.57	8825
	56 Trichloroethene	130	6.706	6.706	(1.023)	12812	5.00000	5.23	
	57 Dibromomethane	93	7.096	7.096	(1.083)	7119	5.00000	5.07	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	11282	5.00000	5.06	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	14457	5.00000	5.05	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	16510	5.00000	5.25	9470
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	6753	5.00000	5.07	
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	17357	5.00000	4.94	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	459521	50.0000	50.1	
	69 Toluene +	91	7.973	7.973	(0.880)	52074	5.00000	5.25	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	10180	5.00000	5.27	
	73 4-methyl-2-pentanone	43	8.265	8.265	(0.913)	14666	5.00000	5.07	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	14696	5.00000	4.79	
M	82 1-3 Dichloropropene total	100				32053	10.0000	9.73	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	11386	5.00000	5.19	
	78 Dibromochloromethane	129	8.543	8.543	(0.943)	11332	5.00000	5.01	
	79 1,3-Dichloropropane	76	8.610	8.610	(0.951)	19365	5.00000	5.21	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	10659	5.00000	4.88	
	83 2-Hexanone	43	8.854	8.854	(0.978)	11800	5.00000	5.12	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	15933	5.00000	5.68	7927
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	188042	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	33449	5.00000	5.20	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	18152	5.00000	5.25	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.005)	11261	5.00000	5.21	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	43470	10.0000	10.2	
	90 o-Xylene	106	9.454	9.454	(1.044)	22084	5.00000	5.20	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				65554	15.0000	15.4	
91 Styrene	104	9.487	9.487	(1.048)	33428	5.00000	4.91	
92 Bromoform ++	173	9.514	9.514	(1.050)	8194	5.00000	4.60	
93 Isopropylbenzene	105	9.649	9.649	(1.065)	56019	5.00000	5.29	
$ 95 Bromofluorobenzene	174	9.836	9.836	(1.086)	146647	50.0000	48.3	
96 Bromobenzene	77	9.903	9.903	(0.942)	23811	5.00000	5.54	
97 n-Propylbenzene	91	9.907	9.907	(0.943)	61973	5.00000	5.57	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	15624	5.00000	5.43	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	43066	5.00000	5.56	
102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	43113	5.00000	5.47	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	18469	5.00000	5.48	
101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	3291	5.00000	4.72	
104 4-Chlorotoluene	91	10.113	10.113	(0.962)	37678	5.00000	5.46	
105 tert-butylbenzene	91	10.215	10.215	(0.972)	24640	5.00000	5.60	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	42503	5.00000	5.38	
108 sec-Butylbenzene	105	10.323	10.323	(0.982)	54120	5.00000	5.56	
110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	43958	5.00000	5.36	
113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	25377	5.00000	5.35	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	166841	50.0000		
115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	26037	5.00000	5.46	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	37052	5.00000	5.36	
118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	25300	5.00000	5.44	
119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	3355	5.00000	5.02	
120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	7129	5.00000	5.41	
122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	11346	5.00000	4.65	
124 Naphthalene	128	12.059	12.059	(1.147)	26403	5.00000	4.16	
125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	11537	5.00000	4.74	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4104D.d

Date : 11-MAY-2017 15:05

Client ID: V13STD005

Instrument: msv13.i

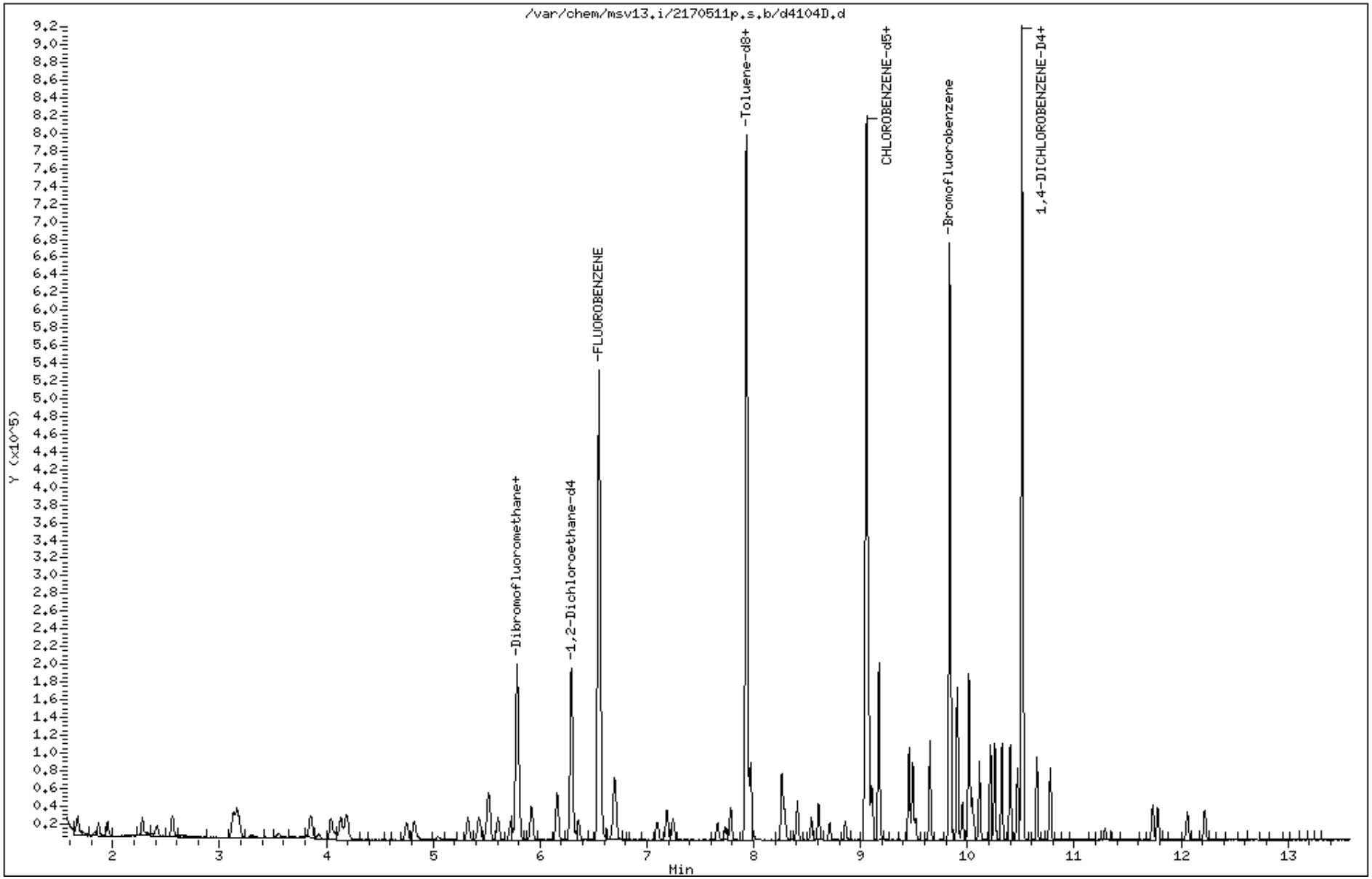
Sample Info: 1204*V13STD005

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

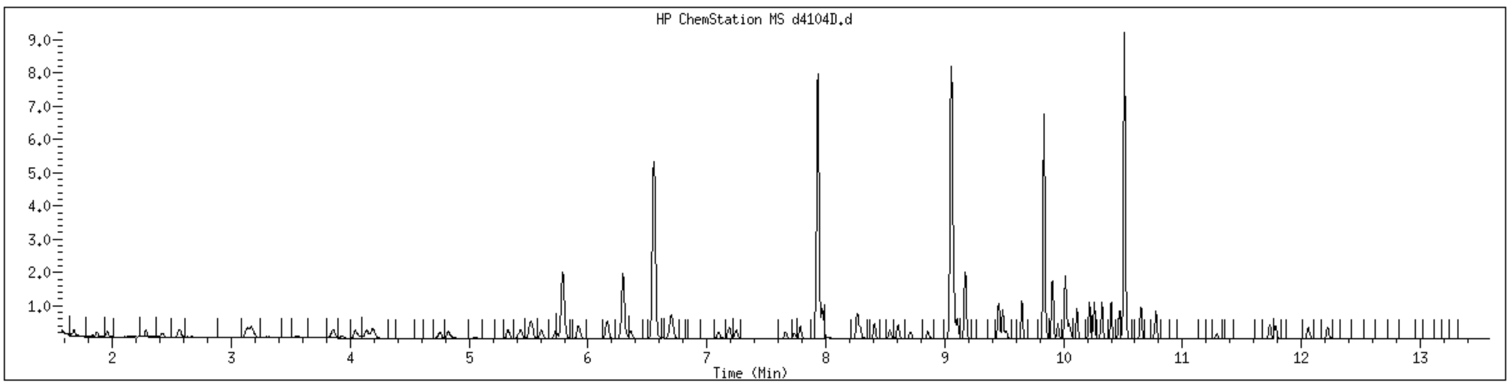


Data file : /var/chem/msv13.i/2170511p.s.b/d4104D.d Page: 1
Report Date: 05/12/2017 12:02

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1204
Injection Date: 05/11/2017 15:05
Operator : JCK
Sample Info : 1204*V13STD005
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE

SampleType : CALIB_4
Instrument : msv13.i
Compound Sublist: 8260b



Original Final

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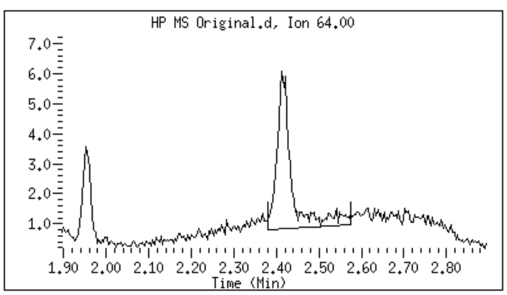
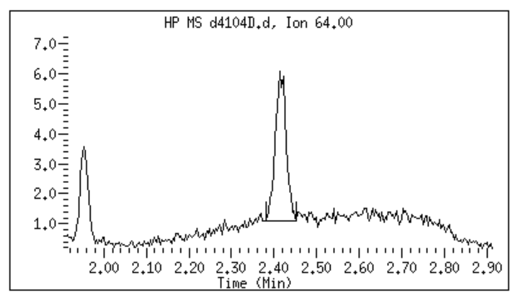
7 Chloroethane CAS#: 75-00-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 15:56



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4105D.d
Lab Smp Id: 1205 Client Smp ID: V13STD010
Inj Date : 11-MAY-2017 15:27
Operator : JCK Inst ID: msv13.i
Smp Info : 1205*V13STD010
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 15:27 Cal File: d4105D.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	23255	10.0000	10.2	
2 Chloromethane ++	50	1.870	1.870	(0.285)	20348	10.0000	9.72	
3 Vinyl Chloride +	62	1.952	1.952	(0.298)	23295	10.0000	9.87	
6 Bromomethane	94	2.279	2.279	(0.348)	16276	10.0000	9.67	
7 Chloroethane	64	2.414	2.414	(0.368)	14956	10.0000	9.01	(M2)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	31931	10.0000	9.99	
10 1,1-Dichloroethene +	96	3.130	3.130	(0.478)	19299	10.0000	9.66	
11 Carbon Disulfide	76	3.159	3.159	(0.482)	54166	10.0000	9.50	
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	19708	10.0000	10.5	
13 Methyl Iodide	142	3.291	3.291	(0.502)	8055	10.0000	9.20	
14 Acrolein	56	3.553	3.553	(0.542)	9073	50.0000	47.0	(M2)
16 Methylene Chloride	49	3.857	3.857	(0.589)	29911	10.0000	10.4	
17 Acetone	43	3.928	3.928	(0.600)	18088	10.0000	10.8	
18 trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	26939	10.0000	9.67	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	20236	10.0000	9.62	8664
	20 Hexane	57	4.134	4.134	(0.631)	24945	10.0000	9.71	9497
	21 MTBE	73	4.187	4.187	(0.639)	67840	10.0000	9.58	8938
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	36255	10.0000	9.61	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	45244	50.0000	51.0	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	13346	10.0000	9.18	
	29 cis-1,2-Dichloroethene	61	5.322	5.322	(0.812)	28017	10.0000	9.74	
M	75 Total 1,2-Dichloroethene	61				54956	20.0000	19.4	
	30 2,2-Dichloropropane	77	5.435	5.435	(0.830)	30064	10.0000	9.45	
	32 Cyclohexane	56	5.514	5.514	(0.842)	33929	10.0000	9.99	9380
	34 Bromochloromethane	128	5.529	5.529	(0.844)	11599	10.0000	10.1	
	35 Chloroform +	83	5.604	5.604	(0.855)	36160	10.0000	9.68	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	25633	10.0000	9.68	
$	40 Dibromofluoromethane	111	5.787	5.787	(0.883)	114398	50.0000	50.5	9258
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	31763	10.0000	9.76	
	44 2-Butanone	43	5.922	5.922	(0.904)	17429	10.0000	10.0	
	43 1,1-Dichloropropene	75	5.918	5.918	(0.903)	27706	10.0000	9.76	
	46 Benzene	78	6.162	6.162	(0.940)	86742	10.0000	9.48	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	67681	50.0000	50.0	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	29895	10.0000	9.51	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	477115	50.0000		
	55 Methyl Cyclohexane	83	6.694	6.694	(1.022)	34496	10.0000	9.87	9383
	56 Trichloroethene	130	6.709	6.709	(1.024)	23839	10.0000	9.66	
	57 Dibromomethane	93	7.099	7.099	(1.084)	13296	10.0000	9.40	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	21629	10.0000	9.64	
	60 Bromodichloromethane	83	7.249	7.249	(1.106)	26867	10.0000	9.32	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	30589	10.0000	9.66	9510
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	11713	10.0000	8.74	
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	32665	10.0000	9.24	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	464989	50.0000	50.0	
	69 Toluene +	91	7.969	7.969	(0.880)	96736	10.0000	9.63	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	18237	10.0000	9.31	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.912)	28193	10.0000	9.61	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	28114	10.0000	9.10	
M	82 1-3 Dichloropropene total	100				60779	20.0000	18.3	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	21179	10.0000	9.52	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	20754	10.0000	9.05	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	35843	10.0000	9.52	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	21055	10.0000	9.51	
	83 2-Hexanone	43	8.857	8.857	(0.978)	22192	10.0000	9.51	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	25831	10.0000	9.08	7435
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	190589	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	63087	10.0000	9.67	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	33522	10.0000	9.56	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	20447	10.0000	9.33	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	83625	20.0000	19.3	
	90 o-Xylene	106	9.453	9.453	(1.044)	41109	10.0000	9.55	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				124734	30.0000	28.8	
	91 Styrene	104	9.487	9.487	(1.048)	64724	10.0000	9.38	
	92 Bromoform ++	173	9.517	9.517	(1.051)	15974	10.0000	8.85	
	93 Isopropylbenzene	105	9.648	9.648	(1.065)	103322	10.0000	9.62	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	149162	50.0000	48.5	
	96 Bromobenzene	77	9.907	9.907	(0.943)	44426	10.0000	9.78	
	97 n-Propylbenzene	91	9.907	9.907	(0.943)	116118	10.0000	9.87	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	29497	10.0000	9.69	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	80932	10.0000	9.88	
	102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	81841	10.0000	9.82	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	32612	10.0000	9.15	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	6877	10.0000	9.33	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	70801	10.0000	9.70	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	45972	10.0000	9.88	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	80539	10.0000	9.64	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	102260	10.0000	9.94	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	83375	10.0000	9.61	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	47249	10.0000	9.43	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	176366	50.0000		
	115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	47886	10.0000	9.49	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	71746	10.0000	9.81	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	47813	10.0000	9.72	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	6438	10.0000	9.11	
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	13544	10.0000	9.72	
	122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	24995	10.0000	8.95	
	124 Naphthalene	128	12.059	12.059	(1.147)	63242	10.0000	8.08	
	125 1,2,3-Trichlorobenzene	180	12.224	12.224	(1.163)	24732	10.0000	8.91	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4105D.d

Page 1

Date : 11-MAY-2017 15:27

Client ID: V13STD010

Instrument: msv13.i

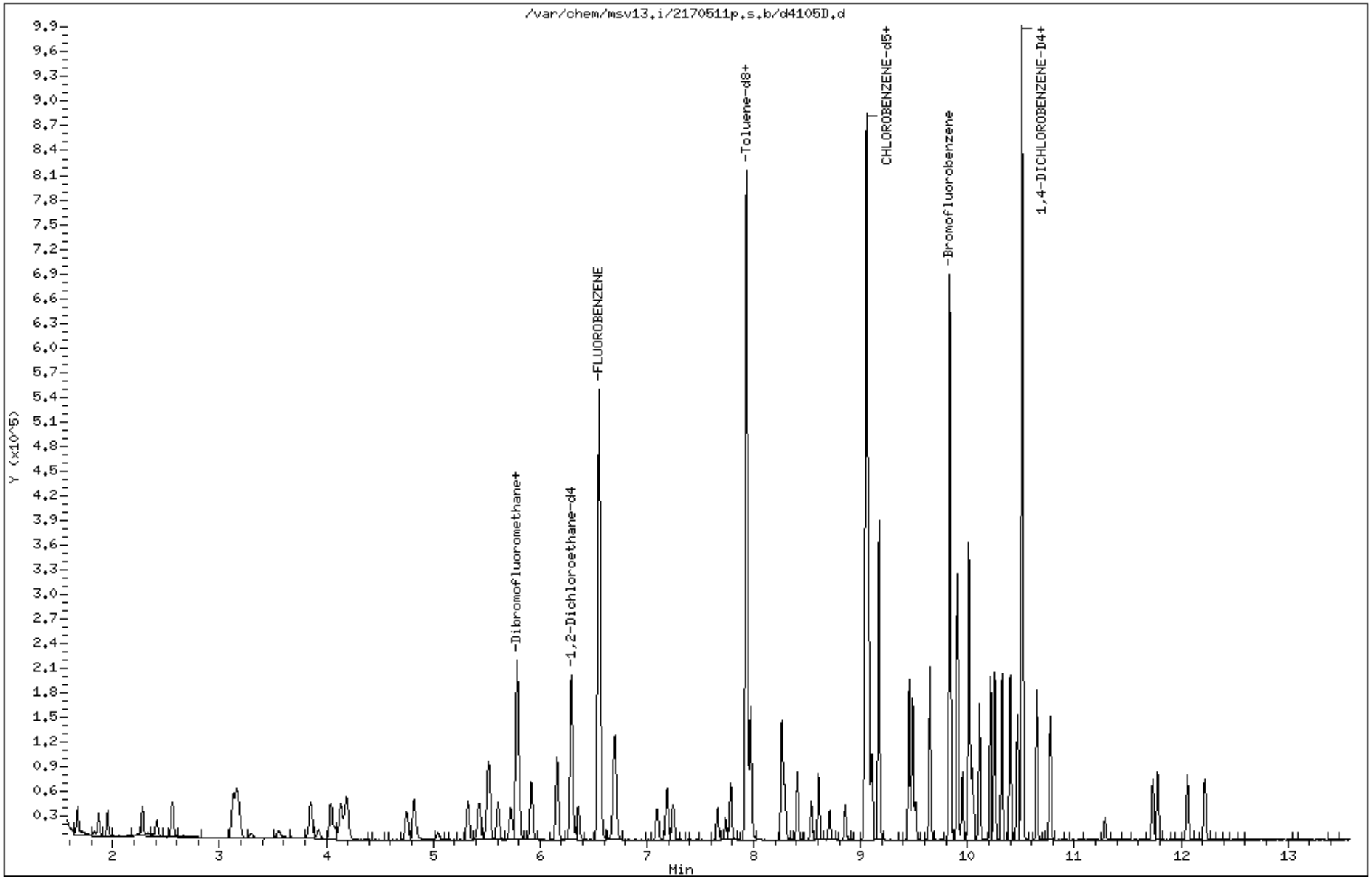
Sample Info: 1205*V13STD010

Purge Volume: 5.0

Operator: JCK

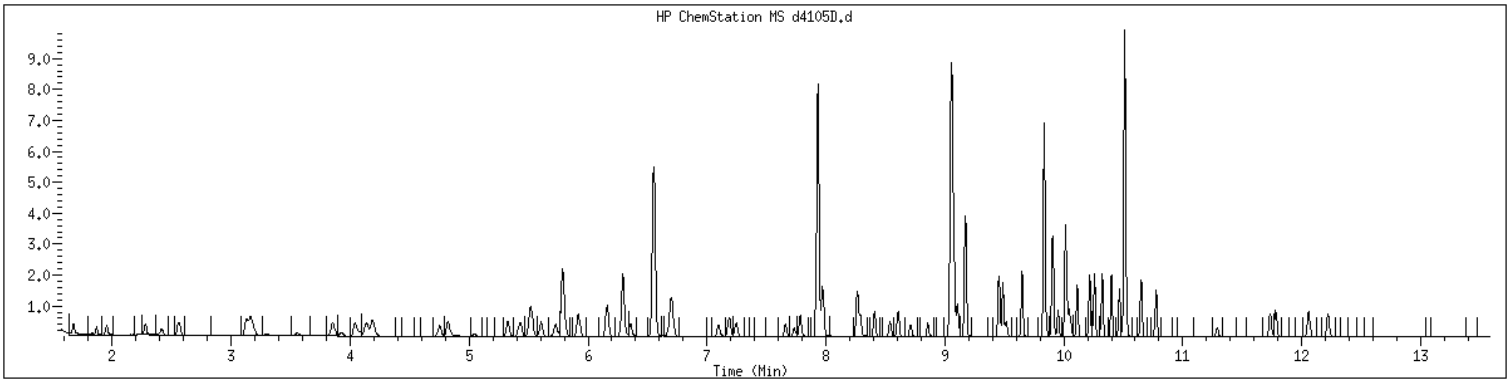
Column phase: RTX-VMS-30M

Column diameter: 0.25



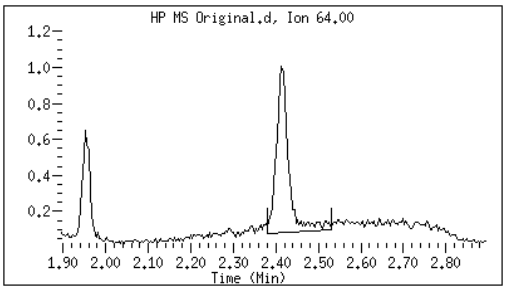
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1205 SampleType : CALIB_5
Injection Date: 05/11/2017 15:27 Instrument : msv13.i
Operator : JCK
Sample Info : 1205*V13STD010
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



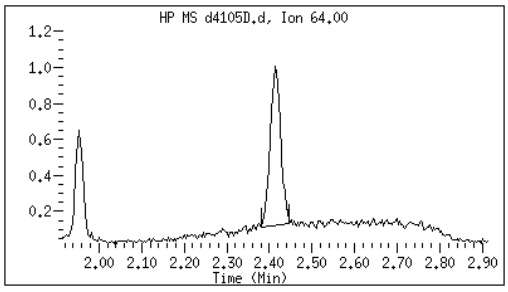
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2

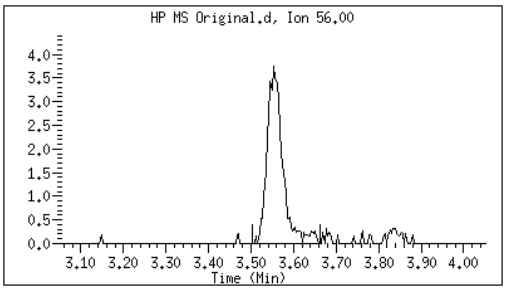


Electronic Signature Applied

User: jck2
Date: 05/11/2017 15:57

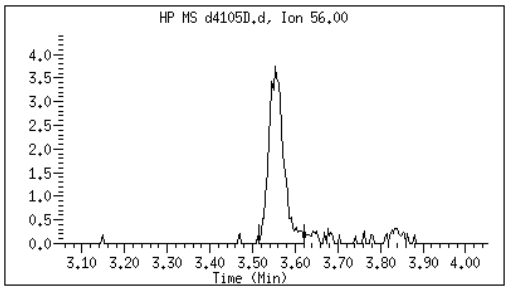


14 Acrolein CAS#: 107-02-8 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 15:57



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4106D.d
Lab Smp Id: 1206 Client Smp ID: V13STD020
Inj Date : 11-MAY-2017 15:49
Operator : JCK Inst ID: msv13.i
Smp Info : 1206*V13STD020
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 15:49 Cal File: d4106D.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.671	1.671	(0.255)	46214	20.0000	20.5	
2 Chloromethane ++	50	1.870	1.870	(0.285)	40090	20.0000	19.4	
3 Vinyl Chloride +	62	1.952	1.952	(0.298)	46825	20.0000	20.1	
6 Bromomethane	94	2.279	2.279	(0.348)	31257	20.0000	18.8	
7 Chloroethane	64	2.413	2.413	(0.368)	30204	20.0000	19.0	(M2)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	63939	20.0000	20.3	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	39309	20.0000	20.0	
11 Carbon Disulfide	76	3.159	3.159	(0.482)	110364	20.0000	19.6	
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	38001	20.0000	20.6	
13 Methyl Iodide	142	3.294	3.294	(0.503)	19717	20.0000	16.2	
14 Acrolein	56	3.557	3.557	(0.543)	19082	100.000	100	
16 Methylene Chloride	49	3.857	3.857	(0.589)	52270	20.0000	18.4	
17 Acetone	43	3.928	3.928	(0.600)	31216	20.0000	18.9	
18 trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	53398	20.0000	19.4	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	38744	20.0000	18.7	9361
	20 Hexane	57	4.134	4.134	(0.631)	51633	20.0000	20.4	9479
	21 MTBE	73	4.187	4.187	(0.639)	135854	20.0000	19.5	8829
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	73084	20.0000	19.7	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	89533	100.000	102	
	28 Vinyl Acetate	43	5.045	5.045	(0.770)	30147	20.0000	21.0	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	55737	20.0000	19.7	
M	75 Total 1,2-Dichloroethene	61				109135	40.0000	39.1	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	60995	20.0000	19.5	
	32 Cyclohexane	56	5.514	5.514	(0.842)	67712	20.0000	20.2	9338
	34 Bromochloromethane	128	5.525	5.525	(0.843)	22754	20.0000	20.0	
	35 Chloroform +	83	5.607	5.607	(0.856)	70885	20.0000	19.2	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	51060	20.0000	19.6	
$	40 Dibromofluoromethane	111	5.787	5.787	(0.883)	110829	50.0000	49.6	9633
	41 1,1,1-Trichloroethane	97	5.802	5.802	(0.886)	62532	20.0000	19.5	
	44 2-Butanone	43	5.918	5.918	(0.903)	34021	20.0000	19.8	
	43 1,1-Dichloropropene	75	5.918	5.918	(0.903)	55484	20.0000	19.8	
	46 Benzene	78	6.162	6.162	(0.940)	175790	20.0000	19.5	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	66870	50.0000	50.1	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	59742	20.0000	19.3	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	470326	50.0000		
	55 Methyl Cyclohexane	83	6.694	6.694	(1.022)	70921	20.0000	20.6	9485
	56 Trichloroethene	130	6.709	6.709	(1.024)	47387	20.0000	19.5	
	57 Dibromomethane	93	7.096	7.096	(1.083)	27497	20.0000	19.7	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	42864	20.0000	19.4	
	60 Bromodichloromethane	83	7.249	7.249	(1.106)	54384	20.0000	19.1	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	60444	20.0000	19.4	9520
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	27491	20.0000	20.8	
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	68048	20.0000	19.5	
$	68 Toluene-d8	98	7.931	7.931	(0.876)	458470	50.0000	50.8	
	69 Toluene +	91	7.973	7.973	(0.880)	192958	20.0000	19.8	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	37569	20.0000	19.8	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.912)	56359	20.0000	19.8	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	59663	20.0000	19.6	
M	82 1-3 Dichloropropene total	100				127711	40.0000	39.1	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	42219	20.0000	19.6	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	43457	20.0000	19.5	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	71824	20.0000	19.7	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	42509	20.0000	19.8	
	83 2-Hexanone	43	8.854	8.854	(0.978)	44408	20.0000	19.6	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	53508	20.0000	19.4	9127
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	184868	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	125164	20.0000	19.8	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	68723	20.0000	20.2	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.005)	42395	20.0000	19.9	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	168211	40.0000	40.0	
	90 o-Xylene	106	9.453	9.453	(1.044)	84359	20.0000	20.2	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				252570	60.0000	60.2	
	91 Styrene	104	9.487	9.487	(1.048)	133614	20.0000	20.0	
	92 Bromoform ++	173	9.517	9.517	(1.051)	33206	20.0000	19.0	
	93 Isopropylbenzene	105	9.648	9.648	(1.065)	208754	20.0000	20.0	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	150234	50.0000	50.3	
	96 Bromobenzene	77	9.907	9.907	(0.943)	89359	20.0000	19.3	
	97 n-Propylbenzene	91	9.907	9.907	(0.943)	241432	20.0000	20.1	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	61627	20.0000	19.8	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	163573	20.0000	19.5	
	102 1,3,5-Trimethylbenzene	105	10.019	10.019	(0.953)	170921	20.0000	20.1	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	68665	20.0000	18.9	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	14184	20.0000	18.8	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	145665	20.0000	19.5	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	93549	20.0000	19.7	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	168530	20.0000	19.7	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	212079	20.0000	20.2	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	177335	20.0000	20.0	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	101561	20.0000	19.8	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	180198	50.0000		
	115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	100805	20.0000	19.6	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	151596	20.0000	20.3	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	99386	20.0000	19.8	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	14450	20.0000	20.0	
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	28118	20.0000	19.8	
	122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	54417	20.0000	18.3	
	124 Naphthalene	128	12.059	12.059	(1.147)	150894	20.0000	17.4	
	125 1,2,3-Trichlorobenzene	180	12.224	12.224	(1.163)	55259	20.0000	18.7	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4106D.d

Date : 11-MAY-2017 15:49

Client ID: V13STD020

Instrument: msv13.i

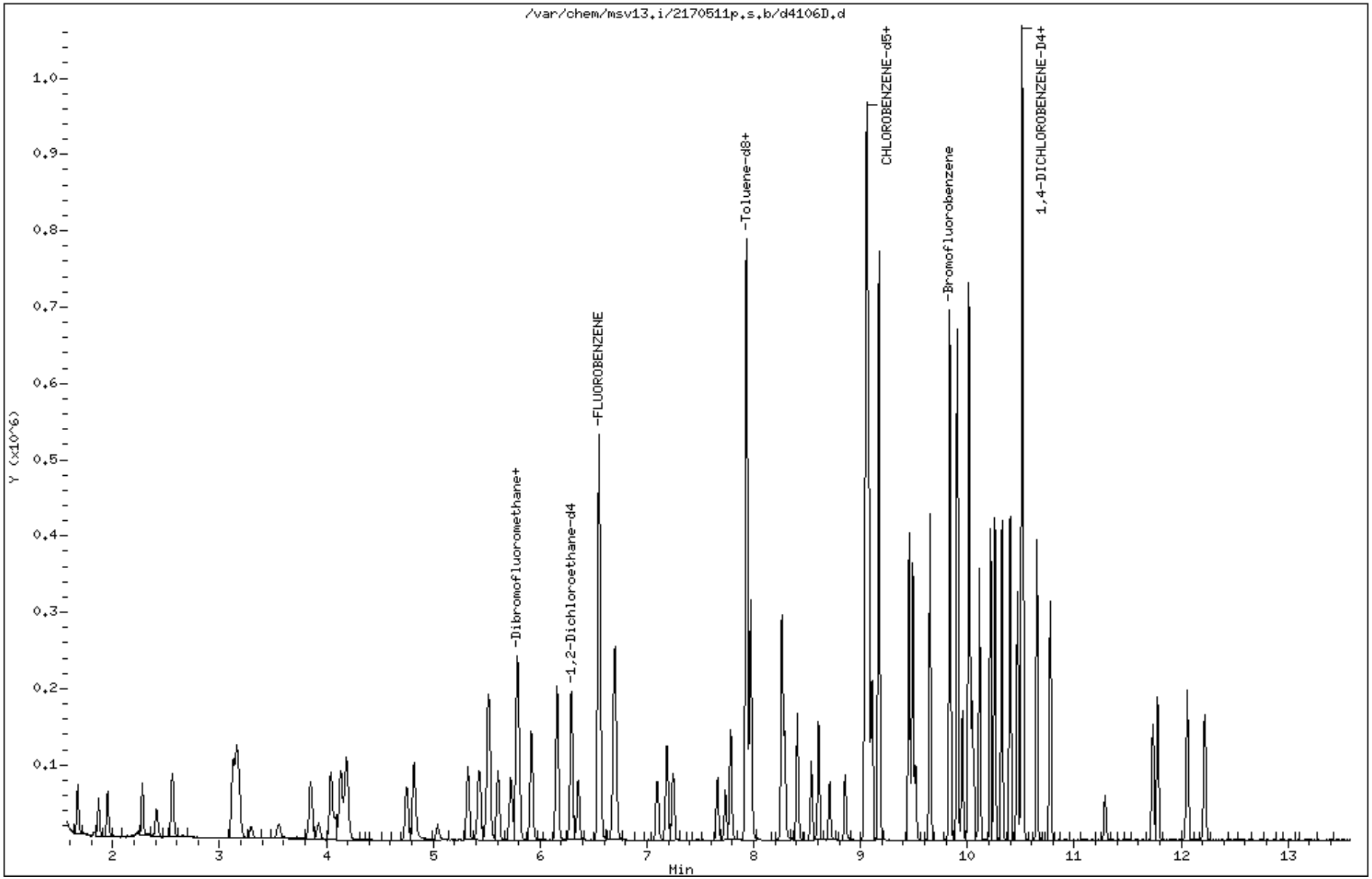
Sample Info: 1206*V13STD020

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

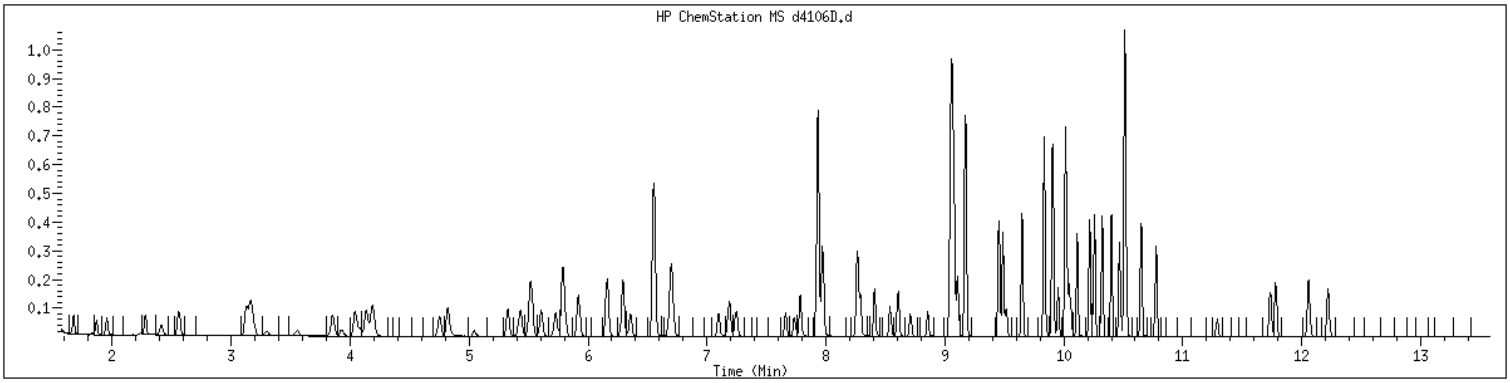
Column diameter: 0.25



Report Date: 05/12/2017 12:02

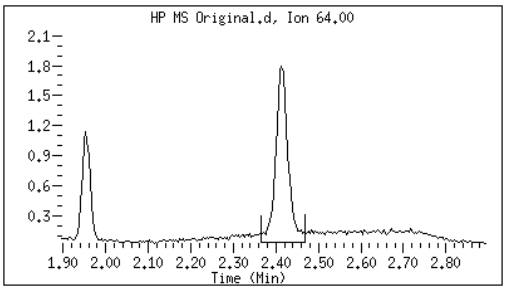
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1206 SampleType : CALIB_6
Injection Date: 05/11/2017 15:49 Instrument : msv13.i
Operator : JCK
Sample Info : 1206*V13STD020
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



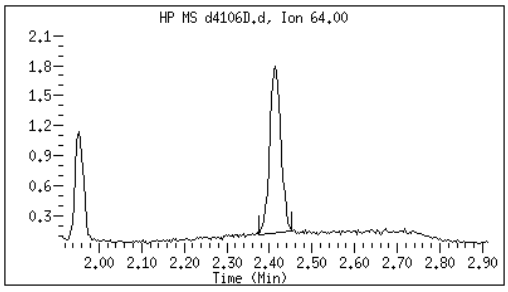
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 16:23



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4107D.d
Lab Smp Id: 1207 Client Smp ID: V13STD050
Inj Date : 11-MAY-2017 16:12
Operator : JCK Inst ID: msv13.i
Smp Info : 1207*V13STD050
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:12 Cal File: d4107D.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	120492	50.0000	52.4	
2 Chloromethane ++	50	1.870	1.870	(0.285)	105036	50.0000	49.8	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	122486	50.0000	51.5	
6 Bromomethane	94	2.279	2.279	(0.348)	80543	50.0000	47.5	
7 Chloroethane	64	2.410	2.410	(0.368)	81144	50.0000	50.7	(M2)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	169374	50.0000	52.6	
10 1,1-Dichloroethene +	96	3.130	3.130	(0.478)	101452	50.0000	50.4	
11 Carbon Disulfide	76	3.160	3.160	(0.482)	302346	50.0000	52.6	(M1)
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	98875	50.0000	52.4	
13 Methyl Iodide	142	3.295	3.295	(0.503)	73719	50.0000	47.5	
14 Acrolein	56	3.553	3.553	(0.542)	44281	250.000	227	
16 Methylene Chloride	49	3.853	3.853	(0.588)	145853	50.0000	50.3	
17 Acetone	43	3.928	3.928	(0.600)	79455	50.0000	47.2	
18 trans-1,2-Dichloroethene	61	4.044	4.044	(0.617)	143214	50.0000	51.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	99553	50.0000	47.0	9593
	20 Hexane	57	4.134	4.134	(0.631)	131529	50.0000	50.8	9523
	21 MTBE	73	4.187	4.187	(0.639)	358761	50.0000	50.3	8811
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	192406	50.0000	50.6	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	228544	250.000	256	
	28 Vinyl Acetate	43	5.038	5.038	(0.769)	72141	50.0000	49.2	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	149624	50.0000	51.6	
M	75 Total 1,2-Dichloroethene	61				292838	100.000	103	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	161554	50.0000	50.4	
	32 Cyclohexane	56	5.514	5.514	(0.842)	177646	50.0000	51.9	9373
	34 Bromochloromethane	128	5.525	5.525	(0.843)	58897	50.0000	50.7	
	35 Chloroform +	83	5.604	5.604	(0.855)	191589	50.0000	50.9	
	36 Carbon Tetrachloride	117	5.728	5.728	(0.874)	140778	50.0000	52.8	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	114098	50.0000	50.0	8231
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	169780	50.0000	51.8	
	44 2-Butanone	43	5.915	5.915	(0.903)	86039	50.0000	49.1	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	146665	50.0000	51.3	
	46 Benzene	78	6.159	6.159	(0.940)	470151	50.0000	51.0	
$	50 1,2-Dichloroethane-d4	67	6.294	6.294	(0.961)	68616	50.0000	50.3	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	156551	50.0000	49.4	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	480773	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.695	(1.022)	180915	50.0000	51.4	9283
	56 Trichloroethene	130	6.710	6.710	(1.024)	128068	50.0000	51.5	
	57 Dibromomethane	93	7.096	7.096	(1.083)	74375	50.0000	52.2	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	114336	50.0000	50.6	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	150675	50.0000	51.9	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	166205	50.0000	52.1	9557
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	72907	50.0000	54.0	
	67 cis-1,3-Dichloropropene	75	7.786	7.786	(1.188)	191917	50.0000	53.9	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	465716	50.0000	49.7	
	69 Toluene +	91	7.973	7.973	(0.880)	513551	50.0000	50.7	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	100893	50.0000	51.1	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.912)	146327	50.0000	49.5	
	74 trans-1,3-Dichloropropene	75	8.292	8.292	(1.265)	171956	50.0000	55.2	
M	82 1-3 Dichloropropene total	100				363873	100.000	109	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	114268	50.0000	51.0	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	125505	50.0000	54.3	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	195908	50.0000	51.6	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	117250	50.0000	52.6	
	83 2-Hexanone	43	8.854	8.854	(0.978)	117326	50.0000	49.9	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	140844	50.0000	49.1	8940
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	192153	50.0000		
	85 Chlorobenzene ++	112	9.068	9.068	(1.001)	336046	50.0000	51.1	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	183687	50.0000	51.9	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	115981	50.0000	52.5	
	89 p,m-Xylene	106	9.173	9.173	(1.013)	456552	100.000	105	
	90 o-Xylene	106	9.454	9.454	(1.044)	224767	50.0000	51.8	

		QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				681319	150.000	156	
	91 Styrene	104	9.487	9.487	(1.048)	373439	50.0000	53.7	
	92 Bromoform ++	173	9.514	9.514	(1.050)	98581	50.0000	54.2	
	93 Isopropylbenzene	105	9.649	9.649	(1.065)	562223	50.0000	51.9	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	159624	50.0000	51.4	
	96 Bromobenzene	77	9.907	9.907	(0.943)	241546	50.0000	48.3	
	97 n-Propylbenzene	91	9.904	9.904	(0.942)	642292	50.0000	49.5	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	162430	50.0000	48.4	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	441206	50.0000	48.9	
	102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	461652	50.0000	50.3	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	196828	50.0000	50.1	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	41104	50.0000	50.6	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	397708	50.0000	49.5	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	249705	50.0000	48.7	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	464698	50.0000	50.5	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	565955	50.0000	49.9	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	482463	50.0000	50.5	
	113 1,3-Dichlorobenzene	146	10.470	10.470	(0.996)	278976	50.0000	50.5	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	194337	50.0000		
	115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	279758	50.0000	50.3	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	409077	50.0000	50.8	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	273381	50.0000	50.4	
	119 1,2-Dibromo-3-Chloropropane	157	11.291	11.291	(1.074)	40644	50.0000	52.2	
	120 Hexachlorobutadiene	225	11.737	11.737	(1.117)	75190	50.0000	49.0	
	122 1,2,4-Trichlorobenzene	180	11.782	11.782	(1.121)	164162	50.0000	49.9	
	124 Naphthalene	128	12.059	12.059	(1.147)	473159	50.0000	48.7	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	161568	50.0000	49.4	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4107D.d

Date : 11-MAY-2017 16:12

Client ID: V13STD050

Instrument: msv13.i

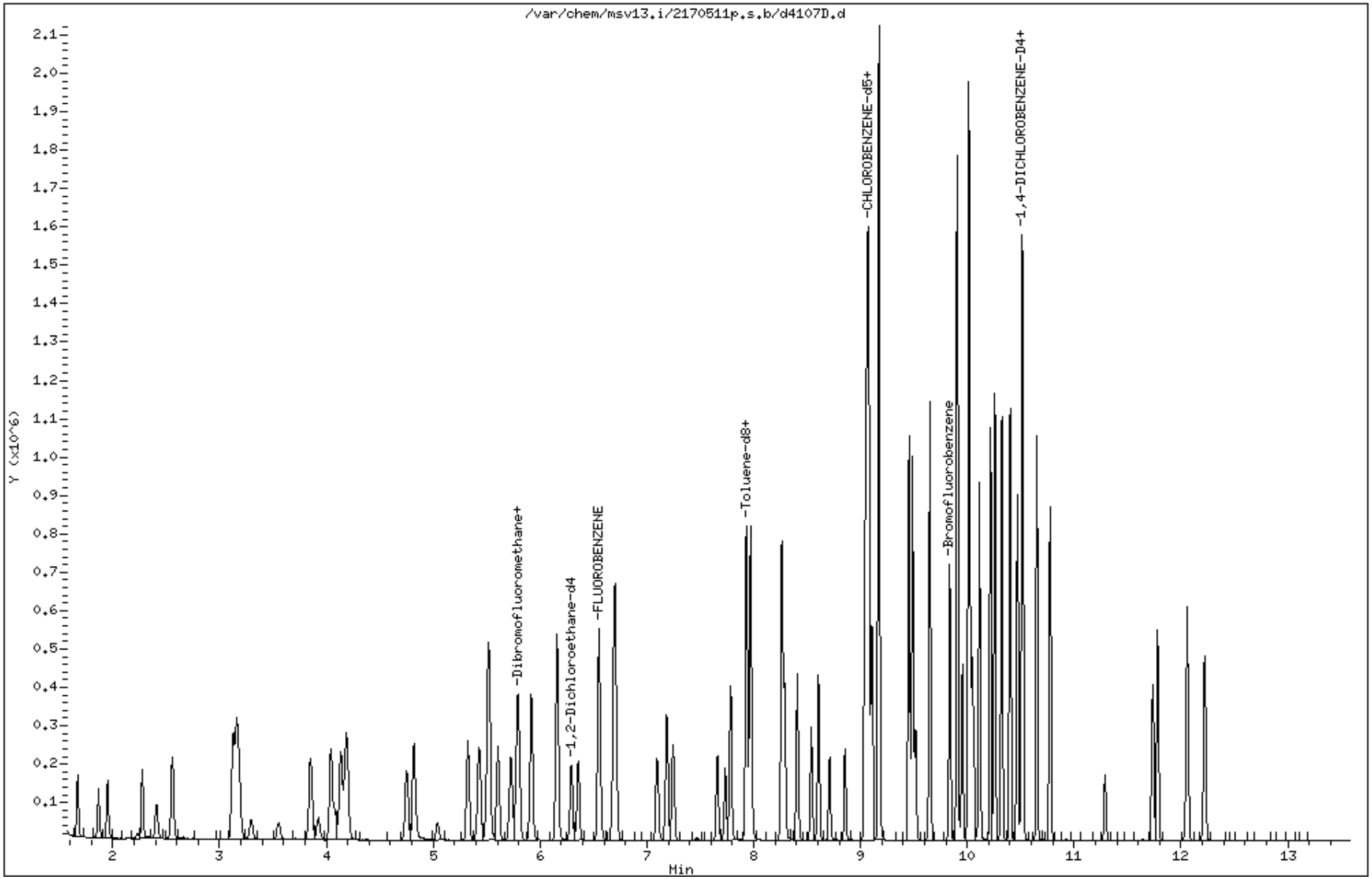
Sample Info: 1207*V13STD050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

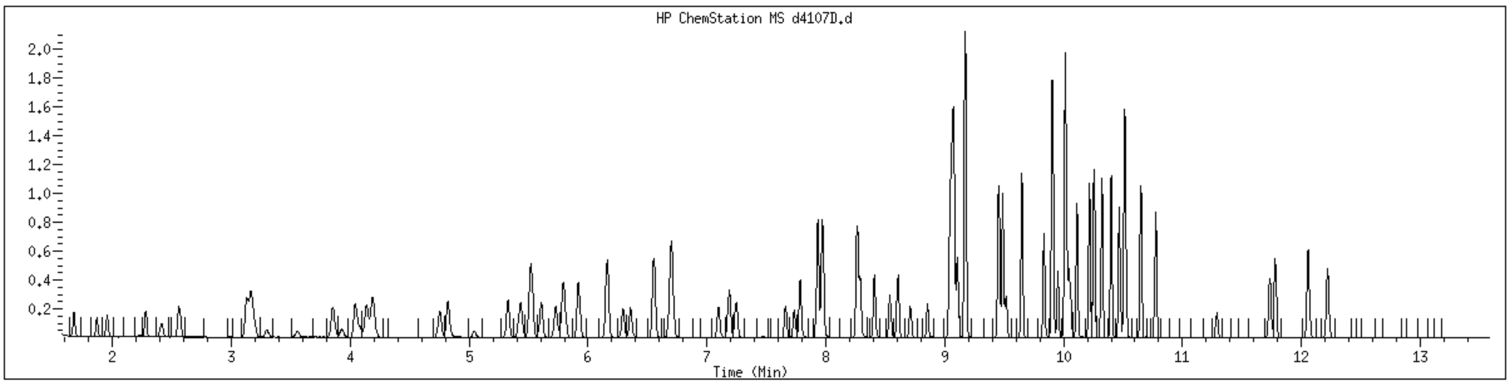
Column diameter: 0.25



Data file : /var/chem/msv13.i/2170511p.s.b/d4107D.d   Page: 1
Report Date: 05/12/2017 12:02

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID   : 1207   SampleType   : CALIB_7
Injection Date: 05/11/2017 16:12   Instrument   : msv13.i
Operator   : JCK
Sample Info   : 1207*V13STD050
Misc Info   : MSV~38318~*1*JCK
Method   : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution   : 1.00
Matrix   : WATER
Integrator   : HP RTE   Compound Sublist: 8260b



Original   Final

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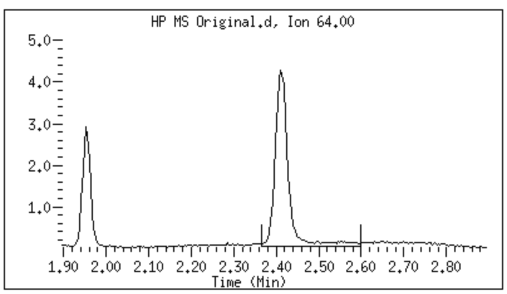
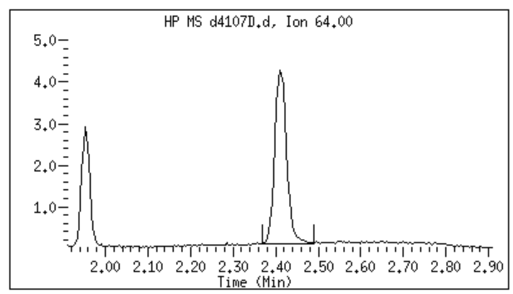
7 Chloroethane   CAS#: 75-00-3   Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 16:29



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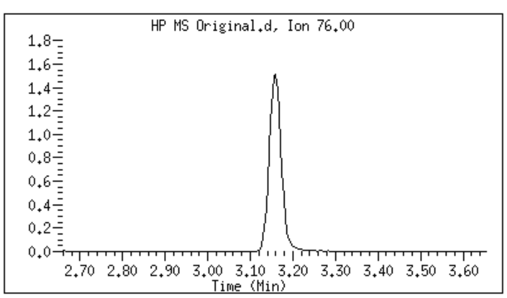
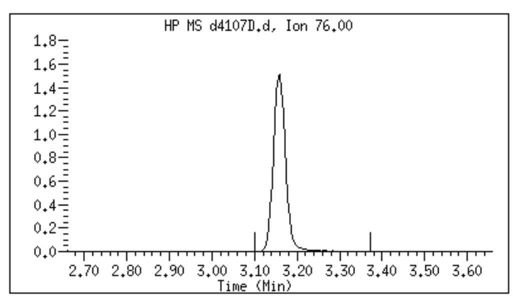
11 Carbon Disulfide   CAS#: 75-15-0   Reason: M1



Electronic Signature Applied

User: jck2
Date: 05/11/2017 16:29



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4108D.d
Lab Smp Id: 1208 Client Smp ID: V13STD100
Inj Date : 11-MAY-2017 16:34
Operator : JCK Inst ID: msv13.i
Smp Info : 1208*V13STD100
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:34 Cal File: d4108D.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	241155	100.000	99.9	
2 Chloromethane ++	50	1.866	1.866	(0.285)	201880	100.000	91.2	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	243624	100.000	97.6	
6 Bromomethane	94	2.279	2.279	(0.348)	160727	100.000	90.3	
7 Chloroethane	64	2.402	2.402	(0.367)	167828	100.000	100	
8 Trichlorofluoromethane	101	2.556	2.556	(0.390)	333105	100.000	98.5	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	203609	100.000	96.4	
11 Carbon Disulfide	76	3.160	3.160	(0.482)	611353	100.000	101	
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	199016	100.000	100	
13 Methyl Iodide	142	3.295	3.295	(0.503)	174743	100.000	102	
14 Acrolein	56	3.553	3.553	(0.542)	96005	500.000	470	
16 Methylene Chloride	49	3.853	3.853	(0.588)	297496	100.000	97.7	
17 Acetone	43	3.928	3.928	(0.600)	163010	100.000	92.2	
18 trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	288620	100.000	98.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	208065	100.000	93.5	9644
	20 Hexane	57	4.138	4.138	(0.632)	285741	100.000	105	9550
	21 MTBE	73	4.187	4.187	(0.639)	726886	100.000	97.1	8775
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	387659	100.000	97.2	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	463689	500.000	495	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	155756	100.000	101	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	302236	100.000	99.3	
M	75 Total 1,2-Dichloroethene	61				590856	200.000	197	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	334041	100.000	99.3	
	32 Cyclohexane	56	5.517	5.517	(0.842)	363699	100.000	101	9367
	34 Bromochloromethane	128	5.529	5.529	(0.844)	118451	100.000	97.2	
	35 Chloroform +	83	5.604	5.604	(0.855)	386438	100.000	97.8	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	291051	100.000	104	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	121332	50.0000	50.6	6727
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	342247	100.000	99.4	
	44 2-Butanone	43	5.915	5.915	(0.903)	178800	100.000	97.2	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	296855	100.000	98.9	
	46 Benzene	78	6.162	6.162	(0.940)	947648	100.000	97.9	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	71452	50.0000	49.9	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	319907	100.000	96.3	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	504579	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.695	(1.022)	380483	100.000	103	9443
	56 Trichloroethene	130	6.710	6.710	(1.024)	255762	100.000	98.0	
	57 Dibromomethane	93	7.096	7.096	(1.083)	151315	100.000	101	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	234338	100.000	98.7	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	312005	100.000	102	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	340293	100.000	102	9577
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	149251	100.000	105	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	395050	100.000	106	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	489913	50.0000	49.3	
	69 Toluene +	91	7.973	7.973	(0.880)	1038831	100.000	96.8	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	210410	100.000	101	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.912)	302886	100.000	96.7	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	361830	100.000	111	
M	82 1-3 Dichloropropene total	100				756880	200.000	216	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	234782	100.000	98.9	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	264685	100.000	108	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	399674	100.000	99.4	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	242218	100.000	103	
	83 2-Hexanone	43	8.854	8.854	(0.978)	243604	100.000	97.8	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	298481	100.000	98.3	7837
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	203484	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	680422	100.000	97.7	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	373776	100.000	99.8	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	237563	100.000	102	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	921198	200.000	199	
	90 o-Xylene	106	9.454	9.454	(1.044)	460243	100.000	100	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				1381441	300.000	299	
91 Styrene	104	9.487	9.487	(1.048)	769592	100.000	105	
92 Bromoform ++	173	9.517	9.517	(1.051)	212747	100.000	110	
93 Isopropylbenzene	105	9.648	9.648	(1.065)	1159950	100.000	101	
$ 95 Bromofluorobenzene	174	9.836	9.836	(1.086)	168495	50.0000	51.3	
96 Bromobenzene	77	9.907	9.907	(0.943)	501293	100.000	93.9	
97 n-Propylbenzene	91	9.903	9.903	(0.942)	1329907	100.000	96.2	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	336873	100.000	94.2	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	910064	100.000	94.6	
102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	959700	100.000	98.0	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	406872	100.000	97.2	
101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	91032	100.000	105	
104 4-Chlorotoluene	91	10.113	10.113	(0.962)	811630	100.000	94.7	
105 tert-butylbenzene	91	10.215	10.215	(0.972)	512206	100.000	93.7	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	966401	100.000	98.4	
108 sec-Butylbenzene	105	10.323	10.323	(0.982)	1175829	100.000	97.3	
110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	1016147	100.000	99.7	
113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	584964	100.000	99.4	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	207221	50.0000		
115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	576176	100.000	97.2	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	869166	100.000	101	
118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	563643	100.000	97.5	
119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	90104	100.000	109	
120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	165389	100.000	101	
122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	357563	100.000	101	
124 Naphthalene	128	12.059	12.059	(1.147)	1050981	100.000	100	
125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	352746	100.000	100	

Data File: /var/chem/msv13.i/2170511p.s.b/d4108D.d

Page 1

Date : 11-MAY-2017 16:34

Client ID: V13STD100

Instrument: msv13.i

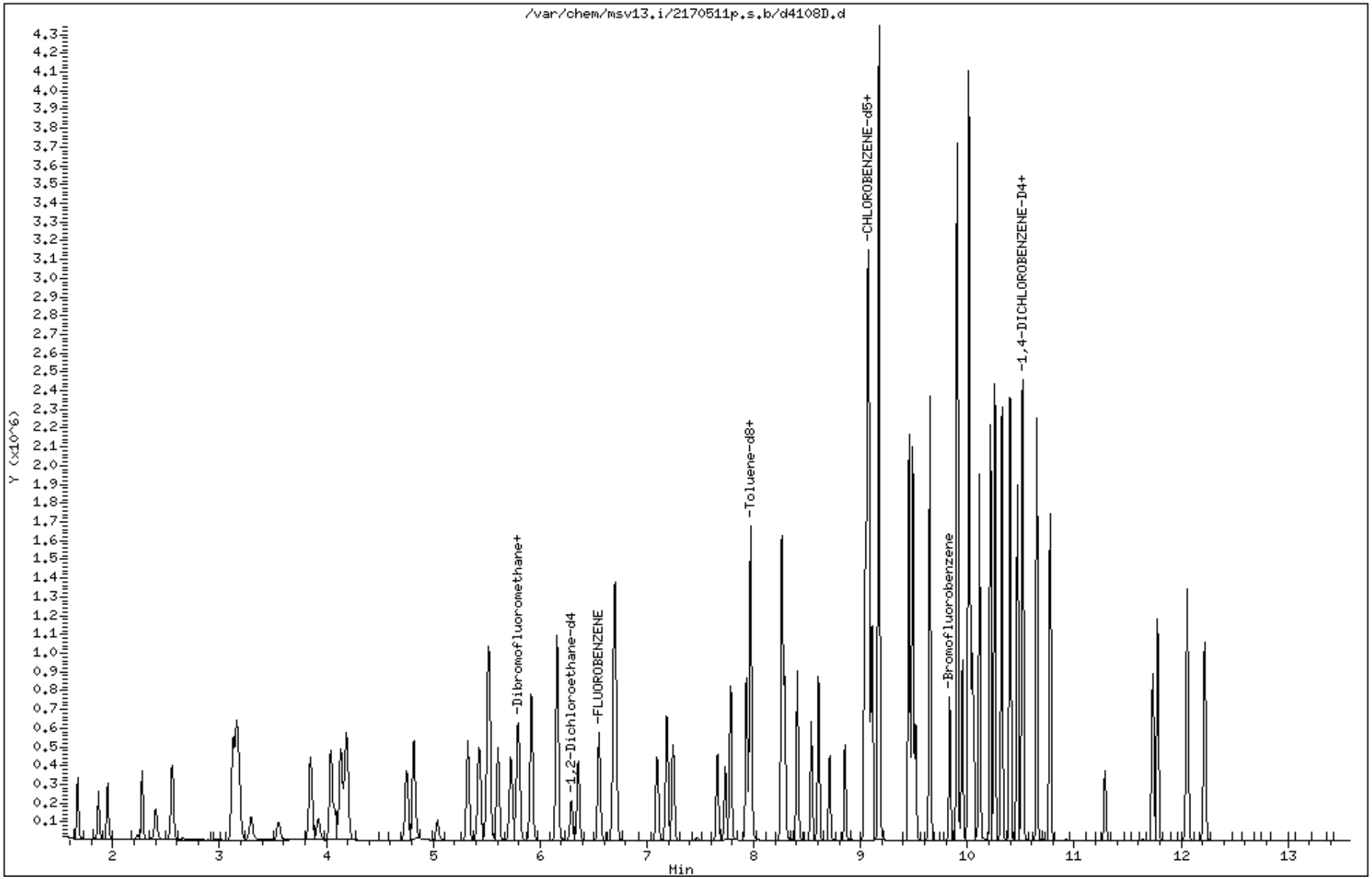
Sample Info: 1208*V13STD100

Purge Volume: 5.0

Operator: JCK

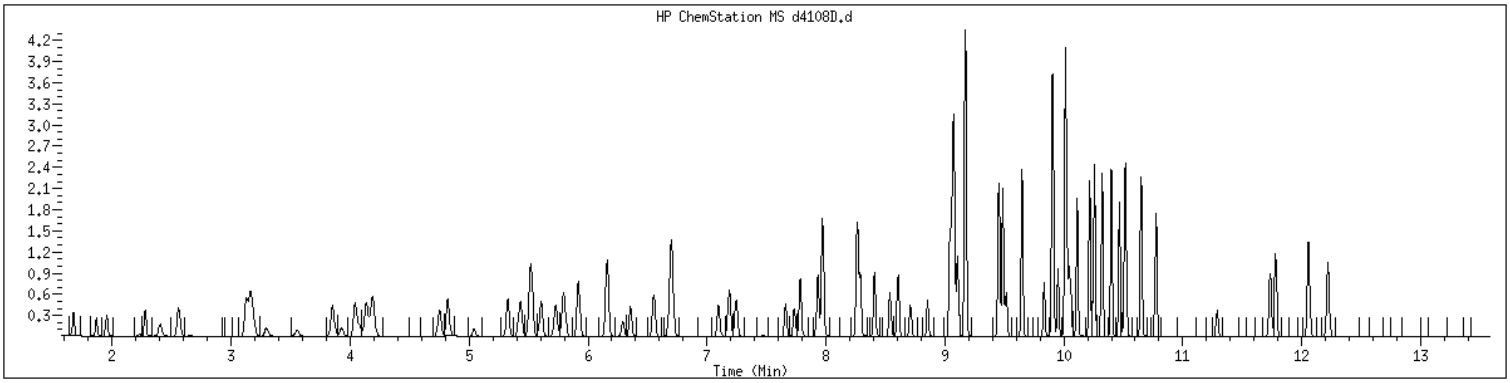
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1208 SampleType : CALIB_8
Injection Date: 05/11/2017 16:34 Instrument : msv13.i
Operator : JCK
Sample Info : 1208*V13STD100
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4109D.d
Lab Smp Id: 1209 Client Smp ID: V13STD200
Inj Date : 11-MAY-2017 16:56
Operator : JCK Inst ID: msv13.i
Smp Info : 1209*V13STD200
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.671	1.671	(0.255)	480826	200.000	197	
2	Chloromethane ++	50	1.866	1.866	(0.285)	404350	200.000	181	
3	Vinyl Chloride +	62	1.952	1.952	(0.298)	481708	200.000	191	
6	Bromomethane	94	2.275	2.275	(0.347)	331561	200.000	184	
7	Chloroethane	64	2.395	2.395	(0.365)	337855	200.000	200	(A)
8	Trichlorofluoromethane	101	2.556	2.556	(0.390)	666955	200.000	195	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	408906	200.000	191	
11	Carbon Disulfide	76	3.156	3.156	(0.482)	1251548	200.000	205	(A)
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	397517	200.000	198	
13	Methyl Iodide	142	3.294	3.294	(0.503)	467983	200.000	262	(AM1)
14	Acrolein	56	3.553	3.553	(0.542)	199442	1000.00	965	
16	Methylene Chloride	49	3.853	3.853	(0.588)	542962	200.000	176	
17	Acetone	43	3.924	3.924	(0.599)	313630	200.000	175	
18	trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	583977	200.000	196	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	413806	200.000	184	9414
	20 Hexane	57	4.134	4.134	(0.631)	560480	200.000	204	9519(A)
	21 MTBE	73	4.187	4.187	(0.639)	1453940	200.000	192	8744
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	774520	200.000	192	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	956309	1000.00	1010	(A)
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	311411	200.000	200	(A)
	29 cis-1,2-Dichloroethene	61	5.322	5.322	(0.812)	607724	200.000	197	
M	75 Total 1,2-Dichloroethene	61				1191701	400.000	393	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	674534	200.000	198	
	32 Cyclohexane	56	5.517	5.517	(0.842)	725604	200.000	200	9420
	34 Bromochloromethane	128	5.525	5.525	(0.843)	229726	200.000	186	
	35 Chloroform +	83	5.604	5.604	(0.855)	777571	200.000	195	
	36 Carbon Tetrachloride	117	5.731	5.731	(0.875)	593932	200.000	210	(A)
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	122591	50.0000	50.6	5123
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	694126	200.000	199	
	44 2-Butanone	43	5.915	5.915	(0.903)	353958	200.000	190	
	43 1,1-Dichloropropene	75	5.922	5.922	(0.904)	599947	200.000	198	
	46 Benzene	78	6.162	6.162	(0.940)	1901116	200.000	194	
$	50 1,2-Dichloroethane-d4	67	6.297	6.297	(0.961)	73498	50.0000	50.8	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	635536	200.000	189	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	510351	50.0000		
	55 Methyl Cyclohexane	83	6.694	6.694	(1.022)	750616	200.000	201	9420(A)
	56 Trichloroethene	130	6.706	6.706	(1.023)	516982	200.000	196	
	57 Dibromomethane	93	7.096	7.096	(1.083)	301916	200.000	200	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	468931	200.000	195	
	60 Bromodichloromethane	83	7.245	7.245	(1.106)	637384	200.000	207	(A)
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	684252	200.000	202	9596(A)
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	298881	200.000	208	(A)
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	809119	200.000	214	(A)
$	68 Toluene-d8	98	7.931	7.931	(0.876)	494769	50.0000	49.4	
	69 Toluene +	91	7.973	7.973	(0.880)	2075446	200.000	192	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	421581	200.000	200	(A)
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.912)	604806	200.000	192	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	747504	200.000	226	(A)
M	82 1-3 Dichloropropene total	100				1556623	400.000	440	0
	76 1,1,2-Trichloroethane	97	8.411	8.411	(0.929)	467363	200.000	195	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	541348	200.000	219	(A)
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	798121	200.000	197	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	490462	200.000	206	(A)
	83 2-Hexanone	43	8.854	8.854	(0.978)	493341	200.000	196	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	657403	200.000	215	7200(A)
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	205098	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	1331410	200.000	190	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	732980	200.000	194	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	468811	200.000	199	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	1798717	400.000	386	
	90 o-Xylene	106	9.453	9.453	(1.044)	904038	200.000	195	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				2702755	600.000	581	
	91 Styrene	104	9.487	9.487	(1.048)	1534110	200.000	207	(A)
	92 Bromoform ++	173	9.517	9.517	(1.051)	435954	200.000	224	(A)
	93 Isopropylbenzene	105	9.648	9.648	(1.065)	2277439	200.000	197	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	173408	50.0000	52.3	
	96 Bromobenzene	77	9.907	9.907	(0.943)	1013806	200.000	187	
	97 n-Propylbenzene	91	9.907	9.907	(0.943)	2619739	200.000	186	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	666096	200.000	183	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	1804636	200.000	184	
	102 1,3,5-Trimethylbenzene	105	10.019	10.019	(0.953)	1870569	200.000	188	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	820327	200.000	193	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	192069	200.000	218	(A)
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	1598354	200.000	183	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	1010369	200.000	182	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	1910089	200.000	191	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	2287076	200.000	186	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	1987963	200.000	192	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	1149114	200.000	192	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	210667	50.0000		
	115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	1145587	200.000	190	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	1718265	200.000	197	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	1125313	200.000	192	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	186104	200.000	221	(A)
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	326461	200.000	196	
	122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	724566	200.000	201	(A)
	124 Naphthalene	128	12.059	12.059	(1.147)	2192258	200.000	205	(A)
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	724250	200.000	202	(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M1- Compound response manually integrated because Target system did not integrate.

Data File: /var/chem/msv13.i/2170511p.s.b/d4109D.d

Date : 11-MAY-2017 16:56

Client ID: V13STD200

Instrument: msv13.i

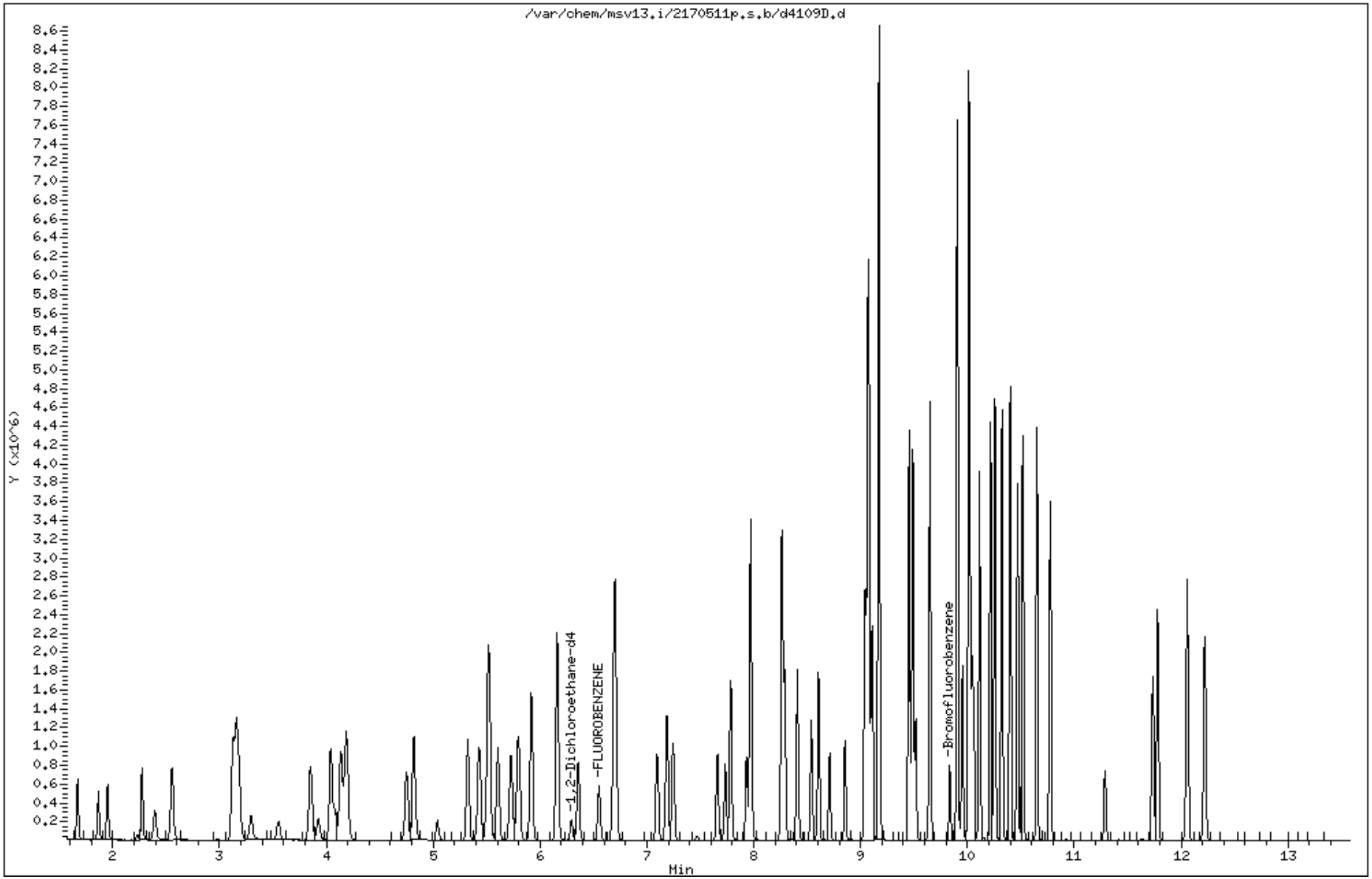
Sample Info: 1209*V13STD200

Purge Volume: 5.0

Operator: JCK

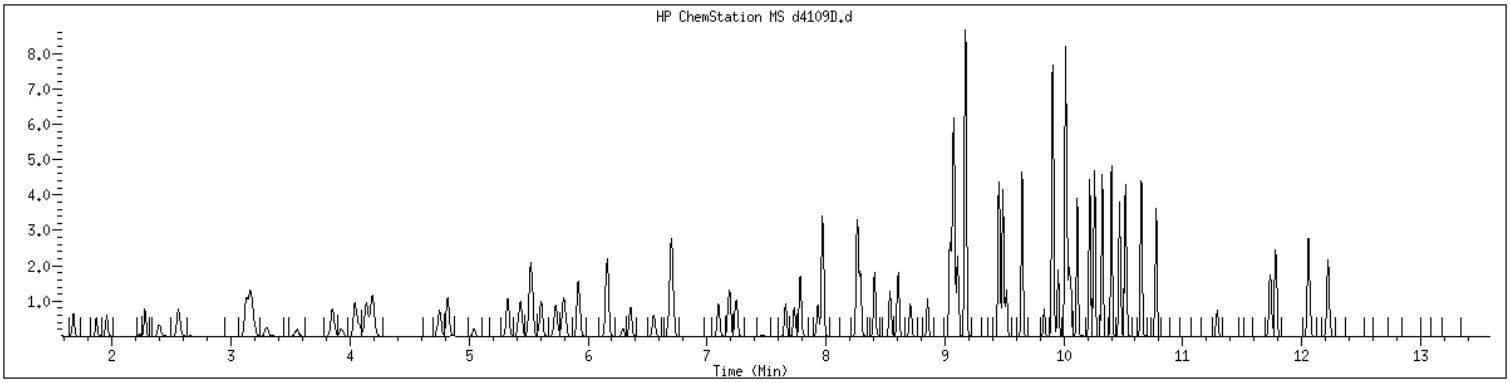
Column phase: RTX-VMS-30M

Column diameter: 0.25

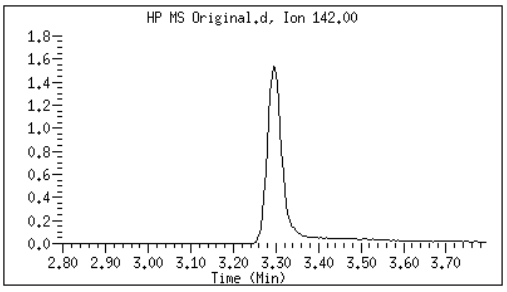


MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1209 SampleType : CALIB_9
Injection Date: 05/11/2017 16:56 Instrument : msv13.i
Operator : JCK
Sample Info : 1209*V13STD200
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b

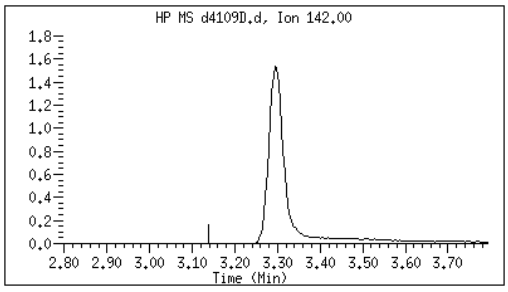


Original		Final
13 Methyl Iodide	CAS#: 74-88-4	Reason: M1



Electronic Signature Applied

User: jck2
Date: 05/11/2017 17:29



M1 - Target system did not integrate

Form 6I

ICAL Verifications

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217051316	Instrument ID:	MSV13
Analysis Date:	05/11/17 1741	Lab File ID:	2170511p/d4111D
Analysis Method:	EPA 8260B	Analytical Batch:	610278

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
1,1,1-Trichloroethane	ug/L	50.0	50.2	100	80	120	
1,1,2,2-Tetrachloroethane	ug/L	50.0	48.0	96	80	120	
1,1,2-Trichloroethane	ug/L	50.0	50.4	101	80	120	
1,1-Dichloroethane	ug/L	50.0	49.3	99	80	120	
1,1-Dichloroethene	ug/L	50.0	49.3	99	80	120	
1,2,3-Trichlorobenzene	ug/L	50.0	49.0	98	80	120	
1,2,4-Trichlorobenzene	ug/L	50.0	50.0	100	80	120	
1,2-Dibromo-3-chloropropane	ug/L	50.0	52.2	104	80	120	
1,2-Dibromoethane	ug/L	50.0	51.4	103	80	120	
1,2-Dichlorobenzene	ug/L	50.0	50.0	100	80	120	
1,2-Dichloroethane	ug/L	50.0	48.6	97	80	120	
1,2-Dichloropropane	ug/L	50.0	49.5	99	80	120	
1,3-Dichlorobenzene	ug/L	50.0	50.2	100	80	120	
1,4-Dichlorobenzene	ug/L	50.0	49.7	99	80	120	
2-Butanone	ug/L	50.0	47.9	96	80	120	
2-Hexanone	ug/L	50.0	48.4	97	80	120	
4-Methyl-2-pentanone	ug/L	50.0	48.2	96	80	120	
Acetone	ug/L	50.0	45.5	91	80	120	
Benzene	ug/L	50.0	49.7	99	80	120	
Bromochloromethane	ug/L	50.0	51.1	102	80	120	
Bromodichloromethane	ug/L	50.0	51.2	102	80	120	
Bromoform	ug/L	50.0	53.3	107	80	120	
Bromomethane	ug/L	50.0	49.5	99	80	120	
Carbon disulfide	ug/L	50.0	51.7	103	80	120	
Carbon tetrachloride	ug/L	50.0	51.8	104	80	120	
Chlorobenzene	ug/L	50.0	49.8	100	80	120	
Chloroethane	ug/L	50.0	48.6	97	80	120	
Chloroform	ug/L	50.0	49.7	99	80	120	
Chloromethane	ug/L	50.0	50.0	100	80	120	
cis-1,2-Dichloroethene	ug/L	50.0	50.4	101	80	120	
cis-1,3-Dichloropropene	ug/L	50.0	52.6	105	80	120	
Cyclohexane	ug/L	50.0	50.4	101	80	120	
Dibromochloromethane	ug/L	50.0	53.1	106	80	120	
Dichlorodifluoromethane	ug/L	50.0	51.3	103	80	120	

FORM 6I - ORG

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217051316	Instrument ID:	MSV13
Analysis Date:	05/11/17 1741	Lab File ID:	2170511p/d4111D
Analysis Method:	EPA 8260B	Analytical Batch:	610278

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
Ethylbenzene	ug/L	50.0	50.5	101	80	120	
Isopropylbenzene (Cumene)	ug/L	50.0	50.7	101	80	120	
Methyl Acetate	ug/L	50.0	47.4	95	80	120	
Methylcyclohexane	ug/L	50.0	50.9	102	80	120	
Methylene chloride	ug/L	50.0	46.3	93	80	120	
Styrene	ug/L	50.0	52.6	105	80	120	
tert-Butyl methyl ether (MTBE)	ug/L	50.0	49.1	98	80	120	
Tetrachloroethene	ug/L	50.0	50.0	100	80	120	
Toluene	ug/L	50.0	49.4	99	80	120	
trans-1,2-Dichloroethene	ug/L	50.0	49.9	100	80	120	
trans-1,3-Dichloropropene	ug/L	50.0	53.9	108	80	120	
Trichloroethene	ug/L	50.0	50.1	100	80	120	
Trichlorofluoromethane	ug/L	50.0	50.9	102	80	120	
Trichlorotrifluoroethane	ug/L	50.0	50.9	102	80	120	
Xylene (total)	ug/L	150	152	101	80	120	

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4111D.d
Lab Smp Id: 1600 Client Smp ID: ICV050
Inj Date : 11-MAY-2017 17:41
Operator : JCK Inst ID: msv13.i
Smp Info : 1600*ICV050
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.671	(0.256)	119495	51.3293	51.3	
2 Chloromethane ++	50	1.866	1.866	(0.285)	106758	49.9912	50.0	
3 Vinyl Chloride +	62	1.953	1.952	(0.298)	120280	49.9222	49.9	
6 Bromomethane	94	2.279	2.275	(0.348)	85075	49.5473	49.5	
7 Chloroethane	64	2.414	2.395	(0.368)	78789	48.6226	48.6	(M2)
8 Trichlorofluoromethane	101	2.560	2.556	(0.391)	166154	50.9468	50.9	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	100427	49.2642	49.3	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	300795	51.7125	51.7	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.178	(0.484)	97271	50.8625	50.9	
13 Methyl Iodide	142	3.298	3.294	(0.503)	63465	41.0188	41.0	
14 Acrolein	56	3.557	3.553	(0.543)	50346	255.392	255	
16 Methylene Chloride	49	3.857	3.853	(0.589)	136085	46.3321	46.3	
17 Acetone	43	3.928	3.924	(0.600)	77613	45.5125	45.5	
18 trans-1,2-Dichloroethene	61	4.041	4.040	(0.617)	141832	49.8942	49.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.078	(0.623)	101653	47.3589	47.4	9711
	20 Hexane	57	4.134	4.134	(0.631)	135327	51.6248	51.6	9511
	21 MTBE	73	4.191	4.187	(0.640)	354914	49.1342	49.1	8797
	26 1,1-Dichloroethane ++	63	4.753	4.749	(0.725)	189520	49.2551	49.3	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	228504	252.652	253	
	28 Vinyl Acetate	43	5.038	5.041	(0.769)	70332	47.4074	47.4	
	29 cis-1,2-Dichloroethene	61	5.323	5.322	(0.812)	147820	50.3580	50.4	
M	75 Total 1,2-Dichloroethene	61				289652	100.252	100	
	30 2,2-Dichloropropane	77	5.428	5.431	(0.828)	159637	49.1839	49.2	
	32 Cyclohexane	56	5.518	5.517	(0.842)	174580	50.4013	50.4	9315
	34 Bromochloromethane	128	5.525	5.525	(0.843)	60064	51.0846	51.1	
	35 Chloroform +	83	5.604	5.604	(0.855)	189584	49.7377	49.7	
	36 Carbon Tetrachloride	117	5.727	5.731	(0.874)	139985	51.8084	51.8	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	115957	50.1531	50.2	8367
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	166669	50.1721	50.2	
	44 2-Butanone	43	5.915	5.915	(0.903)	84928	47.8603	47.9	
	43 1,1-Dichloropropene	75	5.919	5.922	(0.903)	145063	50.0754	50.1	
	46 Benzene	78	6.162	6.162	(0.941)	464189	49.7216	49.7	
$	50 1,2-Dichloroethane-d4	67	6.293	6.297	(0.961)	69788	50.5393	50.5	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	155850	48.6101	48.6	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	486832	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.694	(1.022)	181359	50.8759	50.9	9328
	56 Trichloroethene	130	6.710	6.706	(1.024)	125994	50.0573	50.1	
	57 Dibromomethane	93	7.096	7.096	(1.083)	72835	50.4534	50.5	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	113249	49.4533	49.5	
	60 Bromodichloromethane	83	7.246	7.245	(1.106)	150524	51.1972	51.2	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	166674	51.5743	51.6	9593
	64 2-Chloroethyl vinyl ether	63	7.737	7.733	(1.181)	72345	52.9031	52.9	
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	189782	52.5980	52.6	
$	68 Toluene-d8	98	7.932	7.931	(0.876)	475388	49.8944	49.9	
	69 Toluene +	91	7.973	7.973	(0.880)	508554	49.4058	49.4	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	100327	50.0126	50.0	
	73 4-methyl-2-pentanone	43	8.262	8.261	(0.912)	144783	48.1697	48.2	
	74 trans-1,3-Dichloropropene	75	8.288	8.291	(1.265)	170106	53.9360	53.9	
M	82 1-3 Dichloropropene total	100				359888	106.534	107	0
	76 1,1,2-Trichloroethane	97	8.408	8.411	(0.928)	114805	50.4077	50.4	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	124832	53.1296	53.1	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	193217	50.1107	50.1	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	116489	51.3982	51.4	
	83 2-Hexanone	43	8.854	8.854	(0.978)	115671	48.3949	48.4	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	140361	48.1664	48.2	8898
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	195200	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	332725	49.7902	49.8	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	181310	50.4688	50.5	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	114902	51.2047	51.2	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	449250	101.250	101	
	90 o-Xylene	106	9.454	9.453	(1.044)	223191	50.5999	50.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
M	121 TOTAL XYLENE	106				672441	151.850	152	
	91 Styrene	104	9.487	9.487	(1.048)	371873	52.6464	52.6	
	92 Bromoform ++	173	9.517	9.517	(1.051)	98587	53.3152	53.3	
	93 Isopropylbenzene	105	9.649	9.648	(1.065)	557535	50.7037	50.7	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	161751	51.3028	51.3	
	96 Bromobenzene	77	9.903	9.907	(0.942)	241667	48.0059	48.0	
	97 n-Propylbenzene	91	9.903	9.907	(0.942)	636430	48.7986	48.8	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	161793	47.9846	48.0	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	438605	48.3196	48.3	
	102 1,3,5-Trimethylbenzene	105	10.020	10.019	(0.953)	459323	49.7207	49.7	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	190200	48.1615	48.2	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	41164	50.4161	50.4	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	391509	48.4206	48.4	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	245689	47.6316	47.6	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	464770	50.1900	50.2	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	566502	49.6907	49.7	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	482174	50.1547	50.2	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	278593	50.1752	50.2	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	195441	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.522	(1.001)	277790	49.7013	49.7	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	409632	50.5491	50.5	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	272281	49.9521	50.0	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	40831	52.1633	52.2	
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	75951	49.1973	49.2	
	122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	165133	49.9570	50.0	
	124 Naphthalene	128	12.055	12.059	(1.147)	471077	48.2162	48.2	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	161183	49.0392	49.0	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4111D.d

Date : 11-MAY-2017 17:41

Client ID: ICV050

Instrument: msv13.i

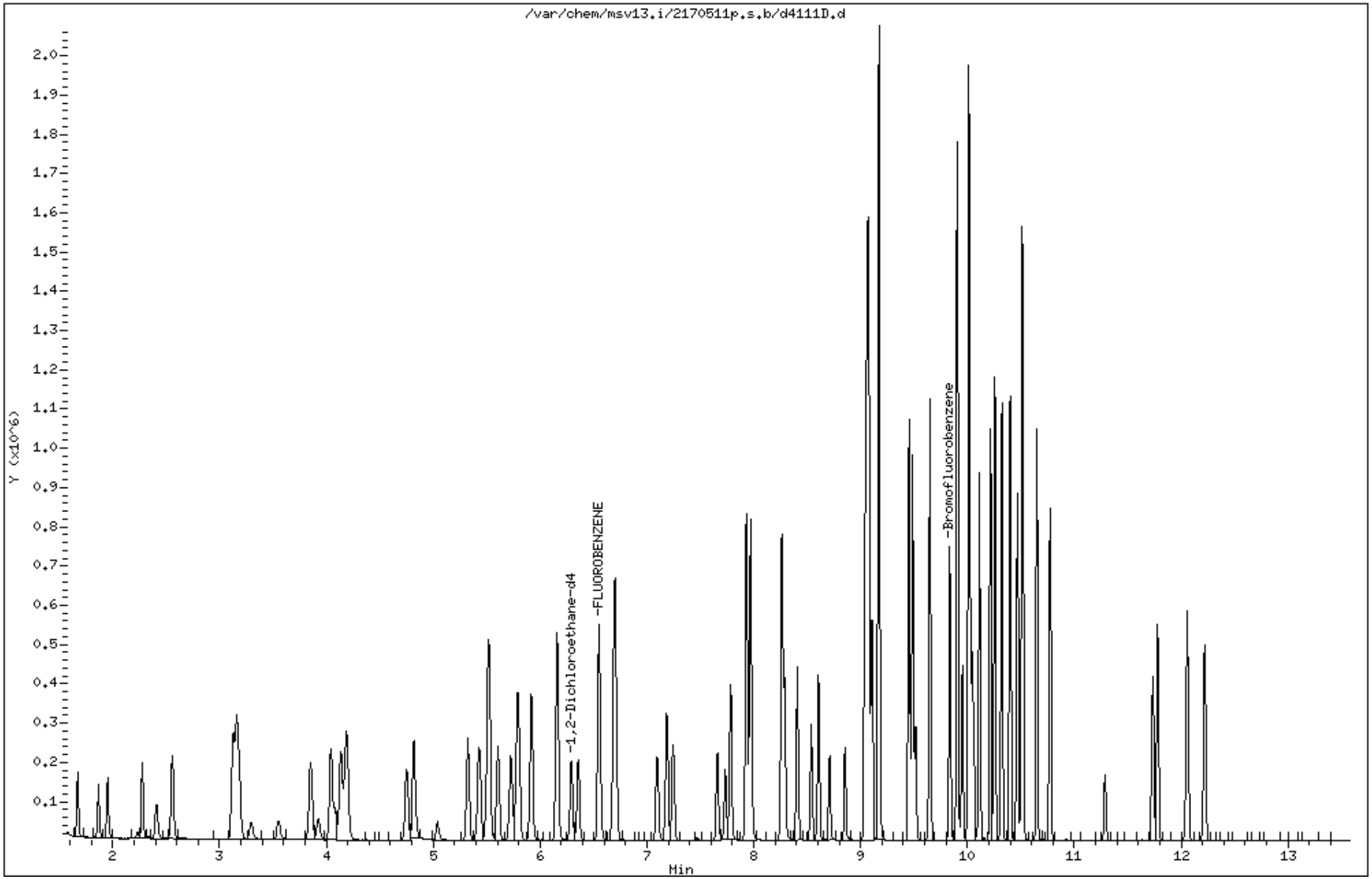
Sample Info: 1600*ICV050

Purge Volume: 5.0

Operator: JCK

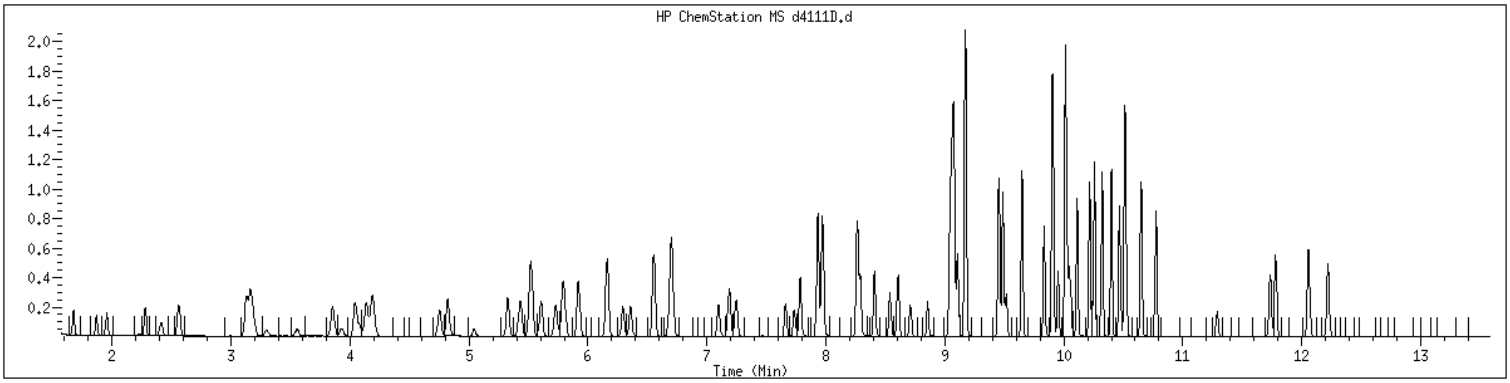
Column phase: RTX-VMS-30M

Column diameter: 0.25

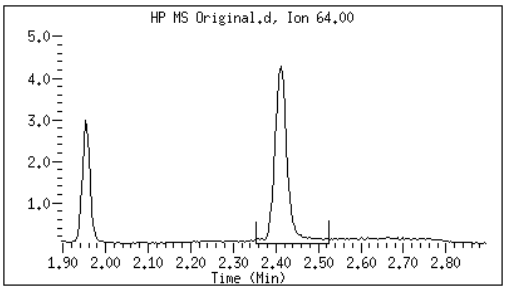


MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1600 SampleType : LCS
Injection Date: 05/11/2017 17:41 Instrument : msv13.i
Operator : JCK
Sample Info : 1600*ICV050
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b

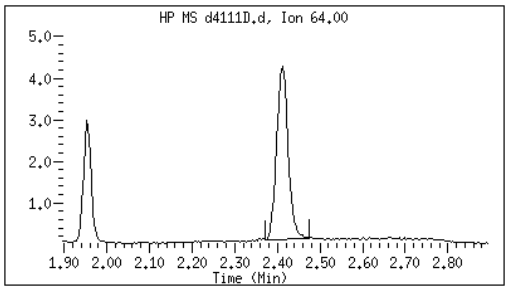


Original		Final
7 Chloroethane	CAS#: 75-00-3	Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 17:57



M2 - Target system integrated incorrectly

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051316	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170515/d4221
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 0855	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.575	0.567	.01	-1.29	20	A	
1,1,1-Trichloroethane	0.341	0.345	.01	.99	20	A	
1,1,2,2-Tetrachloroethane	0.863	0.907	.3	5.17	20	A	
1,1,2-Trichloroethane	0.583	0.567	.01	-2.83	20	A	
1,1-Dichloroethane	0.395	0.435	.1	10	20	A	
1,1-Dichloroethene	0.209	0.213	.01	1.54	20	A	
1,1-Dichloropropene	0.298	0.328	.01	10.2	20	A	
1,2,3-Trichlorobenzene	0.853	0.874	.01	3.8	20	W	
1,2,3-Trichloropropane	1.010	1.021	.01	1.04	20	A	
1,2,4-Trichlorobenzene	0.857	0.898	.01	6.2	20	W	
1,2,4-Trimethylbenzene	2.369	2.525	.01	6.58	20	A	
1,2-Dibromo-3-chloropropane	0.200	0.190	.01	-5.15	20	A	
1,2-Dibromoethane	0.581	0.562	.01	-3.22	20	A	
1,2-Dichlorobenzene	1.394	1.427	.01	2.3	20	A	
1,2-Dichloroethane	0.329	0.328	.01	-.5	20	A	
1,2-Dichloroethane-d4	0.142	0.146	.01	2.88	20	A	
1,2-Dichloroethene (total)	0.297	0.328	.01	10.6	20	A	
1,2-Dichloropropane	0.235	0.257	.01	9.25	20	A	
1,3,5-Trimethylbenzene	2.363	2.564	.01	8.51	20	A	
1,3-Dichlorobenzene	1.420	1.475	.01	3.82	20	A	
1,3-Dichloropropane	0.988	1.006	.01	1.82	20	A	
1,3-Dichloropropylene	0.347	0.368	.01	6.01	20	A	
1,4-Dichlorobenzene	1.430	1.455	.01	1.76	20	A	
1-Bromo-2-Chloroethane	0.332	0.362	.01	9	20	A	
1-Chlorohexane	0.746	0.776	.01	3.94	20	A	
2,2-Dichloropropane	0.333	0.319	.01	-4.35	20	A	
2-Butanone	0.182	0.174	.01	-4.27	20	A	
2-Chloroethylvinyl ether	0.140	0.126	.01	-10.3	20	A	
2-Chlorotoluene	2.322	2.475	.01	6.58	20	A	
2-Hexanone	0.612	0.567	.01	-7.45	20	A	
4-Bromofluorobenzene	0.808	0.738	.01	-8.64	20	A	
4-Chlorotoluene	2.069	2.193	.01	6.03	20	A	
4-Isopropyltoluene	2.460	2.664	.01	8.3	20	A	
4-Methyl-2-pentanone	0.770	0.708	.01	-8.1	20	A	
Acetone	0.175	0.163	.01	-7.03	20	A	
Acrolein	0.020	0.021	.01	3.85	20	A	
Acrylonitrile	0.093	0.105	.01	13	20	A	
Benzene	0.959	1.016	.01	5.93	20	A	
Bromobenzene	1.288	1.378	.01	7.02	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051316	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170515/d4221
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 0855	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.121	0.118	.01	-2.2	20	A	
Bromodichloromethane	0.302	0.318	.01	5.41	20	A	
Bromoform	0.474	0.438	.1	-7.46	20	A	
Bromomethane	0.176	0.156	.01	-11.7	20	A	
Carbon disulfide	0.597	0.681	.01	14	20	A	
Carbon tetrachloride	0.278	0.286	.01	2.96	20	A	
Chlorobenzene	1.712	1.704	.3	-.45	20	A	
Chloroethane	0.165	0.185	.01	11.6	20	W	
Chloroform	0.391	0.408	.01	4.19	20	A	
Chloromethane	0.219	0.221	.1	.76	20	A	
Cyclohexane	0.356	0.417	.01	17.2	20	A	
Dibromochloromethane	0.602	0.603	.01	.11	20	A	
Dibromofluoromethane	0.237	0.232	.01	-2.14	20	A	
Dibromomethane	0.148	0.150	.01	1.38	20	A	
Dichlorodifluoromethane	0.239	0.245	.01	2.42	20	A	
Ethylbenzene	0.920	0.933	.01	1.37	20	A	
Hexachlorobutadiene	0.395	0.412	.01	4.41	20	A	
Isopropylbenzene (Cumene)	2.817	2.864	.01	1.69	20	A	
Methyl Acetate	0.220	0.202	.01	-8.21	20	A	
Methyl iodide	0.178	0.098	.01	-36	20	L	*
Methylcyclohexane	0.366	0.407	.01	11.1	20	A	
Methylene chloride	0.302	0.312	.01	3.28	20	A	
Naphthalene	2.556	2.411	.01	-3.6	20	W	
Styrene	1.809	1.842	.01	1.83	20	A	
Tetrachloroethene	0.514	0.502	.01	-2.34	20	A	
Toluene	2.637	2.624	.01	-.47	20	A	
Toluene-d8	2.441	2.307	.01	-5.46	20	A	
Trichloroethene	0.259	0.252	.01	-2.52	20	A	
Trichlorofluoromethane	0.335	0.341	.01	1.91	20	A	
Trichlorotrifluoroethane	0.196	0.211	.01	7.4	20	A	
Vinyl acetate	0.152	0.162	.01	6.59	20	A	
Vinyl chloride	0.247	0.281	.01	13.4	20	A	
Xylene (total)	1.134	1.139	.01	.38	20	A	
cis-1,2-Dichloroethene	0.301	0.332	.01	10.2	20	A	
cis-1,3-Dichloropropene	0.371	0.400	.01	7.89	20	A	
m,p-Xylene	1.137	1.151	.01	1.3	20	A	
n-Butylbenzene	2.073	2.406	.01	16.1	20	A	
n-Hexane	0.269	0.319	.01	18.5	20	A	
n-Propylbenzene	3.337	3.682	.01	10.4	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051316	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170515/d4221
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 0855	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	1.130	1.113	.01	-1.47	20	A	
sec-Butylbenzene	2.917	3.168	.01	8.63	20	A	
tert-Butyl methyl ether (MTBE)	0.742	0.683	.01	-7.98	20	A	
tert-Butylbenzene	1.320	1.388	.01	5.21	20	A	
trans-1,2-Dichloroethene	0.292	0.324	.01	11	20	A	
trans-1,3-Dichloropropene	0.324	0.336	.01	3.86	20	A	
trans-1,4-Dichloro-2-butene	0.209	0.213	.01	2.14	20	A	

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4221.d
Lab Smp Id: 1400 Client Smp ID: V13STD050
Inj Date : 15-MAY-2017 08:55
Operator : LBH Inst ID: msv13.i
Smp Info : 1400*V13STD050
Misc Info : MSV~38330~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Meth Date : 17-May-2017 13:19 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	120164	50.0000	51.2	
2 Chloromethane ++	50	1.866	1.866	(0.285)	108444	50.0000	50.4	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	137663	50.0000	56.7	
6 Bromomethane	94	2.279	2.279	(0.348)	76381	50.0000	44.1	
7 Chloroethane	64	2.410	2.410	(0.368)	90970	50.0000	55.8	(M1)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	167500	50.0000	51.0	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	104314	50.0000	50.8	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	334077	50.0000	57.0	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.175	(0.484)	103512	50.0000	53.7	
13 Methyl Iodide	142	3.291	3.291	(0.502)	48266	50.0000	32.0	
14 Acrolein	56	3.549	3.549	(0.542)	51589	250.000	260	
16 Methylene Chloride	49	3.849	3.849	(0.587)	152876	50.0000	51.6	
17 Acetone	43	3.924	3.924	(0.599)	79901	50.0000	46.5	
18 trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	158972	50.0000	55.5	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	99297	50.0000	45.9	9188
	20 Hexane	57	4.134	4.134	(0.631)	156596	50.0000	59.3	9666
	21 MTBE	73	4.187	4.187	(0.639)	334977	50.0000	46.0	9658
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	213361	50.0000	55.0	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	257569	250.000	283	
	28 Vinyl Acetate	43	5.038	5.038	(0.769)	79691	50.0000	53.3	
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	162962	50.0000	55.1	
M	75 Total 1,2-Dichloroethene	61				321934	100.000	111	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	156451	50.0000	47.8	
	32 Cyclohexane	56	5.514	5.514	(0.842)	204564	50.0000	58.6	9720
	34 Bromochloromethane	128	5.521	5.521	(0.843)	57949	50.0000	48.9	
	35 Chloroform +	83	5.604	5.604	(0.855)	200138	50.0000	52.1	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	140204	50.0000	51.5	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	114024	50.0000	48.9	9582
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	169077	50.0000	50.5	
	44 2-Butanone	43	5.915	5.915	(0.903)	85614	50.0000	47.9	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	160938	50.0000	55.1	
	46 Benzene	78	6.159	6.159	(0.940)	498412	50.0000	53.0	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	71597	50.0000	51.4	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	160775	50.0000	49.8	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	490698	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	199535	50.0000	55.5	9691
	56 Trichloroethene	130	6.706	6.706	(1.023)	123658	50.0000	48.7	
	57 Dibromomethane	93	7.096	7.096	(1.083)	73754	50.0000	50.7	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	126085	50.0000	54.6	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	156183	50.0000	52.7	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	177536	50.0000	54.5	9799
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	61813	50.0000	44.8	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	196188	50.0000	53.9	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	463496	50.0000	47.3	
	69 Toluene +	91	7.969	7.969	(0.880)	527161	50.0000	49.8	
	71 Tetrachloroethene	164	8.261	8.261	(0.913)	100805	50.0000	48.8	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	142133	50.0000	45.9	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	165077	50.0000	51.9	
M	82 1-3 Dichloropropene total	100				361265	100.000	106	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	113879	50.0000	48.6	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	121040	50.0000	50.1	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	202025	50.0000	50.9	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	112870	50.0000	48.4	
	83 2-Hexanone	43	8.854	8.854	(0.978)	113828	50.0000	46.3	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	155857	50.0000	52.0	9516
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	200889	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	342313	50.0000	49.8	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	187390	50.0000	50.7	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	113984	50.0000	49.4	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	462586	100.000	101	
	90 o-Xylene	106	9.454	9.454	(1.044)	223631	50.0000	49.3	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				686217	150.000	151	
	91 Styrene	104	9.487	9.487	(1.048)	370112	50.0000	50.9	
	92 Bromoform ++	173	9.514	9.514	(1.051)	88052	50.0000	46.3	
	93 Isopropylbenzene	105	9.649	9.649	(1.066)	575407	50.0000	50.8	
$	95 Bromofluorobenzene	174	9.832	9.832	(1.086)	148217	50.0000	45.7	
	96 Bromobenzene	77	9.903	9.903	(0.942)	255543	50.0000	53.5	
	97 n-Propylbenzene	91	9.903	9.903	(0.942)	682676	50.0000	55.2	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	168203	50.0000	52.6	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	458867	50.0000	53.3	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	475452	50.0000	54.3	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	189260	50.0000	50.5	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	39556	50.0000	51.1	
	104 4-Chlorotoluene	91	10.110	10.110	(0.962)	406652	50.0000	53.0	
	105 tert-butylbenzene	91	10.215	10.215	(0.972)	257397	50.0000	52.6	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	468116	50.0000	53.3	
	108 sec-Butylbenzene	105	10.319	10.319	(0.982)	587436	50.0000	54.3	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	493838	50.0000	54.1	
	113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	273421	50.0000	51.9	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	185404	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	269782	50.0000	50.9	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	446105	50.0000	58.0	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	264498	50.0000	51.2	
	119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	35214	50.0000	47.4	
	120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	76457	50.0000	52.2	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	166573	50.0000	53.1	
	124 Naphthalene	128	12.055	12.055	(1.147)	446932	50.0000	48.2	
	125 1,2,3-Trichlorobenzene	180	12.216	12.216	(1.162)	162075	50.0000	51.9	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.

Data File: /var/chem/msv13.i/2170515.s.b/d4221.d

Date : 15-MAY-2017 08:55

Client ID: V13STD050

Instrument: msv13.i

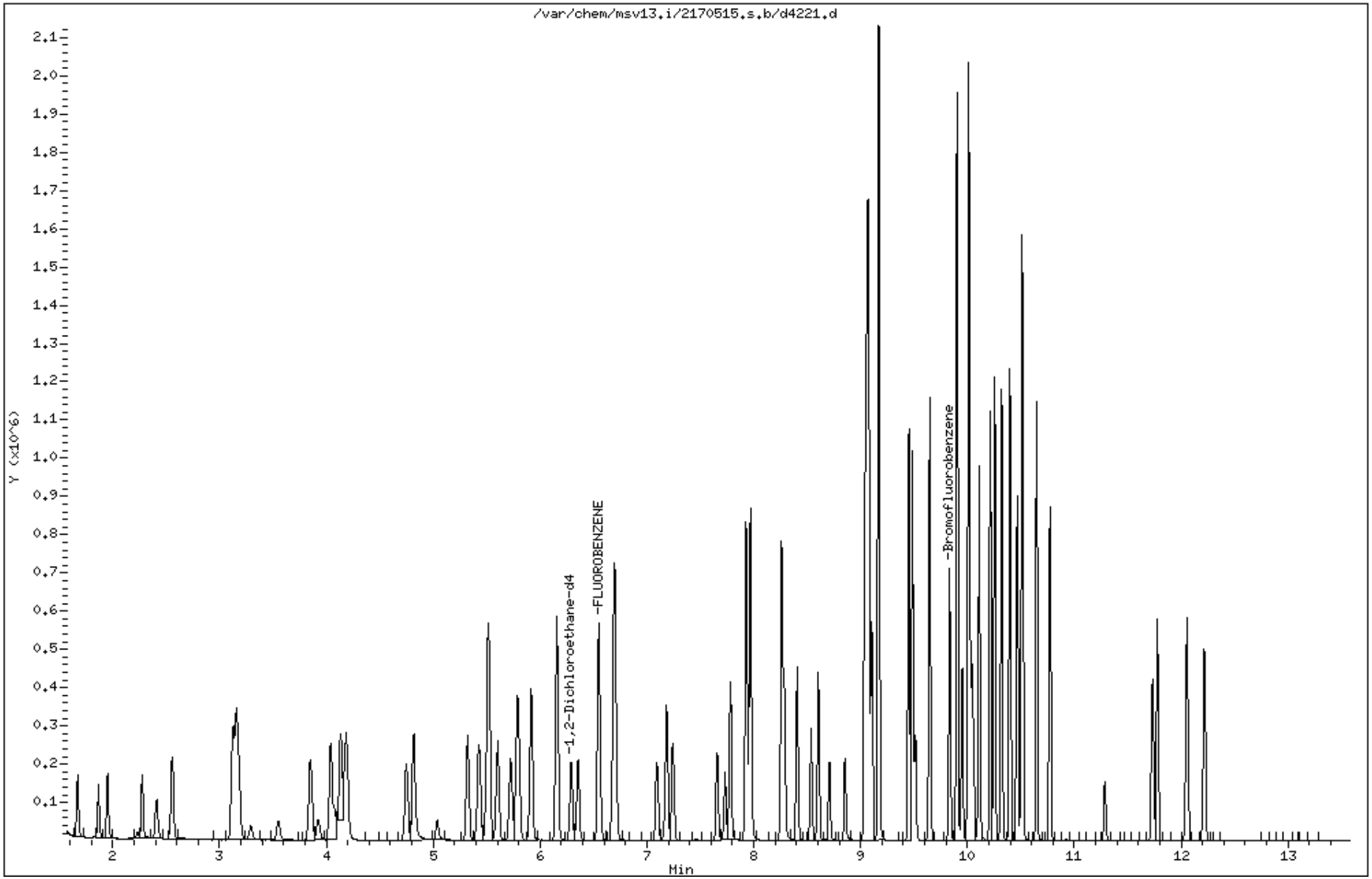
Sample Info: 1400*V13STD050

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

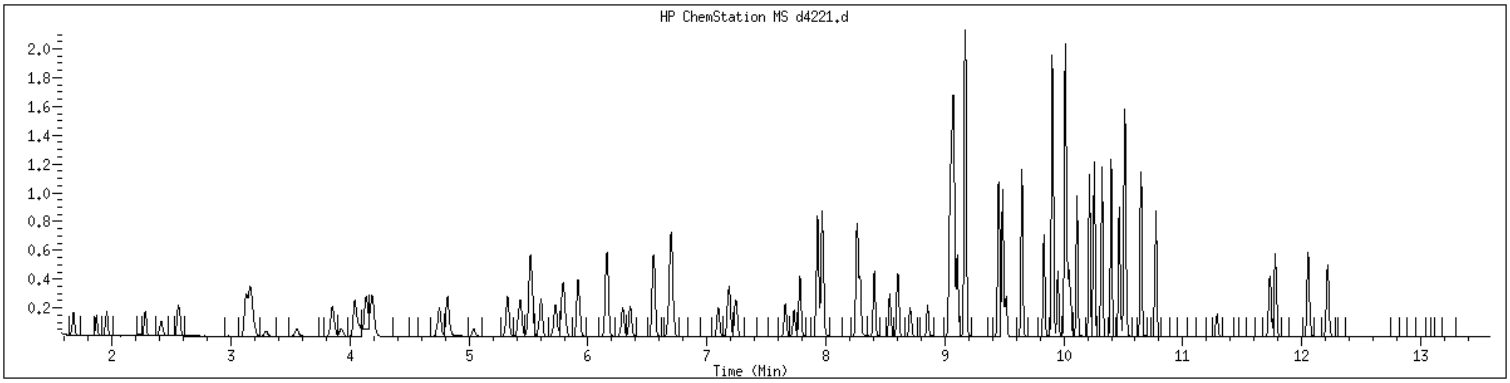
Column diameter: 0.25



Report Date: 05/17/2017 13:19

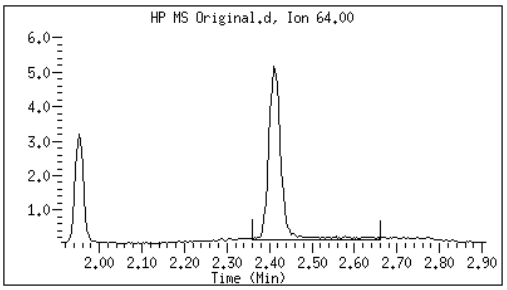
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1400 SampleType : CCALIB_7
Injection Date: 05/15/2017 08:55 Instrument : msv13.i
Operator : LBH
Sample Info : 1400*V13STD050
Misc Info : MSV~38330~*1*LBH
Method : /var/chem/msv13.i/2170515.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



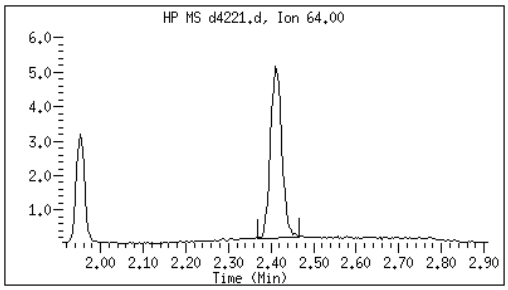
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M1



Electronic Signature Applied

User: lbh
Date: 05/15/2017 09:12



M1 - Target system did not integrate

7A
VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051316	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170515/d4249
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1937	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.575	0.551	.01	-4.09	50	A	
1,1,1-Trichloroethane	0.341	0.331	.01	-2.87	50	A	
1,1,2,2-Tetrachloroethane	0.863	0.775	.3	-10.1	50	A	
1,1,2-Trichloroethane	0.583	0.567	.01	-2.85	50	A	
1,1-Dichloroethane	0.395	0.429	.1	8.66	50	A	
1,1-Dichloroethene	0.209	0.203	.01	-3.11	50	A	
1,1-Dichloropropene	0.298	0.309	.01	3.98	50	A	
1,2,3-Trichlorobenzene	0.853	0.830	.01	-1.4	50	W	
1,2,3-Trichloropropane	1.010	0.996	.01	-1.45	50	A	
1,2,4-Trichlorobenzene	0.857	0.827	.01	-2.2	50	W	
1,2,4-Trimethylbenzene	2.369	2.326	.01	-1.84	50	A	
1,2-Dibromo-3-chloropropane	0.200	0.192	.01	-4.23	50	A	
1,2-Dibromoethane	0.581	0.560	.01	-3.47	50	A	
1,2-Dichlorobenzene	1.394	1.372	.01	-1.62	50	A	
1,2-Dichloroethane	0.329	0.324	.01	-1.46	50	A	
1,2-Dichloroethane-d4	0.142	0.147	.01	3.74	50	A	
1,2-Dichloroethene (total)	0.297	0.324	.01	9.29	50	A	
1,2-Dichloropropane	0.235	0.254	.01	8.13	50	A	
1,3,5-Trimethylbenzene	2.363	2.361	.01	-.12	50	A	
1,3-Dichlorobenzene	1.420	1.380	.01	-2.82	50	A	
1,3-Dichloropropane	0.988	0.993	.01	.52	50	A	
1,3-Dichloropropylene	0.347	0.349	.01	.44	50	A	
1,4-Dichlorobenzene	1.430	1.387	.01	-3.02	50	A	
1-Bromo-2-Chloroethane	0.332	0.358	.01	7.83	50	A	
1-Chlorohexane	0.746	0.698	.01	-6.45	50	A	
2,2-Dichloropropane	0.333	0.248	.01	-25.6	50	A	
2-Butanone	0.182	0.180	.01	-1	50	A	
2-Chloroethylvinyl ether	0.140	0.128	.01	-9.1	50	A	
2-Chlorotoluene	2.322	2.316	.01	-.25	50	A	
2-Hexanone	0.612	0.570	.01	-6.86	50	A	
4-Bromofluorobenzene	0.808	0.754	.01	-6.7	50	A	
4-Chlorotoluene	2.069	2.041	.01	-1.32	50	A	
4-Isopropyltoluene	2.460	2.399	.01	-2.45	50	A	
4-Methyl-2-pentanone	0.770	0.737	.01	-4.27	50	A	
Acetone	0.175	0.166	.01	-5.43	50	A	
Acrolein	0.020	0.019	.01	-5.82	50	A	
Acrylonitrile	0.093	0.105	.01	12.9	50	A	
Benzene	0.959	0.991	.01	3.32	50	A	
Bromobenzene	1.288	1.313	.01	1.95	50	A	

FORM V II VOA

7A
VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051316			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2170515/d4249
Init. Calib. Date 1:	05/11/17	Time 1: 1420		Analyst:	LBH
Init. Calib. Date 2:	05/11/17	Time 2: 1656		Analytical Batch:	610372
Analysis Date:	05/15/17	Time: 1937		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.121	0.120	.01	-.97	50	A	
Bromodichloromethane	0.302	0.308	.01	1.86	50	A	
Bromoform	0.474	0.444	.1	-6.23	50	A	
Bromomethane	0.176	0.169	.01	-4.24	50	A	
Carbon disulfide	0.597	0.662	.01	10.9	50	A	
Carbon tetrachloride	0.278	0.279	.01	.39	50	A	
Chlorobenzene	1.712	1.650	.3	-3.6	50	A	
Chloroethane	0.165	0.183	.01	10	50	W	
Chloroform	0.391	0.401	.01	2.36	50	A	
Chloromethane	0.219	0.233	.1	6.03	50	A	
Cyclohexane	0.356	0.395	.01	10.9	50	A	
Dibromochloromethane	0.602	0.596	.01	-.97	50	A	
Dibromofluoromethane	0.237	0.236	.01	-.41	50	A	
Dibromomethane	0.148	0.149	.01	.39	50	A	
Dichlorodifluoromethane	0.239	0.237	.01	-1.03	50	A	
Ethylbenzene	0.920	0.898	.01	-2.36	50	A	
Hexachlorobutadiene	0.395	0.377	.01	-4.66	50	A	
Isopropylbenzene (Cumene)	2.817	2.720	.01	-3.42	50	A	
Methyl Acetate	0.220	0.207	.01	-6.29	50	A	
Methyl iodide	0.178	0.125	.01	-21.2	50	L	
Methylcyclohexane	0.366	0.368	.01	.6	50	A	
Methylene chloride	0.302	0.316	.01	4.79	50	A	
Naphthalene	2.556	2.367	.01	-5.2	50	W	
Styrene	1.809	1.792	.01	-.97	50	A	
Tetrachloroethene	0.514	0.472	.01	-8.17	50	A	
Toluene	2.637	2.569	.01	-2.56	50	A	
Toluene-d8	2.441	2.338	.01	-4.2	50	A	
Trichloroethene	0.259	0.268	.01	3.84	50	A	
Trichlorofluoromethane	0.335	0.327	.01	-2.41	50	A	
Trichlorotrifluoroethane	0.196	0.193	.01	-1.87	50	A	
Vinyl acetate	0.152	0.069	.01	-54.7	50	A	*
Vinyl chloride	0.247	0.277	.01	11.9	50	A	
Xylene (total)	1.134	1.095	.01	-3.48	50	A	
cis-1,2-Dichloroethene	0.301	0.328	.01	8.79	50	A	
cis-1,3-Dichloropropene	0.371	0.375	.01	1.33	50	A	
m,p-Xylene	1.137	1.102	.01	-3.01	50	A	
n-Butylbenzene	2.073	2.117	.01	2.12	50	A	
n-Hexane	0.269	0.262	.01	-2.73	50	A	
n-Propylbenzene	3.337	3.401	.01	1.92	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051316	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170515/d4249
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610372
Analysis Date:	05/15/17 Time: 1937	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	1.130	1.080	.01	-4.42	50	A	
sec-Butylbenzene	2.917	2.875	.01	-1.43	50	A	
tert-Butyl methyl ether (MTBE)	0.742	0.668	.01	-9.89	50	A	
tert-Butylbenzene	1.320	1.301	.01	-1.38	50	A	
trans-1,2-Dichloroethene	0.292	0.321	.01	9.81	50	A	
trans-1,3-Dichloropropene	0.324	0.322	.01	-.57	50	A	
trans-1,4-Dichloro-2-butene	0.209	0.193	.01	-7.53	50	A	

GCAL, Inc.

Data file : /var/chem/msv13.i/2170515.s.b/d4249.d
Lab Smp Id: 1440 Client Smp ID: V13STD050
Inj Date : 15-MAY-2017 19:37
Operator : LBH Inst ID: msv13.i
Smp Info : 1440*V13STD050
Misc Info : MSV~38330~*1*LBH
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Meth Date : 17-May-2017 13:18 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	110747	50.0000	49.5	
2	Chloromethane ++	50	1.866	1.866	(0.285)	108836	50.0000	53.0	
3	Vinyl Chloride +	62	1.953	1.953	(0.298)	129576	50.0000	55.9	
6	Bromomethane	94	2.279	2.279	(0.348)	79030	50.0000	47.9	
7	Chloroethane	64	2.410	2.410	(0.368)	85509	50.0000	55.0	(M1)
8	Trichlorofluoromethane	101	2.556	2.556	(0.390)	152990	50.0000	48.8	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	94940	50.0000	48.4	
11	Carbon Disulfide	76	3.156	3.156	(0.482)	309948	50.0000	55.4	
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	90204	50.0000	49.1	
13	Methyl Iodide	142	3.295	3.295	(0.503)	58370	50.0000	39.4	
14	Acrolein	56	3.553	3.553	(0.542)	44621	250.000	235	
16	Methylene Chloride	49	3.853	3.853	(0.588)	147942	50.0000	52.4	
17	Acetone	43	3.928	3.928	(0.600)	77515	50.0000	47.3	
18	trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	150048	50.0000	54.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	96682	50.0000	46.9	9486
	20 Hexane	57	4.134	4.134	(0.631)	122566	50.0000	48.6	9610
	21 MTBE	73	4.187	4.187	(0.639)	312854	50.0000	45.1	9839
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	200955	50.0000	54.3	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	245343	250.000	282	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	32255	50.0000	22.6	
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	153498	50.0000	54.4	
M	75 Total 1,2-Dichloroethene	61				303546	100.000	109	
	30 2,2-Dichloropropane	77	5.428	5.428	(0.828)	116060	50.0000	37.2	
	32 Cyclohexane	56	5.518	5.518	(0.842)	184659	50.0000	55.5	9775
	34 Bromochloromethane	128	5.525	5.525	(0.843)	55970	50.0000	49.5	
	35 Chloroform +	83	5.607	5.607	(0.856)	187541	50.0000	51.2	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	130382	50.0000	50.2	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	110675	50.0000	49.8	9584
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	155100	50.0000	48.6	
	44 2-Butanone	43	5.919	5.919	(0.903)	84442	50.0000	49.5	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	144788	50.0000	52.0	
	46 Benzene	78	6.162	6.162	(0.941)	463657	50.0000	51.7	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	68853	50.0000	51.9	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	151852	50.0000	49.3	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	468009	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	172372	50.0000	50.3	8497
	56 Trichloroethene	130	6.710	6.710	(1.024)	125633	50.0000	51.9	
	57 Dibromomethane	93	7.096	7.096	(1.083)	69661	50.0000	50.2	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	119021	50.0000	54.1	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	143943	50.0000	50.9	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	167505	50.0000	53.9	9641
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	59750	50.0000	45.5	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	175731	50.0000	50.7	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	444526	50.0000	47.9	
	69 Toluene +	91	7.969	7.969	(0.880)	488476	50.0000	48.7	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	89721	50.0000	45.9	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	140139	50.0000	47.9	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	150734	50.0000	49.7	
M	82 1-3 Dichloropropene total	100				326465	100.000	100	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	107755	50.0000	48.6	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	113319	50.0000	49.5	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	188763	50.0000	50.3	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	106544	50.0000	48.3	
	83 2-Hexanone	43	8.854	8.854	(0.978)	108419	50.0000	46.6	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	132775	50.0000	46.8	9669
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	190135	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.002)	313728	50.0000	48.2	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	170828	50.0000	48.8	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	104816	50.0000	48.0	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	419162	100.000	97.0	
	90 o-Xylene	106	9.454	9.454	(1.044)	205321	50.0000	47.8	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				624483	150.000	145	
91 Styrene	104	9.487	9.487	(1.048)	340689	50.0000	49.5	
92 Bromoform ++	173	9.514	9.514	(1.051)	84447	50.0000	46.9	
93 Isopropylbenzene	105	9.649	9.649	(1.066)	517227	50.0000	48.3	
$ 95 Bromofluorobenzene	174	9.836	9.836	(1.087)	143269	50.0000	46.7	
96 Bromobenzene	77	9.903	9.903	(0.942)	235750	50.0000	51.0	
97 n-Propylbenzene	91	9.903	9.903	(0.942)	610596	50.0000	51.0	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	139159	50.0000	44.9	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	415933	50.0000	49.9	
102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	423842	50.0000	49.9	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	178773	50.0000	49.3	
101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	34680	50.0000	46.2	
104 4-Chlorotoluene	91	10.110	10.110	(0.962)	366503	50.0000	49.3	
105 tert-butylbenzene	91	10.215	10.215	(0.972)	233668	50.0000	49.3	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	417559	50.0000	49.1	
108 sec-Butylbenzene	105	10.320	10.320	(0.982)	516212	50.0000	49.3	
110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	430776	50.0000	48.8	
113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	247861	50.0000	48.6	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	179555	50.0000		
115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	248982	50.0000	48.5	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	380150	50.0000	51.1	
118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	246338	50.0000	49.2	
119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	34436	50.0000	47.9	
120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	67611	50.0000	47.7	
122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	148404	50.0000	48.9	
124 Naphthalene	128	12.055	12.055	(1.147)	425021	50.0000	47.4	
125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	148994	50.0000	49.3	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.

Data File: /var/chem/msv13.i/2170515.s.b/d4249.d

Page 1

Date : 15-MAY-2017 19:37

Client ID: V13STD050

Instrument: msv13.i

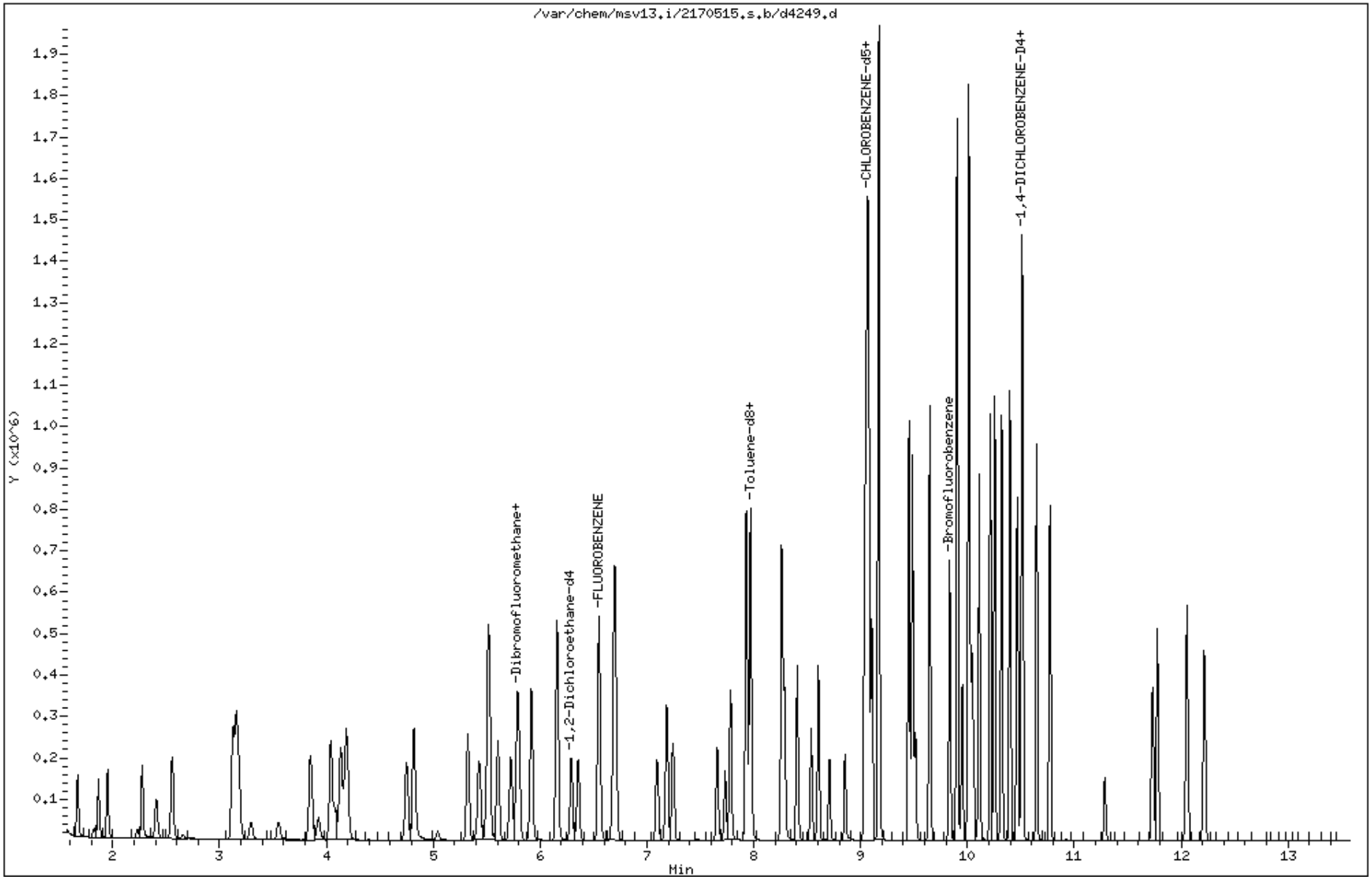
Sample Info: 1440*V13STD050

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



Report Date: 05/17/2017 13:18

MANUAL INTEGRATION GRAPHIC REPORT

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Lab ID         : 1440                      SampleType      : CCALIB_7
Injection Date: 05/15/2017 19:37           Instrument      : msv13.i
Operator       : LBH
Sample Info    : 1440*V13STD050
Misc Info      : MSV~38330~*1*LBH
Method         : /var/chem/msv13.i/2170515.s.b/8260bdod5w13.m
Dilution       : 1.00
Matrix         : WATER
Integrator     : HP RTE                    Compound Sublist: 8260b
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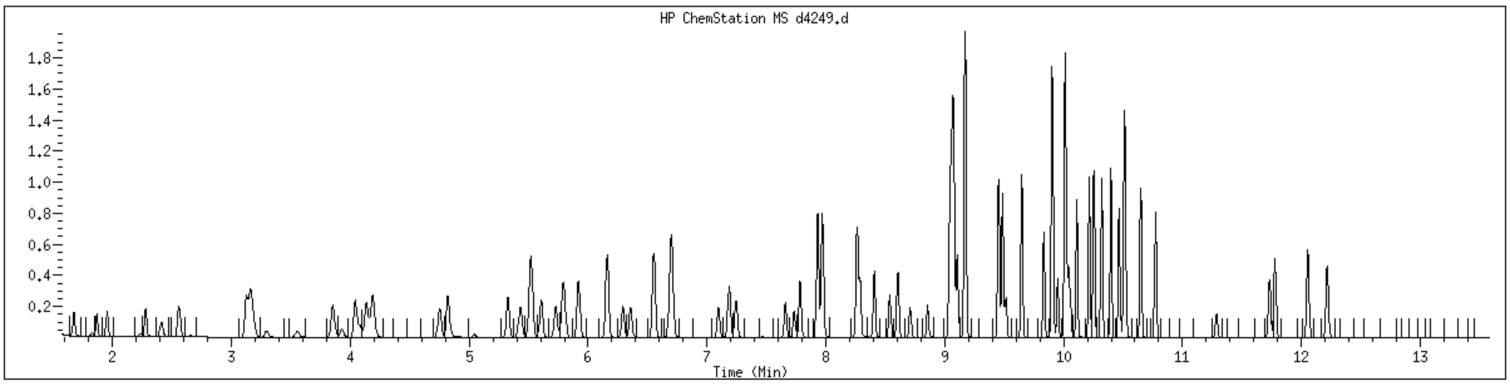

Original Final

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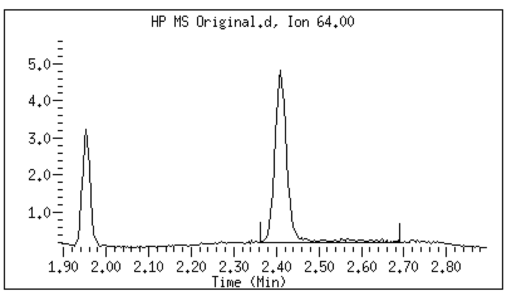
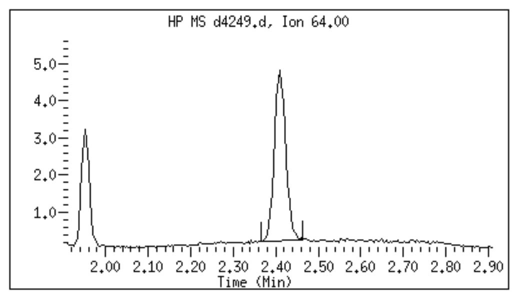
7 Chloroethane CAS#: 75-00-3 Reason: M1



Electronic Signature Applied

User: lbh
Date: 05/15/2017 20:24



M1 - Target system did not integrate

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	217051316	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170511p/d4107D
Analyst:	JCK	Analytical Batch:	610278
Analysis Date:	05/11/17 Time: 1612	Analytical Method:	EPA 8260B

		IS 1		IS 2		IS 3	
		Area	RT	Area	RT	Area	RT
STANDARD		192153	9.06	194337	10.51	480773	6.55
CLIENT SAMPLE ID	***GCAL SAMP ID***		#	#	#	#	#
LCS1684505	1684505	200889		9.05	185404	10.51	490698	6.55	
LCSD1684506	1684506	199385		9.05	186025	10.51	482446	6.55	
MB1684504	1684504	180833		9.05	147906	10.51	466719	6.55	
OMS-28-GW38-30-S	21705131601	179186		9.05	147069	10.51	456540	6.55	
OMS-28-GW38-30-c	21705131602	178367		9.05	145603	10.51	463214	6.55	
OMS-28-GW41-20-S	21705131603	178805		9.05	146727	10.51	459847	6.55	
OMS-28-GW57-16-S	21705131604	173218		9.05	143234	10.51	452860	6.55	
OMS-28-GW57-16-S-a	21705131605	173267		9.05	142062	10.51	450100	6.55	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 11-MAY-2017
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		d4099bfb.d	0.00 ml	11-MAY-2017 13:07	1.0	JCK	2
1201		d4100.d	5.00 ml	11-MAY-2017 13:36	1.0	JCK	1
1202		d4101.d	5.00 ml	11-MAY-2017 13:58	1.0	JCK	1
1203		d4102.d	5.00 ml	11-MAY-2017 14:20	1.0	JCK	1
2PPB		d4103.d	5.00 ml	11-MAY-2017 14:43	1.0	JCK	1
1204		d4104.d	5.00 ml	11-MAY-2017 15:05	1.0	JCK	1
1205		d4105.d	5.00 ml	11-MAY-2017 15:27	1.0	JCK	1
1206		d4106.d	5.00 ml	11-MAY-2017 15:49	1.0	JCK	1
1207		d4107.d	5.00 ml	11-MAY-2017 16:12	1.0	JCK	1
1208		d4108.d	5.00 ml	11-MAY-2017 16:34	1.0	JCK	1
1209		d4109.d	5.00 ml	11-MAY-2017 16:56	1.0	JCK	1
BLANK		d4110.d	5.00 ml	11-MAY-2017 17:18	1.0	JCK	1
1600		d4111.d	5.00 ml	11-MAY-2017 17:41	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: TUNE TIME: :

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 15-MAY-2017
Instrument: msv13.i
Analyst(s): LBH

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1400 (CCV)	8260	250	126-74-9	05/29/17
	Ac/Ac/VA	MC	126-74-5	07/31/17
	2-CVE	250	126-74-7	11/05/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		d4220c.d	0.00 ml	15-MAY-2017 08:12	1.0	LBH	2
1000		d4220.d	0.00 ml	15-MAY-2017 08:12	1.0	LBH	2
1400		d4221.d	5.00 ml	15-MAY-2017 08:55	1.0	LBH	1
1400		d4221dc.d	5.00 ml	15-MAY-2017 08:55	1.0	LBH	1
1684711		d4221dcL.d	5.00 ml	15-MAY-2017 08:55	1.0	LBH	1
1684505		d4221L.d	5.00 ml	15-MAY-2017 08:55	1.0	LBH	1
1684506		d4222.d	5.00 ml	15-MAY-2017 09:17	1.0	LBH	1
1684712		d4222dc.d	5.00 ml	15-MAY-2017 09:17	1.0	LBH	1
BLANK		d4223.d	5.00 ml	15-MAY-2017 09:39	1.0	LBH	1
BLANK		d4224.d	5.00 ml	15-MAY-2017 10:02	1.0	LBH	1
1684504		d4225.d	5.00 ml	15-MAY-2017 10:24	1.0	LBH	1
1684710 pH		d4225dc.d	5.00 ml	15-MAY-2017 10:24	1.0	LBH	1
21705131601 1		d4226.d	5.00 ml	15-MAY-2017 10:46	1.0	LBH	1
21705131602 1		d4227.d	5.00 ml	15-MAY-2017 11:08	1.0	LBH	1
21705131603 1		d4228.d	5.00 ml	15-MAY-2017 11:31	1.0	LBH	1
21705131604 1		d4229.d	5.00 ml	15-MAY-2017 11:53	1.0	LBH	1
21705131605 1		d4230.d	5.00 ml	15-MAY-2017 12:15	1.0	LBH	1
21705132101 1		d4231dc.d	5.00 ml	15-MAY-2017 12:38	1.0	LBH	1
21705132102 1	RR, NOT SPIKED	d4232.d	5.00 ml	15-MAY-2017 13:00	1.0	LBH	1
21705132103 1		d4233.d	5.00 ml	15-MAY-2017 13:22	1.0	LBH	1
21705132104 1		d4234.d	5.00 ml	15-MAY-2017 13:44	1.0	LBH	1
21705132105 1		d4235.d	5.00 ml	15-MAY-2017 14:07	1.0	LBH	1
21705132106 1		d4236.d	5.00 ml	15-MAY-2017 14:29	1.0	LBH	1
21705132107 1		d4237.d	5.00 ml	15-MAY-2017 14:51	1.0	LBH	1
21705132108 1		d4238.d	5.00 ml	15-MAY-2017 15:14	1.0	LBH	1
21705132109 1		d4239.d	5.00 ml	15-MAY-2017 15:36	1.0	LBH	1
21705132110 1		d4240.d	5.00 ml	15-MAY-2017 15:58	1.0	LBH	1
21705132111 1	RR 1X	d4241.d	5.00 ml	15-MAY-2017 16:20	1000.0	LBH	1
21705132112 1		d4242.d	5.00 ml	15-MAY-2017 17:01	1.0	LBH	1
21705121601 1		d4243.d	5.00 ml	15-MAY-2017 17:23	1.0	LBH	1
21705121602 1		d4244.d	5.00 ml	15-MAY-2017 17:46	1.0	LBH	1
21705121603 1		d4245.d	5.00 ml	15-MAY-2017 18:08	1.0	LBH	1
21705132111 1		d4246.d	5.00 ml	15-MAY-2017 18:30	1.0	LBH	1
21705132102 1		d4247ms.d	5.00 ml	15-MAY-2017 18:52	1.0	LBH	1
21705132103 1		d4248msd.d	5.00 ml	15-MAY-2017 19:15	1.0	LBH	1
1440		d4249c.d	5.00 ml	15-MAY-2017 19:37	1.0	LBH	1
BLANK		d4250.d	5.00 ml	15-MAY-2017 19:59	1.0	LBH	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 20:12

Client ID: 4838 - AECOM
SDG: 217051316
PM: AMK

AECOM

Chain of Custody and Analytical Reque

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	TCL VOCs (8260B)	Comments	Cooler ID
OMS-28-GW38-30-S	5/11/17	0940	26 30	Split	WG	3	X		-1
OMS-28-GW38-30-C	5/11/17	—	— —	TB	WQ	3	X		-2
OMS-28-GW41-20-S	5/11/17	1530	16 20	Split	WG	3	X		-3
OMS-28-GW57-16-S	5-12-17	1145	12 16	Split	WG	3	X		-4
OMS-28-GW57-16-S-a	5-12-17	1145	12 16	Split	WG	3	X		-5
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5/12/17	1400	1. Fed Ex		
2. Fed Ex			2. Tiffany Sam	5-13-17	1030
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab
Method of Shipment: Fed Ex
Analytical Lab: GCAL
Lab Receipient:

Shipped: XX
Airbill #: 8731 2991 6274
Location: Baton Rouge LA
Date:
Time:

1) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

22 CPM
3.9°C E29

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 70775

Analytical Data To: Vasi Kourlas and Dwight Parks

SAMPLE RECEIVING CHECKLIST

2170513 16

SAMPLE DELIVERY GROUP 217051316	
Client PM AMK 4838 - AECOM	**Transport Method** FED EX
Profile Number 264814	**Received By** Savage, Tiffany R
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 05/13/17

CHECKLIST	YES	NO	NA
Samples received with proper thermal and chemical preservation?	☑	☐	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐	☐
When used, were custody seals intact?	☑	☐	☐
COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	☑	☐	☐
Short holds or RUSH samples received?	☐	☑	☐
All containers received in good condition and within hold time?	☑	☐	☐
All sample labels and containers received match the chain of custody?	☑	☐	☐
Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	☐	☐	☑
Preservative added to any containers?	☐	☐	☑
VOC water containers received with headspace < 6mm?	☑	☐	☐
Received filtered sample volume for dissolved analysis?	☐	☐	☑
Trip blank present in all coolers containing VOC waters?	☑	☐	☐
Samples collected in containers provided by GCAL?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E29	Temp(°C)
8731 2991 6242		3.9

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

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Appendix B6
GCAL Report 21705110 dated May 22, 2017

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 05/22/2017

GCAL Report 217051110

Project ARNG OMS 28/ 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____

Authorized Signature
GCAL Report 217051110

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 217051110

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES MASS SPECTROMETRY

In the EPA 8260B analysis, samples 21705111009 (OMS-28-SB24-1-S), 21705111010 (OMS-28-SB24-3-S), and 21705111011 (OMS-28-SB24-5-S) had to be diluted to bracket the concentration of target analytes within the calibration range of the instrument. The dilutions are reflected in elevated detection limits.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21705111001	OMS-28-SB04-1-S	Solid	05/08/2017 09:10	05/11/2017 10:00
21705111002	OMS-28-SB01-2-S	Solid	05/08/2017 11:38	05/11/2017 10:00
21705111003	OMS-28-SB11-6-S	Solid	05/08/2017 13:15	05/11/2017 10:00
21705111004	OMS-28-SB14-1-S	Solid	05/08/2017 15:20	05/11/2017 10:00
21705111005	OMS-28-GW13-32-S	Water	05/09/2017 10:45	05/11/2017 10:00
21705111006	OMS-28-GW13-32-C	Water	05/09/2017 00:01	05/11/2017 10:00
21705111007	OMS-28-SB22-1.5-S	Solid	05/10/2017 08:21	05/11/2017 10:00
21705111008	OMS-28-SB16-5-S	Solid	05/10/2017 09:14	05/11/2017 10:00
21705111009	OMS-28-SB24-1-S	Solid	05/10/2017 10:40	05/11/2017 10:00
21705111010	OMS-28-SB24-3-S	Solid	05/10/2017 10:45	05/11/2017 10:00
21705111011	OMS-28-SB24-5-S	Solid	05/10/2017 10:50	05/11/2017 10:00
21705111012	OMS-28-GW28-12-S	Water	05/10/2017 12:05	05/11/2017 10:00

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21705111001	OMS-28-SB04-1-S	S	EPA 8260B DOD Solid
21705111001	OMS-28-SB04-1-S	S	Dry Weight/Percent Moisture
21705111002	OMS-28-SB01-2-S	S	EPA 8260B DOD Solid
21705111002	OMS-28-SB01-2-S	S	Dry Weight/Percent Moisture
21705111003	OMS-28-SB11-6-S	S	EPA 8260B DOD Solid
21705111003	OMS-28-SB11-6-S	S	Dry Weight/Percent Moisture
21705111004	OMS-28-SB14-1-S	S	EPA 8260B DOD Solid
21705111004	OMS-28-SB14-1-S	S	Dry Weight/Percent Moisture
21705111005	OMS-28-GW13-32-S	W	EPA 8260B DOD Water
21705111006	OMS-28-GW13-32-C	W	EPA 8260B DOD Water
21705111007	OMS-28-SB22-1.5-S	S	EPA 8260B DOD Solid
21705111007	OMS-28-SB22-1.5-S	S	Dry Weight/Percent Moisture
21705111008	OMS-28-SB16-5-S	S	EPA 8260B DOD Solid
21705111008	OMS-28-SB16-5-S	S	Dry Weight/Percent Moisture
21705111009	OMS-28-SB24-1-S	S	EPA 8260B DOD Solid
21705111009	OMS-28-SB24-1-S	S	Dry Weight/Percent Moisture
21705111010	OMS-28-SB24-3-S	S	EPA 8260B DOD Solid
21705111010	OMS-28-SB24-3-S	S	Dry Weight/Percent Moisture
21705111011	OMS-28-SB24-5-S	S	EPA 8260B DOD Solid
21705111011	OMS-28-SB24-5-S	S	Dry Weight/Percent Moisture
21705111012	OMS-28-GW28-12-S	W	EPA 8260B DOD Water

Manual Integrations

No Manual Integrations Performed By GCAL.

Summary of Compounds Detected

OMS-28-SB04-1-S

Collect Date	05/08/2017 09:10	**GCAL ID**	21705111001
Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
67-64-1	Acetone	4.37J	0.395	1.58	19.7	ug/Kg
71-43-2	Benzene	0.499J	0.197	0.395	3.95	ug/Kg
110-82-7	Cyclohexane	0.698J	0.197	0.395	3.95	ug/Kg
108-87-2	Methylcyclohexane	1.43J	0.197	0.395	3.95	ug/Kg
75-09-2	Methylene chloride	3.14J	0.790	1.58	7.90	ug/Kg
108-88-3	Toluene	1.37J	0.197	0.395	3.95	ug/Kg
1330-20-7	Xylene (total)	0.862J	0.395	1.18	11.8	ug/Kg

OMS-28-SB01-2-S

Collect Date	05/08/2017 11:38	**GCAL ID**	21705111002
Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
67-64-1	Acetone	9.80J	0.358	1.43	17.9	ug/Kg
75-09-2	Methylene chloride	11.3	0.715	1.43	7.15	ug/Kg

OMS-28-SB11-6-S

Collect Date	05/08/2017 13:15	**GCAL ID**	21705111003
Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-09-2	Methylene chloride	9.09J	1.00	2.01	10.0	ug/Kg

OMS-28-SB14-1-S

Collect Date	05/08/2017 15:20	**GCAL ID**	21705111004
Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
78-93-3	2-Butanone	4.03J	0.443	1.77	4.43	ug/Kg
108-10-1	4-Methyl-2-pentanone	1.39J	0.221	0.443	4.43	ug/Kg
67-64-1	Acetone	83.0	0.443	1.77	22.1	ug/Kg

Summary of Compounds Detected

OMS-28-SB14-1-S

Collect Date	05/08/2017 15:20	**GCAL ID**	21705111004
Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B (Continued) *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-09-2	Methylene chloride	1.92J	0.886	1.77	8.86	ug/Kg

OMS-28-SB22-1.5-S

Collect Date	05/10/2017 08:21	**GCAL ID**	21705111007
Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
67-64-1	Acetone	6.16J	0.468	1.87	23.4	ug/Kg
75-09-2	Methylene chloride	4.18J	0.936	1.87	9.36	ug/Kg

OMS-28-SB16-5-S

Collect Date	05/10/2017 09:14	**GCAL ID**	21705111008
Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-09-2	Methylene chloride	2.73J	0.906	1.81	9.06	ug/Kg

OMS-28-SB24-1-S

Collect Date	05/10/2017 10:40	**GCAL ID**	21705111009
Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
127-18-4	Tetrachloroethene	329000	3070	6140	30700	ug/Kg

Summary of Compounds Detected

OMS-28-SB24-3-S				
	Collect Date	05/10/2017 10:45	**GCAL ID**	21705111010
	Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
127-18-4	Tetrachloroethene	53700	464	929	4640	ug/Kg

OMS-28-SB24-5-S				
	Collect Date	05/10/2017 10:50	**GCAL ID**	21705111011
	Receive Date	05/11/2017 10:00	**Matrix**	Solid

EPA 8260B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
127-18-4	Tetrachloroethene	24400	230	460	2300	ug/Kg

OMS-28-GW28-12-S				
	Collect Date	05/10/2017 12:05	**GCAL ID**	21705111012
	Receive Date	05/11/2017 10:00	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
127-18-4	Tetrachloroethene	0.863J	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	0.751J	0.200	0.500	1.00	ug/L

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB04-1-S
Collect Date:	05/08/17 Time: 0910	GCAL Sample ID:	21705111001
Matrix:	Solid % Moisture: 7.4	Instrument ID:	MSV11
Sample Amt:	6.84 g	Lab File ID:	2170514/i7169
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1451	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.395	U	0.197	0.395	3.95
79-34-5	1,1,2,2-Tetrachloroethane	0.395	U	0.197	0.395	3.95
79-00-5	1,1,2-Trichloroethane	0.395	U	0.197	0.395	3.95
75-34-3	1,1-Dichloroethane	0.395	U	0.197	0.395	3.95
75-35-4	1,1-Dichloroethene	0.395	U	0.197	0.395	3.95
87-61-6	1,2,3-Trichlorobenzene	0.790	U	0.395	0.790	3.95
120-82-1	1,2,4-Trichlorobenzene	0.790	U	0.395	0.790	3.95
96-12-8	1,2-Dibromo-3-chloropropane	1.58	U	0.395	1.58	3.95
106-93-4	1,2-Dibromoethane	1.58	U	0.395	1.58	3.95
95-50-1	1,2-Dichlorobenzene	0.395	U	0.197	0.395	3.95
107-06-2	1,2-Dichloroethane	0.395	U	0.197	0.395	3.95
78-87-5	1,2-Dichloropropane	0.395	U	0.197	0.395	3.95
541-73-1	1,3-Dichlorobenzene	0.395	U	0.197	0.395	3.95
106-46-7	1,4-Dichlorobenzene	0.395	U	0.197	0.395	3.95
78-93-3	2-Butanone	1.58	U	0.395	1.58	3.95
591-78-6	2-Hexanone	1.58	U	0.395	1.58	3.95
108-10-1	4-Methyl-2-pentanone	0.395	U	0.197	0.395	3.95
67-64-1	Acetone	4.37	J	0.395	1.58	19.7
71-43-2	Benzene	0.499	J	0.197	0.395	3.95
74-97-5	Bromochloromethane	0.790	U	0.395	0.790	3.95
75-27-4	Bromodichloromethane	0.395	U	0.197	0.395	3.95
75-25-2	Bromoform	0.790	U	0.395	0.790	3.95
74-83-9	Bromomethane	1.58	U	0.395	1.58	3.95
75-15-0	Carbon disulfide	0.395	U	0.197	0.395	3.95
56-23-5	Carbon tetrachloride	0.395	U	0.197	0.395	3.95
108-90-7	Chlorobenzene	0.395	U	0.197	0.395	3.95
75-00-3	Chloroethane	0.395	U	0.197	0.395	3.95
67-66-3	Chloroform	0.395	U	0.197	0.395	3.95
74-87-3	Chloromethane	1.58	U	0.395	1.58	3.95
156-59-2	cis-1,2-Dichloroethene	0.395	U	0.197	0.395	3.95
10061-01-5	cis-1,3-Dichloropropene	0.395	U	0.197	0.395	3.95
110-82-7	Cyclohexane	0.698	J	0.197	0.395	3.95
124-48-1	Dibromochloromethane	0.395	U	0.197	0.395	3.95
75-71-8	Dichlorodifluoromethane	0.395	U	0.197	0.395	3.95
100-41-4	Ethylbenzene	0.395	U	0.197	0.395	3.95
98-82-8	Isopropylbenzene (Cumene)	0.395	U	0.197	0.395	3.95

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	OMS-28-SB04-1-S
Collect Date:	05/08/17	Time:	0910	GCAL Sample ID:	21705111001
Matrix:	Solid	% Moisture:	7.4	Instrument ID:	MSV11
Sample Amt:	6.84 g			Lab File ID:	2170514/i7169
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17	Time:	1451	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	0.790	U	0.395	0.790	3.95
108-87-2	Methylcyclohexane	1.43	J	0.197	0.395	3.95
75-09-2	Methylene chloride	3.14	J	0.790	1.58	7.90
100-42-5	Styrene	0.395	U	0.197	0.395	3.95
1634-04-4	tert-Butyl methyl ether (MTBE)	0.395	U	0.197	0.395	3.95
127-18-4	Tetrachloroethene	0.790	U	0.395	0.790	3.95
108-88-3	Toluene	1.37	J	0.197	0.395	3.95
156-60-5	trans-1,2-Dichloroethene	0.395	U	0.197	0.395	3.95
10061-02-6	trans-1,3-Dichloropropene	0.395	U	0.197	0.395	3.95
79-01-6	Trichloroethene	0.395	U	0.197	0.395	3.95
75-69-4	Trichlorofluoromethane	0.395	U	0.197	0.395	3.95
76-13-1	Trichlorotrifluoroethane	0.790	U	0.395	0.790	3.95
75-01-4	Vinyl chloride	0.395	U	0.197	0.395	3.95
1330-20-7	Xylene (total)	0.862	J	0.395	1.18	11.8

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7169.d
Lab Smp Id: 21705111001 Client Smp ID: A
Inj Date : 14-MAY-2017 14:51
Operator : JMC2 Inst ID: msv11.i
Smp Info : 21705111001*A
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	6.84000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
	18 Methylene Chloride	49	4.085	4.091	(0.573)	12117	3.97805	2.91	7707
	19 Acetone	43	4.166	4.166	(0.584)	6382	5.53650	4.05	6457
	23 Hexane	57	4.417	4.417	(0.620)	4567	1.17682	0.860	6749
	38 Cyclohexane	56	5.979	5.979	(0.839)	3005	0.88415	0.646	5995(H)
$	42 Dibromofluoromethane	111	6.277	6.283	(0.881)	106493	49.6354	36.3	6014
	48 Benzene	78	6.695	6.693	(0.939)	5224	0.63158	0.462	6588
$	50 1,2-Dichloroethane-d4	67	6.843	6.843	(0.960)	69146	52.3220	38.2	9573
*	54 FLUOROBENZENE	96	7.128	7.133	(1.000)	423894	50.0000		9632
	56 Methyl cyclohexane	83	7.284	7.289	(1.022)	6015	1.81151	1.32	6524
$	74 Toluene-d8	98	8.661	8.661	(0.872)	402699	52.4613	38.3	9443
	77 Toluene +	91	8.712	8.706	(0.877)	13859	1.73628	1.27	8513
*	90 Chlorobenzene-d5	82	9.936	9.933	(1.000)	170745	50.0000		6933
	96 p,m-Xylene	106	10.072	10.072	(1.014)	3698	1.09101	0.798	8449(H)

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
M 120 TOTAL XYLENE	106				3698	1.09101	0.798	0
$ 103 Bromofluorobenzene	174	10.836	10.834	(1.091)	136690	51.7001	37.8	9597
114 1,2,4-Trimethylbenzene	105	11.330	11.327	(0.975)	4504	0.55007	0.402	(H)
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	162213	50.0000		6801

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

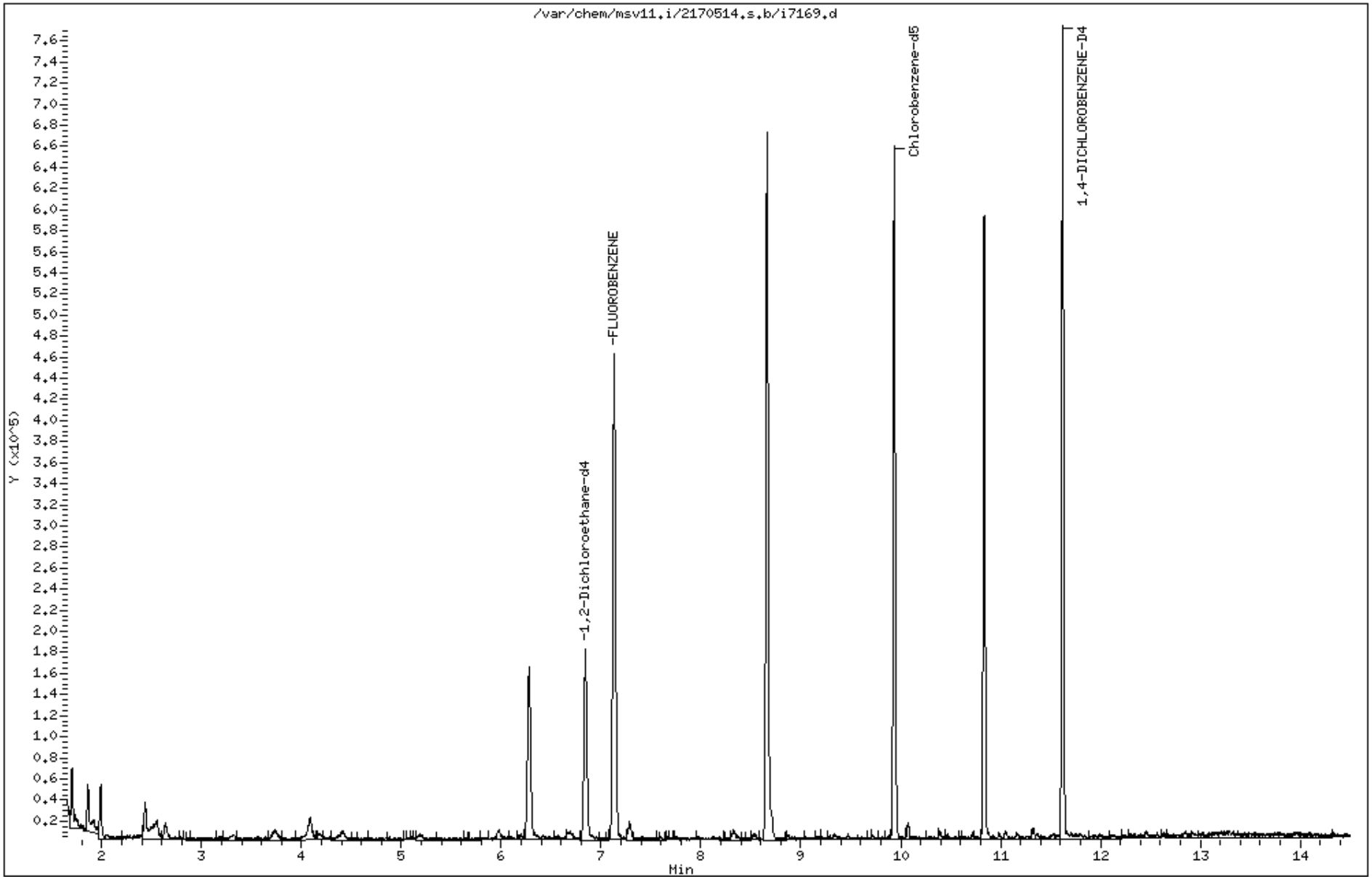
Instrument: msv11.i

Sample Info: 21705111001*A

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

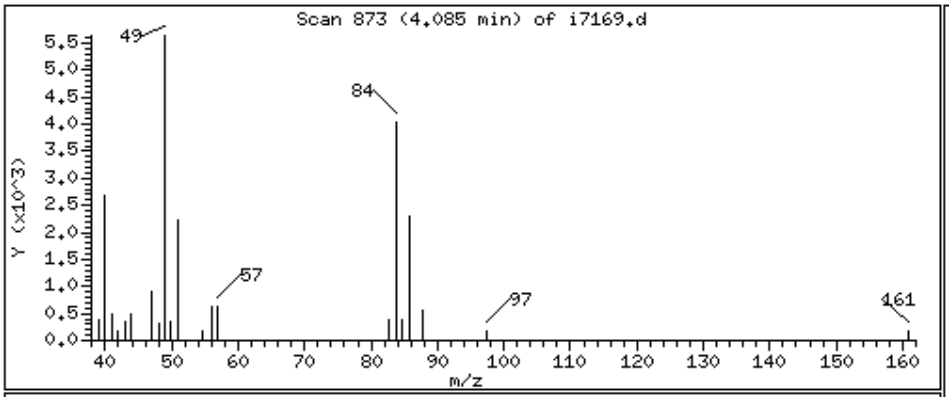
Operator: JMC2

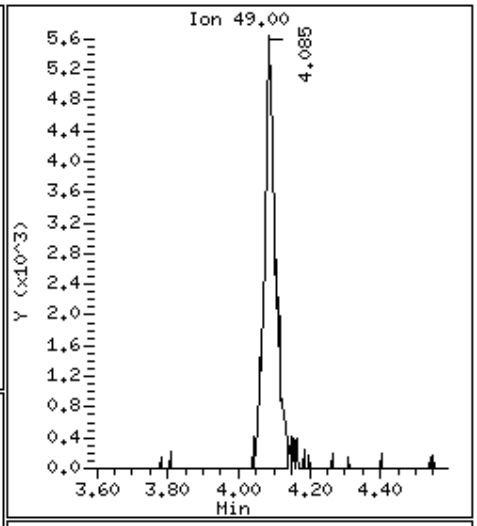
Column phase: RTX-VMS-30M

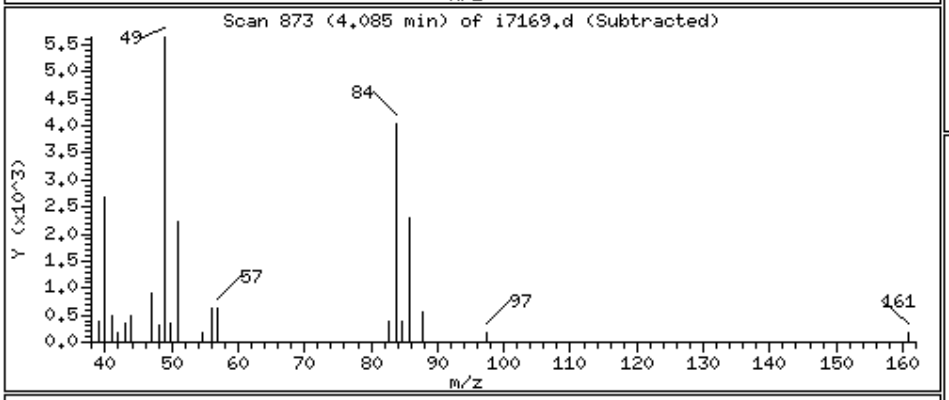
Column diameter: 0.25

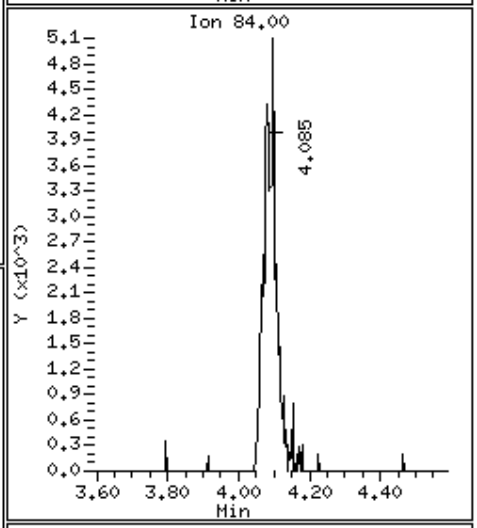
18 Methylene Chloride

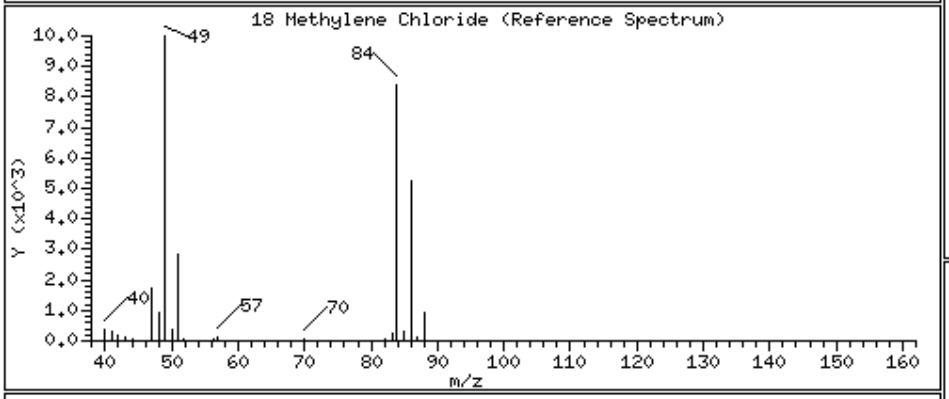
Concentration: 2.91 ug/Kg

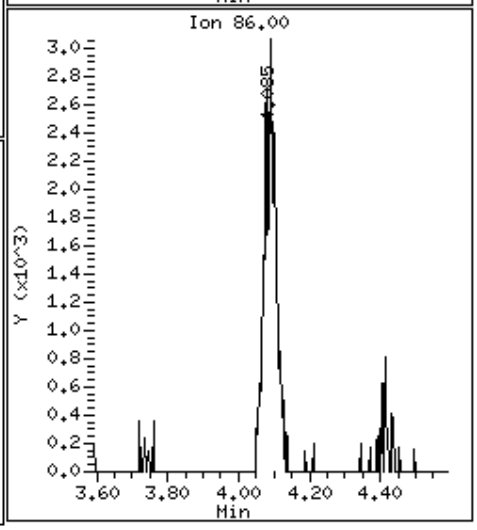


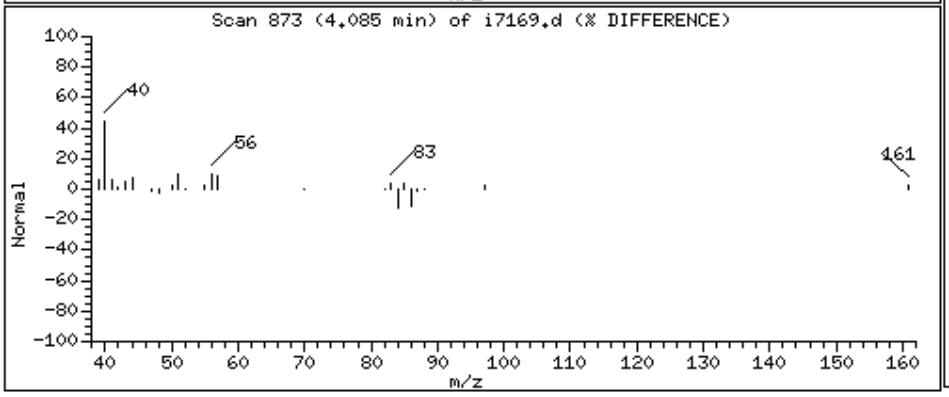












Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

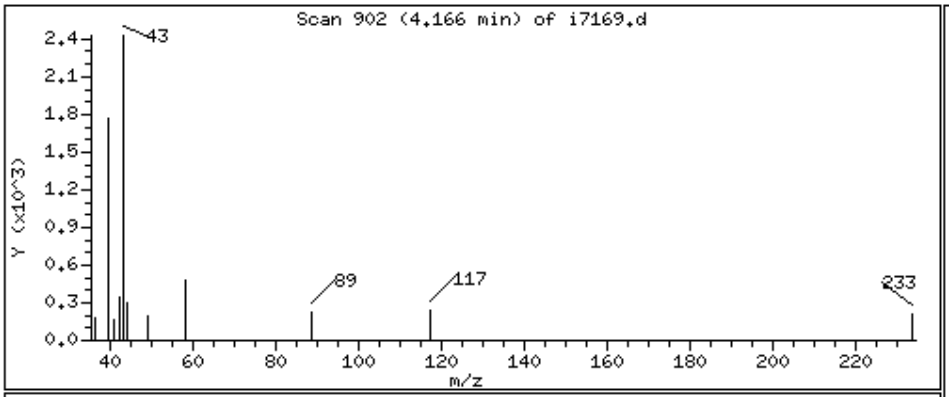
Operator: JMC2

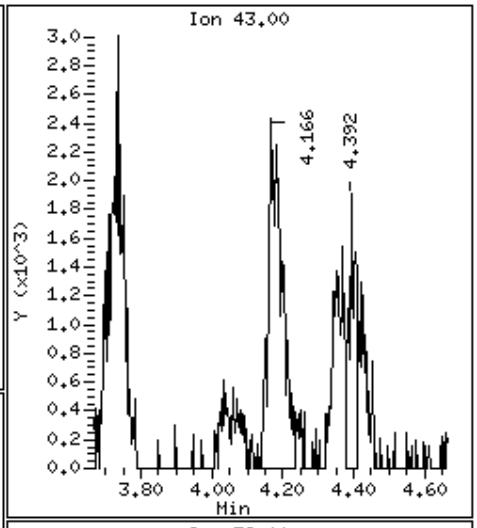
Column phase: RTX-VMS-30M

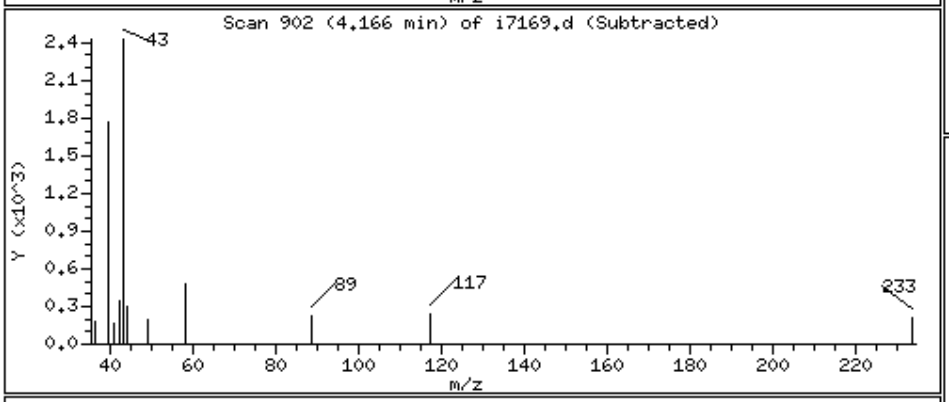
Column diameter: 0.25

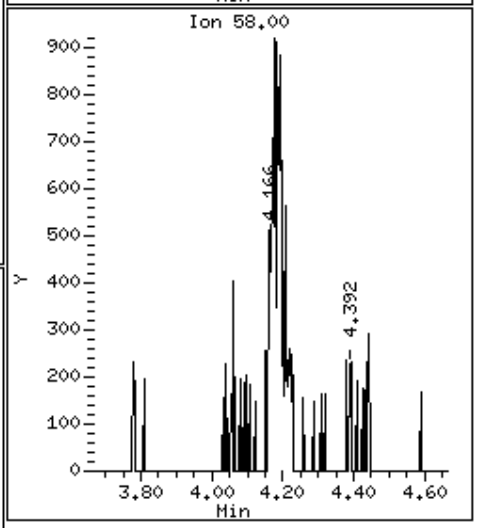
19 Acetone

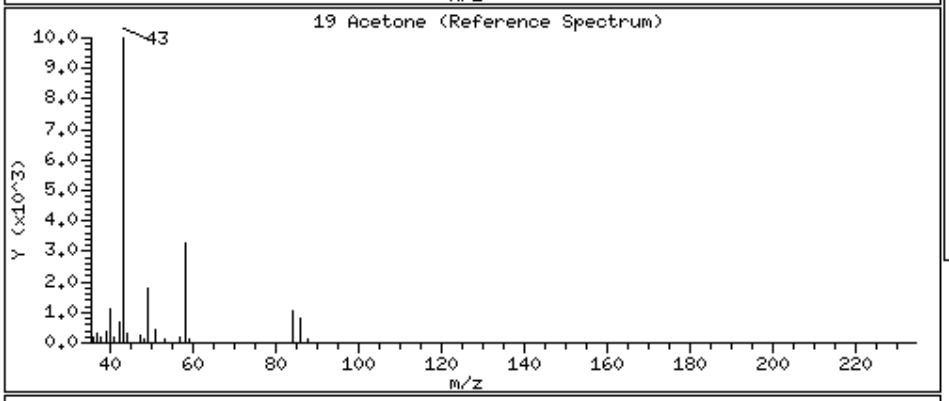
Concentration: 4.05 ug/Kg

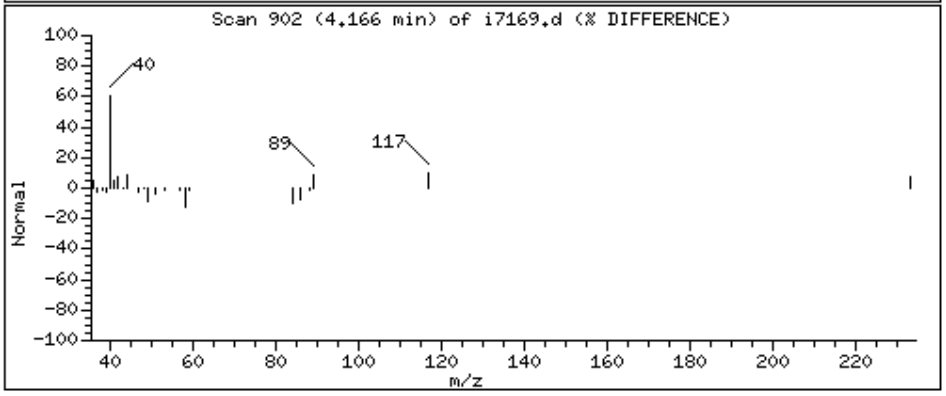












Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

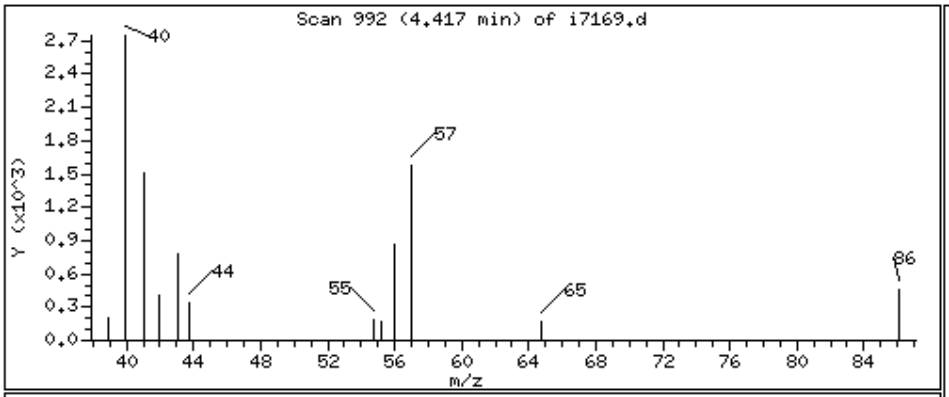
Operator: JMC2

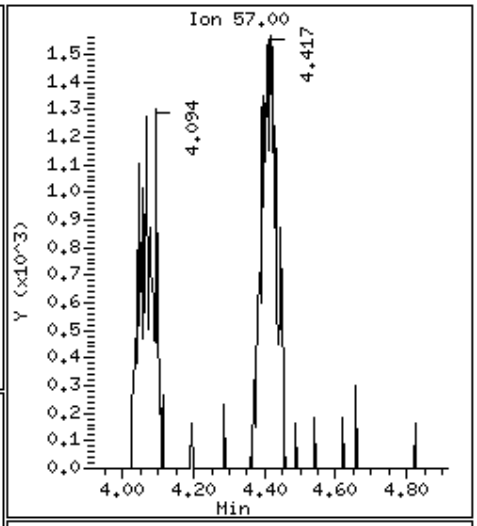
Column phase: RTX-VMS-30M

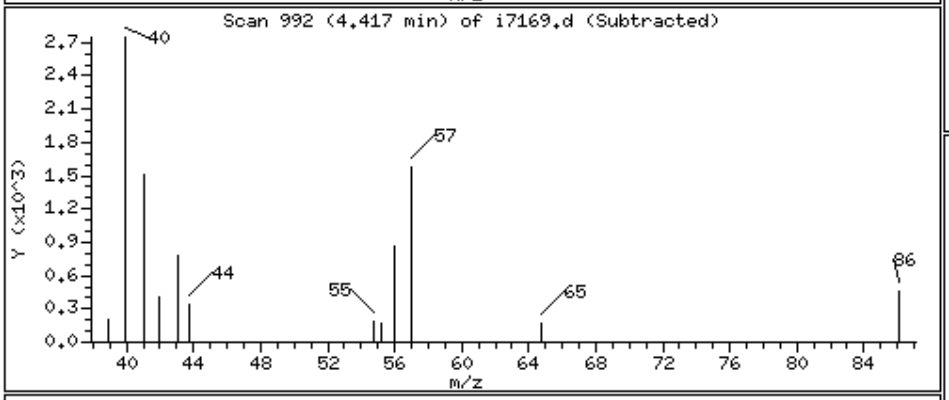
Column diameter: 0.25

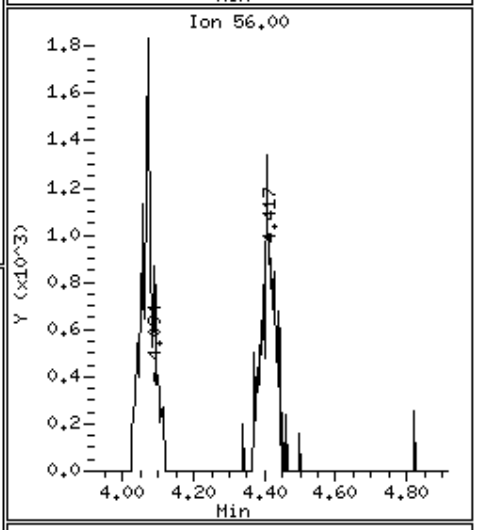
23 Hexane

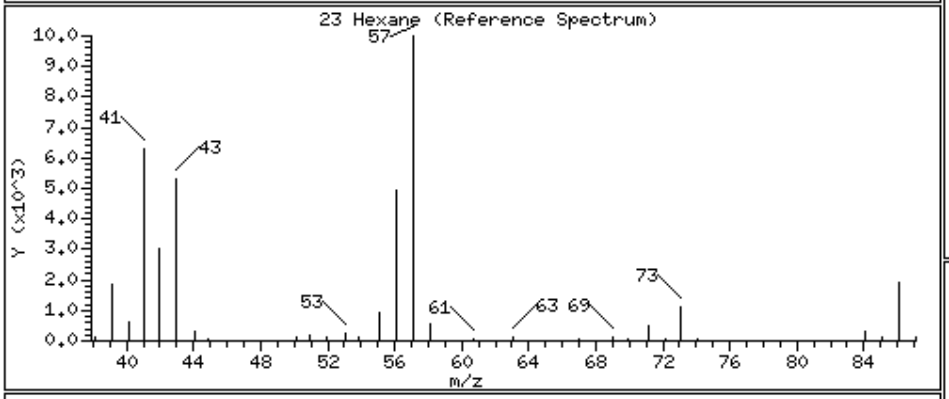
Concentration: 0.860 ug/Kg

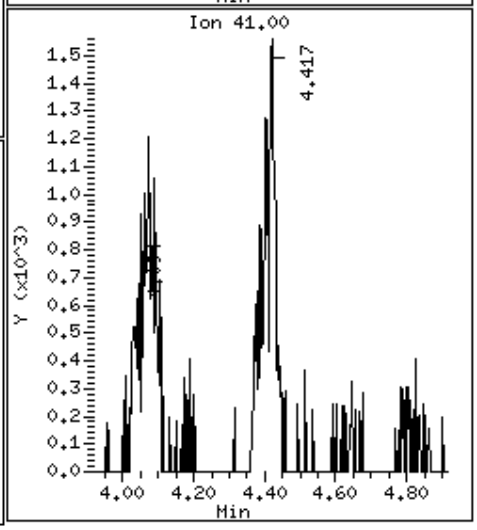


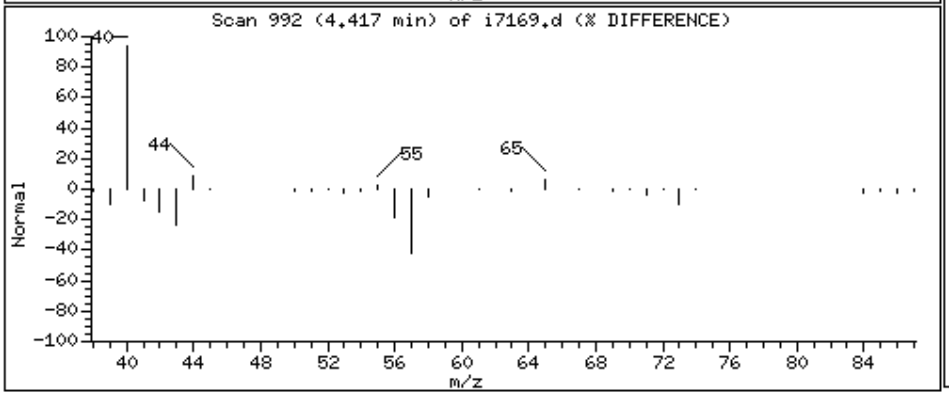












Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

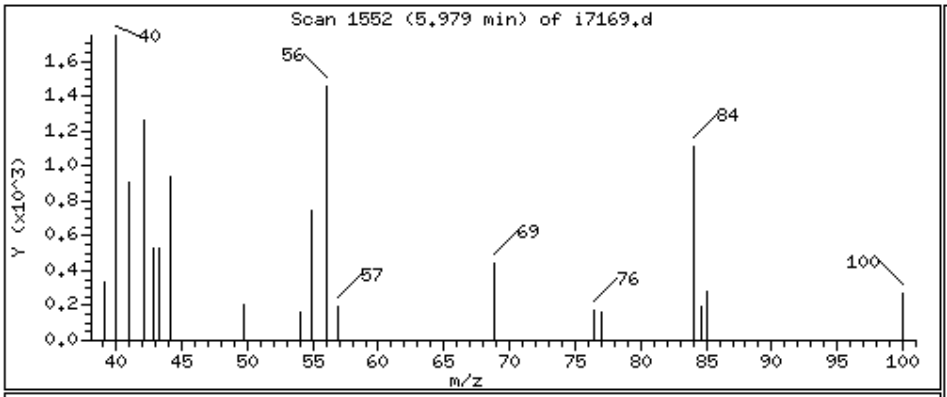
Operator: JMC2

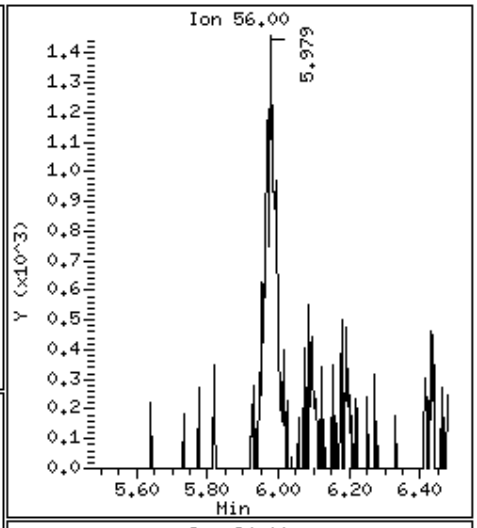
Column phase: RTX-VMS-30M

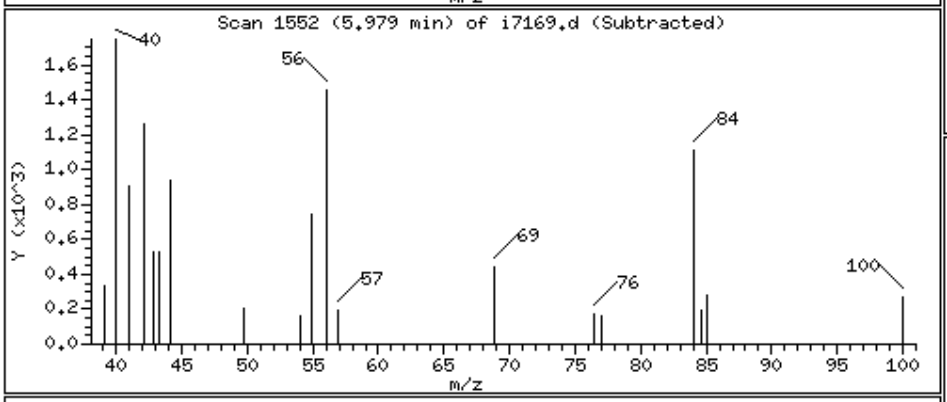
Column diameter: 0.25

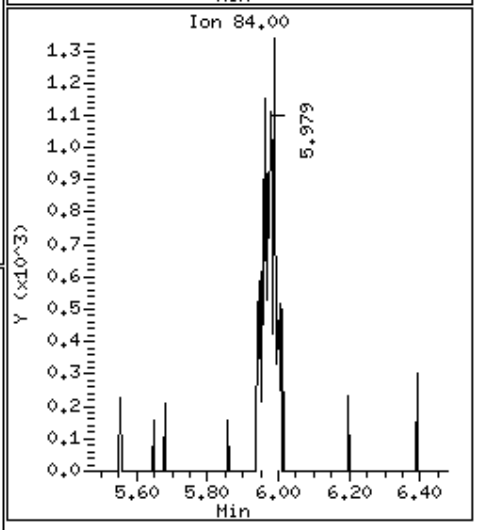
38 Cyclohexane

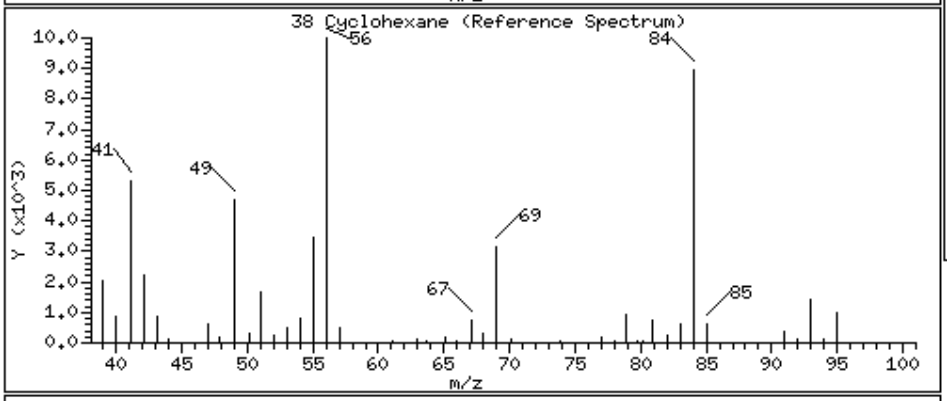
Concentration: 0.646 ug/Kg

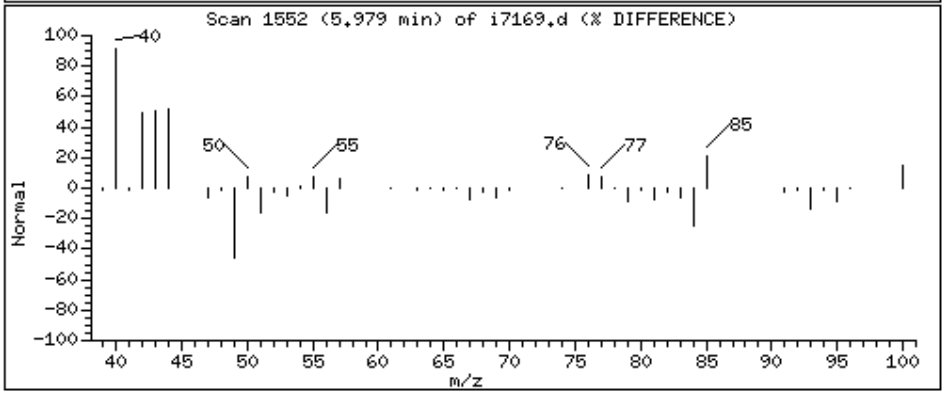












Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

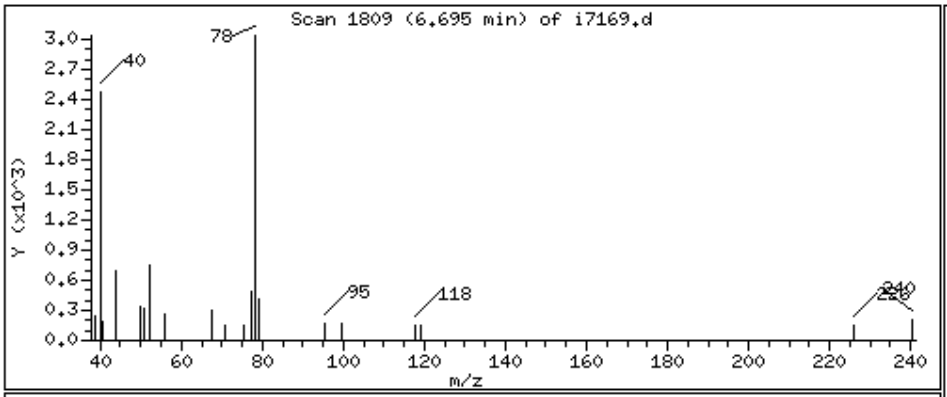
Operator: JMC2

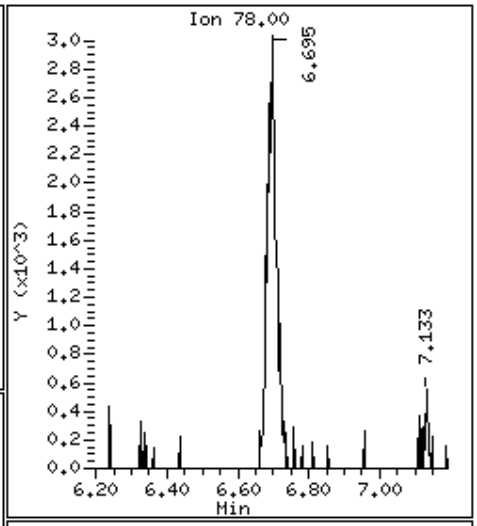
Column phase: RTX-VMS-30M

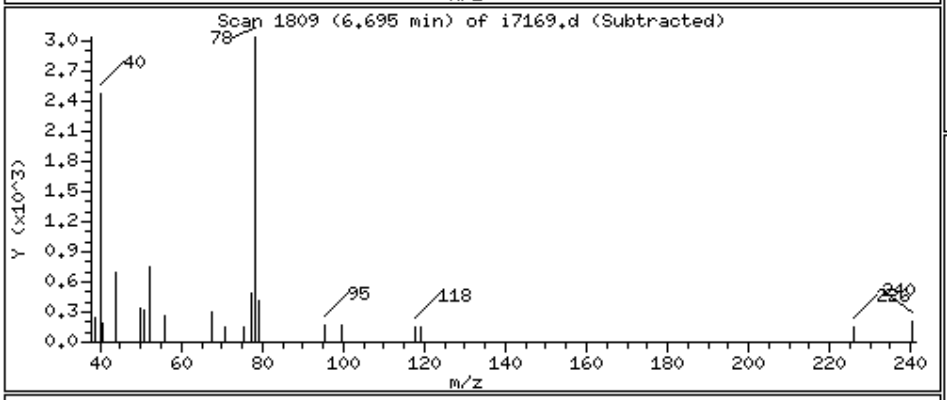
Column diameter: 0.25

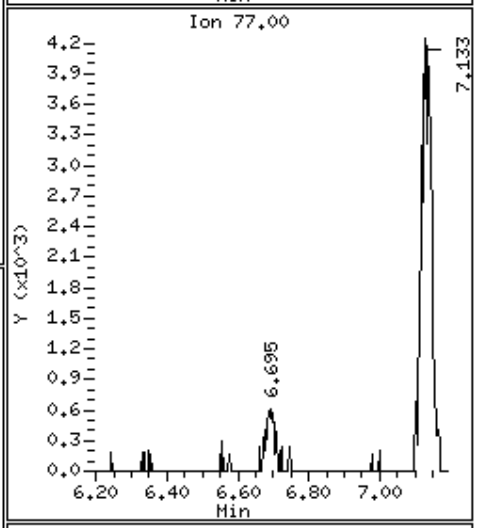
48 Benzene

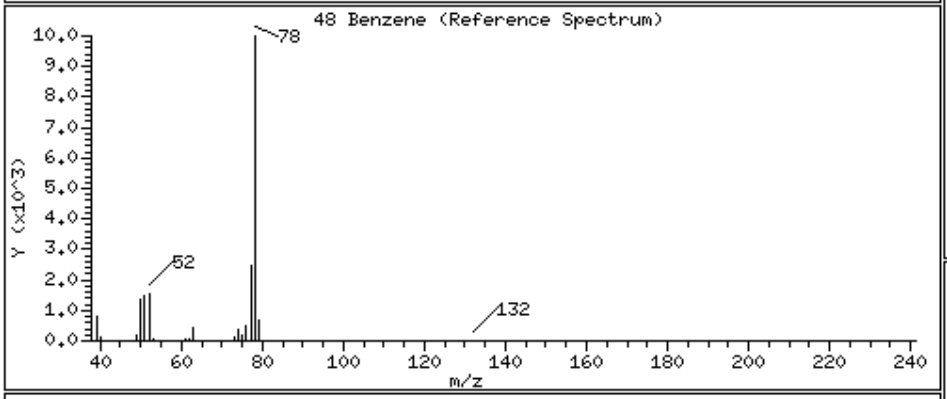
Concentration: 0.462 ug/Kg

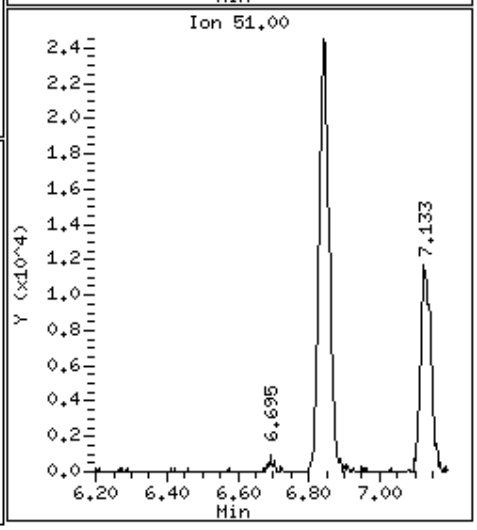


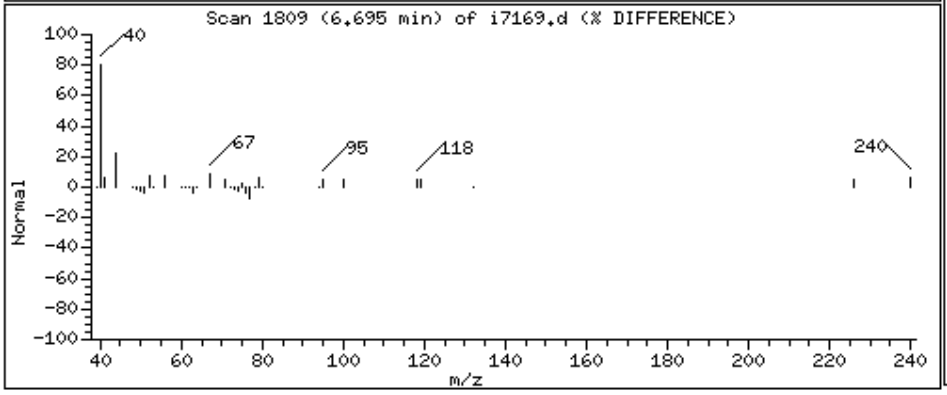












Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

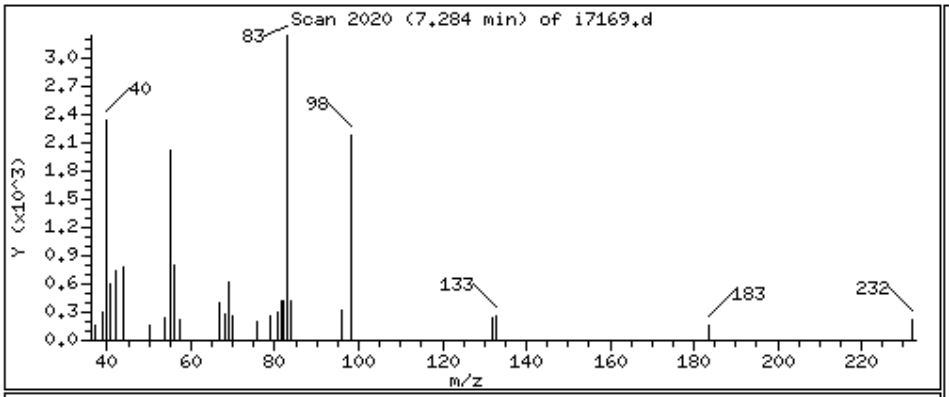
Operator: JMC2

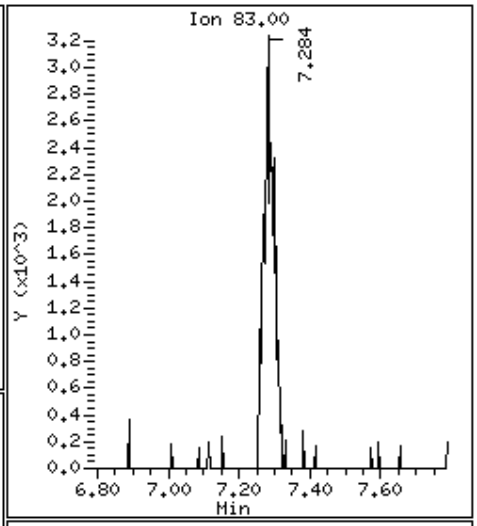
Column phase: RTX-VMS-30M

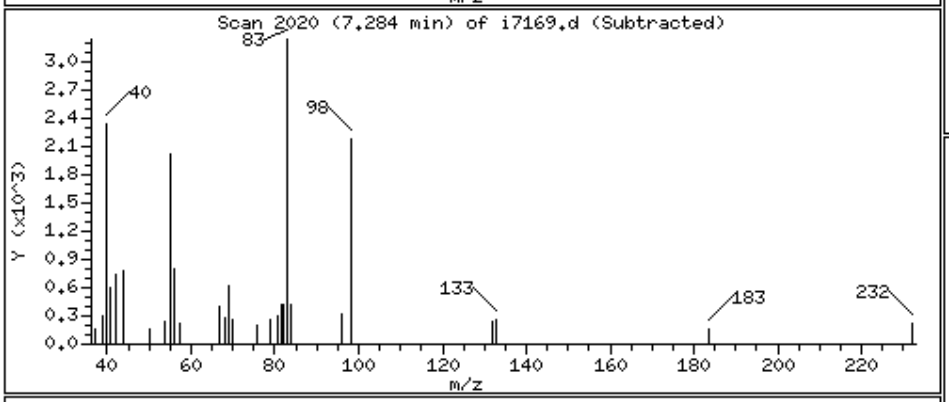
Column diameter: 0.25

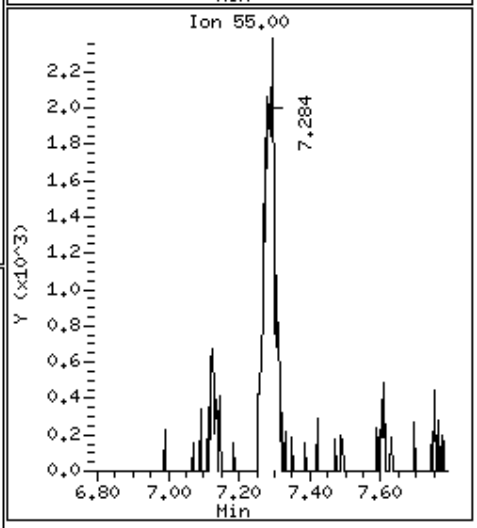
56 Methyl cyclohexane

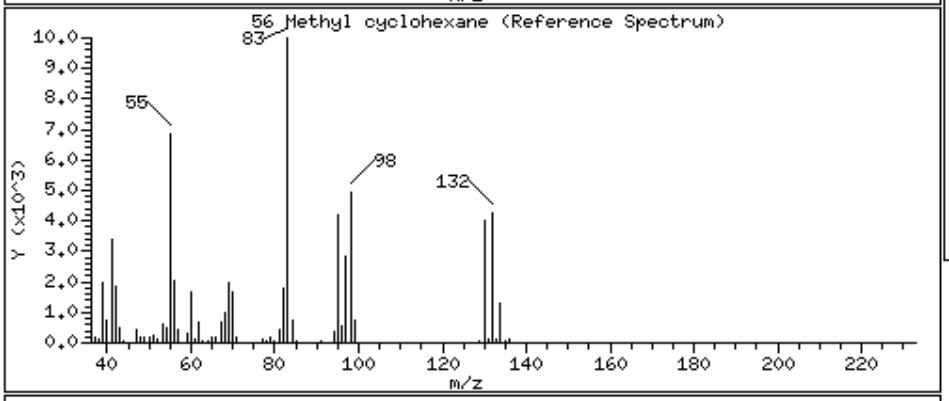
Concentration: 1.32 ug/Kg

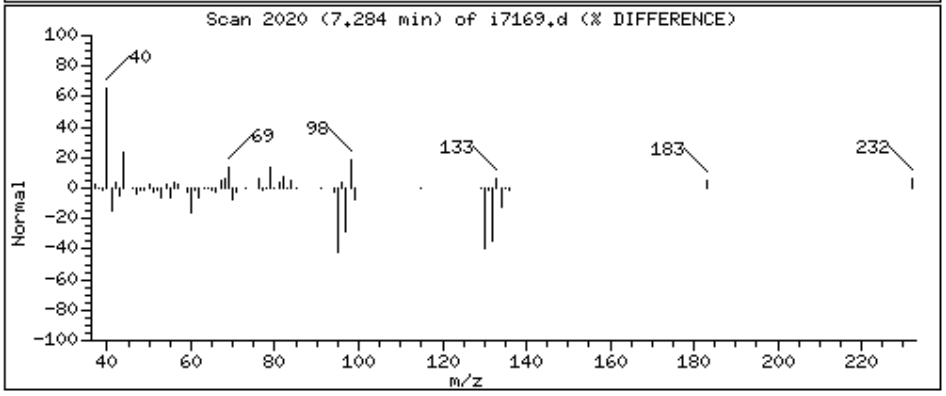












Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

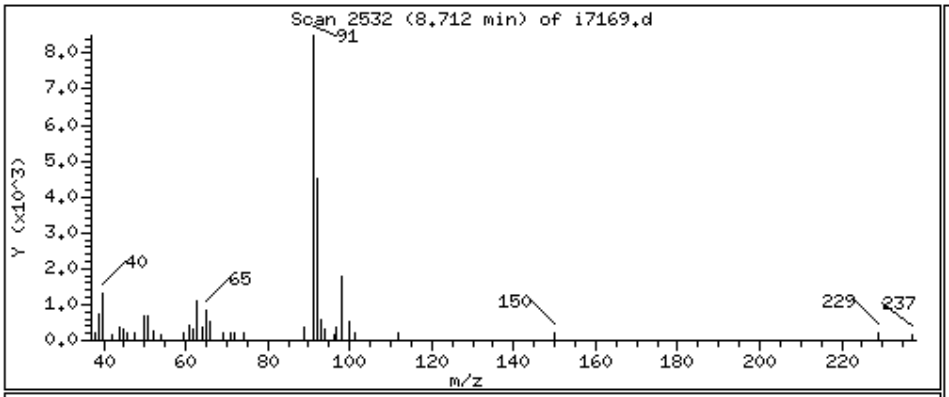
Operator: JMC2

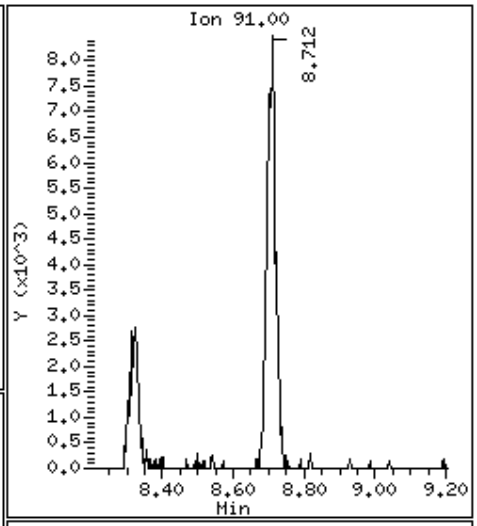
Column phase: RTX-VMS-30M

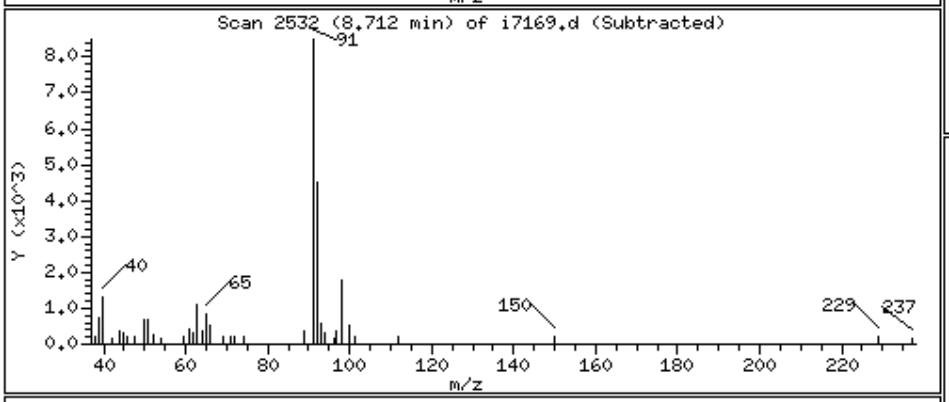
Column diameter: 0.25

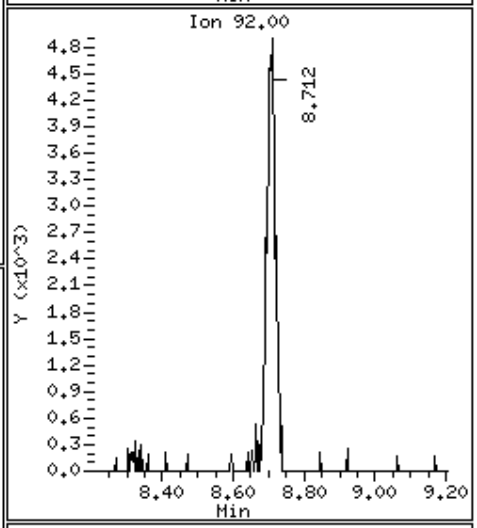
77 Toluene +

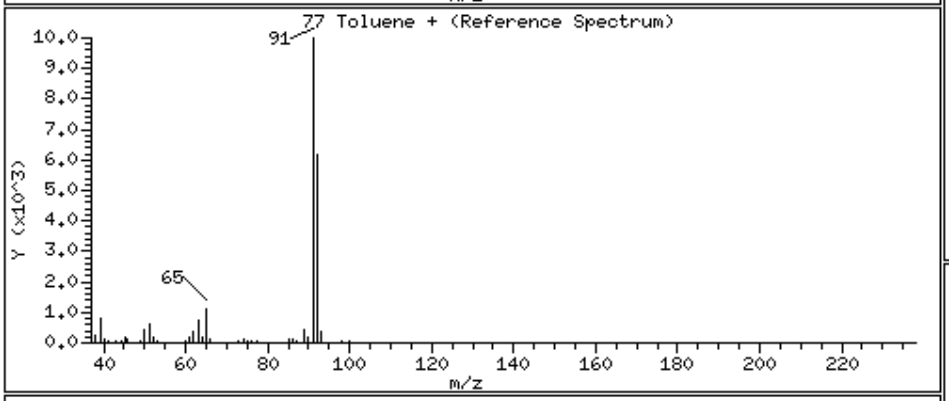
Concentration: 1.27 ug/Kg

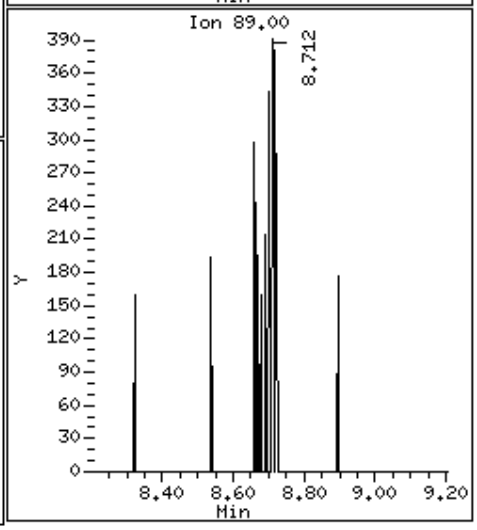


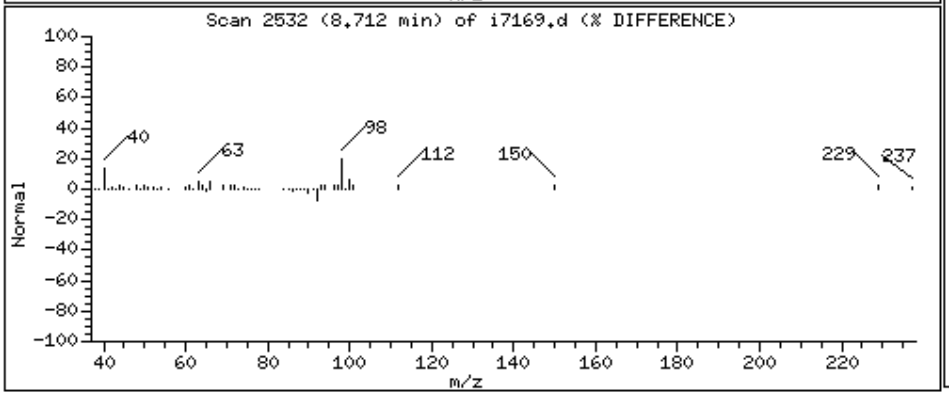












Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

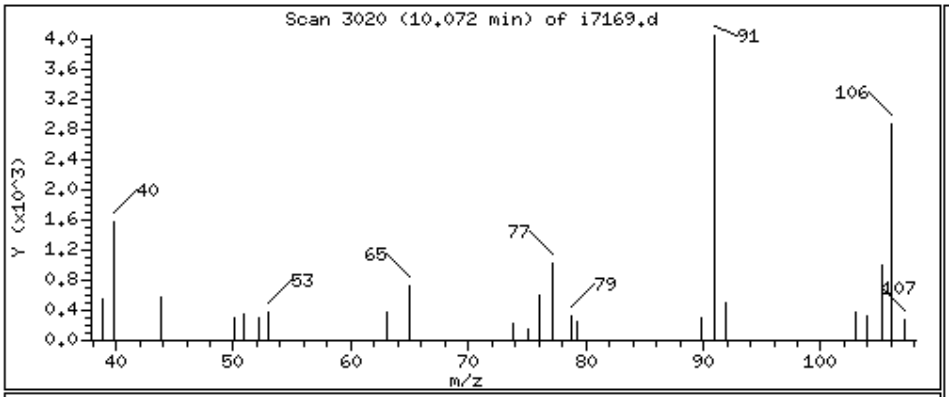
Operator: JMC2

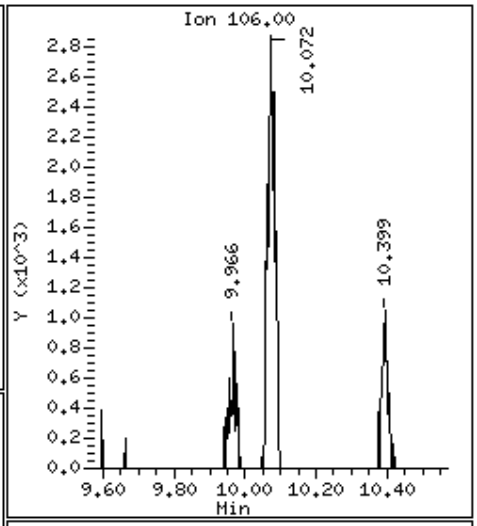
Column phase: RTX-VMS-30M

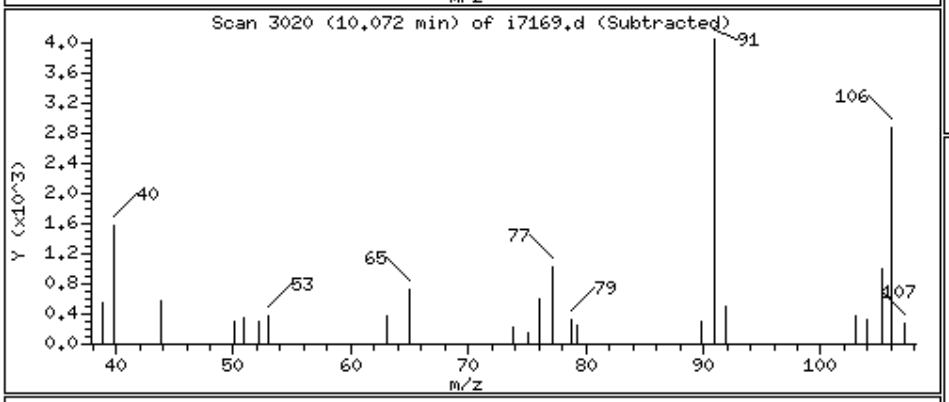
Column diameter: 0.25

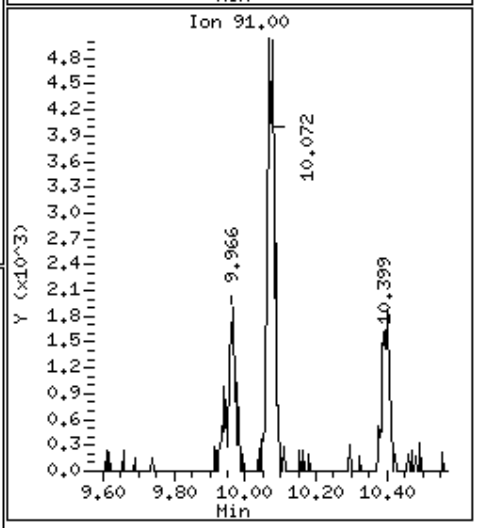
96 p,m-Xylene

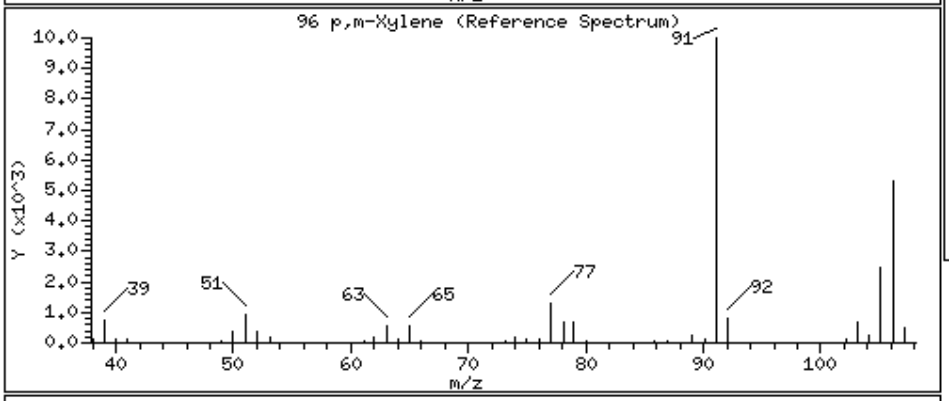
Concentration: 0.798 ug/Kg

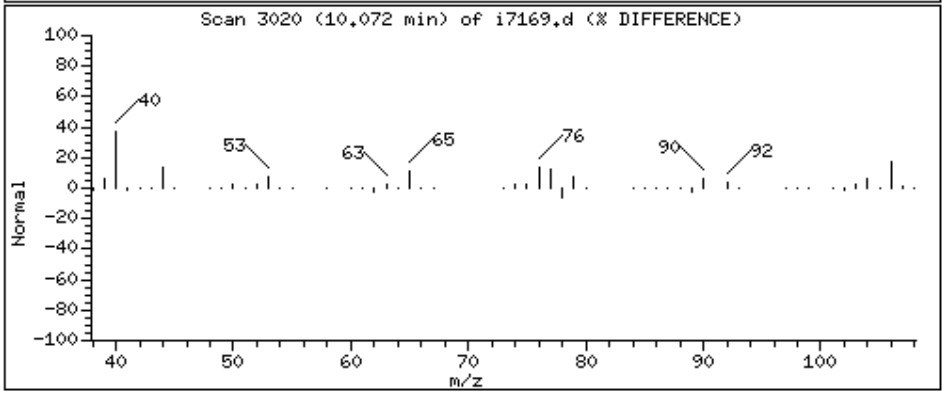












Data File: /var/chem/msv11.i/2170514.s.b/i7169.d

Date : 14-MAY-2017 14:51

Client ID: A

Instrument: msv11.i

Sample Info: 21705111001*A

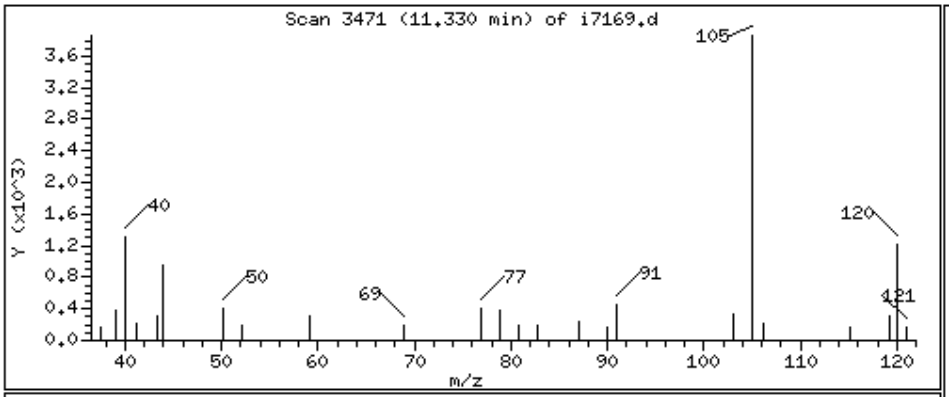
Operator: JMC2

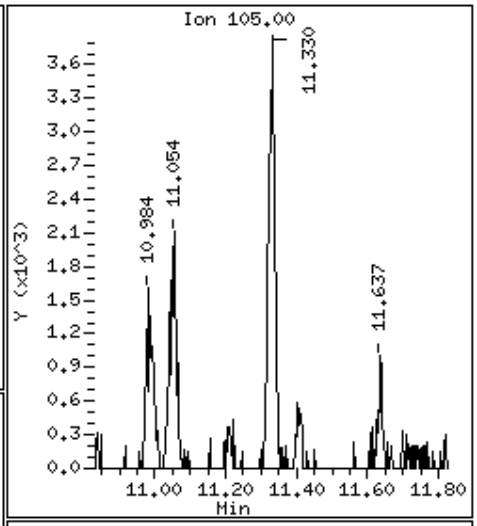
Column phase: RTX-VMS-30M

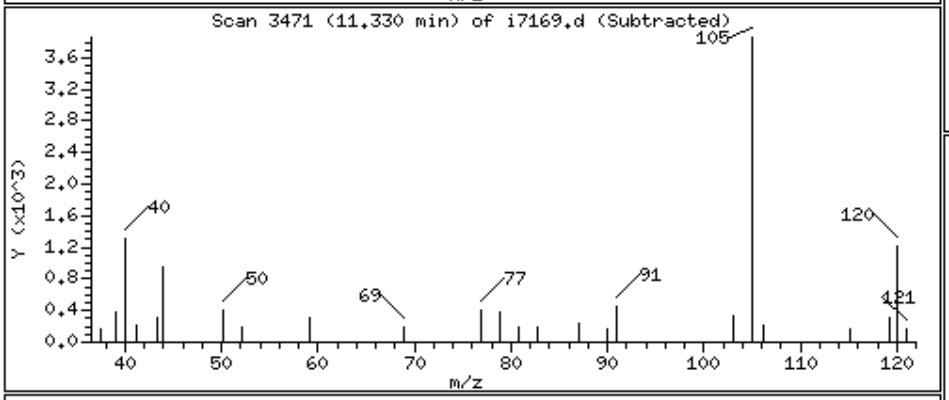
Column diameter: 0.25

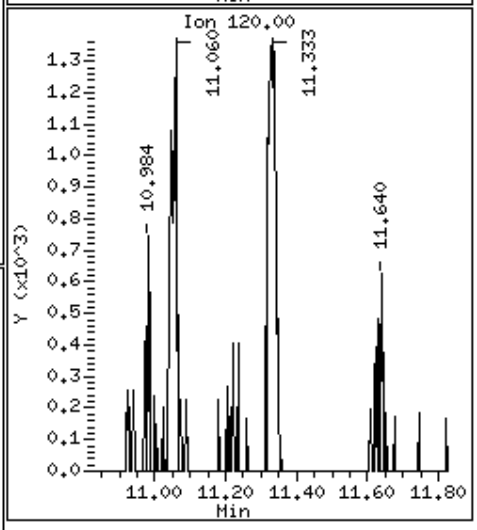
114 1,2,4-Trimethylbenzene

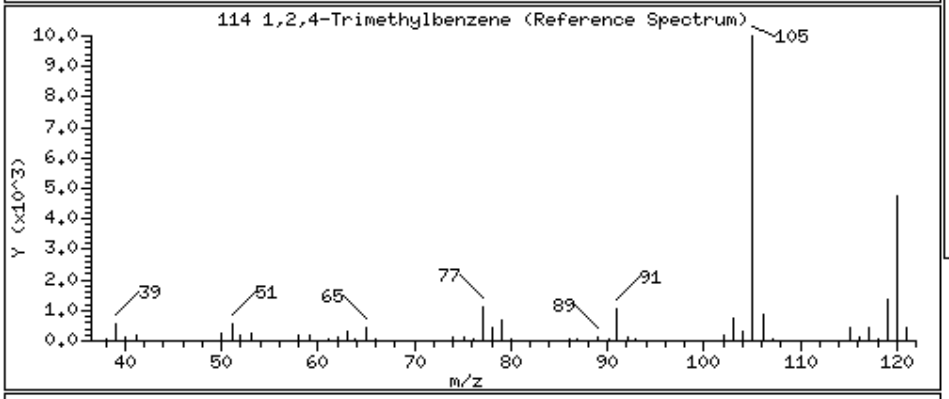
Concentration: 0.402 ug/Kg

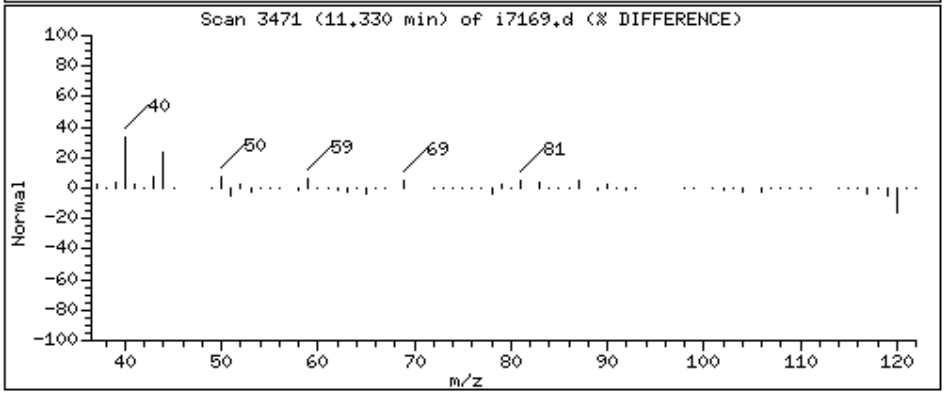








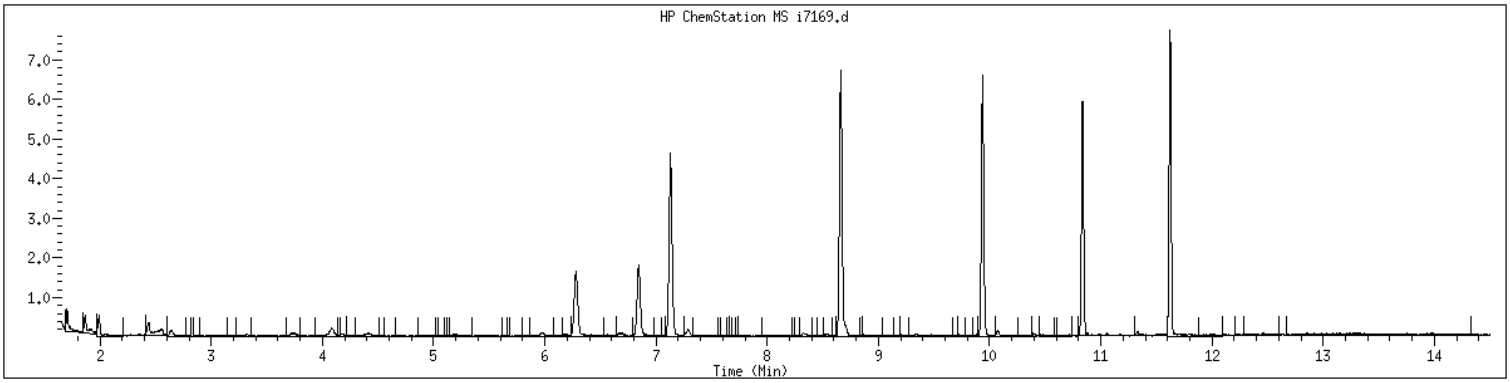




Report Date: 05/15/2017 14:07

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111001 SampleType : SAMPLE
Injection Date: 05/14/2017 14:51 Instrument : msv11.i
Operator : JMC2
Sample Info : 21705111001*A
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB01-2-S
Collect Date:	05/08/17 Time: 1138	GCAL Sample ID:	21705111002
Matrix:	Solid % Moisture: 14.0	Instrument ID:	MSV11
Sample Amt:	8.13 g	Lab File ID:	2170514/i7170
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1515	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.358	U	0.179	0.358	3.58
79-34-5	1,1,2,2-Tetrachloroethane	0.358	U	0.179	0.358	3.58
79-00-5	1,1,2-Trichloroethane	0.358	U	0.179	0.358	3.58
75-34-3	1,1-Dichloroethane	0.358	U	0.179	0.358	3.58
75-35-4	1,1-Dichloroethene	0.358	U	0.179	0.358	3.58
87-61-6	1,2,3-Trichlorobenzene	0.715	U	0.358	0.715	3.58
120-82-1	1,2,4-Trichlorobenzene	0.715	U	0.358	0.715	3.58
96-12-8	1,2-Dibromo-3-chloropropane	1.43	U	0.358	1.43	3.58
106-93-4	1,2-Dibromoethane	1.43	U	0.358	1.43	3.58
95-50-1	1,2-Dichlorobenzene	0.358	U	0.179	0.358	3.58
107-06-2	1,2-Dichloroethane	0.358	U	0.179	0.358	3.58
78-87-5	1,2-Dichloropropane	0.358	U	0.179	0.358	3.58
541-73-1	1,3-Dichlorobenzene	0.358	U	0.179	0.358	3.58
106-46-7	1,4-Dichlorobenzene	0.358	U	0.179	0.358	3.58
78-93-3	2-Butanone	1.43	U	0.358	1.43	3.58
591-78-6	2-Hexanone	1.43	U	0.358	1.43	3.58
108-10-1	4-Methyl-2-pentanone	0.358	U	0.179	0.358	3.58
67-64-1	Acetone	9.80	J	0.358	1.43	17.9
71-43-2	Benzene	0.358	U	0.179	0.358	3.58
74-97-5	Bromochloromethane	0.715	U	0.358	0.715	3.58
75-27-4	Bromodichloromethane	0.358	U	0.179	0.358	3.58
75-25-2	Bromoform	0.715	U	0.358	0.715	3.58
74-83-9	Bromomethane	1.43	U	0.358	1.43	3.58
75-15-0	Carbon disulfide	0.358	U	0.179	0.358	3.58
56-23-5	Carbon tetrachloride	0.358	U	0.179	0.358	3.58
108-90-7	Chlorobenzene	0.358	U	0.179	0.358	3.58
75-00-3	Chloroethane	0.358	U	0.179	0.358	3.58
67-66-3	Chloroform	0.358	U	0.179	0.358	3.58
74-87-3	Chloromethane	1.43	U	0.358	1.43	3.58
156-59-2	cis-1,2-Dichloroethene	0.358	U	0.179	0.358	3.58
10061-01-5	cis-1,3-Dichloropropene	0.358	U	0.179	0.358	3.58
110-82-7	Cyclohexane	0.358	U	0.179	0.358	3.58
124-48-1	Dibromochloromethane	0.358	U	0.179	0.358	3.58
75-71-8	Dichlorodifluoromethane	0.358	U	0.179	0.358	3.58
100-41-4	Ethylbenzene	0.358	U	0.179	0.358	3.58
98-82-8	Isopropylbenzene (Cumene)	0.358	U	0.179	0.358	3.58

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	OMS-28-SB01-2-S
Collect Date:	05/08/17	Time:	1138	GCAL Sample ID:	21705111002
Matrix:	Solid	% Moisture:	14.0	Instrument ID:	MSV11
Sample Amt:	8.13 g			Lab File ID:	2170514/i7170
Injection Vol.:	1.0	(µL)		GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17	Time:	1515	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	0.715	U	0.358	0.715	3.58
108-87-2	Methylcyclohexane	0.358	U	0.179	0.358	3.58
75-09-2	Methylene chloride	11.3		0.715	1.43	7.15
100-42-5	Styrene	0.358	U	0.179	0.358	3.58
1634-04-4	tert-Butyl methyl ether (MTBE)	0.358	U	0.179	0.358	3.58
127-18-4	Tetrachloroethene	0.715	U	0.358	0.715	3.58
108-88-3	Toluene	0.358	U	0.179	0.358	3.58
156-60-5	trans-1,2-Dichloroethene	0.358	U	0.179	0.358	3.58
10061-02-6	trans-1,3-Dichloropropene	0.358	U	0.179	0.358	3.58
79-01-6	Trichloroethene	0.358	U	0.179	0.358	3.58
75-69-4	Trichlorofluoromethane	0.358	U	0.179	0.358	3.58
76-13-1	Trichlorotrifluoroethane	0.715	U	0.358	0.715	3.58
75-01-4	Vinyl chloride	0.358	U	0.179	0.358	3.58
1330-20-7	Xylene (total)	1.07	U	0.358	1.07	10.7

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7170.d
Lab Smp Id: 21705111002 Client Smp ID: A
Inj Date : 14-MAY-2017 15:15
Operator : JMC2 Inst ID: msv11.i
Smp Info : 21705111002*A
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	8.13000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
18 Methylene Chloride	49	4.091	4.091	(0.573)	52968	15.8348	9.74	9213
19 Acetone	43	4.175	4.166	(0.585)	17343	13.7002	8.43	7600
23 Hexane	57	4.414	4.417	(0.619)	2776	0.65136	0.401	6516
$ 42 Dibromofluoromethane	111	6.283	6.283	(0.881)	118679	50.3696	31.0	6014
$ 50 1,2-Dichloroethane-d4	67	6.841	6.843	(0.959)	72636	50.0487	30.8	9520
* 54 FLUOROBENZENE	96	7.133	7.133	(1.000)	465515	50.0000		9699
$ 74 Toluene-d8	98	8.662	8.661	(0.872)	438178	52.3478	32.2	9540
* 90 Chlorobenzene-d5	82	9.936	9.933	(1.000)	186191	50.0000		6893
$ 103 Bromofluorobenzene	174	10.837	10.834	(1.091)	147039	51.0007	31.4	9616
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	167283	50.0000		6855

Data File: /var/chem/msv11.i/2170514.s.b/i7170.d

Date : 14-MAY-2017 15:15

Client ID: A

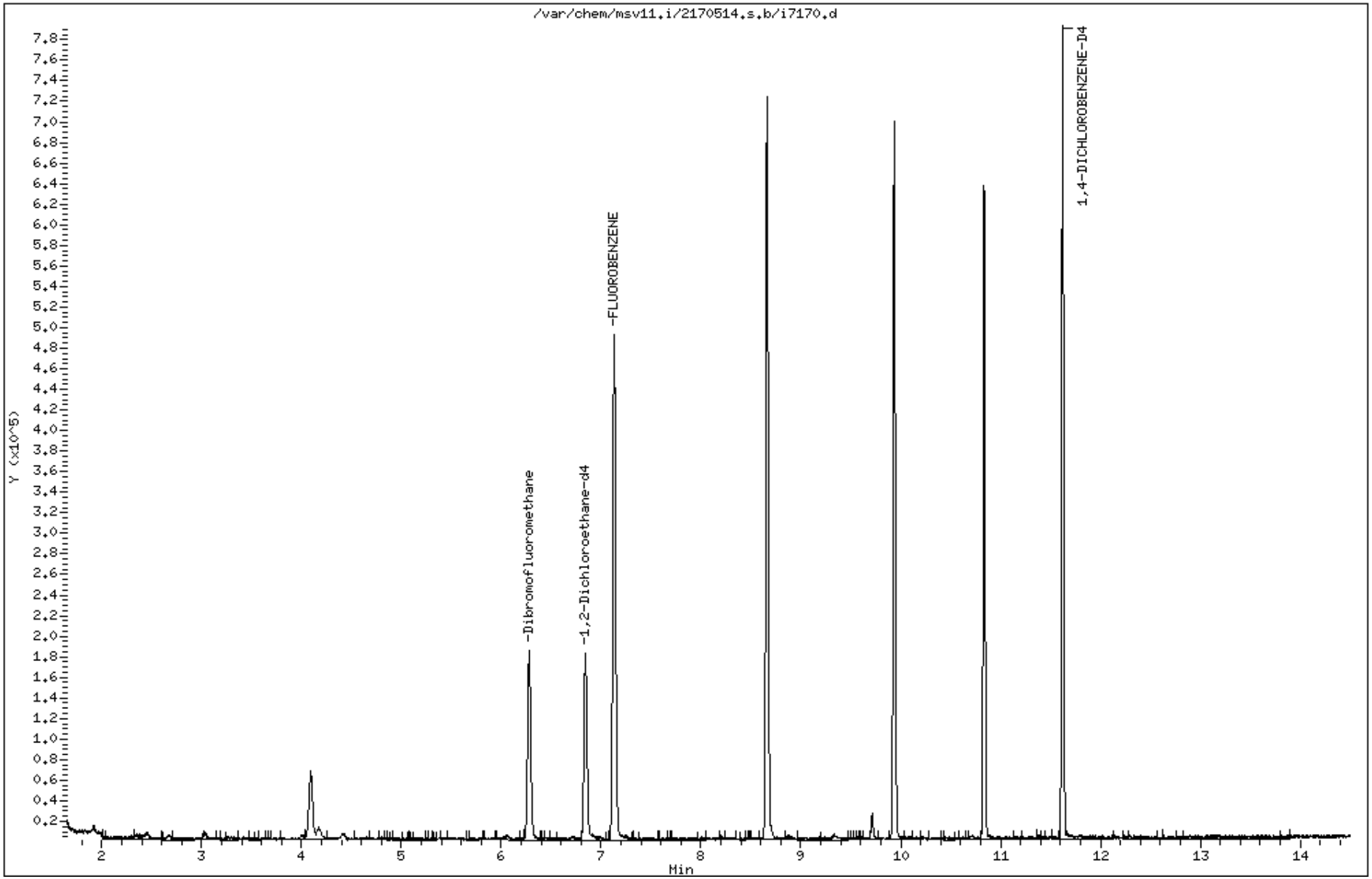
Instrument: msv11.i

Sample Info: 21705111002*A

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170514.s.b/i7170.d

Date : 14-MAY-2017 15:15

Client ID: A

Instrument: msv11.i

Sample Info: 21705111002*A

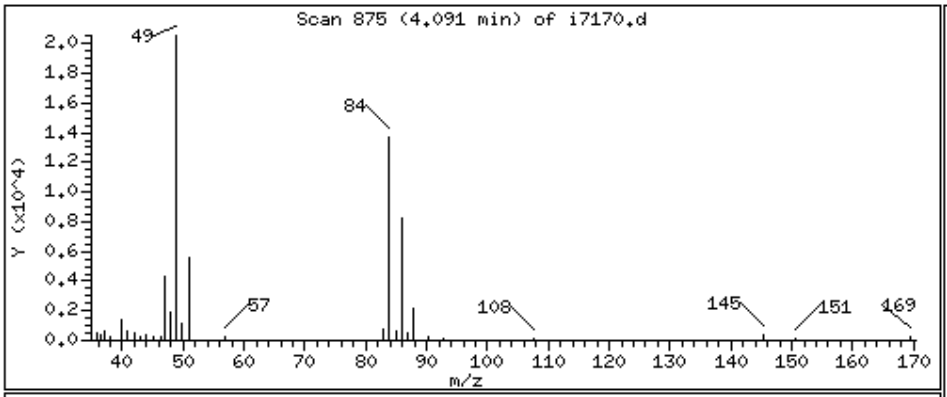
Operator: JMC2

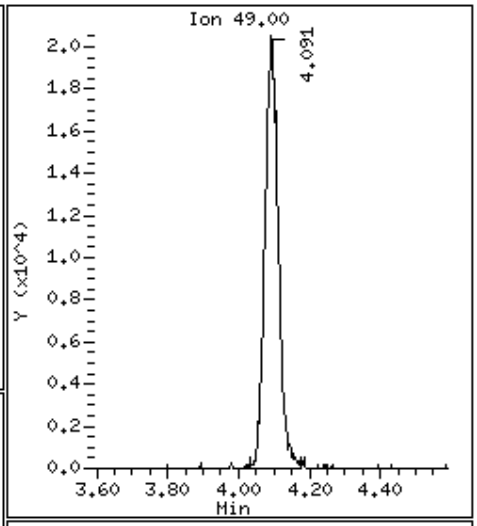
Column phase: RTX-VMS-30M

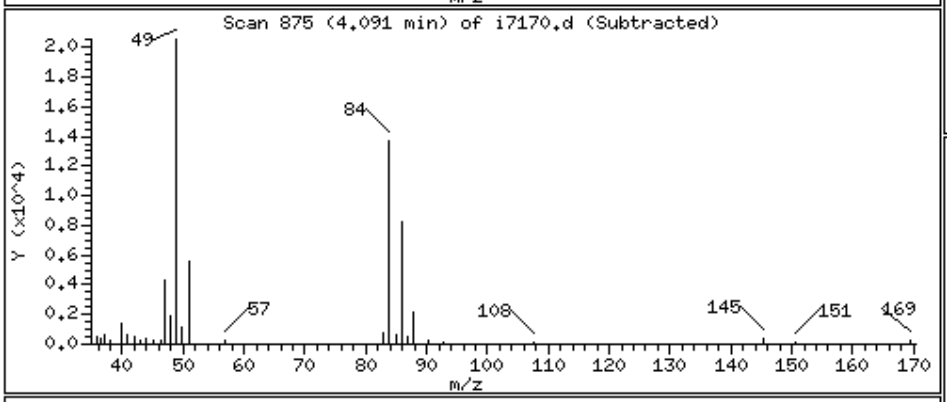
Column diameter: 0.25

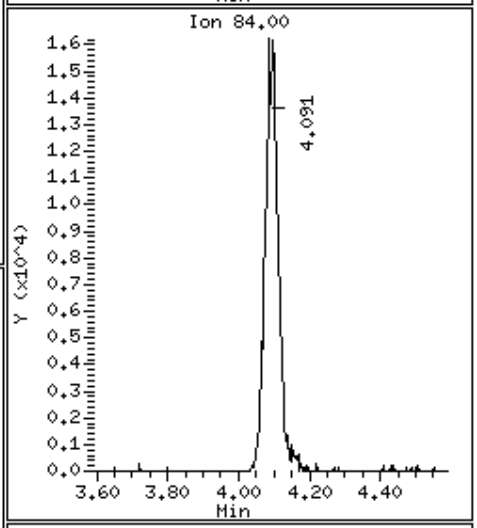
18 Methylene Chloride

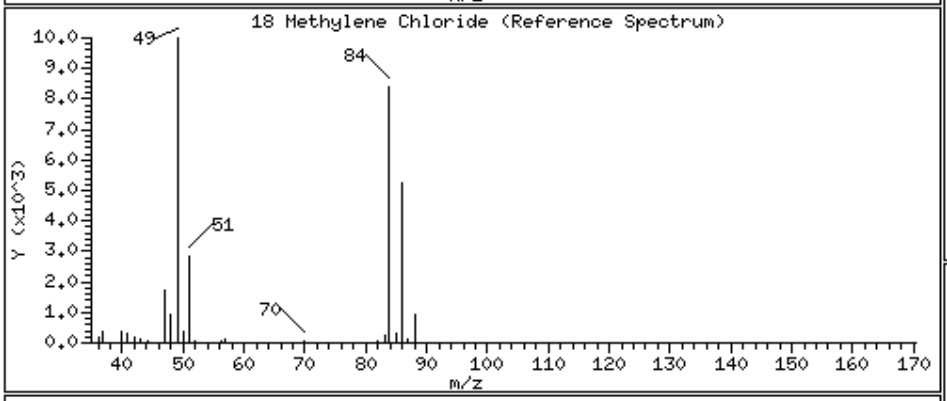
Concentration: 9.74 ug/Kg

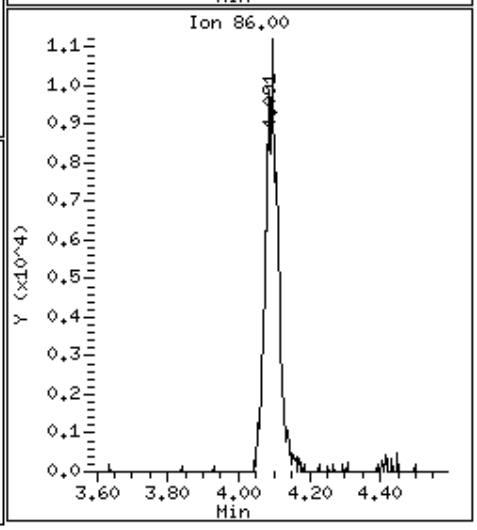


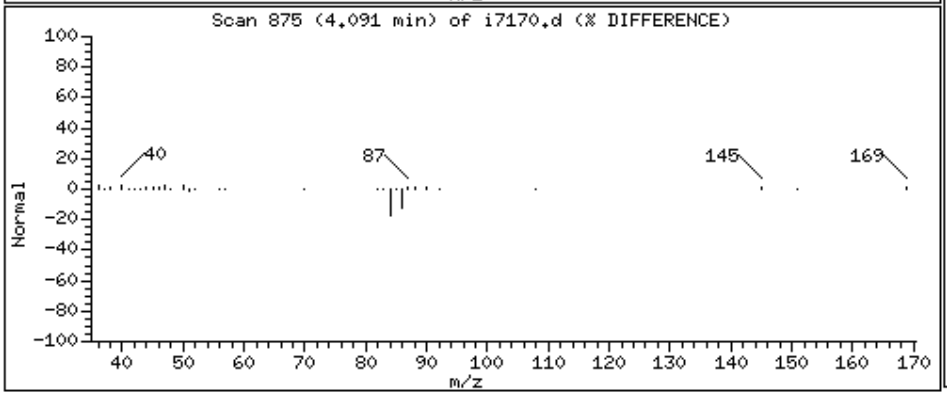












Data File: /var/chem/msv11.i/2170514.s.b/i7170.d

Date : 14-MAY-2017 15:15

Client ID: A

Instrument: msv11.i

Sample Info: 21705111002*A

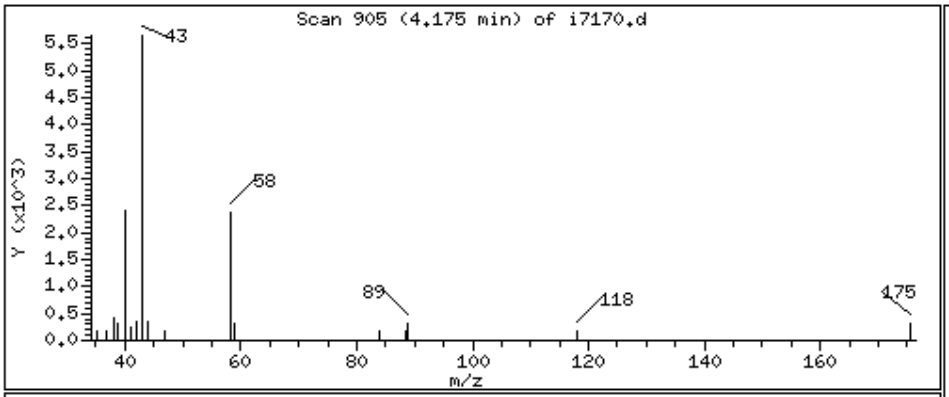
Operator: JMC2

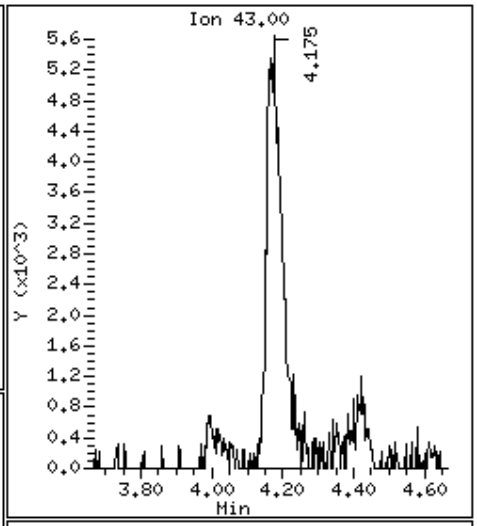
Column phase: RTX-VMS-30M

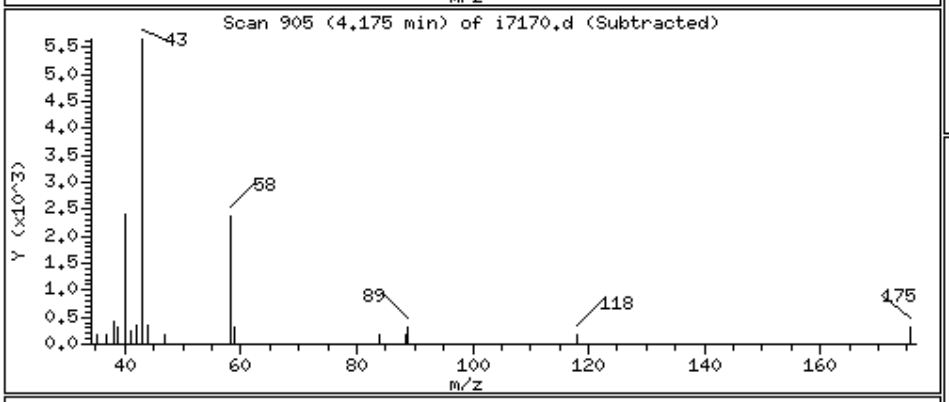
Column diameter: 0.25

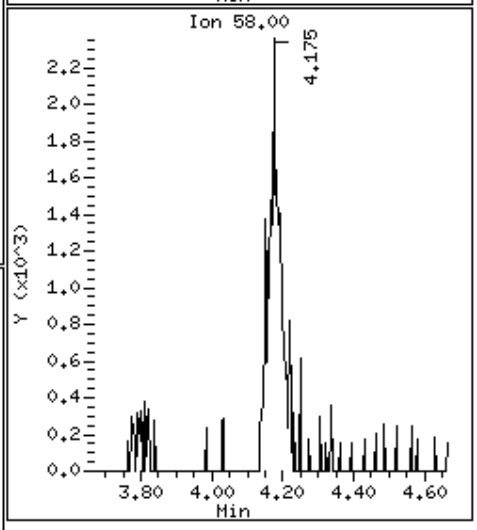
19 Acetone

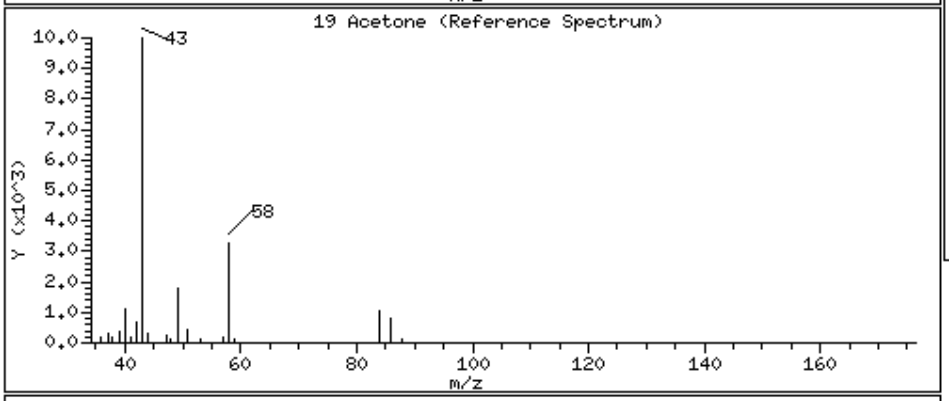
Concentration: 8.43 ug/Kg

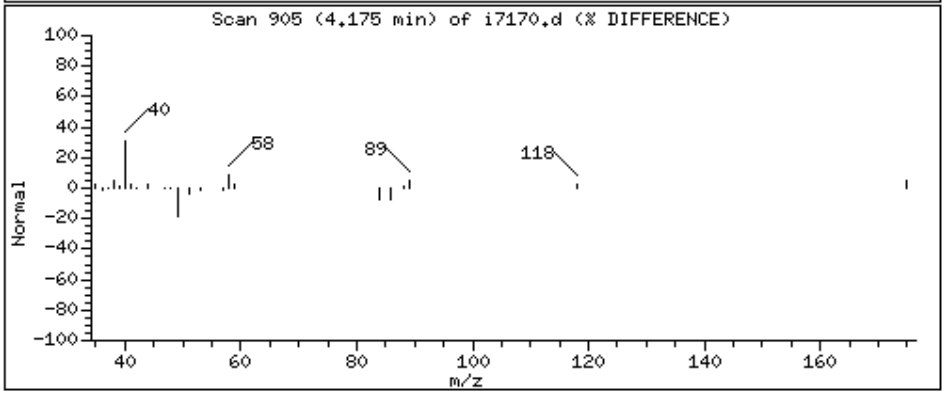












Data File: /var/chem/msv11.i/2170514.s.b/i7170.d

Date : 14-MAY-2017 15:15

Client ID: A

Instrument: msv11.i

Sample Info: 21705111002*A

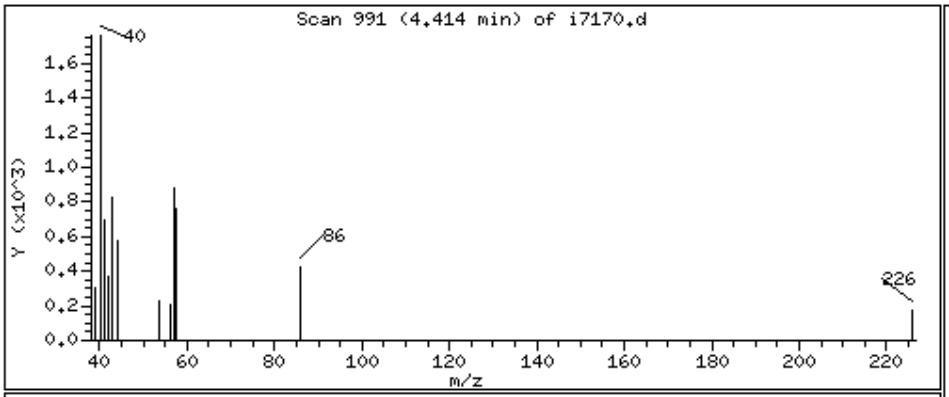
Operator: JMC2

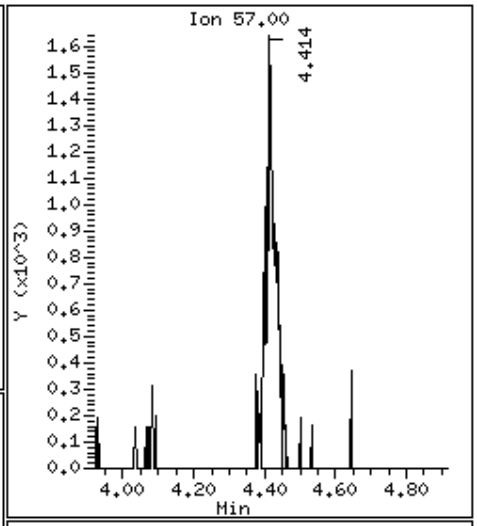
Column phase: RTX-VMS-30M

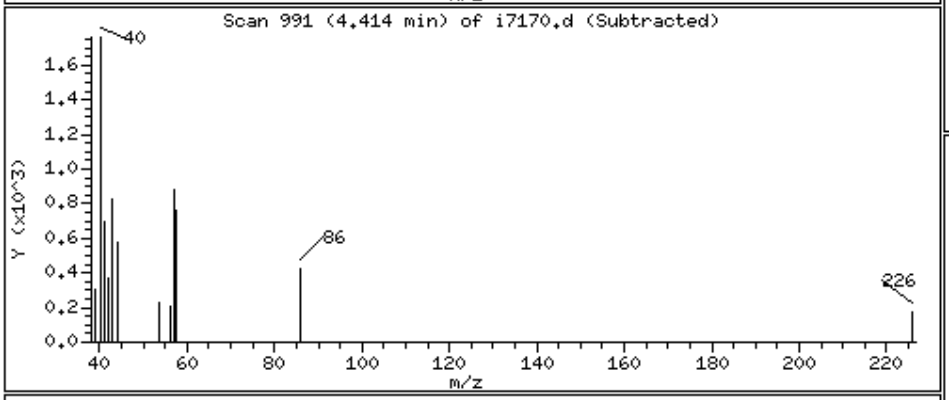
Column diameter: 0.25

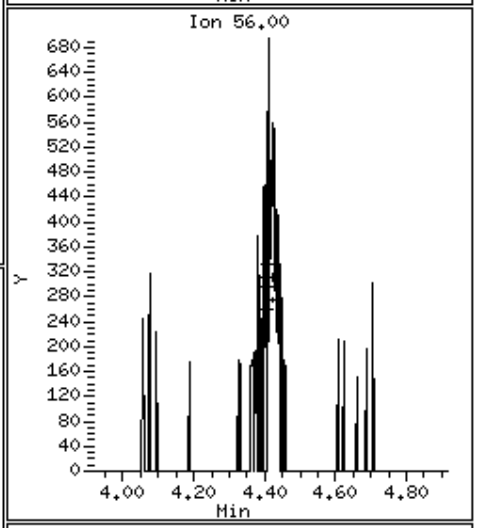
23 Hexane

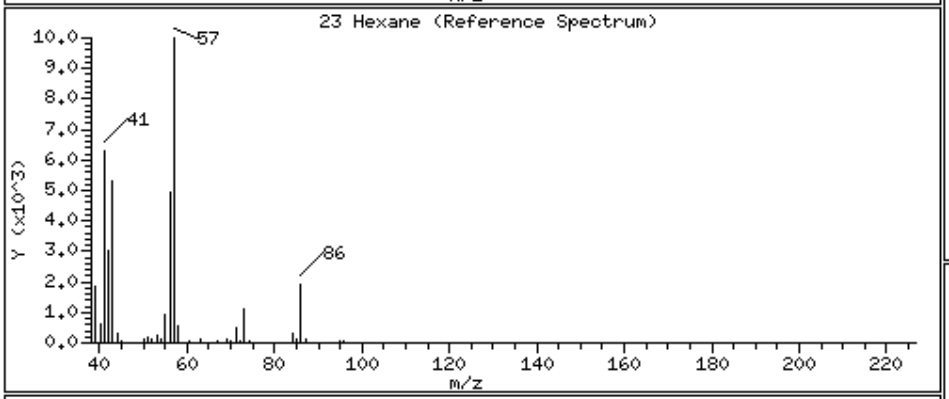
Concentration: 0.401 ug/Kg

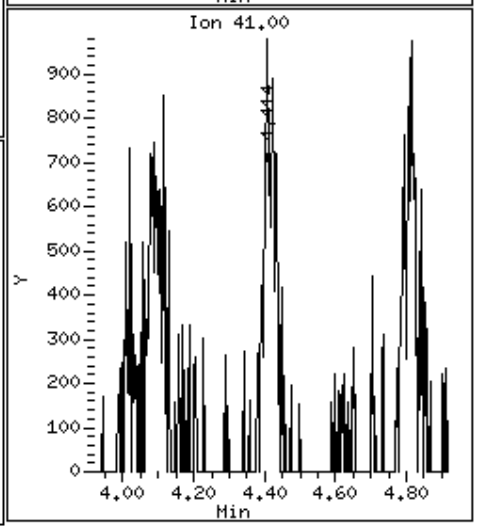


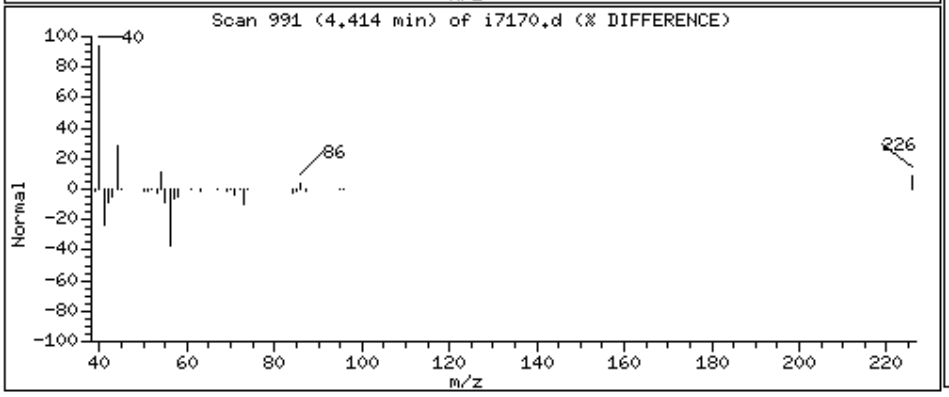






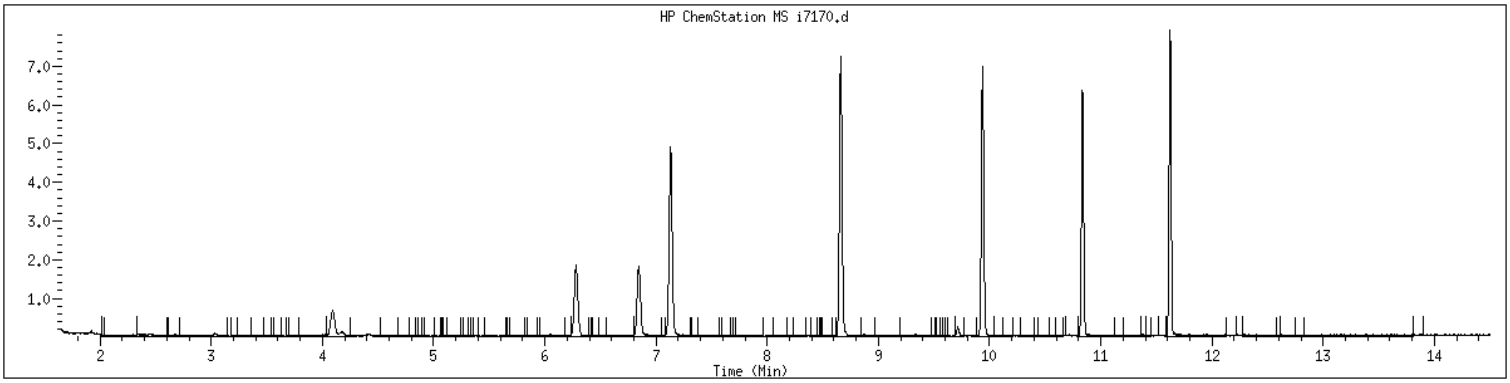






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111002 SampleType : SAMPLE
Injection Date: 05/14/2017 15:15 Instrument : msv11.i
Operator : JMC2
Sample Info : 21705111002*A
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB11-6-S
Collect Date:	05/08/17 Time: 1315	GCAL Sample ID:	21705111003
Matrix:	Solid % Moisture: 22.6	Instrument ID:	MSV11
Sample Amt:	6.43 g	Lab File ID:	2170514/i7171
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1538	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.502	U	0.251	0.502	5.02
79-34-5	1,1,2,2-Tetrachloroethane	0.502	U	0.251	0.502	5.02
79-00-5	1,1,2-Trichloroethane	0.502	U	0.251	0.502	5.02
75-34-3	1,1-Dichloroethane	0.502	U	0.251	0.502	5.02
75-35-4	1,1-Dichloroethene	0.502	U	0.251	0.502	5.02
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.502	1.00	5.02
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.502	1.00	5.02
96-12-8	1,2-Dibromo-3-chloropropane	2.01	U	0.502	2.01	5.02
106-93-4	1,2-Dibromoethane	2.01	U	0.502	2.01	5.02
95-50-1	1,2-Dichlorobenzene	0.502	U	0.251	0.502	5.02
107-06-2	1,2-Dichloroethane	0.502	U	0.251	0.502	5.02
78-87-5	1,2-Dichloropropane	0.502	U	0.251	0.502	5.02
541-73-1	1,3-Dichlorobenzene	0.502	U	0.251	0.502	5.02
106-46-7	1,4-Dichlorobenzene	0.502	U	0.251	0.502	5.02
78-93-3	2-Butanone	2.01	U	0.502	2.01	5.02
591-78-6	2-Hexanone	2.01	U	0.502	2.01	5.02
108-10-1	4-Methyl-2-pentanone	0.502	U	0.251	0.502	5.02
67-64-1	Acetone	2.01	U	0.502	2.01	25.1
71-43-2	Benzene	0.502	U	0.251	0.502	5.02
74-97-5	Bromochloromethane	1.00	U	0.502	1.00	5.02
75-27-4	Bromodichloromethane	0.502	U	0.251	0.502	5.02
75-25-2	Bromoform	1.00	U	0.502	1.00	5.02
74-83-9	Bromomethane	2.01	U	0.502	2.01	5.02
75-15-0	Carbon disulfide	0.502	U	0.251	0.502	5.02
56-23-5	Carbon tetrachloride	0.502	U	0.251	0.502	5.02
108-90-7	Chlorobenzene	0.502	U	0.251	0.502	5.02
75-00-3	Chloroethane	0.502	U	0.251	0.502	5.02
67-66-3	Chloroform	0.502	U	0.251	0.502	5.02
74-87-3	Chloromethane	2.01	U	0.502	2.01	5.02
156-59-2	cis-1,2-Dichloroethene	0.502	U	0.251	0.502	5.02
10061-01-5	cis-1,3-Dichloropropene	0.502	U	0.251	0.502	5.02
110-82-7	Cyclohexane	0.502	U	0.251	0.502	5.02
124-48-1	Dibromochloromethane	0.502	U	0.251	0.502	5.02
75-71-8	Dichlorodifluoromethane	0.502	U	0.251	0.502	5.02
100-41-4	Ethylbenzene	0.502	U	0.251	0.502	5.02
98-82-8	Isopropylbenzene (Cumene)	0.502	U	0.251	0.502	5.02

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	OMS-28-SB11-6-S
Collect Date:	05/08/17	Time:	1315	GCAL Sample ID:	21705111003
Matrix:	Solid	% Moisture:	22.6	Instrument ID:	MSV11
Sample Amt:	6.43 g			Lab File ID:	2170514/i7171
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17	Time:	1538	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	1.00	U	0.502	1.00	5.02
108-87-2	Methylcyclohexane	0.502	U	0.251	0.502	5.02
75-09-2	Methylene chloride	9.09	J	1.00	2.01	10.0
100-42-5	Styrene	0.502	U	0.251	0.502	5.02
1634-04-4	tert-Butyl methyl ether (MTBE)	0.502	U	0.251	0.502	5.02
127-18-4	Tetrachloroethene	1.00	U	0.502	1.00	5.02
108-88-3	Toluene	0.502	U	0.251	0.502	5.02
156-60-5	trans-1,2-Dichloroethene	0.502	U	0.251	0.502	5.02
10061-02-6	trans-1,3-Dichloropropene	0.502	U	0.251	0.502	5.02
79-01-6	Trichloroethene	0.502	U	0.251	0.502	5.02
75-69-4	Trichlorofluoromethane	0.502	U	0.251	0.502	5.02
76-13-1	Trichlorotrifluoroethane	1.00	U	0.502	1.00	5.02
75-01-4	Vinyl chloride	0.502	U	0.251	0.502	5.02
1330-20-7	Xylene (total)	1.51	U	0.502	1.51	15.1

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7171.d
Lab Smp Id: 21705111003 Client Smp ID: A
Inj Date : 14-MAY-2017 15:38
Operator : JMC2 Inst ID: msv11.i
Smp Info : 21705111003*A
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	6.43000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
18 Methylene Chloride	49	4.091	4.091	(0.574)	27332	9.05835	7.04	8984
$ 42 Dibromofluoromethane	111	6.280	6.283	(0.881)	110217	51.8587	40.3	6014
$ 50 1,2-Dichloroethane-d4	67	6.843	6.843	(0.960)	67442	51.5169	40.1	9633
* 54 FLUOROBENZENE	96	7.131	7.133	(1.000)	419909	50.0000		9559
$ 74 Toluene-d8	98	8.662	8.661	(0.872)	399058	51.5220	40.1	9533
* 90 Chlorobenzene-d5	82	9.936	9.933	(1.000)	172286	50.0000		6930
$ 103 Bromofluorobenzene	174	10.834	10.834	(1.090)	135582	50.8223	39.5	9487
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	156549	50.0000		6778

Data File: /var/chem/msv11.i/2170514.s.b/i7171.d

Date : 14-MAY-2017 15:38

Client ID: A

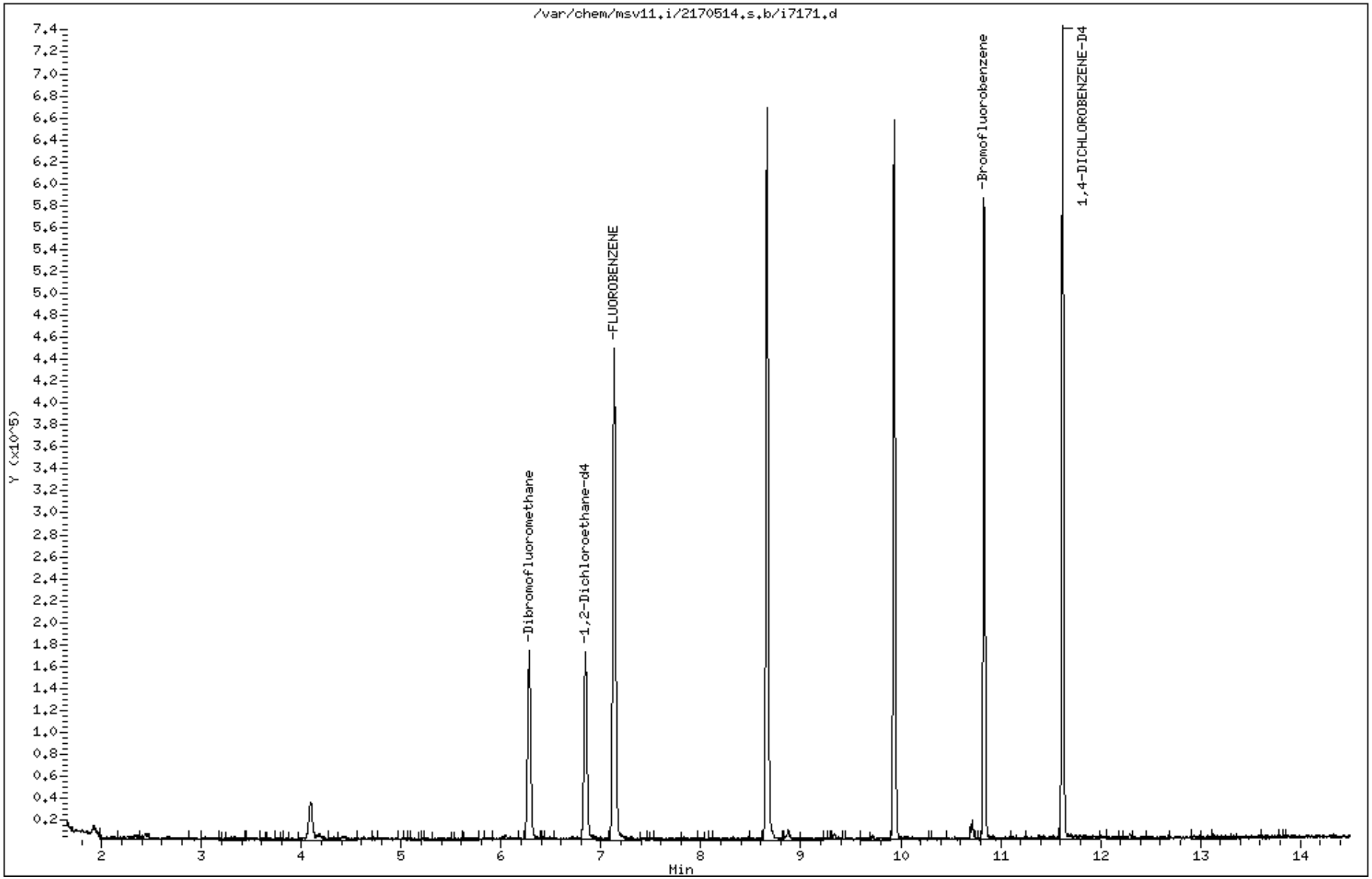
Instrument: msv11.i

Sample Info: 21705111003*A

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170514.s.b/i7171.d

Date : 14-MAY-2017 15:38

Client ID: A

Instrument: msv11.i

Sample Info: 21705111003*A

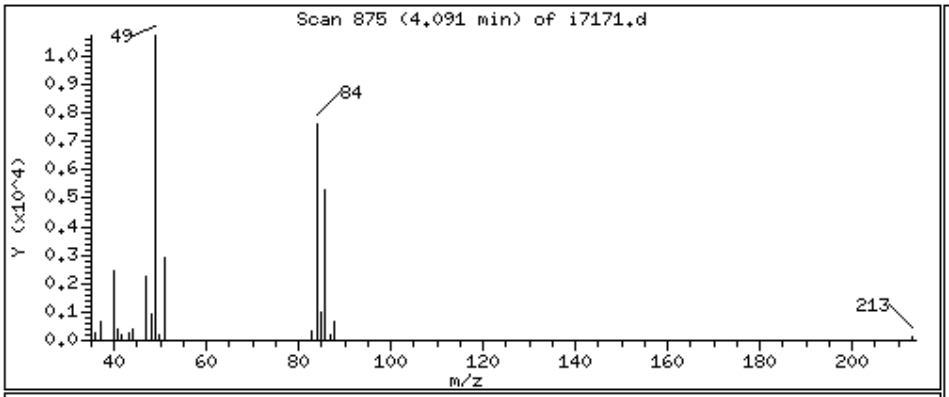
Operator: JMC2

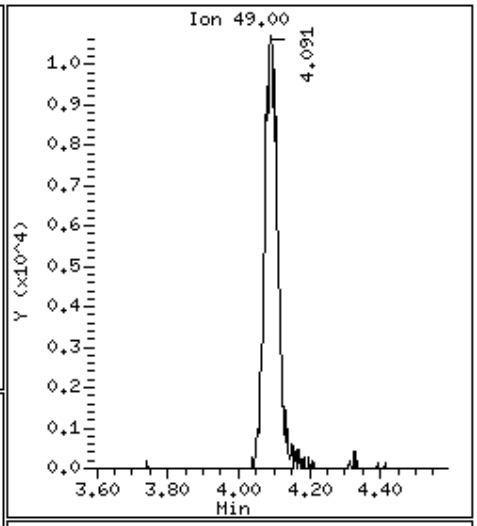
Column phase: RTX-VMS-30M

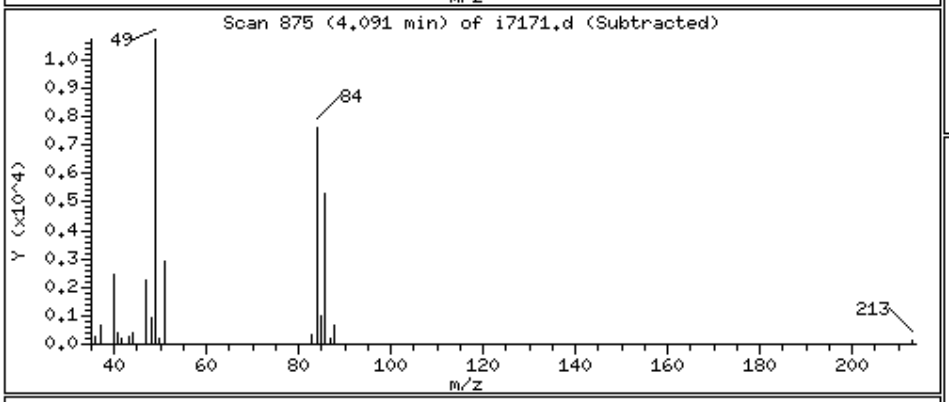
Column diameter: 0.25

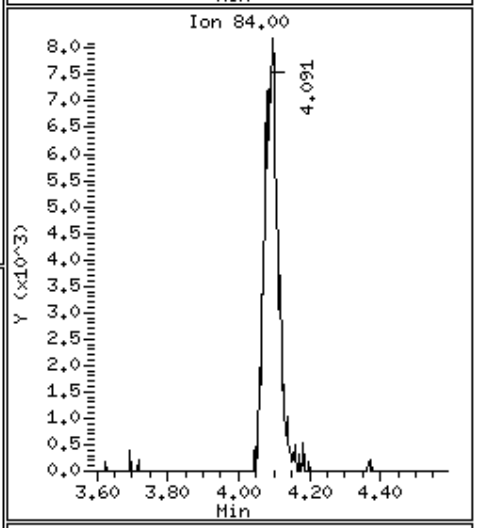
18 Methylene Chloride

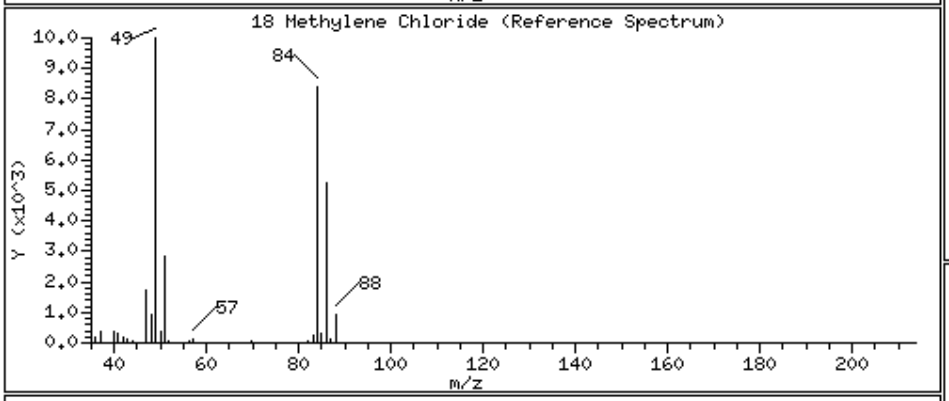
Concentration: 7.04 ug/Kg

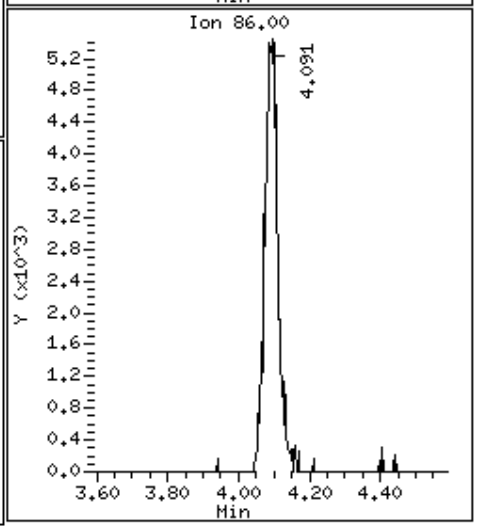


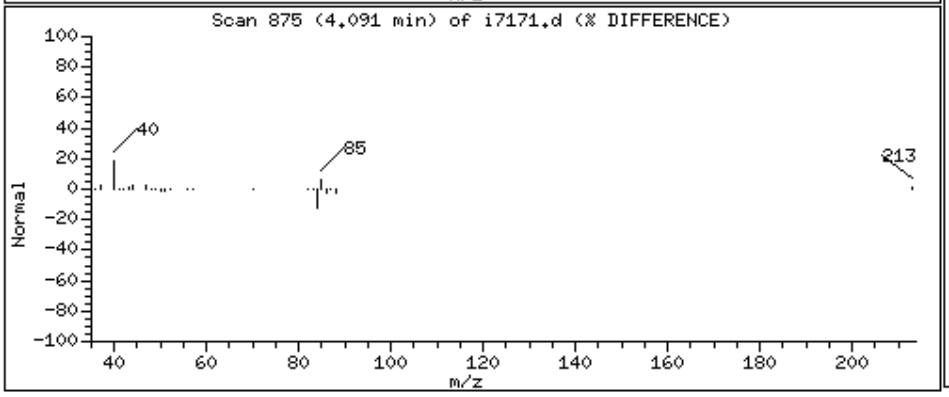








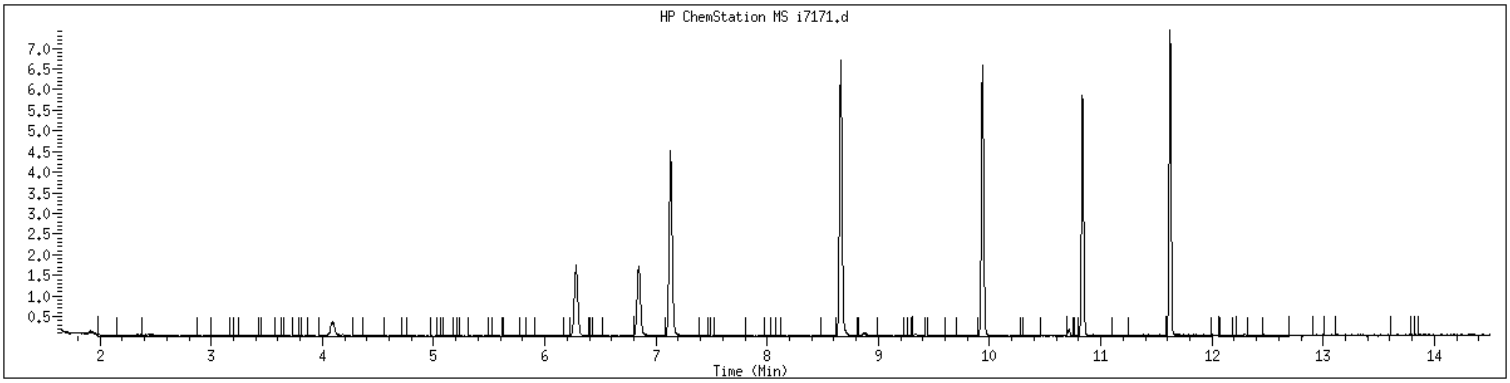




Report Date: 05/15/2017 14:09

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111003 SampleType : SAMPLE
Injection Date: 05/14/2017 15:38 Instrument : msv11.i
Operator : JMC2
Sample Info : 21705111003*A
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB14-1-S
Collect Date:	05/08/17 Time: 1520	GCAL Sample ID:	21705111004
Matrix:	Solid % Moisture: 18.7	Instrument ID:	MSV11
Sample Amt:	6.94 g	Lab File ID:	2170514/i7172
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1601	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.443	U	0.221	0.443	4.43
79-34-5	1,1,2,2-Tetrachloroethane	0.443	U	0.221	0.443	4.43
79-00-5	1,1,2-Trichloroethane	0.443	U	0.221	0.443	4.43
75-34-3	1,1-Dichloroethane	0.443	U	0.221	0.443	4.43
75-35-4	1,1-Dichloroethene	0.443	U	0.221	0.443	4.43
87-61-6	1,2,3-Trichlorobenzene	0.886	U	0.443	0.886	4.43
120-82-1	1,2,4-Trichlorobenzene	0.886	U	0.443	0.886	4.43
96-12-8	1,2-Dibromo-3-chloropropane	1.77	U	0.443	1.77	4.43
106-93-4	1,2-Dibromoethane	1.77	U	0.443	1.77	4.43
95-50-1	1,2-Dichlorobenzene	0.443	U	0.221	0.443	4.43
107-06-2	1,2-Dichloroethane	0.443	U	0.221	0.443	4.43
78-87-5	1,2-Dichloropropane	0.443	U	0.221	0.443	4.43
541-73-1	1,3-Dichlorobenzene	0.443	U	0.221	0.443	4.43
106-46-7	1,4-Dichlorobenzene	0.443	U	0.221	0.443	4.43
78-93-3	2-Butanone	4.03	J	0.443	1.77	4.43
591-78-6	2-Hexanone	1.77	U	0.443	1.77	4.43
108-10-1	4-Methyl-2-pentanone	1.39	J	0.221	0.443	4.43
67-64-1	Acetone	83.0		0.443	1.77	22.1
71-43-2	Benzene	0.443	U	0.221	0.443	4.43
74-97-5	Bromochloromethane	0.886	U	0.443	0.886	4.43
75-27-4	Bromodichloromethane	0.443	U	0.221	0.443	4.43
75-25-2	Bromoform	0.886	U	0.443	0.886	4.43
74-83-9	Bromomethane	1.77	U	0.443	1.77	4.43
75-15-0	Carbon disulfide	0.443	U	0.221	0.443	4.43
56-23-5	Carbon tetrachloride	0.443	U	0.221	0.443	4.43
108-90-7	Chlorobenzene	0.443	U	0.221	0.443	4.43
75-00-3	Chloroethane	0.443	U	0.221	0.443	4.43
67-66-3	Chloroform	0.443	U	0.221	0.443	4.43
74-87-3	Chloromethane	1.77	U	0.443	1.77	4.43
156-59-2	cis-1,2-Dichloroethene	0.443	U	0.221	0.443	4.43
10061-01-5	cis-1,3-Dichloropropene	0.443	U	0.221	0.443	4.43
110-82-7	Cyclohexane	0.443	U	0.221	0.443	4.43
124-48-1	Dibromochloromethane	0.443	U	0.221	0.443	4.43
75-71-8	Dichlorodifluoromethane	0.443	U	0.221	0.443	4.43
100-41-4	Ethylbenzene	0.443	U	0.221	0.443	4.43
98-82-8	Isopropylbenzene (Cumene)	0.443	U	0.221	0.443	4.43

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	OMS-28-SB14-1-S
Collect Date:	05/08/17	Time:	1520	GCAL Sample ID:	21705111004
Matrix:	Solid	% Moisture:	18.7	Instrument ID:	MSV11
Sample Amt:	6.94 g			Lab File ID:	2170514/i7172
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17	Time:	1601	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	0.886	U	0.443	0.886	4.43
108-87-2	Methylcyclohexane	0.443	U	0.221	0.443	4.43
75-09-2	Methylene chloride	1.92	J	0.886	1.77	8.86
100-42-5	Styrene	0.443	U	0.221	0.443	4.43
1634-04-4	tert-Butyl methyl ether (MTBE)	0.443	U	0.221	0.443	4.43
127-18-4	Tetrachloroethene	0.886	U	0.443	0.886	4.43
108-88-3	Toluene	0.443	U	0.221	0.443	4.43
156-60-5	trans-1,2-Dichloroethene	0.443	U	0.221	0.443	4.43
10061-02-6	trans-1,3-Dichloropropene	0.443	U	0.221	0.443	4.43
79-01-6	Trichloroethene	0.443	U	0.221	0.443	4.43
75-69-4	Trichlorofluoromethane	0.443	U	0.221	0.443	4.43
76-13-1	Trichlorotrifluoroethane	0.886	U	0.443	0.886	4.43
75-01-4	Vinyl chloride	0.443	U	0.221	0.443	4.43
1330-20-7	Xylene (total)	1.33	U	0.443	1.33	13.3

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7172.d
Lab Smp Id: 21705111004 Client Smp ID: A
Inj Date : 14-MAY-2017 16:01
Operator : JMC2 Inst ID: msv11.i
Smp Info : 21705111004*A
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	6.94000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
	18 Methylene Chloride	49	4.091	4.091	(0.573)	6826	2.17085	1.56	7626(H)
	19 Acetone	43	4.166	4.166	(0.584)	111513	93.7115	67.5	7678
$	42 Dibromofluoromethane	111	6.280	6.283	(0.880)	115854	52.3083	37.7	6015
	45 2-Butanone	43	6.433	6.419	(0.902)	5091	4.55837	3.28	
$	50 1,2-Dichloroethane-d4	67	6.841	6.843	(0.959)	71594	52.4787	37.8	9564
*	54 FLUOROBENZENE	96	7.133	7.133	(1.000)	437591	50.0000		9633
$	74 Toluene-d8	98	8.662	8.661	(0.872)	419778	51.2324	36.9	9501
	79 4-methyl-2-pentanone	43	9.007	9.035	(0.907)	2840	1.56568	1.13	
*	90 Chlorobenzene-d5	82	9.936	9.933	(1.000)	182256	50.0000		6934
$	103 Bromofluorobenzene	174	10.834	10.834	(1.090)	141860	50.2667	36.2	9534
	116 p-Isopropyltoluene	119	11.500	11.497	(0.989)	3886	0.44686	0.322	8468(H)
*	118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	162564	50.0000		6804
	128 Napthalene	128	13.154	13.154	(1.132)	12476	5.39569	3.89	8951

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /var/chem/msv11.i/2170514.s.b/i7172.d

Date : 14-MAY-2017 16:01

Client ID: A

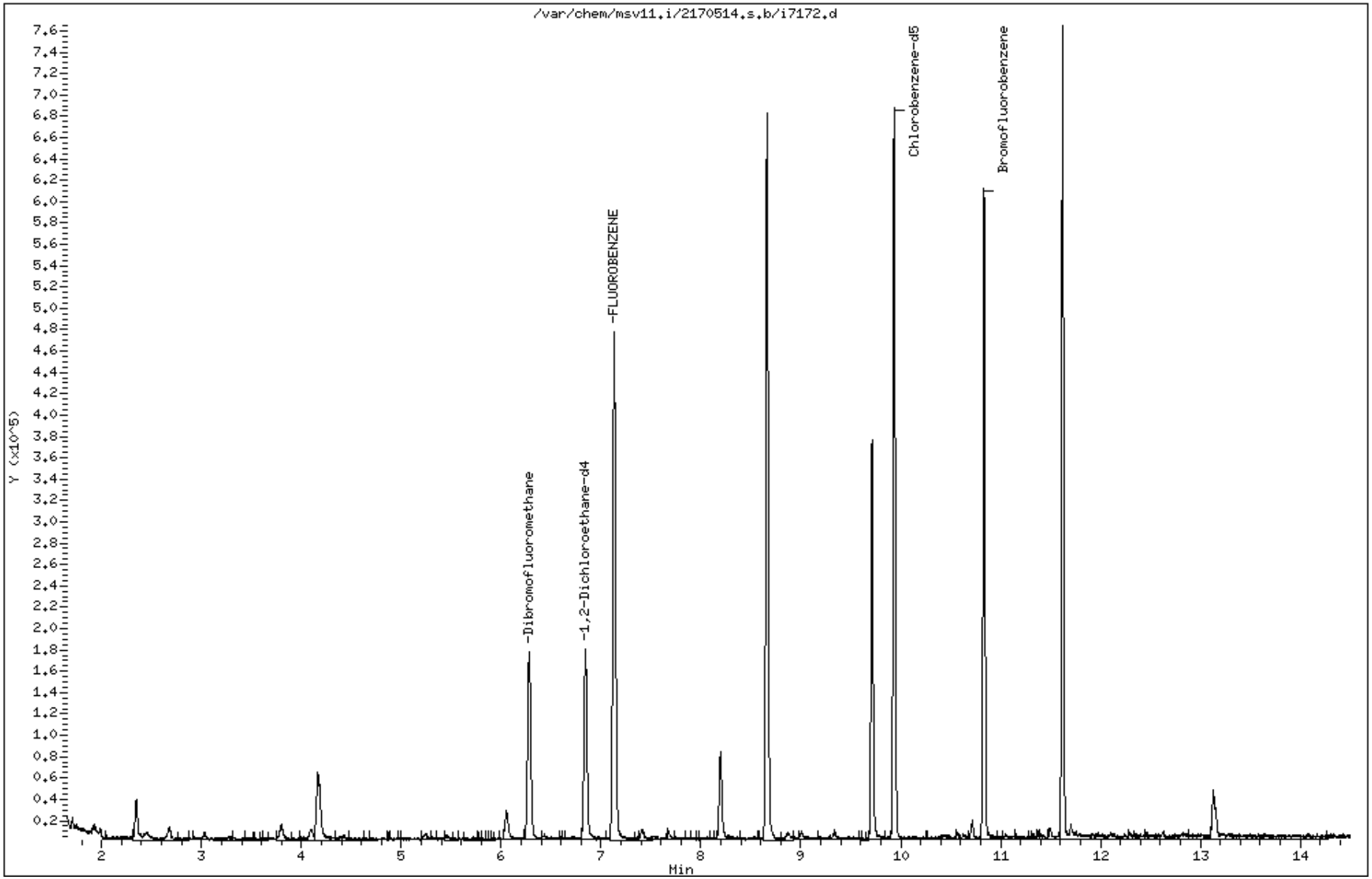
Instrument: msv11.i

Sample Info: 21705111004*A

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170514.s.b/i7172.d

Date : 14-MAY-2017 16:01

Client ID: A

Instrument: msv11.i

Sample Info: 21705111004*A

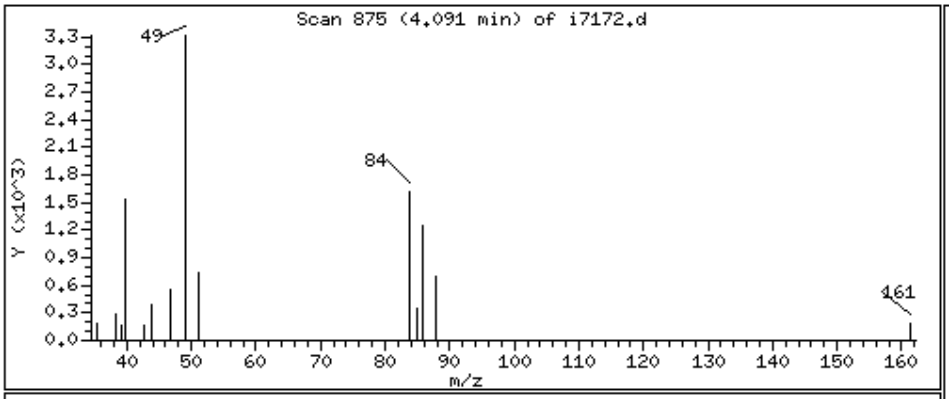
Operator: JMC2

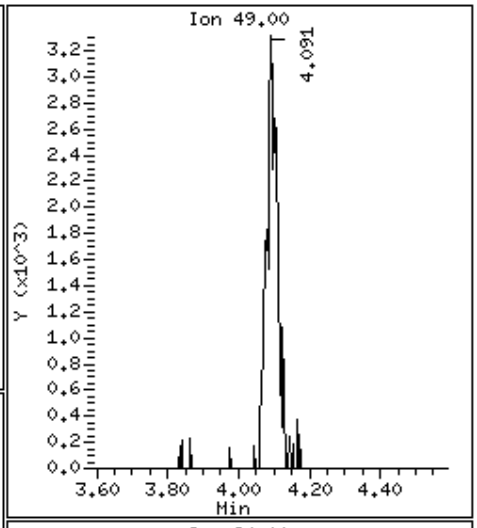
Column phase: RTX-VMS-30M

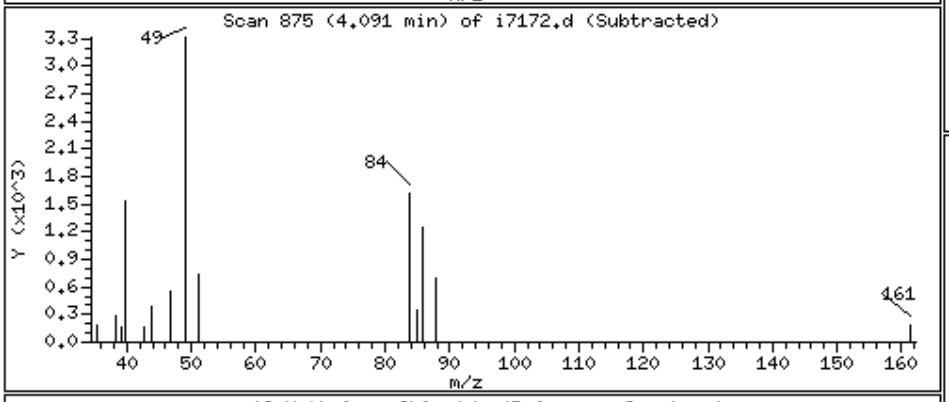
Column diameter: 0.25

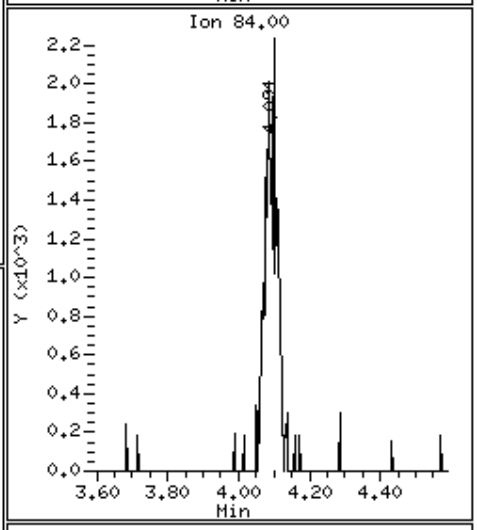
18 Methylene Chloride

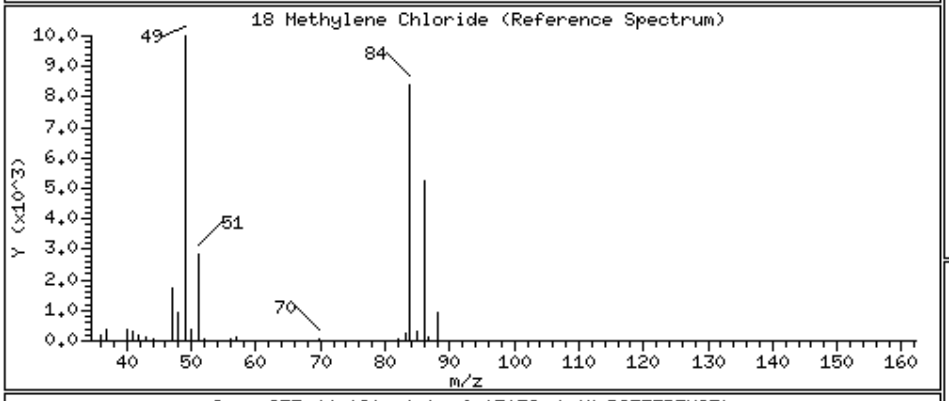
Concentration: 1.56 ug/Kg

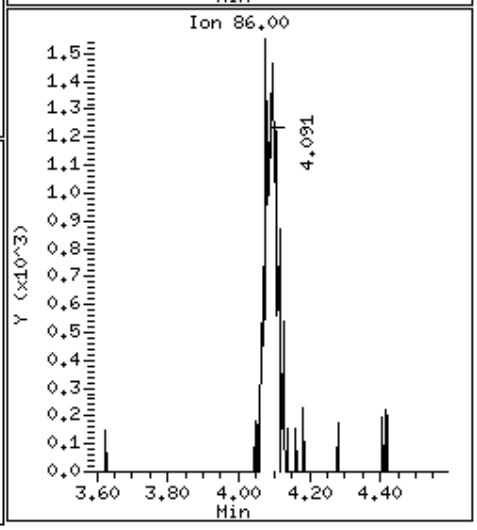


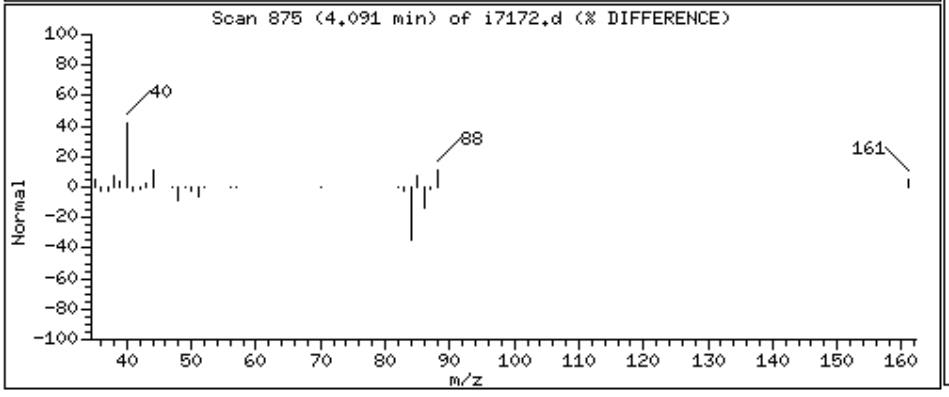












Data File: /var/chem/msv11.i/2170514.s.b/i7172.d

Date : 14-MAY-2017 16:01

Client ID: A

Instrument: msv11.i

Sample Info: 21705111004*A

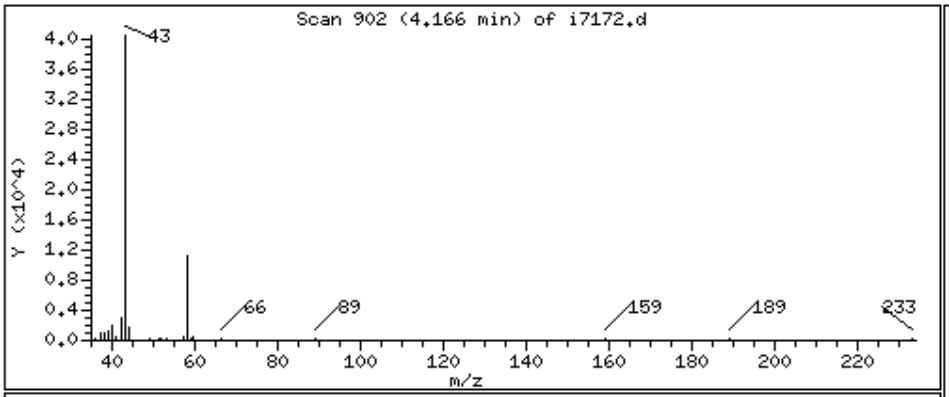
Operator: JMC2

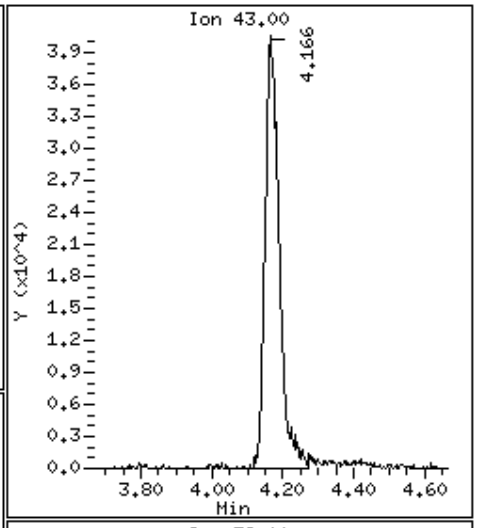
Column phase: RTX-VMS-30M

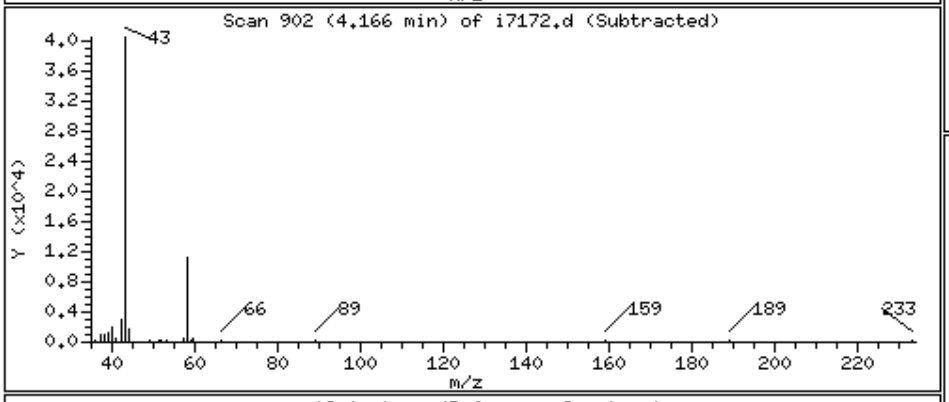
Column diameter: 0.25

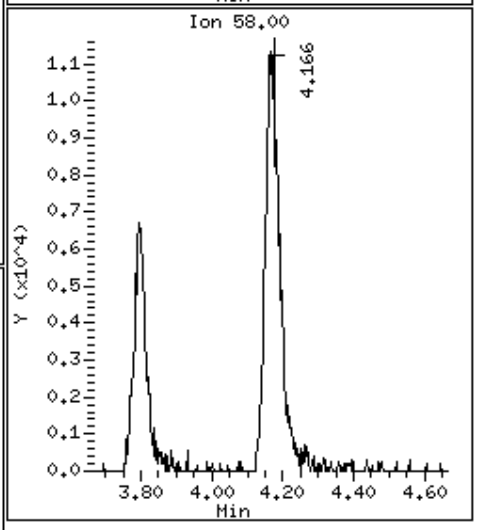
19 Acetone

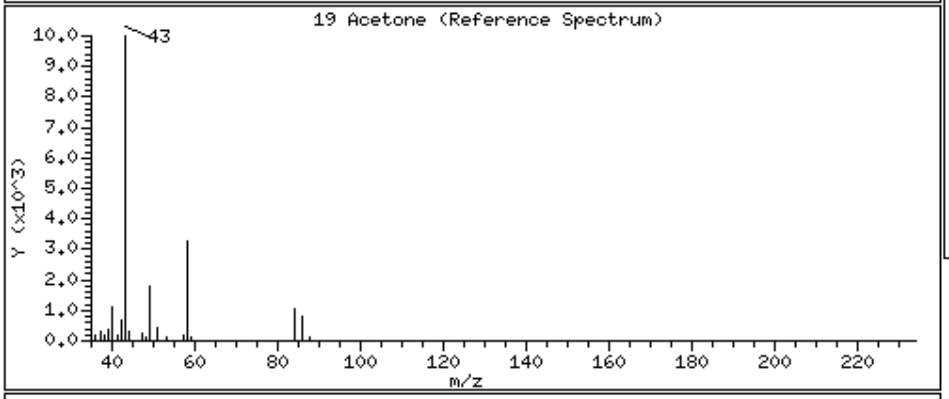
Concentration: 67.5 ug/Kg

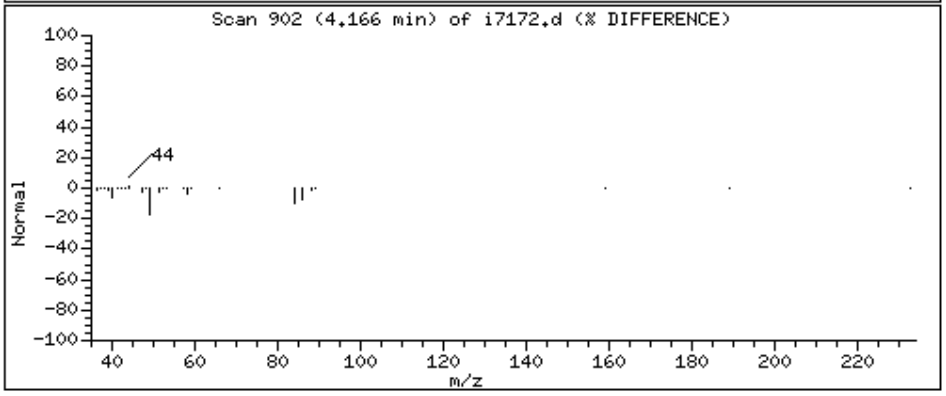












Data File: /var/chem/msv11.i/2170514.s.b/i7172.d

Date : 14-MAY-2017 16:01

Client ID: A

Instrument: msv11.i

Sample Info: 21705111004*A

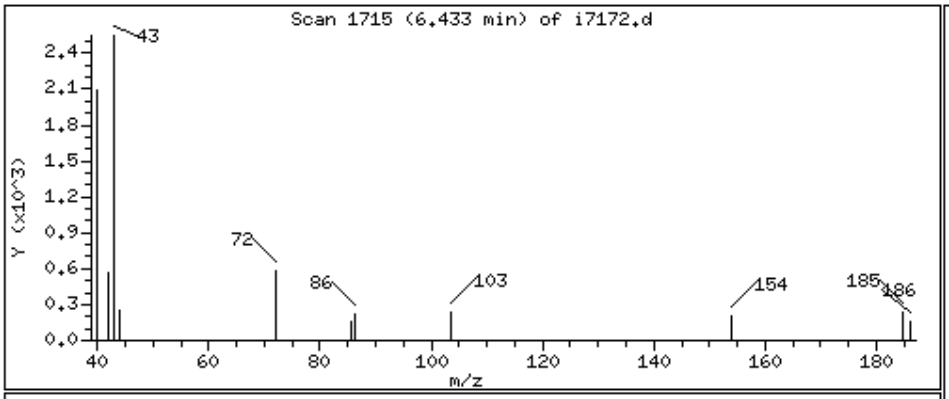
Operator: JMC2

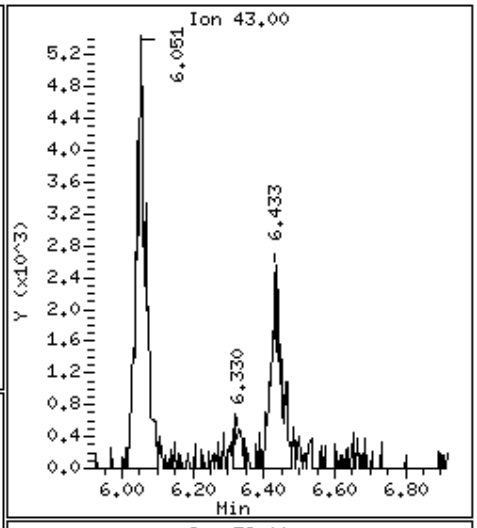
Column phase: RTX-VMS-30M

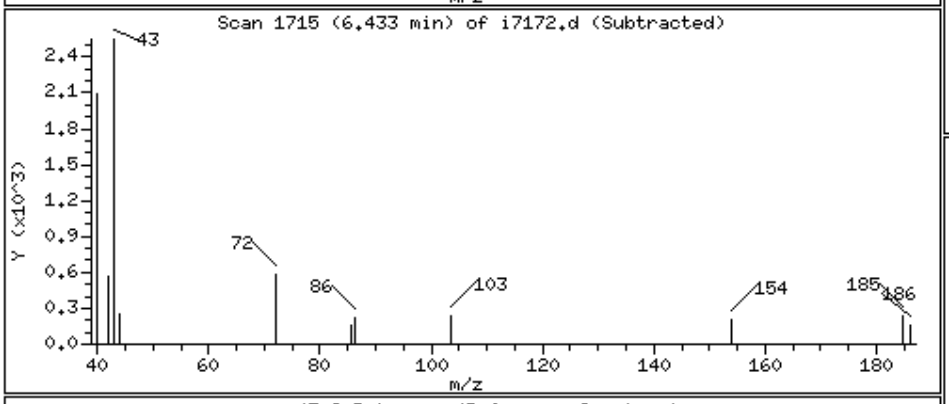
Column diameter: 0.25

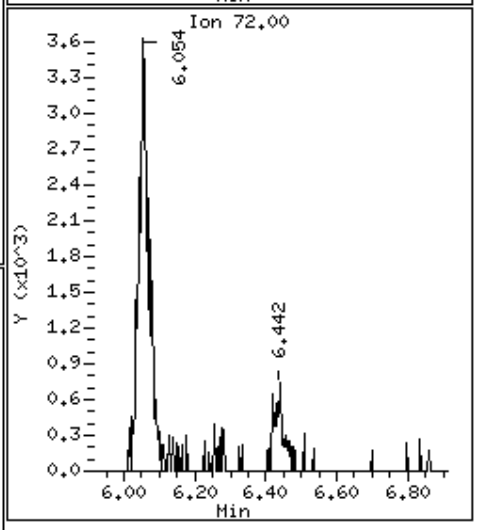
45 2-Butanone

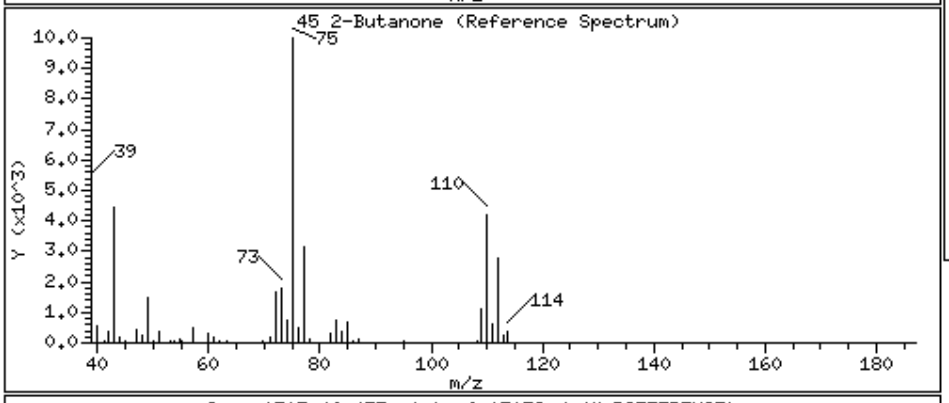
Concentration: 3.28 ug/Kg

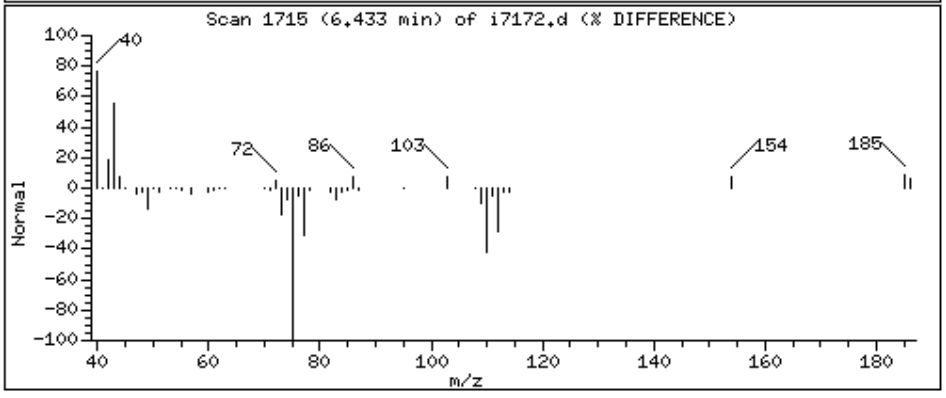












Data File: /var/chem/msv11.i/2170514.s.b/i7172.d

Date : 14-MAY-2017 16:01

Client ID: A

Instrument: msv11.i

Sample Info: 21705111004*A

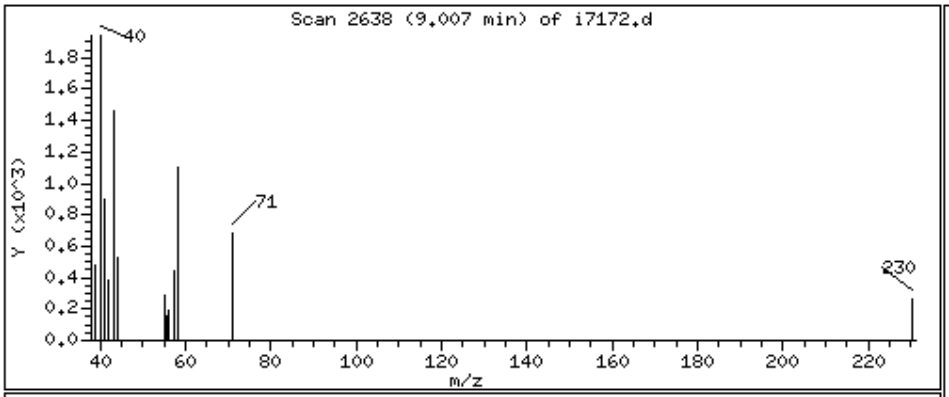
Operator: JMC2

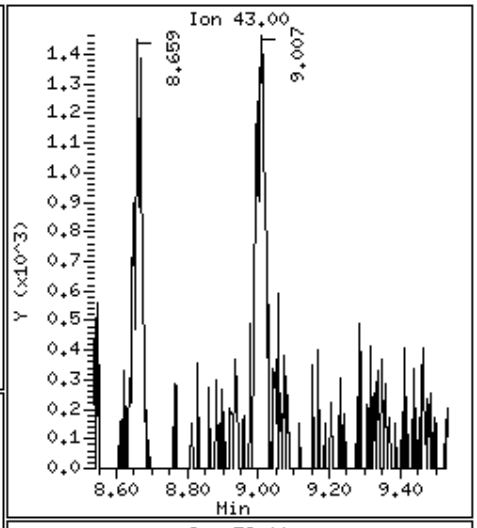
Column phase: RTX-VMS-30M

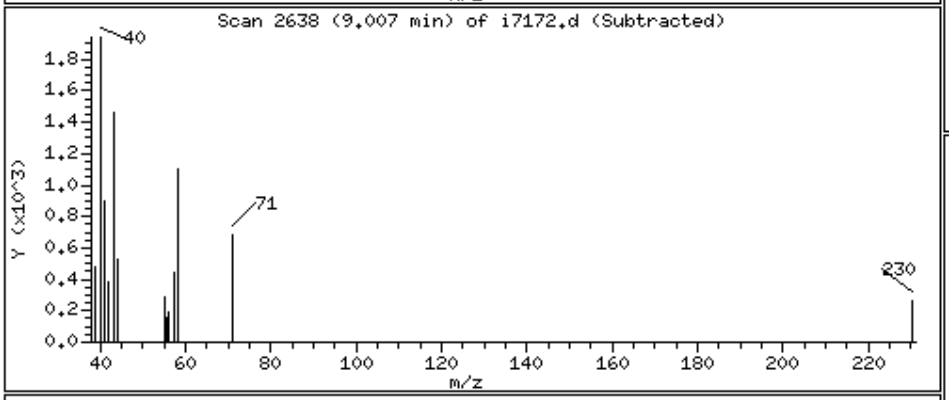
Column diameter: 0.25

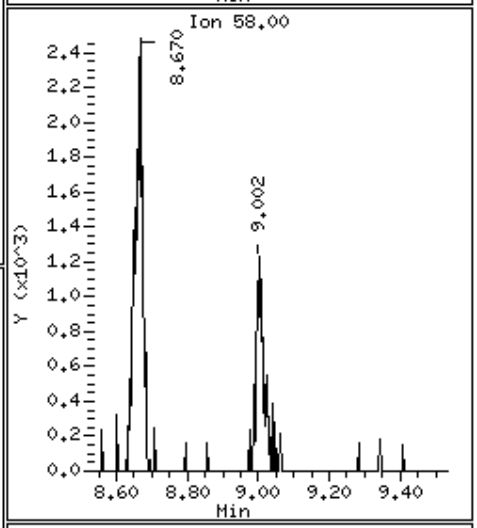
79 4-methyl-2-pentanone

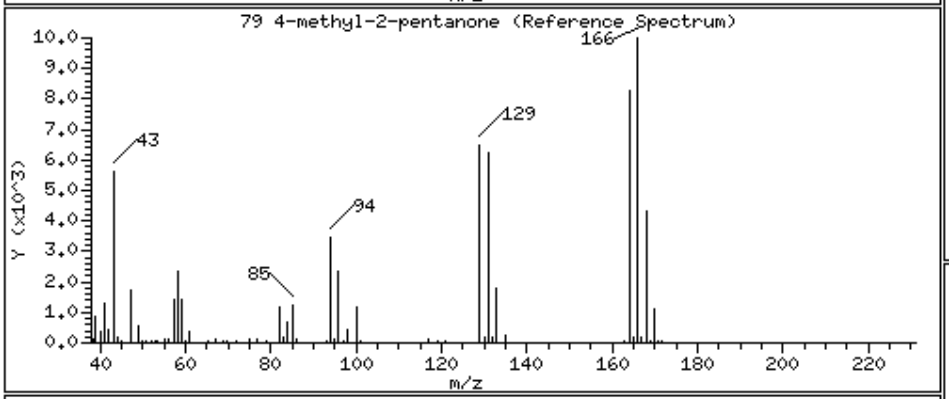
Concentration: 1.13 ug/Kg

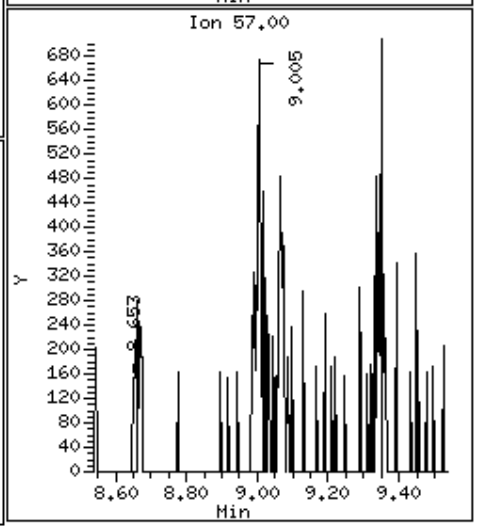


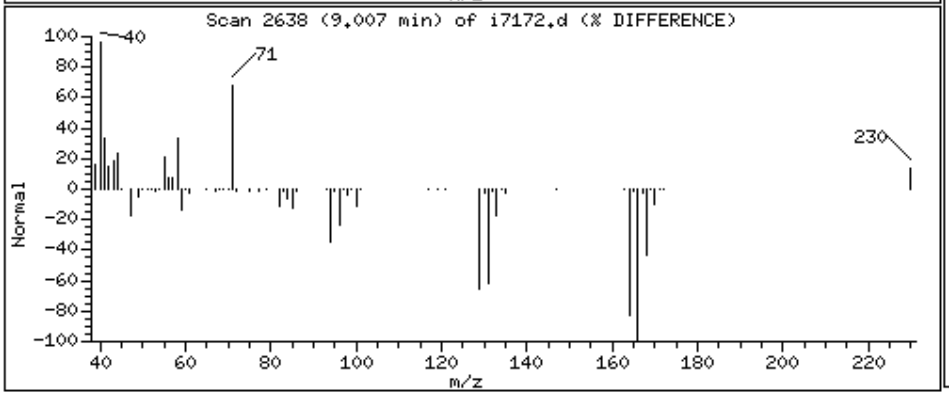












Data File: /var/chem/msv11.i/2170514.s.b/i7172.d

Date : 14-MAY-2017 16:01

Client ID: A

Instrument: msv11.i

Sample Info: 21705111004*A

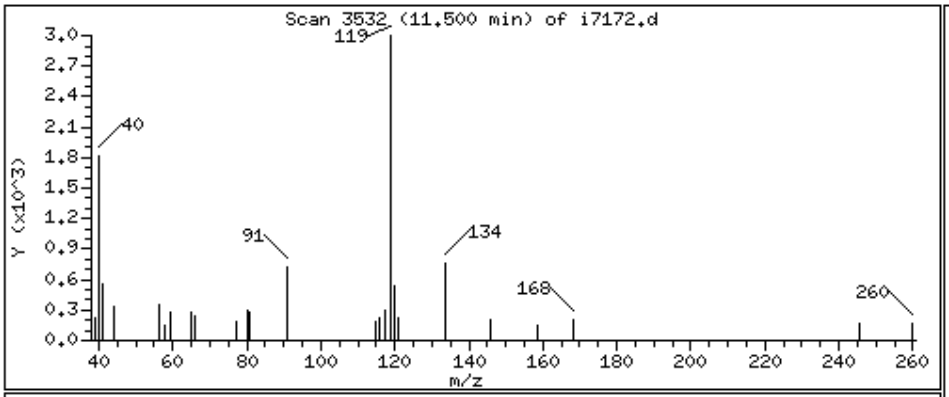
Operator: JMC2

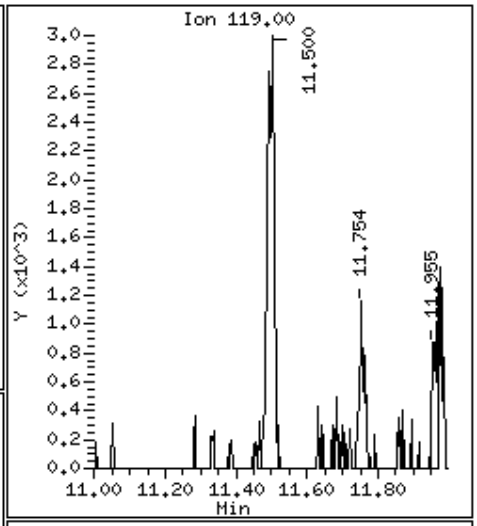
Column phase: RTX-VMS-30M

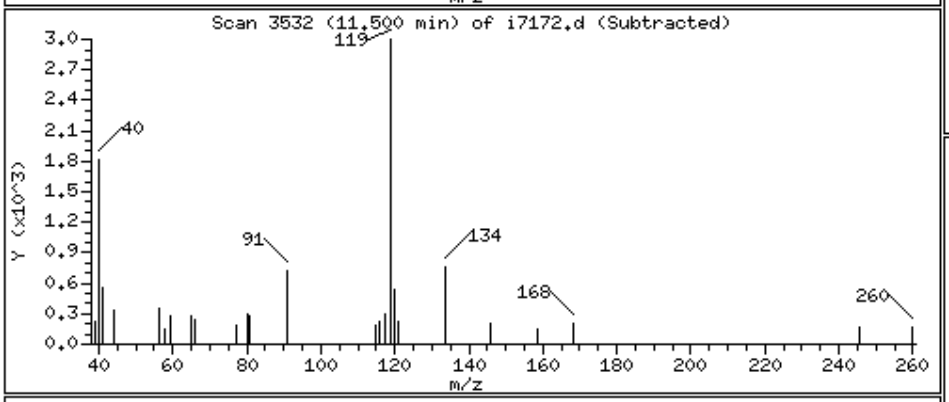
Column diameter: 0.25

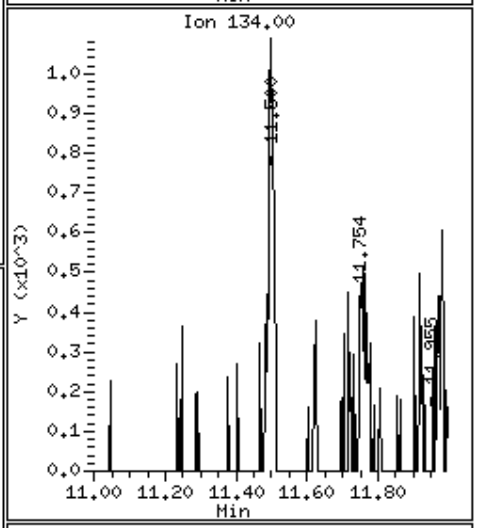
116 p-Isopropyltoluene

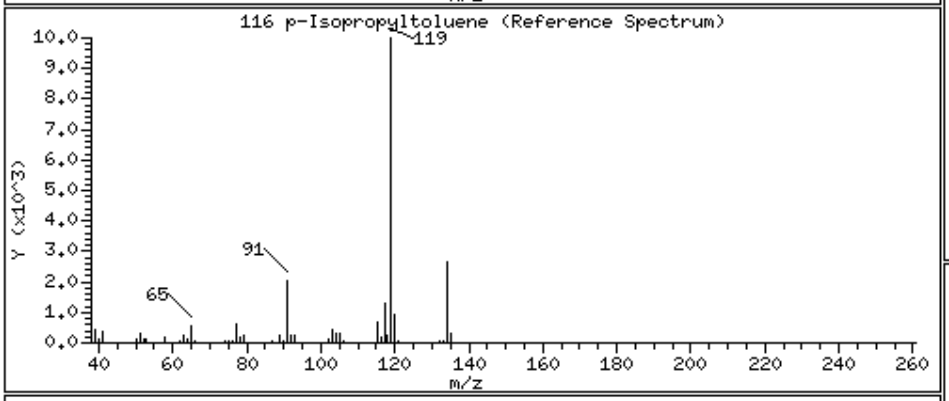
Concentration: 0.322 ug/Kg

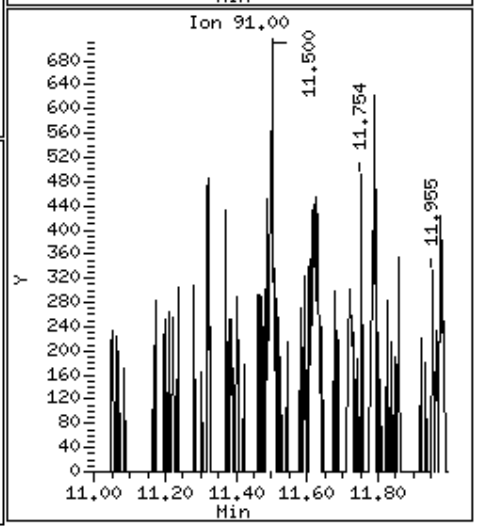


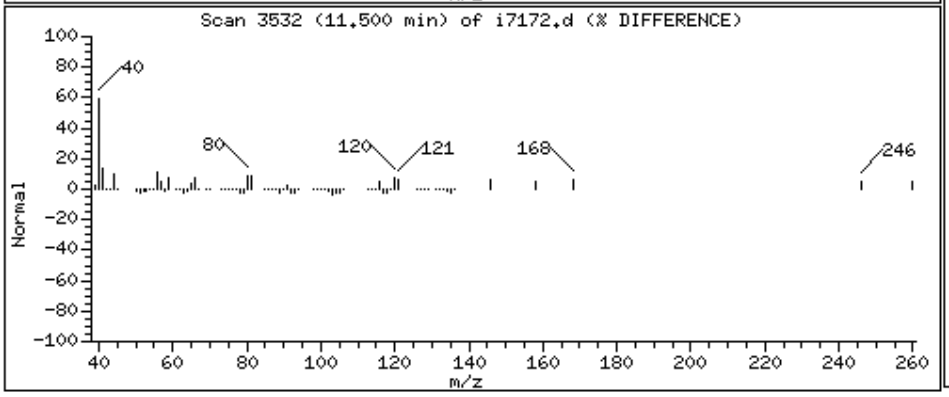












Data File: /var/chem/msv11.i/2170514.s.b/i7172.d

Date : 14-MAY-2017 16:01

Client ID: A

Instrument: msv11.i

Sample Info: 21705111004*A

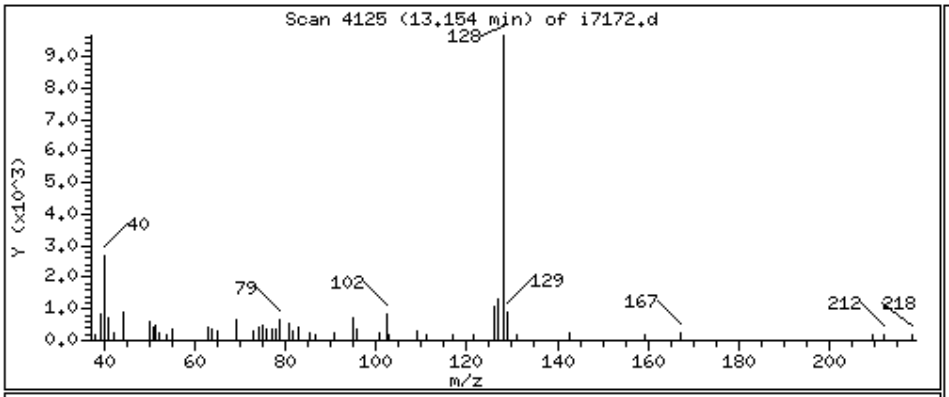
Operator: JMC2

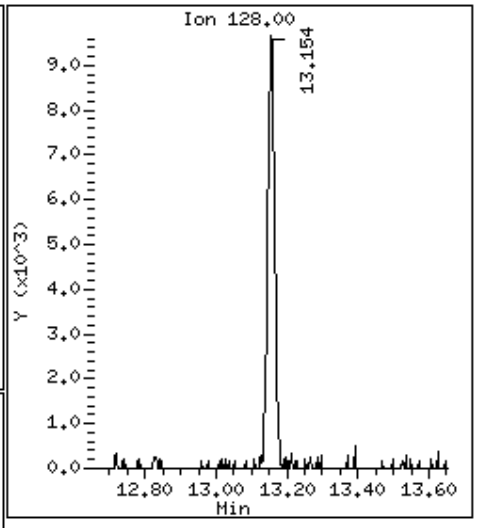
Column phase: RTX-VMS-30M

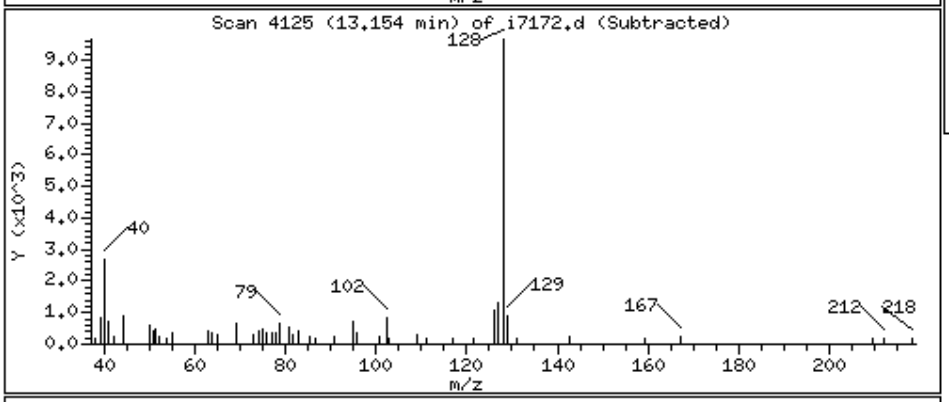
Column diameter: 0.25

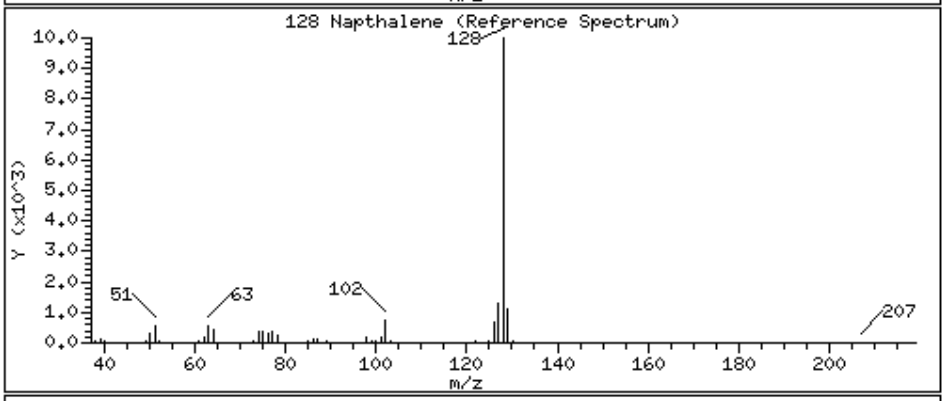
128 Napthalene

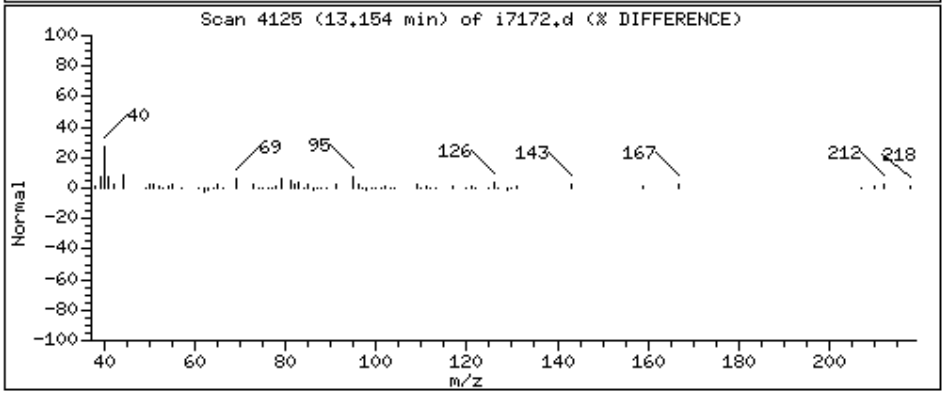
Concentration: 3.89 ug/Kg







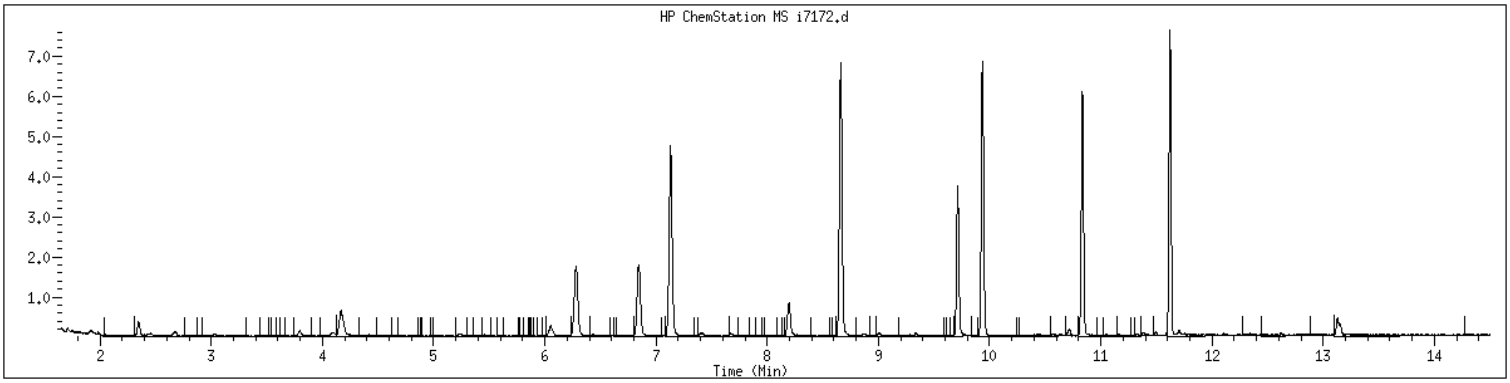




Data file : /var/chem/msv11.i/2170514.s.b/i7172.d Page: 1
Report Date: 05/15/2017 14:10

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111004 SampleType : SAMPLE
Injection Date: 05/14/2017 16:01 Instrument : msv11.i
Operator : JMC2
Sample Info : 21705111004*A
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-GW13-32-S
Collect Date:	05/09/17 Time: 1045	GCAL Sample ID:	21705111005
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3263
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1325	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	OMS-28-GW13-32-S
Collect Date:	05/09/17	Time:	1045	GCAL Sample ID:	21705111005
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170513/b3263
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	IXE	Analytical Batch:	610316
Analysis Date:	05/13/17	Time:	1325	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170513.s.b/b3263.d
Lab Smp Id: 21705111005 Client Smp ID: 21705111005
Inj Date : 13-MAY-2017 13:25
Operator : IXE Inst ID: msv14.i
Smp Info : 21705111005*
Misc Info : MSV~38321~*1*IXE
Comment :
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Meth Date : 16-May-2017 11:14 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	190739	51.1082	51.1	6888
$ 43 1,2-Dichloroethane-d4	67	6.418	6.422	(0.961)	124991	50.4023	50.4	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	734659	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.878)	700468	50.8311	50.8	
* 71 CHLOROBENZENE-d5	82	9.155	9.151	(1.000)	292089	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	173885	49.5005	49.5	
* 97 1,4-DICHLOROBENZENE-D4	152	10.605	10.605	(1.000)	211971	50.0000		

Data File: /var/chem/msv14.i/2170513.s.b/b3263.d

Date : 13-MAY-2017 13:25

Client ID: 21705111005

Instrument: msv14.i

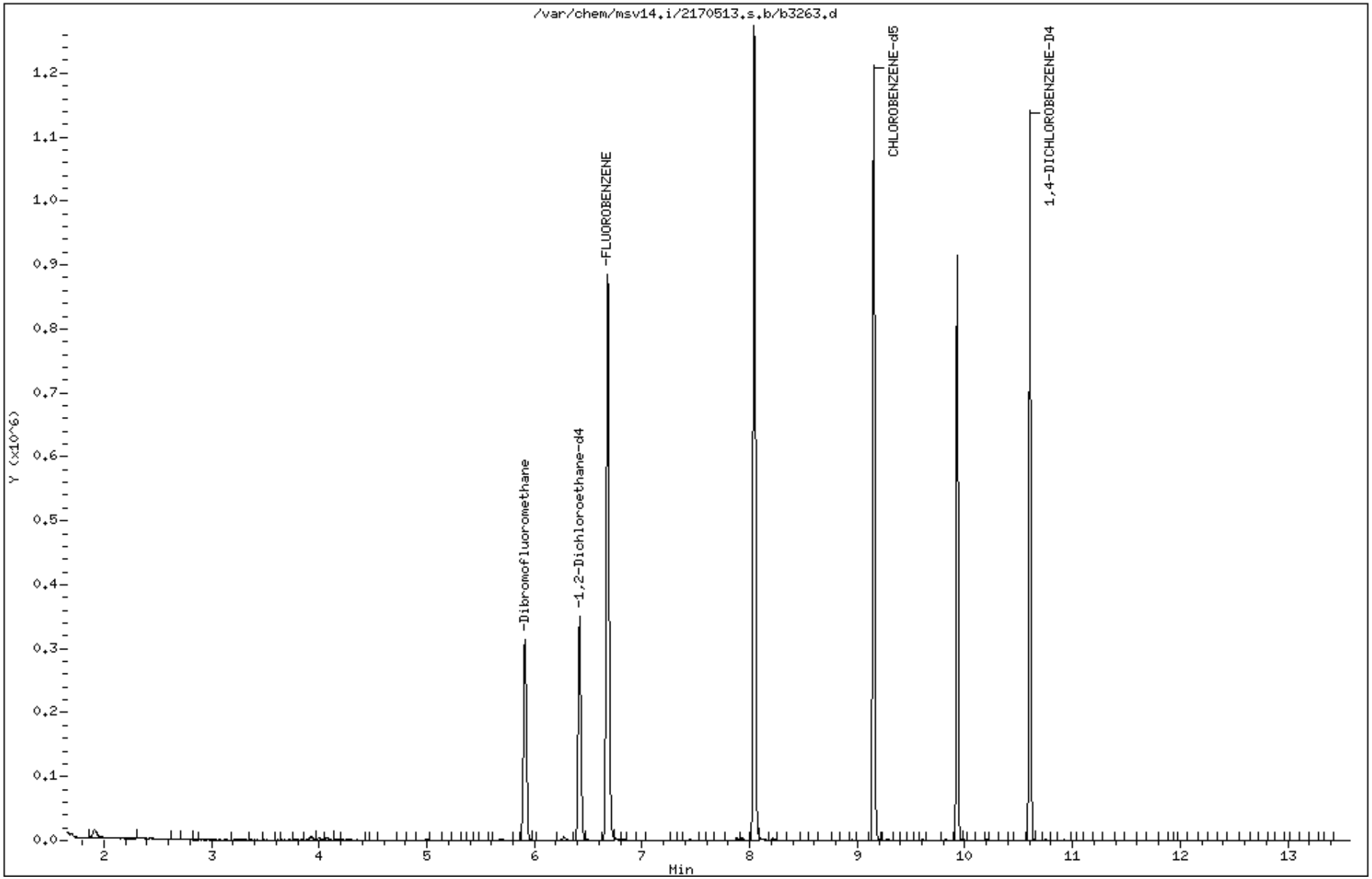
Sample Info: 21705111005*

Purge Volume: 5.0

Operator: IXE

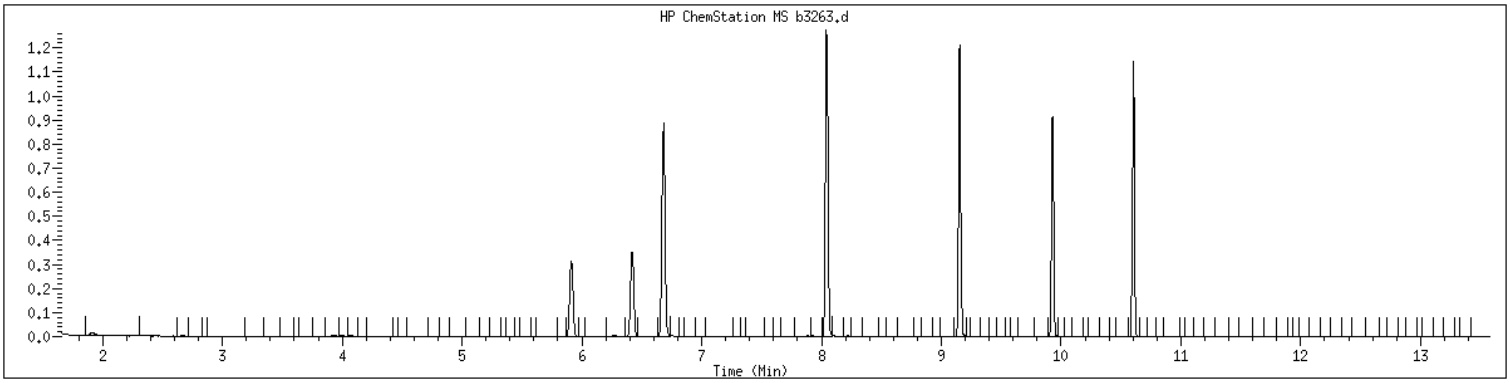
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111005 SampleType : SAMPLE
Injection Date: 05/13/2017 13:25 Instrument : msv14.i
Operator : IXE
Sample Info : 21705111005*
Misc Info : MSV~38321~*1*IXE
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-GW13-32-C
Collect Date:	05/09/17 Time: 0001	GCAL Sample ID:	21705111006
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3264
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1347	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-GW13-32-C
Collect Date:	05/09/17 Time: 0001	GCAL Sample ID:	21705111006
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3264
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1347	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170513.s.b/b3264.d
Lab Smp Id: 21705111006 Client Smp ID: 21705111006
Inj Date : 13-MAY-2017 13:47
Operator : IXE Inst ID: msv14.i
Smp Info : 21705111006*
Misc Info : MSV~38321~*1*IXE
Comment :
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Meth Date : 16-May-2017 11:14 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	191206	51.5994	51.6	6910
$ 43 1,2-Dichloroethane-d4	67	6.418	6.422	(0.961)	126487	51.3700	51.4	
* 47 FLUOROBENZENE	96	6.681	6.680	(1.000)	729447	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.879)	694773	49.9225	49.9	
* 71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	294987	50.0000		
$ 80 Bromofluorobenzene	174	9.931	9.927	(1.085)	173284	48.8448	48.8	
* 97 1,4-DICHLOROBENZENE-D4	152	10.605	10.605	(1.000)	213774	50.0000		

Data File: /var/chem/msv14.i/2170513.s.b/b3264.d

Page 1

Date : 13-MAY-2017 13:47

Client ID: 21705111006

Instrument: msv14.i

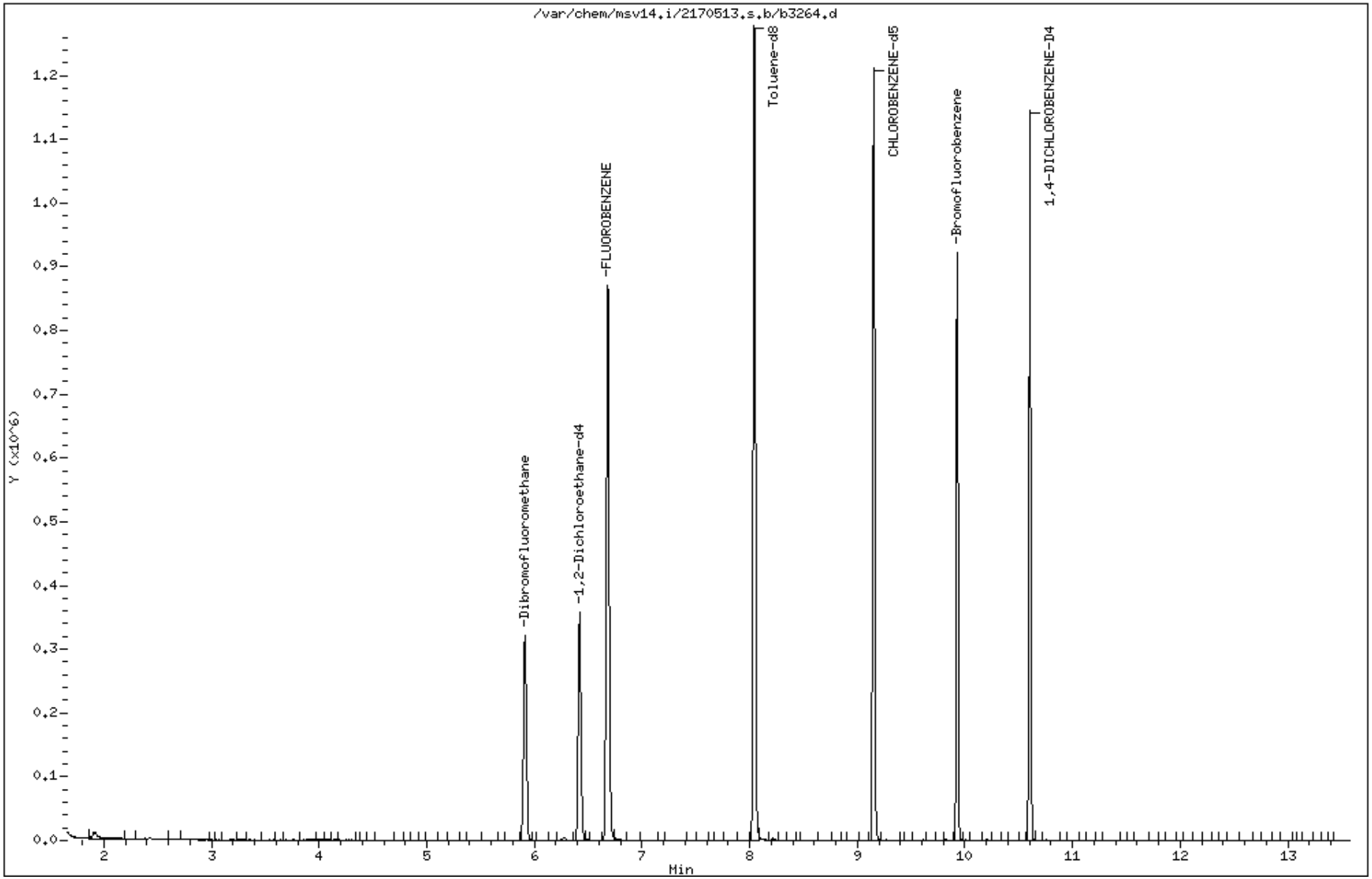
Sample Info: 21705111006*

Purge Volume: 5.0

Operator: IXE

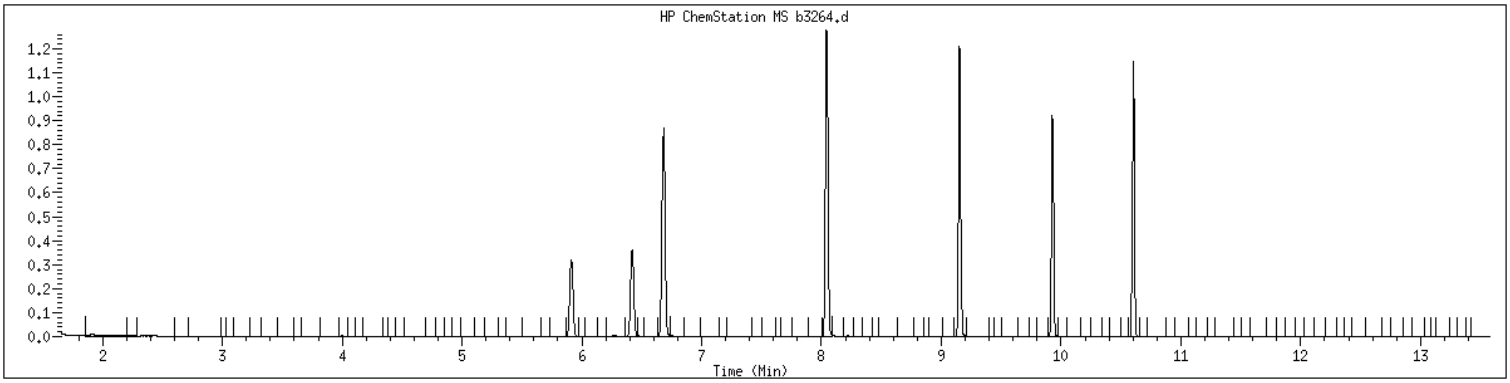
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111006 SampleType : SAMPLE
Injection Date: 05/13/2017 13:47 Instrument : msv14.i
Operator : IXE
Sample Info : 21705111006*
Misc Info : MSV~38321~*1*IXE
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB22-1.5-S
Collect Date:	05/10/17 Time: 0821	GCAL Sample ID:	21705111007
Matrix:	Solid % Moisture: 17.0	Instrument ID:	MSV11
Sample Amt:	6.44 g	Lab File ID:	2170514/i7173
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1624	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.468	U	0.234	0.468	4.68
79-34-5	1,1,2,2-Tetrachloroethane	0.468	U	0.234	0.468	4.68
79-00-5	1,1,2-Trichloroethane	0.468	U	0.234	0.468	4.68
75-34-3	1,1-Dichloroethane	0.468	U	0.234	0.468	4.68
75-35-4	1,1-Dichloroethene	0.468	U	0.234	0.468	4.68
87-61-6	1,2,3-Trichlorobenzene	0.936	U	0.468	0.936	4.68
120-82-1	1,2,4-Trichlorobenzene	0.936	U	0.468	0.936	4.68
96-12-8	1,2-Dibromo-3-chloropropane	1.87	U	0.468	1.87	4.68
106-93-4	1,2-Dibromoethane	1.87	U	0.468	1.87	4.68
95-50-1	1,2-Dichlorobenzene	0.468	U	0.234	0.468	4.68
107-06-2	1,2-Dichloroethane	0.468	U	0.234	0.468	4.68
78-87-5	1,2-Dichloropropane	0.468	U	0.234	0.468	4.68
541-73-1	1,3-Dichlorobenzene	0.468	U	0.234	0.468	4.68
106-46-7	1,4-Dichlorobenzene	0.468	U	0.234	0.468	4.68
78-93-3	2-Butanone	1.87	U	0.468	1.87	4.68
591-78-6	2-Hexanone	1.87	U	0.468	1.87	4.68
108-10-1	4-Methyl-2-pentanone	0.468	U	0.234	0.468	4.68
67-64-1	Acetone	6.16	J	0.468	1.87	23.4
71-43-2	Benzene	0.468	U	0.234	0.468	4.68
74-97-5	Bromochloromethane	0.936	U	0.468	0.936	4.68
75-27-4	Bromodichloromethane	0.468	U	0.234	0.468	4.68
75-25-2	Bromoform	0.936	U	0.468	0.936	4.68
74-83-9	Bromomethane	1.87	U	0.468	1.87	4.68
75-15-0	Carbon disulfide	0.468	U	0.234	0.468	4.68
56-23-5	Carbon tetrachloride	0.468	U	0.234	0.468	4.68
108-90-7	Chlorobenzene	0.468	U	0.234	0.468	4.68
75-00-3	Chloroethane	0.468	U	0.234	0.468	4.68
67-66-3	Chloroform	0.468	U	0.234	0.468	4.68
74-87-3	Chloromethane	1.87	U	0.468	1.87	4.68
156-59-2	cis-1,2-Dichloroethene	0.468	U	0.234	0.468	4.68
10061-01-5	cis-1,3-Dichloropropene	0.468	U	0.234	0.468	4.68
110-82-7	Cyclohexane	0.468	U	0.234	0.468	4.68
124-48-1	Dibromochloromethane	0.468	U	0.234	0.468	4.68
75-71-8	Dichlorodifluoromethane	0.468	U	0.234	0.468	4.68
100-41-4	Ethylbenzene	0.468	U	0.234	0.468	4.68
98-82-8	Isopropylbenzene (Cumene)	0.468	U	0.234	0.468	4.68

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB22-1.5-S
Collect Date:	05/10/17 Time: 0821	GCAL Sample ID:	21705111007
Matrix:	Solid % Moisture: 17.0	Instrument ID:	MSV11
Sample Amt:	6.44 g	Lab File ID:	2170514/i7173
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1624	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	0.936	U	0.468	0.936	4.68
108-87-2	Methylcyclohexane	0.468	U	0.234	0.468	4.68
75-09-2	Methylene chloride	4.18	J	0.936	1.87	9.36
100-42-5	Styrene	0.468	U	0.234	0.468	4.68
1634-04-4	tert-Butyl methyl ether (MTBE)	0.468	U	0.234	0.468	4.68
127-18-4	Tetrachloroethene	0.936	U	0.468	0.936	4.68
108-88-3	Toluene	0.468	U	0.234	0.468	4.68
156-60-5	trans-1,2-Dichloroethene	0.468	U	0.234	0.468	4.68
10061-02-6	trans-1,3-Dichloropropene	0.468	U	0.234	0.468	4.68
79-01-6	Trichloroethene	0.468	U	0.234	0.468	4.68
75-69-4	Trichlorofluoromethane	0.468	U	0.234	0.468	4.68
76-13-1	Trichlorotrifluoroethane	0.936	U	0.468	0.936	4.68
75-01-4	Vinyl chloride	0.468	U	0.234	0.468	4.68
1330-20-7	Xylene (total)	1.40	U	0.468	1.40	14.0

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7173.d
Lab Smp Id: 21705111007 Client Smp ID: A
Inj Date : 14-MAY-2017 16:24
Operator : JMC2 Inst ID: msv11.i
Smp Info : 21705111007*A
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	6.44000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
18 Methylene Chloride	49	4.094	4.091	(0.574)	13373	4.46754	3.47	8700
19 Acetone	43	4.175	4.166	(0.585)	7449	6.57568	5.11	6401
$ 42 Dibromofluoromethane	111	6.280	6.283	(0.880)	112051	53.1436	41.3	6014
$ 50 1,2-Dichloroethane-d4	67	6.843	6.843	(0.959)	67776	52.1864	40.5	9686
* 54 FLUOROBENZENE	96	7.133	7.133	(1.000)	416575	50.0000		9521
$ 74 Toluene-d8	98	8.661	8.661	(0.872)	408487	51.0900	39.7	9469
* 90 Chlorobenzene-d5	82	9.936	9.933	(1.000)	177848	50.0000		6935
$ 103 Bromofluorobenzene	174	10.837	10.834	(1.091)	138303	50.2210	39.0	9615
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	158628	50.0000		6820

Data File: /var/chem/msv11.i/2170514.s.b/i7173.d

Page 1

Date : 14-MAY-2017 16:24

Client ID: A

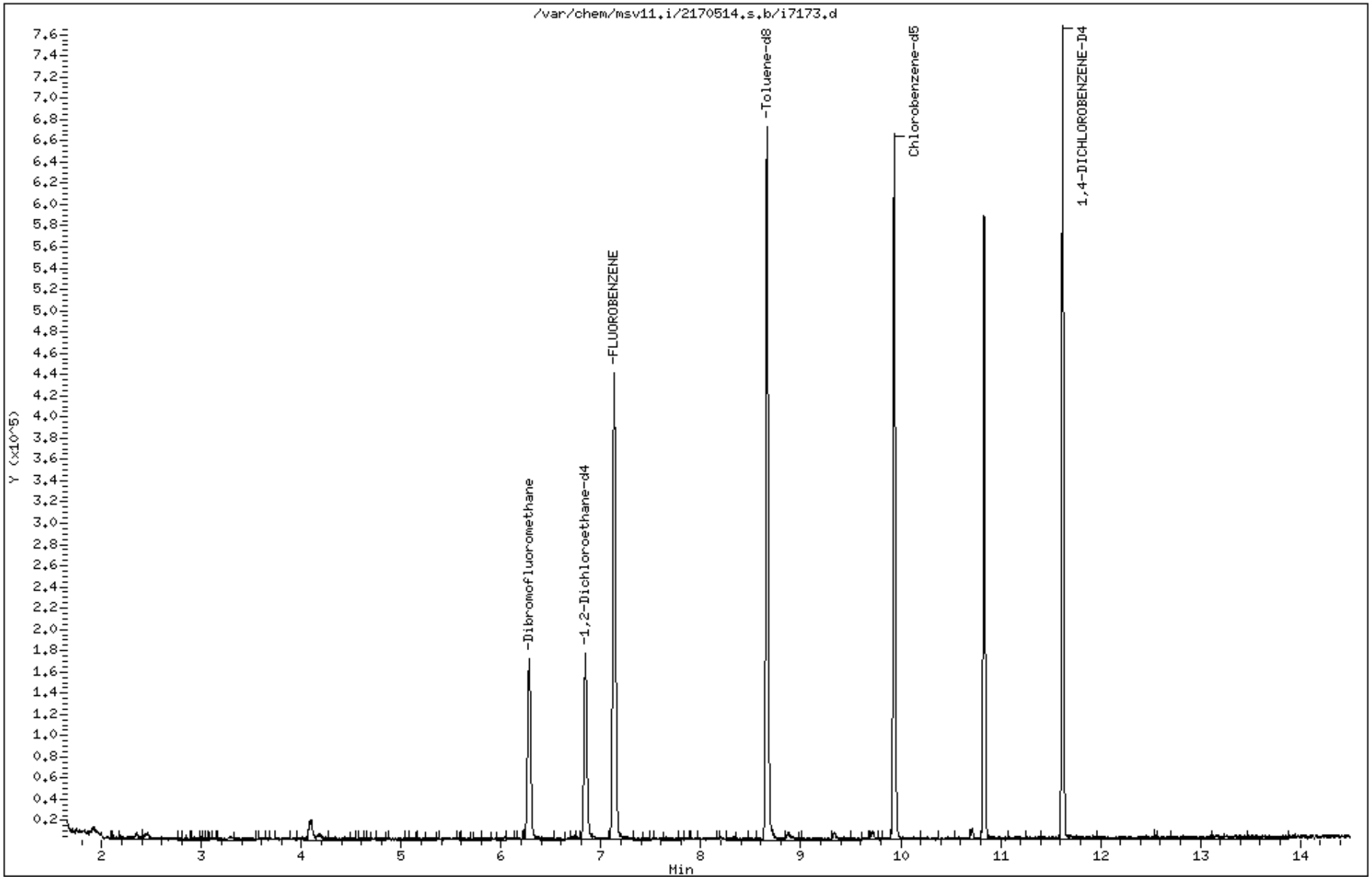
Instrument: msv11.i

Sample Info: 21705111007*A

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170514.s.b/i7173.d

Date : 14-MAY-2017 16:24

Client ID: A

Instrument: msv11.i

Sample Info: 21705111007*A

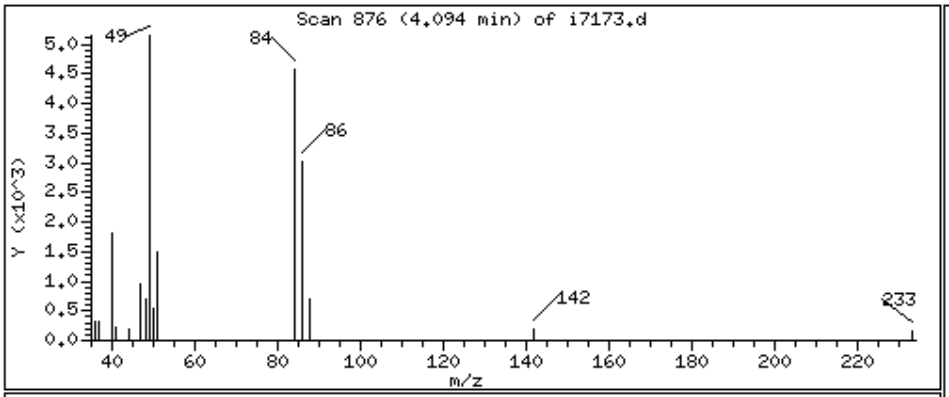
Operator: JMC2

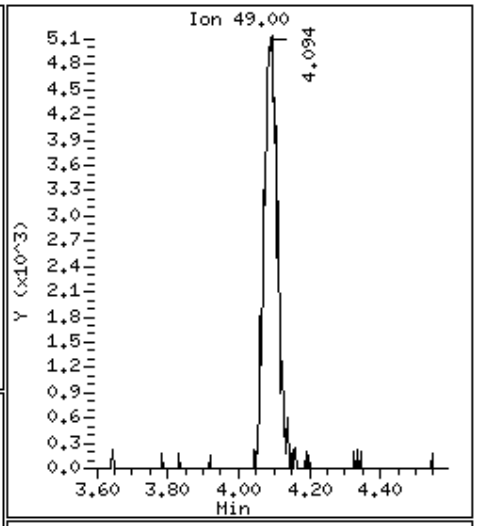
Column phase: RTX-VMS-30M

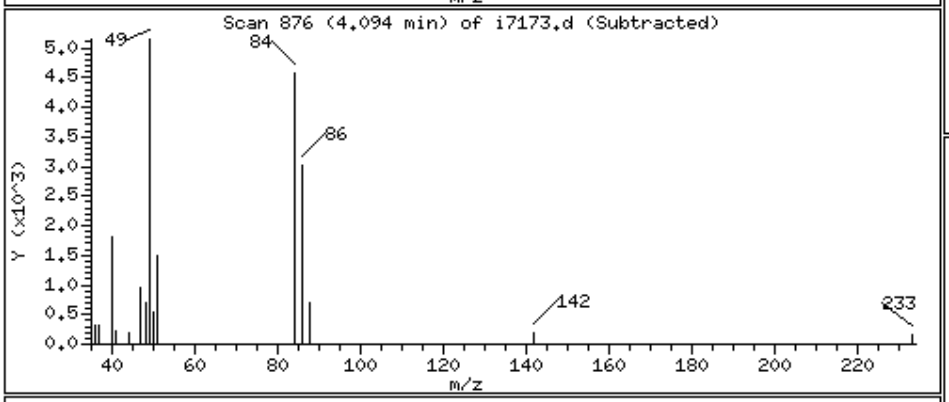
Column diameter: 0.25

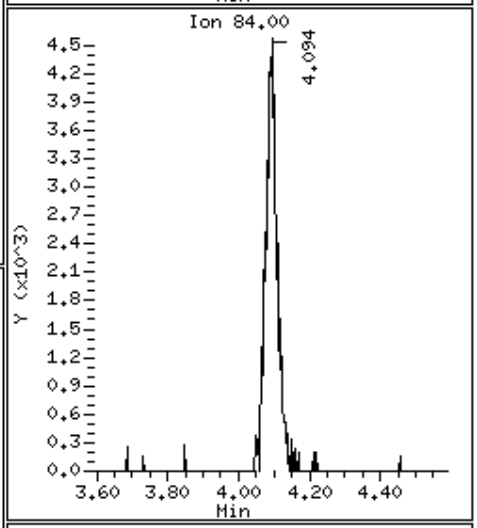
18 Methylene Chloride

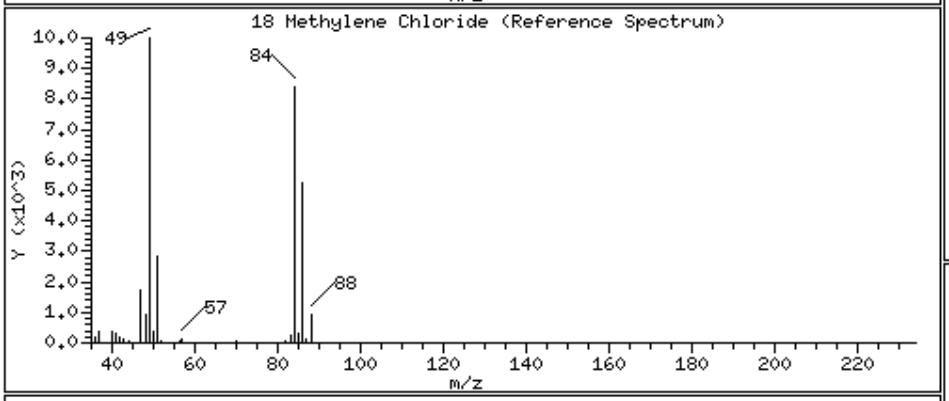
Concentration: 3.47 ug/Kg

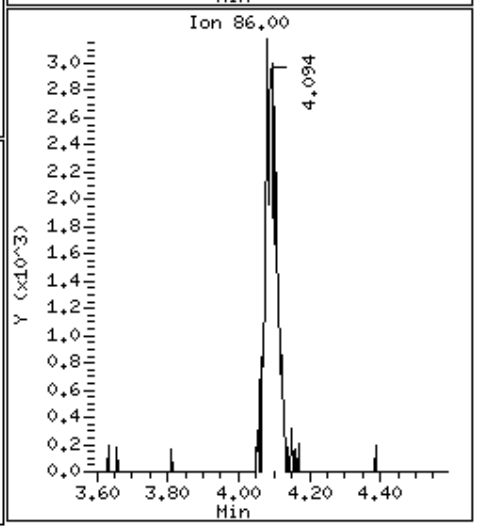


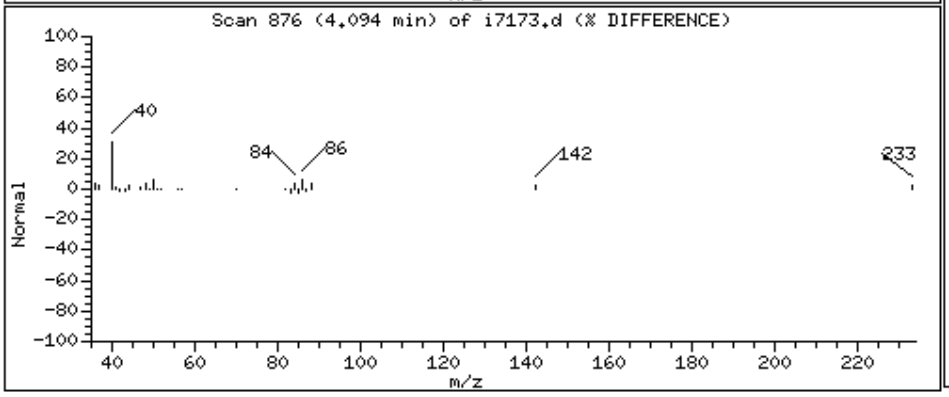












Data File: /var/chem/msv11.i/2170514.s.b/i7173.d

Date : 14-MAY-2017 16:24

Client ID: A

Instrument: msv11.i

Sample Info: 21705111007*A

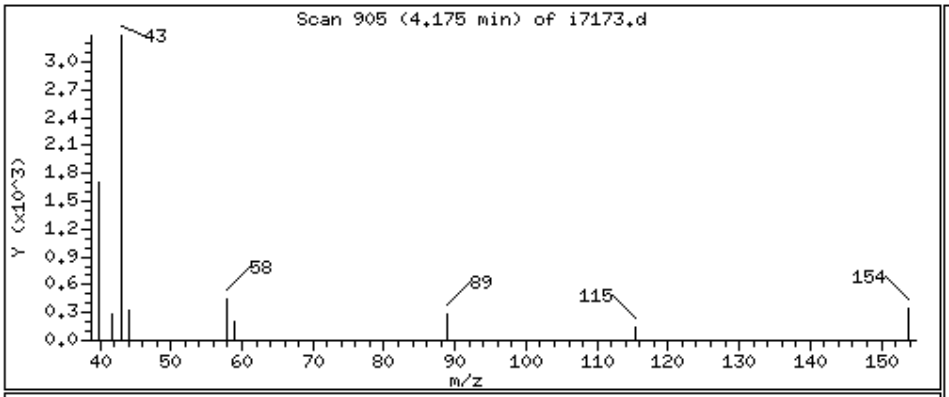
Operator: JMC2

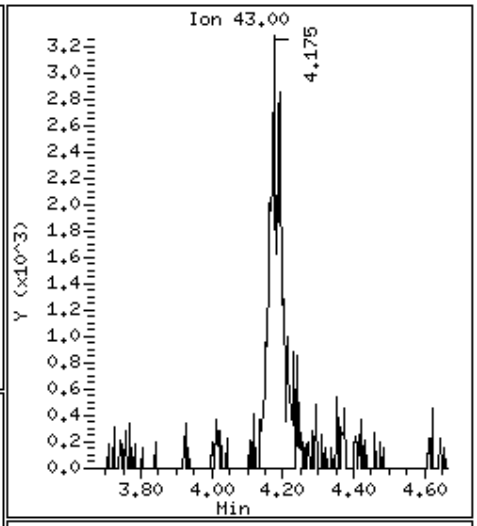
Column phase: RTX-VMS-30M

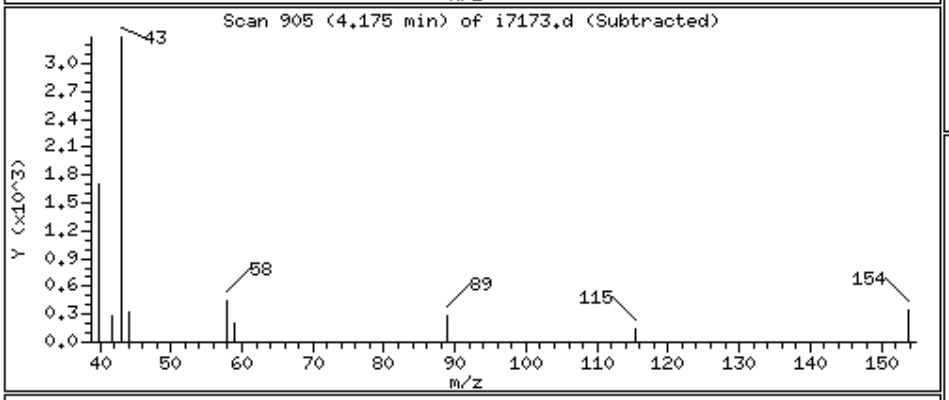
Column diameter: 0.25

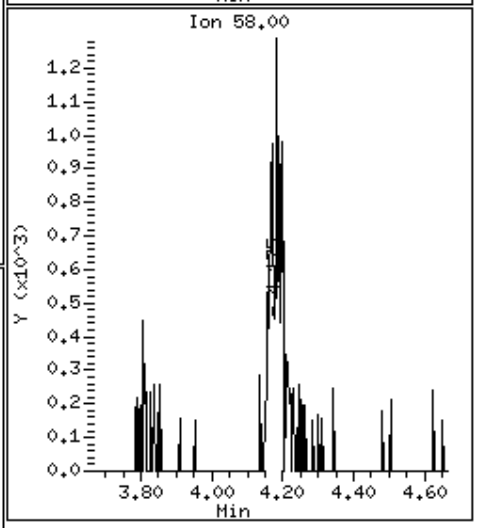
19 Acetone

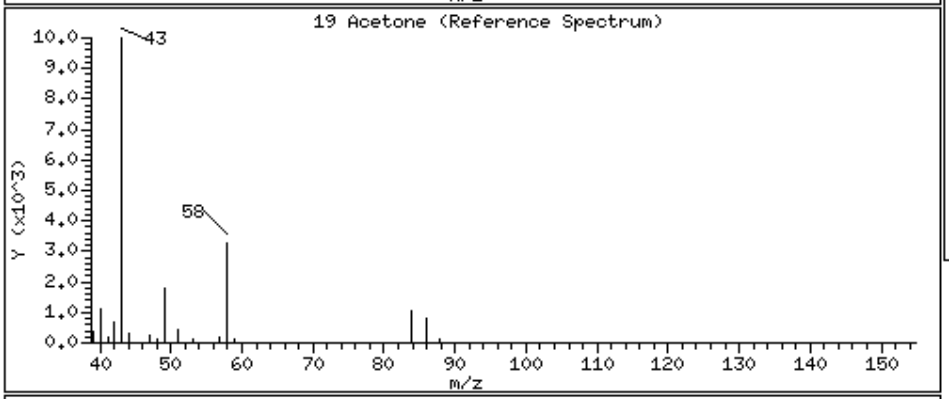
Concentration: 5.11 ug/Kg

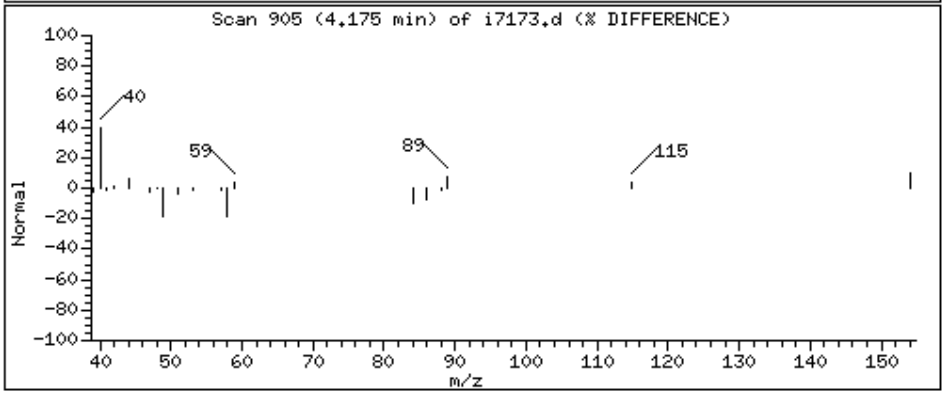






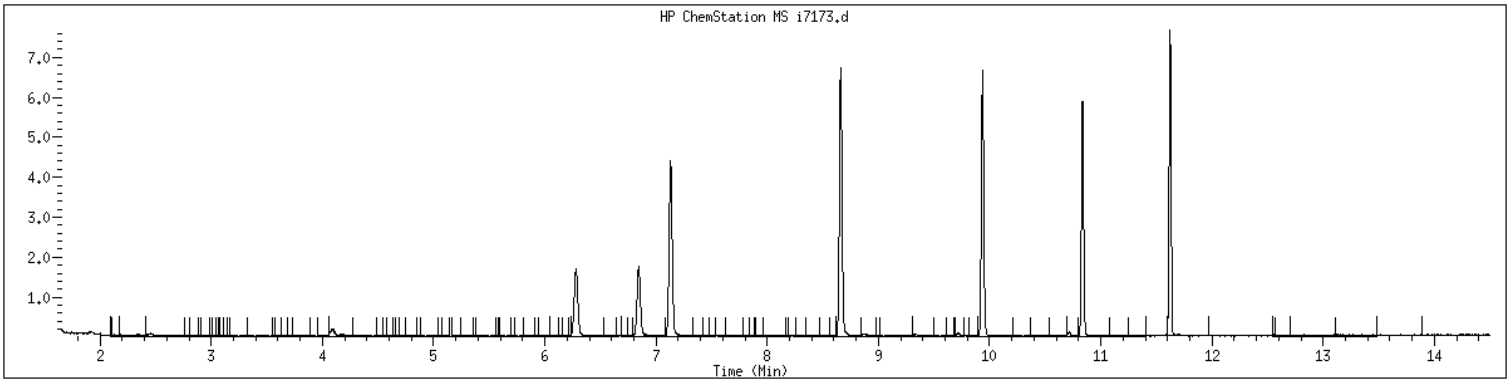






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111007 SampleType : SAMPLE
Injection Date: 05/14/2017 16:24 Instrument : msv11.i
Operator : JMC2
Sample Info : 21705111007*A
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB16-5-S
Collect Date:	05/10/17 Time: 0914	GCAL Sample ID:	21705111008
Matrix:	Solid % Moisture: 17.1	Instrument ID:	MSV11
Sample Amt:	6.66 g	Lab File ID:	2170514/i7174
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1648	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.453	U	0.226	0.453	4.53
79-34-5	1,1,2,2-Tetrachloroethane	0.453	U	0.226	0.453	4.53
79-00-5	1,1,2-Trichloroethane	0.453	U	0.226	0.453	4.53
75-34-3	1,1-Dichloroethane	0.453	U	0.226	0.453	4.53
75-35-4	1,1-Dichloroethene	0.453	U	0.226	0.453	4.53
87-61-6	1,2,3-Trichlorobenzene	0.906	U	0.453	0.906	4.53
120-82-1	1,2,4-Trichlorobenzene	0.906	U	0.453	0.906	4.53
96-12-8	1,2-Dibromo-3-chloropropane	1.81	U	0.453	1.81	4.53
106-93-4	1,2-Dibromoethane	1.81	U	0.453	1.81	4.53
95-50-1	1,2-Dichlorobenzene	0.453	U	0.226	0.453	4.53
107-06-2	1,2-Dichloroethane	0.453	U	0.226	0.453	4.53
78-87-5	1,2-Dichloropropane	0.453	U	0.226	0.453	4.53
541-73-1	1,3-Dichlorobenzene	0.453	U	0.226	0.453	4.53
106-46-7	1,4-Dichlorobenzene	0.453	U	0.226	0.453	4.53
78-93-3	2-Butanone	1.81	U	0.453	1.81	4.53
591-78-6	2-Hexanone	1.81	U	0.453	1.81	4.53
108-10-1	4-Methyl-2-pentanone	0.453	U	0.226	0.453	4.53
67-64-1	Acetone	1.81	U	0.453	1.81	22.6
71-43-2	Benzene	0.453	U	0.226	0.453	4.53
74-97-5	Bromochloromethane	0.906	U	0.453	0.906	4.53
75-27-4	Bromodichloromethane	0.453	U	0.226	0.453	4.53
75-25-2	Bromoform	0.906	U	0.453	0.906	4.53
74-83-9	Bromomethane	1.81	U	0.453	1.81	4.53
75-15-0	Carbon disulfide	0.453	U	0.226	0.453	4.53
56-23-5	Carbon tetrachloride	0.453	U	0.226	0.453	4.53
108-90-7	Chlorobenzene	0.453	U	0.226	0.453	4.53
75-00-3	Chloroethane	0.453	U	0.226	0.453	4.53
67-66-3	Chloroform	0.453	U	0.226	0.453	4.53
74-87-3	Chloromethane	1.81	U	0.453	1.81	4.53
156-59-2	cis-1,2-Dichloroethene	0.453	U	0.226	0.453	4.53
10061-01-5	cis-1,3-Dichloropropene	0.453	U	0.226	0.453	4.53
110-82-7	Cyclohexane	0.453	U	0.226	0.453	4.53
124-48-1	Dibromochloromethane	0.453	U	0.226	0.453	4.53
75-71-8	Dichlorodifluoromethane	0.453	U	0.226	0.453	4.53
100-41-4	Ethylbenzene	0.453	U	0.226	0.453	4.53
98-82-8	Isopropylbenzene (Cumene)	0.453	U	0.226	0.453	4.53

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB16-5-S
Collect Date:	05/10/17 Time: 0914	GCAL Sample ID:	21705111008
Matrix:	Solid % Moisture: 17.1	Instrument ID:	MSV11
Sample Amt:	6.66 g	Lab File ID:	2170514/i7174
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1648	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	0.906	U	0.453	0.906	4.53
108-87-2	Methylcyclohexane	0.453	U	0.226	0.453	4.53
75-09-2	Methylene chloride	2.73	J	0.906	1.81	9.06
100-42-5	Styrene	0.453	U	0.226	0.453	4.53
1634-04-4	tert-Butyl methyl ether (MTBE)	0.453	U	0.226	0.453	4.53
127-18-4	Tetrachloroethene	0.906	U	0.453	0.906	4.53
108-88-3	Toluene	0.453	U	0.226	0.453	4.53
156-60-5	trans-1,2-Dichloroethene	0.453	U	0.226	0.453	4.53
10061-02-6	trans-1,3-Dichloropropene	0.453	U	0.226	0.453	4.53
79-01-6	Trichloroethene	0.453	U	0.226	0.453	4.53
75-69-4	Trichlorofluoromethane	0.453	U	0.226	0.453	4.53
76-13-1	Trichlorotrifluoroethane	0.906	U	0.453	0.906	4.53
75-01-4	Vinyl chloride	0.453	U	0.226	0.453	4.53
1330-20-7	Xylene (total)	1.36	U	0.453	1.36	13.6

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7174.d
Lab Smp Id: 21705111008 Client Smp ID: A
Inj Date : 14-MAY-2017 16:48
Operator : JMC2 Inst ID: msv11.i
Smp Info : 21705111008*A
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	6.66000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
18 Methylene Chloride	49	4.088	4.091	(0.573)	9355	3.01586	2.26	8290
$ 42 Dibromofluoromethane	111	6.280	6.283	(0.881)	112848	51.6484	38.8	6014
$ 50 1,2-Dichloroethane-d4	67	6.846	6.843	(0.960)	69714	51.8000	38.9	9663
* 54 FLUOROBENZENE	96	7.130	7.133	(1.000)	431683	50.0000		9616
$ 74 Toluene-d8	98	8.661	8.661	(0.872)	411680	52.3216	39.3	9434
* 90 Chlorobenzene-d5	82	9.933	9.933	(1.000)	175019	50.0000		6945
$ 103 Bromofluorobenzene	174	10.837	10.834	(1.091)	139880	51.6147	38.7	9600
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	158532	50.0000		6837

Data File: /var/chem/msv11.i/2170514.s.b/i7174.d

Page 1

Date : 14-MAY-2017 16:48

Client ID: A

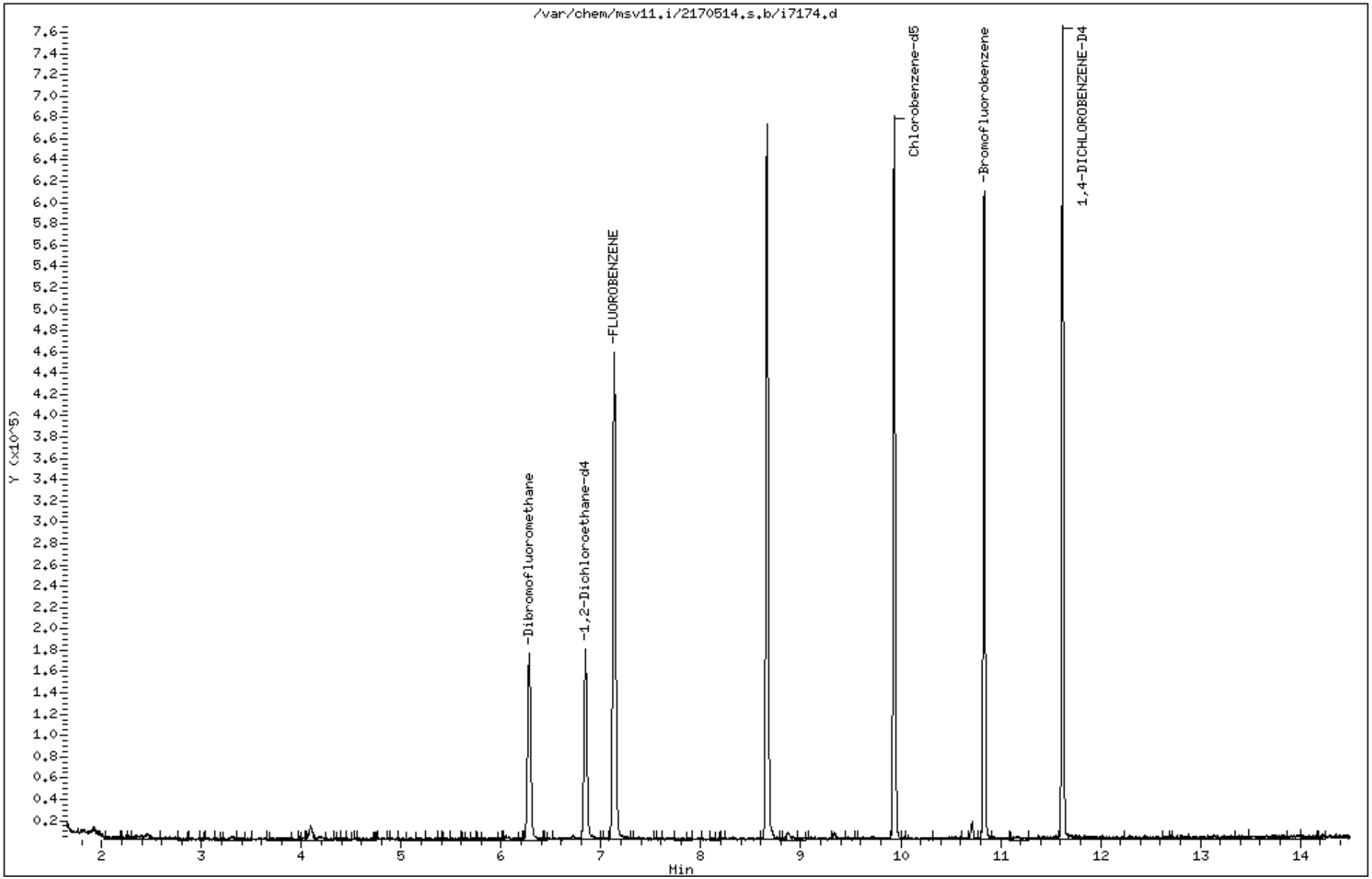
Instrument: msv11.i

Sample Info: 21705111008*A

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170514.s.b/i7174.d

Date : 14-MAY-2017 16:48

Client ID: A

Instrument: msv11.i

Sample Info: 21705111008*A

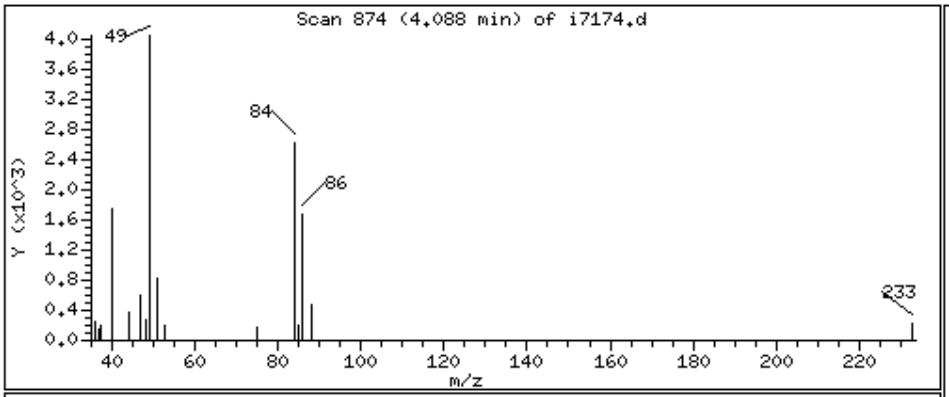
Operator: JMC2

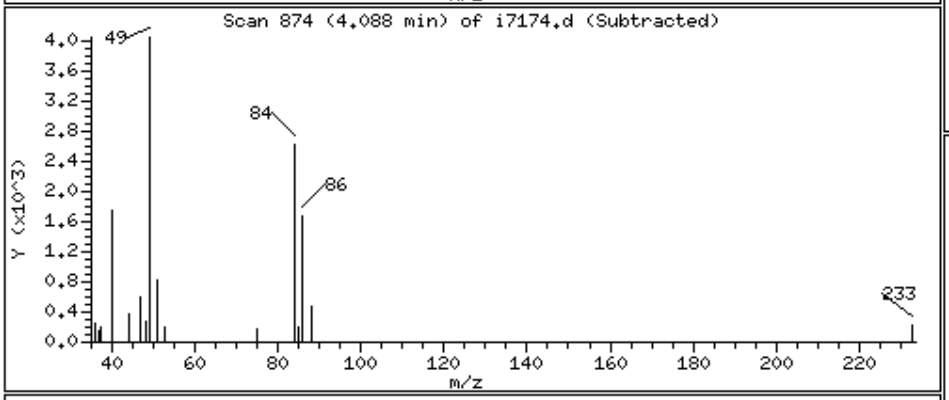
Column phase: RTX-VMS-30M

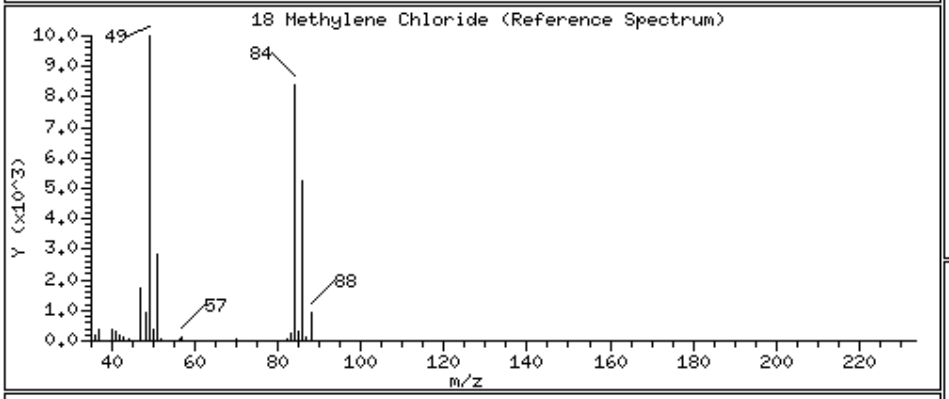
Column diameter: 0.25

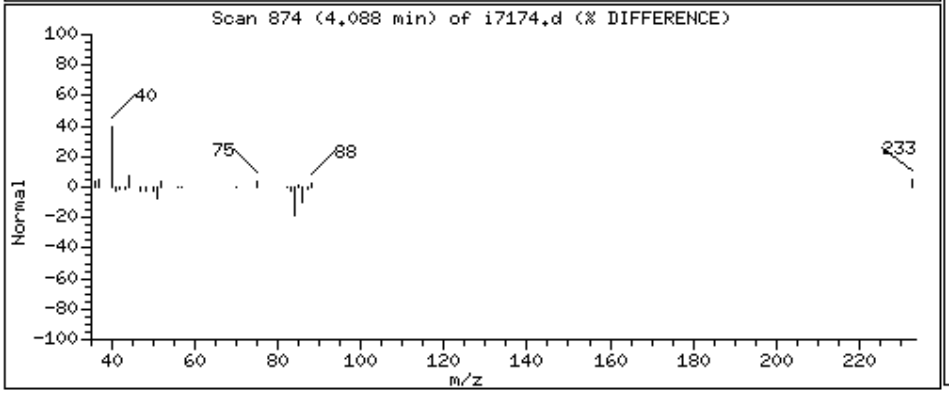
18 Methylene Chloride

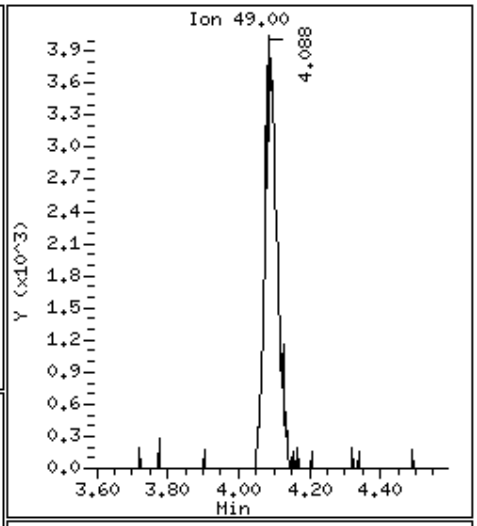
Concentration: 2.26 ug/Kg

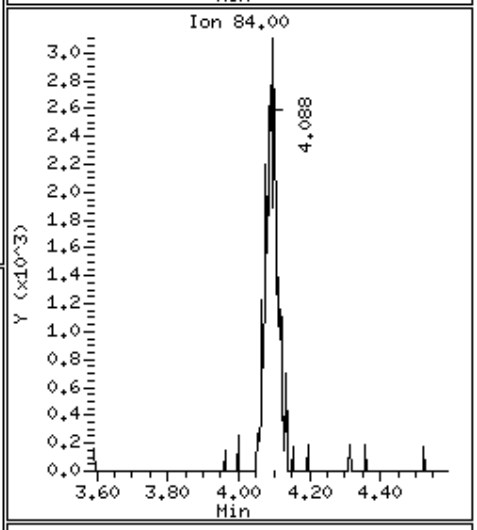


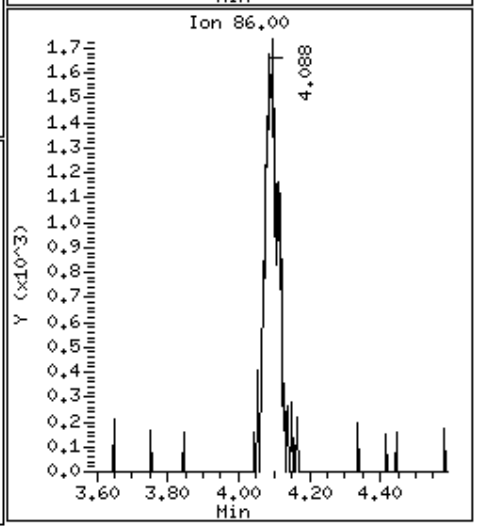








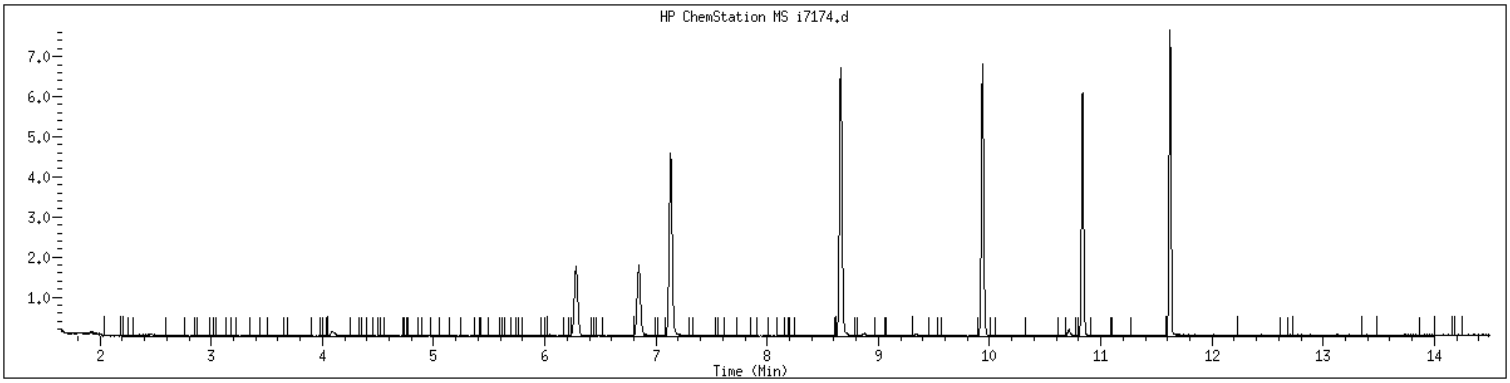




Report Date: 05/15/2017 14:11

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111008 SampleType : SAMPLE
Injection Date: 05/14/2017 16:48 Instrument : msv11.i
Operator : JMC2
Sample Info : 21705111008*A
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB24-1-S
Collect Date:	05/10/17 Time: 1040	GCAL Sample ID:	21705111009
Matrix:	Solid % Moisture: 10.6	Instrument ID:	MSV13
Sample Amt:	4.55 g	Lab File ID:	2170519/d4404
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	5000 Analyst: LBH	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 1435	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	3070	U	1540	3070	30700
79-34-5	1,1,2,2-Tetrachloroethane	3070	U	1540	3070	30700
79-00-5	1,1,2-Trichloroethane	3070	U	1540	3070	30700
75-34-3	1,1-Dichloroethane	3070	U	1540	3070	30700
75-35-4	1,1-Dichloroethene	3070	U	1540	3070	30700
87-61-6	1,2,3-Trichlorobenzene	6140	U	3070	6140	30700
120-82-1	1,2,4-Trichlorobenzene	6140	U	3070	6140	30700
96-12-8	1,2-Dibromo-3-chloropropane	12300	U	3070	12300	30700
106-93-4	1,2-Dibromoethane	12300	U	3070	12300	30700
95-50-1	1,2-Dichlorobenzene	3070	U	1540	3070	30700
107-06-2	1,2-Dichloroethane	3070	U	1540	3070	30700
78-87-5	1,2-Dichloropropane	3070	U	1540	3070	30700
541-73-1	1,3-Dichlorobenzene	3070	U	1540	3070	30700
106-46-7	1,4-Dichlorobenzene	3070	U	1540	3070	30700
78-93-3	2-Butanone	12300	U	3070	12300	30700
591-78-6	2-Hexanone	12300	U	3070	12300	30700
108-10-1	4-Methyl-2-pentanone	3070	U	1540	3070	30700
67-64-1	Acetone	12300	U	3070	12300	154000
71-43-2	Benzene	3070	U	1540	3070	30700
74-97-5	Bromochloromethane	6140	U	3070	6140	30700
75-27-4	Bromodichloromethane	3070	U	1540	3070	30700
75-25-2	Bromoform	6140	U	3070	6140	30700
74-83-9	Bromomethane	12300	U	3070	12300	30700
75-15-0	Carbon disulfide	3070	U	1540	3070	30700
56-23-5	Carbon tetrachloride	3070	U	1540	3070	30700
108-90-7	Chlorobenzene	3070	U	1540	3070	30700
75-00-3	Chloroethane	3070	U	1540	3070	30700
67-66-3	Chloroform	3070	U	1540	3070	30700
74-87-3	Chloromethane	12300	U	3070	12300	30700
156-59-2	cis-1,2-Dichloroethene	3070	U	1540	3070	30700
10061-01-5	cis-1,3-Dichloropropene	3070	U	1540	3070	30700
110-82-7	Cyclohexane	3070	U	1540	3070	30700
124-48-1	Dibromochloromethane	3070	U	1540	3070	30700
75-71-8	Dichlorodifluoromethane	3070	U	1540	3070	30700
100-41-4	Ethylbenzene	3070	U	1540	3070	30700
98-82-8	Isopropylbenzene (Cumene)	3070	U	1540	3070	30700

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	OMS-28-SB24-1-S
Collect Date:	05/10/17	Time:	1040	GCAL Sample ID:	21705111009
Matrix:	Solid	% Moisture:	10.6	Instrument ID:	MSV13
Sample Amt:	4.55 g			Lab File ID:	2170519/d4404
Injection Vol.:	1.0	(µL)		GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	5000	Analyst:	LBH	Analytical Batch:	610743
Analysis Date:	05/19/17	Time:	1435	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	6140	U	3070	6140	30700
108-87-2	Methylcyclohexane	3070	U	1540	3070	30700
75-09-2	Methylene chloride	12300	U	6140	12300	61400
100-42-5	Styrene	3070	U	1540	3070	30700
1634-04-4	tert-Butyl methyl ether (MTBE)	3070	U	1540	3070	30700
127-18-4	Tetrachloroethene	329000		3070	6140	30700
108-88-3	Toluene	3070	U	1540	3070	30700
156-60-5	trans-1,2-Dichloroethene	3070	U	1540	3070	30700
10061-02-6	trans-1,3-Dichloropropene	3070	U	1540	3070	30700
79-01-6	Trichloroethene	3070	U	1540	3070	30700
75-69-4	Trichlorofluoromethane	3070	U	1540	3070	30700
76-13-1	Trichlorotrifluoroethane	6140	U	3070	6140	30700
75-01-4	Vinyl chloride	3070	U	1540	3070	30700
1330-20-7	Xylene (total)	9220	U	3070	9220	92200

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170519.s.b/d4404.d
Lab Smp Id: 21705111009 Client Smp ID: C
Inj Date : 19-MAY-2017 14:35
Operator : LBH Inst ID: msv13.i
Smp Info : 21705111009*C
Misc Info : MSV~38363~*5000*LBH
Comment :
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Meth Date : 20-May-2017 12:42 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1
Dil Factor: 5000.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100))/5000 * CpndVariable

Name	Value	Description
DF	5000.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Ws	4.55000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
m	0.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (UG/KG)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	96671	47.4294	261000	9534
$ 50 1,2-Dichloroethane-d4	67	6.294	6.290	(0.961)	63127	51.8578	285000	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	429169	50.0000		
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	404552	49.7688	273000	
71 Tetrachloroethene	164	8.265	8.262	(0.913)	91561	53.4997	294000	
* 84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	166533	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	112034	41.6508	229000	(R)
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	130515	50.0000		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /var/chem/msv13.i/2170519.s.b/d4404.d

Date : 19-MAY-2017 14:35

Client ID: C

Instrument: msv13.i

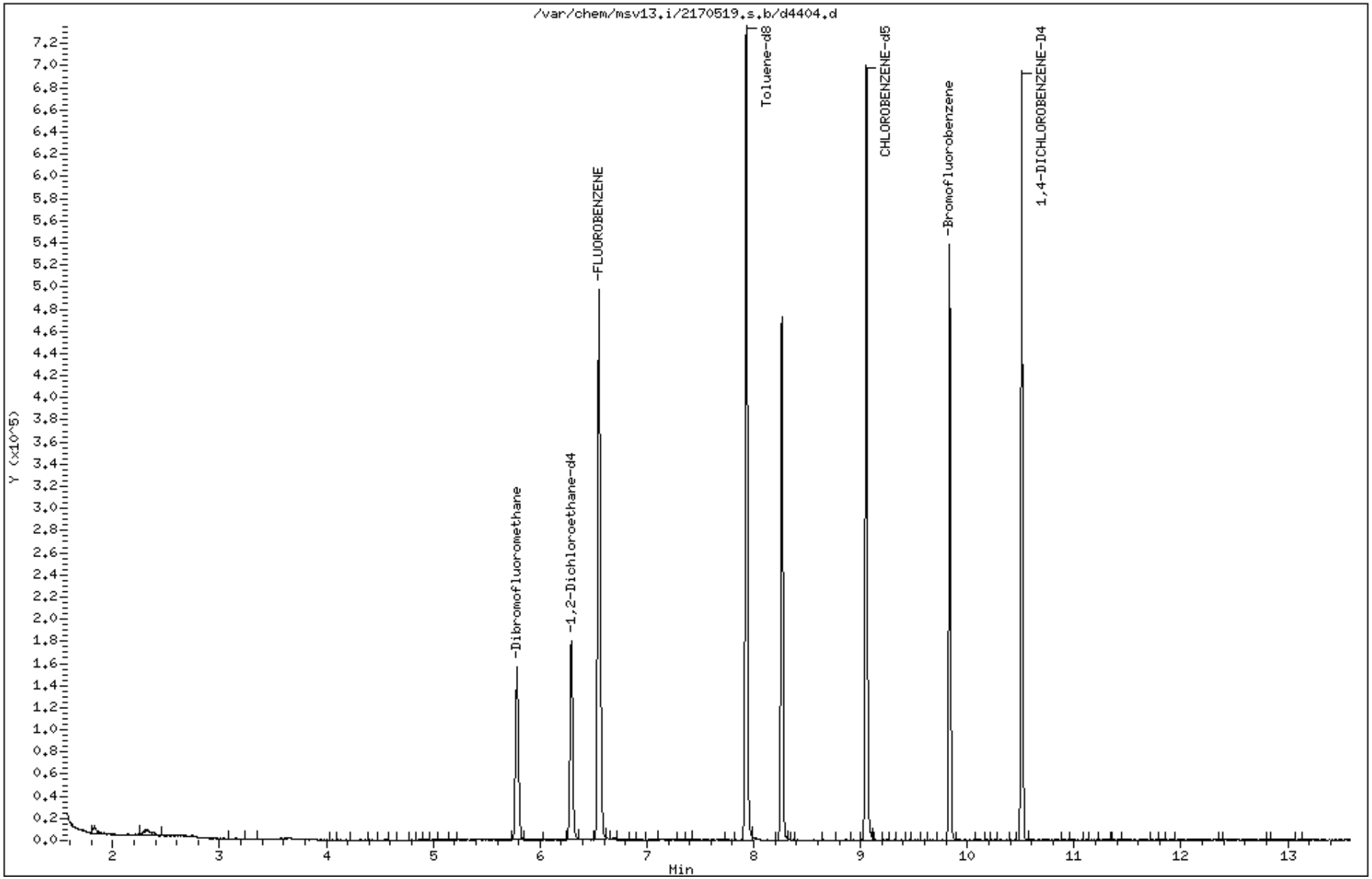
Sample Info: 21705111009*C

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170519.s.b/d4404.d

Date : 19-MAY-2017 14:35

Client ID: C

Instrument: msv13.i

Sample Info: 21705111009*C

Purge Volume: 5.0

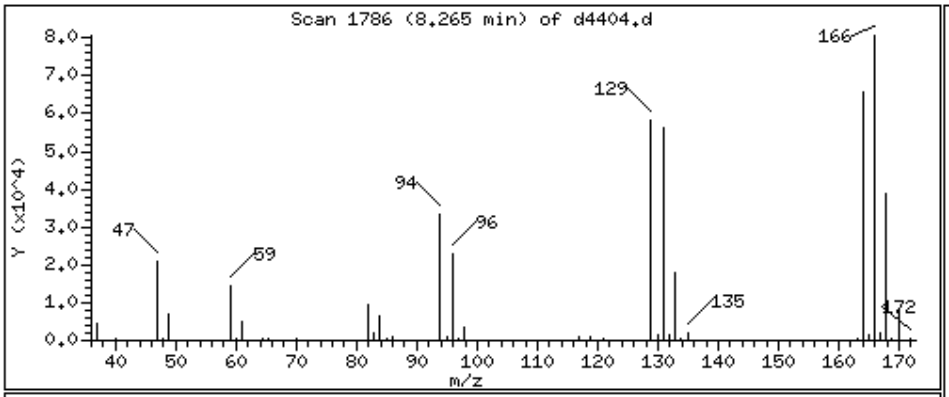
Operator: LBH

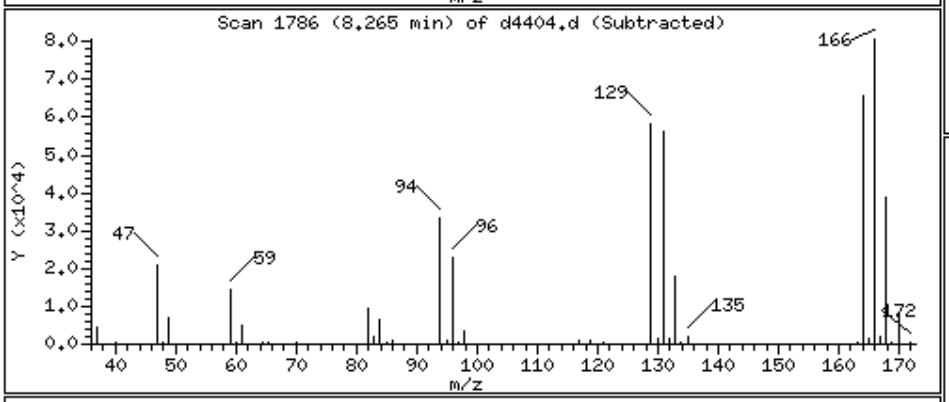
Column phase: RTX-VMS-30M

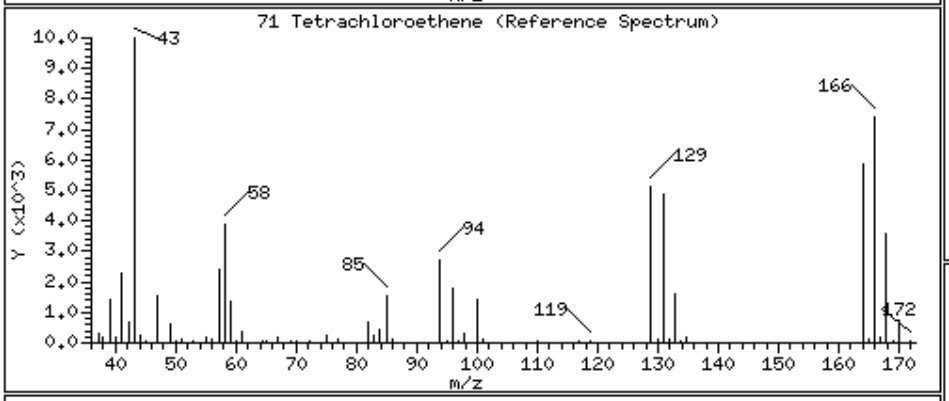
Column diameter: 0.25

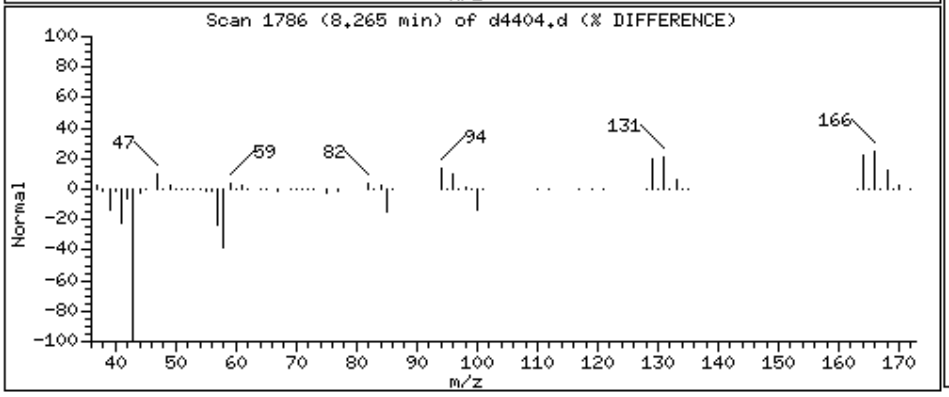
71 Tetrachloroethene

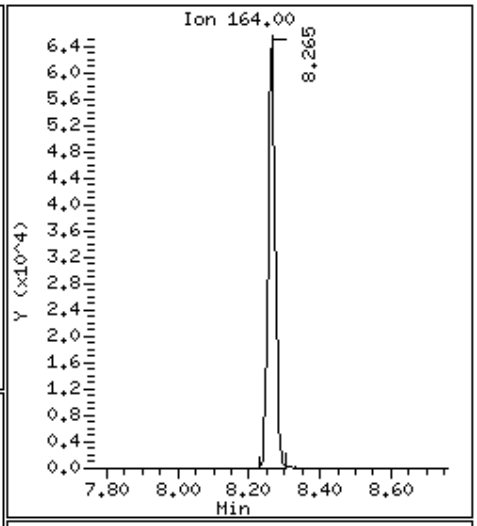
Concentration: 294000 UG/KG

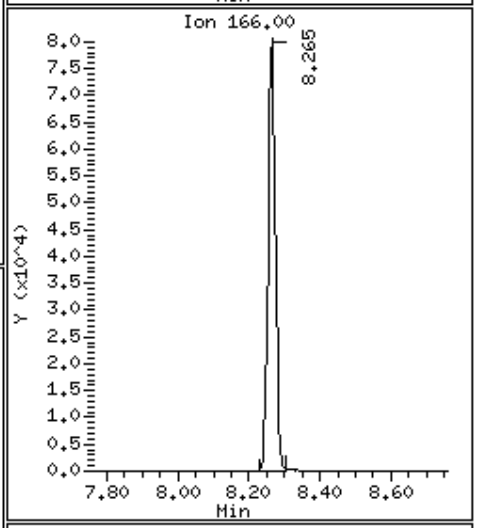


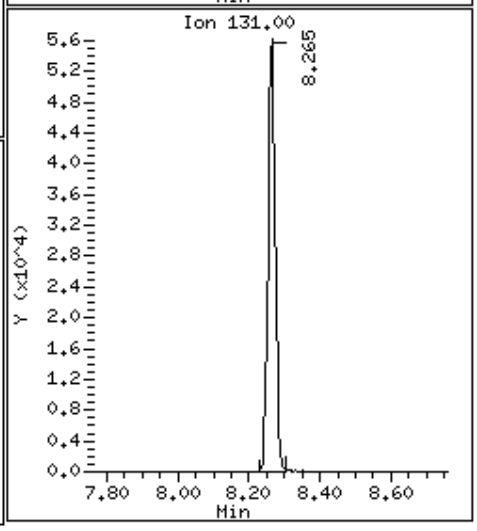






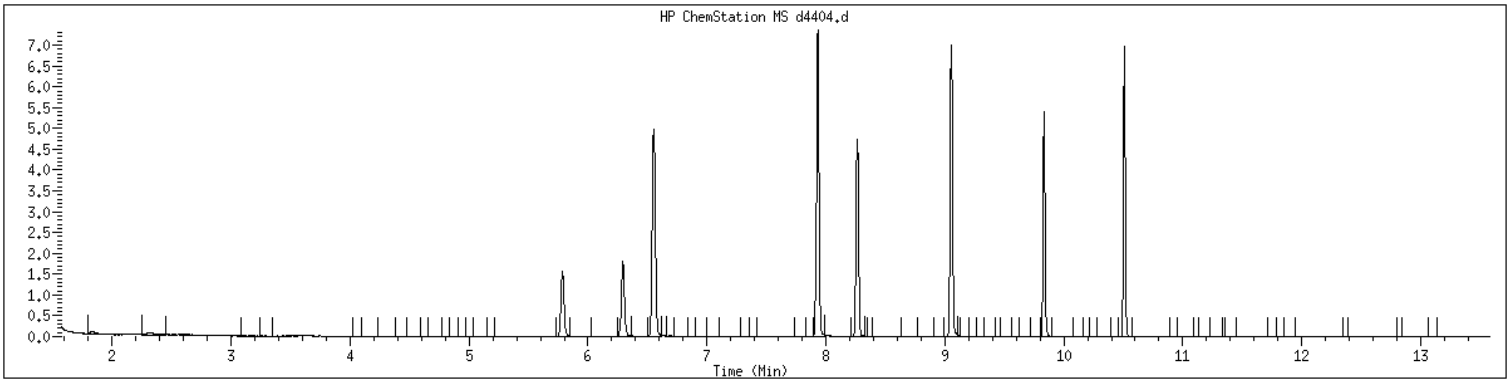






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111009 SampleType : SAMPLE
Injection Date: 05/19/2017 14:35 Instrument : msv13.i
Operator : LBH
Sample Info : 21705111009*C
Misc Info : MSV~38363~*5000*LBH
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Dilution : 5000
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB24-3-S
Collect Date:	05/10/17 Time: 1045	GCAL Sample ID:	21705111010
Matrix:	Solid % Moisture: 17.3	Instrument ID:	MSV13
Sample Amt:	6.51 g	Lab File ID:	2170519/d4405
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1000 Analyst: LBH	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 1458	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	464	U	232	464	4640
79-34-5	1,1,2,2-Tetrachloroethane	464	U	232	464	4640
79-00-5	1,1,2-Trichloroethane	464	U	232	464	4640
75-34-3	1,1-Dichloroethane	464	U	232	464	4640
75-35-4	1,1-Dichloroethene	464	U	232	464	4640
87-61-6	1,2,3-Trichlorobenzene	929	U	464	929	4640
120-82-1	1,2,4-Trichlorobenzene	929	U	464	929	4640
96-12-8	1,2-Dibromo-3-chloropropane	1860	U	464	1860	4640
106-93-4	1,2-Dibromoethane	1860	U	464	1860	4640
95-50-1	1,2-Dichlorobenzene	464	U	232	464	4640
107-06-2	1,2-Dichloroethane	464	U	232	464	4640
78-87-5	1,2-Dichloropropane	464	U	232	464	4640
541-73-1	1,3-Dichlorobenzene	464	U	232	464	4640
106-46-7	1,4-Dichlorobenzene	464	U	232	464	4640
78-93-3	2-Butanone	1860	U	464	1860	4640
591-78-6	2-Hexanone	1860	U	464	1860	4640
108-10-1	4-Methyl-2-pentanone	464	U	232	464	4640
67-64-1	Acetone	1860	U	464	1860	23200
71-43-2	Benzene	464	U	232	464	4640
74-97-5	Bromochloromethane	929	U	464	929	4640
75-27-4	Bromodichloromethane	464	U	232	464	4640
75-25-2	Bromoform	929	U	464	929	4640
74-83-9	Bromomethane	1860	U	464	1860	4640
75-15-0	Carbon disulfide	464	U	232	464	4640
56-23-5	Carbon tetrachloride	464	U	232	464	4640
108-90-7	Chlorobenzene	464	U	232	464	4640
75-00-3	Chloroethane	464	U	232	464	4640
67-66-3	Chloroform	464	U	232	464	4640
74-87-3	Chloromethane	1860	U	464	1860	4640
156-59-2	cis-1,2-Dichloroethene	464	U	232	464	4640
10061-01-5	cis-1,3-Dichloropropene	464	U	232	464	4640
110-82-7	Cyclohexane	464	U	232	464	4640
124-48-1	Dibromochloromethane	464	U	232	464	4640
75-71-8	Dichlorodifluoromethane	464	U	232	464	4640
100-41-4	Ethylbenzene	464	U	232	464	4640
98-82-8	Isopropylbenzene (Cumene)	464	U	232	464	4640

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	OMS-28-SB24-3-S
Collect Date:	05/10/17	Time:	1045	GCAL Sample ID:	21705111010
Matrix:	Solid	% Moisture:	17.3	Instrument ID:	MSV13
Sample Amt:	6.51 g			Lab File ID:	2170519/d4405
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1000	Analyst:	LBH	Analytical Batch:	610743
Analysis Date:	05/19/17	Time:	1458	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	929	U	464	929	4640
108-87-2	Methylcyclohexane	464	U	232	464	4640
75-09-2	Methylene chloride	1860	U	929	1860	9290
100-42-5	Styrene	464	U	232	464	4640
1634-04-4	tert-Butyl methyl ether (MTBE)	464	U	232	464	4640
127-18-4	Tetrachloroethene	53700		464	929	4640
108-88-3	Toluene	464	U	232	464	4640
156-60-5	trans-1,2-Dichloroethene	464	U	232	464	4640
10061-02-6	trans-1,3-Dichloropropene	464	U	232	464	4640
79-01-6	Trichloroethene	464	U	232	464	4640
75-69-4	Trichlorofluoromethane	464	U	232	464	4640
76-13-1	Trichlorotrifluoroethane	929	U	464	929	4640
75-01-4	Vinyl chloride	464	U	232	464	4640
1330-20-7	Xylene (total)	1390	U	464	1390	13900

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170519.s.b/d4405.d
Lab Smp Id: 21705111010 Client Smp ID: C
Inj Date : 19-MAY-2017 14:58
Operator : LBH Inst ID: msv13.i
Smp Info : 21705111010*C
Misc Info : MSV~38363~*1000*LBH
Comment :
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Meth Date : 20-May-2017 12:42 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1
Dil Factor: 1000.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100))/5000 * CpndVariable

Name	Value	Description
DF	1000.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Ws	6.51000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
m	0.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (UG/KG)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.788	5.784	(0.883)	97892	47.1267	36200	9476
$ 50 1,2-Dichloroethane-d4	67	6.294	6.290	(0.961)	64047	51.6257	39700	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	437381	50.0000		
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	406867	48.8627	37500	
71 Tetrachloroethene	164	8.265	8.262	(0.913)	101331	57.7996	44400	
* 84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	170592	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	113610	41.2318	31700	(R)
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	132807	50.0000		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /var/chem/msv13.i/2170519.s.b/d4405.d

Date : 19-MAY-2017 14:58

Client ID: C

Instrument: msv13.i

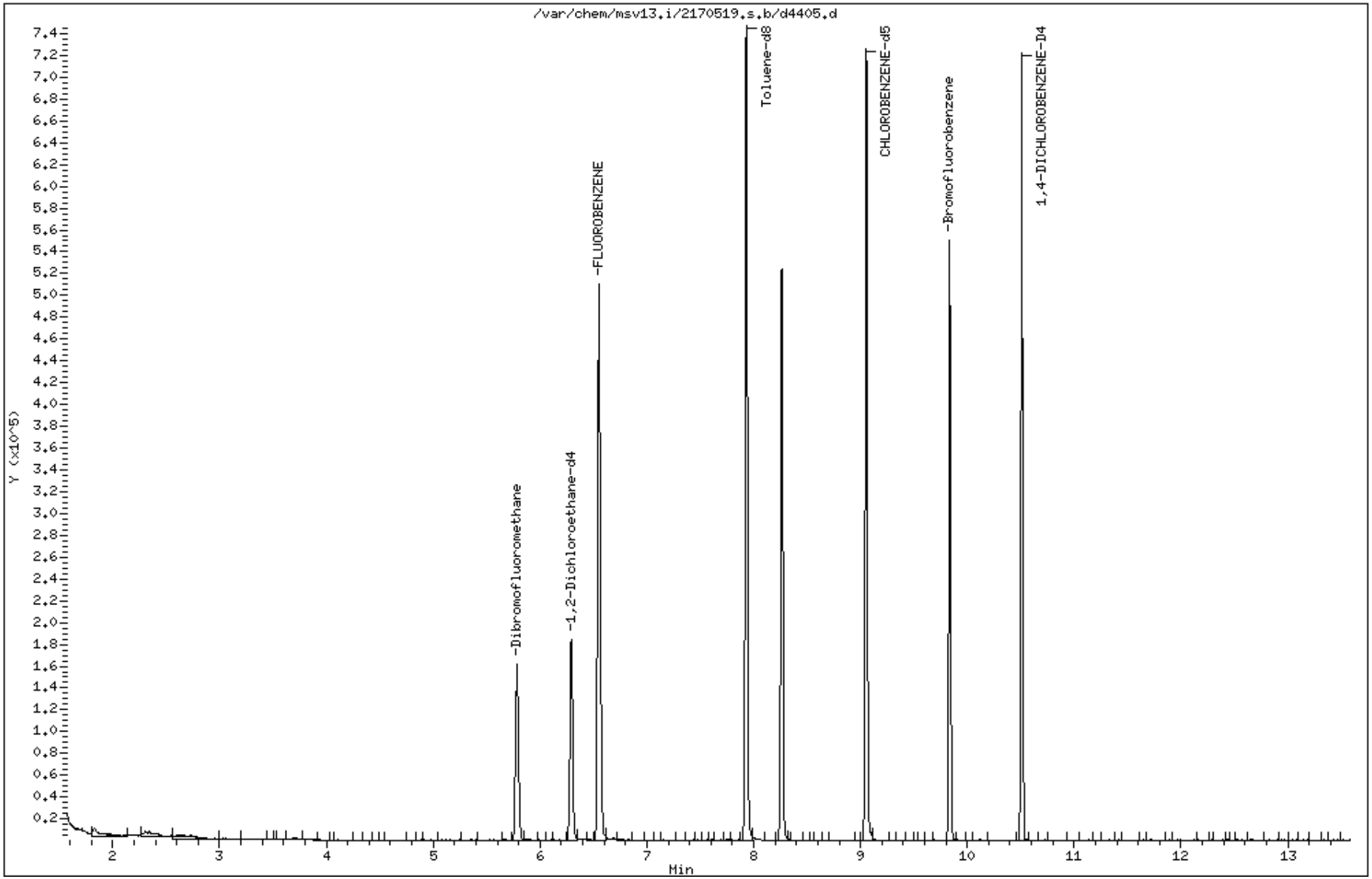
Sample Info: 21705111010*C

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170519.s.b/d4405.d

Date : 19-MAY-2017 14:58

Client ID: C

Instrument: msv13.i

Sample Info: 21705111010*C

Purge Volume: 5.0

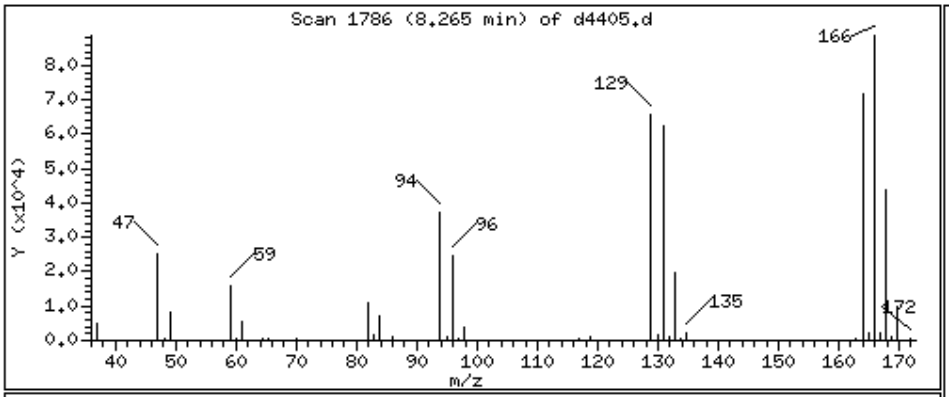
Operator: LBH

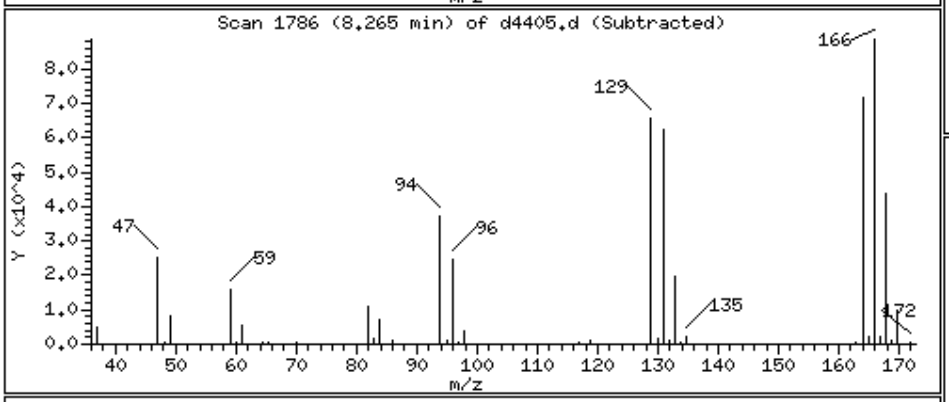
Column phase: RTX-VMS-30M

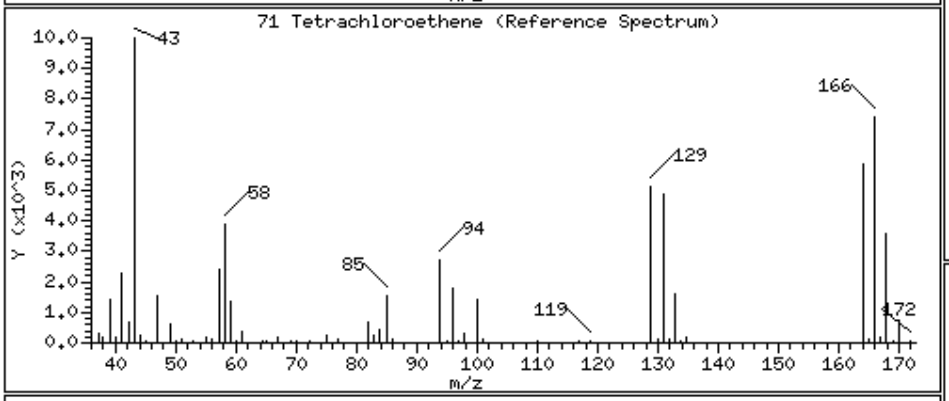
Column diameter: 0.25

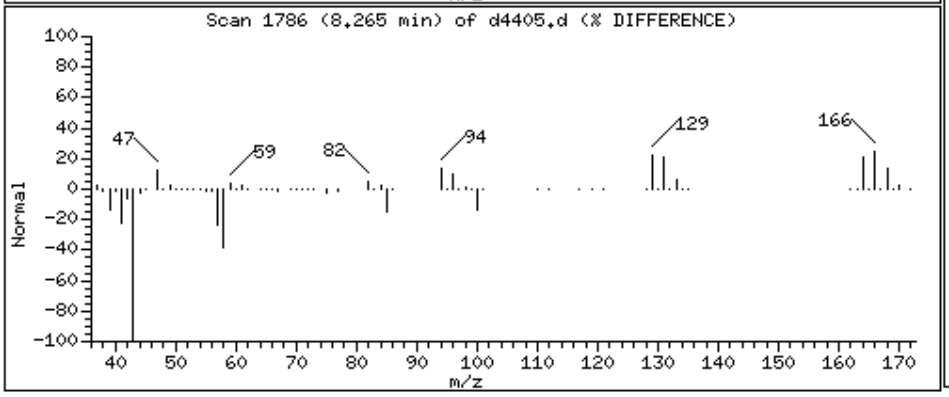
71 Tetrachloroethene

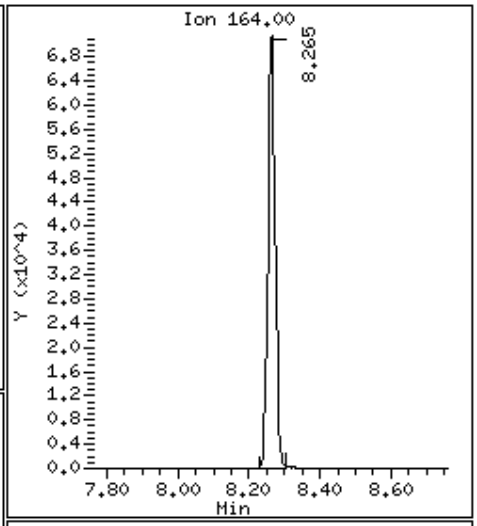
Concentration: 44400 UG/KG

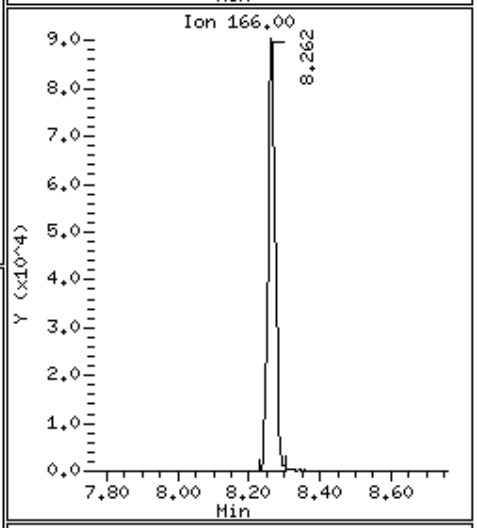


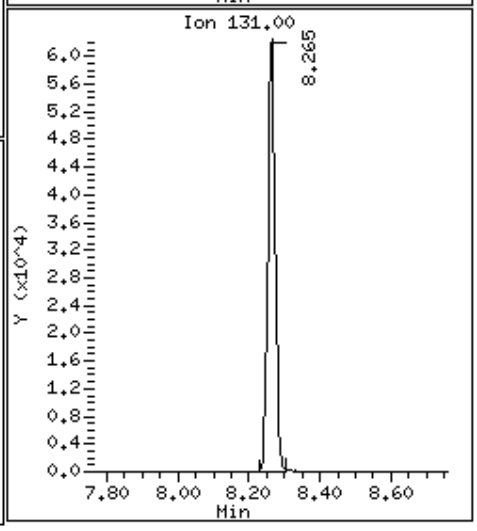






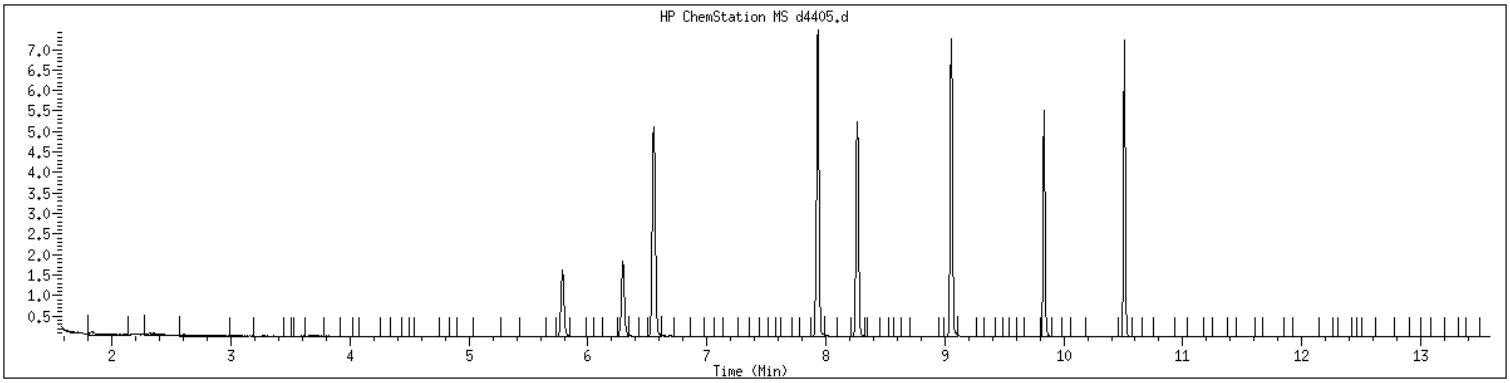






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111010 SampleType : SAMPLE
Injection Date: 05/19/2017 14:58 Instrument : msv13.i
Operator : LBH
Sample Info : 21705111010*C
Misc Info : MSV~38363~*1000*LBH
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Dilution : 1000
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-SB24-5-S
Collect Date:	05/10/17 Time: 1050	GCAL Sample ID:	21705111011
Matrix:	Solid % Moisture: 17.4	Instrument ID:	MSV13
Sample Amt:	6.58 g	Lab File ID:	2170519/d4406
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	500 Analyst: LBH	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 1520	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	230	U	115	230	2300
79-34-5	1,1,2,2-Tetrachloroethane	230	U	115	230	2300
79-00-5	1,1,2-Trichloroethane	230	U	115	230	2300
75-34-3	1,1-Dichloroethane	230	U	115	230	2300
75-35-4	1,1-Dichloroethene	230	U	115	230	2300
87-61-6	1,2,3-Trichlorobenzene	460	U	230	460	2300
120-82-1	1,2,4-Trichlorobenzene	460	U	230	460	2300
96-12-8	1,2-Dibromo-3-chloropropane	920	U	230	920	2300
106-93-4	1,2-Dibromoethane	920	U	230	920	2300
95-50-1	1,2-Dichlorobenzene	230	U	115	230	2300
107-06-2	1,2-Dichloroethane	230	U	115	230	2300
78-87-5	1,2-Dichloropropane	230	U	115	230	2300
541-73-1	1,3-Dichlorobenzene	230	U	115	230	2300
106-46-7	1,4-Dichlorobenzene	230	U	115	230	2300
78-93-3	2-Butanone	920	U	230	920	2300
591-78-6	2-Hexanone	920	U	230	920	2300
108-10-1	4-Methyl-2-pentanone	230	U	115	230	2300
67-64-1	Acetone	920	U	230	920	11500
71-43-2	Benzene	230	U	115	230	2300
74-97-5	Bromochloromethane	460	U	230	460	2300
75-27-4	Bromodichloromethane	230	U	115	230	2300
75-25-2	Bromoform	460	U	230	460	2300
74-83-9	Bromomethane	920	U	230	920	2300
75-15-0	Carbon disulfide	230	U	115	230	2300
56-23-5	Carbon tetrachloride	230	U	115	230	2300
108-90-7	Chlorobenzene	230	U	115	230	2300
75-00-3	Chloroethane	230	U	115	230	2300
67-66-3	Chloroform	230	U	115	230	2300
74-87-3	Chloromethane	920	U	230	920	2300
156-59-2	cis-1,2-Dichloroethene	230	U	115	230	2300
10061-01-5	cis-1,3-Dichloropropene	230	U	115	230	2300
110-82-7	Cyclohexane	230	U	115	230	2300
124-48-1	Dibromochloromethane	230	U	115	230	2300
75-71-8	Dichlorodifluoromethane	230	U	115	230	2300
100-41-4	Ethylbenzene	230	U	115	230	2300
98-82-8	Isopropylbenzene (Cumene)	230	U	115	230	2300

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	OMS-28-SB24-5-S
Collect Date:	05/10/17	Time:	1050	GCAL Sample ID:	21705111011
Matrix:	Solid	% Moisture:	17.4	Instrument ID:	MSV13
Sample Amt:	6.58 g			Lab File ID:	2170519/d4406
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	500	Analyst:	LBH	Analytical Batch:	610743
Analysis Date:	05/19/17	Time:	1520	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	460	U	230	460	2300
108-87-2	Methylcyclohexane	230	U	115	230	2300
75-09-2	Methylene chloride	920	U	460	920	4600
100-42-5	Styrene	230	U	115	230	2300
1634-04-4	tert-Butyl methyl ether (MTBE)	230	U	115	230	2300
127-18-4	Tetrachloroethene	24400		230	460	2300
108-88-3	Toluene	230	U	115	230	2300
156-60-5	trans-1,2-Dichloroethene	230	U	115	230	2300
10061-02-6	trans-1,3-Dichloropropene	230	U	115	230	2300
79-01-6	Trichloroethene	230	U	115	230	2300
75-69-4	Trichlorofluoromethane	230	U	115	230	2300
76-13-1	Trichlorotrifluoroethane	460	U	230	460	2300
75-01-4	Vinyl chloride	230	U	115	230	2300
1330-20-7	Xylene (total)	690	U	230	690	6900

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170519.s.b/d4406.d
Lab Smp Id: 21705111011 Client Smp ID: C
Inj Date : 19-MAY-2017 15:20
Operator : LBH Inst ID: msv13.i
Smp Info : 21705111011*C
Misc Info : MSV~38363~*500*LBH
Comment :
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Meth Date : 20-May-2017 12:42 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1
Dil Factor: 500.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100))/5000 * CpndVariable

Name	Value	Description
DF	500.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Ws	6.58000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
m	0.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (UG/KG)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	97350	48.0677	18300	9507
$ 50 1,2-Dichloroethane-d4	67	6.293	6.290	(0.961)	64077	52.9746	20100	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	426444	50.0000		
$ 68 Toluene-d8	98	7.931	7.928	(0.876)	400122	49.2958	18700	
71 Tetrachloroethene	164	8.265	8.262	(0.913)	90917	53.2011	20200	
* 84 CHLOROBENZENE-d5	82	9.052	9.053	(1.000)	166290	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	110734	41.2277	15700	(R)
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	128793	50.0000		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /var/chem/msv13.i/2170519.s.b/d4406.d

Date : 19-MAY-2017 15:20

Client ID: C

Instrument: msv13.i

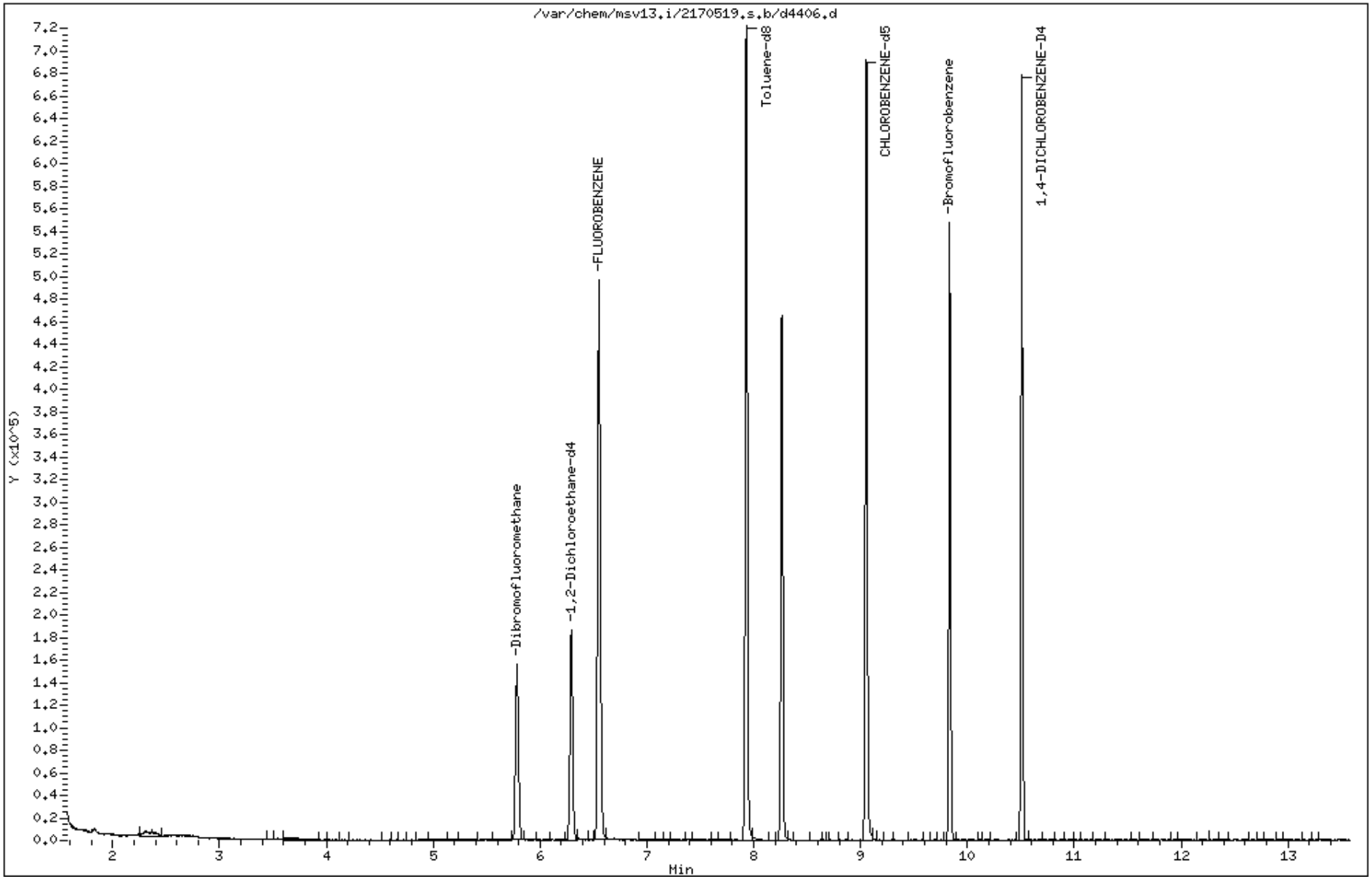
Sample Info: 21705111011*C

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



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Date : 19-MAY-2017 15:20

Client ID: C

Instrument: msv13.i

Sample Info: 21705111011*C

Purge Volume: 5.0

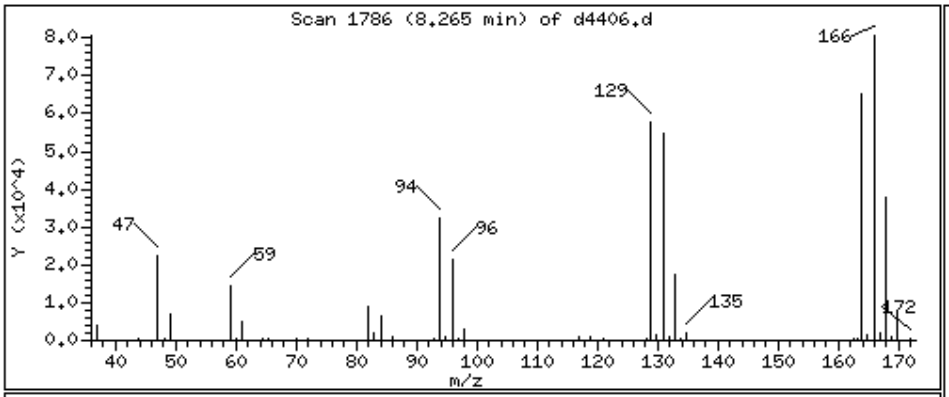
Operator: LBH

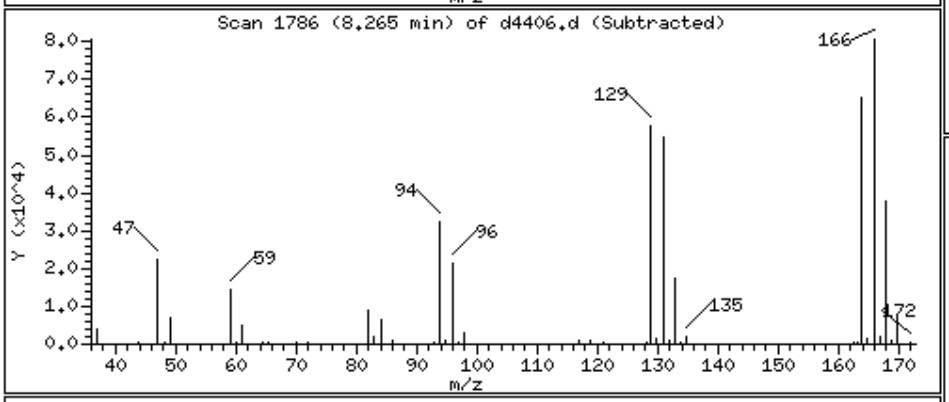
Column phase: RTX-VMS-30M

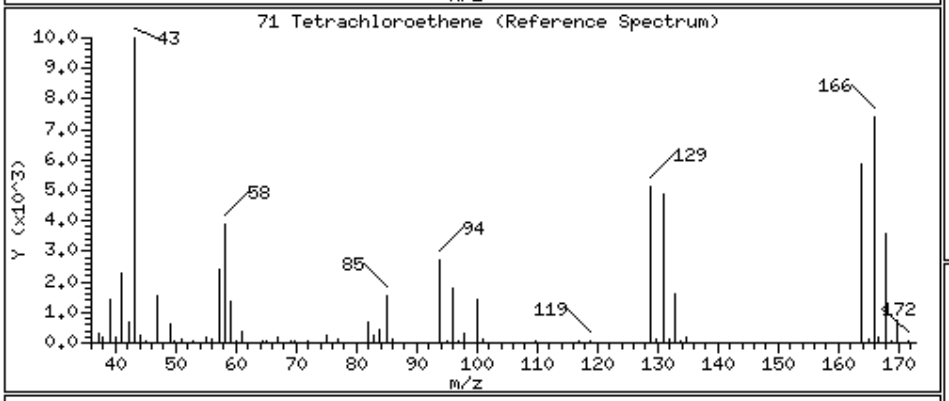
Column diameter: 0.25

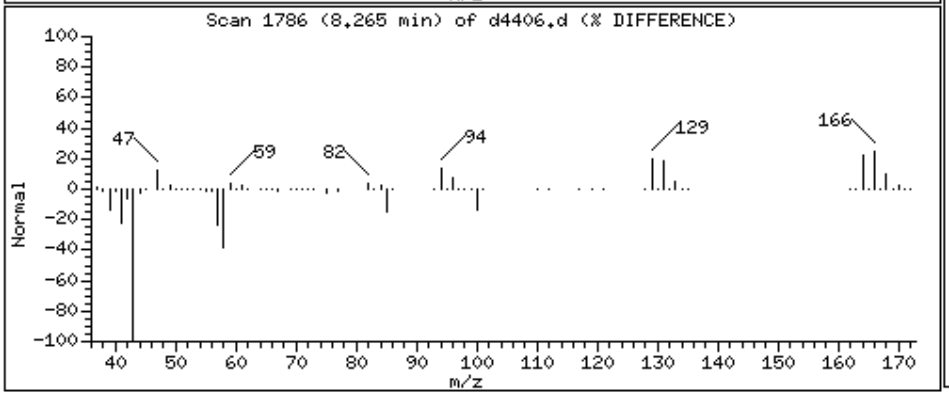
71 Tetrachloroethene

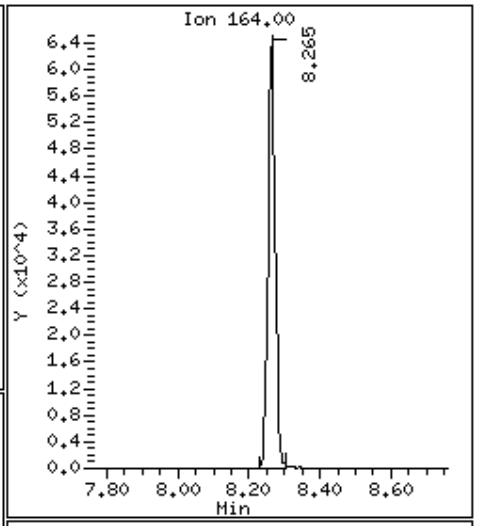
Concentration: 20200 UG/KG

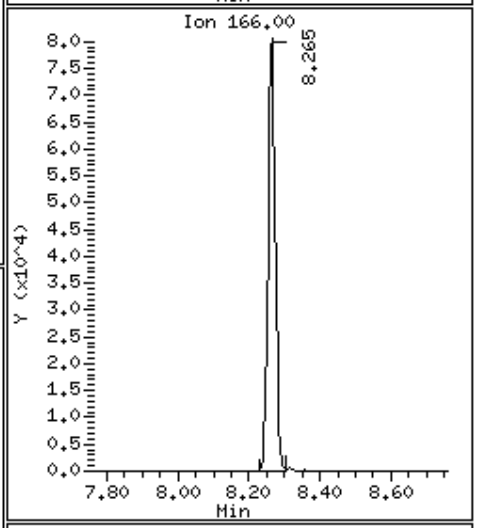


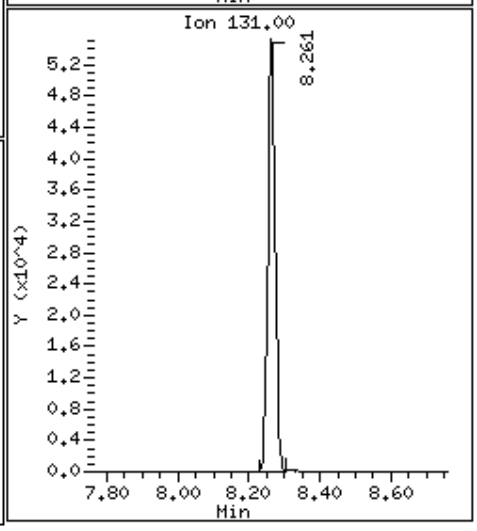






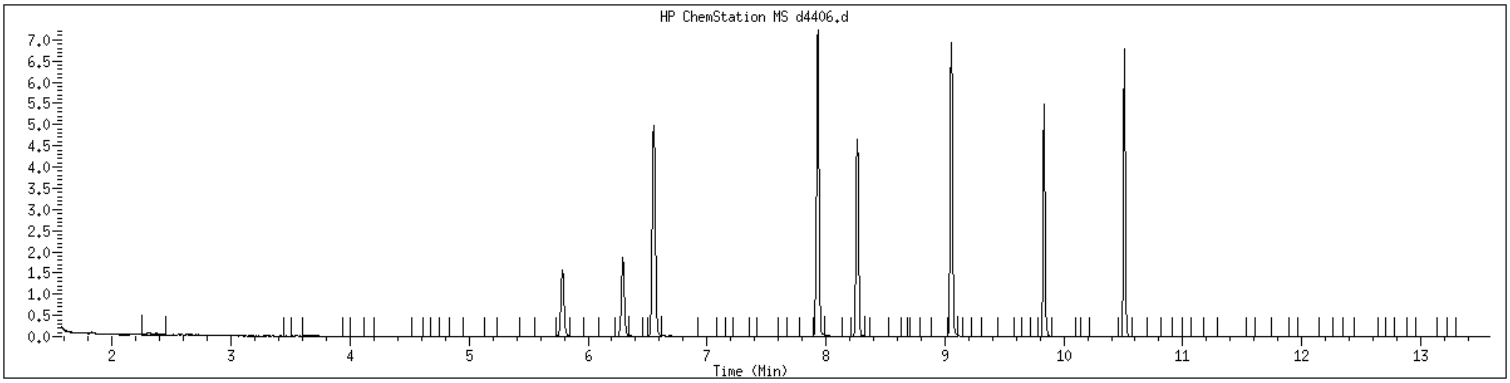






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111011 SampleType : SAMPLE
Injection Date: 05/19/2017 15:20 Instrument : msv13.i
Operator : LBH
Sample Info : 21705111011*C
Misc Info : MSV~38363~*500*LBH
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Dilution : 500
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-GW28-12-S
Collect Date:	05/10/17 Time: 1205	GCAL Sample ID:	21705111012
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3265
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1409	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	OMS-28-GW28-12-S
Collect Date:	05/10/17 Time: 1205	GCAL Sample ID:	21705111012
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3265
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1409	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.863	J	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.751	J	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170513.s.b/b3265.d
Lab Smp Id: 21705111012 Client Smp ID: 21705111012
Inj Date : 13-MAY-2017 14:09
Operator : IXE Inst ID: msv14.i
Smp Info : 21705111012*
Misc Info : MSV~38321~*1*IXE
Comment :
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Meth Date : 16-May-2017 11:14 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	191332	52.0236	52.0	6890
$ 43 1,2-Dichloroethane-d4	67	6.422	6.422	(0.961)	123490	50.5318	50.5	
* 47 FLUOROBENZENE	96	6.680	6.680	(1.000)	723977	50.0000		
49 Trichloroethene	130	6.830	6.830	(1.022)	2737	0.75107	0.751	
$ 60 Toluene-d8	98	8.045	8.041	(0.879)	694621	50.5890	50.6	
66 Tetrachloroethene	164	8.367	8.371	(0.914)	2264	0.86256	0.863	
* 71 CHLOROBENZENE-d5	82	9.154	9.151	(1.000)	291037	50.0000		
$ 80 Bromofluorobenzene	174	9.930	9.927	(1.085)	172902	49.3986	49.4	
* 97 1,4-DICHLOROBENZENE-D4	152	10.605	10.605	(1.000)	208923	50.0000		

Data File: /var/chem/msv14.i/2170513.s.b/b3265.d

Date : 13-MAY-2017 14:09

Client ID: 21705111012

Instrument: msv14.i

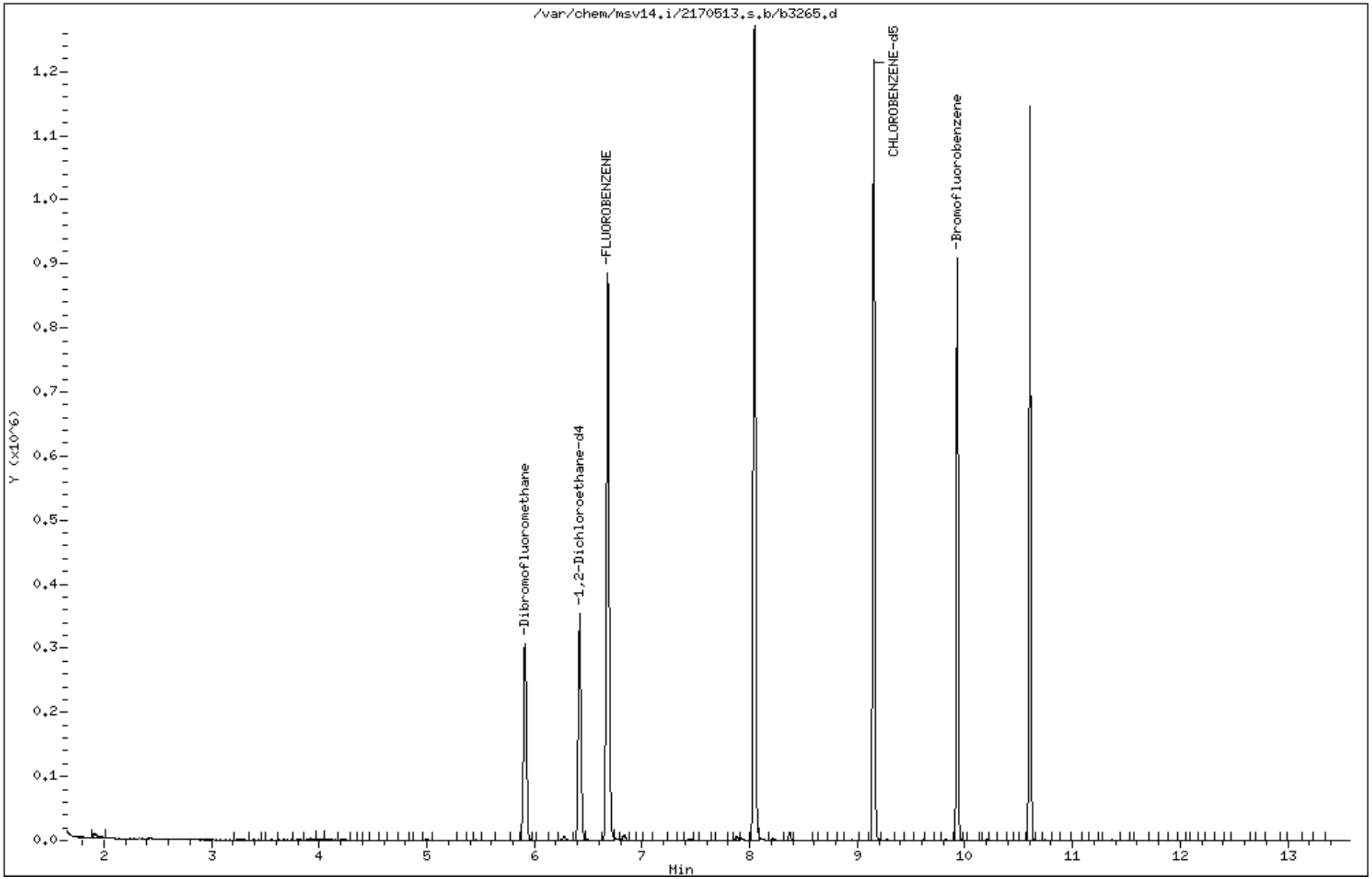
Sample Info: 21705111012*

Purge Volume: 5.0

Operator: IXE

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170513.s.b/b3265.d

Date : 13-MAY-2017 14:09

Client ID: 21705111012

Instrument: msv14.i

Sample Info: 21705111012x

Purge Volume: 5.0

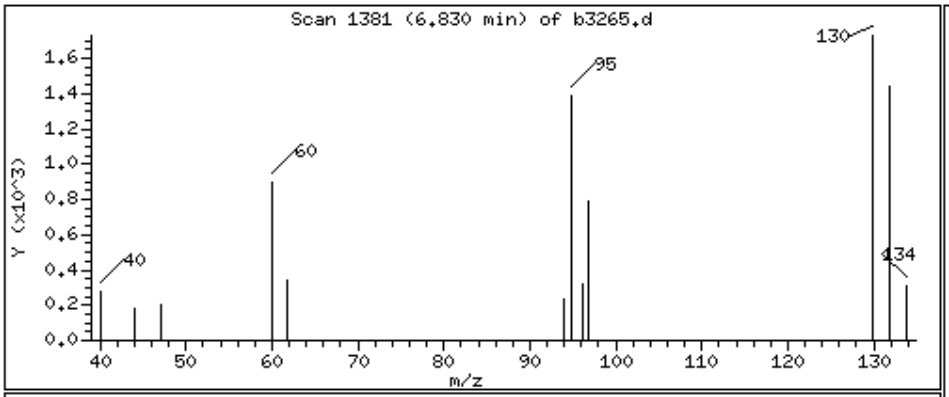
Operator: IXE

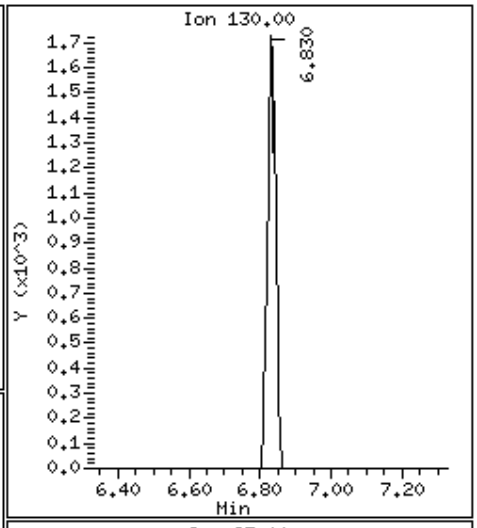
Column phase: RTX-VMS-30M

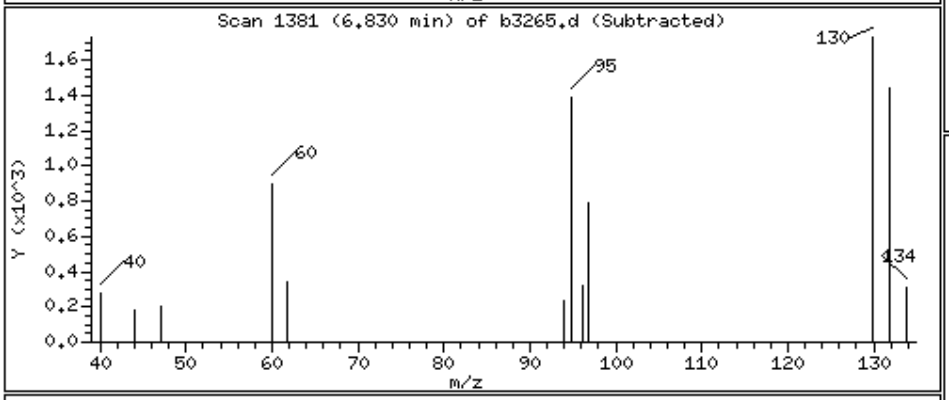
Column diameter: 0.25

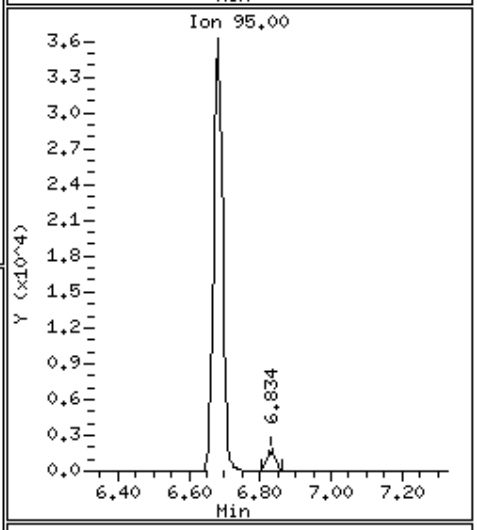
49 Trichloroethene

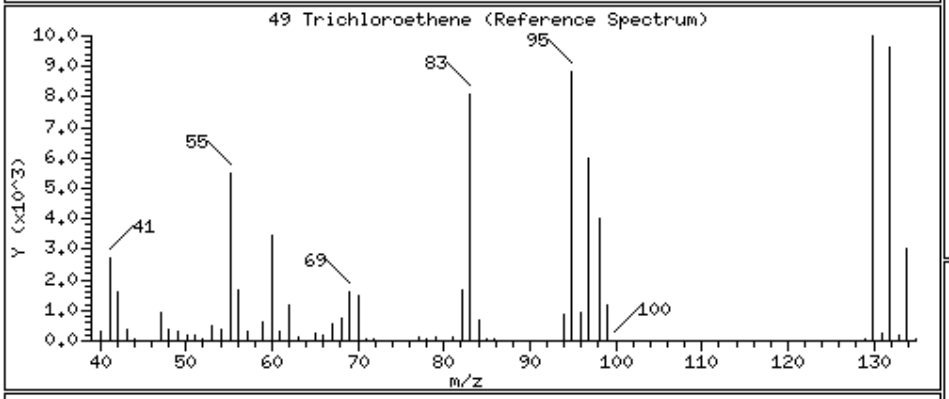
Concentration: 0.751 ug/L

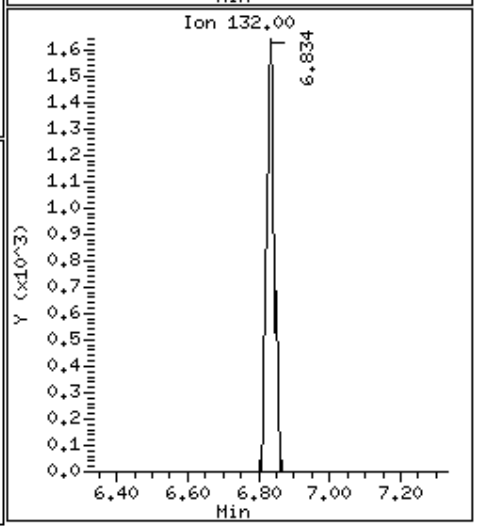


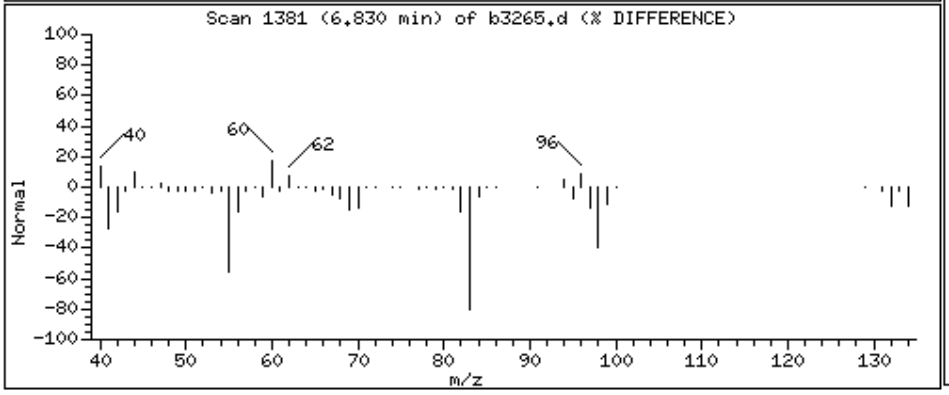












Data File: /var/chem/msv14.i/2170513.s.b/b3265.d

Date : 13-MAY-2017 14:09

Client ID: 21705111012

Instrument: msv14.i

Sample Info: 21705111012x

Purge Volume: 5.0

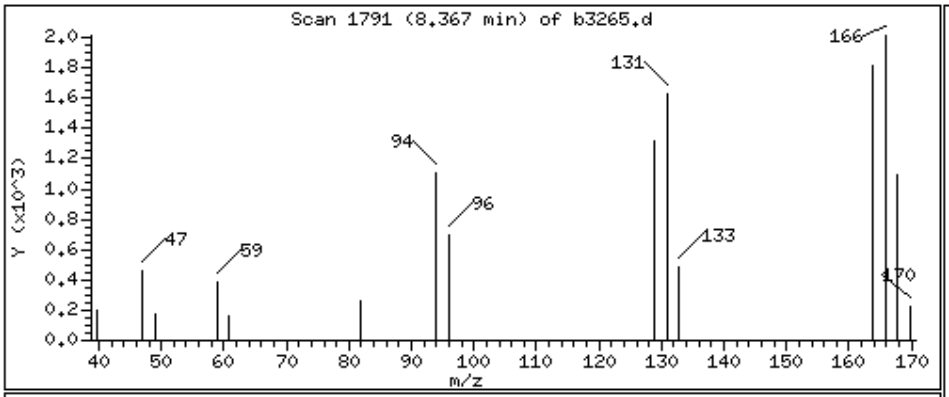
Operator: IXE

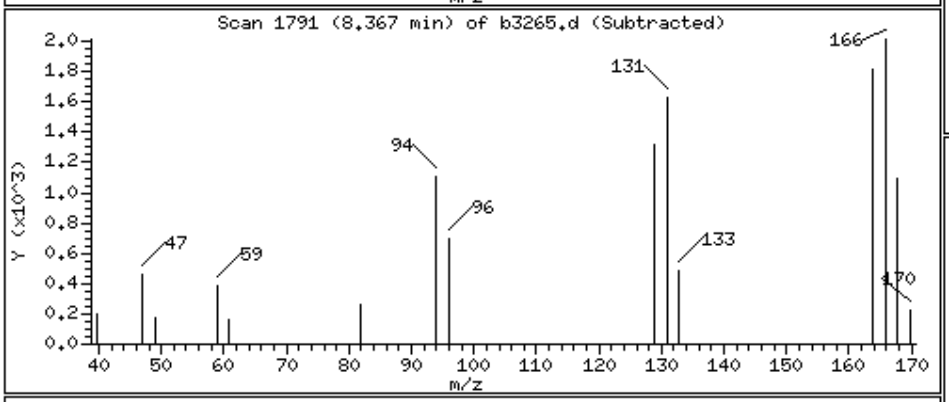
Column phase: RTX-VMS-30M

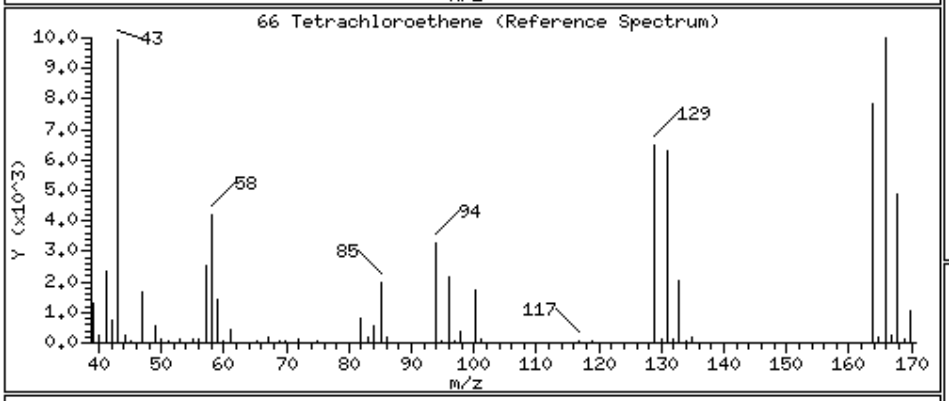
Column diameter: 0.25

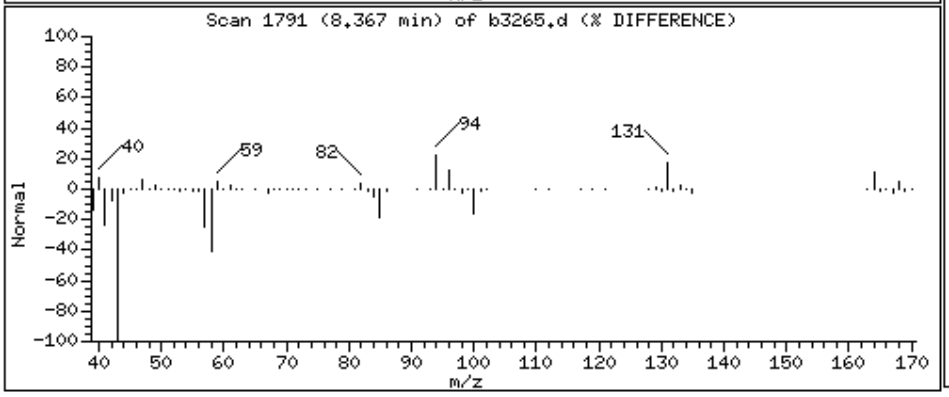
66 Tetrachloroethene

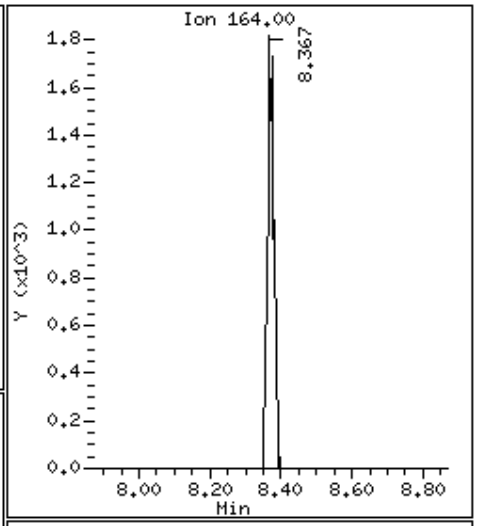
Concentration: 0.863 ug/L

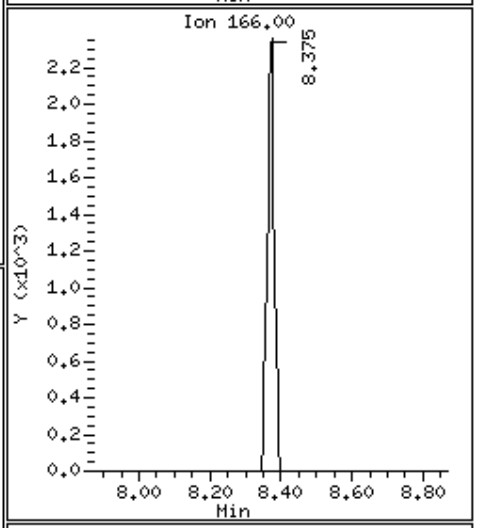


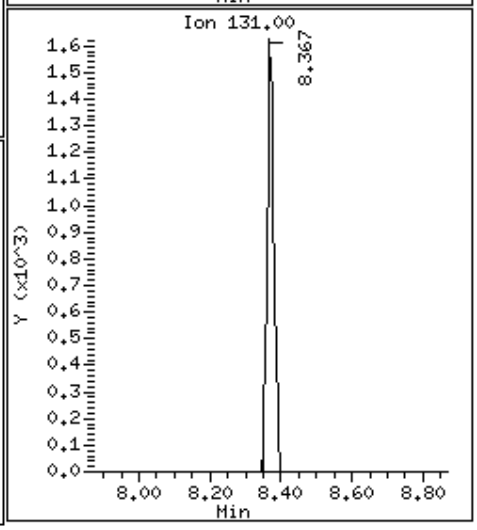






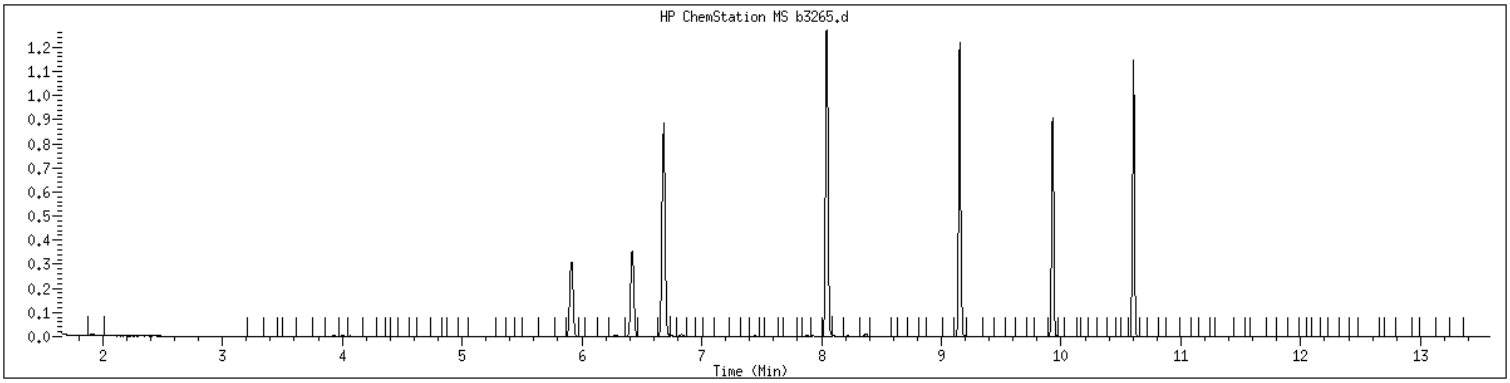






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705111012 SampleType : SAMPLE
Injection Date: 05/13/2017 14:09 Instrument : msv14.i
Operator : IXE
Sample Info : 21705111012*
Misc Info : MSV~38321~*1*IXE
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	MB1684001
Collect Date:	NA Time: NA	GCAL Sample ID:	1684001
Matrix:	Solid % Moisture: NA	Instrument ID:	MSV11
Sample Amt:	5 g	Lab File ID:	2170514/i7168
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1415	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.250	0.500	5.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.250	0.500	5.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.250	0.500	5.00
75-34-3	1,1-Dichloroethane	0.500	U	0.250	0.500	5.00
75-35-4	1,1-Dichloroethene	0.500	U	0.250	0.500	5.00
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.500	1.00	5.00
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.500	1.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane	2.00	U	0.500	2.00	5.00
106-93-4	1,2-Dibromoethane	2.00	U	0.500	2.00	5.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.250	0.500	5.00
107-06-2	1,2-Dichloroethane	0.500	U	0.250	0.500	5.00
78-87-5	1,2-Dichloropropane	0.500	U	0.250	0.500	5.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.250	0.500	5.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.250	0.500	5.00
78-93-3	2-Butanone	2.00	U	0.500	2.00	5.00
591-78-6	2-Hexanone	2.00	U	0.500	2.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.250	0.500	5.00
67-64-1	Acetone	2.00	U	0.500	2.00	25.0
71-43-2	Benzene	0.500	U	0.250	0.500	5.00
74-97-5	Bromochloromethane	1.00	U	0.500	1.00	5.00
75-27-4	Bromodichloromethane	0.500	U	0.250	0.500	5.00
75-25-2	Bromoform	1.00	U	0.500	1.00	5.00
74-83-9	Bromomethane	2.00	U	0.500	2.00	5.00
75-15-0	Carbon disulfide	0.500	U	0.250	0.500	5.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	5.00
108-90-7	Chlorobenzene	0.500	U	0.250	0.500	5.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	5.00
67-66-3	Chloroform	0.500	U	0.250	0.500	5.00
74-87-3	Chloromethane	2.00	U	0.500	2.00	5.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.250	0.500	5.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.250	0.500	5.00
110-82-7	Cyclohexane	0.500	U	0.250	0.500	5.00
124-48-1	Dibromochloromethane	0.500	U	0.250	0.500	5.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.250	0.500	5.00
100-41-4	Ethylbenzene	0.500	U	0.250	0.500	5.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.250	0.500	5.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	MB1684001
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1684001
Matrix:	Solid	% Moisture:	NA	Instrument ID:	MSV11
Sample Amt:	5 g			Lab File ID:	2170514/i7168
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17	Time:	1415	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	1.00	U	0.500	1.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.250	0.500	5.00
75-09-2	Methylene chloride	1.61	J	1.00	2.00	10.0
100-42-5	Styrene	0.500	U	0.250	0.500	5.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.250	0.500	5.00
127-18-4	Tetrachloroethene	1.00	U	0.500	1.00	5.00
108-88-3	Toluene	0.500	U	0.250	0.500	5.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.250	0.500	5.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.250	0.500	5.00
79-01-6	Trichloroethene	0.500	U	0.250	0.500	5.00
75-69-4	Trichlorofluoromethane	0.500	U	0.250	0.500	5.00
76-13-1	Trichlorotrifluoroethane	1.00	U	0.500	1.00	5.00
75-01-4	Vinyl chloride	0.500	U	0.250	0.500	5.00
1330-20-7	Xylene (total)	1.50	U	0.500	1.50	15.0

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7168.d
Lab Smp Id: 1684001 Client Smp ID: MB
Inj Date : 14-MAY-2017 14:15
Operator : JMC2 Inst ID: msv11.i
Smp Info : 1684001*MB
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
18 Methylene Chloride	49	4.085	4.091	(0.573)	5554	1.60643	1.61	7306(H)
$ 42 Dibromofluoromethane	111	6.283	6.283	(0.881)	120722	49.5722	49.6	6014
$ 50 1,2-Dichloroethane-d4	67	6.843	6.843	(0.960)	71343	47.5609	47.6	9651
* 54 FLUOROBENZENE	96	7.130	7.133	(1.000)	481145	50.0000		9560
$ 74 Toluene-d8	98	8.661	8.661	(0.872)	457931	53.4063	53.4	9536
* 90 Chlorobenzene-d5	82	9.936	9.933	(1.000)	190728	50.0000		6963
$ 103 Bromofluorobenzene	174	10.834	10.834	(1.090)	149164	50.5071	50.5	9480
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	171624	50.0000		6778

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /var/chem/msv11.i/2170514.s.b/i7168.d

Date : 14-MAY-2017 14:15

Client ID: MB

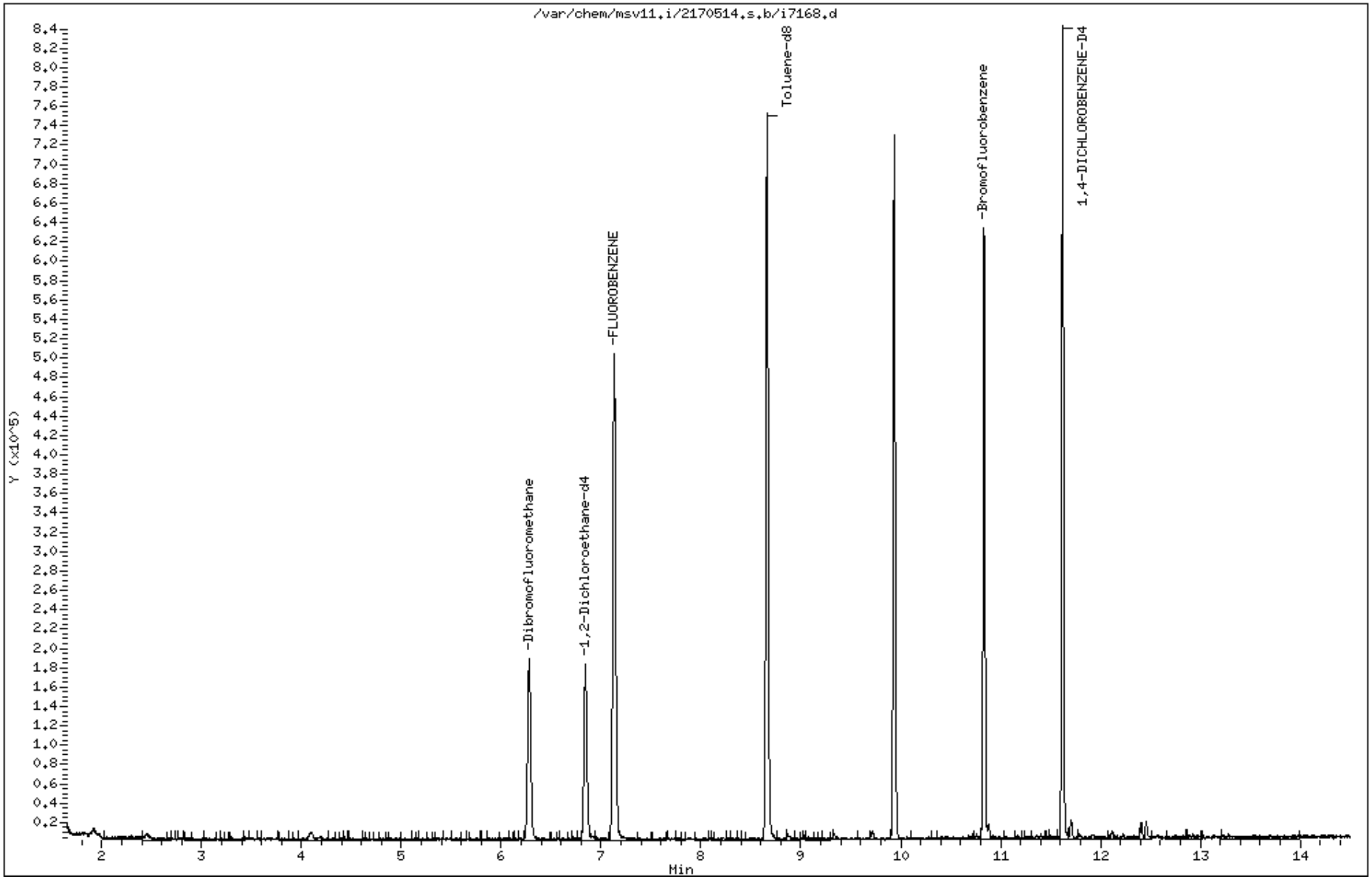
Instrument: msv11.i

Sample Info: 1684001*MB

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170514.s.b/i7168.d

Date : 14-MAY-2017 14:15

Client ID: MB

Instrument: msv11.i

Sample Info: 1684001*MB

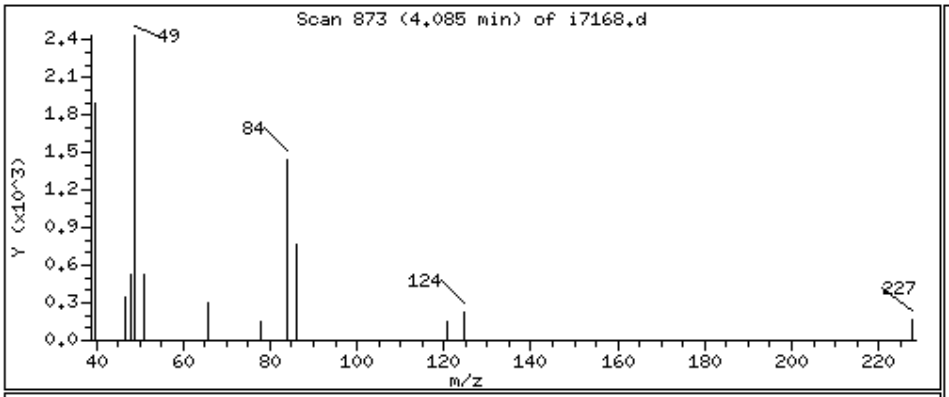
Operator: JMC2

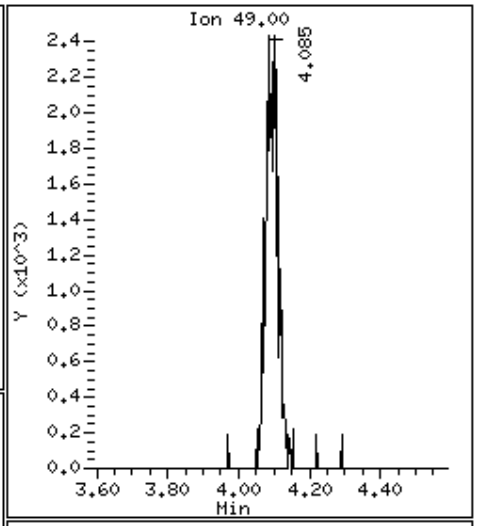
Column phase: RTX-VMS-30M

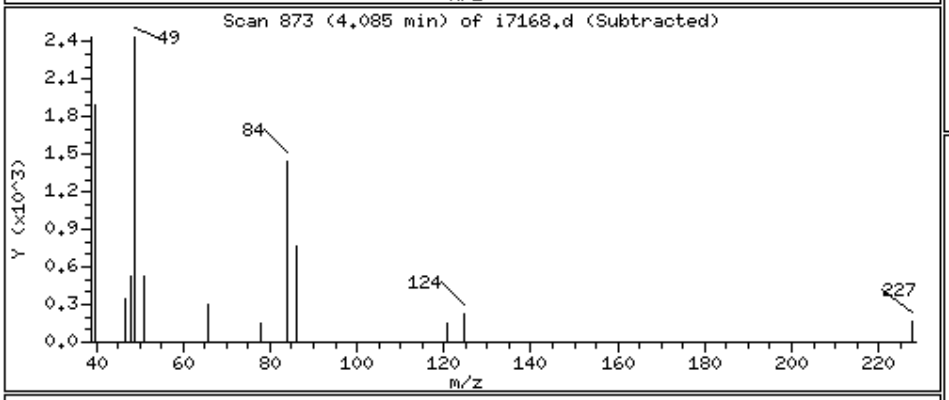
Column diameter: 0.25

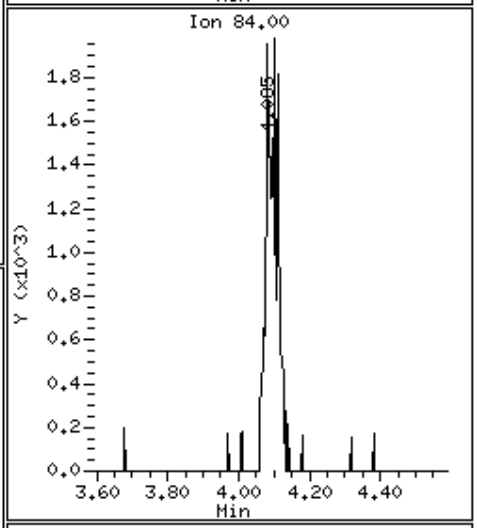
18 Methylene Chloride

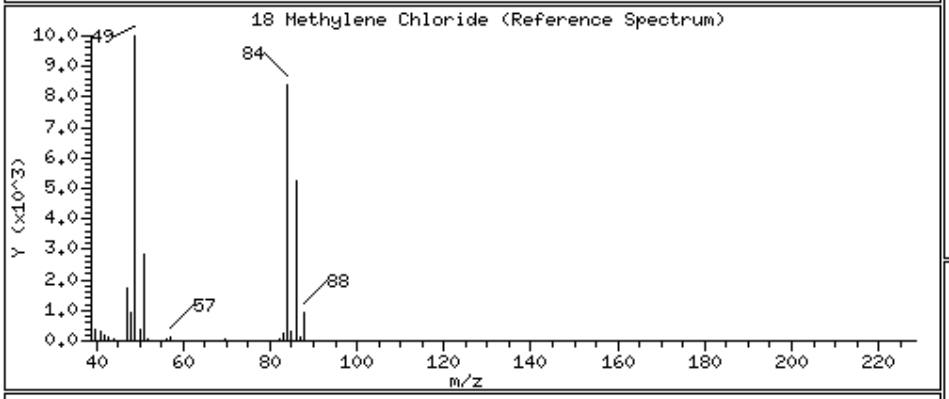
Concentration: 1.61 ug/Kg

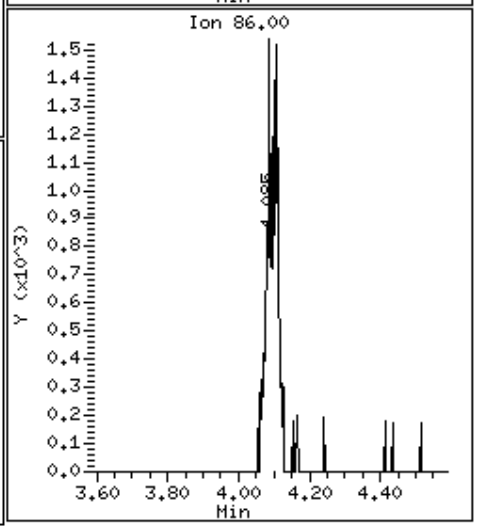


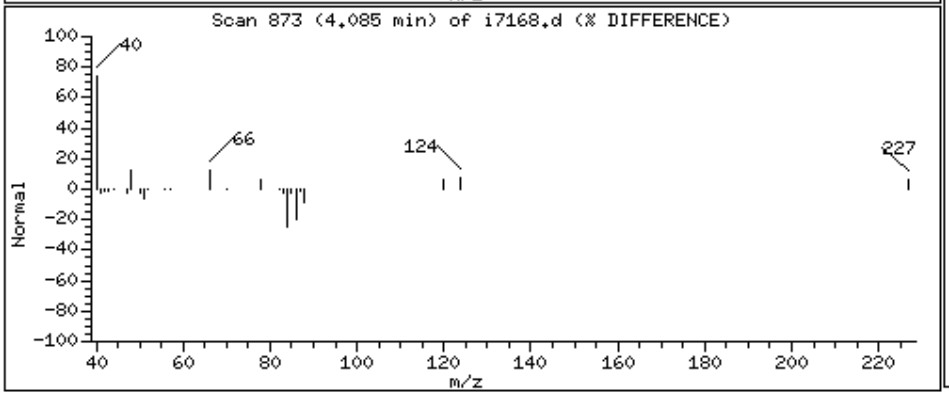






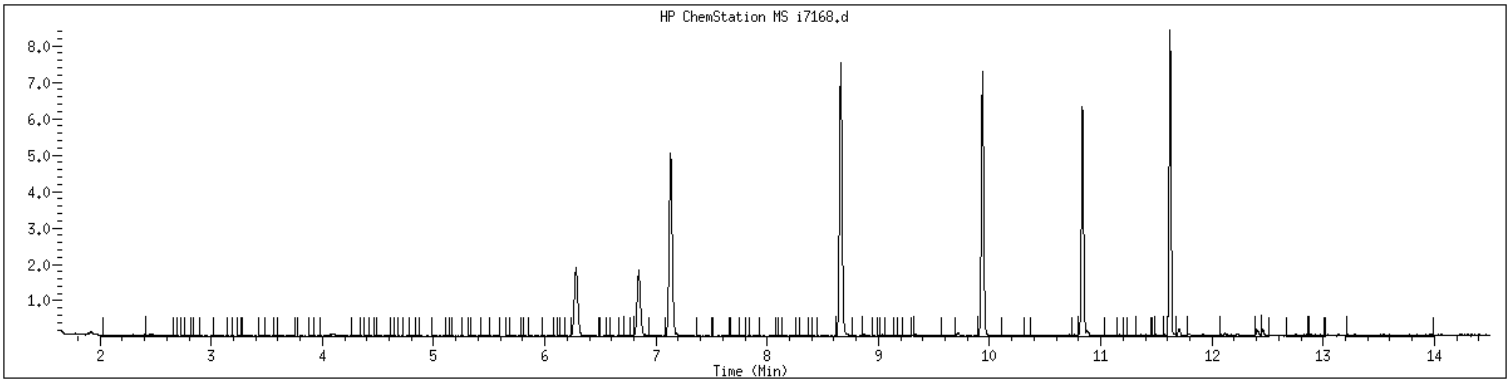






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684001 SampleType : BLANK
Injection Date: 05/14/2017 14:15 Instrument : msv11.i
Operator : JMC2
Sample Info : 1684001*MB
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	LCS1684002
Collect Date:	NA Time: NA	GCAL Sample ID:	1684002
Matrix:	Solid % Moisture: NA	Instrument ID:	MSV11
Sample Amt:	5 g	Lab File ID:	2170514/i7164
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1242	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	48.3		0.250	0.500	5.00
79-34-5	1,1,2,2-Tetrachloroethane	51.1		0.250	0.500	5.00
79-00-5	1,1,2-Trichloroethane	51.9		0.250	0.500	5.00
75-34-3	1,1-Dichloroethane	46.3		0.250	0.500	5.00
75-35-4	1,1-Dichloroethene	48.3		0.250	0.500	5.00
87-61-6	1,2,3-Trichlorobenzene	56.3		0.500	1.00	5.00
120-82-1	1,2,4-Trichlorobenzene	57.1		0.500	1.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane	56.8		0.500	2.00	5.00
106-93-4	1,2-Dibromoethane	52.6		0.500	2.00	5.00
95-50-1	1,2-Dichlorobenzene	51.7		0.250	0.500	5.00
107-06-2	1,2-Dichloroethane	44.4		0.250	0.500	5.00
78-87-5	1,2-Dichloropropane	44.0		0.250	0.500	5.00
541-73-1	1,3-Dichlorobenzene	49.8		0.250	0.500	5.00
106-46-7	1,4-Dichlorobenzene	48.7		0.250	0.500	5.00
78-93-3	2-Butanone	51.0		0.500	2.00	5.00
591-78-6	2-Hexanone	54.5		0.500	2.00	5.00
108-10-1	4-Methyl-2-pentanone	52.7		0.250	0.500	5.00
67-64-1	Acetone	47.3		0.500	2.00	25.0
71-43-2	Benzene	47.1		0.250	0.500	5.00
74-97-5	Bromochloromethane	51.0		0.500	1.00	5.00
75-27-4	Bromodichloromethane	46.6		0.250	0.500	5.00
75-25-2	Bromoform	53.7		0.500	1.00	5.00
74-83-9	Bromomethane	48.2		0.500	2.00	5.00
75-15-0	Carbon disulfide	48.0		0.250	0.500	5.00
56-23-5	Carbon tetrachloride	47.5		0.250	0.500	5.00
108-90-7	Chlorobenzene	50.5		0.250	0.500	5.00
75-00-3	Chloroethane	48.5		0.250	0.500	5.00
67-66-3	Chloroform	46.9		0.250	0.500	5.00
74-87-3	Chloromethane	44.5		0.500	2.00	5.00
156-59-2	cis-1,2-Dichloroethene	46.0		0.250	0.500	5.00
10061-01-5	cis-1,3-Dichloropropene	50.7		0.250	0.500	5.00
110-82-7	Cyclohexane	44.9		0.250	0.500	5.00
124-48-1	Dibromochloromethane	51.8		0.250	0.500	5.00
75-71-8	Dichlorodifluoromethane	42.2		0.250	0.500	5.00
100-41-4	Ethylbenzene	52.2		0.250	0.500	5.00
98-82-8	Isopropylbenzene (Cumene)	53.0		0.250	0.500	5.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	LCS1684002
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1684002
Matrix:	Solid	% Moisture:	NA	Instrument ID:	MSV11
Sample Amt:	5 g			Lab File ID:	2170514/i7164
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17	Time:	1242	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	46.9		0.500	1.00	5.00
108-87-2	Methylcyclohexane	47.4		0.250	0.500	5.00
75-09-2	Methylene chloride	44.8		1.00	2.00	10.0
100-42-5	Styrene	52.2		0.250	0.500	5.00
1634-04-4	tert-Butyl methyl ether (MTBE)	47.5		0.250	0.500	5.00
127-18-4	Tetrachloroethene	53.6		0.500	1.00	5.00
108-88-3	Toluene	50.1		0.250	0.500	5.00
156-60-5	trans-1,2-Dichloroethene	45.3		0.250	0.500	5.00
10061-02-6	trans-1,3-Dichloropropene	52.0		0.250	0.500	5.00
79-01-6	Trichloroethene	51.2		0.250	0.500	5.00
75-69-4	Trichlorofluoromethane	47.5		0.250	0.500	5.00
76-13-1	Trichlorotrifluoroethane	49.7		0.500	1.00	5.00
75-01-4	Vinyl chloride	47.3		0.250	0.500	5.00
1330-20-7	Xylene (total)	156		0.500	1.50	15.0

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7164.d
Lab Smp Id: 1684002 Client Smp ID: LCS
Inj Date : 14-MAY-2017 12:42
Operator : JMC2 Inst ID: msv11.i
Smp Info : 1684002*LCS
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
1 Dichlorodifluoromethane	85	1.757	1.757	(0.246)	122016	42.2459	42.2	9580
2 Chloromethane ++	50	1.966	1.969	(0.276)	137350	44.4783	44.5	9708
3 Vinyl Chloride +	62	2.044	2.044	(0.287)	124723	47.2740	47.3	9698
6 Bromomethane	94	2.390	2.393	(0.335)	72550	48.1518	48.2	9389
8 Chloroethane	64	2.521	2.524	(0.353)	71952	48.4816	48.5	9211
9 Trichlorofluoromethane	101	2.683	2.691	(0.376)	168829	47.4840	47.5	9706
12 1,1-Dichloroethene +	96	3.293	3.302	(0.462)	91123	48.2939	48.3	9415
14 Carbon Disulfide	76	3.327	3.332	(0.466)	315206	47.9871	48.0	9322
15 1,1,2Trichlotrifluoroethane	101	3.352	3.355	(0.470)	95882	49.7456	49.7	9546
16 Methyl Iodide	142	3.480	3.480	(0.488)	87831	48.2252	48.2	9054
17 Acrolein	56	3.751	3.745	(0.526)	31254	166.950	167	8837
18 Methylene Chloride	49	4.085	4.091	(0.573)	156959	44.8168	44.8	9463
19 Acetone	43	4.169	4.166	(0.584)	62726	47.3265	47.3	8288

							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/Kg)	SIMILARITY
	13 trans-1,2-Dichloroethene	61	4.311	4.311	(0.604)	148343	45.3490	45.3	9624
	22 Methyl Acetate	43	4.345	4.345	(0.609)	68634	46.8618	46.9	8539
	23 Hexane	57	4.414	4.417	(0.619)	197032	44.1567	44.2	9375
	25 MTBE	73	4.462	4.470	(0.625)	246069	47.5243	47.5	9768
	31 1,1-Dichloroethane ++	63	5.120	5.114	(0.718)	198287	46.2731	46.3	9429
	33 Acrylonitrile	53	5.187	5.192	(0.727)	146543	218.009	218	9700
	34 Vinyl Acetate	43	5.446	5.443	(0.763)	43772	27.5197	27.5	(R)
M	68 Total 1,2-Dichloroethene	61				305002	91.3774	91.4	0
	21 cis-1,2-Dichloroethene	61	5.761	5.767	(0.808)	156659	46.0284	46.0	9522
	35 2,2-Dichloropropane	77	5.881	5.884	(0.824)	159822	54.7508	54.8	9428
	38 Cyclohexane	56	5.979	5.979	(0.838)	175329	44.8654	44.9	9628
	39 Bromochloromethane	128	5.996	5.987	(0.841)	56731	50.9512	51.0	9205
	40 Chloroform +	83	6.082	6.079	(0.853)	208615	46.8808	46.9	9749
	41 Carbon Tetrachloride	117	6.216	6.219	(0.871)	167818	47.4513	47.5	9714
$	42 Dibromofluoromethane	111	6.283	6.283	(0.881)	125232	50.7651	50.8	9150
	43 1,1,1-Trichloroethane	97	6.294	6.297	(0.882)	181452	48.3219	48.3	9102
	45 2-Butanone	43	6.420	6.419	(0.900)	63501	51.0478	51.0	
	44 1,1-Dichloropropene	75	6.433	6.430	(0.902)	146882	49.5856	49.6	9480
	48 Benzene	78	6.696	6.693	(0.939)	448395	47.1485	47.1	9621
$	50 1,2-Dichloroethane-d4	67	6.846	6.843	(0.960)	72496	47.7101	47.7	9647
	52 1,2-Dichloroethane	62	6.913	6.916	(0.969)	165652	44.4354	44.4	9491
*	54 FLUOROBENZENE	96	7.133	7.133	(1.000)	487392	50.0000		9580
	56 Methyl cyclohexane	83	7.287	7.289	(1.021)	180903	47.3839	47.4	9279
	57 Trichloroethene	130	7.303	7.301	(1.024)	123286	51.2196	51.2	9716
	62 Dibromomethane	93	7.730	7.730	(1.084)	69741	49.6003	49.6	9466
	63 1,2-Dichloropropane +	63	7.828	7.830	(1.097)	110758	43.9579	44.0	9488
	64 Bromodichloromethane	83	7.895	7.894	(1.107)	169665	46.6076	46.6	9700
	69 1-Bromo-2-chloroethane	63	8.355	8.355	(1.171)	152345	48.3741	48.4	9481
	72 cis-1,3-Dichloropropene	75	8.494	8.497	(1.191)	184373	50.7221	50.7	
$	74 Toluene-d8	98	8.662	8.661	(0.872)	470842	51.9860	52.0	9610
	77 Toluene +	91	8.706	8.706	(0.876)	471833	50.0991	50.1	9705
M	71 1-3 Dichloropropene-Total	100				348910	102.751	103	0
	79 4-methyl-2-pentanone	43	9.035	9.035	(0.910)	105604	52.6686	52.7	
	78 Tetrachloroethene	164	9.035	9.038	(0.910)	100409	53.5505	53.6	9263
	81 trans-1,3-Dichloropropene	75	9.069	9.069	(1.271)	164537	52.0291	52.0	
	82 1,1,2-Trichloroethane	97	9.200	9.202	(0.926)	101118	51.9046	51.9	9548
	85 Dibromochloromethane	129	9.348	9.347	(0.941)	132715	51.7918	51.8	9532
	86 1,3-Dichloropropane	76	9.426	9.423	(0.949)	179080	51.3461	51.3	9382
	88 1,2-Dibromoethane(EDB)	107	9.543	9.540	(0.961)	96596	52.6388	52.6	9538
	80 2-Hexanone	43	9.710	9.710	(0.978)	92147	54.4807	54.5	9607
	91 1-Chlorohexane	91	9.925	9.922	(0.999)	141549	52.7101	52.7	9385
*	90 Chlorobenzene-d5	82	9.933	9.933	(1.000)	201463	50.0000		8888
	92 Chlorobenzene ++	112	9.947	9.947	(1.001)	310419	50.5423	50.5	9507
	93 Ethylbenzene +	106	9.964	9.961	(1.003)	168188	52.1875	52.2	9502
	95 1,1,1,2-Tetrachloroethane	133	9.997	9.997	(1.006)	124019	53.8151	53.8	9540
	96 p,m-Xylene	106	10.073	10.072	(1.014)	416469	104.135	104	9713
M	120 TOTAL XYLENE	106				621883	156.182	156	0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/Kg)	SIMILARITY
98	o-Xylene	106	10.393	10.396	(1.046)	205414	52.0469	52.0	
99	Styrene	104	10.432	10.435	(1.050)	346891	52.1798	52.2	9645
100	Bromoform ++	173	10.466	10.463	(1.054)	97426	53.7494	53.7	9515
102	Isopropylbenzene	105	10.622	10.619	(1.069)	555983	53.0132	53.0	9744
$ 103	Bromofluorobenzene	174	10.837	10.834	(1.091)	167830	53.7993	53.8	9653
104	Bromobenzene	77	10.915	10.915	(0.939)	244901	47.3349	47.3	9641
106	n-Propylbenzene	91	10.918	10.920	(0.939)	651406	50.0793	50.1	9642
107	1,1,2,2-Tetrachloroethane++	83	10.973	10.973	(0.944)	129910	51.0830	51.1	9655
108	2-Chlorotoluene	91	11.040	11.043	(0.950)	451812	48.9024	48.9	9641
110	1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	478123	49.4680	49.5	
109	1,2,3-Trichloropropane	75	11.077	11.076	(0.953)	160362	52.4902	52.5	9430
111	trans-1,4-Dichloro-2-Butene	53	11.096	11.099	(0.955)	36695	50.0712	50.1	9407
112	4-Chlorotoluene	91	11.157	11.157	(0.960)	397594	48.7304	48.7	9526
113	tert-butylbenzene	91	11.283	11.283	(0.971)	277310	48.9010	48.9	9707
114	1,2,4-Trimethylbenzene	105	11.328	11.327	(0.975)	485363	48.5098	48.5	
115	sec-Butylbenzene	105	11.406	11.403	(0.981)	607653	50.7046	50.7	
116	p-Isopropyltoluene	119	11.498	11.497	(0.989)	531390	50.1141	50.1	9630
117	1,3-Dichlorobenzene	146	11.573	11.573	(0.996)	286988	49.7501	49.8	
* 118	1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	198219	50.0000		9310
119	1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	286171	48.6970	48.7	
121	n-Butylbenzene	91	11.790	11.790	(1.014)	486424	50.6098	50.6	9731
122	1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	285975	51.6768	51.7	
125	1,2-Dibromo-3-Chloropropane	157	12.474	12.473	(1.073)	35538	56.8446	56.8	9579
126	Hexachlorobutadiene	225	12.889	12.892	(1.109)	146338	50.5585	50.6	9758
127	1,2,4-Trichlorobenzene	180	12.928	12.928	(1.112)	214300	57.1487	57.1	
128	Napthalene	128	13.154	13.154	(1.132)	376123	48.6520	48.7	9630
129	1,2,3-Trichlorobenzene	180	13.285	13.285	(1.143)	202755	56.2846	56.3	
10	tert-butyl alcohol	59	4.607	4.615	(0.646)	26616	85.7706	85.8	8440(R)
26	Isopropyl Ether	45	4.975	4.969	(0.697)	409346	53.5194	53.5	9632
20	Chloroprene	53	5.081	5.081	(0.712)	173040	56.2419	56.2	8971
30	Isobutyl Alcohol	43	6.955	6.958	(0.975)	29480	305.564	306	8639
53	1,4-Dioxane	58	8.095	8.092	(1.135)	29321	1633.59	1630	9485
162	3,4-dichloro-1-butene	75	9.392	9.398	(0.946)	140177	61.9773	62.0	9554
161	cis-1,4-dichloro-2-butene	53	10.881	10.876	(0.936)	43203	57.5568	57.6	9398

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /var/chem/msv11.i/2170514.s.b/i7164.d

Date : 14-MAY-2017 12:42

Client ID: LCS

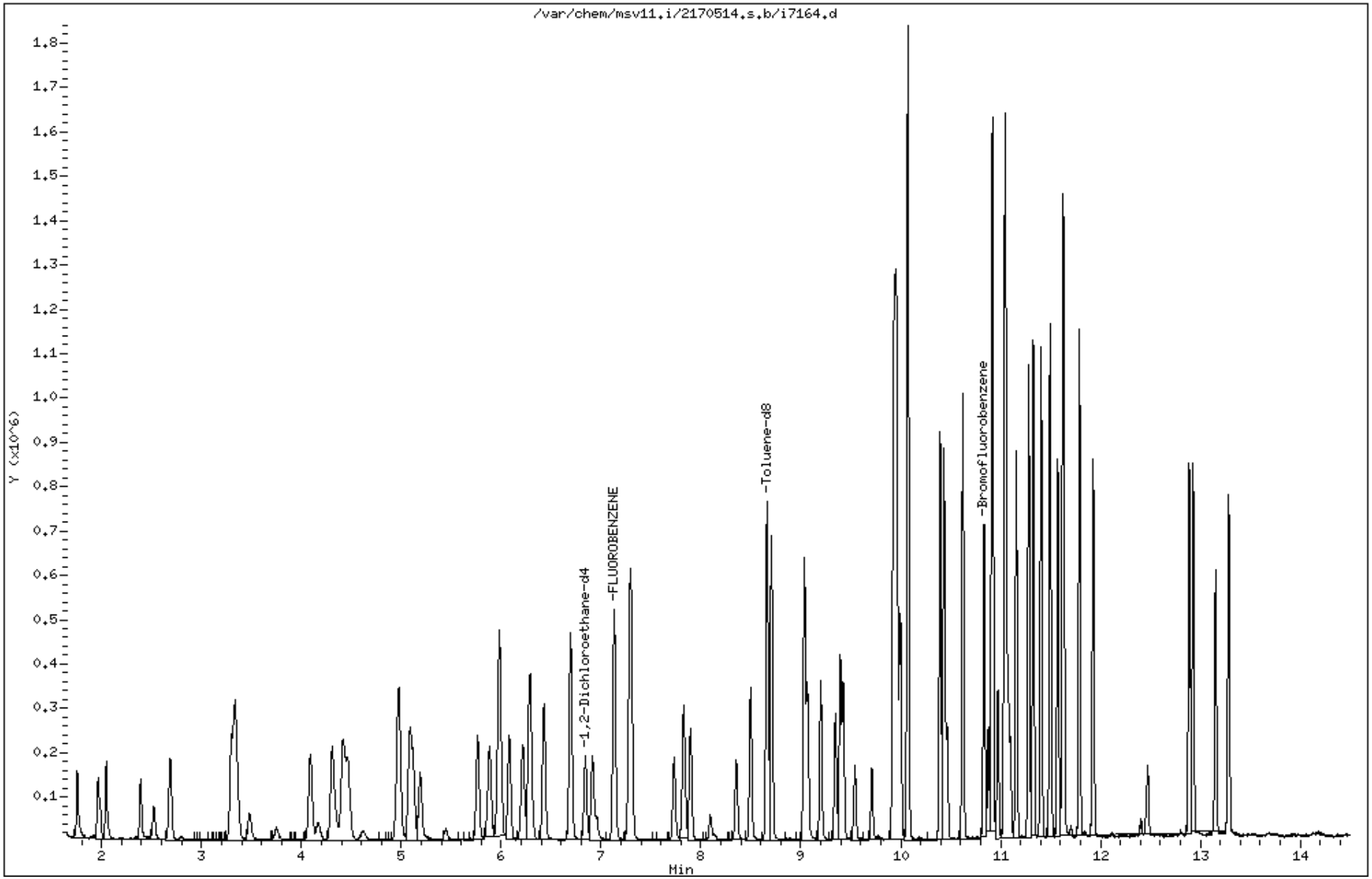
Instrument: msv11.i

Sample Info: 1684002*LCS

Operator: JMC2

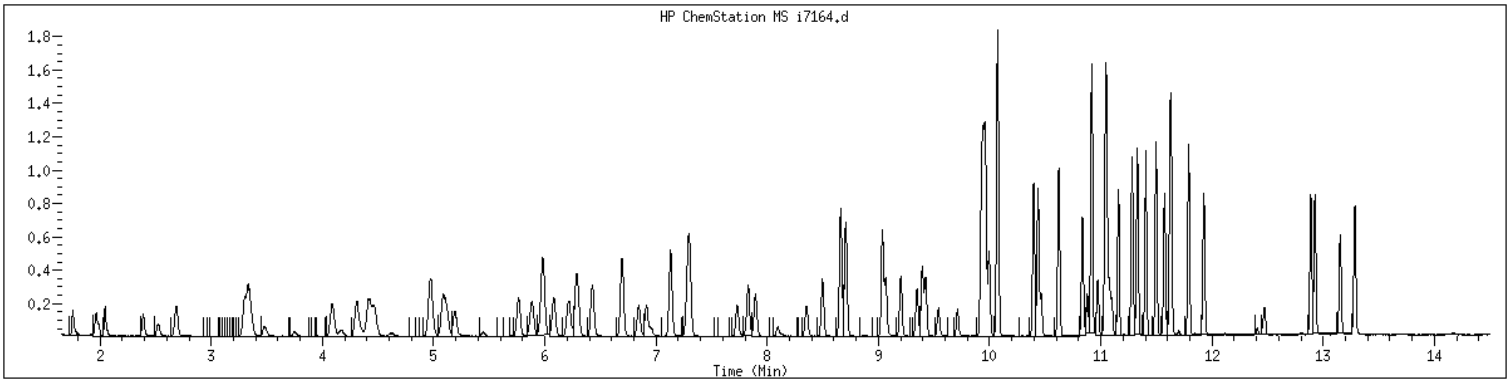
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684002 SampleType : LCS
Injection Date: 05/14/2017 12:42 Instrument : msv11.i
Operator : JMC2
Sample Info : 1684002*LCS
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	LCSD1684003
Collect Date:	NA Time: NA	GCAL Sample ID:	1684003
Matrix:	Solid % Moisture: NA	Instrument ID:	MSV11
Sample Amt:	5 g	Lab File ID:	2170514/i7165
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1306	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	44.8		0.250	0.500	5.00
79-34-5	1,1,2,2-Tetrachloroethane	49.2		0.250	0.500	5.00
79-00-5	1,1,2-Trichloroethane	49.6		0.250	0.500	5.00
75-34-3	1,1-Dichloroethane	43.3		0.250	0.500	5.00
75-35-4	1,1-Dichloroethene	45.2		0.250	0.500	5.00
87-61-6	1,2,3-Trichlorobenzene	53.5		0.500	1.00	5.00
120-82-1	1,2,4-Trichlorobenzene	54.8		0.500	1.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane	54.1		0.500	2.00	5.00
106-93-4	1,2-Dibromoethane	49.7		0.500	2.00	5.00
95-50-1	1,2-Dichlorobenzene	49.4		0.250	0.500	5.00
107-06-2	1,2-Dichloroethane	41.1		0.250	0.500	5.00
78-87-5	1,2-Dichloropropane	43.1		0.250	0.500	5.00
541-73-1	1,3-Dichlorobenzene	47.6		0.250	0.500	5.00
106-46-7	1,4-Dichlorobenzene	46.3		0.250	0.500	5.00
78-93-3	2-Butanone	47.1		0.500	2.00	5.00
591-78-6	2-Hexanone	51.4		0.500	2.00	5.00
108-10-1	4-Methyl-2-pentanone	50.6		0.250	0.500	5.00
67-64-1	Acetone	44.0		0.500	2.00	25.0
71-43-2	Benzene	44.3		0.250	0.500	5.00
74-97-5	Bromochloromethane	48.0		0.500	1.00	5.00
75-27-4	Bromodichloromethane	43.3		0.250	0.500	5.00
75-25-2	Bromoform	52.1		0.500	1.00	5.00
74-83-9	Bromomethane	45.0		0.500	2.00	5.00
75-15-0	Carbon disulfide	43.7		0.250	0.500	5.00
56-23-5	Carbon tetrachloride	43.5		0.250	0.500	5.00
108-90-7	Chlorobenzene	48.5		0.250	0.500	5.00
75-00-3	Chloroethane	44.3		0.250	0.500	5.00
67-66-3	Chloroform	42.9		0.250	0.500	5.00
74-87-3	Chloromethane	39.6		0.500	2.00	5.00
156-59-2	cis-1,2-Dichloroethene	42.7		0.250	0.500	5.00
10061-01-5	cis-1,3-Dichloropropene	47.9		0.250	0.500	5.00
110-82-7	Cyclohexane	41.3		0.250	0.500	5.00
124-48-1	Dibromochloromethane	49.7		0.250	0.500	5.00
75-71-8	Dichlorodifluoromethane	38.8		0.250	0.500	5.00
100-41-4	Ethylbenzene	48.4		0.250	0.500	5.00
98-82-8	Isopropylbenzene (Cumene)	48.6		0.250	0.500	5.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	LCSD1684003
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1684003
Matrix:	Solid	% Moisture:	NA	Instrument ID:	MSV11
Sample Amt:	5 g			Lab File ID:	2170514/i7165
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17	Time:	1306	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	43.2		0.500	1.00	5.00
108-87-2	Methylcyclohexane	44.2		0.250	0.500	5.00
75-09-2	Methylene chloride	41.0		1.00	2.00	10.0
100-42-5	Styrene	49.0		0.250	0.500	5.00
1634-04-4	tert-Butyl methyl ether (MTBE)	45.7		0.250	0.500	5.00
127-18-4	Tetrachloroethene	51.5		0.500	1.00	5.00
108-88-3	Toluene	48.3		0.250	0.500	5.00
156-60-5	trans-1,2-Dichloroethene	42.3		0.250	0.500	5.00
10061-02-6	trans-1,3-Dichloropropene	48.7		0.250	0.500	5.00
79-01-6	Trichloroethene	49.2		0.250	0.500	5.00
75-69-4	Trichlorofluoromethane	43.5		0.250	0.500	5.00
76-13-1	Trichlorotrifluoroethane	45.6		0.500	1.00	5.00
75-01-4	Vinyl chloride	42.1		0.250	0.500	5.00
1330-20-7	Xylene (total)	147		0.500	1.50	15.0

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7165.d
Lab Smp Id: 1684003 Client Smp ID: LCSD
Inj Date : 14-MAY-2017 13:06
Operator : JMC2 Inst ID: msv11.i
Smp Info : 1684003*LCSD
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 4 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
1 Dichlorodifluoromethane	85	1.759	1.757	(0.247)	120528	38.8134	38.8	9458
2 Chloromethane ++	50	1.969	1.969	(0.276)	131636	39.6479	39.6	9578
3 Vinyl Chloride +	62	2.047	2.044	(0.287)	119390	42.0891	42.1	9716
6 Bromomethane	94	2.392	2.393	(0.336)	72940	45.0264	45.0	9455
8 Chloroethane	64	2.524	2.524	(0.354)	70631	44.2644	44.3	9507
9 Trichlorofluoromethane	101	2.688	2.691	(0.377)	166155	43.4650	43.5	9696
12 1,1-Dichloroethene +	96	3.299	3.302	(0.463)	91771	45.2371	45.2	9447
14 Carbon Disulfide	76	3.332	3.332	(0.467)	308919	43.7422	43.7	9629
15 1,1,2Trichlotrifluoroethane	101	3.355	3.355	(0.470)	94497	45.5996	45.6	9532
16 Methyl Iodide	142	3.483	3.480	(0.488)	89240	45.9297	45.9	9118
17 Acrolein	56	3.756	3.745	(0.527)	31392	155.964	156	8597
18 Methylene Chloride	49	4.091	4.091	(0.574)	154329	40.9852	41.0	9734
19 Acetone	43	4.163	4.166	(0.584)	62703	44.0019	44.0	8117

							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/Kg)	SIMILARITY
	13 trans-1,2-Dichloroethene	61	4.311	4.311	(0.605)	148909	42.3397	42.3	9684
	22 Methyl Acetate	43	4.345	4.345	(0.609)	67991	43.1775	43.2	9000
	23 Hexane	57	4.414	4.417	(0.619)	196308	40.9188	40.9	9358
	25 MTBE	73	4.467	4.470	(0.626)	254618	45.7376	45.7	9665
	31 1,1-Dichloroethane ++	63	5.114	5.114	(0.717)	199398	43.2794	43.3	9291
	33 Acrylonitrile	53	5.195	5.192	(0.729)	154908	214.343	214	9772
	34 Vinyl Acetate	43	5.446	5.443	(0.764)	42753	25.1792	25.2	(R)
M	68 Total 1,2-Dichloroethene	61				305336	85.0869	85.1	0
	21 cis-1,2-Dichloroethene	61	5.767	5.767	(0.809)	156427	42.7472	42.7	9664
	35 2,2-Dichloropropane	77	5.881	5.884	(0.825)	153773	48.9959	49.0	9420
	38 Cyclohexane	56	5.981	5.979	(0.839)	173637	41.3262	41.3	9681
	39 Bromochloromethane	128	5.990	5.987	(0.840)	57470	48.0065	48.0	9616
	40 Chloroform +	83	6.082	6.079	(0.853)	205097	42.8681	42.9	9634
	41 Carbon Tetrachloride	117	6.216	6.219	(0.872)	165411	43.5010	43.5	9629
$	42 Dibromofluoromethane	111	6.283	6.283	(0.881)	131999	49.7675	49.8	9449
	43 1,1,1-Trichloroethane	97	6.294	6.297	(0.883)	180718	44.7620	44.8	8652
	45 2-Butanone	43	6.428	6.419	(0.901)	63035	47.1307	47.1	
	44 1,1-Dichloropropene	75	6.428	6.430	(0.901)	142993	44.8980	44.9	9243
	48 Benzene	78	6.695	6.693	(0.939)	452695	44.2729	44.3	9548
$	50 1,2-Dichloroethane-d4	67	6.843	6.843	(0.960)	74620	45.6748	45.7	9613
	52 1,2-Dichloroethane	62	6.913	6.916	(0.969)	164825	41.1226	41.1	9563
*	54 FLUOROBENZENE	96	7.130	7.133	(1.000)	524026	50.0000		9641
	56 Methyl cyclohexane	83	7.287	7.289	(1.022)	181229	44.1507	44.2	9196
	57 Trichloroethene	130	7.303	7.301	(1.024)	127210	49.1552	49.2	9608
	62 Dibromomethane	93	7.730	7.730	(1.084)	71396	47.2276	47.2	9509
	63 1,2-Dichloropropane +	63	7.833	7.830	(1.099)	116669	43.0668	43.1	9569
	64 Bromodichloromethane	83	7.892	7.894	(1.107)	169324	43.2622	43.3	9557
	69 1-Bromo-2-chloroethane	63	8.355	8.355	(1.172)	154423	45.6060	45.6	9760
	72 cis-1,3-Dichloropropene	75	8.497	8.497	(1.192)	187394	47.9492	47.9	
$	74 Toluene-d8	98	8.661	8.661	(0.872)	501290	51.8815	51.9	9522
	77 Toluene +	91	8.706	8.706	(0.876)	485604	48.3321	48.3	9786
M	71 1-3 Dichloropropene-Total	100				353020	96.6613	96.7	0
	79 4-methyl-2-pentanone	43	9.032	9.035	(0.909)	108304	50.6324	50.6	
	78 Tetrachloroethene	164	9.038	9.038	(0.910)	103058	51.5211	51.5	9419
	81 trans-1,3-Dichloropropene	75	9.066	9.069	(1.271)	165626	48.7121	48.7	
	82 1,1,2-Trichloroethane	97	9.202	9.202	(0.926)	103104	49.6096	49.6	9532
	85 Dibromochloromethane	129	9.347	9.347	(0.941)	135880	49.7060	49.7	9621
	86 1,3-Dichloropropane	76	9.423	9.423	(0.949)	182367	49.0138	49.0	9425
	88 1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	97219	49.6604	49.7	9625
	80 2-Hexanone	43	9.710	9.710	(0.978)	92796	51.4284	51.4	9594
	91 1-Chlorohexane	91	9.922	9.922	(0.999)	143824	50.2031	50.2	9514
*	90 Chlorobenzene-d5	82	9.933	9.933	(1.000)	214923	50.0000		8771
	92 Chlorobenzene ++	112	9.947	9.947	(1.001)	317557	48.4664	48.5	9271
	93 Ethylbenzene +	106	9.961	9.961	(1.003)	166300	48.3700	48.4	9600
	95 1,1,1,2-Tetrachloroethane	133	9.997	9.997	(1.006)	126699	51.5349	51.5	9493
	96 p,m-Xylene	106	10.072	10.072	(1.014)	411391	96.4236	96.4	9687
M	120 TOTAL XYLENE	106				623839	146.882	147	0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/Kg)	SIMILARITY
98	o-Xylene	106	10.396	10.396	(1.047)	212448	50.4580	50.5	
99	Styrene	104	10.435	10.435	(1.051)	347237	48.9607	49.0	9626
100	Bromoform ++	173	10.463	10.463	(1.053)	100781	52.1182	52.1	9594
102	Isopropylbenzene	105	10.622	10.619	(1.069)	543862	48.6098	48.6	9674
$ 103	Bromofluorobenzene	174	10.836	10.834	(1.091)	174970	52.5755	52.6	9663
104	Bromobenzene	77	10.917	10.915	(0.939)	244853	45.3818	45.4	9513
106	n-Propylbenzene	91	10.920	10.920	(0.940)	635840	46.8749	46.9	9736
107	1,1,2,2-Tetrachloroethane++	83	10.973	10.973	(0.944)	130532	49.2195	49.2	9646
108	2-Chlorotoluene	91	11.043	11.043	(0.950)	447193	46.4145	46.4	9319
110	1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	468946	46.5257	46.5	
109	1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	150799	47.3327	47.3	9405
111	trans-1,4-Dichloro-2-Butene	53	11.099	11.099	(0.955)	33625	43.9976	44.0	9340
112	4-Chlorotoluene	91	11.157	11.157	(0.960)	399309	46.9305	46.9	9619
113	tert-butylbenzene	91	11.280	11.283	(0.970)	274337	46.3898	46.4	9660
114	1,2,4-Trimethylbenzene	105	11.330	11.327	(0.975)	479749	45.9793	46.0	
115	sec-Butylbenzene	105	11.405	11.403	(0.981)	589072	47.1353	47.1	
116	p-Isopropyltoluene	119	11.497	11.497	(0.989)	520268	47.0499	47.0	9726
117	1,3-Dichlorobenzene	146	11.573	11.573	(0.996)	286322	47.5960	47.6	
* 118	1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	206709	50.0000		9175
119	1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	283547	46.2687	46.3	
121	n-Butylbenzene	91	11.790	11.790	(1.014)	469127	46.8054	46.8	9810
122	1,2-Dichlorobenzene	146	11.930	11.927	(1.026)	285351	49.4462	49.4	
125	1,2-Dibromo-3-Chloropropane	157	12.476	12.473	(1.073)	35260	54.0835	54.1	9639
126	Hexachlorobutadiene	225	12.889	12.892	(1.109)	142197	47.1100	47.1	9646
127	1,2,4-Trichlorobenzene	180	12.928	12.928	(1.112)	214264	54.7922	54.8	
128	Napthalene	128	13.154	13.154	(1.132)	383856	47.6893	47.7	9691
129	1,2,3-Trichlorobenzene	180	13.282	13.285	(1.143)	200797	53.4517	53.5	
10	tert-butyl alcohol	59	4.612	4.615	(0.647)	27124	81.2971	81.3	8639(R)
26	Isopropyl Ether	45	4.972	4.969	(0.697)	421804	51.2929	51.3	9699
20	Chloroprene	53	5.086	5.081	(0.713)	166481	50.3273	50.3	9140
30	Isobutyl Alcohol	43	6.957	6.958	(0.976)	30326	292.358	292	8456
53	1,4-Dioxane	58	8.098	8.092	(1.136)	27150	1406.89	1410	9244
162	3,4-dichloro-1-butene	75	9.392	9.398	(0.946)	145269	60.2062	60.2	9608
161	cis-1,4-dichloro-2-butene	53	10.876	10.876	(0.936)	42895	54.7993	54.8	9358

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /var/chem/msv11.i/2170514.s.b/i7165.d

Date : 14-MAY-2017 13:06

Client ID: LCSD

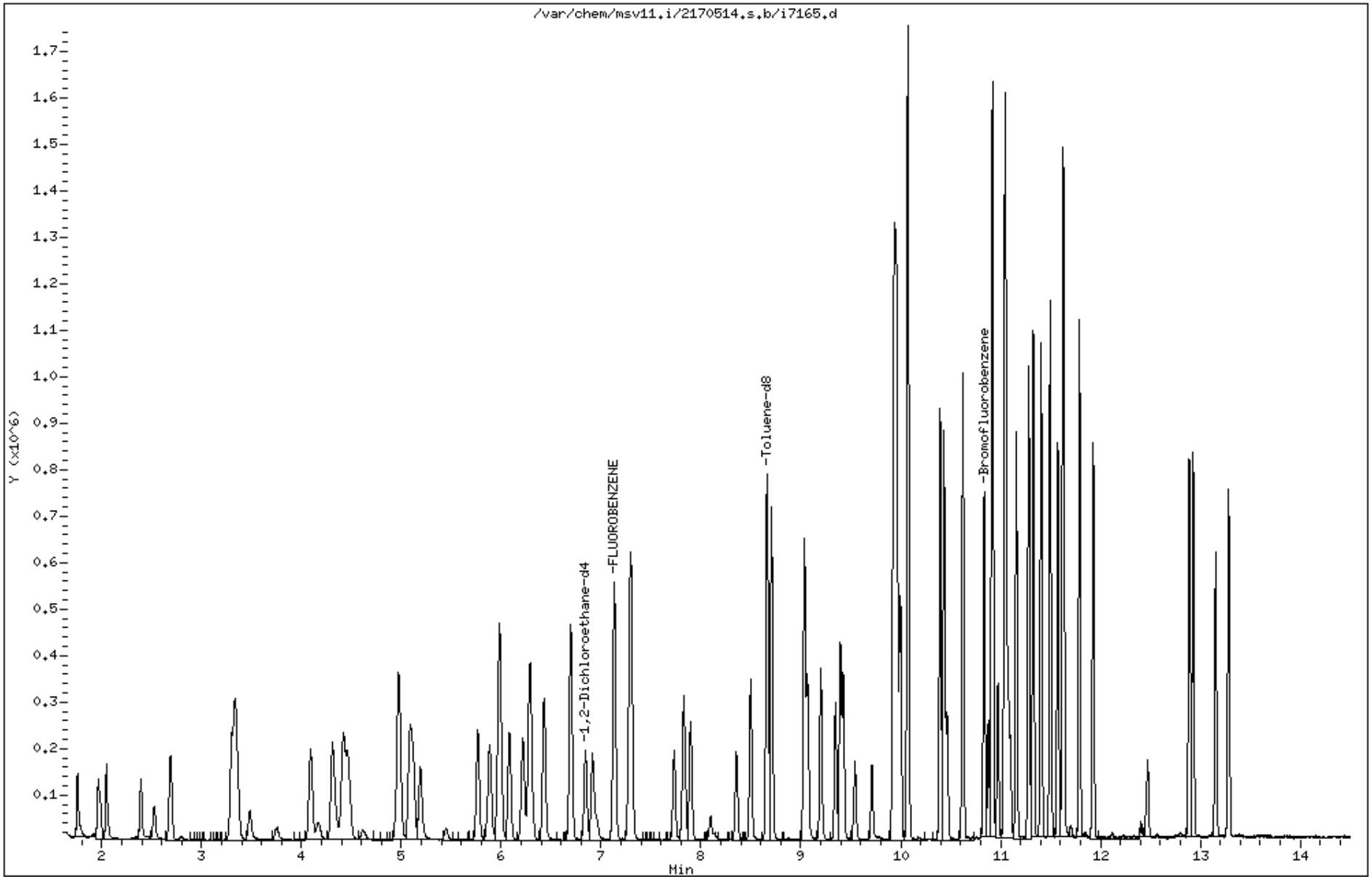
Instrument: msv11.i

Sample Info: 1684003*LCSD

Operator: JMC2

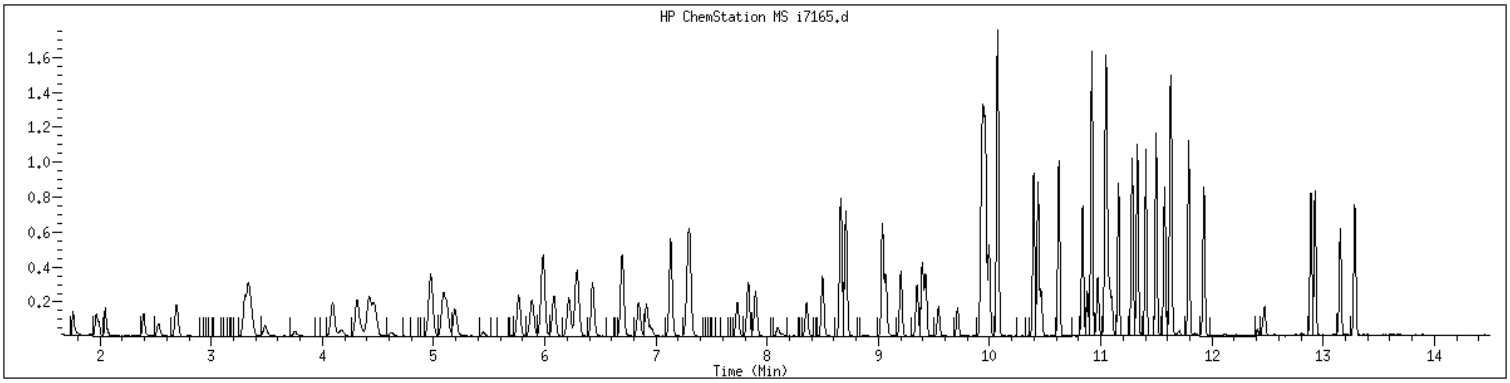
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684003 SampleType : LCSD
Injection Date: 05/14/2017 13:06 Instrument : msv11.i
Operator : JMC2
Sample Info : 1684003*LCSD
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	MB1684271
Collect Date:	NA Time: NA	GCAL Sample ID:	1684271
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3255
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1027	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	MB1684271
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1684271
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170513/b3255
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	IXE	Analytical Batch:	610316
Analysis Date:	05/13/17	Time:	1027	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170513.s.b/b3255.d
Lab Smp Id: 1684271 Client Smp ID: MB
Inj Date : 13-MAY-2017 10:27
Operator : IXE Inst ID: msv14.i
Smp Info : 1684271*MB
Misc Info : MSV~38321~*1*IXE
Comment :
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Meth Date : 16-May-2017 11:14 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 36 Dibromofluoromethane	111	5.912	5.912	(0.885)	200508	51.1358	51.1	6891
$ 43 1,2-Dichloroethane-d4	67	6.422	6.422	(0.961)	131150	50.3364	50.3	
* 47 FLUOROBENZENE	96	6.681	6.680	(1.000)	771869	50.0000		
$ 60 Toluene-d8	98	8.041	8.041	(0.879)	725607	50.5821	50.6	
* 71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	304061	50.0000		
$ 80 Bromofluorobenzene	174	9.931	9.927	(1.085)	179923	49.2027	49.2	
* 97 1,4-DICHLOROBENZENE-D4	152	10.602	10.605	(1.000)	218386	50.0000		

Data File: /var/chem/msv14.i/2170513.s.b/b3255.d

Page 1

Date : 13-MAY-2017 10:27

Client ID: MB

Instrument: msv14.i

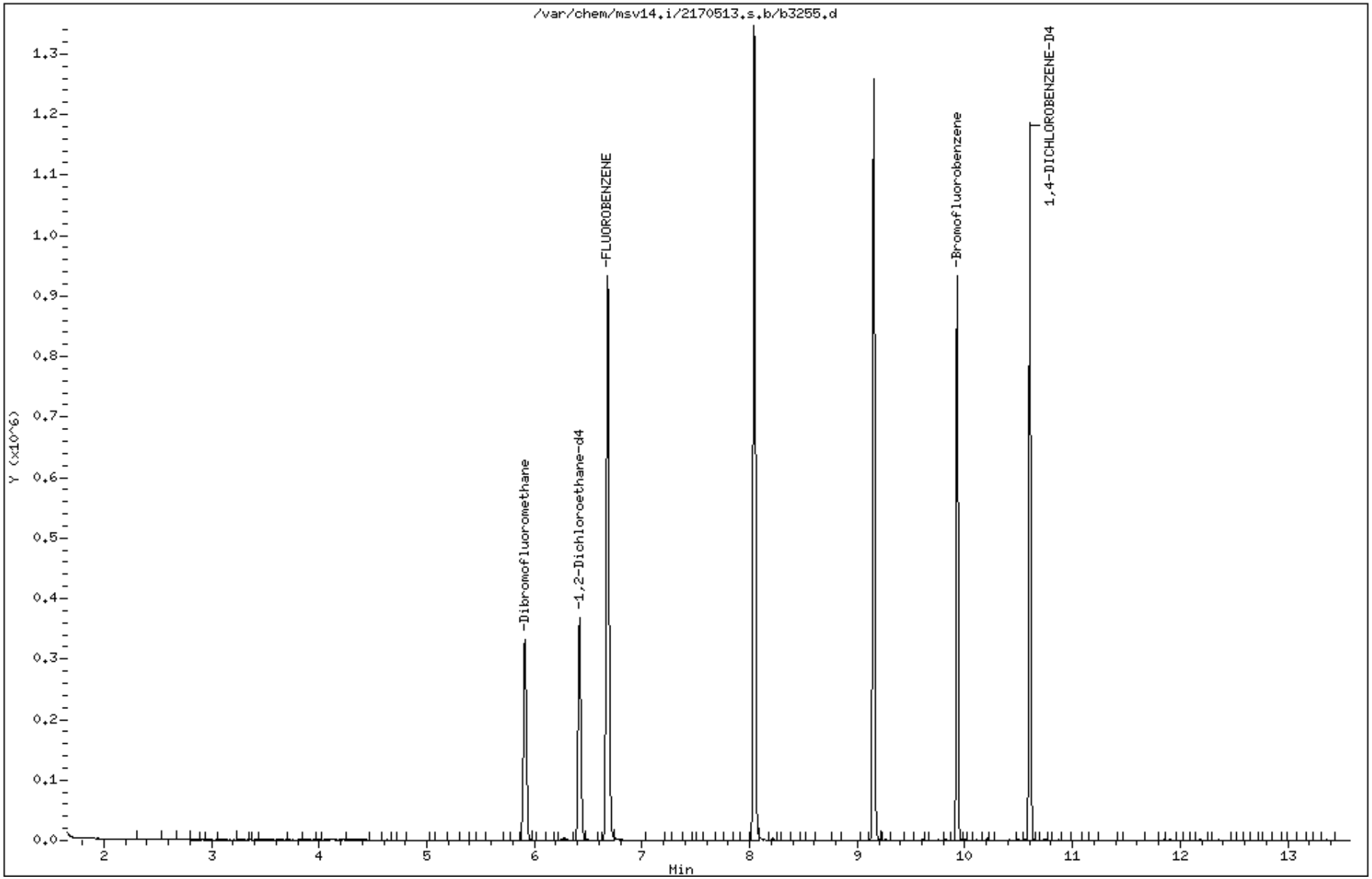
Sample Info: 1684271*MB

Purge Volume: 5.0

Operator: IXE

Column phase: RTX-VMS-30M

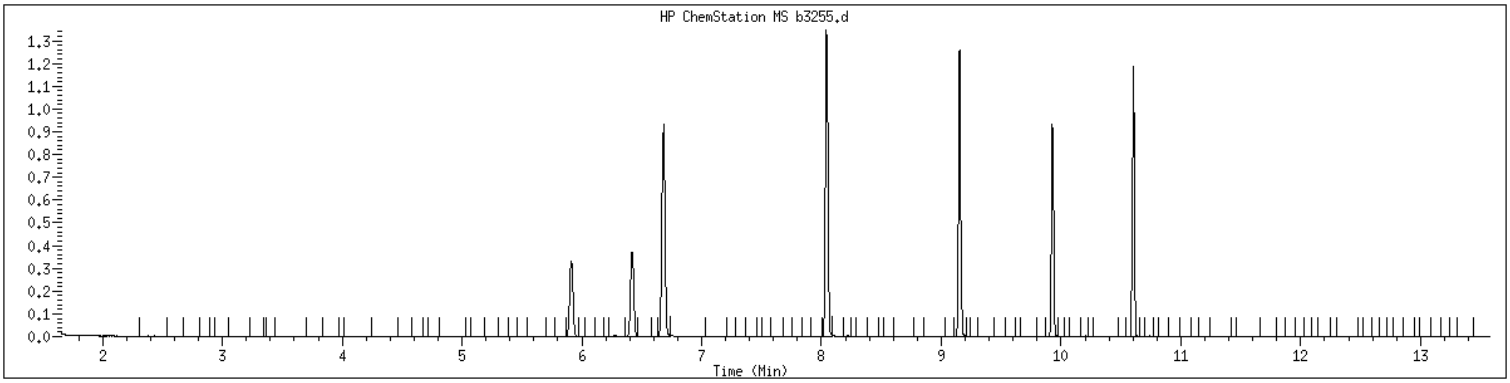
Column diameter: 0.25



Report Date: 05/16/2017 11:15

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684271 SampleType : BLANK
Injection Date: 05/13/2017 10:27 Instrument : msv14.i
Operator : IXE
Sample Info : 1684271*MB
Misc Info : MSV~38321~*1*IXE
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	LCS1684272
Collect Date:	NA Time: NA	GCAL Sample ID:	1684272
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3251L
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 0857	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	50.4		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	47.7		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	47.9		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	50.2		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	53.3		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	44.6		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	42.8		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	47.8		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	48.3		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	49.4		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	46.6		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	49.0		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	48.8		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	47.2		0.200	0.500	1.00
78-93-3	2-Butanone	49.8		0.200	0.500	5.00
591-78-6	2-Hexanone	51.1		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	50.4		0.200	0.500	5.00
67-64-1	Acetone	48.4		0.500	1.00	5.00
71-43-2	Benzene	49.8		0.200	0.500	1.00
74-97-5	Bromochloromethane	50.5		0.200	0.500	1.00
75-27-4	Bromodichloromethane	49.8		0.200	0.500	1.00
75-25-2	Bromoform	49.4		0.250	0.500	1.00
74-83-9	Bromomethane	56.9		0.500	1.00	1.00
75-15-0	Carbon disulfide	52.4		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	52.3		0.250	0.500	1.00
108-90-7	Chlorobenzene	49.4		0.200	0.500	1.00
75-00-3	Chloroethane	46.7		0.250	0.500	1.00
67-66-3	Chloroform	49.3		0.200	0.500	1.00
74-87-3	Chloromethane	49.6		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	50.6		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	51.9		0.200	0.500	1.00
110-82-7	Cyclohexane	48.8		0.500	1.00	2.00
124-48-1	Dibromochloromethane	49.7		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	49.3		0.200	0.500	1.00
100-41-4	Ethylbenzene	51.6		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	50.1		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	LCS1684272
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1684272
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170513/b3251L
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	IXE	Analytical Batch:	610316
Analysis Date:	05/13/17	Time:	0857	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	47.2		1.00	2.00	5.00
108-87-2	Methylcyclohexane	55.4		0.200	0.500	1.00
75-09-2	Methylene chloride	47.5		0.200	0.500	5.00
100-42-5	Styrene	49.4		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	46.6		0.200	0.500	1.00
127-18-4	Tetrachloroethene	49.9		0.200	0.500	1.00
108-88-3	Toluene	48.9		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	47.1		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	51.3		0.200	0.500	1.00
79-01-6	Trichloroethene	50.0		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	55.6		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	56.7		0.200	0.500	1.00
1330-20-7	Xylene (total)	152		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170513.s.b/b3251L.d
Lab Smp Id: 1684272 Client Smp ID: LCS
Inj Date : 13-MAY-2017 08:57
Operator : IXE Inst ID: msv14.i
Smp Info : 1684272*LCS
Misc Info : MSV~38321~*1*IXE
Comment :
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Meth Date : 16-May-2017 11:14 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.743	1.743	(0.261)	195645	49.3383	49.3	
2 Chloromethane ++	50	1.953	1.953	(0.292)	156429	49.6338	49.6	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	191332	48.4125	48.4	
5 Bromomethane	94	2.377	2.377	(0.356)	82526	56.8508	56.9	
6 Chloroethane	64	2.516	2.516	(0.377)	119188	46.6713	46.7	
7 Trichlorofluoromethane	101	2.677	2.677	(0.401)	256095	55.6219	55.6	
11 1,1-Dichloroethene +	96	3.265	3.265	(0.489)	137476	53.3016	53.3	
14 Carbon Disulfide	76	3.295	3.295	(0.493)	440265	52.4005	52.4	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	150875	56.6762	56.7	
13 Methyl Iodide	142	3.438	3.438	(0.515)	88768	55.1630	55.2	
9 Acrolein	56	3.697	3.697	(0.553)	79031	355.143	355	
17 Methylene Chloride	49	4.000	4.000	(0.599)	226298	47.4784	47.5	
12 Acetone	43	4.068	4.068	(0.609)	124938	48.4292	48.4	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	254720	47.0525	47.1	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	166297	47.1953	47.2	8925
	23 Hexane	57	4.293	4.293	(0.643)	239057	49.3566	49.4	9227(M2)
	21 MTBE	73	4.334	4.334	(0.649)	517204	46.6409	46.6	9654
	26 tert-Butyl Alcohol	59	4.461	4.461	(0.668)	21938	46.2587	46.3	9309
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	602057	49.8470	49.8	9856
	29 Chloroprene	53	4.866	4.866	(0.728)	277237	46.8152	46.8	9066
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	377319	50.2246	50.2	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	400472	259.053	259	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	122311	49.4828	49.5	
M	48 Total 1,2-Dichloroethene	61				528556	97.6913	97.7	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	273836	50.6387	50.6	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	310799	50.9061	50.9	
	38 Cyclohexane	56	5.653	5.653	(0.846)	334473	48.7604	48.8	9153
	34 Bromochloromethane	128	5.657	5.657	(0.847)	86730	50.4763	50.5	
	41 Chloroform +	83	5.736	5.736	(0.859)	355426	49.3227	49.3	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	265325	52.3169	52.3	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	206751	50.4312	50.4	6908
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	311168	50.3723	50.4	
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	261894	52.4021	52.4	
	32 2-Butanone	43	6.043	6.043	(0.905)	140712	49.8031	49.8	
	44 Benzene	78	6.294	6.294	(0.942)	783881	49.7540	49.8	
$	43 1,2-Dichloroethane-d4	67	6.422	6.422	(0.961)	136470	50.0966	50.1	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	286214	46.6231	46.6	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	42384	249.114	249	9541
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	807023	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	299388	55.3723	55.4	8923
	49 Trichloroethene	130	6.830	6.830	(1.022)	203026	49.9799	50.0	
	52 Dibromomethane	93	7.216	7.216	(1.080)	125840	47.6341	47.6	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	203538	49.0241	49.0	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	281872	49.8259	49.8	
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	39065	1140.26	1140	9467
	57 1-Bromo-2-chloroethane	63	7.775	7.775	(1.164)	299968	49.3652	49.4	9680
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	326709	51.9463	51.9	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	761158	49.0498	49.0	
	61 Toluene +	91	8.082	8.082	(0.883)	810749	48.9314	48.9	
M	145 1-3 Dichloropropene total	100				638577	103.268	103	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	148148	49.9417	49.9	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	217691	50.3533	50.4	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	311868	51.3218	51.3	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	188126	47.8964	47.9	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	226820	47.6789	47.7	9679
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	211695	49.6610	49.7	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	346599	49.2897	49.3	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	184946	48.3326	48.3	
	68 2-Hexanone	43	8.952	8.952	(0.978)	177932	51.1335	51.1	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	214458	45.7955	45.8	9066
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	328923	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	72 Chlorobenzene ++	112	9.166	9.166	(1.002)	499986	49.4088	49.4	
	73 Ethylbenzene +	106	9.177	9.177	(1.003)	263393	51.6227	51.6	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	187910	48.9857	49.0	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	610938	103.338	103	
M	99 TOTAL XYLENE	106				899758	151.628	152	
	76 o-Xylene	106	9.552	9.552	(1.044)	288820	48.2897	48.3	
	77 Styrene	104	9.582	9.582	(1.047)	500414	49.3730	49.4	
	78 Bromoform ++	173	9.608	9.608	(1.050)	146906	49.4370	49.4	
	79 Isopropylbenzene	105	9.743	9.743	(1.065)	762402	50.0624	50.1	
	161 cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.939)	81003	44.0218	44.0	9568
$	80 Bromofluorobenzene	174	9.927	9.927	(1.085)	198667	50.2221	50.2	
	84 Bromobenzene	77	9.998	9.998	(0.943)	372129	49.1243	49.1	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	841831	51.4843	51.5	
	81 1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	245520	47.6755	47.7	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	590386	51.5304	51.5	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	591655	53.7948	53.8	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.955)	324799	49.2688	49.3	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	73390	48.3136	48.3	
	90 4-Chlorotoluene	91	10.204	10.204	(0.962)	534508	50.9449	50.9	
	91 tert-butylbenzene	91	10.313	10.313	(0.972)	330770	54.1061	54.1	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	604435	52.6535	52.7	
	94 sec-Butylbenzene	105	10.418	10.418	(0.982)	683328	54.6728	54.7	
	92 p-Isopropyltoluene	119	10.497	10.497	(0.990)	560406	54.0276	54.0	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	316141	48.8397	48.8	
*	97 1,4-DICHLOROBENZENE-D4	152	10.605	10.605	(1.000)	231531	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	313222	47.2033	47.2	
	100 n-Butylbenzene	91	10.748	10.748	(1.013)	491784	52.0147	52.0	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	304077	49.3719	49.4	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	40664	47.8247	47.8	
	109 Hexachlorobutadiene	225	11.857	11.857	(1.118)	69170	53.3288	53.3	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.122)	152199	42.7947	42.8	
	110 Naphthalene	128	12.191	12.191	(1.150)	465945	42.8170	42.8	
	111 1,2,3-Trichlorobenzene	180	12.360	12.360	(1.165)	155320	44.5660	44.6	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170513.s.b/b3251L.d

Date : 13-MAY-2017 08:57

Client ID: LCS

Instrument: msv14.i

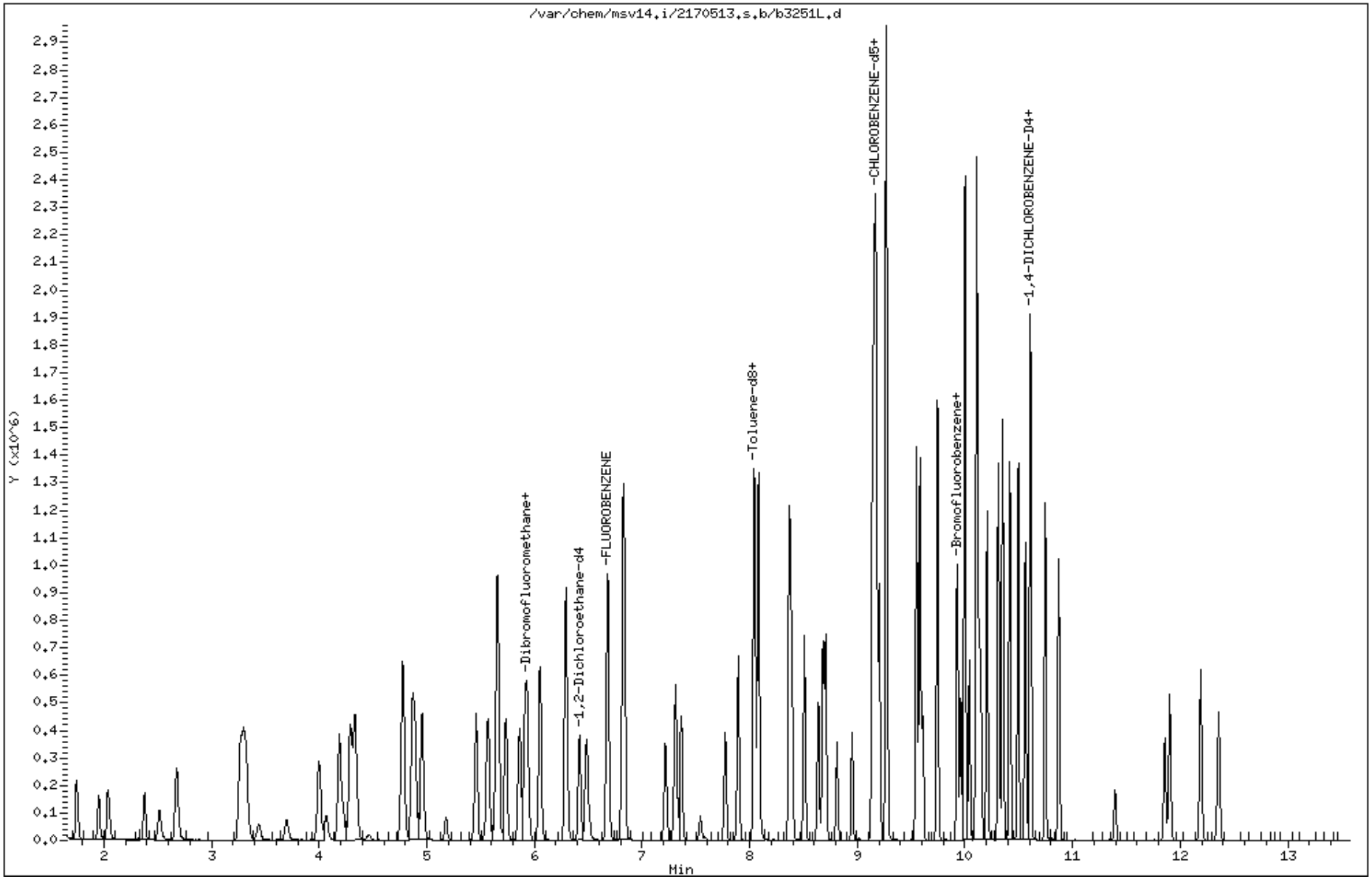
Sample Info: 1684272*LCS

Purge Volume: 5.0

Operator: IXE

Column phase: RTX-VMS-30M

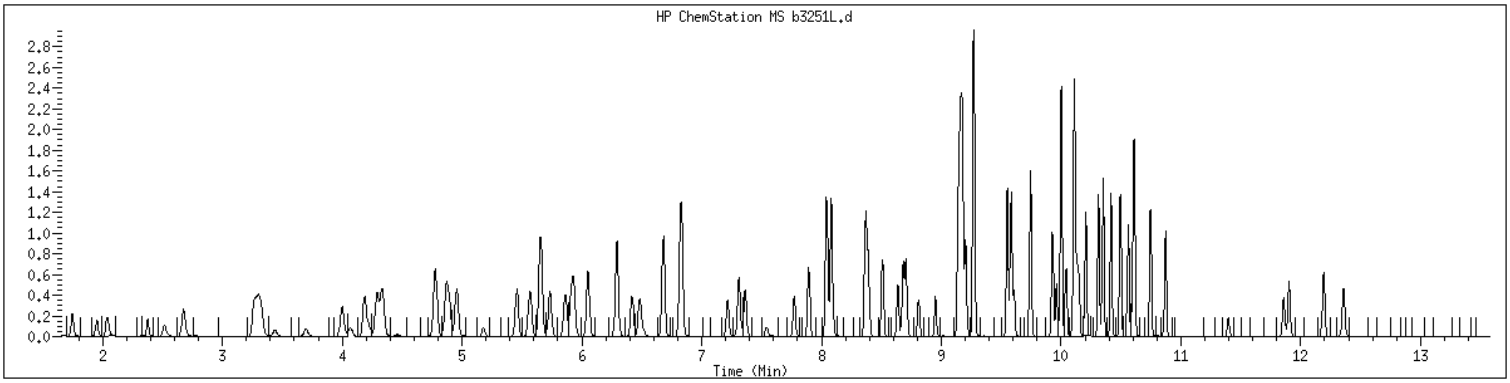
Column diameter: 0.25



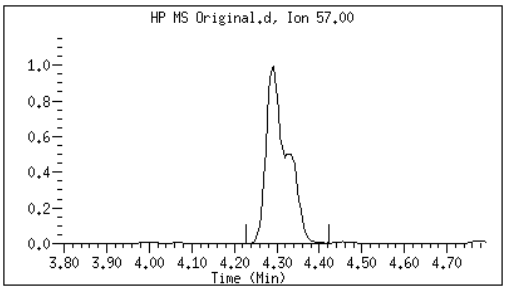
Report Date: 05/16/2017 11:15

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684272 SampleType : LCS
Injection Date: 05/13/2017 08:57 Instrument : msv14.i
Operator : IXE
Sample Info : 1684272*LCS
Misc Info : MSV~38321~*1*IXE
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1

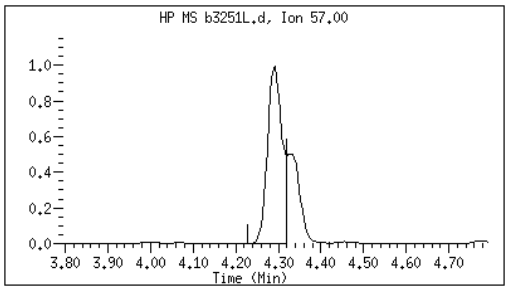


Original		Final
23 Hexane	CAS#: 110-54-3	Reason: M2



Electronic Signature Applied

User: ixe
Date: 05/13/2017 09:21



M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	LCSD1684273
Collect Date:	NA Time: NA	GCAL Sample ID:	1684273
Matrix:	Water % Moisture: NA	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3252
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 0921	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	50.7		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	50.0		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	48.9		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	51.0		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	52.0		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	45.4		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	44.0		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	49.8		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	49.1		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	49.3		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	47.6		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	50.9		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	50.6		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	48.9		0.200	0.500	1.00
78-93-3	2-Butanone	50.5		0.200	0.500	5.00
591-78-6	2-Hexanone	53.3		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	51.8		0.200	0.500	5.00
67-64-1	Acetone	49.8		0.500	1.00	5.00
71-43-2	Benzene	51.1		0.200	0.500	1.00
74-97-5	Bromochloromethane	52.1		0.200	0.500	1.00
75-27-4	Bromodichloromethane	51.1		0.200	0.500	1.00
75-25-2	Bromoform	51.3		0.250	0.500	1.00
74-83-9	Bromomethane	58.2		0.500	1.00	1.00
75-15-0	Carbon disulfide	52.4		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	52.3		0.250	0.500	1.00
108-90-7	Chlorobenzene	50.1		0.200	0.500	1.00
75-00-3	Chloroethane	46.0		0.250	0.500	1.00
67-66-3	Chloroform	50.2		0.200	0.500	1.00
74-87-3	Chloromethane	50.9		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	52.2		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	54.1		0.200	0.500	1.00
110-82-7	Cyclohexane	48.8		0.500	1.00	2.00
124-48-1	Dibromochloromethane	50.5		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	49.2		0.200	0.500	1.00
100-41-4	Ethylbenzene	52.1		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	50.6		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	LCSD1684273
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1684273
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV14
Sample Amt:	5 mL			Lab File ID:	2170513/b3252
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	IXE	Analytical Batch:	610316
Analysis Date:	05/13/17	Time:	0921	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	47.2		1.00	2.00	5.00
108-87-2	Methylcyclohexane	55.0		0.200	0.500	1.00
75-09-2	Methylene chloride	48.6		0.200	0.500	5.00
100-42-5	Styrene	50.3		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	46.9		0.200	0.500	1.00
127-18-4	Tetrachloroethene	49.8		0.200	0.500	1.00
108-88-3	Toluene	49.5		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	46.5		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	53.7		0.200	0.500	1.00
79-01-6	Trichloroethene	50.4		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	53.0		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	55.8		0.200	0.500	1.00
1330-20-7	Xylene (total)	153		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170513.s.b/b3252.d
Lab Smp Id: 1684273 Client Smp ID: LCSD
Inj Date : 13-MAY-2017 09:21
Operator : IXE Inst ID: msv14.i
Smp Info : 1684273*LCSD
Misc Info : MSV~38321~*1*IXE
Comment :
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Meth Date : 16-May-2017 11:14 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.743	1.743	(0.261)	197832	49.2385	49.2	
2 Chloromethane ++	50	1.953	1.953	(0.292)	162566	50.9076	50.9	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	200420	50.0500	50.0	
5 Bromomethane	94	2.377	2.377	(0.356)	85666	58.2441	58.2	
6 Chloroethane	64	2.516	2.516	(0.377)	118935	45.9642	46.0	
7 Trichlorofluoromethane	101	2.673	2.677	(0.400)	247353	53.0219	53.0	
11 1,1-Dichloroethene +	96	3.269	3.265	(0.489)	135884	51.9965	52.0	
14 Carbon Disulfide	76	3.292	3.295	(0.493)	446168	52.4098	52.4	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	150532	55.8092	55.8	
13 Methyl Iodide	142	3.438	3.438	(0.515)	93574	57.0565	57.1	
9 Acrolein	56	3.696	3.697	(0.553)	81045	359.438	359	
17 Methylene Chloride	49	4.000	4.000	(0.599)	234688	48.5958	48.6	
12 Acetone	43	4.067	4.068	(0.609)	130190	49.8062	49.8	
19 trans-1,2-Dichloroethene	61	4.187	4.188	(0.627)	255250	46.5349	46.5	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	168463	47.1859	47.2	8904
	23 Hexane	57	4.292	4.293	(0.643)	222896	45.4453	45.4	9288(M2)
	21 MTBE	73	4.330	4.334	(0.648)	527036	46.9070	46.9	9590
	26 tert-Butyl Alcohol	59	4.465	4.461	(0.668)	22900	47.6568	47.7	9523
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	640478	52.3358	52.3	9833
	29 Chloroprene	53	4.866	4.866	(0.728)	289144	48.1661	48.2	9008
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	387916	50.9611	51.0	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	396146	252.909	253	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	128687	51.3826	51.4	
M	48 Total 1,2-Dichloroethene	61				541196	98.7227	98.7	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	285946	52.1878	52.2	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	321787	52.0178	52.0	
	38 Cyclohexane	56	5.653	5.653	(0.846)	339506	48.8467	48.8	9129
	34 Bromochloromethane	128	5.657	5.657	(0.847)	90670	52.0804	52.1	
	41 Chloroform +	83	5.732	5.736	(0.858)	366691	50.2216	50.2	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	268991	52.3474	52.3	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	209318	50.3908	50.4	6912
	37 1,1,1-Trichloroethane	97	5.931	5.934	(0.888)	317314	50.6967	50.7	
	42 1,1-Dichloropropene	75	6.051	6.054	(0.906)	267086	52.7433	52.7	
	32 2-Butanone	43	6.047	6.043	(0.905)	144485	50.4709	50.5	
	44 Benzene	78	6.290	6.294	(0.942)	815423	51.0804	51.1	
$	43 1,2-Dichloroethane-d4	67	6.418	6.422	(0.961)	135817	49.2061	49.2	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	295780	47.5524	47.6	
	45 Isobutyl Alcohol	43	6.512	6.508	(0.975)	43618	253.020	253	9567
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	817698	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	301312	55.0006	55.0	8903
	49 Trichloroethene	130	6.834	6.830	(1.023)	207359	50.3801	50.4	
	52 Dibromomethane	93	7.216	7.216	(1.080)	131549	49.1450	49.1	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	214264	50.9338	50.9	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	292729	51.0695	51.1	
	55 1,4- Dioxane	58	7.542	7.543	(1.129)	41071	1183.16	1180	9506
	57 1-Bromo-2-chloroethane	63	7.771	7.775	(1.163)	308265	50.0683	50.1	9619
	58 cis-1,3-Dichloropropene	75	7.891	7.895	(1.181)	344453	54.0526	54.1	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	770350	48.6789	48.7	
	61 Toluene +	91	8.082	8.082	(0.883)	836351	49.4973	49.5	
M	145 1-3 Dichloropropene total	100				674991	107.737	108	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	150554	49.7681	49.8	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	228465	51.8201	51.8	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	330538	53.6841	53.7	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	195728	48.8650	48.9	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	246129	50.7339	50.7	9697
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	219433	50.4776	50.5	
	67 1,3-Dichloropropane	76	8.708	8.705	(0.952)	360088	50.2145	50.2	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	191725	49.1321	49.1	
	68 2-Hexanone	43	8.952	8.952	(0.978)	189287	53.3412	53.3	
	140 1-Chlorohexane	91	9.139	9.140	(0.999)	218059	45.6629	45.7	9123
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	335431	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	516774	50.0769	50.1	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	271111	52.1044	52.1	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	196545	50.2427	50.2	
75	p,m-Xylene	106	9.271	9.271	(1.013)	624438	103.572	104	
M 99	TOTAL XYLENE	106				925701	152.950	153	
76	o-Xylene	106	9.552	9.552	(1.044)	301263	49.3780	49.4	
77	Styrene	104	9.582	9.582	(1.047)	519875	50.2870	50.3	
78	Bromoform ++	173	9.608	9.608	(1.050)	155590	51.3435	51.3	
79	Isopropylbenzene	105	9.747	9.743	(1.065)	786661	50.6465	50.6	
161	cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	85988	44.9088	44.9	9600
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	207046	51.3247	51.3	
84	Bromobenzene	77	9.998	9.998	(0.943)	402049	51.0046	51.0	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	891083	52.3715	52.4	
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	267741	49.9632	50.0	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	627598	52.6425	52.6	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	616037	53.8277	53.8	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	350103	51.0365	51.0	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	79913	50.5565	50.6	
90	4-Chlorotoluene	91	10.208	10.204	(0.963)	567327	51.9645	52.0	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	346124	54.4101	54.4	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	641370	53.6925	53.7	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	716091	55.0602	55.1	
92	p-Isopropyltoluene	119	10.496	10.497	(0.990)	590857	54.7422	54.7	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	341068	50.6361	50.6	
* 97	1,4-DICHLOROBENZENE-D4	152	10.601	10.605	(1.000)	240925	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	337603	48.8938	48.9	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	520574	52.9129	52.9	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	315929	49.2962	49.3	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	44028	49.7620	49.8	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	71899	53.2714	53.3	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	163624	44.0171	44.0	
110	Naphthalene	128	12.191	12.191	(1.150)	491141	43.2857	43.3	
111	1,2,3-Trichlorobenzene	180	12.359	12.360	(1.166)	165193	45.4253	45.4	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170513.s.b/b3252.d

Page 1

Date : 13-MAY-2017 09:21

Client ID: LCSD

Instrument: msv14.i

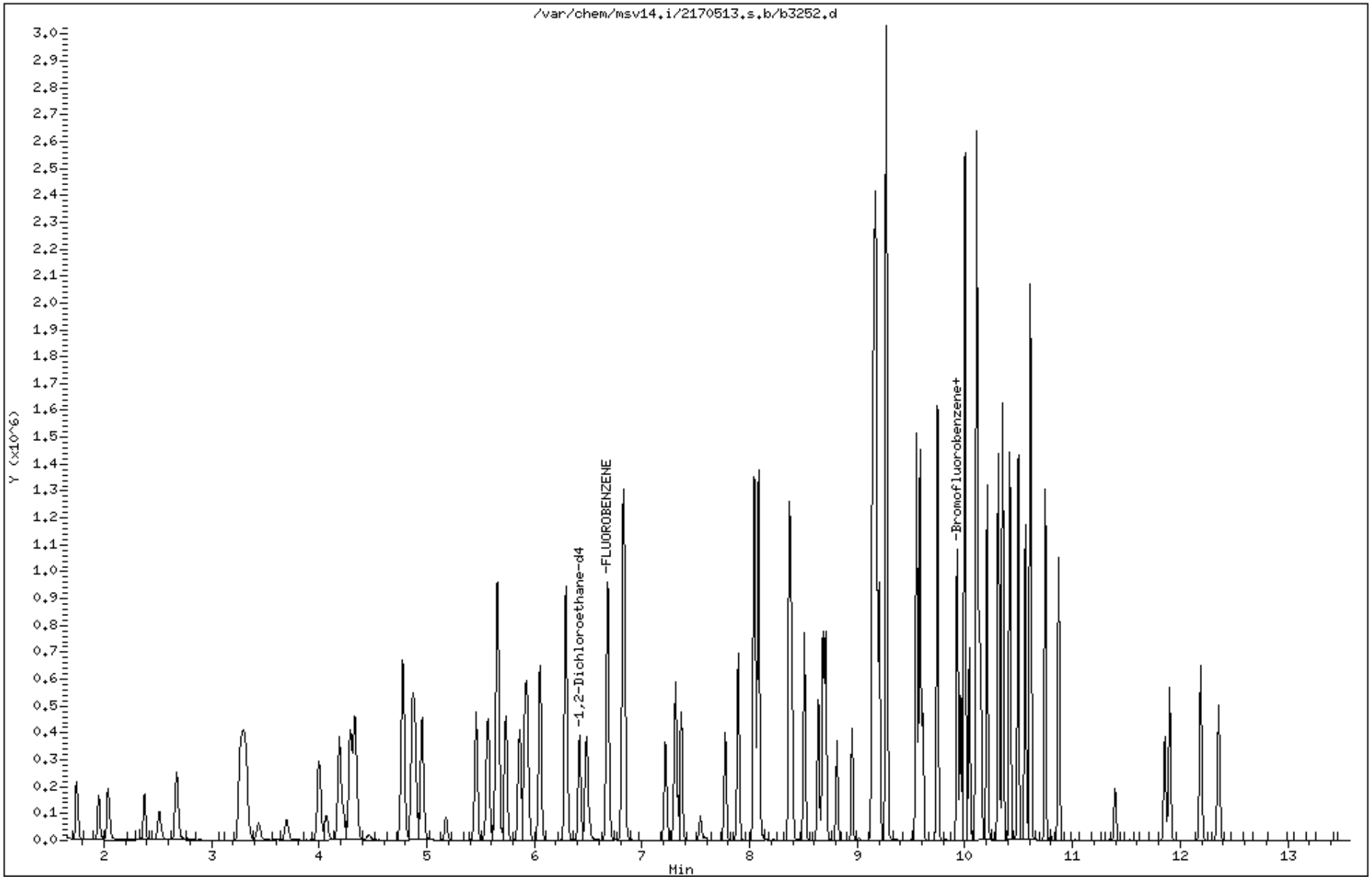
Sample Info: 1684273*LCSD

Purge Volume: 5.0

Operator: IXE

Column phase: RTX-VMS-30M

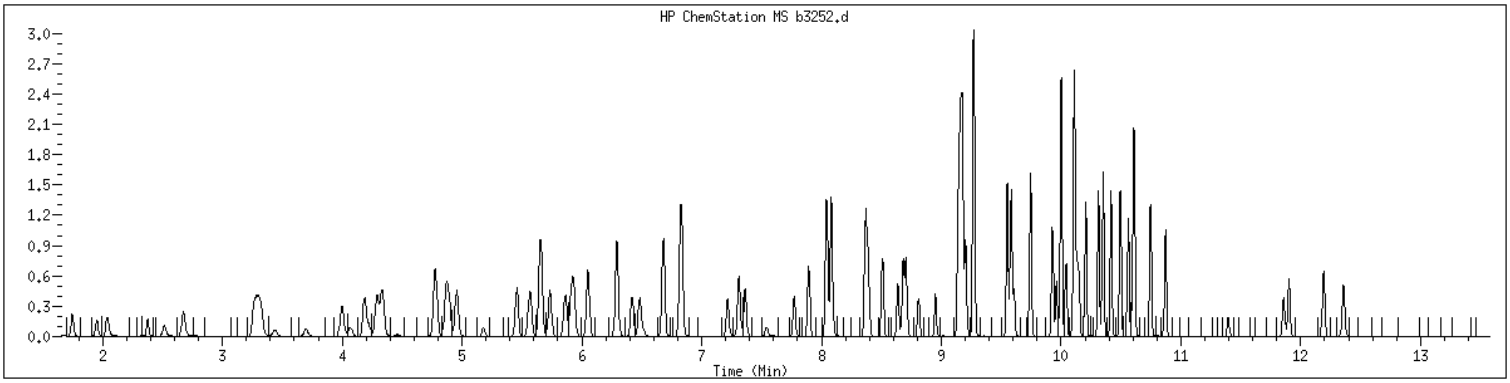
Column diameter: 0.25



Report Date: 05/16/2017 11:15

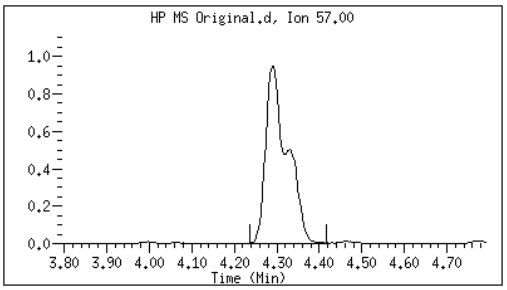
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1684273 SampleType : LCSD
Injection Date: 05/13/2017 09:21 Instrument : msv14.i
Operator : IXE
Sample Info : 1684273*LCSD
Misc Info : MSV~38321~*1*IXE
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



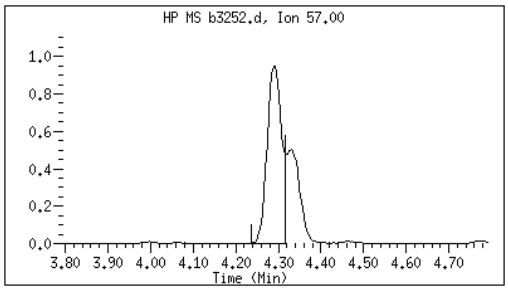
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: ixe
Date: 05/13/2017 09:44



M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	MB1686051
Collect Date:	NA Time: NA	GCAL Sample ID:	1686051
Matrix:	Solid % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 g	Lab File ID:	2170519/d4403s
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	50 Analyst: LBH	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 1413	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	25.0	U	12.5	25.0	250
79-34-5	1,1,2,2-Tetrachloroethane	25.0	U	12.5	25.0	250
79-00-5	1,1,2-Trichloroethane	25.0	U	12.5	25.0	250
75-34-3	1,1-Dichloroethane	25.0	U	12.5	25.0	250
75-35-4	1,1-Dichloroethene	25.0	U	12.5	25.0	250
87-61-6	1,2,3-Trichlorobenzene	50.0	U	25.0	50.0	250
120-82-1	1,2,4-Trichlorobenzene	50.0	U	25.0	50.0	250
96-12-8	1,2-Dibromo-3-chloropropane	100	U	25.0	100	250
106-93-4	1,2-Dibromoethane	100	U	25.0	100	250
95-50-1	1,2-Dichlorobenzene	25.0	U	12.5	25.0	250
107-06-2	1,2-Dichloroethane	25.0	U	12.5	25.0	250
78-87-5	1,2-Dichloropropane	25.0	U	12.5	25.0	250
541-73-1	1,3-Dichlorobenzene	25.0	U	12.5	25.0	250
106-46-7	1,4-Dichlorobenzene	25.0	U	12.5	25.0	250
78-93-3	2-Butanone	100	U	25.0	100	250
591-78-6	2-Hexanone	100	U	25.0	100	250
108-10-1	4-Methyl-2-pentanone	25.0	U	12.5	25.0	250
67-64-1	Acetone	100	U	25.0	100	1250
71-43-2	Benzene	25.0	U	12.5	25.0	250
74-97-5	Bromochloromethane	50.0	U	25.0	50.0	250
75-27-4	Bromodichloromethane	25.0	U	12.5	25.0	250
75-25-2	Bromoform	50.0	U	25.0	50.0	250
74-83-9	Bromomethane	100	U	25.0	100	250
75-15-0	Carbon disulfide	25.0	U	12.5	25.0	250
56-23-5	Carbon tetrachloride	25.0	U	12.5	25.0	250
108-90-7	Chlorobenzene	25.0	U	12.5	25.0	250
75-00-3	Chloroethane	25.0	U	12.5	25.0	250
67-66-3	Chloroform	25.0	U	12.5	25.0	250
74-87-3	Chloromethane	100	U	25.0	100	250
156-59-2	cis-1,2-Dichloroethene	25.0	U	12.5	25.0	250
10061-01-5	cis-1,3-Dichloropropene	25.0	U	12.5	25.0	250
110-82-7	Cyclohexane	25.0	U	12.5	25.0	250
124-48-1	Dibromochloromethane	25.0	U	12.5	25.0	250
75-71-8	Dichlorodifluoromethane	25.0	U	12.5	25.0	250
100-41-4	Ethylbenzene	25.0	U	12.5	25.0	250
98-82-8	Isopropylbenzene (Cumene)	25.0	U	12.5	25.0	250

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	MB1686051
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1686051
Matrix:	Solid	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 g			Lab File ID:	2170519/d4403s
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	50	Analyst:	LBH	Analytical Batch:	610743
Analysis Date:	05/19/17	Time:	1413	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	50.0	U	25.0	50.0	250
108-87-2	Methylcyclohexane	25.0	U	12.5	25.0	250
75-09-2	Methylene chloride	100	U	50.0	100	500
100-42-5	Styrene	25.0	U	12.5	25.0	250
1634-04-4	tert-Butyl methyl ether (MTBE)	25.0	U	12.5	25.0	250
127-18-4	Tetrachloroethene	50.0	U	25.0	50.0	250
108-88-3	Toluene	25.0	U	12.5	25.0	250
156-60-5	trans-1,2-Dichloroethene	25.0	U	12.5	25.0	250
10061-02-6	trans-1,3-Dichloropropene	25.0	U	12.5	25.0	250
79-01-6	Trichloroethene	25.0	U	12.5	25.0	250
75-69-4	Trichlorofluoromethane	25.0	U	12.5	25.0	250
76-13-1	Trichlorotrifluoroethane	50.0	U	25.0	50.0	250
75-01-4	Vinyl chloride	25.0	U	12.5	25.0	250
1330-20-7	Xylene (total)	75.0	U	25.0	75.0	750

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170519.s.b/d4403s.d
Lab Smp Id: 1686051 Client Smp ID: SMB
Inj Date : 19-MAY-2017 14:13
Operator : LBH Inst ID: msv13.i
Smp Info : 1686051*SMB
Misc Info : MSV~38363~*50*LBH
Comment :
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Meth Date : 20-May-2017 12:42 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100))/5000 * CpndVariable

Name	Value	Description
DF	50.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
m	0.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (UG/KG)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.780	5.784	(0.883)	93763	47.4398	2370	9465
$ 50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	62485	52.9339	2650	
* 53 FLUOROBENZENE	96	6.548	6.552	(1.000)	416168	50.0000		
$ 68 Toluene-d8	98	7.928	7.928	(0.876)	393509	48.9096	2450	
* 84 CHLOROBENZENE-d5	82	9.052	9.053	(1.000)	164833	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	115304	43.3086	2170	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	135307	50.0000		

Data File: /var/chem/msv13.i/2170519.s.b/d4403s.d

Page 1

Date : 19-MAY-2017 14:13

Client ID: SMB

Instrument: msv13.i

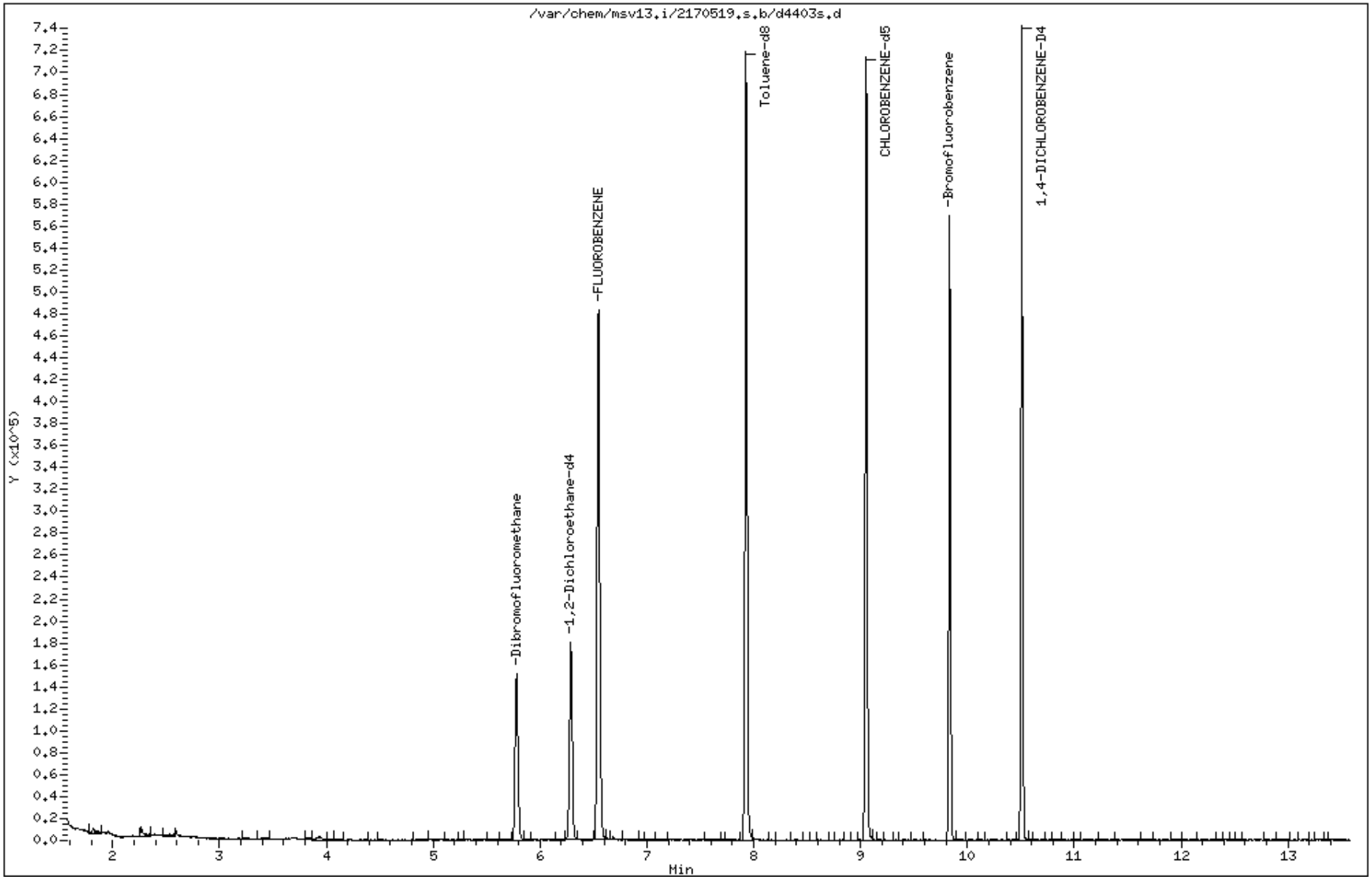
Sample Info: 1686051*SMB

Purge Volume: 5.0

Operator: LBH

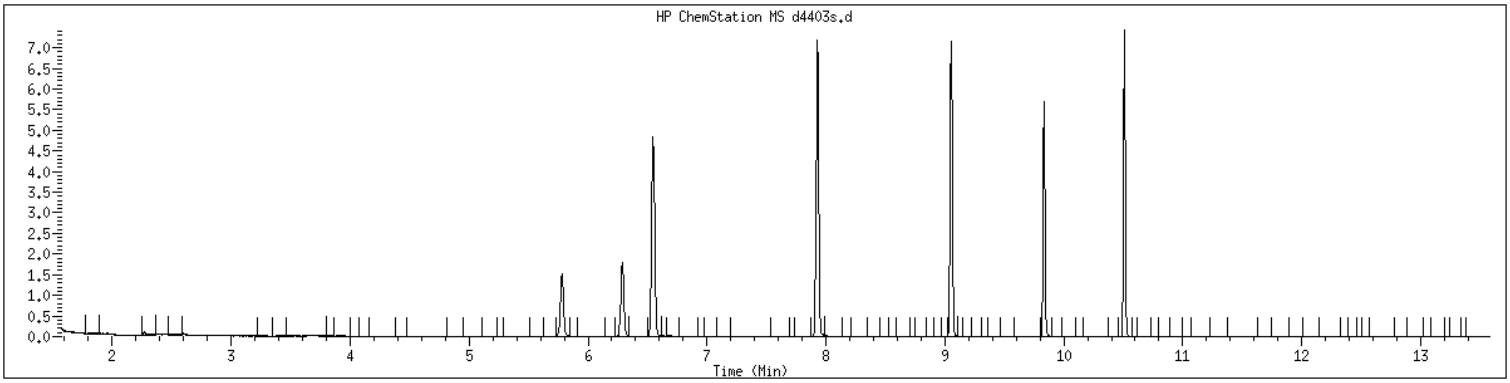
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1686051 SampleType : BLANK
Injection Date: 05/19/2017 14:13 Instrument : msv13.i
Operator : LBH
Sample Info : 1686051*SMB
Misc Info : MSV~38363~*50*LBH
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Dilution : 50.0
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	LCS1686052
Collect Date:	NA Time: NA	GCAL Sample ID:	1686052
Matrix:	Solid % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 g	Lab File ID:	2170519/d4389Ls
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	50 Analyst: LBH	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 0900	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	2320		12.5	25.0	250
79-34-5	1,1,2,2-Tetrachloroethane	2590		12.5	25.0	250
79-00-5	1,1,2-Trichloroethane	2320		12.5	25.0	250
75-34-3	1,1-Dichloroethane	2590		12.5	25.0	250
75-35-4	1,1-Dichloroethene	2350		12.5	25.0	250
87-61-6	1,2,3-Trichlorobenzene	2410		25.0	50.0	250
120-82-1	1,2,4-Trichlorobenzene	2380		25.0	50.0	250
96-12-8	1,2-Dibromo-3-chloropropane	2220		25.0	100	250
106-93-4	1,2-Dibromoethane	2230		25.0	100	250
95-50-1	1,2-Dichlorobenzene	2430		12.5	25.0	250
107-06-2	1,2-Dichloroethane	2410		12.5	25.0	250
78-87-5	1,2-Dichloropropane	2650		12.5	25.0	250
541-73-1	1,3-Dichlorobenzene	2440		12.5	25.0	250
106-46-7	1,4-Dichlorobenzene	2450		12.5	25.0	250
78-93-3	2-Butanone	2340		25.0	100	250
591-78-6	2-Hexanone	2070		25.0	100	250
108-10-1	4-Methyl-2-pentanone	2180		12.5	25.0	250
67-64-1	Acetone	2120		25.0	100	1250
71-43-2	Benzene	2540		12.5	25.0	250
74-97-5	Bromochloromethane	2330		25.0	50.0	250
75-27-4	Bromodichloromethane	2560		12.5	25.0	250
75-25-2	Bromoform	2260		25.0	50.0	250
74-83-9	Bromomethane	2480		25.0	100	250
75-15-0	Carbon disulfide	2750		12.5	25.0	250
56-23-5	Carbon tetrachloride	2380		12.5	25.0	250
108-90-7	Chlorobenzene	2340		12.5	25.0	250
75-00-3	Chloroethane	2980		12.5	25.0	250
67-66-3	Chloroform	2480		12.5	25.0	250
74-87-3	Chloromethane	2480		25.0	100	250
156-59-2	cis-1,2-Dichloroethene	2620		12.5	25.0	250
10061-01-5	cis-1,3-Dichloropropene	2580		12.5	25.0	250
110-82-7	Cyclohexane	2710		12.5	25.0	250
124-48-1	Dibromochloromethane	2370		12.5	25.0	250
75-71-8	Dichlorodifluoromethane	2370		12.5	25.0	250
100-41-4	Ethylbenzene	2330		12.5	25.0	250
98-82-8	Isopropylbenzene (Cumene)	2340		12.5	25.0	250

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	LCS1686052
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1686052
Matrix:	Solid	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 g			Lab File ID:	2170519/d4389Ls
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	50	Analyst:	LBH	Analytical Batch:	610743
Analysis Date:	05/19/17	Time:	0900	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2370		25.0	50.0	250
108-87-2	Methylcyclohexane	2550		12.5	25.0	250
75-09-2	Methylene chloride	2560		50.0	100	500
100-42-5	Styrene	2350		12.5	25.0	250
1634-04-4	tert-Butyl methyl ether (MTBE)	2090		12.5	25.0	250
127-18-4	Tetrachloroethene	2160		25.0	50.0	250
108-88-3	Toluene	2310		12.5	25.0	250
156-60-5	trans-1,2-Dichloroethene	2590		12.5	25.0	250
10061-02-6	trans-1,3-Dichloropropene	2510		12.5	25.0	250
79-01-6	Trichloroethene	2290		12.5	25.0	250
75-69-4	Trichlorofluoromethane	2570		12.5	25.0	250
76-13-1	Trichlorotrifluoroethane	2430		25.0	50.0	250
75-01-4	Vinyl chloride	2680		12.5	25.0	250
1330-20-7	Xylene (total)	6960		25.0	75.0	750

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170519.s.b/d4389Ls.d
Lab Smp Id: 1686052 Client Smp ID: LCS
Inj Date : 19-MAY-2017 09:00
Operator : LBH Inst ID: msv13.i
Smp Info : 1686052*LCS
Misc Info : MSV~38363~*50*LBH
Comment :
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Meth Date : 20-May-2017 12:42 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100))/5000 * CpndVariable

Name	Value	Description
DF	50.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
m	0.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (UG/KG)	SIMILARITY
1 Dichlorodifluoromethane	85	1.671	1.671	(0.255)	101282	47.3411	2370	
2 Chloromethane ++	50	1.866	1.866	(0.285)	97358	49.6083	2480	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	118493	53.5159	2680	
6 Bromomethane	94	2.275	2.275	(0.347)	78306	49.6253	2480	
7 Chloroethane	64	2.410	2.410	(0.368)	88450	59.5086	2980	(M1)
8 Trichlorofluoromethane	101	2.556	2.556	(0.390)	154174	51.4407	2570	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	88058	47.0045	2350	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	294030	55.0056	2750	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.175	(0.485)	85453	48.6218	2430	
13 Methyl Iodide	142	3.295	3.295	(0.503)	55651	39.3439	1970	
14 Acrolein	56	3.553	3.553	(0.542)	66256	365.728	18300	
16 Methylene Chloride	49	3.849	3.849	(0.588)	137951	51.1077	2560	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (UG/KG)	SIMILARITY
	17 Acetone	43	3.924	3.924	(0.599)	66510	42.4398	2120	
	18 trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	135112	51.7202	2590	
	19 Methyl Acetate	43	4.078	4.078	(0.622)	93639	47.4710	2370	9488
	20 Hexane	57	4.134	4.134	(0.631)	133099	55.2508	2760	9776
	21 MTBE	73	4.187	4.187	(0.639)	277427	41.7926	2090	9840
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	182861	51.7139	2590	
	27 Acrylonitrile	53	4.817	4.817	(0.735)	235965	283.900	14200	
	28 Vinyl Acetate	43	5.038	5.038	(0.769)	77767	57.0398	2850	(M1)
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	141129	52.3169	2620	
M	75 Total 1,2-Dichloroethene	61				276241	104.037	5200	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	129339	43.3619	2170	
	32 Cyclohexane	56	5.514	5.514	(0.842)	172232	54.1067	2710	9772
	34 Bromochloromethane	128	5.521	5.521	(0.843)	50360	46.6070	2330	
	35 Chloroform +	83	5.604	5.604	(0.855)	173734	49.5974	2480	
	36 Carbon Tetrachloride	117	5.724	5.724	(0.874)	117988	47.5167	2380	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	103663	48.7881	2440	9504
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	141374	46.3092	2320	
	44 2-Butanone	43	5.915	5.915	(0.903)	76245	46.7547	2340	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	135129	50.7582	2540	
	46 Benzene	78	6.159	6.159	(0.940)	435459	50.7560	2540	
$	50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	66270	52.2222	2610	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	141987	48.1902	2410	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	447393	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	167230	51.0478	2550	9788
	56 Trichloroethene	130	6.706	6.706	(1.023)	105971	45.8136	2290	
	57 Dibromomethane	93	7.096	7.096	(1.083)	65389	49.2885	2460	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	111346	52.9085	2650	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	138538	51.2742	2560	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	158315	53.3061	2670	9793
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	53388	42.4822	2120	(M1)
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	171355	51.6774	2580	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	422876	46.1810	2310	
	69 Toluene +	91	7.969	7.969	(0.880)	457530	46.2495	2310	
	71 Tetrachloroethene	164	8.262	8.262	(0.913)	83132	43.1198	2160	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	126014	43.6237	2180	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	145335	50.1440	2510	
M	82 1-3 Dichloropropene total	100				316690	101.821	5090	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	101678	46.4526	2320	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	106897	47.3394	2370	
	79 1,3-Dichloropropane	76	8.603	8.603	(0.950)	180868	48.8083	2440	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	97209	44.6290	2230	
	83 2-Hexanone	43	8.854	8.854	(0.978)	94951	41.3354	2070	
	86 1-Chlorohexane	91	9.038	9.038	(0.998)	131444	46.9337	2350	3269(M2)
*	84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	187600	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	301088	46.8813	2340	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	160958	46.6188	2330	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	100169	46.4475	2320	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (UG/KG)	SIMILARITY
89	p,m-Xylene	106	9.169	9.169	(1.013)	398838	93.5296	4680	
90	o-Xylene	106	9.454	9.454	(1.044)	193958	45.7539	2290	
M 121	TOTAL XYLENE	106				592796	139.284	6960	
91	Styrene	104	9.487	9.487	(1.048)	319153	47.0132	2350	
92	Bromoform ++	173	9.514	9.514	(1.051)	80478	45.2851	2260	
93	Isopropylbenzene	105	9.649	9.649	(1.066)	494634	46.8056	2340	
$ 95	Bromofluorobenzene	174	9.832	9.832	(1.086)	135289	44.6482	2230	
96	Bromobenzene	77	9.903	9.903	(0.943)	227512	51.3265	2570	
97	n-Propylbenzene	91	9.903	9.903	(0.943)	594584	51.7762	2590	
98	1,1,2,2-Tetrachloroethane++	83	9.948	9.948	(0.947)	154081	51.8981	2590	
99	2-Chlorotoluene	91	10.008	10.008	(0.953)	401515	50.2356	2510	
102	1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	410946	50.5201	2530	
100	1,2,3-Trichloropropane	75	10.038	10.038	(0.955)	173356	49.8527	2490	
101	trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	35174	48.9252	2450	
104	4-Chlorotoluene	91	10.110	10.110	(0.962)	354776	49.8314	2490	
105	tert-butylbenzene	91	10.215	10.215	(0.972)	223950	49.3084	2470	
107	1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	404388	49.5950	2480	
108	sec-Butylbenzene	105	10.320	10.320	(0.982)	513182	51.1217	2560	
110	p-Isopropyltoluene	119	10.398	10.398	(0.990)	423336	50.0095	2500	
113	1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	238790	48.8422	2440	
* 114	1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	172090	50.0000		
115	1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	241312	49.0332	2450	
117	n-Butylbenzene	91	10.649	10.649	(1.014)	386929	54.2264	2710	
118	1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	233442	48.6380	2430	
119	1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	30569	44.3523	2220	
120	Hexachlorobutadiene	225	11.733	11.733	(1.117)	65153	47.9294	2400	
122	1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	138735	47.6976	2380	
124	Naphthalene	128	12.055	12.055	(1.147)	375035	43.6967	2180	
125	1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	139312	48.1490	2410	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170519.s.b/d4389Ls.d

Page 1

Date : 19-MAY-2017 09:00

Client ID: LCS

Instrument: msv13.i

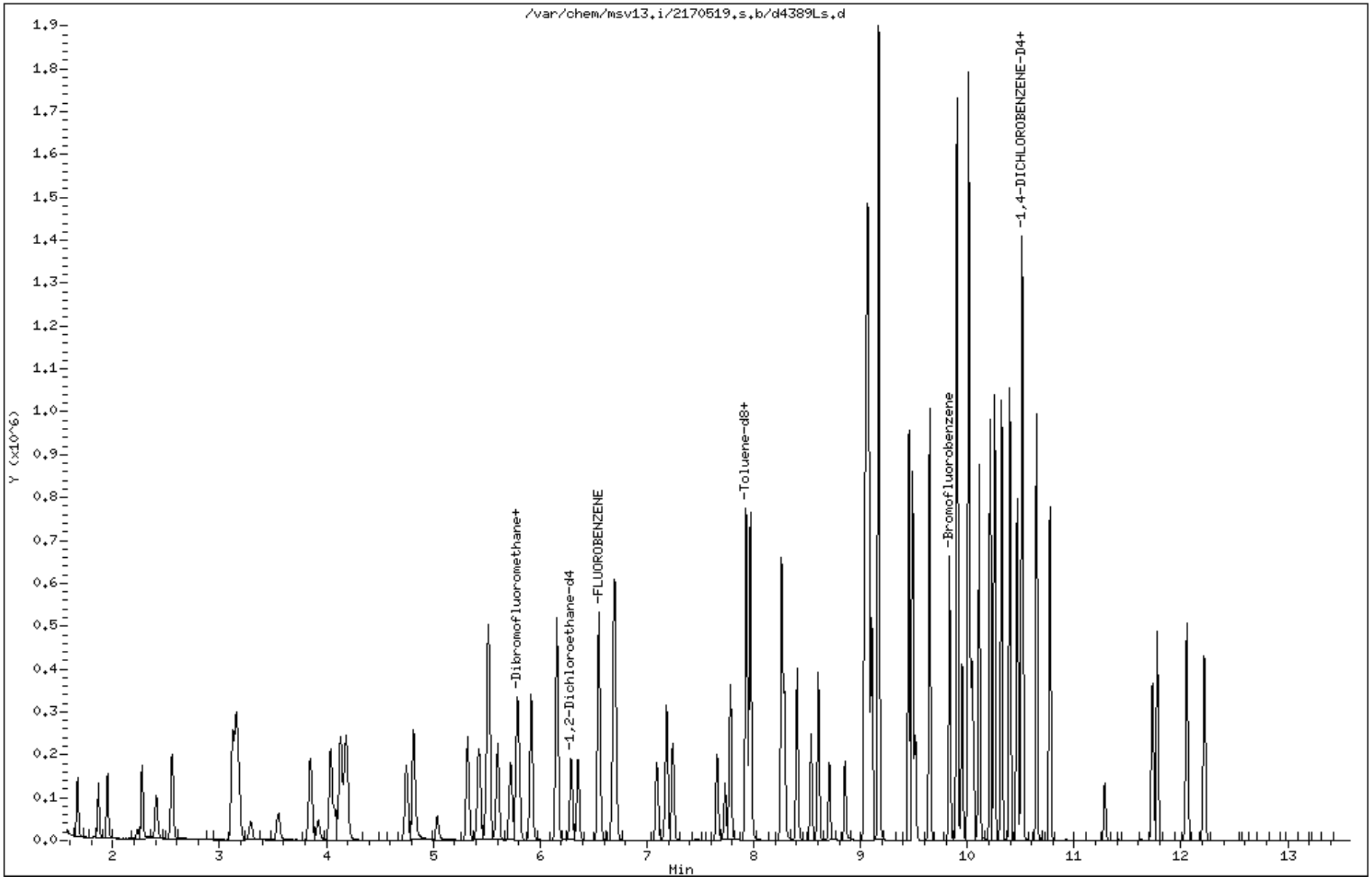
Sample Info: 1686052*LCS

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

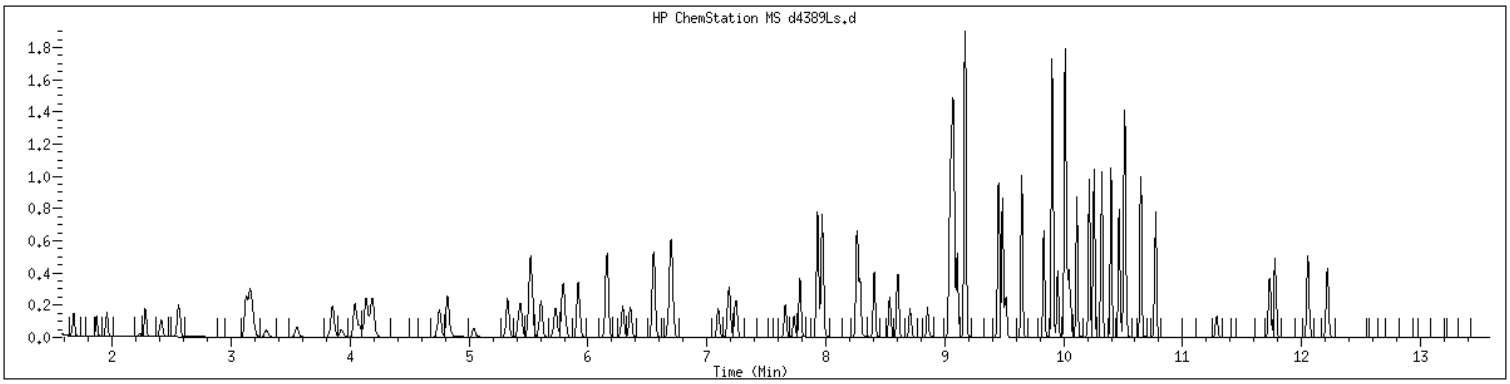
Column diameter: 0.25



Data file : /var/chem/msv13.i/2170519.s.b/d4389Ls.d   Page: 1
Report Date: 05/20/2017 12:42

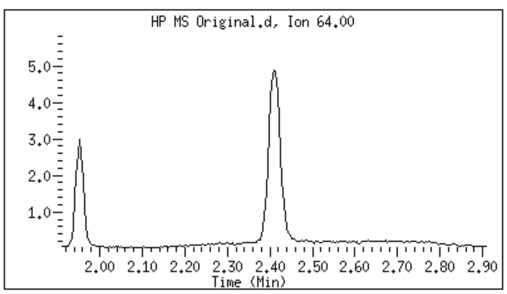
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID   : 1686052   SampleType   : LCS
Injection Date: 05/19/2017 09:00   Instrument   : msv13.i
Operator   : LBH
Sample Info   : 1686052*LCS
Misc Info   : MSV~38363~*50*LBH
Method   : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Dilution   : 50.0
Matrix   : SOIL
Integrator   : HP RTE   Compound Sublist: 8260b



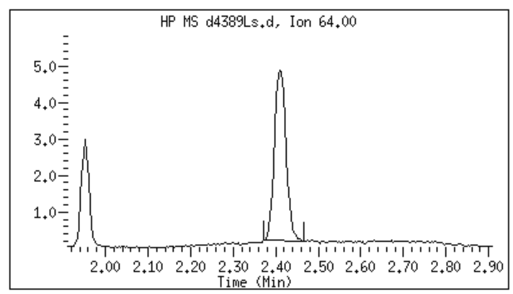
Original   Final

7 Chloroethane   CAS#: 75-00-3   Reason: M1

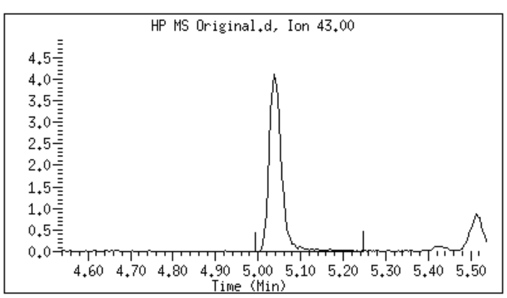


Electronic Signature Applied

User: lbh
Date: 05/19/2017 09:19



28 Vinyl Acetate   CAS#: 108-05-4   Reason: M1



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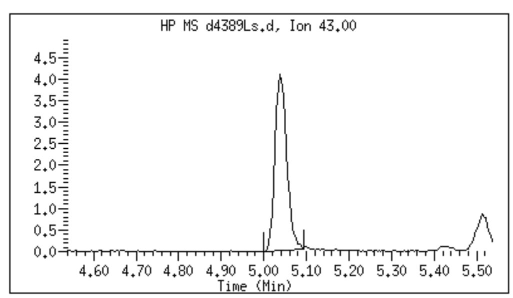
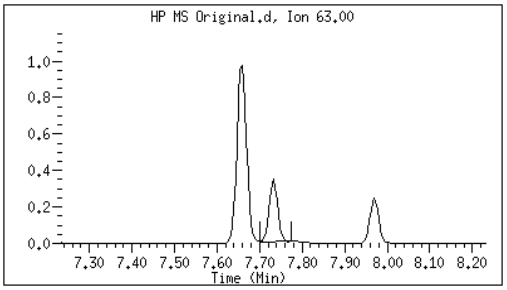
Date: 05/19/2017 09:19



Original Final

64 2-Chloroethyl vinyl ether CAS#: 110-75-8 Reason: M1



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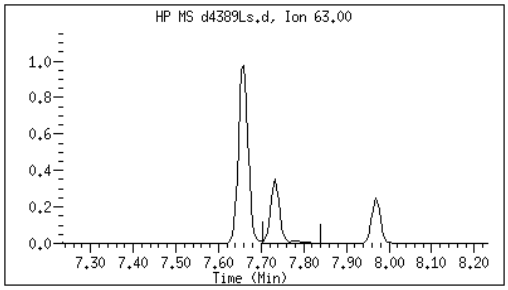
Date: 05/19/2017 09:20



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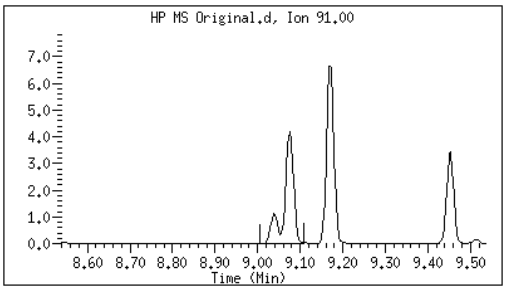
86 1-Chlorohexane CAS#: 544-10-5 Reason: M2



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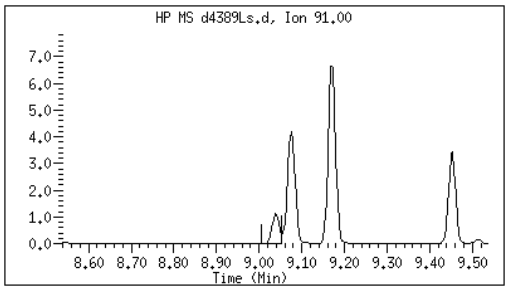
Date: 05/19/2017 09:20



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110	Client Sample ID:	LCSD1686053
Collect Date:	NA Time: NA	GCAL Sample ID:	1686053
Matrix:	Solid % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 g	Lab File ID:	2170519/d4390s
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	50 Analyst: LBH	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 0923	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	2300		12.5	25.0	250
79-34-5	1,1,2,2-Tetrachloroethane	2630		12.5	25.0	250
79-00-5	1,1,2-Trichloroethane	2350		12.5	25.0	250
75-34-3	1,1-Dichloroethane	2590		12.5	25.0	250
75-35-4	1,1-Dichloroethene	2360		12.5	25.0	250
87-61-6	1,2,3-Trichlorobenzene	2470		25.0	50.0	250
120-82-1	1,2,4-Trichlorobenzene	2430		25.0	50.0	250
96-12-8	1,2-Dibromo-3-chloropropane	2420		25.0	100	250
106-93-4	1,2-Dibromoethane	2300		25.0	100	250
95-50-1	1,2-Dichlorobenzene	2430		12.5	25.0	250
107-06-2	1,2-Dichloroethane	2430		12.5	25.0	250
78-87-5	1,2-Dichloropropane	2650		12.5	25.0	250
541-73-1	1,3-Dichlorobenzene	2450		12.5	25.0	250
106-46-7	1,4-Dichlorobenzene	2430		12.5	25.0	250
78-93-3	2-Butanone	2500		25.0	100	250
591-78-6	2-Hexanone	2310		25.0	100	250
108-10-1	4-Methyl-2-pentanone	2340		12.5	25.0	250
67-64-1	Acetone	2350		25.0	100	1250
71-43-2	Benzene	2510		12.5	25.0	250
74-97-5	Bromochloromethane	2390		25.0	50.0	250
75-27-4	Bromodichloromethane	2530		12.5	25.0	250
75-25-2	Bromoform	2350		25.0	50.0	250
74-83-9	Bromomethane	2540		25.0	100	250
75-15-0	Carbon disulfide	2710		12.5	25.0	250
56-23-5	Carbon tetrachloride	2360		12.5	25.0	250
108-90-7	Chlorobenzene	2330		12.5	25.0	250
75-00-3	Chloroethane	3200		12.5	25.0	250
67-66-3	Chloroform	2480		12.5	25.0	250
74-87-3	Chloromethane	2590		25.0	100	250
156-59-2	cis-1,2-Dichloroethene	2600		12.5	25.0	250
10061-01-5	cis-1,3-Dichloropropene	2580		12.5	25.0	250
110-82-7	Cyclohexane	2680		12.5	25.0	250
124-48-1	Dibromochloromethane	2410		12.5	25.0	250
75-71-8	Dichlorodifluoromethane	2390		12.5	25.0	250
100-41-4	Ethylbenzene	2350		12.5	25.0	250
98-82-8	Isopropylbenzene (Cumene)	2320		12.5	25.0	250

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217051110			Client Sample ID:	LCSD1686053
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1686053
Matrix:	Solid	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 g			Lab File ID:	2170519/d4390s
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	50	Analyst:	LBH	Analytical Batch:	610743
Analysis Date:	05/19/17	Time:	0923	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2480		25.0	50.0	250
108-87-2	Methylcyclohexane	2460		12.5	25.0	250
75-09-2	Methylene chloride	2650		50.0	100	500
100-42-5	Styrene	2360		12.5	25.0	250
1634-04-4	tert-Butyl methyl ether (MTBE)	2150		12.5	25.0	250
127-18-4	Tetrachloroethene	2180		25.0	50.0	250
108-88-3	Toluene	2310		12.5	25.0	250
156-60-5	trans-1,2-Dichloroethene	2600		12.5	25.0	250
10061-02-6	trans-1,3-Dichloropropene	2540		12.5	25.0	250
79-01-6	Trichloroethene	2270		12.5	25.0	250
75-69-4	Trichlorofluoromethane	2520		12.5	25.0	250
76-13-1	Trichlorotrifluoroethane	2390		25.0	50.0	250
75-01-4	Vinyl chloride	2690		12.5	25.0	250
1330-20-7	Xylene (total)	6950		25.0	75.0	750

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170519.s.b/d4390s.d
Lab Smp Id: 1686053 Client Smp ID: LCSD
Inj Date : 19-MAY-2017 09:23
Operator : LBH Inst ID: msv13.i
Smp Info : 1686053*LCSD
Misc Info : MSV~38363~*50*LBH
Comment :
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Meth Date : 20-May-2017 12:42 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/(Ws*(100-M)/100))/5000 * CpndVariable

Name	Value	Description
DF	50.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
m	0.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (UG/KG)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.671	(0.256)	101645	47.7856	2390	
2 Chloromethane ++	50	1.866	1.866	(0.285)	101038	51.7813	2590	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	118319	53.7464	2690	
6 Bromomethane	94	2.279	2.275	(0.348)	79845	50.8933	2540	
7 Chloroethane	64	2.414	2.410	(0.368)	94630	64.0732	3200	
8 Trichlorofluoromethane	101	2.560	2.556	(0.391)	150084	50.3658	2520	
10 1,1-Dichloroethene +	96	3.130	3.126	(0.478)	87909	47.1964	2360	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	288573	54.2970	2710	
12 1,1,2Trichlotrifluoroethane	101	3.182	3.175	(0.486)	83598	47.8415	2390	
13 Methyl Iodide	142	3.298	3.295	(0.503)	57297	40.5831	2030	
14 Acrolein	56	3.557	3.553	(0.543)	69060	383.410	19200	
16 Methylene Chloride	49	3.853	3.849	(0.588)	142184	52.9806	2650	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (UG/KG)	SIMILARITY
	17 Acetone	43	3.924	3.924	(0.599)	73277	47.0282	2350	
	18 trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	134893	51.9350	2600	
	19 Methyl Acetate	43	4.078	4.078	(0.622)	97315	49.6199	2480	9164
	20 Hexane	57	4.138	4.134	(0.632)	132817	55.4527	2770	9716(M2)
	21 MTBE	73	4.187	4.187	(0.639)	284156	43.0539	2150	9833
	26 1,1-Dichloroethane ++	63	4.753	4.749	(0.725)	181795	51.7098	2590	
	27 Acrylonitrile	53	4.820	4.817	(0.736)	245813	297.460	14900	(M2)
	28 Vinyl Acetate	43	5.042	5.038	(0.769)	78916	58.2174	2910	
	29 cis-1,2-Dichloroethene	61	5.326	5.323	(0.813)	139696	52.0852	2600	
M	75 Total 1,2-Dichloroethene	61				274589	104.020	5200	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	127128	42.8672	2140	
	32 Cyclohexane	56	5.518	5.514	(0.842)	169444	53.5388	2680	9663
	34 Bromochloromethane	128	5.529	5.521	(0.844)	51259	47.7135	2390	
	35 Chloroform +	83	5.604	5.604	(0.855)	172616	49.5632	2480	
	36 Carbon Tetrachloride	117	5.731	5.724	(0.875)	116415	47.1544	2360	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	103190	48.8464	2440	9501
	41 1,1,1-Trichloroethane	97	5.799	5.795	(0.885)	139702	46.0262	2300	
	44 2-Butanone	43	5.915	5.915	(0.903)	81112	50.0270	2500	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	132447	50.0385	2500	
	46 Benzene	78	6.159	6.159	(0.940)	427962	50.1707	2510	
$	50 1,2-Dichloroethane-d4	67	6.294	6.290	(0.961)	66428	52.6495	2630	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	142376	48.6017	2430	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	444820	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.691	(1.022)	160460	49.2645	2460	9436
	56 Trichloroethene	130	6.710	6.706	(1.024)	104191	45.3046	2270	
	57 Dibromomethane	93	7.096	7.096	(1.083)	66957	50.7623	2540	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	110818	52.9622	2650	
	60 Bromodichloromethane	83	7.246	7.242	(1.106)	135677	50.5058	2530	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	162007	54.8648	2740	9831
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	44494	35.6098	1780	
	67 cis-1,3-Dichloropropene	75	7.786	7.782	(1.188)	170003	51.5663	2580	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	424447	46.8516	2340	
	69 Toluene +	91	7.969	7.969	(0.880)	452620	46.2458	2310	
	71 Tetrachloroethene	164	8.265	8.262	(0.913)	83100	43.5672	2180	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	133586	46.7428	2340	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	146117	50.7054	2540	
M	82 1-3 Dichloropropene total	100				316120	102.272	5110	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	101870	47.0413	2350	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	107824	48.2639	2410	
	79 1,3-Dichloropropane	76	8.606	8.603	(0.951)	182421	49.7574	2490	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	99057	45.9669	2300	
	83 2-Hexanone	43	8.854	8.854	(0.978)	105088	46.2408	2310	
	86 1-Chlorohexane	91	9.038	9.038	(0.998)	126860	45.7846	2290	3350(M2)
*	84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	185602	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	295548	46.5140	2330	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	160316	46.9327	2350	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	98600	46.2121	2310	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (UG/KG)	SIMILARITY
89	p,m-Xylene	106	9.173	9.169	(1.013)	394061	93.4042	4670	
90	o-Xylene	106	9.454	9.454	(1.044)	191071	45.5581	2280	
M 121	TOTAL XYLENE	106				585132	138.962	6950	
91	Styrene	104	9.487	9.487	(1.048)	317552	47.2809	2360	
92	Bromoform ++	173	9.514	9.514	(1.051)	82707	47.0404	2350	
93	Isopropylbenzene	105	9.649	9.649	(1.066)	484751	46.3642	2320	
$ 95	Bromofluorobenzene	174	9.832	9.832	(1.086)	135596	45.2312	2260	
96	Bromobenzene	77	9.904	9.903	(0.943)	224952	50.9699	2550	
97	n-Propylbenzene	91	9.904	9.903	(0.943)	576831	50.4490	2520	
98	1,1,2,2-Tetrachloroethane++	83	9.948	9.948	(0.947)	155633	52.6490	2630	
99	2-Chlorotoluene	91	10.012	10.008	(0.953)	395535	49.7029	2490	
102	1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	401921	49.6257	2480	
100	1,2,3-Trichloropropane	75	10.042	10.038	(0.956)	179579	51.8671	2590	
101	trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	36335	50.7602	2540	
104	4-Chlorotoluene	91	10.110	10.110	(0.962)	348969	49.2291	2460	
105	tert-butylbenzene	91	10.215	10.215	(0.972)	216863	47.9559	2400	
107	1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	396734	48.8681	2440	
108	sec-Butylbenzene	105	10.320	10.320	(0.982)	495412	49.5664	2480	
110	p-Isopropyltoluene	119	10.398	10.398	(0.990)	409971	48.6416	2430	
113	1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	238147	48.9227	2450	
* 114	1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	171344	50.0000		
115	1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	237973	48.5653	2430	
117	n-Butylbenzene	91	10.649	10.649	(1.014)	372962	52.4965	2620	
118	1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	232676	48.6894	2430	
119	1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	33248	48.4493	2420	
120	Hexachlorobutadiene	225	11.733	11.733	(1.117)	62335	46.0560	2300	
122	1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	140604	48.5383	2430	
124	Naphthalene	128	12.055	12.055	(1.147)	393582	45.9998	2300	
125	1,2,3-Trichlorobenzene	180	12.216	12.220	(1.163)	142187	49.3393	2470	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170519.s.b/d4390s.d

Page 1

Date : 19-MAY-2017 09:23

Client ID: LCSD

Instrument: msv13.i

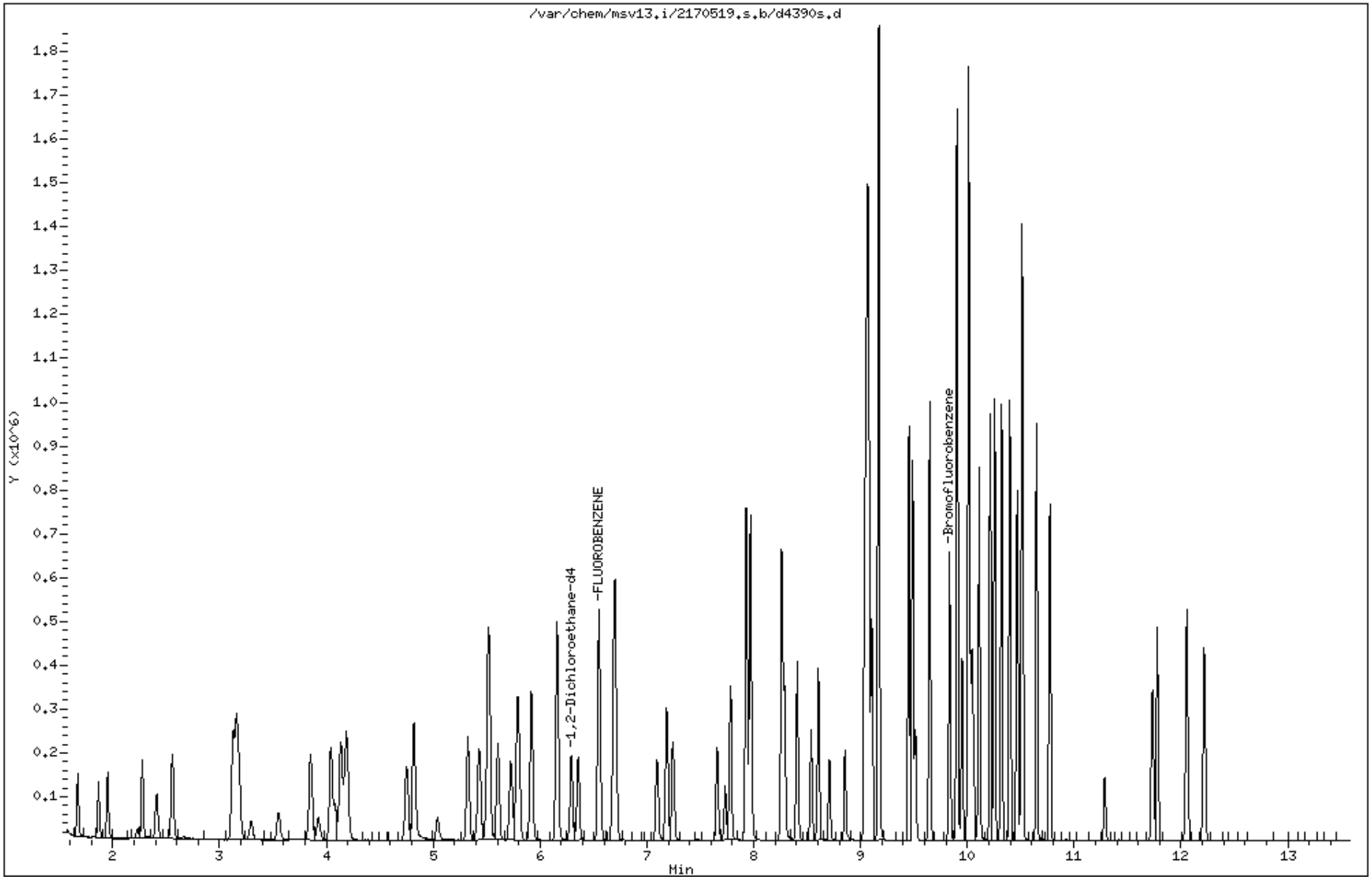
Sample Info: 1686053*LCSD

Purge Volume: 5.0

Operator: LBH

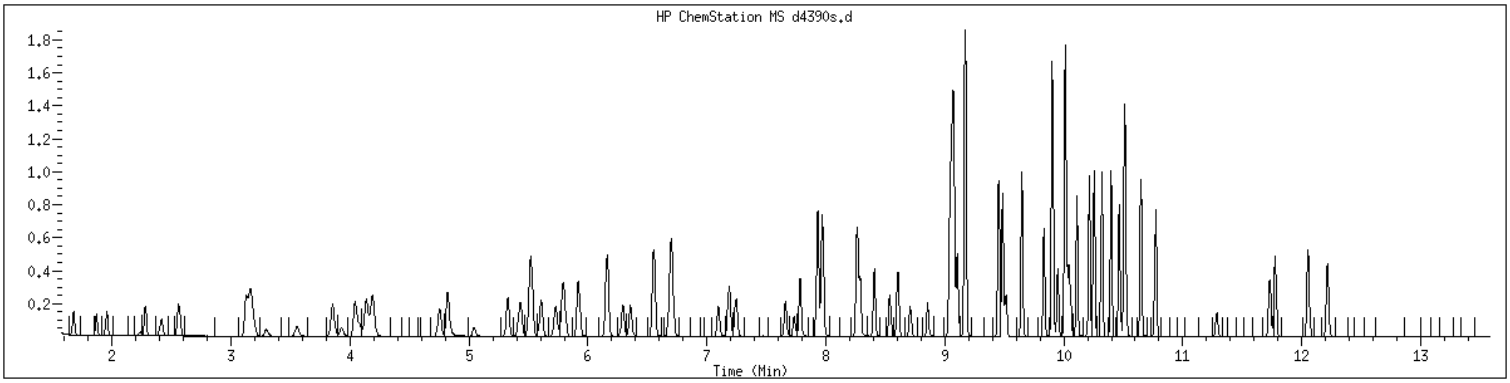
Column phase: RTX-VMS-30M

Column diameter: 0.25



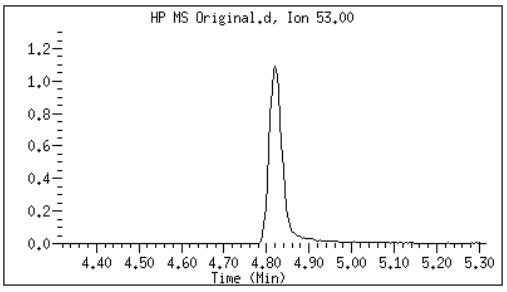
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1686053 SampleType : LCSD
Injection Date: 05/19/2017 09:23 Instrument : msv13.i
Operator : LBH
Sample Info : 1686053*LCSD
Misc Info : MSV~38363~*50*LBH
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Dilution : 50.0
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b



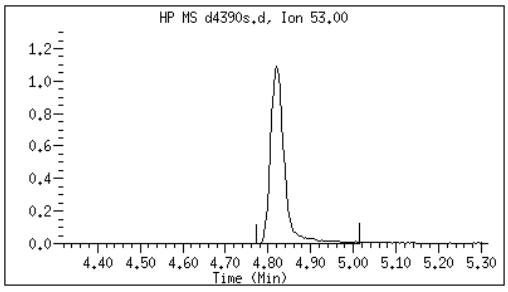
Original Final

27 Acrylonitrile CAS#: 107-13-1 Reason: M2

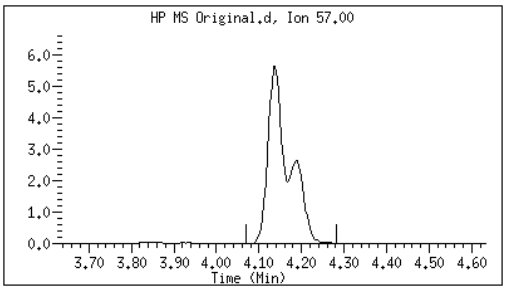


Electronic Signature Applied

User: lbh
Date: 05/19/2017 10:41



20 Hexane CAS#: 110-54-3 Reason: M2



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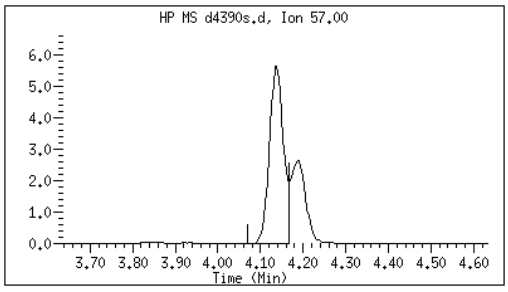
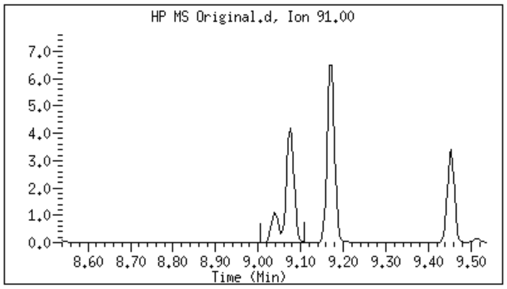


Original | Final

86 1-Chlorohexane   CAS#: 544-10-5   Reason: M2



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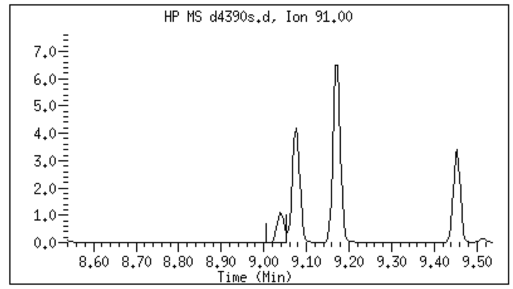


M2 - Target system integrated incorrectly

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 217051110 Analytical Method: EPA 8260B

	Client Sample ID	GCAL Sample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1.	OMS-28-GW13-32-S	21705111005	101		99		102		102		0
2.	OMS-28-GW13-32-C	21705111006	103		98		103		100		0
3.	OMS-28-GW28-12-S	21705111012	101		99		104		101		0
4.	MB1684271	1684271	101		98		102		101		0
5.	LCS1684272	1684272	100		100		101		98		0
6.	LCSD1684273	1684273	98		103		101		97		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 2B

Surrogates

Soil

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 217051110 Analytical Method: EPA 8260B

	Client Sample ID	*GCALSample ID*	*SMC1*	#	*SMC2*	#	*SMC3*	#	*SMC4*	#	*TOT OUT*
1.	OMS-28-SB04-1-S	21705111001	105		103		99		105		0
2.	OMS-28-SB01-2-S	21705111002	100		102		101		105		0
3.	OMS-28-SB11-6-S	21705111003	103		102		104		103		0
4.	OMS-28-SB14-1-S	21705111004	105		100		105		102		0
5.	OMS-28-SB22-1.5-S	21705111007	104		100		106		102		0
6.	OMS-28-SB16-5-S	21705111008	104		103		103		105		0
7.	OMS-28-SB24-1-S	21705111009	104		83		95		99		0
8.	OMS-28-SB24-3-S	21705111010	103		83		94		98		0
9.	OMS-28-SB24-5-S	21705111011	106		83		96		98		0
10.	MB1684001	1684001	95		101		99		107		0
11.	LCS1684002	1684002	95		108		102		104		0
12.	LCSD1684003	1684003	91		105		100		104		0
13.	MB1686051	1686051	106		87		95		98		0
14.	LCS1686052	1686052	104		89		98		92		0
15.	LCSD1686053	1686053	105		90		98		94		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	71 - 136	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	79 - 119	* Values outside of QC limits
SMC 3	Dibromofluoromethane	78 - 119	
SMC 4	Toluene-d8	85 - 116	

FORM II VOA-2

Form 3A

Spikes

Water

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610316

GCAL QC ID: 1684272

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	50.4	101		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	47.7	95		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	47.9	96		80 - 119
1,1-Dichloroethane	ug/L	50	0	50.2	100		77 - 125
1,1-Dichloroethene	ug/L	50	0	53.3	107		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	44.6	89		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	42.8	86		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	47.8	96		62 - 128
1,2-Dibromoethane	ug/L	50	0	48.3	97		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	49.4	99		80 - 119
1,2-Dichloroethane	ug/L	50	0	46.6	93		73 - 128
1,2-Dichloropropane	ug/L	50	0	49	98		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	48.8	98		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	47.2	94		79 - 118
2-Butanone	ug/L	50	0	49.8	100		56 - 143
2-Hexanone	ug/L	50	0	51.1	102		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	50.4	101		67 - 130
Acetone	ug/L	50	0	48.4	97		39 - 160
Benzene	ug/L	50	0	49.8	100		79 - 120
Bromochloromethane	ug/L	50	0	50.5	101		78 - 123
Bromodichloromethane	ug/L	50	0	49.8	100		79 - 125
Bromoform	ug/L	50	0	49.4	99		66 - 130
Bromomethane	ug/L	50	0	56.9	114		53 - 141
Carbon disulfide	ug/L	50	0	52.4	105		64 - 133
Carbon tetrachloride	ug/L	50	0	52.3	105		72 - 136
Chlorobenzene	ug/L	50	0	49.4	99		82 - 118
Chloroethane	ug/L	50	0	46.7	93		60 - 138
Chloroform	ug/L	50	0	49.3	99		79 - 124
Chloromethane	ug/L	50	0	49.6	99		50 - 139
Cyclohexane	ug/L	50	0	48.8	98		71 - 130
Dibromochloromethane	ug/L	50	0	49.7	99		74 - 126
Dichlorodifluoromethane	ug/L	50	0	49.3	99		32 - 152
Ethylbenzene	ug/L	50	0	51.6	103		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	50.1	100		72 - 131
Methyl Acetate	ug/L	50	0	47.2	94		56 - 136
Methylcyclohexane	ug/L	50	0	55.4	111		72 - 132
Methylene chloride	ug/L	50	0	47.5	95		74 - 124
Styrene	ug/L	50	0	49.4	99		78 - 123
Tetrachloroethene	ug/L	50	0	49.9	100		74 - 129

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610316

Toluene	ug/L	50	0	48.9	98		80 - 121
Trichloroethene	ug/L	50	0	50	100		79 - 123
Trichlorofluoromethane	ug/L	50	0	55.6	111		65 - 141
Trichlorotrifluoroethane	ug/L	50	0	56.7	113		70 - 136
Xylene (total)	ug/L	150	0	152	101		79 - 121
cis-1,2-Dichloroethene	ug/L	50	0	50.6	101		78 - 123
cis-1,3-Dichloropropene	ug/L	50	0	51.9	104		75 - 124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	46.6	93		71 - 124
trans-1,2-Dichloroethene	ug/L	50	0	47.1	94		75 - 124
trans-1,3-Dichloropropene	ug/L	50	0	51.3	103		73 - 127

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B

Analytical Batch: 610316

GCAL QC ID: 1684273

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/L	50	50.7	101		.6		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	50	100		5		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	48.9	98		2		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	51	102		2		77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	52	104		2		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	45.4	91		2		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	44	88		3		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	49.8	100		4		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	49.1	98		2		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	49.3	99		.2		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	47.6	95		2		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	50.9	102		4		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	50.6	101		4		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	48.9	98		4		79 - 118	0 - 20
2-Butanone	ug/L	50	50.5	101		1		56 - 143	0 - 20
2-Hexanone	ug/L	50	53.3	107		4		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	51.8	104		3		67 - 130	0 - 20
Acetone	ug/L	50	49.8	100		3		39 - 160	0 - 20
Benzene	ug/L	50	51.1	102		3		79 - 120	0 - 20
Bromochloromethane	ug/L	50	52.1	104		3		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	51.1	102		3		79 - 125	0 - 20
Bromoform	ug/L	50	51.3	103		4		66 - 130	0 - 20
Bromomethane	ug/L	50	58.2	116		2		53 - 141	0 - 20
Carbon disulfide	ug/L	50	52.4	105		0		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	52.3	105		0		72 - 136	0 - 20
Chlorobenzene	ug/L	50	50.1	100		1		82 - 118	0 - 20
Chloroethane	ug/L	50	46	92		2		60 - 138	0 - 20
Chloroform	ug/L	50	50.2	100		2		79 - 124	0 - 20
Chloromethane	ug/L	50	50.9	102		3		50 - 139	0 - 20
Cyclohexane	ug/L	50	48.8	98		0		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	50.5	101		2		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	49.2	98		.2		32 - 152	0 - 20
Ethylbenzene	ug/L	50	52.1	104		1		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	50.6	101		1		72 - 131	0 - 20
Methyl Acetate	ug/L	50	47.2	94		0		56 - 136	0 - 20
Methylcyclohexane	ug/L	50	55	110		.7		72 - 132	0 - 20
Methylene chloride	ug/L	50	48.6	97		2		74 - 124	0 - 20
Styrene	ug/L	50	50.3	101		2		78 - 123	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B

Analytical Batch: 610316

Tetrachloroethene	ug/L	50	49.8	100		.2		74 - 129	0 - 20
Toluene	ug/L	50	49.5	99		1		80 - 121	0 - 20
Trichloroethene	ug/L	50	50.4	101		.8		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	53	106		5		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	55.8	112		2		70 - 136	0 - 20
Xylene (total)	ug/L	150	153	102		.7		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	52.2	104		3		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	54.1	108		4		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	46.9	94		.6		71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	46.5	93		1		75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	53.7	107		5		73 - 127	0 - 20

RPD : 0 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 3B

Spikes

Soil

3B

SOIL VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610743

GCAL QC ID: 1686052

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/kg	2500	0	2320	93		73 - 130
1,1,2,2-Tetrachloroethane	ug/kg	2500	0	2590	104		70 - 124
1,1,2-Trichloroethane	ug/kg	2500	0	2320	93		78 - 121
1,1-Dichloroethane	ug/kg	2500	0	2590	104		76 - 125
1,1-Dichloroethene	ug/kg	2500	0	2350	94		70 - 131
1,2,3-Trichlorobenzene	ug/kg	2500	0	2410	96		66 - 130
1,2,4-Trichlorobenzene	ug/kg	2500	0	2380	95		67 - 129
1,2-Dibromo-3-chloropropane	ug/kg	2500	0	2220	89		61 - 132
1,2-Dibromoethane	ug/kg	2500	0	2230	89		78 - 122
1,2-Dichlorobenzene	ug/kg	2500	0	2430	97		78 - 121
1,2-Dichloroethane	ug/kg	2500	0	2410	96		73 - 128
1,2-Dichloropropane	ug/kg	2500	0	2650	106		76 - 123
1,3-Dichlorobenzene	ug/kg	2500	0	2440	98		77 - 121
1,4-Dichlorobenzene	ug/kg	2500	0	2450	98		75 - 120
2-Butanone	ug/kg	2500	0	2340	94		51 - 148
2-Hexanone	ug/kg	2500	0	2070	83		53 - 145
4-Methyl-2-pentanone	ug/kg	2500	0	2180	87		65 - 135
Acetone	ug/kg	2500	0	2120	85		36 - 164
Benzene	ug/kg	2500	0	2540	102		77 - 121
Bromochloromethane	ug/kg	2500	0	2330	93		78 - 125
Bromodichloromethane	ug/kg	2500	0	2560	102		75 - 127
Bromoform	ug/kg	2500	0	2260	90		67 - 132
Bromomethane	ug/kg	2500	0	2480	99		53 - 143
Carbon disulfide	ug/kg	2500	0	2750	110		63 - 132
Carbon tetrachloride	ug/kg	2500	0	2380	95		70 - 135
Chlorobenzene	ug/kg	2500	0	2340	94		79 - 120
Chloroethane	ug/kg	2500	0	2980	119		59 - 139
Chloroform	ug/kg	2500	0	2480	99		78 - 123
Chloromethane	ug/kg	2500	0	2480	99		50 - 136
Cyclohexane	ug/kg	2500	0	2710	108		67 - 131
Dibromochloromethane	ug/kg	2500	0	2370	95		74 - 126
Dichlorodifluoromethane	ug/kg	2500	0	2370	95		29 - 149
Ethylbenzene	ug/kg	2500	0	2330	93		76 - 122
Isopropylbenzene (Cumene)	ug/kg	2500	0	2340	94		68 - 134
Methyl Acetate	ug/kg	2500	0	2370	95		53 - 144
Methylcyclohexane	ug/kg	2500	0	2550	102		66 - 133
Methylene chloride	ug/kg	2500	0	2560	102		70 - 128
Styrene	ug/kg	2500	0	2350	94		76 - 124

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3B

SOIL VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610743

Tetrachloroethene	ug/kg	2500	0	2160	86		73 - 128
Toluene	ug/kg	2500	0	2310	92		77 - 121
Trichloroethene	ug/kg	2500	0	2290	92		77 - 123
Trichlorofluoromethane	ug/kg	2500	0	2570	103		62 - 140
Trichlorotrifluoroethane	ug/kg	2500	0	2430	97		66 - 136
Vinyl chloride	ug/kg	2500	0	2680	107		77 - 124
Xylene (total)	ug/kg	7500	0	6960	93		75 - 125
cis-1,2-Dichloroethene	ug/kg	2500	0	2620	105		77 - 123
cis-1,3-Dichloropropene	ug/kg	2500	0	2580	103		74 - 126
tert-Butyl methyl ether (MTBE)	ug/kg	2500	0	2090	84		73 - 125
trans-1,2-Dichloroethene	ug/kg	2500	0	2590	104		74 - 125
trans-1,3-Dichloropropene	ug/kg	2500	0	2510	100		71 - 130

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3B

SOIL VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610743

GCAL QC ID: 1686053

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/kg	2500	2300	92		.9		73 - 130	0 - 20
1,1,2,2-Tetrachloroethane	ug/kg	2500	2630	105		2		70 - 124	0 - 20
1,1,2-Trichloroethane	ug/kg	2500	2350	94		1		78 - 121	0 - 20
1,1-Dichloroethane	ug/kg	2500	2590	104		0		76 - 125	0 - 20
1,1-Dichloroethene	ug/kg	2500	2360	94		.4		70 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/kg	2500	2470	99		2		66 - 130	0 - 20
1,2,4-Trichlorobenzene	ug/kg	2500	2430	97		2		67 - 129	0 - 20
1,2-Dibromo-3-chloropropane	ug/kg	2500	2420	97		9		61 - 132	0 - 20
1,2-Dibromoethane	ug/kg	2500	2300	92		3		78 - 122	0 - 20
1,2-Dichlorobenzene	ug/kg	2500	2430	97		0		78 - 121	0 - 20
1,2-Dichloroethane	ug/kg	2500	2430	97		.8		73 - 128	0 - 20
1,2-Dichloropropane	ug/kg	2500	2650	106		0		76 - 123	0 - 20
1,3-Dichlorobenzene	ug/kg	2500	2450	98		.4		77 - 121	0 - 20
1,4-Dichlorobenzene	ug/kg	2500	2430	97		.8		75 - 120	0 - 20
2-Butanone	ug/kg	2500	2500	100		7		51 - 148	0 - 20
2-Hexanone	ug/kg	2500	2310	92		11		53 - 145	0 - 20
4-Methyl-2-pentanone	ug/kg	2500	2340	94		7		65 - 135	0 - 20
Acetone	ug/kg	2500	2350	94		10		36 - 164	0 - 20
Benzene	ug/kg	2500	2510	100		1		77 - 121	0 - 20
Bromochloromethane	ug/kg	2500	2390	96		3		78 - 125	0 - 20
Bromodichloromethane	ug/kg	2500	2530	101		1		75 - 127	0 - 20
Bromoform	ug/kg	2500	2350	94		4		67 - 132	0 - 20
Bromomethane	ug/kg	2500	2540	102		2		53 - 143	0 - 20
Carbon disulfide	ug/kg	2500	2710	108		1		63 - 132	0 - 20
Carbon tetrachloride	ug/kg	2500	2360	94		.8		70 - 135	0 - 20
Chlorobenzene	ug/kg	2500	2330	93		.4		79 - 120	0 - 20
Chloroethane	ug/kg	2500	3200	128		7		59 - 139	0 - 20
Chloroform	ug/kg	2500	2480	99		0		78 - 123	0 - 20
Chloromethane	ug/kg	2500	2590	104		4		50 - 136	0 - 20
Cyclohexane	ug/kg	2500	2680	107		1		67 - 131	0 - 20
Dibromochloromethane	ug/kg	2500	2410	96		2		74 - 126	0 - 20
Dichlorodifluoromethane	ug/kg	2500	2390	96		.8		29 - 149	0 - 20
Ethylbenzene	ug/kg	2500	2350	94		.9		76 - 122	0 - 20
Isopropylbenzene (Cumene)	ug/kg	2500	2320	93		.9		68 - 134	0 - 20
Methyl Acetate	ug/kg	2500	2480	99		5		53 - 144	0 - 20
Methylcyclohexane	ug/kg	2500	2460	98		4		66 - 133	0 - 20
Methylene chloride	ug/kg	2500	2650	106		3		70 - 128	0 - 20
Styrene	ug/kg	2500	2360	94		.4		76 - 124	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3B

SOIL VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610743

Tetrachloroethene	ug/kg	2500	2180	87		.9		73 - 128	0 - 20
Toluene	ug/kg	2500	2310	92		0		77 - 121	0 - 20
Trichloroethene	ug/kg	2500	2270	91		.9		77 - 123	0 - 20
Trichlorofluoromethane	ug/kg	2500	2520	101		2		62 - 140	0 - 20
Trichlorotrifluoroethane	ug/kg	2500	2390	96		2		66 - 136	0 - 20
Vinyl chloride	ug/kg	2500	2690	108		.4		77 - 124	0 - 20
Xylene (total)	ug/kg	7500	6950	93		.1		75 - 125	0 - 30
cis-1,2-Dichloroethene	ug/kg	2500	2600	104		.8		77 - 123	0 - 20
cis-1,3-Dichloropropene	ug/kg	2500	2580	103		0		74 - 126	0 - 20
tert-Butyl methyl ether (MTBE)	ug/kg	2500	2150	86		3		73 - 125	0 - 20
trans-1,2-Dichloroethene	ug/kg	2500	2600	104		.4		74 - 125	0 - 20
trans-1,3-Dichloropropene	ug/kg	2500	2540	102		1		71 - 130	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3B

SOIL VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610274

GCAL QC ID: 1684002

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/kg	50	0	48.3	97		73 - 130
1,1,2,2-Tetrachloroethane	ug/kg	50	0	51.1	102		70 - 124
1,1,2-Trichloroethane	ug/kg	50	0	51.9	104		78 - 121
1,1-Dichloroethane	ug/kg	50	0	46.3	93		76 - 125
1,1-Dichloroethene	ug/kg	50	0	48.3	97		70 - 131
1,2,3-Trichlorobenzene	ug/kg	50	0	56.3	113		66 - 130
1,2,4-Trichlorobenzene	ug/kg	50	0	57.1	114		67 - 129
1,2-Dibromo-3-chloropropane	ug/kg	50	0	56.8	114		61 - 132
1,2-Dibromoethane	ug/kg	50	0	52.6	105		78 - 122
1,2-Dichlorobenzene	ug/kg	50	0	51.7	103		78 - 121
1,2-Dichloroethane	ug/kg	50	0	44.4	89		73 - 128
1,2-Dichloropropane	ug/kg	50	0	44	88		76 - 123
1,3-Dichlorobenzene	ug/kg	50	0	49.8	100		77 - 121
1,4-Dichlorobenzene	ug/kg	50	0	48.7	97		75 - 120
2-Butanone	ug/kg	50	0	51	102		51 - 148
2-Hexanone	ug/kg	50	0	54.5	109		53 - 145
4-Methyl-2-pentanone	ug/kg	50	0	52.7	105		65 - 135
Acetone	ug/kg	50	0	47.3	95		36 - 164
Benzene	ug/kg	50	0	47.1	94		77 - 121
Bromochloromethane	ug/kg	50	0	51	102		78 - 125
Bromodichloromethane	ug/kg	50	0	46.6	93		75 - 127
Bromoform	ug/kg	50	0	53.7	107		67 - 132
Bromomethane	ug/kg	50	0	48.2	96		53 - 143
Carbon disulfide	ug/kg	50	0	48	96		63 - 132
Carbon tetrachloride	ug/kg	50	0	47.5	95		70 - 135
Chlorobenzene	ug/kg	50	0	50.5	101		79 - 120
Chloroethane	ug/kg	50	0	48.5	97		59 - 139
Chloroform	ug/kg	50	0	46.9	94		78 - 123
Chloromethane	ug/kg	50	0	44.5	89		50 - 136
Cyclohexane	ug/kg	50	0	44.9	90		67 - 131
Dibromochloromethane	ug/kg	50	0	51.8	104		74 - 126
Dichlorodifluoromethane	ug/kg	50	0	42.2	84		29 - 149
Ethylbenzene	ug/kg	50	0	52.2	104		76 - 122
Isopropylbenzene (Cumene)	ug/kg	50	0	53	106		68 - 134
Methyl Acetate	ug/kg	50	0	46.9	94		53 - 144
Methylcyclohexane	ug/kg	50	0	47.4	95		66 - 133
Methylene chloride	ug/kg	50	0	44.8	90		70 - 128
Styrene	ug/kg	50	0	52.2	104		76 - 124

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3B

SOIL VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610274

Tetrachloroethene	ug/kg	50	0	53.6	107		73 - 128
Toluene	ug/kg	50	0	50.1	100		77 - 121
Trichloroethene	ug/kg	50	0	51.2	102		77 - 123
Trichlorofluoromethane	ug/kg	50	0	47.5	95		62 - 140
Trichlorotrifluoroethane	ug/kg	50	0	49.7	99		66 - 136
Vinyl chloride	ug/kg	50	0	47.3	95		77 - 124
Xylene (total)	ug/kg	150	0	156	104		75 - 125
cis-1,2-Dichloroethene	ug/kg	50	0	46	92		77 - 123
cis-1,3-Dichloropropene	ug/kg	50	0	50.7	101		74 - 126
tert-Butyl methyl ether (MTBE)	ug/kg	50	0	47.5	95		73 - 125
trans-1,2-Dichloroethene	ug/kg	50	0	45.3	91		74 - 125
trans-1,3-Dichloropropene	ug/kg	50	0	52	104		71 - 130

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3B

SOIL VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610274

GCAL QC ID: 1684003

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/kg	50	44.8	90		8		73 - 130	0 - 20
1,1,2,2-Tetrachloroethane	ug/kg	50	49.2	98		4		70 - 124	0 - 20
1,1,2-Trichloroethane	ug/kg	50	49.6	99		5		78 - 121	0 - 20
1,1-Dichloroethane	ug/kg	50	43.3	87		7		76 - 125	0 - 20
1,1-Dichloroethene	ug/kg	50	45.2	90		7		70 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/kg	50	53.5	107		5		66 - 130	0 - 20
1,2,4-Trichlorobenzene	ug/kg	50	54.8	110		4		67 - 129	0 - 20
1,2-Dibromo-3-chloropropane	ug/kg	50	54.1	108		5		61 - 132	0 - 20
1,2-Dibromoethane	ug/kg	50	49.7	99		6		78 - 122	0 - 20
1,2-Dichlorobenzene	ug/kg	50	49.4	99		5		78 - 121	0 - 20
1,2-Dichloroethane	ug/kg	50	41.1	82		8		73 - 128	0 - 20
1,2-Dichloropropane	ug/kg	50	43.1	86		2		76 - 123	0 - 20
1,3-Dichlorobenzene	ug/kg	50	47.6	95		5		77 - 121	0 - 20
1,4-Dichlorobenzene	ug/kg	50	46.3	93		5		75 - 120	0 - 20
2-Butanone	ug/kg	50	47.1	94		8		51 - 148	0 - 20
2-Hexanone	ug/kg	50	51.4	103		6		53 - 145	0 - 20
4-Methyl-2-pentanone	ug/kg	50	50.6	101		4		65 - 135	0 - 20
Acetone	ug/kg	50	44	88		7		36 - 164	0 - 20
Benzene	ug/kg	50	44.3	89		6		77 - 121	0 - 20
Bromochloromethane	ug/kg	50	48	96		6		78 - 125	0 - 20
Bromodichloromethane	ug/kg	50	43.3	87		7		75 - 127	0 - 20
Bromoform	ug/kg	50	52.1	104		3		67 - 132	0 - 20
Bromomethane	ug/kg	50	45	90		7		53 - 143	0 - 20
Carbon disulfide	ug/kg	50	43.7	87		9		63 - 132	0 - 20
Carbon tetrachloride	ug/kg	50	43.5	87		9		70 - 135	0 - 20
Chlorobenzene	ug/kg	50	48.5	97		4		79 - 120	0 - 20
Chloroethane	ug/kg	50	44.3	89		9		59 - 139	0 - 20
Chloroform	ug/kg	50	42.9	86		9		78 - 123	0 - 20
Chloromethane	ug/kg	50	39.6	79		12		50 - 136	0 - 20
Cyclohexane	ug/kg	50	41.3	83		8		67 - 131	0 - 20
Dibromochloromethane	ug/kg	50	49.7	99		4		74 - 126	0 - 20
Dichlorodifluoromethane	ug/kg	50	38.8	78		8		29 - 149	0 - 20
Ethylbenzene	ug/kg	50	48.4	97		8		76 - 122	0 - 20
Isopropylbenzene (Cumene)	ug/kg	50	48.6	97		9		68 - 134	0 - 20
Methyl Acetate	ug/kg	50	43.2	86		8		53 - 144	0 - 20
Methylcyclohexane	ug/kg	50	44.2	88		7		66 - 133	0 - 20
Methylene chloride	ug/kg	50	41	82		9		70 - 128	0 - 20
Styrene	ug/kg	50	49	98		6		76 - 124	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3B

SOIL VOLATILE LCS/LCSD RECOVERY

Report No: 217051110

Analytical Method: EPA 8260B Analytical Batch: 610274

Tetrachloroethene	ug/kg	50	51.5	103		4		73 - 128	0 - 20
Toluene	ug/kg	50	48.3	97		4		77 - 121	0 - 20
Trichloroethene	ug/kg	50	49.2	98		4		77 - 123	0 - 20
Trichlorofluoromethane	ug/kg	50	43.5	87		9		62 - 140	0 - 20
Trichlorotrifluoroethane	ug/kg	50	45.6	91		9		66 - 136	0 - 20
Vinyl chloride	ug/kg	50	42.1	84		12		77 - 124	0 - 20
Xylene (total)	ug/kg	150	147	98		6		75 - 125	0 - 30
cis-1,2-Dichloroethene	ug/kg	50	42.7	85		7		77 - 123	0 - 20
cis-1,3-Dichloropropene	ug/kg	50	47.9	96		6		74 - 126	0 - 20
tert-Butyl methyl ether (MTBE)	ug/kg	50	45.7	91		4		73 - 125	0 - 20
trans-1,2-Dichloroethene	ug/kg	50	42.3	85		7		74 - 125	0 - 20
trans-1,3-Dichloropropene	ug/kg	50	48.7	97		7		71 - 130	0 - 20

RPD : 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	217051110	Method Blank ID:	1684271
Matrix:	Water	Instrument ID:	MSV14
Sample Amt:	5 mL	Lab File ID:	2170513/b3255
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1027	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1684272	1684272	2170513/b3251L	05/13/17	0857
2 .	LCSD1684273	1684273	2170513/b3252	05/13/17	0921
3 .	OMS-28-GW13-32-S	21705111005	2170513/b3263	05/13/17	1325
4 .	OMS-28-GW13-32-C	21705111006	2170513/b3264	05/13/17	1347
5 .	OMS-28-GW28-12-S	21705111012	2170513/b3265	05/13/17	1409

FORM IV VOA

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	217051110	Method Blank ID:	1684001
Matrix:	Solid	Instrument ID:	MSV11
Sample Amt:	5 g	Lab File ID:	2170514/i7168
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1415	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1684002	1684002	2170514/i7164	05/14/17	1242
2 .	LCSD1684003	1684003	2170514/i7165	05/14/17	1306
3 .	OMS-28-SB04-1-S	21705111001	2170514/i7169	05/14/17	1451
4 .	OMS-28-SB01-2-S	21705111002	2170514/i7170	05/14/17	1515
5 .	OMS-28-SB11-6-S	21705111003	2170514/i7171	05/14/17	1538
6 .	OMS-28-SB14-1-S	21705111004	2170514/i7172	05/14/17	1601
7 .	OMS-28-SB22-1.5-S	21705111007	2170514/i7173	05/14/17	1624
8 .	OMS-28-SB16-5-S	21705111008	2170514/i7174	05/14/17	1648

FORM IV VOA

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	217051110	Method Blank ID:	1686051
Matrix:	Solid	Instrument ID:	MSV13
Sample Amt:	5 g	Lab File ID:	2170519/d4403s
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	50 Analyst: LBH	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 1413	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1686052	1686052	2170519/d4389Ls	05/19/17	0900
2 .	LCSD1686053	1686053	2170519/d4390s	05/19/17	0923
3 .	OMS-28-SB24-1-S	21705111009	2170519/d4404	05/19/17	1435
4 .	OMS-28-SB24-3-S	21705111010	2170519/d4405	05/19/17	1458
5 .	OMS-28-SB24-5-S	21705111011	2170519/d4406	05/19/17	1520

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217051110	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV11
Injection Vol.:	1.0 (µL)	Lab File ID:	2170414/i6573D
Analyst:	JCK	Analytical Batch:	608399
Analysis Date:	04/14/17 Time: 1239	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	21.63	(	)	
75	30.0 - 60.0% of mass 95	59.88	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.61	(	)	
173	Less than 2.0% of mass 174	1.14	(1.24	)	1
174	50.0 - 120.0% of mass 95	92.1	(	)	
175	5.0 - 9.0% of mass 174	6.91	(7.51	)	1
176	95.0 - 101.0% of mass 174	90	(97.72	)	1
177	5.0 - 9.0% of mass 176	5.95	(6.62	)	2

1- Value is % mass 174

2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V11STD002	1201	2170414/i6576D	04/14/17	1412
2 .	V11STD005	1202	2170414/i6577D	04/14/17	1435
3 .	V11STD010	1203	2170414/i6578D	04/14/17	1458
4 .	V11STD020	1204	2170414/i6579D	04/14/17	1522
5 .	V11STD050	1205	2170414/i6580D	04/14/17	1545
6 .	V11STD100	1206	2170414/i6581D	04/14/17	1608
7 .	V11STD200	1207	2170414/i6582D	04/14/17	1632
8 .	ICV050	1600	2170414/i6584D	04/14/17	1718

Data File: /var/chem/msv11.i/2170414.s.b/i6573D.d

Page 1

Date : 14-APR-2017 12:39

Client ID: V11BFB

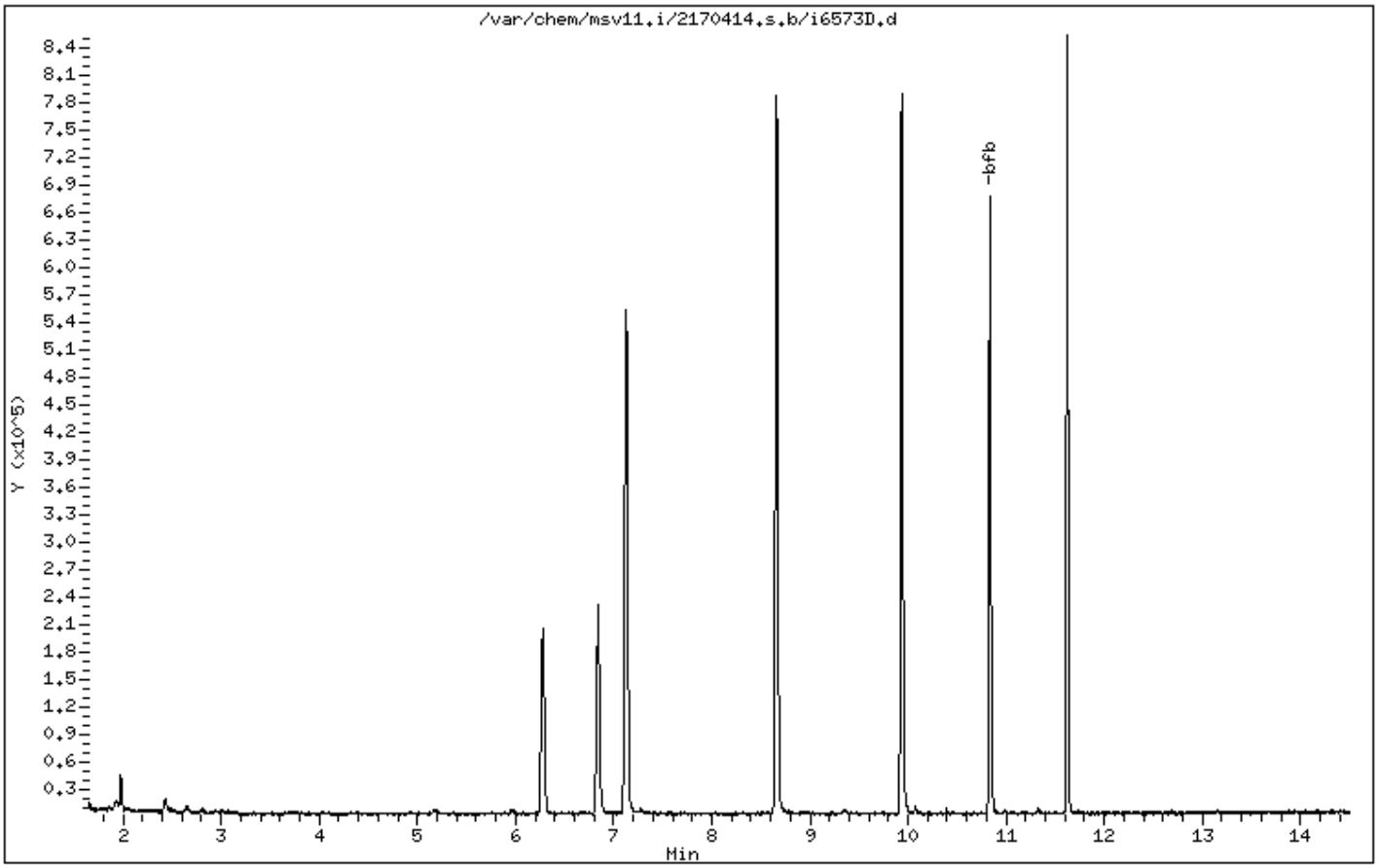
Instrument: msv11.i

Sample Info: 1000*V11BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170414.s.b/i6573D.d

Date : 14-APR-2017 12:39

Client ID: V11BFB

Instrument: msv11.i

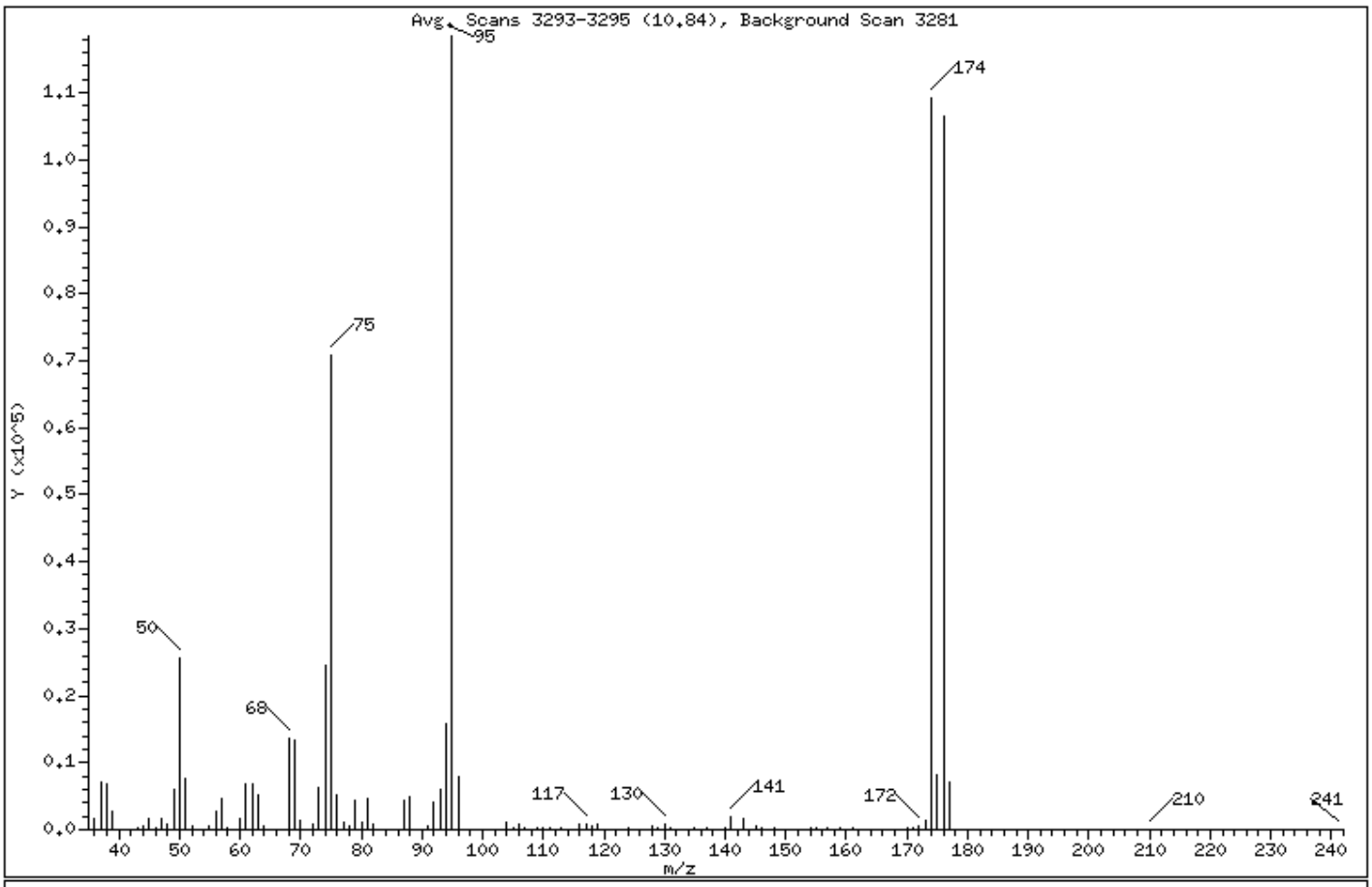
Sample Info: 1000*V11BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.63
75	30.00 - 60.00% of mass 95	59.88
96	5.00 - 9.00% of mass 95	6.61
173	Less than 2.00% of mass 174	1.15 (1.24)
174	50.00 - 120.00% of mass 95	92.10
175	5.00 - 9.00% of mass 174	6.92 (7.51)
176	95.00 - 101.00% of mass 174	90.00 (97.72)
177	5.00 - 9.00% of mass 176	5.96 (6.62)

Date : 14-APR-2017 12:39

Client ID: V11BFB Instrument: msv11.i

Sample Info: 1000*V11BFB

Operator: JCK

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: i6573D.d
Spectrum: Avg. Scans 3293-3295 (10.84), Background Scan 3281
Location of Maximum: 95.00
Number of points: 104

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1741	70.00	1462	106.00	696	143.00	1668
37.00	7022	72.00	926	107.00	140	145.00	445
38.00	6833	73.00	6270	109.00	164	146.00	196
39.00	2615	74.00	24504	110.00	218	147.00	53
43.00	141	75.00	70936	111.00	376	148.00	355
44.00	523	76.00	5265	113.00	143	150.00	59
45.00	1603	77.00	1150	115.00	85	154.00	251
46.00	164	78.00	468	116.00	830	155.00	211
47.00	1559	79.00	4460	117.00	948	157.00	369
48.00	936	80.00	1192	118.00	560	159.00	235
49.00	6037	81.00	4685	119.00	725	161.00	174
50.00	25624	82.00	939	123.00	60	167.00	69
51.00	7760	83.00	51	124.00	163	170.00	153
52.00	422	86.00	123	127.00	119	171.00	165
55.00	446	87.00	4313	128.00	507	172.00	577
56.00	2593	88.00	4981	129.00	280	173.00	1357
57.00	4606	89.00	50	130.00	739	174.00	109112
58.00	243	91.00	566	131.00	333	175.00	8197
59.00	65	92.00	4066	132.00	54	176.00	106616
60.00	1544	93.00	5916	133.00	58	177.00	7056
61.00	6864	94.00	15712	134.00	94	178.00	83
62.00	6802	95.00	118464	135.00	196	210.00	74
63.00	5253	96.00	7832	137.00	365	241.00	52
64.00	661	97.00	117	139.00	75		
67.00	97	98.00	61	140.00	228		
68.00	13717	104.00	957	141.00	1833		
69.00	13441	105.00	169	142.00	81		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217051110	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV11
Injection Vol.:	1.0 (µL)	Lab File ID:	2170514/i7161
Analyst:	JMC2	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1058	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	21.63	(	)	
75	30.0 - 60.0% of mass 95	55.73	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.54	(	)	
173	Less than 2.0% of mass 174	.78	(.86	)	1
174	50.0 - 120.0% of mass 95	91.71	(	)	
175	5.0 - 9.0% of mass 174	6.73	(7.34	)	1
176	95.0 - 101.0% of mass 174	90.17	(98.33	)	1
177	5.0 - 9.0% of mass 176	6.33	(7.03	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V11STD050	1400	2170514/i7163	05/14/17	1219
2 .	LCS1684002	1684002	2170514/i7164	05/14/17	1242
3 .	LCSD1684003	1684003	2170514/i7165	05/14/17	1306
4 .	MB1684001	1684001	2170514/i7168	05/14/17	1415
5 .	OMS-28-SB04-1-S	21705111001	2170514/i7169	05/14/17	1451
6 .	OMS-28-SB01-2-S	21705111002	2170514/i7170	05/14/17	1515
7 .	OMS-28-SB11-6-S	21705111003	2170514/i7171	05/14/17	1538
8 .	OMS-28-SB14-1-S	21705111004	2170514/i7172	05/14/17	1601
9 .	OMS-28-SB22-1.5-S	21705111007	2170514/i7173	05/14/17	1624
10 .	OMS-28-SB16-5-S	21705111008	2170514/i7174	05/14/17	1648
11 .	V11STD50	1440	2170514/i7183	05/14/17	2044

FORM V VOA

Data File: /var/chem/msv11.i/2170514.s.b/i7161.d

Page 1

Date : 14-MAY-2017 10:58

Client ID: V11BFB

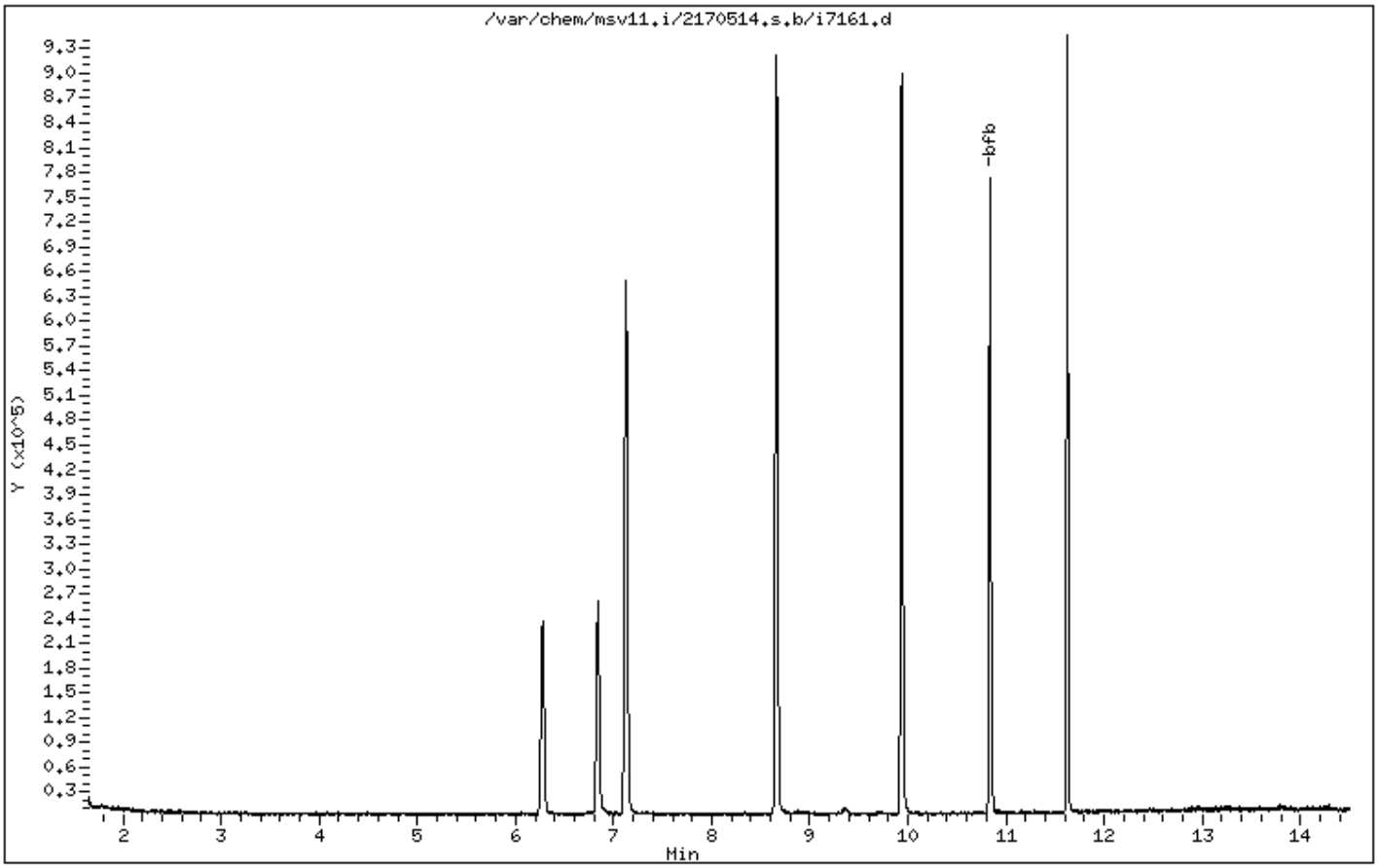
Instrument: msv11.i

Sample Info: 1000*V11BFB

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv11.i/2170514.s.b/i7161.d

Date : 14-MAY-2017 10:58

Client ID: V11BFB

Instrument: msv11.i

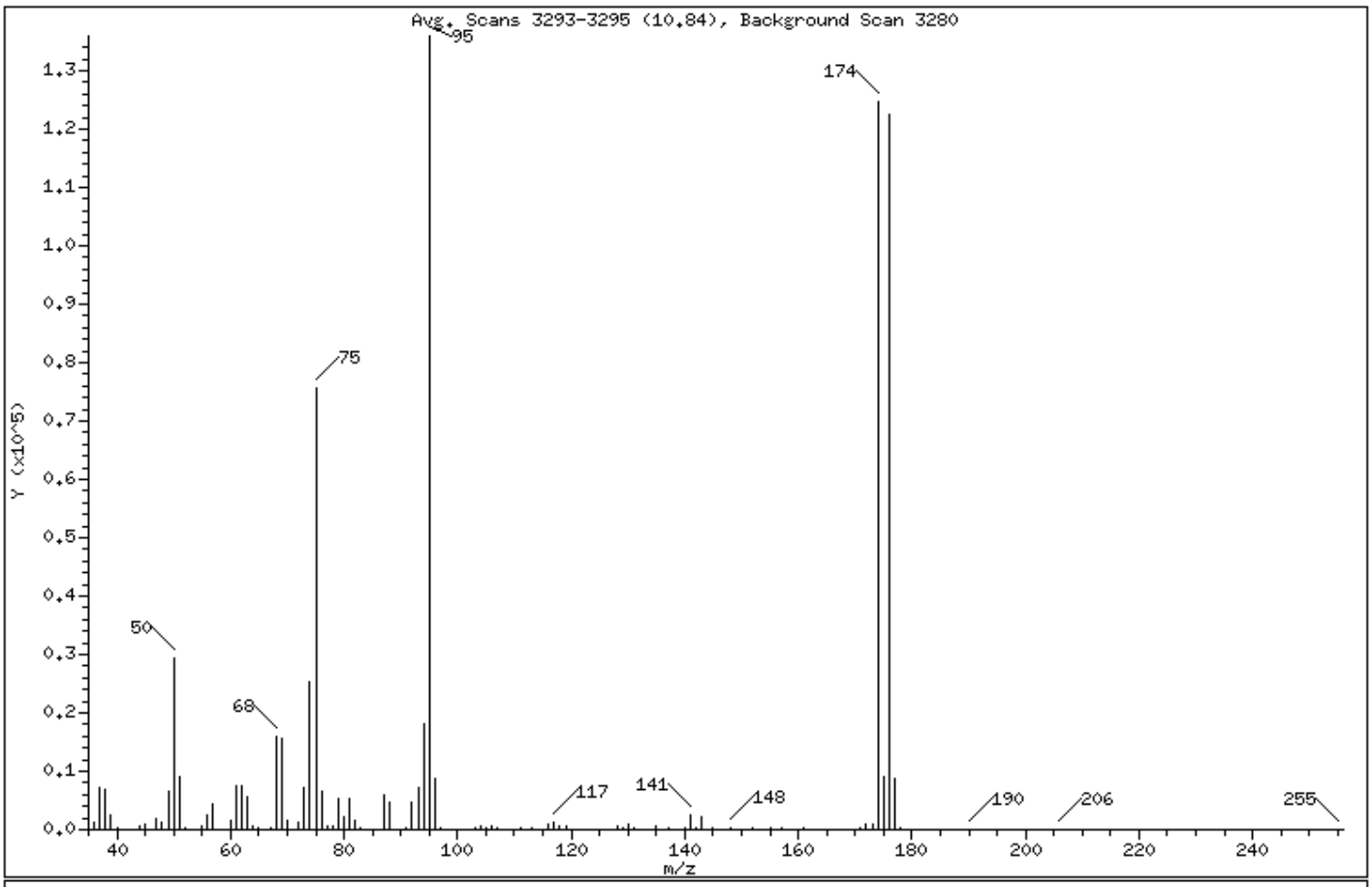
Sample Info: 1000*V11BFB

Operator: JMC2

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.63
75	30.00 - 60.00% of mass 95	55.73
96	5.00 - 9.00% of mass 95	6.54
173	Less than 2.00% of mass 174	0.79 (0.86)
174	50.00 - 120.00% of mass 95	91.71
175	5.00 - 9.00% of mass 174	6.73 (7.34)
176	95.00 - 101.00% of mass 174	90.17 (98.33)
177	5.00 - 9.00% of mass 176	6.34 (7.03)

Date : 14-MAY-2017 10:58

Client ID: V11BFB Instrument: msv11.i

Sample Info: 1000*V11BFB

Operator: JMC2

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: i7161.d
Spectrum: Avg. Scans 3293-3295 (10.84), Background Scan 3280
Location of Maximum: 95.00
Number of points: 125

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1341	69.00	15661	110.00	61	152.00	181
37.00	7264	70.00	1573	111.00	268	153.00	153
38.00	6763	71.00	139	112.00	125	154.00	76
39.00	2445	72.00	1121	113.00	299	155.00	414
40.00	347	73.00	7262	115.00	139	156.00	125
42.00	96	74.00	25208	116.00	905	157.00	366
43.00	117	75.00	75768	117.00	1105	158.00	137
44.00	612	76.00	6586	118.00	699	159.00	66
45.00	960	77.00	753	119.00	552	160.00	98
46.00	90	78.00	778	121.00	74	161.00	310
47.00	1930	79.00	5186	122.00	149	169.00	63
48.00	1189	80.00	2035	124.00	69	170.00	55
49.00	6451	81.00	5428	126.00	99	171.00	273
50.00	29408	82.00	1601	128.00	720	172.00	783
51.00	9127	83.00	279	129.00	395	173.00	1068
52.00	209	85.00	94	130.00	874	174.00	124680
53.00	128	86.00	135	131.00	237	175.00	9151
54.00	69	87.00	6014	133.00	71	176.00	122592
55.00	651	88.00	4649	135.00	508	177.00	8620
56.00	2572	91.00	377	136.00	89	178.00	286
57.00	4420	92.00	4744	137.00	452	184.00	68
58.00	139	93.00	7189	139.00	94	189.00	54
59.00	58	94.00	18136	140.00	247	190.00	150
60.00	1628	95.00	135936	141.00	2585	200.00	71
61.00	7485	96.00	8888	142.00	177	206.00	133
62.00	7588	97.00	372	143.00	2333	212.00	65
63.00	5511	102.00	65	144.00	88	213.00	74
64.00	691	103.00	318	145.00	358	244.00	51
65.00	387	104.00	622	146.00	95	255.00	58
66.00	53	105.00	450	147.00	141		
67.00	326	106.00	720	148.00	439		
68.00	15831	107.00	167	149.00	66		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217051110	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170511p/d4099bfbD
Analyst:	JCK	Analytical Batch:	610278
Analysis Date:	05/11/17 Time: 1307	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	18.94	(	)	
75	30.0 - 60.0% of mass 95	48.13	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.52	(	)	
173	Less than 2.0% of mass 174	.79	(.86	)	1
174	50.0 - 120.0% of mass 95	92.2	(	)	
175	5.0 - 9.0% of mass 174	6.78	(7.36	)	1
176	95.0 - 101.0% of mass 174	89.43	(97	)	1
177	5.0 - 9.0% of mass 176	5.66	(6.34	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2170511p/d4102D	05/11/17	1420
2 .	V13STD005	1204	2170511p/d4104D	05/11/17	1505
3 .	V13STD010	1205	2170511p/d4105D	05/11/17	1527
4 .	V13STD020	1206	2170511p/d4106D	05/11/17	1549
5 .	V13STD050	1207	2170511p/d4107D	05/11/17	1612
6 .	V13STD100	1208	2170511p/d4108D	05/11/17	1634
7 .	V13STD200	1209	2170511p/d4109D	05/11/17	1656
8 .	ICV050	1600	2170511p/d4111D	05/11/17	1741

FORM V VOA

Data File: /var/chem/msv13.i/2170511p.s.b/d4099bfbD.d

Date : 11-MAY-2017 13:07

Client ID: V13BFB

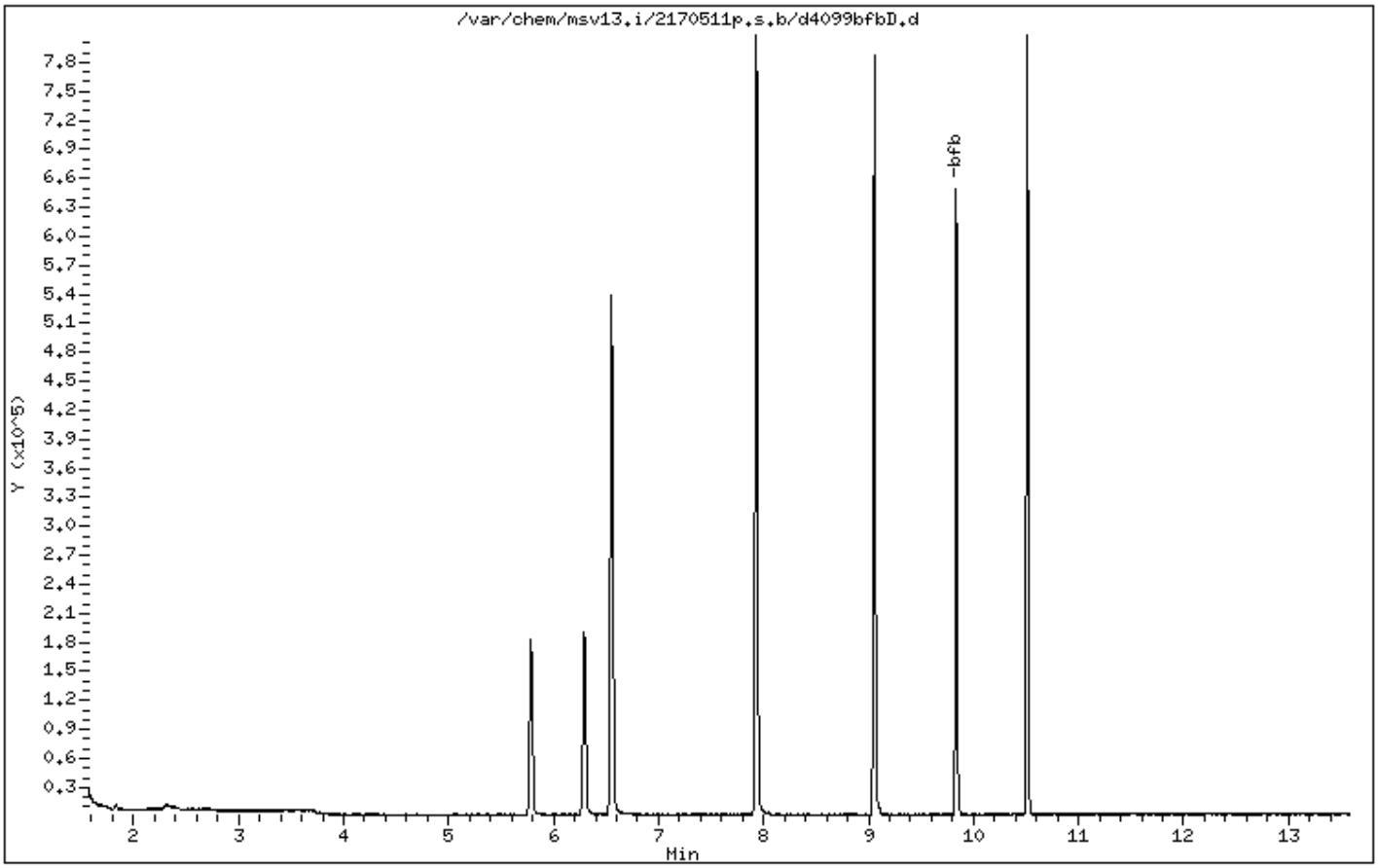
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170511p.s.b/d4099bfbD.d

Date : 11-MAY-2017 13:07

Client ID: V13BFB

Instrument: msv13.i

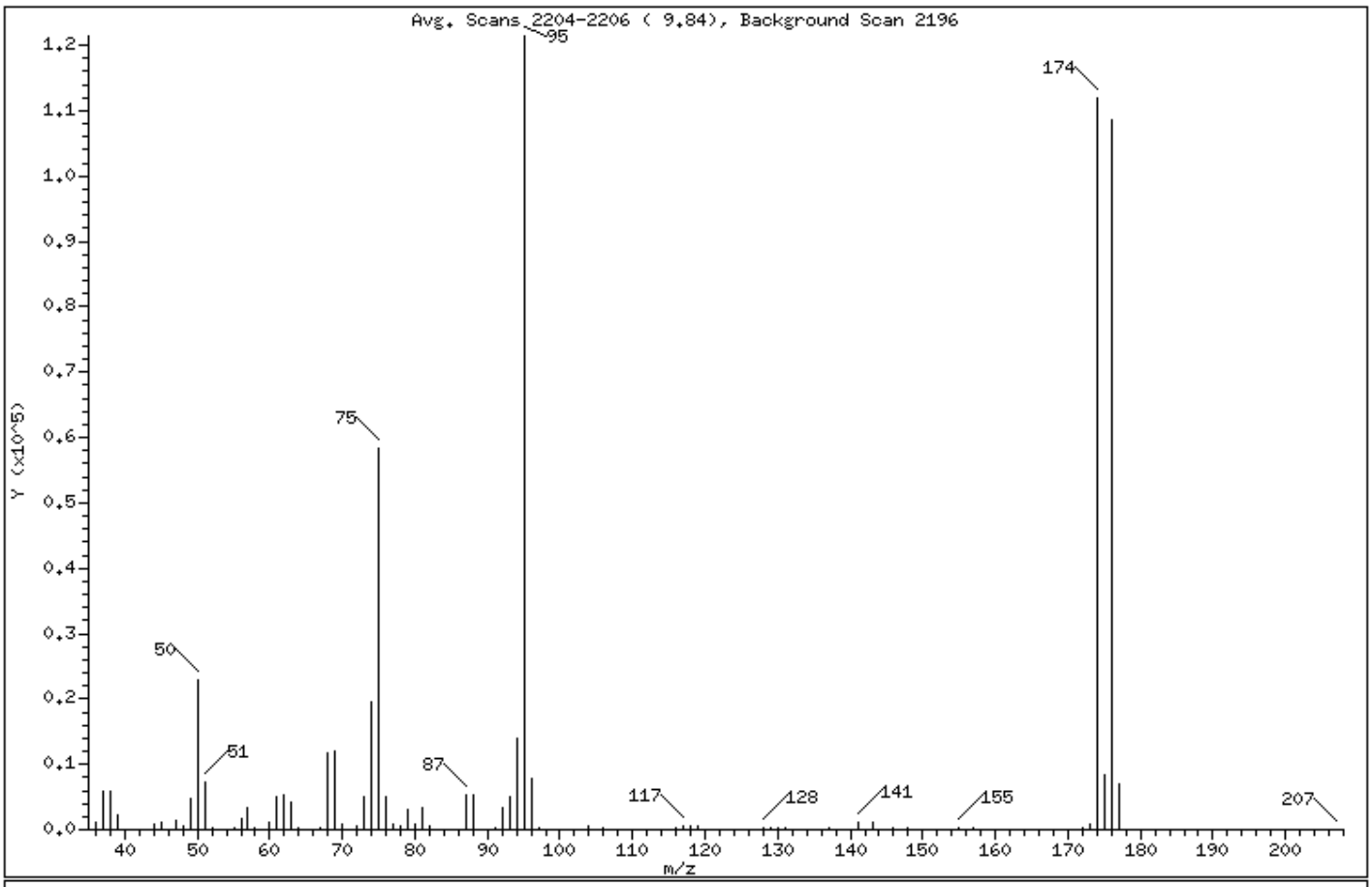
Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.94
75	30.00 - 60.00% of mass 95	48.13
96	5.00 - 9.00% of mass 95	6.52
173	Less than 2.00% of mass 174	0.79 (0.86)
174	50.00 - 120.00% of mass 95	92.20
175	5.00 - 9.00% of mass 174	6.78 (7.36)
176	95.00 - 101.00% of mass 174	89.44 (97.00)
177	5.00 - 9.00% of mass 176	5.67 (6.34)

Date : 11-MAY-2017 13:07

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: d4099bfbD.d
Spectrum: Avg. Scans 2204-2206 (9.84), Background Scan 2196
Location of Maximum: 95.00
Number of points: 81

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1086	62.00	5272	91.00	392	137.00	220
37.00	5951	63.00	4088	92.00	3423	140.00	66
38.00	5725	64.00	323	93.00	5025	141.00	1024
39.00	2135	67.00	332	94.00	13913	143.00	979
40.00	32	68.00	11800	95.00	121416	146.00	215
43.00	70	69.00	12050	96.00	7911	148.00	273
44.00	935	70.00	913	97.00	257	149.00	53
45.00	1061	72.00	606	104.00	460	155.00	257
46.00	60	73.00	5020	105.00	67	157.00	224
47.00	1367	74.00	19664	106.00	360	159.00	50
48.00	689	75.00	58432	107.00	54	172.00	150
49.00	4690	76.00	5069	113.00	52	173.00	965
50.00	22992	77.00	725	116.00	334	174.00	111944
51.00	7197	78.00	470	117.00	659	175.00	8235
52.00	293	79.00	3000	118.00	445	176.00	108584
55.00	352	80.00	884	119.00	571	177.00	6887
56.00	1808	81.00	3228	128.00	351	178.00	121
57.00	3332	82.00	623	129.00	216	207.00	55
58.00	200	86.00	70	130.00	321		
60.00	1092	87.00	5363	131.00	182		
61.00	4978	88.00	5194	135.00	127		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217051110	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170519/d4388s
Analyst:	LBH	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 0819	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	20.45	(	)	
75	30.0 - 60.0% of mass 95	49.2	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.48	(	)	
173	Less than 2.0% of mass 174	.86	(1.06	)	1
174	50.0 - 120.0% of mass 95	81.48	(	)	
175	5.0 - 9.0% of mass 174	5.8	(7.12	)	1
176	95.0 - 101.0% of mass 174	79.02	(96.99	)	1
177	5.0 - 9.0% of mass 176	5.29	(6.7	)	2

1- Value is % mass 174

2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2170519/d4389s	05/19/17	0900
2 .	LCS1686052	1686052	2170519/d4389Ls	05/19/17	0900
3 .	LCSD1686053	1686053	2170519/d4390s	05/19/17	0923
4 .	MB1686051	1686051	2170519/d4403s	05/19/17	1413
5 .	OMS-28-SB24-1-S	21705111009	2170519/d4404	05/19/17	1435
6 .	OMS-28-SB24-3-S	21705111010	2170519/d4405	05/19/17	1458
7 .	OMS-28-SB24-5-S	21705111011	2170519/d4406	05/19/17	1520
8 .	V13STD050	1440	2170519/d4407c	05/19/17	1542

FORM V VOA

Data File: /var/chem/msv13.i/2170519.s.b/d4388s.d

Page 1

Date : 19-MAY-2017 08:19

Client ID: V13BFB

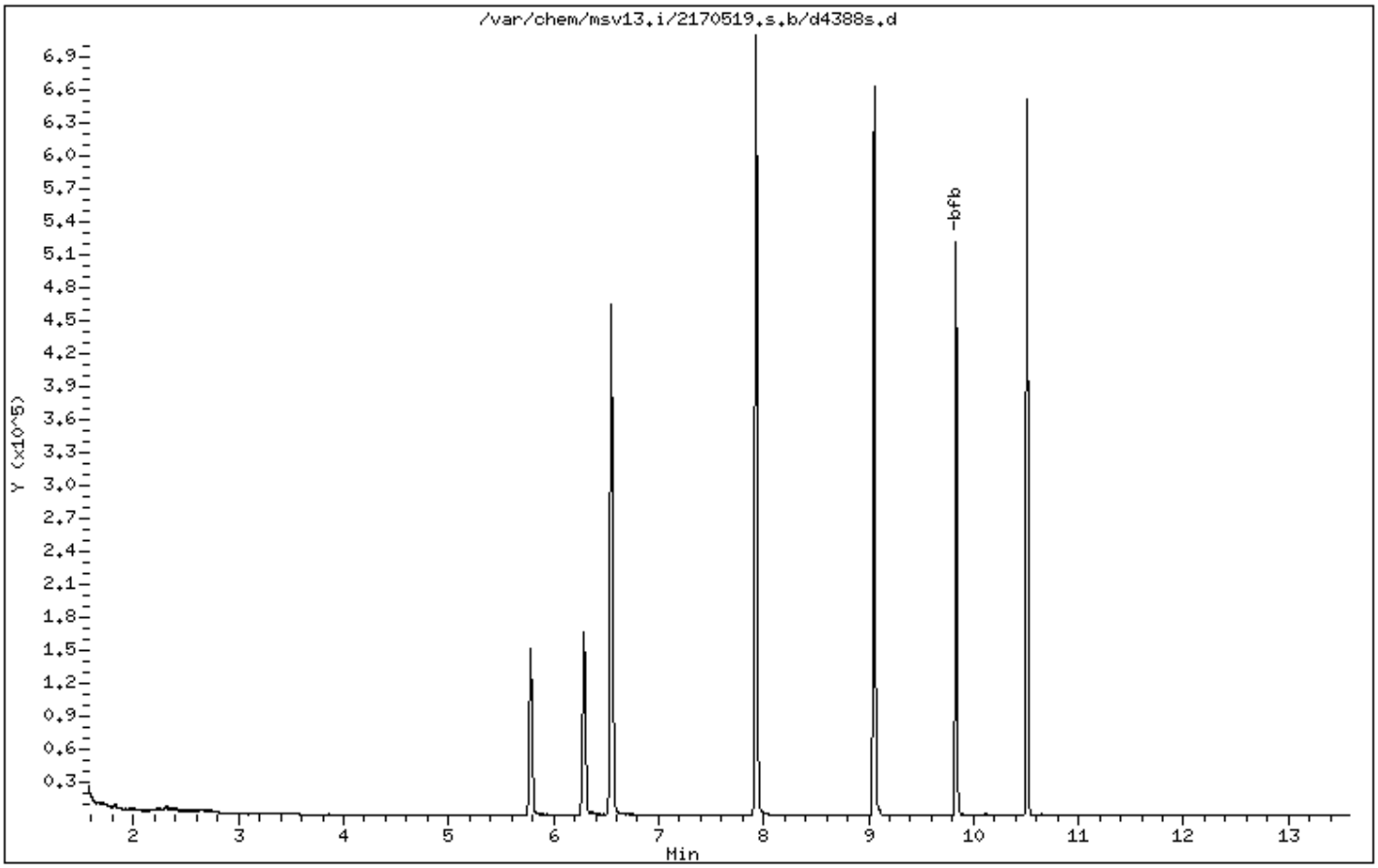
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170519.s.b/d4388s.d

Date : 19-MAY-2017 08:19

Client ID: V13BFB

Instrument: msv13.i

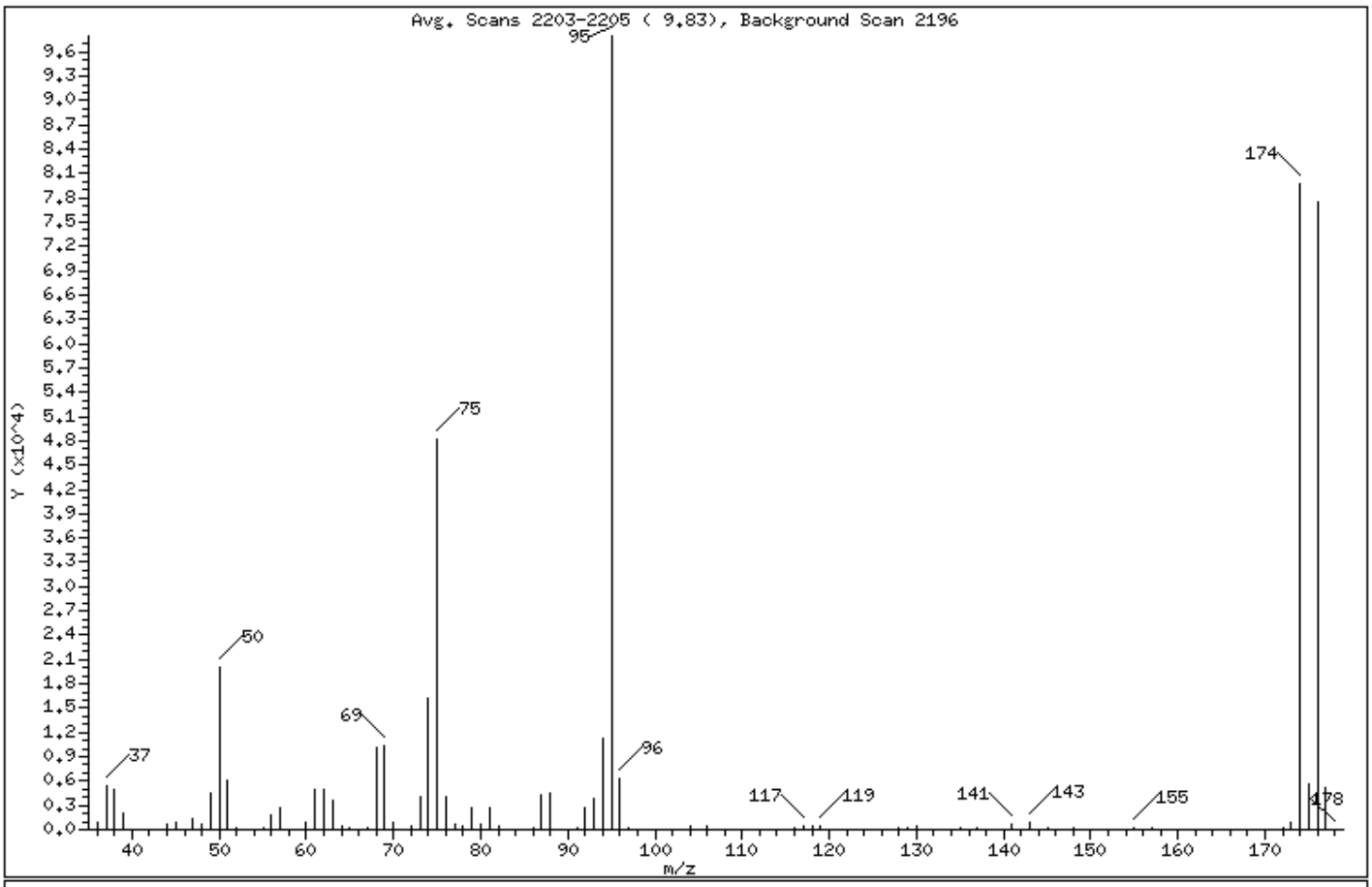
Sample Info: 1000*V13BFB

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.45
75	30.00 - 60.00% of mass 95	49.20
96	5.00 - 9.00% of mass 95	6.48
173	Less than 2.00% of mass 174	0.86 (1.06)
174	50.00 - 120.00% of mass 95	81.48
175	5.00 - 9.00% of mass 174	5.80 (7.12)
176	95.00 - 101.00% of mass 174	79.03 (96.99)
177	5.00 - 9.00% of mass 176	5.29 (6.70)

Date : 19-MAY-2017 08:19

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: LBH

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: d4388s.d
Spectrum: Avg. Scans 2203-2205 (9.83), Background Scan 2196
Location of Maximum: 95.00
Number of points: 73

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	961	62.00	4977	86.00	139	131.00	56
37.00	5408	63.00	3590	87.00	4348	135.00	152
38.00	4912	64.00	425	88.00	4478	137.00	142
39.00	2073	65.00	236	91.00	287	141.00	732
40.00	27	67.00	210	92.00	2668	143.00	839
44.00	709	68.00	10184	93.00	3772	145.00	120
45.00	1003	69.00	10294	94.00	11195	148.00	221
47.00	1419	70.00	816	95.00	97976	155.00	210
48.00	772	72.00	550	96.00	6350	157.00	140
49.00	4566	73.00	4099	97.00	193	172.00	321
50.00	20032	74.00	16235	104.00	348	173.00	844
51.00	6124	75.00	48200	106.00	407	174.00	79832
52.00	273	76.00	4084	116.00	307	175.00	5682
55.00	260	77.00	695	117.00	525	176.00	77432
56.00	1749	78.00	464	118.00	343	177.00	5187
57.00	2684	79.00	2613	119.00	389	178.00	53
58.00	55	80.00	744	128.00	287		
60.00	957	81.00	2665	129.00	159		
61.00	4852	82.00	441	130.00	338		

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VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217051110	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170505/b2888d
Analyst:	LBH	Analytical Batch:	609837
Analysis Date:	05/05/17 Time: 0759	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	18.62	(	)	
75	30.0 - 60.0% of mass 95	50.63	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.36	(	)	
173	Less than 2.0% of mass 174	.73	(1.01	)	1
174	50.0 - 120.0% of mass 95	72.52	(	)	
175	5.0 - 9.0% of mass 174	5.14	(7.09	)	1
176	95.0 - 101.0% of mass 174	70.83	(97.68	)	1
177	5.0 - 9.0% of mass 176	4.48	(6.33	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V14STD005	1204	2170505/b2892d	05/05/17	0959
2 .	V14STD020	1206	2170505/b2894d	05/05/17	1043
3 .	V14STD050	1207	2170505/b2895d	05/05/17	1105
4 .	V14STD100	1208	2170505/b2896d	05/05/17	1127
5 .	V14STD200	1209	2170505/b2897d	05/05/17	1150
6 .	V14STD001	1203	2170505/b2900d	05/05/17	1310
7 .	V14STD010	1205	2170505/b2901d	05/05/17	1332
8 .	V14ICV050	1600	2170505/b2902d	05/05/17	1415

FORM V VOA

Data File: /var/chem/msv14.i/2170505.s.b/b2888d.d

Page 1

Date : 05-MAY-2017 07:59

Client ID: V14BFB

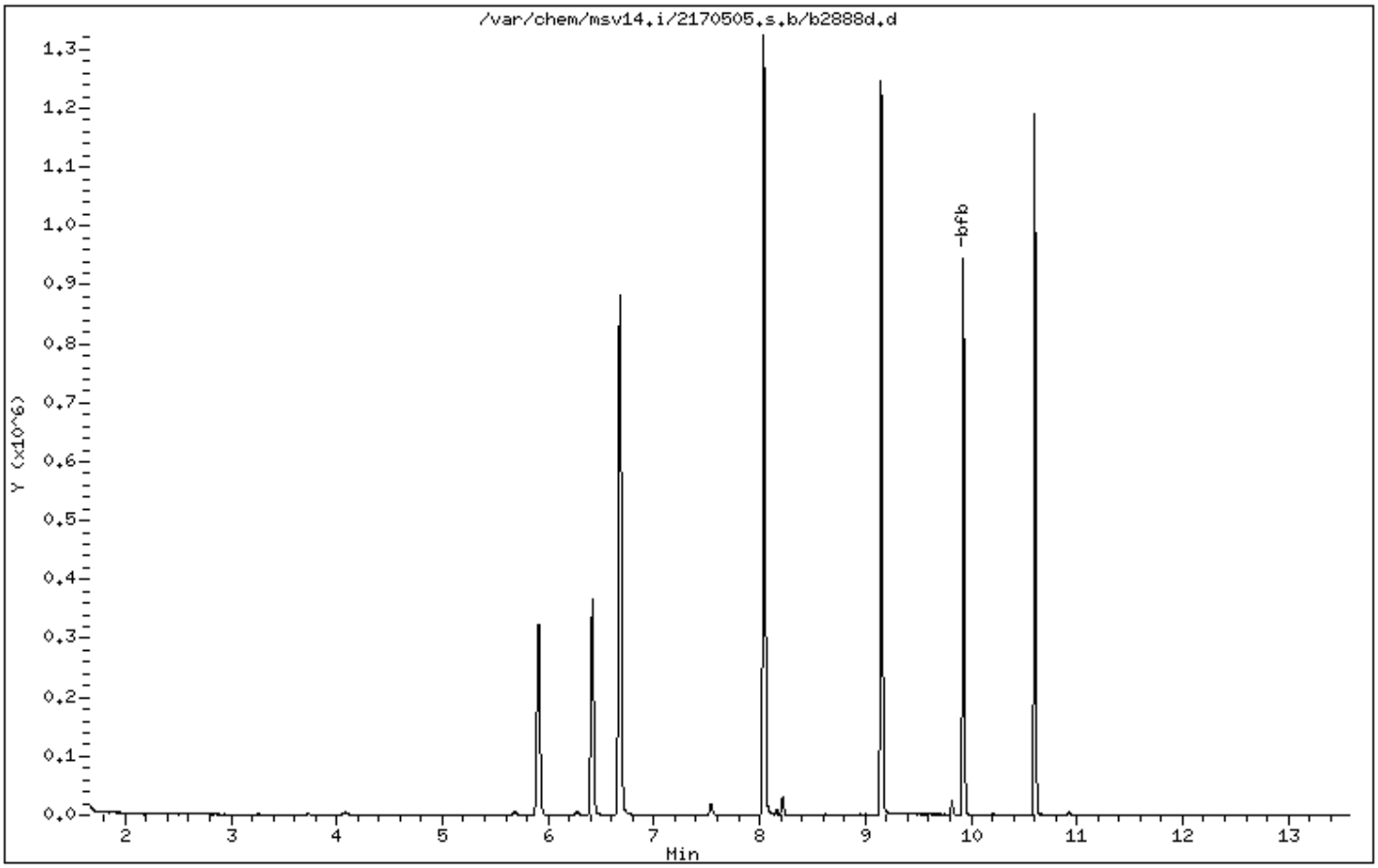
Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170505.s.b/b2888d.d

Date : 05-MAY-2017 07:59

Client ID: V14BFB

Instrument: msv14.i

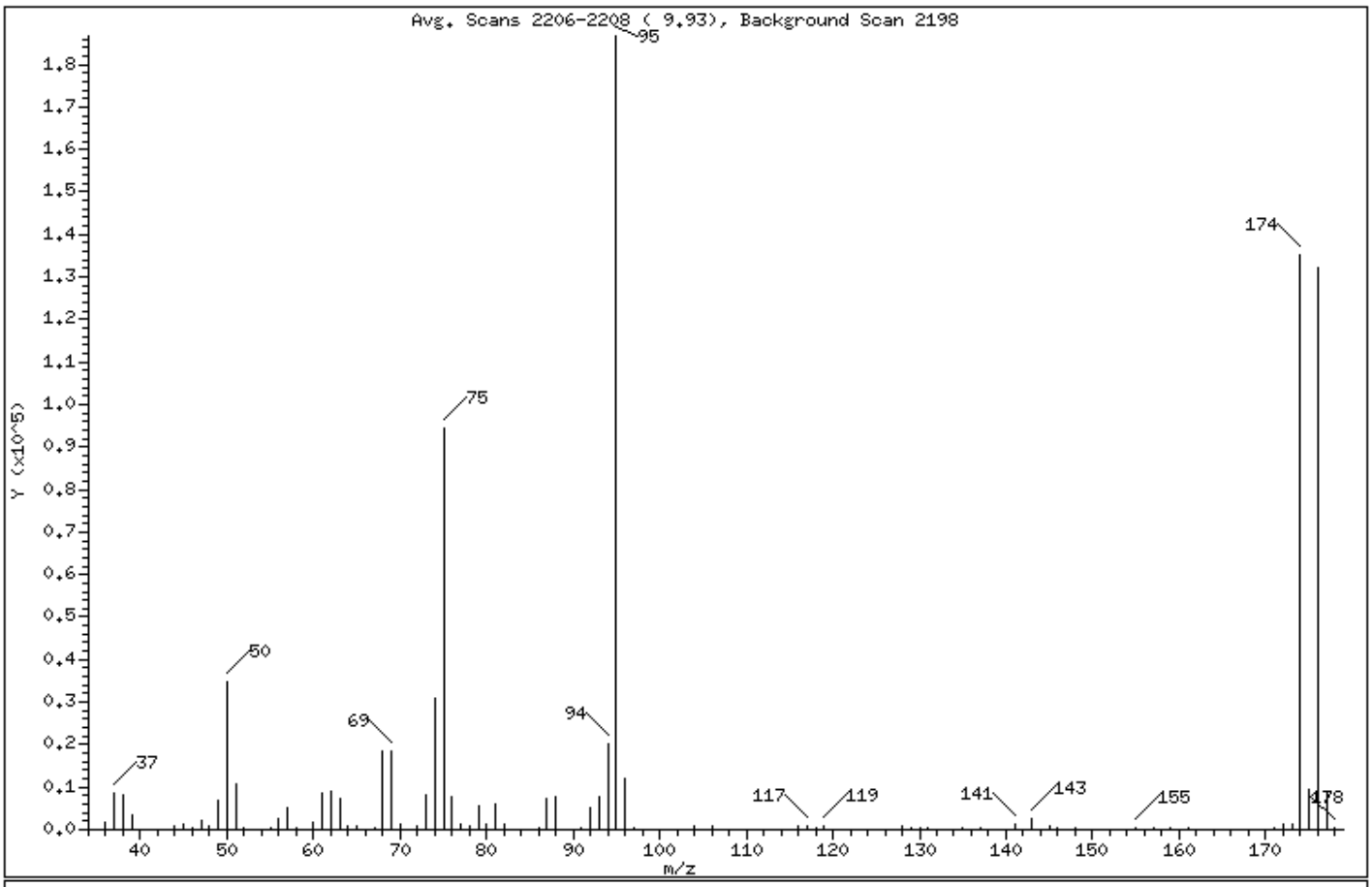
Sample Info: 1000*V14BFB

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.62
75	30.00 - 60.00% of mass 95	50.63
96	5.00 - 9.00% of mass 95	6.36
173	Less than 2.00% of mass 174	0.73 (1.01)
174	50.00 - 120.00% of mass 95	72.52
175	5.00 - 9.00% of mass 174	5.14 (7.09)
176	95.00 - 101.00% of mass 174	70.84 (97.68)
177	5.00 - 9.00% of mass 176	4.48 (6.33)

Date : 05-MAY-2017 07:59

Client ID: V14BFB Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: LBH

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b2888d.d
Spectrum: Avg. Scans 2206-2208 (9.93), Background Scan 2198
Location of Maximum: 95.00
Number of points: 97

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	60	65.00	862	95.00	186688	143.00	2363
36.00	1618	66.00	62	96.00	11882	144.00	185
37.00	8390	67.00	497	97.00	407	145.00	883
38.00	8214	68.00	18288	104.00	709	146.00	241
39.00	3288	69.00	18600	105.00	155	148.00	410
40.00	142	70.00	1328	106.00	685	149.00	55
44.00	801	72.00	922	107.00	120	150.00	132
45.00	1487	73.00	7984	110.00	50	153.00	51
46.00	289	74.00	30824	111.00	106	154.00	73
47.00	2273	75.00	94536	113.00	175	155.00	548
48.00	1043	76.00	7868	115.00	112	156.00	70
49.00	6838	77.00	1213	116.00	751	157.00	365
50.00	34760	78.00	822	117.00	1049	159.00	227
51.00	10909	79.00	5679	118.00	618	161.00	219
52.00	511	80.00	1436	119.00	1029	171.00	326
53.00	57	81.00	5800	124.00	56	172.00	1247
55.00	452	82.00	1076	128.00	677	173.00	1372
56.00	2629	83.00	146	129.00	300	174.00	135360
57.00	5060	86.00	248	130.00	619	175.00	9606
58.00	282	87.00	7320	131.00	296	176.00	132224
60.00	1893	88.00	7790	135.00	309	177.00	8369
61.00	8719	91.00	531	137.00	322	178.00	328
62.00	8884	92.00	5157	140.00	57		
63.00	7370	93.00	7928	141.00	1474		
64.00	1051	94.00	20192	142.00	126		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217051110	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170513/b3249
Analyst:	IXE	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 0750	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	17.93	(	)	
75	30.0 - 60.0% of mass 95	48.68	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.28	(	)	
173	Less than 2.0% of mass 174	.68	(.89	)	1
174	50.0 - 120.0% of mass 95	76.95	(	)	
175	5.0 - 9.0% of mass 174	5.61	(7.3	)	1
176	95.0 - 101.0% of mass 174	73.53	(95.56	)	1
177	5.0 - 9.0% of mass 176	4.56	(6.21	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V14STD050	1400	2170513/b3251	05/13/17	0857
2 .	LCS1684272	1684272	2170513/b3251L	05/13/17	0857
3 .	LCSD1684273	1684273	2170513/b3252	05/13/17	0921
4 .	MB1684271	1684271	2170513/b3255	05/13/17	1027
5 .	OMS-28-GW13-32-S	21705111005	2170513/b3263	05/13/17	1325
6 .	OMS-28-GW13-32-C	21705111006	2170513/b3264	05/13/17	1347
7 .	OMS-28-GW28-12-S	21705111012	2170513/b3265	05/13/17	1409
8 .	V14STD050	1440	2170513/b3273	05/13/17	1706

FORM V VOA

Data File: /var/chem/msv14.i/2170513.s.b/b3249.d

Page 1

Date : 13-MAY-2017 07:50

Client ID: V14BFB

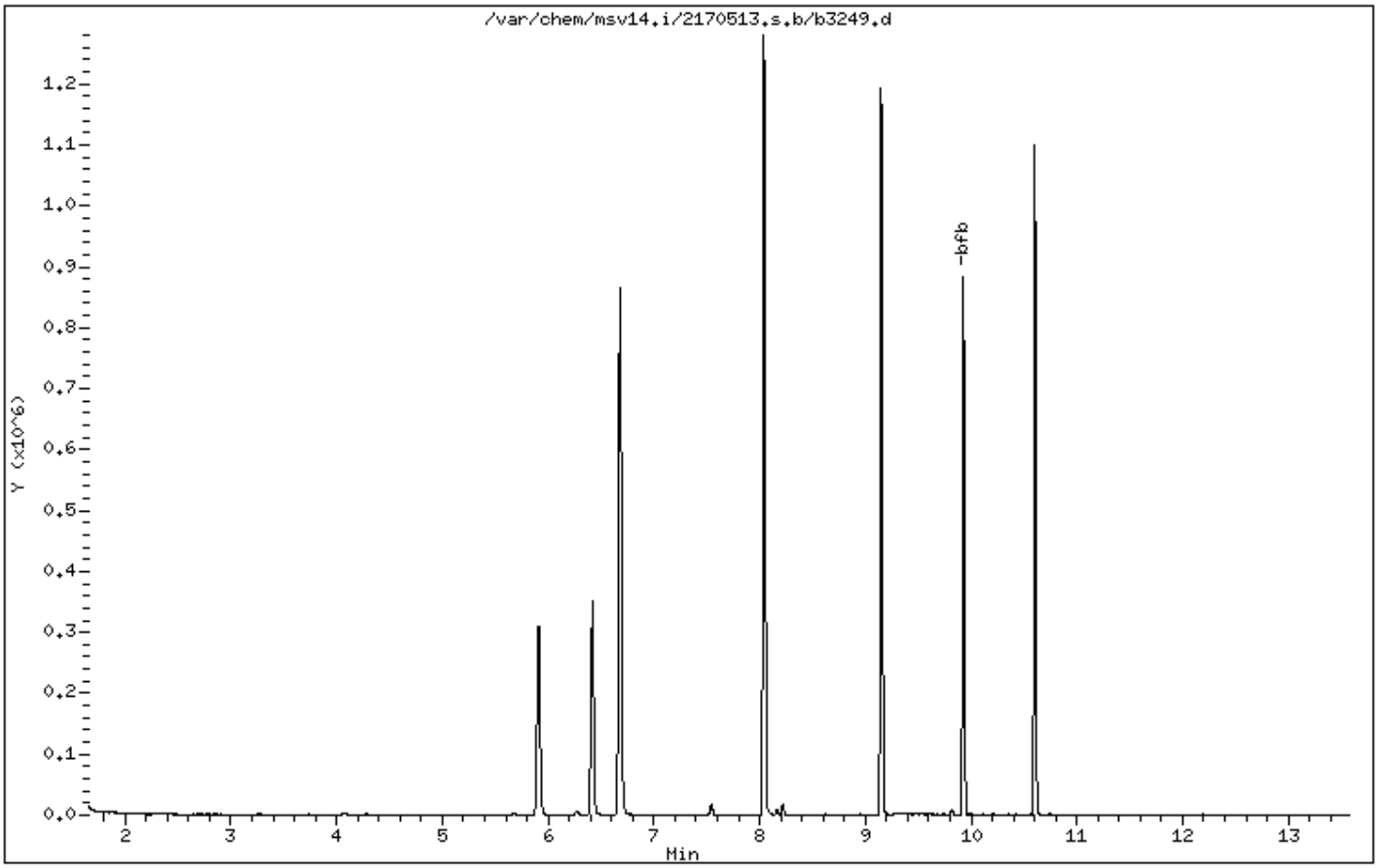
Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: IXE

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv14.i/2170513.s.b/b3249.d

Date : 13-MAY-2017 07:50

Client ID: V14BFB

Instrument: msv14.i

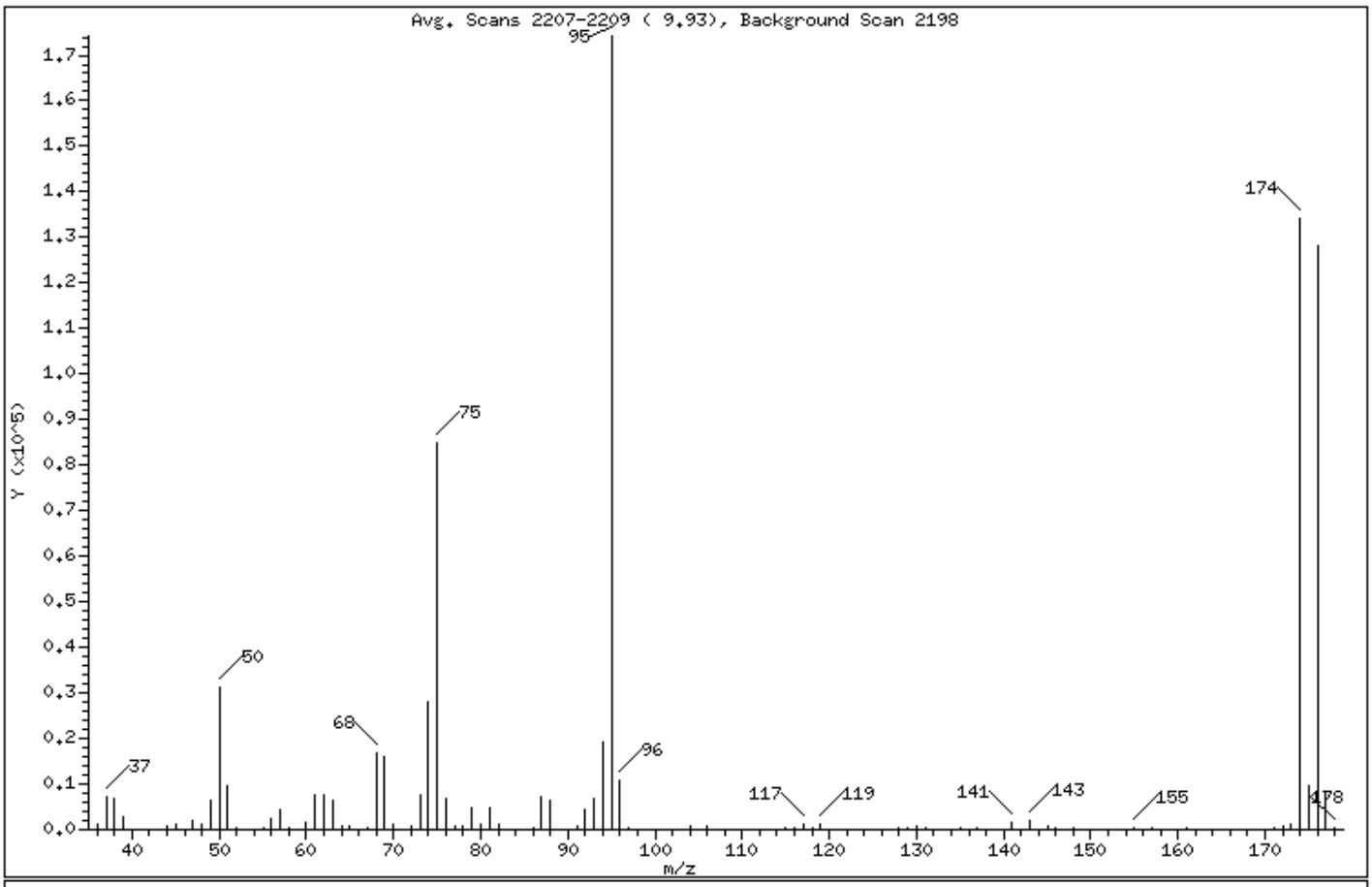
Sample Info: 1000*V14BFB

Operator: IXE

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.93
75	30.00 - 60.00% of mass 95	48.68
96	5.00 - 9.00% of mass 95	6.28
173	Less than 2.00% of mass 174	0.68 (0.89)
174	50.00 - 120.00% of mass 95	76.95
175	5.00 - 9.00% of mass 174	5.61 (7.30)
176	95.00 - 101.00% of mass 174	73.54 (95.56)
177	5.00 - 9.00% of mass 176	4.57 (6.21)

Date : 13-MAY-2017 07:50

Client ID: V14BFB Instrument: msv14.i

Sample Info: 1000*V14BFB

Operator: IXE

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: b3249.d
Spectrum: Avg. Scans 2207-2209 (9.93), Background Scan 2198
Location of Maximum: 95.00
Number of points: 92

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1384	64.00	934	93.00	6615	143.00	1909
37.00	7234	65.00	834	94.00	19352	145.00	771
38.00	6651	66.00	73	95.00	174208	146.00	228
39.00	2735	67.00	440	96.00	10939	147.00	51
40.00	175	68.00	16696	97.00	304	148.00	380
44.00	650	69.00	16186	104.00	635	150.00	187
45.00	1344	70.00	1266	105.00	148	153.00	75
46.00	98	72.00	932	106.00	688	155.00	432
47.00	2195	73.00	7509	113.00	79	157.00	379
48.00	1030	74.00	28072	115.00	221	158.00	57
49.00	6461	75.00	84792	116.00	538	159.00	142
50.00	31224	76.00	6910	117.00	1017	161.00	254
51.00	9563	77.00	943	118.00	558	171.00	296
52.00	371	78.00	733	119.00	1017	172.00	950
53.00	68	79.00	4888	124.00	84	173.00	1193
54.00	117	80.00	1249	128.00	488	174.00	134016
55.00	425	81.00	4964	129.00	353	175.00	9781
56.00	2381	82.00	1079	130.00	602	176.00	128104
57.00	4477	83.00	62	131.00	219	177.00	7958
58.00	205	86.00	269	135.00	251	178.00	267
60.00	1623	87.00	7110	137.00	324		
61.00	7607	88.00	6220	140.00	111		
62.00	7635	91.00	642	141.00	1542		
63.00	6424	92.00	4598	142.00	180		

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1201 ~ 2170414/i6576D ~ 2	
Report No:	217051110		Instrument ID:	MSV11	1202 ~ 2170414/i6577D ~ 5	1203 ~ 2170414/i6578D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1204 ~ 2170414/i6579D ~ 20	1205 ~ 2170414/i6580D ~ 50	
Calib. Date 1:	04/14/17	Time 1: 1412	Analytical Batch:	608399	1206 ~ 2170414/i6581D ~ 100	1207 ~ 2170414/i6582D ~ 200	
Calib. Date 2:	04/14/17	Time 2: 1632	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane	0.496	0.626	0.567	0.592	0.581	0.578	0.565			0.572			6.864	A
1,1,1-Trichloroethane	0.481	0.411	0.391	0.369	0.347	0.353	0.344			0.385			12.70	A
1,1,2,2-Tetrachloroethane	0.713	0.689	0.618	0.647	0.633	0.614	0.576			0.641			7.251	A
1,1,2-Trichloroethane	0.481	0.504	0.474	0.503	0.473	0.486	0.464			0.484			3.174	A
1,1-Dichloroethane	0.522	0.446	0.449	0.430	0.411	0.417	0.401			0.440			9.229	A
1,1-Dichloroethene	0.238	0.210	0.191	0.192	0.169	0.179	0.177			0.194			12.18	A
1,1-Dichloropropene	0.348	0.344	0.299	0.297	0.281	0.282	0.278			0.304			9.801	A
1,2,3-Trichlorobenzene	0.726	0.787	0.858	0.954	0.993	1.040	1.004			0.909			13.20	A
1,2,3-Trichloropropane	0.889	0.781	0.730	0.797	0.722	0.718	0.758			0.771			7.811	A
1,2,4-Trichlorobenzene	0.765	0.814	0.914	0.991	1.036	1.061	1.041			0.946			12.46	A
1,2,4-Trimethylbenzene	3.049	2.636	2.538	2.471	2.398	2.331	2.245			2.524			10.50	A
1,2-Dibromo-3-chloropropane	0.154	0.160	0.158	0.156	0.154	0.164	0.158			0.158			2.198	A
1,2-Dibromoethane	0.459	0.474	0.441	0.454	0.444	0.462	0.454			0.455			2.430	A
1,2-Dichlorobenzene	1.412	1.398	1.384	1.437	1.417	1.378	1.346			1.396			2.137	A
1,2-Dichloroethane	0.404	0.415	0.387	0.380	0.369	0.376	0.347			0.382			5.935	A
1,2-Dichloroethane-d4	0.161	0.159	0.160	0.156	0.152	0.152	0.151			0.156			2.593	A
1,2-Dichloroethene (total)	0.401	0.359	0.353	0.331	0.314	0.325	0.313			0.342			9.162	A
1,2-Dichloropropane	0.316	0.262	0.261	0.255	0.242	0.242	0.232			0.258			10.62	A
1,3,5-Trimethylbenzene	2.878	2.505	2.501	2.416	2.334	2.248	2.184			2.438			9.383	A
1,3-Dichlorobenzene	1.704	1.504	1.429	1.413	1.412	1.377	1.346			1.455			8.250	A
1,3-Dichloropropane	0.838	0.854	0.865	0.900	0.885	0.872	0.845			0.866			2.551	A
1,3-Dichloropropylene	0.335	0.318	0.325	0.345	0.356	0.384	0.377			0.349			7.273	A
1,4 Dioxane		0.002	0.002	0.002	0.002	0.002	0.002			0.002			5.619	A
1,4-Dichlorobenzene	1.816	1.539	1.407	1.454	1.426	1.383	1.351			1.482			10.71	A
1-Bromo-2-Chloroethane	0.333	0.325	0.318	0.322	0.320	0.328	0.316			0.323			1.786	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1201 ~ 2170414/i6576D ~ 2	
Report No:	217051110		Instrument ID:	MSV11	1202 ~ 2170414/i6577D ~ 5	1203 ~ 2170414/i6578D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1204 ~ 2170414/i6579D ~ 20	1205 ~ 2170414/i6580D ~ 50	
Calib. Date 1:	04/14/17	Time 1: 1412	Analytical Batch:	608399	1206 ~ 2170414/i6581D ~ 100	1207 ~ 2170414/i6582D ~ 200	
Calib. Date 2:	04/14/17	Time 2: 1632	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1-Chlorohexane	0.671	0.747	0.646	0.685	0.664	0.601	0.651			0.666			6.632	A
2,2-Dichloropropane	0.365	0.324	0.288	0.286	0.271	0.284	0.277			0.299			11.18	A
2-Butanone	0.108	0.118	0.132	0.130	0.128	0.144	0.134			0.128			9.097	A
2-Chlorotoluene	2.797	2.455	2.266	2.323	2.234	2.141	2.096			2.331			10.16	A
2-Hexanone	0.479	0.382	0.363	0.405	0.423	0.446	0.441			0.420			9.481	A
4-Bromofluorobenzene	0.753	0.746	0.747	0.792	0.788	0.796	0.798			0.774			3.137	A
4-Chlorotoluene	2.245	2.244	2.037	2.050	2.010	1.945	1.876			2.058			6.819	A
4-Isopropyltoluene	3.129	2.890	2.682	2.646	2.512	2.472	2.392			2.675			9.666	A
4-Methyl-2-pentanone	0.498	0.493	0.462	0.478	0.505	0.531	0.517			0.498			4.674	A
Acetone		0.144	0.147	0.138	0.131	0.131	0.125			0.136			6.151	A
Acrolein	0.015	0.022	0.017	0.019	0.020	0.021	0.020			0.019			13.56	A
Acrylonitrile	0.069	0.073	0.068	0.071	0.068	0.069	0.066			0.069			3.216	A
Benzene	1.202	1.019	0.986	0.946	0.902	0.897	0.878			0.976			11.47	A
Bromobenzene	1.377	1.379	1.356	1.315	1.277	1.232	1.199			1.305			5.479	A
Bromochloromethane	0.093	0.112	0.129	0.120	0.113	0.122	0.111			0.114			9.925	A
Bromodichloromethane	0.405	0.390	0.374	0.373	0.355	0.367	0.349			0.373			5.171	A
Bromoform	0.443	0.478	0.400	0.462	0.451	0.462	0.452			0.450			5.423	A
Bromomethane		0.188	0.165	0.150	0.139	0.142	0.144			0.155			12.02	A
Carbon disulfide	0.790	0.729	0.695	0.654	0.608	0.622	0.618			0.674			10.04	A
Carbon tetrachloride	0.433	0.412	0.376	0.356	0.325	0.324	0.314			0.363			12.74	A
Chlorobenzene	1.633	1.581	1.522	1.563	1.466	1.461	1.444			1.524			4.677	A
Chloroethane	0.186	0.157	0.154	0.153	0.142	0.144	0.131			0.152			11.38	A
Chloroform	0.558	0.490	0.434	0.443	0.424	0.432	0.413			0.456			11.20	A
Chloromethane		0.372	0.336	0.319	0.295	0.292	0.286			0.317			10.45	A
Chloroprene	0.354	0.328	0.311	0.322	0.305	0.299	0.291			0.316			6.699	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1201 ~ 2170414/i6576D ~ 2	
Report No:	217051110		Instrument ID:	MSV11	1202 ~ 2170414/i6577D ~ 5	1203 ~ 2170414/i6578D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1204 ~ 2170414/i6579D ~ 20	1205 ~ 2170414/i6580D ~ 50	
Calib. Date 1:	04/14/17	Time 1: 1412	Analytical Batch:	608399	1206 ~ 2170414/i6581D ~ 100	1207 ~ 2170414/i6582D ~ 200	
Calib. Date 2:	04/14/17	Time 2: 1632	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Cyclohexane	0.495	0.451	0.414	0.387	0.356	0.361	0.343			0.401			13.96	A
Dibromochloromethane	0.649	0.652	0.620	0.644	0.626	0.640	0.621			0.636			2.136	A
Dibromofluoromethane	0.257	0.249	0.256	0.255	0.250	0.253	0.251			0.253			1.262	A
Dibromomethane	0.140	0.147	0.141	0.149	0.143	0.149	0.140			0.144			2.891	A
Dichlorodifluoromethane		0.328	0.333	0.301	0.273	0.277	0.266			0.296			9.765	A
Ethylbenzene	0.931	0.825	0.783	0.801	0.750	0.753	0.756			0.800			8.047	A
Hexachlorobutadiene	0.877	0.753	0.728	0.714	0.688	0.679	0.671			0.730			9.721	A
Isobutyl alcohol	0.011	0.008	0.011	0.009	0.009	0.011	0.010			0.010			11.72	A
Isopropylbenzene (Cumene)	2.877	2.624	2.576	2.682	2.531	2.479	2.450			2.603			5.583	A
Methyl Acetate	0.124	0.151	0.146	0.163	0.153	0.160	0.154			0.150			8.509	A
Methyl iodide (RSP)	1214	3567	8652	19938	66897	166785	399198			0.216	0.130		0.995	L
Methyl iodide	0.083	0.094	0.111	0.123	0.157	0.192	0.213							
Methylcyclohexane		0.456	0.402	0.414	0.364	0.360	0.354			0.392			10.22	A
Methylene chloride		0.408	0.390	0.364	0.337	0.338	0.318			0.359			9.653	A
Naphthalene (RSP)		13102	39980	103552	328861	786385	1682663			2.105	0.071		0.999	W
Naphthalene		0.864	1.249	1.570	1.908	2.074	2.068							
Styrene	1.598	1.642	1.597	1.693	1.653	1.702	1.665			1.650			2.525	A
Tetrachloroethene	0.534	0.464	0.449	0.493	0.450	0.432	0.436			0.465			7.779	A
Toluene	2.652	2.527	2.307	2.380	2.200	2.160	2.137			2.337			8.350	A
Toluene-d8	2.228	2.269	2.224	2.309	2.270	2.227	2.208			2.248			1.598	A
Trichloroethene	0.264	0.258	0.249	0.252	0.237	0.236	0.233			0.247			4.839	A
Trichlorofluoromethane		0.426	0.390	0.366	0.340	0.341	0.326			0.365			10.37	A
Trichlorotrifluoroethane		0.240	0.203	0.201	0.181	0.185	0.175			0.198			11.88	A
Vinyl acetate (RSP)		4219	11258	25200	69026	151923	327526			0.176	0.039		0.999	W
Vinyl acetate		0.111	0.145	0.155	0.162	0.174	0.174							

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1201 ~ 2170414/i6576D ~ 2	
Report No:	217051110		Instrument ID:	MSV11	1202 ~ 2170414/i6577D ~ 5	1203 ~ 2170414/i6578D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1204 ~ 2170414/i6579D ~ 20	1205 ~ 2170414/i6580D ~ 50	
Calib. Date 1:	04/14/17	Time 1: 1412	Analytical Batch:	608399	1206 ~ 2170414/i6581D ~ 100	1207 ~ 2170414/i6582D ~ 200	
Calib. Date 2:	04/14/17	Time 2: 1632	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Vinyl chloride	0.329	0.280	0.274	0.261	0.249	0.252	0.250			0.271			10.48	A
Xylene (total)	1.101	1.010	0.967	0.999	0.944	0.950	0.945			0.988			5.690	A
cis-1,2-Dichloroethene	0.400	0.364	0.348	0.338	0.329	0.340	0.326			0.349			7.320	A
cis-1,3-Dichloropropene	0.359	0.347	0.354	0.376	0.375	0.404	0.395			0.373			5.690	A
diisopropyl Ether (DIPE)	0.769	0.781	0.764	0.798	0.792	0.818	0.772			0.785			2.451	A
m,p-Xylene	1.111	1.044	0.979	1.009	0.935	0.938	0.932			0.993			6.767	A
n-Butylbenzene	2.839	2.556	2.417	2.423	2.286	2.269	2.181			2.424			9.104	A
n-Hexane	0.578	0.488	0.456	0.455	0.414	0.416	0.397			0.458			13.39	A
n-Propylbenzene	3.783	3.545	3.287	3.296	3.133	3.007	2.917			3.281			9.230	A
o-Xylene	1.081	0.943	0.944	0.979	0.963	0.976	0.971			0.980			4.812	A
sec-Butylbenzene	3.493	3.241	3.008	3.070	2.901	2.759	2.689			3.023			9.233	A
t-Butanol (TBA)	0.033	0.027	0.039	0.030	0.031	0.033	0.030			0.032			11.74	A
tert-Butyl methyl ether (MTBE)	0.520	0.506	0.507	0.549	0.537	0.562	0.538			0.531			3.994	A
tert-Butylbenzene	1.725	1.478	1.423	1.432	1.380	1.305	1.269			1.430			10.40	A
trans-1,2-Dichloroethene	0.403	0.354	0.358	0.325	0.299	0.309	0.301			0.336			11.32	A
trans-1,3-Dichloropropene	0.311	0.289	0.296	0.313	0.337	0.365	0.360			0.324			9.246	A
trans-1,4-Dichloro-2-butene	0.184	0.176	0.172	0.189	0.196	0.191	0.185			0.185			4.587	A

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Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

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$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170414.s.b/i6576D.d
Lab Smp Id: 1201 Client Smp ID: V11STD002
Inj Date : 14-APR-2017 14:12
Operator : JCK Inst ID: msv11.i
Smp Info : 1201*V11STD002
Misc Info : MSV~38124~*1*JCK
Comment :
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Meth Date : 14-Apr-2017 18:18 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 14:12 Cal File: i6576D.d
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.757	1.757	(0.246)	5884	2.00000	2.72	4748
2 Chloromethane ++	50	1.969	1.969	(0.276)	6387	2.00000	2.77	5597
3 Vinyl Chloride +	62	2.044	2.044	(0.287)	4796	2.00000	2.43	6565
6 Bromomethane	94	2.404	2.404	(0.337)	3354	2.00000	2.98	6417
8 Chloroethane	64	2.526	2.526	(0.354)	2709	2.00000	2.44	6642
9 Trichlorofluoromethane	101	2.694	2.694	(0.378)	7075	2.00000	2.66	6486
12 1,1-Dichloroethene +	96	3.302	3.302	(0.463)	3463	2.00000	2.45	7369
14 Carbon Disulfide	76	3.335	3.335	(0.468)	11517	2.00000	2.34	7443
15 1,1,2Trichlotrifluoroethane	101	3.355	3.355	(0.470)	4236	2.00000	2.94	7570
16 Methyl Iodide	142	3.494	3.494	(0.490)	1214	2.00000	7.25	3752(M2)
17 Acrolein	56	3.781	3.781	(0.530)	1075	10.0000	7.68	3454(M2H)
18 Methylene Chloride	49	4.088	4.088	(0.573)	7506	2.00000	2.87	6801
19 Acetone	43	4.174	4.174	(0.585)	3116	2.00000	3.14	5787

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	13	trans-1,2-Dichloroethene	61	4.314	4.314	(0.605)	5870	2.00000	2.40	7363
	22	Methyl Acetate	43	4.361	4.361	(0.611)	1815	2.00000	1.66	0(M1)
	23	Hexane	57	4.406	4.406	(0.618)	8422	2.00000	2.52	7360
	25	MTBE	73	4.476	4.476	(0.627)	7586	2.00000	1.96	6849
	31	1,1-Dichloroethane ++	63	5.114	5.114	(0.717)	7616	2.00000	2.38	7553
	33	Acrylonitrile	53	5.209	5.209	(0.730)	5033	10.0000	10.0	5430
	34	Vinyl Acetate	43	5.471	5.471	(0.767)	1264	2.00000	2.94	
M	68	Total 1,2-Dichloroethene	61				11696	4.00000	4.69	0
	21	cis-1,2-Dichloroethene	61	5.764	5.764	(0.808)	5826	2.00000	2.29	7943
	35	2,2-Dichloropropane	77	5.881	5.881	(0.824)	5322	2.00000	2.44	7610(M2)
	38	Cyclohexane	56	5.981	5.981	(0.839)	7218	2.00000	2.47	7988
	39	Bromochloromethane	128	5.993	5.993	(0.840)	1355	2.00000	1.63	7891(M2)
	40	Chloroform +	83	6.090	6.090	(0.854)	8140	2.00000	2.45	7365
	41	Carbon Tetrachloride	117	6.210	6.210	(0.871)	6309	2.00000	2.39	8037
$	42	Dibromofluoromethane	111	6.283	6.283	(0.881)	93707	50.0000	50.8	6850
	43	1,1,1-Trichloroethane	97	6.299	6.299	(0.883)	7017	2.00000	2.50	4025
	45	2-Butanone	43	6.430	6.430	(0.901)	1576	2.00000	1.69	
	44	1,1-Dichloropropene	75	6.442	6.442	(0.903)	5070	2.00000	2.29	7430
	48	Benzene	78	6.701	6.701	(0.939)	17525	2.00000	2.46	8522
$	50	1,2-Dichloroethane-d4	67	6.843	6.843	(0.959)	58626	50.0000	51.6	9552
	52	1,2-Dichloroethane	62	6.910	6.910	(0.969)	5896	2.00000	2.11	3122(M3)
*	54	FLUOROBENZENE	96	7.133	7.133	(1.000)	364481	50.0000		9455
	56	Methyl cyclohexane	83	7.289	7.289	(1.022)	8950	2.00000	3.13	8310
	57	Trichloroethene	130	7.300	7.300	(1.023)	3848	2.00000	2.14	7489
	62	Dibromomethane	93	7.733	7.733	(1.084)	2040	2.00000	1.94	5966
	63	1,2-Dichloropropane +	63	7.841	7.841	(1.099)	4600	2.00000	2.44	7115
	64	Bromodichloromethane	83	7.889	7.889	(1.106)	5901	2.00000	2.17	7925
	69	1-Bromo-2-chloroethane	63	8.355	8.355	(1.171)	4848	2.00000	2.06	6787
	72	cis-1,3-Dichloropropene	75	8.500	8.500	(1.192)	5237	2.00000	1.93	
$	74	Toluene-d8	98	8.661	8.661	(0.872)	360607	50.0000	49.5	9520
	77	Toluene +	91	8.706	8.706	(0.876)	17176	2.00000	2.27	8154
M	71	1-3 Dichloropropene-Total	100				9773	4.00000	3.84	0
	79	4-methyl-2-pentanone	43	9.038	9.038	(0.910)	3225	2.00000	2.00	
	78	Tetrachloroethene	164	9.035	9.035	(0.909)	3455	2.00000	2.29	8947
	81	trans-1,3-Dichloropropene	75	9.077	9.077	(1.272)	4536	2.00000	1.92	
	82	1,1,2-Trichloroethane	97	9.205	9.205	(0.926)	3112	2.00000	1.99	8495
	85	Dibromochloromethane	129	9.350	9.350	(0.941)	4205	2.00000	2.04	7650
	86	1,3-Dichloropropane	76	9.431	9.431	(0.949)	5429	2.00000	1.94	7666
	88	1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	2970	2.00000	2.01	5912
	80	2-Hexanone	43	9.713	9.713	(0.978)	3099	2.00000	2.28	5718
	91	1-Chlorohexane	91	9.925	9.925	(0.999)	4348	2.00000	2.01	4755
*	90	Chlorobenzene-d5	82	9.936	9.936	(1.000)	161889	50.0000		9395
	92	Chlorobenzene ++	112	9.950	9.950	(1.001)	10577	2.00000	2.14	4627
	93	Ethylbenzene +	106	9.966	9.966	(1.003)	6030	2.00000	2.33	8773
	95	1,1,1,2-Tetrachloroethane	133	9.994	9.994	(1.006)	3212	2.00000	1.73	7857
	96	p,m-Xylene	106	10.072	10.072	(1.014)	14383	4.00000	4.48	9257
M	120	TOTAL XYLENE	106				21385	6.00000	6.68	0

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98 o-Xylene	106	10.401	10.401	(1.047)	7002	2.00000	2.21	
99 Styrene	104	10.438	10.438	(1.051)	10347	2.00000	1.94	8770
100 Bromoform ++	173	10.466	10.466	(1.053)	2870	2.00000	1.97	6424
102 Isopropylbenzene	105	10.625	10.625	(1.069)	18632	2.00000	2.21	9382
$ 103 Bromofluorobenzene	174	10.834	10.834	(1.090)	121857	50.0000	48.6	9416
104 Bromobenzene	77	10.917	10.917	(0.939)	7975	2.00000	2.11	9309
106 n-Propylbenzene	91	10.917	10.917	(0.939)	21908	2.00000	2.31	9309
107 1,1,2,2-Tetrachloroethane++	83	10.970	10.970	(0.944)	4128	2.00000	2.22	8533
108 2-Chlorotoluene	91	11.040	11.040	(0.950)	16198	2.00000	2.40	8078
110 1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	16669	2.00000	2.36	
109 1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	5149	2.00000	2.31	7784
111 trans-1,4-Dichloro-2-Butene	53	11.099	11.099	(0.955)	1067	2.00000	1.99	6918
112 4-Chlorotoluene	91	11.157	11.157	(0.960)	13005	2.00000	2.18	8734
113 tert-butylbenzene	91	11.280	11.280	(0.970)	9990	2.00000	2.41	9513
114 1,2,4-Trimethylbenzene	105	11.325	11.325	(0.974)	17657	2.00000	2.42	
115 sec-Butylbenzene	105	11.408	11.408	(0.982)	20231	2.00000	2.31	
116 p-Isopropyltoluene	119	11.500	11.500	(0.989)	18122	2.00000	2.34	9261
117 1,3-Dichlorobenzene	146	11.573	11.573	(0.996)	9869	2.00000	2.34	
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	144798	50.0000		9373
119 1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	10520	2.00000	2.45	
121 n-Butylbenzene	91	11.793	11.793	(1.015)	16445	2.00000	2.34	8967
122 1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	8177	2.00000	2.02	
125 1,2-Dibromo-3-Chloropropane	157	12.471	12.471	(1.073)	894	2.00000	1.96	5887
126 Hexachlorobutadiene	225	12.889	12.889	(1.109)	5081	2.00000	2.40	8603
127 1,2,4-Trichlorobenzene	180	12.931	12.931	(1.113)	4430	2.00000	1.62	
128 Napthalene	128	13.159	13.159	(1.132)	3125	2.00000	4.09	8150
129 1,2,3-Trichlorobenzene	180	13.279	13.279	(1.143)	4203	2.00000	1.60	
10 tert-butyl alcohol	59	4.621	4.621	(0.648)	486	2.00000	2.09	0(M1)
26 Isopropyl Ether	45	4.975	4.975	(0.697)	11208	2.00000	1.96	7382
20 Chloroprene	53	5.086	5.086	(0.713)	5163	2.00000	2.24	7016
30 Isobutyl Alcohol	43	6.963	6.963	(0.976)	775	10.0000	10.7	5314(M3)
53 1,4-Dioxane	58	8.106	8.106	(1.136)	380	50.0000	28.3	3901
162 3,4-dichloro-1-butene	75	9.395	9.395	(0.946)	3237	2.00000	1.78	7407(a)
161 cis-1,4-dichloro-2-butene	53	10.881	10.881	(0.936)	1046	2.00000	1.91	6601(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.
M3- Compound response manually integrated because
Target system integrated incorrect peak.
H - Operator selected an alternate compound hit.

Data File: /var/chem/msv11.i/2170414.s.b/i6576D.d

Page 1

Date : 14-APR-2017 14:12

Client ID: V11STD002

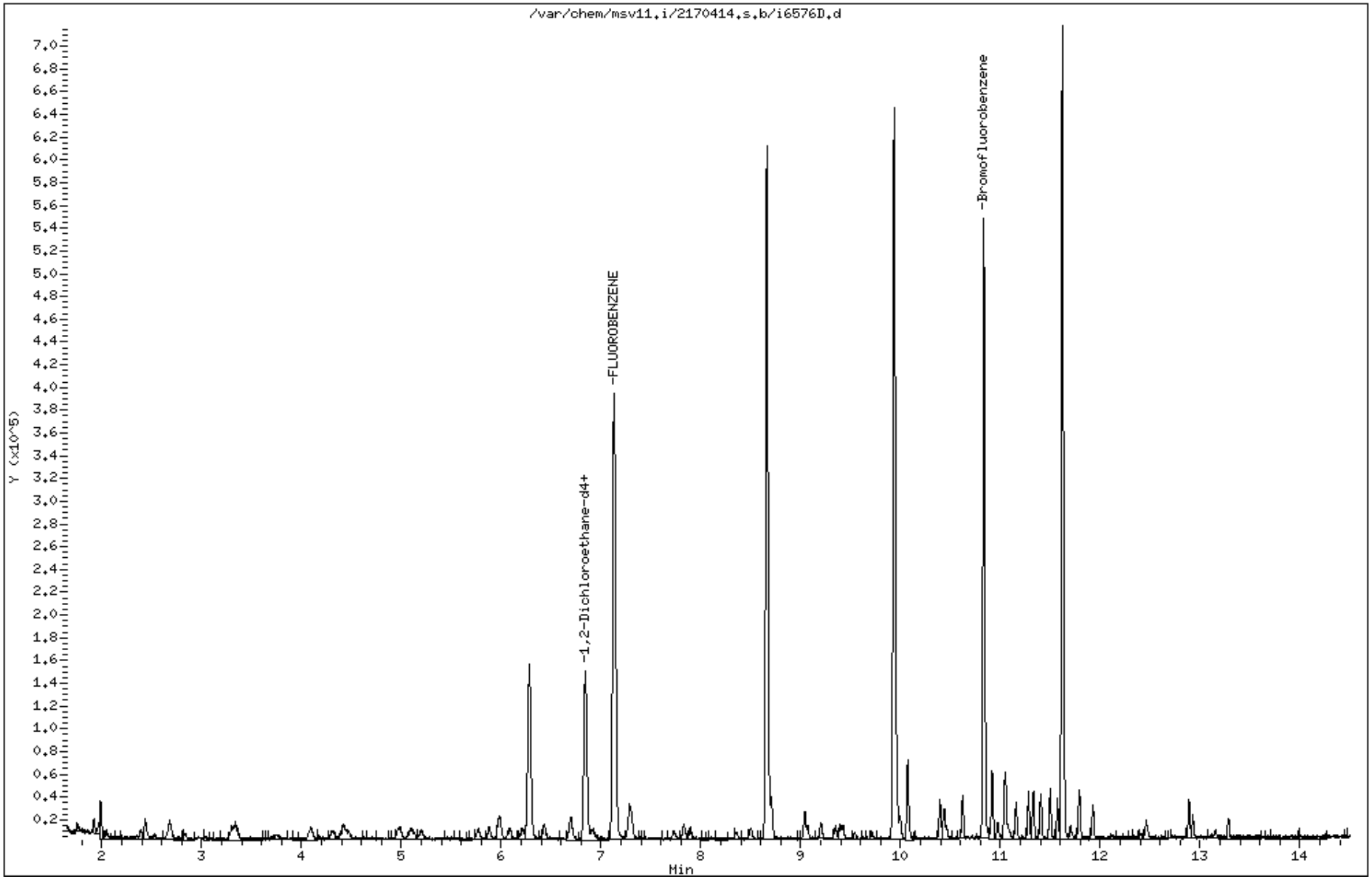
Instrument: msv11.i

Sample Info: 1201*V11STD002

Operator: JCK

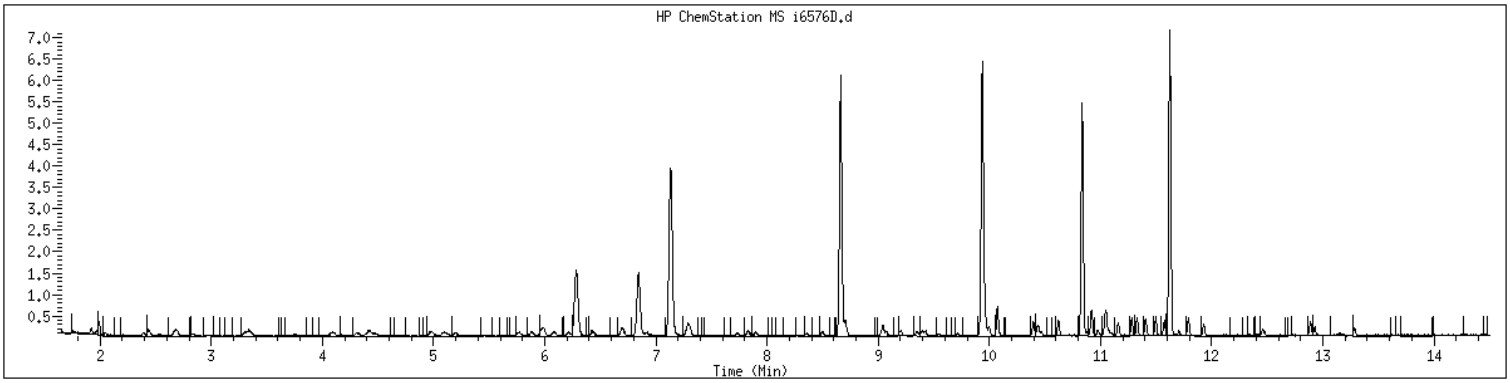
Column phase: RTX-VMS-30M

Column diameter: 0.25



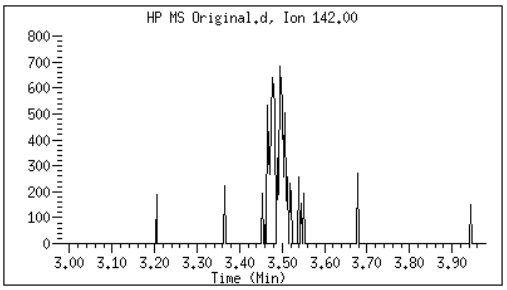
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1201 SampleType : CALIB_1
Injection Date: 04/14/2017 14:12 Instrument : msv11.i
Operator : JCK
Sample Info : 1201*V11STD002
Misc Info : MSV~38124~*1*JCK
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



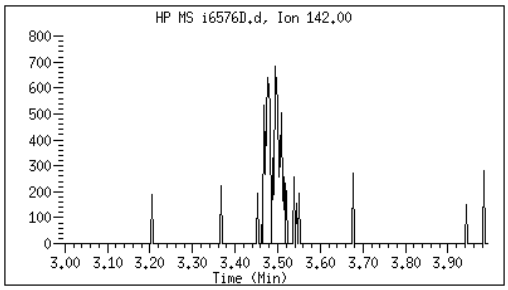
Original Final

16 Methyl Iodide CAS#: 74-88-4 Reason: M2

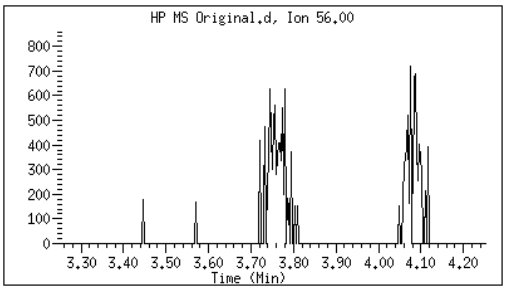


Electronic Signature Applied

User: jck2
Date: 04/14/2017 14:42



17 Acrolein CAS#: 107-02-8 Reason: M2



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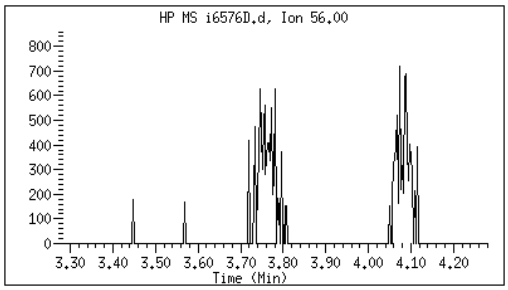
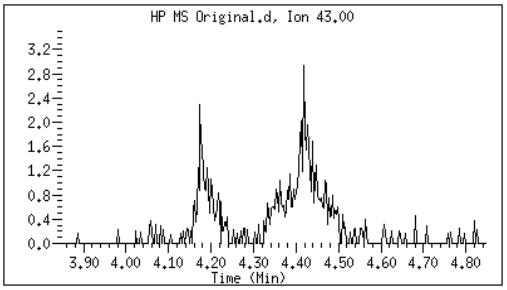


Original Final

22 Methyl Acetate CAS#: 79-20-9 Reason: M1



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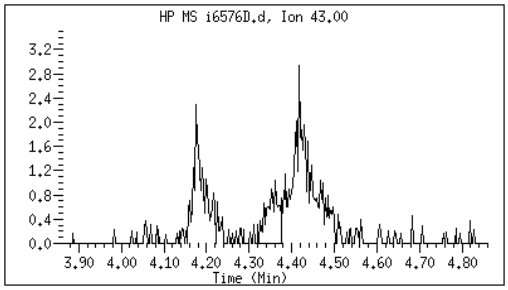
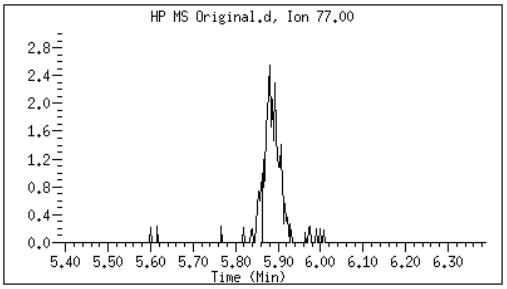


35 2,2-Dichloropropane CAS#: 594-20-7 Reason: M2



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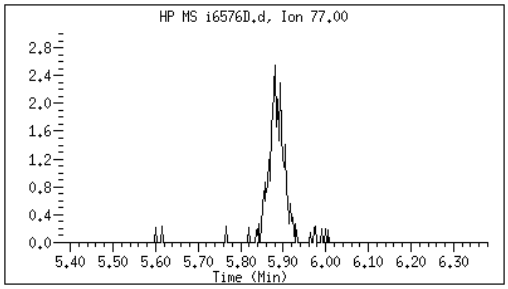
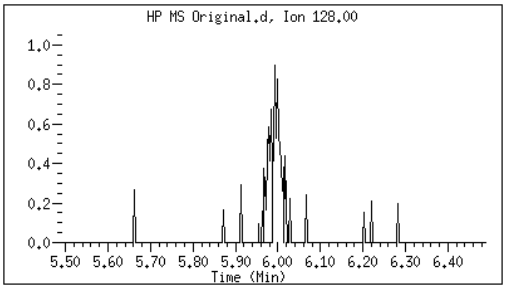


39 Bromochloromethane CAS#: 74-97-5 Reason: M2



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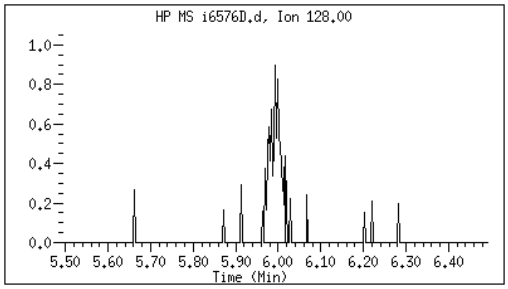
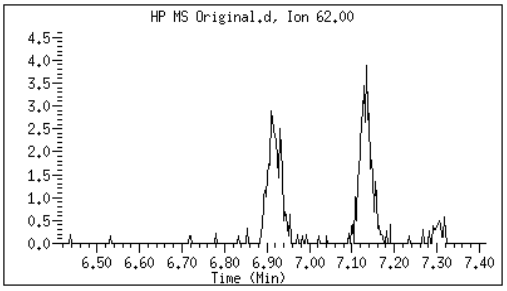
Date: 04/14/2017 14:42



52 1,2-Dichloroethane CAS#: 107-06-2 Reason: M3



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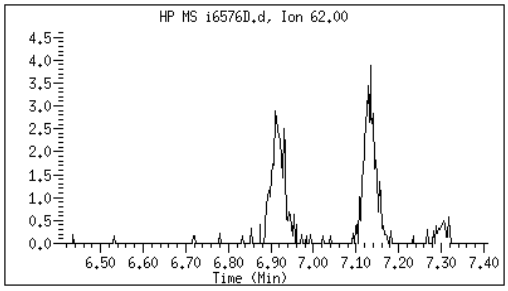
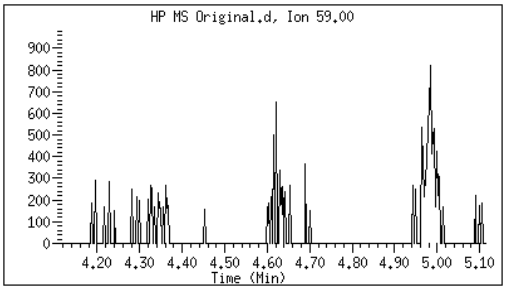


Original Final

10 tert-butyl alcohol CAS#: 75-65-0 Reason: M1



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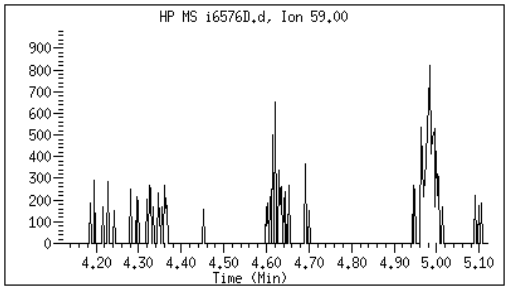
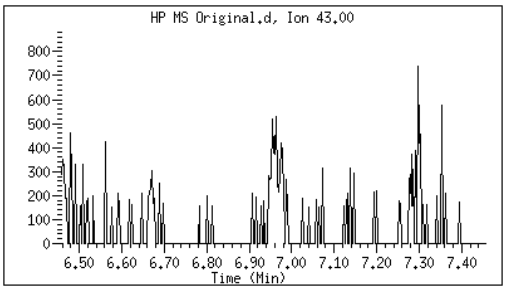
Date: 04/14/2017 14:43



30 Isobutyl Alcohol CAS#: 78-83-1 Reason: M3



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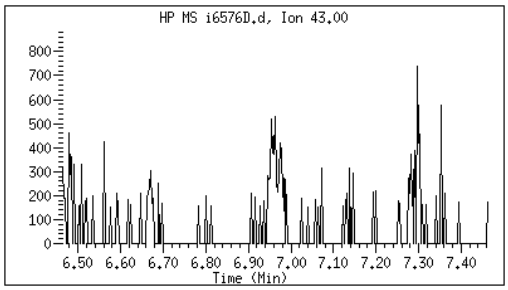


M1 - Target system did not integrate
M2 - Target system integrated incorrectly
M3 - Target system integrated incorrect peak

GCAL, Inc.

Data file : /var/chem/msv11.i/2170414.s.b/i6577D.d
Lab Smp Id: 1202 Client Smp ID: V11STD005
Inj Date : 14-APR-2017 14:35
Operator : JCK Inst ID: msv11.i
Smp Info : 1202*V11STD005
Misc Info : MSV~38124~*1*JCK
Comment :
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Meth Date : 14-Apr-2017 18:18 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 14:35 Cal File: i6577D.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.759	1.759	(0.247)	12481	5.00000	5.53	6652
2 Chloromethane ++	50	1.966	1.966	(0.276)	14188	5.00000	5.88	7171
3 Vinyl Chloride +	62	2.047	2.047	(0.287)	10657	5.00000	5.17	8079
6 Bromomethane	94	2.392	2.392	(0.335)	7147	5.00000	6.07	7806
8 Chloroethane	64	2.529	2.529	(0.355)	5998	5.00000	5.17	7298
9 Trichlorofluoromethane	101	2.691	2.691	(0.377)	16229	5.00000	5.84	8115
12 1,1-Dichloroethene +	96	3.304	3.304	(0.463)	8015	5.00000	5.43	8758
14 Carbon Disulfide	76	3.327	3.327	(0.466)	27793	5.00000	5.41	8000
15 1,1,2Trichlotrifluoroethane	101	3.349	3.349	(0.469)	9146	5.00000	6.07	7646
16 Methyl Iodide	142	3.477	3.477	(0.487)	3567	5.00000	8.65	5623
17 Acrolein	56	3.753	3.753	(0.526)	4214	25.0000	28.8	5893
18 Methylene Chloride	49	4.102	4.102	(0.575)	15548	5.00000	5.68	8663
19 Acetone	43	4.191	4.191	(0.588)	5477	5.00000	5.29	6380

		QUANT SIG				AMOUNTS		
	Compounds	MASS	RT	EXP RT REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	13 trans-1,2-Dichloroethene	61	4.311	4.311 (0.604)	13484	5.00000	5.27	8348
	22 Methyl Acetate	43	4.347	4.347 (0.609)	5742	5.00000	5.01	7008
	23 Hexane	57	4.420	4.420 (0.620)	18585	5.00000	5.33	8808
	25 MTBE	73	4.462	4.462 (0.625)	19269	5.00000	4.76	8226
	31 1,1-Dichloroethane ++	63	5.117	5.117 (0.717)	17005	5.00000	5.08	8442
	33 Acrylonitrile	53	5.201	5.201 (0.729)	13835	25.0000	26.3	8132
	34 Vinyl Acetate	43	5.452	5.452 (0.764)	4219	5.00000	5.11	
M	68 Total 1,2-Dichloroethene	61			27351	10.0000	10.5	0
	21 cis-1,2-Dichloroethene	61	5.761	5.761 (0.808)	13867	5.00000	5.21	8279
	35 2,2-Dichloropropane	77	5.878	5.878 (0.824)	12351	5.00000	5.41	8377
	38 Cyclohexane	56	5.973	5.973 (0.837)	17194	5.00000	5.63	8150
	39 Bromochloromethane	128	5.990	5.990 (0.840)	4285	5.00000	4.92	9031
	40 Chloroform +	83	6.082	6.082 (0.853)	18679	5.00000	5.37	8449
	41 Carbon Tetrachloride	117	6.213	6.213 (0.871)	15687	5.00000	5.67	8905
$	42 Dibromofluoromethane	111	6.277	6.277 (0.880)	94931	50.0000	49.2	7282
	43 1,1,1-Trichloroethane	97	6.294	6.294 (0.882)	15648	5.00000	5.33	4683(H)
	45 2-Butanone	43	6.436	6.436 (0.902)	4485	5.00000	4.61	
	44 1,1-Dichloropropene	75	6.433	6.433 (0.902)	13107	5.00000	5.66	8635
	48 Benzene	78	6.695	6.695 (0.939)	38814	5.00000	5.22	8896
$	50 1,2-Dichloroethane-d4	67	6.846	6.846 (0.960)	60510	50.0000	50.9	9530
	52 1,2-Dichloroethane	62	6.913	6.913 (0.969)	15819	5.00000	5.43	8411
*	54 FLUOROBENZENE	96	7.133	7.133 (1.000)	381051	50.0000		9460
	56 Methyl cyclohexane	83	7.286	7.286 (1.022)	17382	5.00000	5.82	8418
	57 Trichloroethene	130	7.303	7.303 (1.024)	9823	5.00000	5.22	8883
	62 Dibromomethane	93	7.727	7.727 (1.083)	5602	5.00000	5.10	8162
	63 1,2-Dichloropropane +	63	7.833	7.833 (1.098)	9986	5.00000	5.07	8794
	64 Bromodichloromethane	83	7.894	7.894 (1.107)	14867	5.00000	5.22	8650
	69 1-Bromo-2-chloroethane	63	8.352	8.352 (1.171)	12382	5.00000	5.03	8500
	72 cis-1,3-Dichloropropene	75	8.494	8.494 (1.191)	13216	5.00000	4.65	
$	74 Toluene-d8	98	8.661	8.661 (0.872)	373565	50.0000	50.5	9550
	77 Toluene +	91	8.709	8.709 (0.876)	41591	5.00000	5.40	9291
M	71 1-3 Dichloropropene-Total	100			24221	10.0000	9.10	0
	79 4-methyl-2-pentanone	43	9.035	9.035 (0.909)	8112	5.00000	4.95	
	78 Tetrachloroethene	164	9.035	9.035 (0.909)	7631	5.00000	4.98	9343
	81 trans-1,3-Dichloropropene	75	9.068	9.068 (1.271)	11005	5.00000	4.45	
	82 1,1,2-Trichloroethane	97	9.199	9.199 (0.926)	8303	5.00000	5.22	8879
	85 Dibromochloromethane	129	9.345	9.345 (0.940)	10732	5.00000	5.13	8490
	86 1,3-Dichloropropane	76	9.423	9.423 (0.948)	14058	5.00000	4.93	8747
	88 1,2-Dibromoethane(EDB)	107	9.540	9.540 (0.960)	7802	5.00000	5.20	7798
	80 2-Hexanone	43	9.710	9.710 (0.977)	6280	5.00000	4.54	7725
	91 1-Chlorohexane	91	9.925	9.925 (0.999)	12294	5.00000	5.60	5393(H)
*	90 Chlorobenzene-d5	82	9.936	9.936 (1.000)	164606	50.0000		9279
	92 Chlorobenzene ++	112	9.952	9.952 (1.002)	26027	5.00000	5.19	6784
	93 Ethylbenzene +	106	9.966	9.966 (1.003)	13586	5.00000	5.16	9280
	95 1,1,1,2-Tetrachloroethane	133	9.994	9.994 (1.006)	10302	5.00000	5.47	9037
	96 p,m-Xylene	106	10.072	10.072 (1.014)	34383	10.0000	10.5	9453
M	120 TOTAL XYLENE	106			49900	15.0000	15.3	0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98	o-Xylene	106	10.393	10.393	(1.046)	15517	5.00000	4.81	
99	Styrene	104	10.435	10.435	(1.050)	27026	5.00000	4.98	9058
100	Bromoform ++	173	10.471	10.471	(1.054)	7864	5.00000	5.31	8297
102	Isopropylbenzene	105	10.624	10.624	(1.069)	43199	5.00000	5.04	9365
$ 103	Bromofluorobenzene	174	10.836	10.836	(1.091)	122851	50.0000	48.2	9419
104	Bromobenzene	77	10.917	10.917	(0.939)	20916	5.00000	5.28	9391
106	n-Propylbenzene	91	10.917	10.917	(0.939)	53755	5.00000	5.40	9391
107	1,1,2,2-Tetrachloroethane++	83	10.973	10.973	(0.944)	10447	5.00000	5.37	0(M1)
108	2-Chlorotoluene	91	11.040	11.040	(0.950)	37231	5.00000	5.27	8743
110	1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	37990	5.00000	5.14	
109	1,2,3-Trichloropropane	75	11.082	11.082	(0.953)	11842	5.00000	5.07	8391
111	trans-1,4-Dichloro-2-Butene	53	11.093	11.093	(0.954)	2665	5.00000	4.75	8115
112	4-Chlorotoluene	91	11.160	11.160	(0.960)	34025	5.00000	5.45	9364
113	tert-butylbenzene	91	11.277	11.277	(0.970)	22410	5.00000	5.17	8957
114	1,2,4-Trimethylbenzene	105	11.327	11.327	(0.975)	39975	5.00000	5.22	
115	sec-Butylbenzene	105	11.403	11.403	(0.981)	49159	5.00000	5.36	
116	p-Isopropyltoluene	119	11.497	11.497	(0.989)	43836	5.00000	5.40	9441
117	1,3-Dichlorobenzene	146	11.570	11.570	(0.995)	22809	5.00000	5.17	
* 118	1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	151657	50.0000		9469
119	1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	23338	5.00000	5.19	
121	n-Butylbenzene	91	11.790	11.790	(1.014)	38762	5.00000	5.27	9706
122	1,2-Dichlorobenzene	146	11.930	11.930	(1.026)	21194	5.00000	5.01	
125	1,2-Dibromo-3-Chloropropane	157	12.473	12.473	(1.073)	2422	5.00000	5.06	7271
126	Hexachlorobutadiene	225	12.889	12.889	(1.109)	11414	5.00000	5.15	9109
127	1,2,4-Trichlorobenzene	180	12.928	12.928	(1.112)	12349	5.00000	4.30	
128	Napthalene	128	13.154	13.154	(1.132)	13102	5.00000	5.62	8717
129	1,2,3-Trichlorobenzene	180	13.285	13.285	(1.143)	11930	5.00000	4.33	
10	tert-butyl alcohol	59	4.623	4.623	(0.648)	1038	5.00000	4.28	0(M1)
26	Isopropyl Ether	45	4.980	4.980	(0.698)	29755	5.00000	4.98	8550
20	Chloroprene	53	5.083	5.083	(0.713)	12493	5.00000	5.19	8193
30	Isobutyl Alcohol	43	6.963	6.963	(0.976)	1483	25.0000	19.7	6463
53	1,4-Dioxane	58	8.106	8.106	(1.136)	1828	125.000	130	6954
162	3,4-dichloro-1-butene	75	9.395	9.395	(0.946)	9121	5.00000	4.94	8638(a)
161	cis-1,4-dichloro-2-butene	53	10.884	10.884	(0.936)	3011	5.00000	5.24	8019

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M1- Compound response manually integrated because
Target system did not integrate.
H - Operator selected an alternate compound hit.

Data File: /var/chem/msv11.i/2170414.s.b/i6577D.d

Date : 14-APR-2017 14:35

Client ID: V11STD005

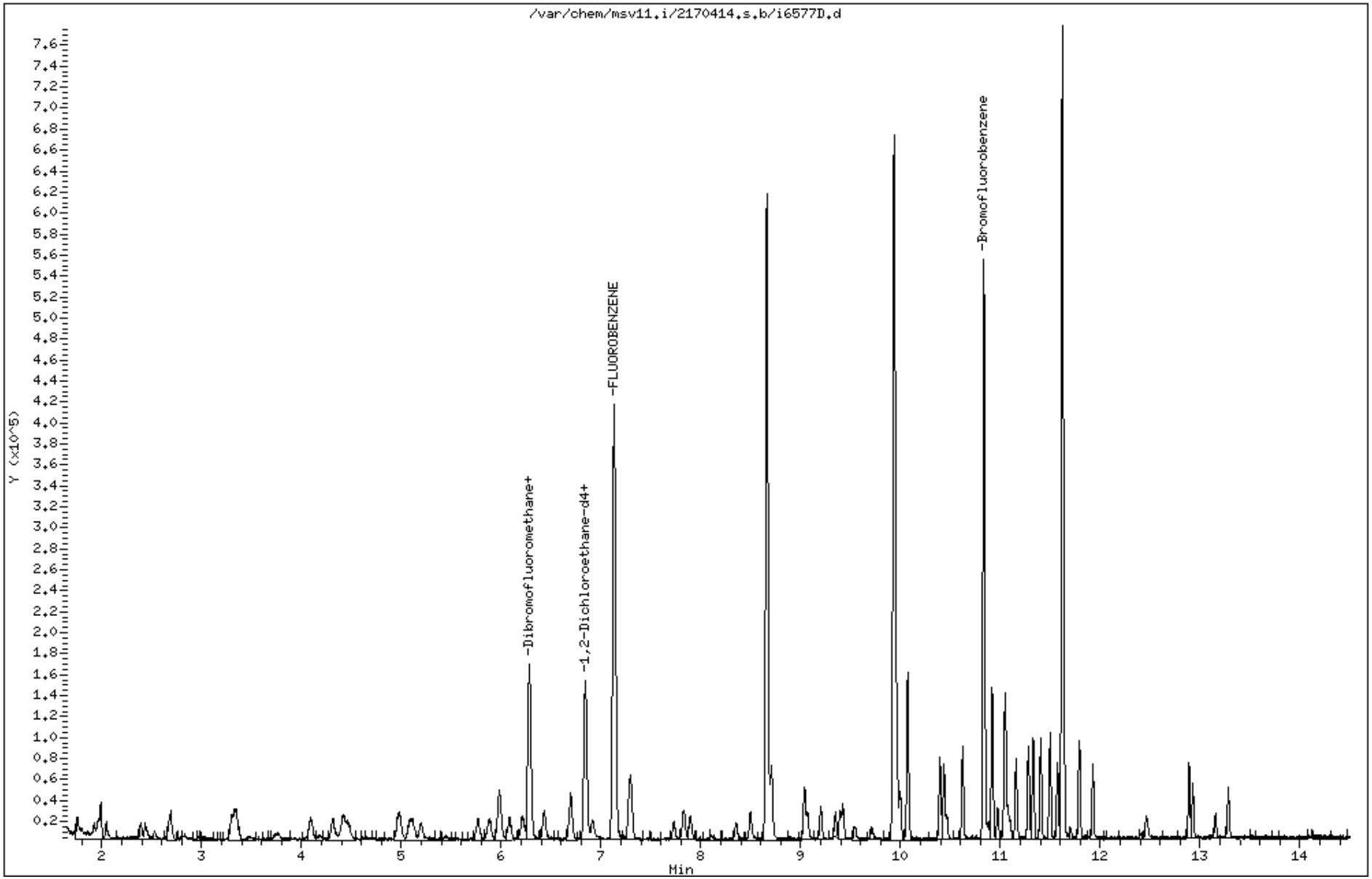
Instrument: msv11.i

Sample Info: 1202*V11STD005

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Report Date: 04/14/2017 18:18

MANUAL INTEGRATION GRAPHIC REPORT

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Lab ID         : 1202                    SampleType      : CALIB_2
Injection Date: 04/14/2017 14:35         Instrument      : msv11.i
Operator       : JCK
Sample Info    : 1202*V11STD005
Misc Info      : MSV~38124~*1*JCK
Method         : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Dilution       : 1.00
Matrix         : SOIL
Integrator     : HP RTE                  Compound Sublist: 8260b+AppIX1
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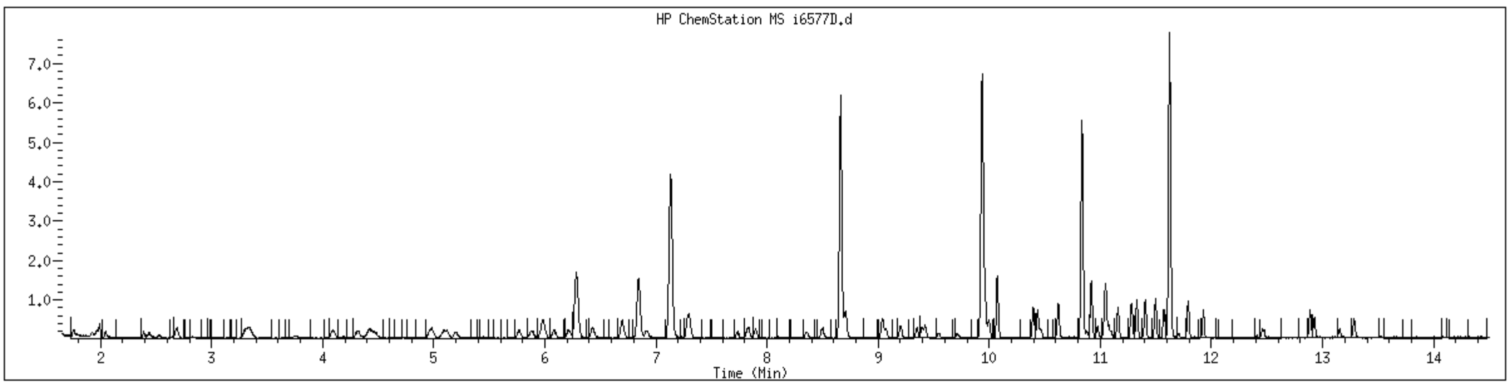

Original   Final

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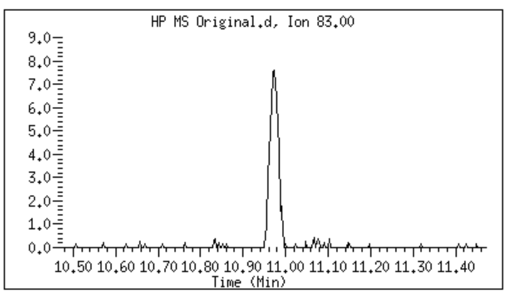
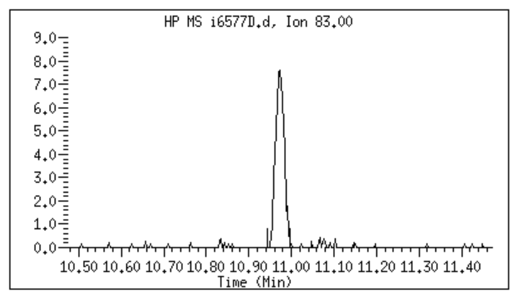
107 1,1,2,2-Tetrachloroethane++   CAS#: 79-34-5   Reason: M1



Electronic Signature Applied

User: jck2
Date: 04/14/2017 14:53



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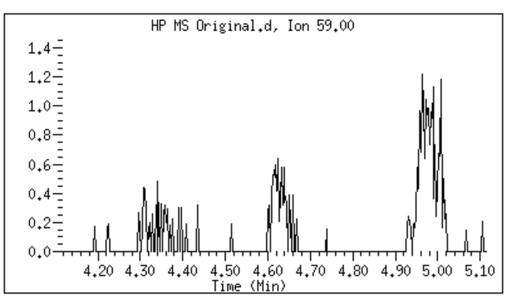
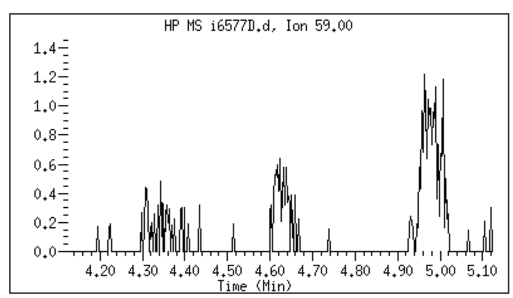
10 tert-butyl alcohol   CAS#: 75-65-0   Reason: M1



Electronic Signature Applied

User: jck2
Date: 04/14/2017 14:53



M1 - Target system did not integrate

GCAL, Inc.

Data file : /var/chem/msv11.i/2170414.s.b/i6578D.d
Lab Smp Id: 1203 Client Smp ID: V11STD010
Inj Date : 14-APR-2017 14:58
Operator : JCK Inst ID: msv11.i
Smp Info : 1203*V11STD010
Misc Info : MSV~38124~*1*JCK
Comment :
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Meth Date : 14-Apr-2017 18:18 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 14:58 Cal File: i6578D.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.754	1.754	(0.246)	25878	10.0000	11.2	8169(M2)
2 Chloromethane ++	50	1.966	1.966	(0.276)	26126	10.0000	10.6	8746
3 Vinyl Chloride +	62	2.047	2.047	(0.287)	21297	10.0000	10.1	9030
6 Bromomethane	94	2.392	2.392	(0.335)	12803	10.0000	10.7	8573
8 Chloroethane	64	2.535	2.535	(0.355)	11962	10.0000	10.1	7993
9 Trichlorofluoromethane	101	2.691	2.691	(0.377)	30351	10.0000	10.7	8886
12 1,1-Dichloroethene +	96	3.302	3.302	(0.463)	14812	10.0000	9.84	9277
14 Carbon Disulfide	76	3.335	3.335	(0.468)	54018	10.0000	10.3	9133
15 1,1,2Trichlotrifluoroethane	101	3.349	3.349	(0.469)	15803	10.0000	10.3	7930
16 Methyl Iodide	142	3.486	3.486	(0.489)	8652	10.0000	11.6	7787
17 Acrolein	56	3.762	3.762	(0.527)	6572	50.0000	44.0	7149
18 Methylene Chloride	49	4.094	4.094	(0.574)	30351	10.0000	10.9	9154
19 Acetone	43	4.172	4.172	(0.585)	11427	10.0000	10.8	7234

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	13	trans-1,2-Dichloroethene	61	4.314	4.314	(0.605)	27837	10.0000	10.7	8641
	22	Methyl Acetate	43	4.356	4.356	(0.611)	11327	10.0000	9.70	7443(M2)
	23	Hexane	57	4.423	4.423	(0.620)	35480	10.0000	9.97	8893
	25	MTBE	73	4.464	4.464	(0.626)	39379	10.0000	9.54	8916
	31	1,1-Dichloroethane ++	63	5.117	5.117	(0.717)	34932	10.0000	10.2	8976
	33	Acrylonitrile	53	5.198	5.198	(0.729)	26253	50.0000	49.0	8574
	34	Vinyl Acetate	43	5.446	5.446	(0.763)	11258	10.0000	10.2	
M	68	Total 1,2-Dichloroethene	61				54876	20.0000	20.6	0
	21	cis-1,2-Dichloroethene	61	5.772	5.772	(0.809)	27039	10.0000	9.96	9269
	35	2,2-Dichloropropane	77	5.878	5.878	(0.824)	22399	10.0000	9.62	8643
	38	Cyclohexane	56	5.976	5.976	(0.838)	32193	10.0000	10.3	8682
	39	Bromochloromethane	128	5.990	5.990	(0.840)	10026	10.0000	11.3	9011
	40	Chloroform +	83	6.085	6.085	(0.853)	33771	10.0000	9.52	9133
	41	Carbon Tetrachloride	117	6.221	6.221	(0.872)	29235	10.0000	10.4	9047
$	42	Dibromofluoromethane	111	6.285	6.285	(0.881)	99550	50.0000	50.6	8328
	43	1,1,1-Trichloroethane	97	6.299	6.299	(0.883)	30409	10.0000	10.2	6709
	45	2-Butanone	43	6.430	6.430	(0.901)	10290	10.0000	10.4	
	44	1,1-Dichloropropene	75	6.433	6.433	(0.902)	23220	10.0000	9.83	8939
	48	Benzene	78	6.698	6.698	(0.939)	76628	10.0000	10.1	9192
$	50	1,2-Dichloroethane-d4	67	6.843	6.843	(0.959)	62105	50.0000	51.2	9581
	52	1,2-Dichloroethane	62	6.913	6.913	(0.969)	30078	10.0000	10.1	9130
*	54	FLUOROBENZENE	96	7.133	7.133	(1.000)	388698	50.0000		9402
	56	Methyl cyclohexane	83	7.289	7.289	(1.022)	31266	10.0000	10.3	8898
	57	Trichloroethene	130	7.303	7.303	(1.024)	19352	10.0000	10.1	8736
	62	Dibromomethane	93	7.733	7.733	(1.084)	10976	10.0000	9.79	8867
	63	1,2-Dichloropropane +	63	7.830	7.830	(1.098)	20270	10.0000	10.1	9034
	64	Bromodichloromethane	83	7.892	7.892	(1.106)	29111	10.0000	10.0	9089
	69	1-Bromo-2-chloroethane	63	8.357	8.357	(1.172)	24728	10.0000	9.85	8816
	72	cis-1,3-Dichloropropene	75	8.494	8.494	(1.191)	27528	10.0000	9.50	
$	74	Toluene-d8	98	8.661	8.661	(0.872)	382935	50.0000	49.5	9504
	77	Toluene +	91	8.706	8.706	(0.876)	79444	10.0000	9.87	9225
M	71	1-3 Dichloropropene-Total	100				50567	20.0000	18.6	0
	79	4-methyl-2-pentanone	43	9.038	9.038	(0.910)	15905	10.0000	9.28	
	78	Tetrachloroethene	164	9.043	9.043	(0.910)	15473	10.0000	9.65	9350
	81	trans-1,3-Dichloropropene	75	9.063	9.063	(1.271)	23039	10.0000	9.14	
	82	1,1,2-Trichloroethane	97	9.205	9.205	(0.927)	16314	10.0000	9.80	9234
	85	Dibromochloromethane	129	9.347	9.347	(0.941)	21344	10.0000	9.74	9068
	86	1,3-Dichloropropane	76	9.425	9.425	(0.949)	29797	10.0000	9.99	8991
	88	1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	15184	10.0000	9.68	8771
	80	2-Hexanone	43	9.713	9.713	(0.978)	12505	10.0000	8.65	7788
	91	1-Chlorohexane	91	9.922	9.922	(0.999)	22258	10.0000	9.70	6993
*	90	Chlorobenzene-d5	82	9.933	9.933	(1.000)	172208	50.0000		9239
	92	Chlorobenzene ++	112	9.950	9.950	(1.002)	52429	10.0000	9.99	7264
	93	Ethylbenzene +	106	9.964	9.964	(1.003)	26965	10.0000	9.79	9215
	95	1,1,1,2-Tetrachloroethane	133	9.997	9.997	(1.006)	19527	10.0000	9.91	9058
	96	p,m-Xylene	106	10.072	10.072	(1.014)	67424	20.0000	19.7	9495
M	120	TOTAL XYLENE	106				99943	30.0000	29.4	0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98	o-Xylene	106	10.396	10.396	(1.047)	32519	10.0000	9.64	
99	Styrene	104	10.435	10.435	(1.051)	54995	10.0000	9.68	9439
100	Bromoform ++	173	10.460	10.460	(1.053)	13793	10.0000	8.90	8683
102	Isopropylbenzene	105	10.622	10.622	(1.069)	88727	10.0000	9.90	9467
$ 103	Bromofluorobenzene	174	10.836	10.836	(1.091)	128588	50.0000	48.2	9424
104	Bromobenzene	77	10.917	10.917	(0.939)	43389	10.0000	10.4	9420
106	n-Propylbenzene	91	10.917	10.917	(0.939)	105187	10.0000	10.0	9420
107	1,1,2,2-Tetrachloroethane++	83	10.973	10.973	(0.944)	19787	10.0000	9.64	9090
108	2-Chlorotoluene	91	11.043	11.043	(0.950)	72526	10.0000	9.73	9347
110	1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	80046	10.0000	10.3	
109	1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	23368	10.0000	9.48	8932
111	trans-1,4-Dichloro-2-Butene	53	11.093	11.093	(0.954)	5510	10.0000	9.31	8296
112	4-Chlorotoluene	91	11.160	11.160	(0.960)	65182	10.0000	9.90	9332
113	tert-butylbenzene	91	11.280	11.280	(0.970)	45550	10.0000	9.95	9277
114	1,2,4-Trimethylbenzene	105	11.330	11.330	(0.975)	81205	10.0000	10.1	
115	sec-Butylbenzene	105	11.405	11.405	(0.981)	96263	10.0000	9.95	
116	p-Isopropyltoluene	119	11.497	11.497	(0.989)	85814	10.0000	10.0	9592
117	1,3-Dichlorobenzene	146	11.573	11.573	(0.995)	45722	10.0000	9.82	
* 118	1,4-DICHLOROBENZENE-D4	152	11.626	11.626	(1.000)	159999	50.0000		9346
119	1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	45035	10.0000	9.49	
121	n-Butylbenzene	91	11.787	11.787	(1.014)	77349	10.0000	9.97	9415
122	1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	44297	10.0000	9.92	
125	1,2-Dibromo-3-Chloropropane	157	12.471	12.471	(1.073)	5041	10.0000	9.99	8353
126	Hexachlorobutadiene	225	12.889	12.889	(1.109)	23296	10.0000	9.97	9460
127	1,2,4-Trichlorobenzene	180	12.925	12.925	(1.112)	29249	10.0000	9.66	
128	Napthalene	128	13.154	13.154	(1.131)	39980	10.0000	9.51	9210
129	1,2,3-Trichlorobenzene	180	13.282	13.282	(1.142)	27449	10.0000	9.44	
10	tert-butyl alcohol	59	4.646	4.646	(0.651)	3032	10.0000	12.3	5138(M3)
26	Isopropyl Ether	45	4.975	4.975	(0.697)	59356	10.0000	9.73	9135
20	Chloroprene	53	5.081	5.081	(0.712)	24167	10.0000	9.85	8547
30	Isobutyl Alcohol	43	6.957	6.957	(0.975)	4311	50.0000	56.0	7592
53	1,4-Dioxane	58	8.098	8.098	(1.135)	3348	250.000	234	7249
162	3,4-dichloro-1-butene	75	9.395	9.395	(0.946)	18131	10.0000	9.38	8676
161	cis-1,4-dichloro-2-butene	53	10.876	10.876	(0.935)	5701	10.0000	9.41	8782

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.
M3- Compound response manually integrated because
Target system integrated incorrect peak.

Data File: /var/chem/msv11.i/2170414.s.b/i6578D.d

Page 1

Date : 14-APR-2017 14:58

Client ID: V11STD010

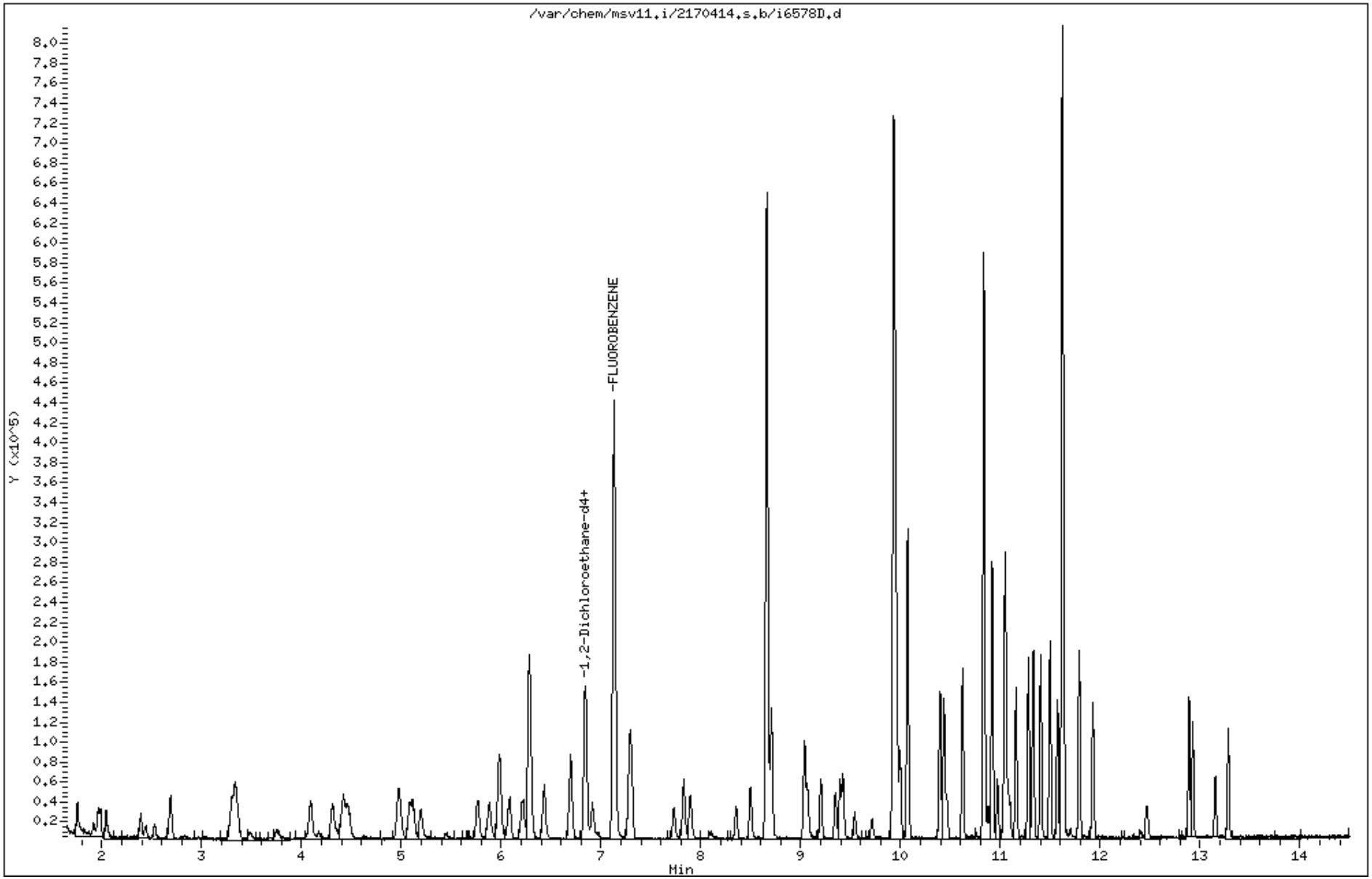
Instrument: msv11.i

Sample Info: 1203*V11STD010

Operator: JCK

Column phase: RTX-VMS-30M

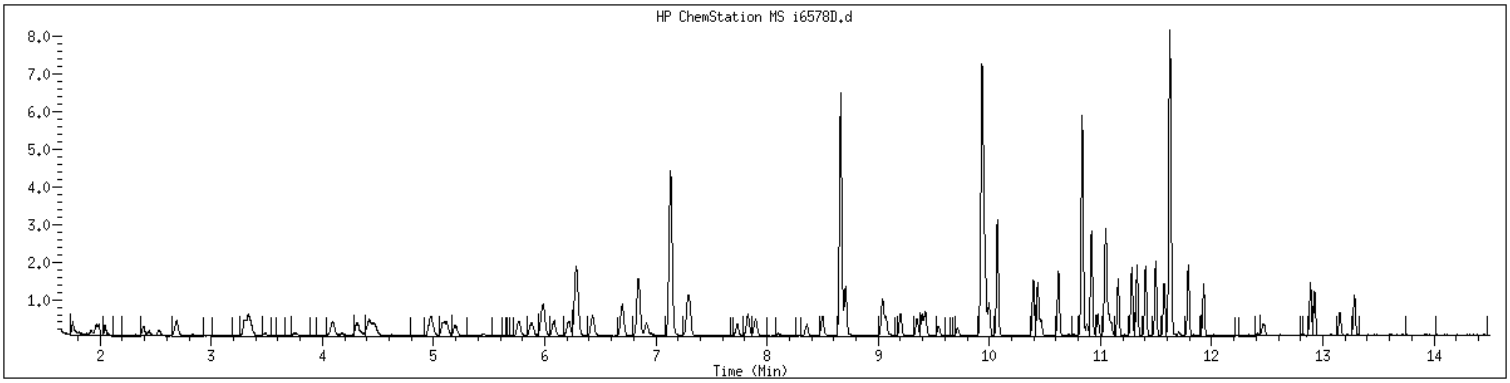
Column diameter: 0.25



Report Date: 04/14/2017 18:18

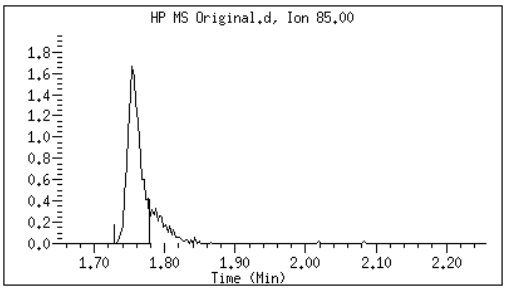
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1203 SampleType : CALIB_3
Injection Date: 04/14/2017 14:58 Instrument : msv11.i
Operator : JCK
Sample Info : 1203*V11STD010
Misc Info : MSV~38124~*1*JCK
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



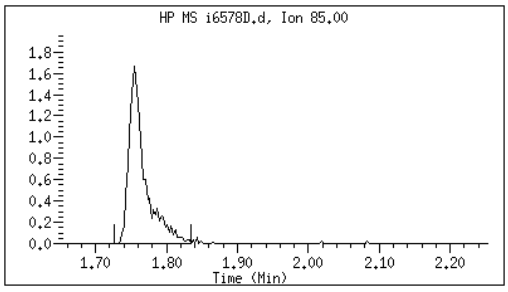
Original Final

1 Dichlorodifluoromethane CAS#: 75-71-8 Reason: M2

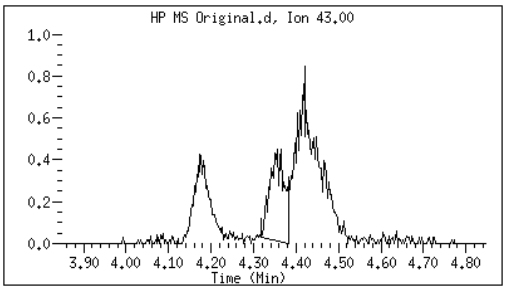


Electronic Signature Applied

User: jck2
Date: 04/14/2017 15:25



22 Methyl Acetate CAS#: 79-20-9 Reason: M2



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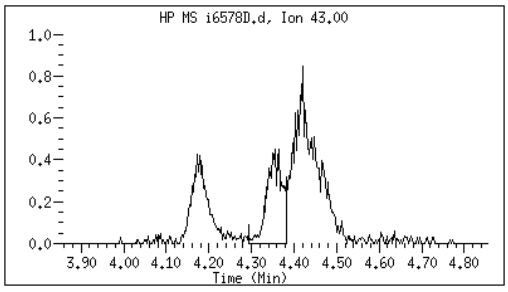
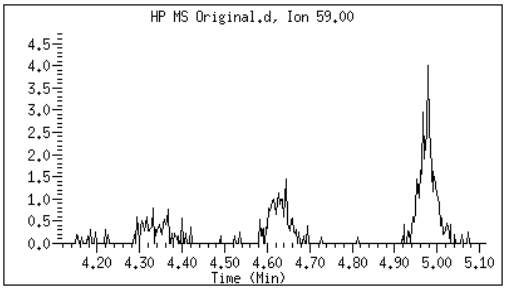
User: jck2
Date: 04/14/2017 15:25



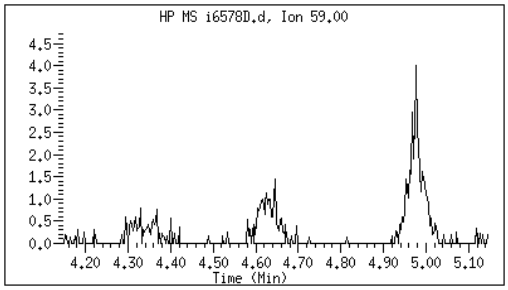
Original Final

10 tert-butyl alcohol CAS#: 75-65-0 Reason: M3



Electronic Signature Applied

User: jck2
Date: 04/14/2017 15:26



M2 - Target system integrated incorrectly
M3 - Target system integrated incorrect peak

GCAL, Inc.

Data file : /var/chem/msv11.i/2170414.s.b/i6579D.d
Lab Smp Id: 1204 Client Smp ID: V11STD020
Inj Date : 14-APR-2017 15:22
Operator : JCK Inst ID: msv11.i
Smp Info : 1204*V11STD020
Misc Info : MSV~38124~*1*JCK
Comment :
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Meth Date : 14-Apr-2017 18:18 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 15:22 Cal File: i6579D.d
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.754	1.754	(0.246)	49056	20.0000	20.3	8937
2 Chloromethane ++	50	1.966	1.966	(0.275)	51923	20.0000	20.1	9103
3 Vinyl Chloride +	62	2.044	2.044	(0.286)	42484	20.0000	19.3	9321
6 Bromomethane	94	2.393	2.393	(0.335)	24430	20.0000	19.4	8943
8 Chloroethane	64	2.524	2.524	(0.354)	24846	20.0000	20.1	8897
9 Trichlorofluoromethane	101	2.688	2.688	(0.377)	59630	20.0000	20.1	9527
12 1,1-Dichloroethene +	96	3.299	3.299	(0.462)	31228	20.0000	19.8	9133
14 Carbon Disulfide	76	3.335	3.335	(0.467)	106445	20.0000	19.4	9125
15 1,1,2Trichlotrifluoroethane	101	3.346	3.346	(0.469)	32740	20.0000	20.3	7994
16 Methyl Iodide	142	3.483	3.483	(0.488)	19938	20.0000	17.8	8954
17 Acrolein	56	3.751	3.751	(0.526)	15407	100.000	98.6	8855
18 Methylene Chloride	49	4.094	4.094	(0.574)	59257	20.0000	20.3	9075
19 Acetone	43	4.172	4.172	(0.585)	22435	20.0000	20.3	8028

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	13	trans-1,2-Dichloroethene	61	4.311	4.311	(0.604)	52877	20.0000	19.4	9229
	22	Methyl Acetate	43	4.350	4.350	(0.610)	26580	20.0000	21.7	8606
	23	Hexane	57	4.420	4.420	(0.619)	73980	20.0000	19.9	9050
	25	MTBE	73	4.465	4.465	(0.626)	89316	20.0000	20.7	9032
	31	1,1-Dichloroethane ++	63	5.117	5.117	(0.717)	69905	20.0000	19.5	9185
	33	Acrylonitrile	53	5.192	5.192	(0.728)	57505	100.000	102	9317
	34	Vinyl Acetate	43	5.452	5.452	(0.764)	25200	20.0000	19.6	
M	68	Total 1,2-Dichloroethene	61				107835	40.0000	38.7	0
	21	cis-1,2-Dichloroethene	61	5.767	5.767	(0.808)	54958	20.0000	19.3	9245
	35	2,2-Dichloropropane	77	5.887	5.887	(0.825)	46499	20.0000	19.1	8996
	38	Cyclohexane	56	5.979	5.979	(0.838)	62910	20.0000	19.3	9009
	39	Bromochloromethane	128	5.990	5.990	(0.839)	19462	20.0000	20.9	9235
	40	Chloroform +	83	6.082	6.082	(0.852)	72151	20.0000	19.4	9272
	41	Carbon Tetrachloride	117	6.213	6.213	(0.871)	57982	20.0000	19.6	9607
$	42	Dibromofluoromethane	111	6.286	6.286	(0.881)	103918	50.0000	50.5	9017
	43	1,1,1-Trichloroethane	97	6.294	6.294	(0.882)	60101	20.0000	19.2	7337
	45	2-Butanone	43	6.433	6.433	(0.902)	21096	20.0000	20.3	
	44	1,1-Dichloropropene	75	6.433	6.433	(0.902)	48259	20.0000	19.5	9219
	48	Benzene	78	6.696	6.696	(0.938)	153981	20.0000	19.4	9224
$	50	1,2-Dichloroethane-d4	67	6.843	6.843	(0.959)	63547	50.0000	50.1	9660
	52	1,2-Dichloroethane	62	6.916	6.916	(0.969)	61775	20.0000	19.9	9380
*	54	FLUOROBENZENE	96	7.136	7.136	(1.000)	406832	50.0000		9533
	56	Methyl cyclohexane	83	7.287	7.287	(1.021)	67411	20.0000	21.2	8480
	57	Trichloroethene	130	7.303	7.303	(1.023)	41039	20.0000	20.4	8905
	62	Dibromomethane	93	7.733	7.733	(1.084)	24319	20.0000	20.7	9163
	63	1,2-Dichloropropane +	63	7.831	7.831	(1.097)	41540	20.0000	19.8	9087
	64	Bromodichloromethane	83	7.892	7.892	(1.106)	60756	20.0000	20.0	9534
	69	1-Bromo-2-chloroethane	63	8.355	8.355	(1.171)	52427	20.0000	19.9	9489
	72	cis-1,3-Dichloropropene	75	8.497	8.497	(1.191)	61236	20.0000	20.2	
$	74	Toluene-d8	98	8.662	8.662	(0.872)	396960	50.0000	51.4	9482
	77	Toluene +	91	8.706	8.706	(0.876)	163629	20.0000	20.4	9419
M	71	1-3 Dichloropropene-Total	100				112197	40.0000	39.5	0
	79	4-methyl-2-pentanone	43	9.038	9.038	(0.910)	32855	20.0000	19.2	
	78	Tetrachloroethene	164	9.038	9.038	(0.910)	33885	20.0000	21.2	9487
	81	trans-1,3-Dichloropropene	75	9.069	9.069	(1.271)	50961	20.0000	19.3	
	82	1,1,2-Trichloroethane	97	9.200	9.200	(0.926)	34569	20.0000	20.8	9445
	85	Dibromochloromethane	129	9.345	9.345	(0.940)	44268	20.0000	20.2	9152
	86	1,3-Dichloropropane	76	9.428	9.428	(0.949)	61884	20.0000	20.8	9111
	88	1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	31213	20.0000	19.9	8968
	80	2-Hexanone	43	9.713	9.713	(0.978)	27843	20.0000	19.3	8337
	91	1-Chlorohexane	91	9.925	9.925	(0.999)	47086	20.0000	20.5	7571
*	90	Chlorobenzene-d5	82	9.936	9.936	(1.000)	171898	50.0000		9131
	92	Chlorobenzene ++	112	9.947	9.947	(1.001)	107437	20.0000	20.5	7705
	93	Ethylbenzene +	106	9.961	9.961	(1.003)	55082	20.0000	20.0	9107
	95	1,1,1,2-Tetrachloroethane	133	9.997	9.997	(1.006)	40675	20.0000	20.7	9378
	96	p,m-Xylene	106	10.073	10.073	(1.014)	138818	40.0000	40.7	9573
M	120	TOTAL XYLENE	106				206145	60.0000	60.7	0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98	o-Xylene	106	10.396	10.396	(1.046)	67327	20.0000	20.0	
99	Styrene	104	10.432	10.432	(1.050)	116384	20.0000	20.5	9484
100	Bromoform ++	173	10.463	10.463	(1.053)	31793	20.0000	20.6	9056
102	Isopropylbenzene	105	10.622	10.622	(1.069)	184439	20.0000	20.6	9491
$ 103	Bromofluorobenzene	174	10.837	10.837	(1.091)	136155	50.0000	51.2	9484
104	Bromobenzene	77	10.918	10.918	(0.939)	86746	20.0000	20.2	9549
106	n-Propylbenzene	91	10.918	10.918	(0.939)	217378	20.0000	20.1	9549
107	1,1,2,2-Tetrachloroethane++	83	10.973	10.973	(0.944)	42676	20.0000	20.2	9452
108	2-Chlorotoluene	91	11.043	11.043	(0.950)	153239	20.0000	19.9	9415
110	1,3,5-Trimethylbenzene	105	11.054	11.054	(0.951)	159340	20.0000	19.8	
109	1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	52553	20.0000	20.7	9261
111	trans-1,4-Dichloro-2-Butene	53	11.099	11.099	(0.955)	12486	20.0000	20.5	8610
112	4-Chlorotoluene	91	11.157	11.157	(0.960)	135189	20.0000	19.9	9459
113	tert-butylbenzene	91	11.280	11.280	(0.970)	94446	20.0000	20.0	9428
114	1,2,4-Trimethylbenzene	105	11.330	11.330	(0.975)	162962	20.0000	19.6	
115	sec-Butylbenzene	105	11.403	11.403	(0.981)	202449	20.0000	20.3	
116	p-Isopropyltoluene	119	11.498	11.498	(0.989)	174518	20.0000	19.8	9479
117	1,3-Dichlorobenzene	146	11.570	11.570	(0.995)	93194	20.0000	19.4	
* 118	1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	164882	50.0000		9303
119	1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	95902	20.0000	19.6	
121	n-Butylbenzene	91	11.790	11.790	(1.014)	159814	20.0000	20.0	9539
122	1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	94778	20.0000	20.6	
125	1,2-Dibromo-3-Chloropropane	157	12.474	12.474	(1.073)	10273	20.0000	19.8	8870
126	Hexachlorobutadiene	225	12.889	12.889	(1.109)	47102	20.0000	19.6	9579
127	1,2,4-Trichlorobenzene	180	12.928	12.928	(1.112)	65356	20.0000	21.0	
128	Napthalene	128	13.154	13.154	(1.132)	103552	20.0000	18.5	9373
129	1,2,3-Trichlorobenzene	180	13.285	13.285	(1.143)	62916	20.0000	21.0	
10	tert-butyl alcohol	59	4.615	4.615	(0.647)	4818	20.0000	18.6	4250(M3)
26	Isopropyl Ether	45	4.978	4.978	(0.698)	129839	20.0000	20.3	9435
20	Chloroprene	53	5.084	5.084	(0.712)	52322	20.0000	20.4	9285
30	Isobutyl Alcohol	43	6.960	6.960	(0.975)	7567	100.000	94.0	7922
53	1,4-Dioxane	58	8.095	8.095	(1.134)	7086	500.000	473	8134
162	3,4-dichloro-1-butene	75	9.392	9.392	(0.945)	39746	20.0000	20.6	8963
161	cis-1,4-dichloro-2-butene	53	10.879	10.879	(0.936)	12551	20.0000	20.1	8900

QC Flag Legend

M3- Compound response manually integrated because
Target system integrated incorrect peak.

Data File: /var/chem/msv11.i/2170414.s.b/i6579D.d

Page 1

Date : 14-APR-2017 15:22

Client ID: V11STD020

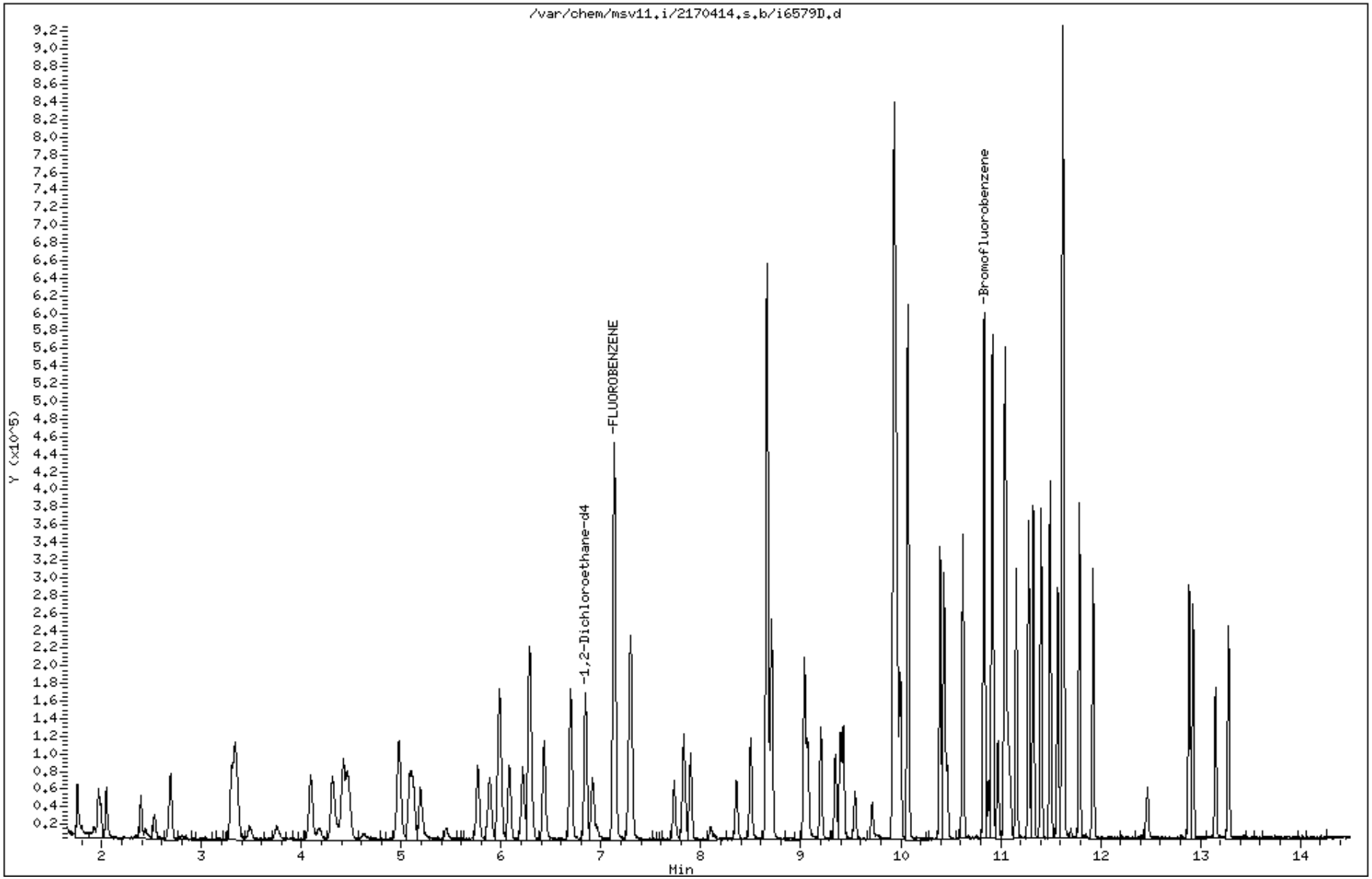
Instrument: msv11.i

Sample Info: 1204*V11STD020

Operator: JCK

Column phase: RTX-VMS-30M

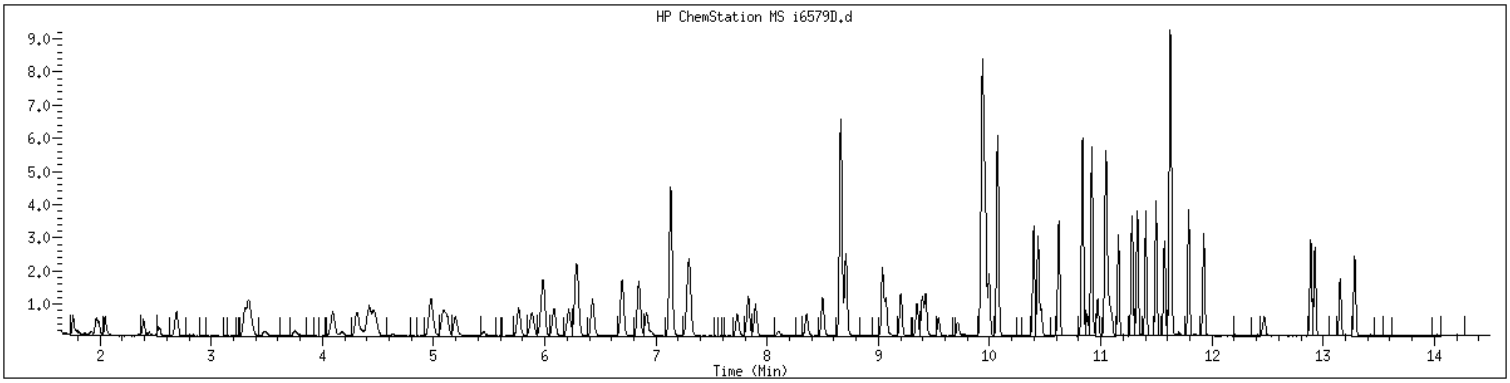
Column diameter: 0.25



Report Date: 04/14/2017 18:18

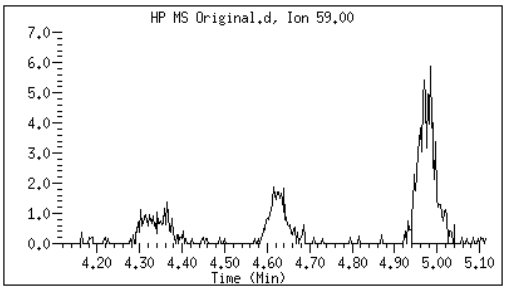
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1204 SampleType : CALIB_4
Injection Date: 04/14/2017 15:22 Instrument : msv11.i
Operator : JCK
Sample Info : 1204*V11STD020
Misc Info : MSV~38124~*1*JCK
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



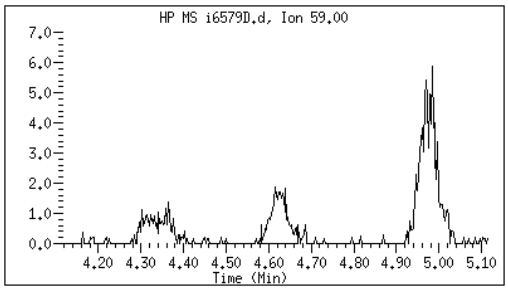
Original Final

10 tert-butyl alcohol CAS#: 75-65-0 Reason: M3



Electronic Signature Applied

User: jck2
Date: 04/14/2017 15:55



M3 - Target system integrated incorrect peak

GCAL, Inc.

Data file : /var/chem/msv11.i/2170414.s.b/i6580D.d
Lab Smp Id: 1205 Client Smp ID: V11STD050
Inj Date : 14-APR-2017 15:45
Operator : JCK Inst ID: msv11.i
Smp Info : 1205*V11STD050
Misc Info : MSV~38124~*1*JCK
Comment :
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Meth Date : 14-Apr-2017 18:18 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 15:45 Cal File: i6580D.d
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.754	1.754	(0.246)	116181	50.0000	46.1	9562
2 Chloromethane ++	50	1.966	1.966	(0.276)	125307	50.0000	46.5	9603
3 Vinyl Chloride +	62	2.044	2.044	(0.287)	105784	50.0000	46.0	9707
6 Bromomethane	94	2.393	2.393	(0.335)	58944	50.0000	44.8	9487
8 Chloroethane	64	2.524	2.524	(0.354)	60206	50.0000	46.5	9280
9 Trichlorofluoromethane	101	2.688	2.688	(0.377)	144405	50.0000	46.5	9602
12 1,1-Dichloroethene +	96	3.302	3.302	(0.463)	71700	50.0000	43.6	9010
14 Carbon Disulfide	76	3.332	3.332	(0.467)	258578	50.0000	45.1	8908
15 1,1,2Trichlotrifluoroethane	101	3.352	3.352	(0.470)	77131	50.0000	45.9	8882
16 Methyl Iodide	142	3.483	3.483	(0.488)	66897	50.0000	42.9	9075
17 Acrolein	56	3.754	3.754	(0.526)	42061	250.000	257	9067
18 Methylene Chloride	49	4.094	4.094	(0.574)	143426	50.0000	46.9	9393
19 Acetone	43	4.172	4.172	(0.585)	55545	50.0000	48.0	8378

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	13 trans-1,2-Dichloroethene	61	4.311	4.311	(0.604)	127271	50.0000	44.6	9366
	22 Methyl Acetate	43	4.350	4.350	(0.610)	65129	50.0000	51.0	8682
	23 Hexane	57	4.420	4.420	(0.620)	176166	50.0000	45.2	9183
	25 MTBE	73	4.470	4.470	(0.627)	228309	50.0000	50.5	9568
	31 1,1-Dichloroethane ++	63	5.120	5.120	(0.718)	174839	50.0000	46.8	9002
	33 Acrylonitrile	53	5.192	5.192	(0.728)	144369	250.000	246	9813
	34 Vinyl Acetate	43	5.446	5.446	(0.763)	69026	50.0000	48.2	
M	68 Total 1,2-Dichloroethene	61				267211	100.000	91.7	0
	21 cis-1,2-Dichloroethene	61	5.764	5.764	(0.808)	139940	50.0000	47.1	9504
	35 2,2-Dichloropropane	77	5.884	5.884	(0.825)	115430	50.0000	45.3	8973
	38 Cyclohexane	56	5.984	5.984	(0.839)	151296	50.0000	44.4	9380
	39 Bromochloromethane	128	5.993	5.993	(0.840)	48078	50.0000	49.5	9149
	40 Chloroform +	83	6.079	6.079	(0.852)	180257	50.0000	46.4	9613
	41 Carbon Tetrachloride	117	6.216	6.216	(0.871)	138319	50.0000	44.8	9711
$	42 Dibromofluoromethane	111	6.283	6.283	(0.881)	106252	50.0000	49.4	8948
	43 1,1,1-Trichloroethane	97	6.291	6.291	(0.882)	147594	50.0000	45.0	8855
	45 2-Butanone	43	6.428	6.428	(0.901)	54363	50.0000	50.1	
	44 1,1-Dichloropropene	75	6.433	6.433	(0.902)	119416	50.0000	46.2	9242
	48 Benzene	78	6.698	6.698	(0.939)	383439	50.0000	46.2	9471
$	50 1,2-Dichloroethane-d4	67	6.841	6.841	(0.959)	64814	50.0000	48.9	9633
	52 1,2-Dichloroethane	62	6.913	6.913	(0.969)	156734	50.0000	48.2	9629
*	54 FLUOROBENZENE	96	7.133	7.133	(1.000)	425272	50.0000		9435
	56 Methyl cyclohexane	83	7.292	7.292	(1.022)	154761	50.0000	46.5	9421
	57 Trichloroethene	130	7.301	7.301	(1.023)	100663	50.0000	47.9	8816
	62 Dibromomethane	93	7.730	7.730	(1.084)	60673	50.0000	49.5	9440
	63 1,2-Dichloropropane +	63	7.825	7.825	(1.097)	102763	50.0000	46.7	9423
	64 Bromodichloromethane	83	7.897	7.897	(1.107)	150958	50.0000	47.5	9579
	69 1-Bromo-2-chloroethane	63	8.355	8.355	(1.171)	136268	50.0000	49.6	9629
	72 cis-1,3-Dichloropropene	75	8.497	8.497	(1.191)	159345	50.0000	50.2	
$	74 Toluene-d8	98	8.662	8.662	(0.872)	412804	50.0000	50.5	9454
	77 Toluene +	91	8.706	8.706	(0.876)	400032	50.0000	47.1	9493
M	71 1-3 Dichloropropene-Total	100				302602	100.000	102	0
	79 4-methyl-2-pentanone	43	9.041	9.041	(0.910)	91835	50.0000	50.7	
	78 Tetrachloroethene	164	9.035	9.035	(0.909)	81866	50.0000	48.4	9402
	81 trans-1,3-Dichloropropene	75	9.069	9.069	(1.271)	143257	50.0000	51.9	
	82 1,1,2-Trichloroethane	97	9.203	9.203	(0.926)	85999	50.0000	48.9	9244
	85 Dibromochloromethane	129	9.350	9.350	(0.941)	113923	50.0000	49.2	9518
	86 1,3-Dichloropropane	76	9.426	9.426	(0.949)	160989	50.0000	51.1	9314
	88 1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	80822	50.0000	48.8	8980
	80 2-Hexanone	43	9.710	9.710	(0.977)	76976	50.0000	50.4	8715
	91 1-Chlorohexane	91	9.922	9.922	(0.999)	120699	50.0000	49.8	9282
*	90 Chlorobenzene-d5	82	9.936	9.936	(1.000)	181863	50.0000		8821
	92 Chlorobenzene ++	112	9.950	9.950	(1.001)	266576	50.0000	48.1	9128
	93 Ethylbenzene +	106	9.964	9.964	(1.003)	136316	50.0000	46.9	9539
	95 1,1,1,2-Tetrachloroethane	133	9.997	9.997	(1.006)	105598	50.0000	50.8	9378
	96 p,m-Xylene	106	10.073	10.073	(1.014)	340031	100.000	94.2	9621
M	120 TOTAL XYLENE	106				515147	150.000	143	0

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98 o-Xylene	106	10.396	10.396	(1.046)	175116	50.0000	49.2	
99 Styrene	104	10.432	10.432	(1.050)	300625	50.0000	50.1	9491
100 Bromoform ++	173	10.463	10.463	(1.053)	82079	50.0000	50.2	9248
102 Isopropylbenzene	105	10.622	10.622	(1.069)	460268	50.0000	48.6	9554
$ 103 Bromofluorobenzene	174	10.834	10.834	(1.090)	143266	50.0000	50.9	9379
104 Bromobenzene	77	10.915	10.915	(0.939)	220140	50.0000	48.9	9433
106 n-Propylbenzene	91	10.920	10.920	(0.940)	540013	50.0000	47.7	9597
107 1,1,2,2-Tetrachloroethane++	83	10.973	10.973	(0.944)	109159	50.0000	49.4	9527
108 2-Chlorotoluene	91	11.040	11.040	(0.950)	385091	50.0000	47.9	8798
110 1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	402253	50.0000	47.9	
109 1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	124462	50.0000	46.9	9259
111 trans-1,4-Dichloro-2-Butene	53	11.099	11.099	(0.955)	33796	50.0000	53.0	9085
112 4-Chlorotoluene	91	11.157	11.157	(0.960)	346439	50.0000	48.8	9594
113 tert-butylbenzene	91	11.280	11.280	(0.970)	237928	50.0000	48.3	9590
114 1,2,4-Trimethylbenzene	105	11.327	11.327	(0.975)	413282	50.0000	47.5	
115 sec-Butylbenzene	105	11.406	11.406	(0.981)	499997	50.0000	48.0	
116 p-Isopropyltoluene	119	11.498	11.498	(0.989)	432911	50.0000	47.0	9598
117 1,3-Dichlorobenzene	146	11.576	11.576	(0.996)	243418	50.0000	48.5	
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	172359	50.0000		8842
119 1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	245700	50.0000	48.1	
121 n-Butylbenzene	91	11.790	11.790	(1.014)	393954	50.0000	47.1	9659
122 1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	244236	50.0000	50.8	
125 1,2-Dibromo-3-Chloropropane	157	12.474	12.474	(1.073)	26557	50.0000	48.9	9093
126 Hexachlorobutadiene	225	12.889	12.889	(1.109)	118628	50.0000	47.1	9644
127 1,2,4-Trichlorobenzene	180	12.925	12.925	(1.112)	178483	50.0000	54.7	
128 Napthalene	128	13.154	13.154	(1.132)	328861	50.0000	48.9	9487
129 1,2,3-Trichlorobenzene	180	13.282	13.282	(1.143)	171175	50.0000	54.6	
10 tert-butyl alcohol	59	4.626	4.626	(0.649)	13209	50.0000	48.8	8940
26 Isopropyl Ether	45	4.972	4.972	(0.697)	336654	50.0000	50.4	9475
20 Chloroprene	53	5.087	5.087	(0.713)	129745	50.0000	48.3	9383
30 Isobutyl Alcohol	43	6.958	6.958	(0.975)	19942	250.000	237	9147
53 1,4-Dioxane	58	8.095	8.095	(1.135)	18985	1250.00	1210	8994
162 3,4-dichloro-1-butene	75	9.395	9.395	(0.946)	104174	50.0000	51.0	9165
161 cis-1,4-dichloro-2-butene	53	10.879	10.879	(0.936)	33954	50.0000	52.0	9345

Data File: /var/chem/msv11.i/2170414.s.b/i6580D.d

Page 1

Date : 14-APR-2017 15:45

Client ID: V11STD050

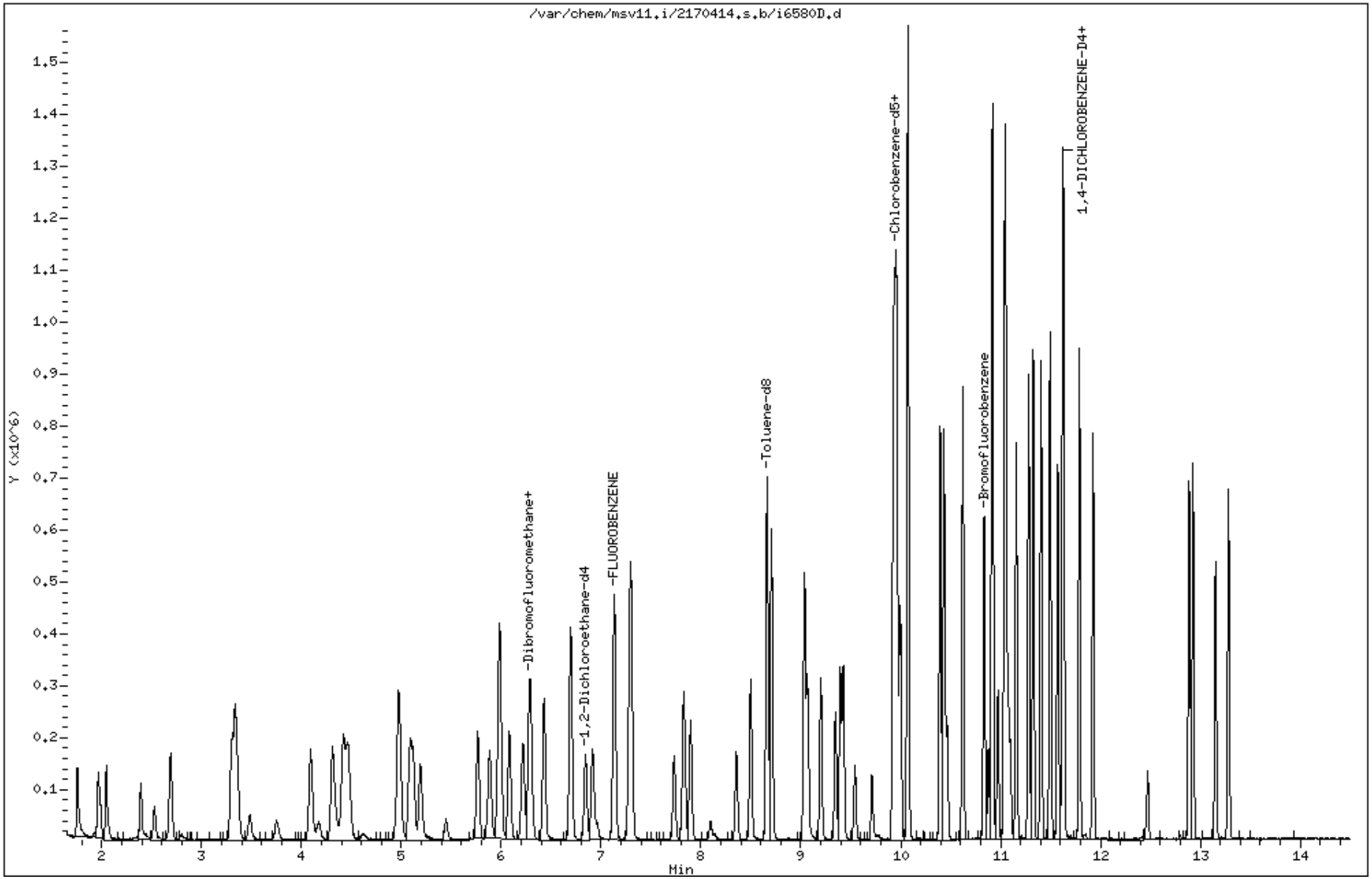
Instrument: msv11.i

Sample Info: 1205*V11STD050

Operator: JCK

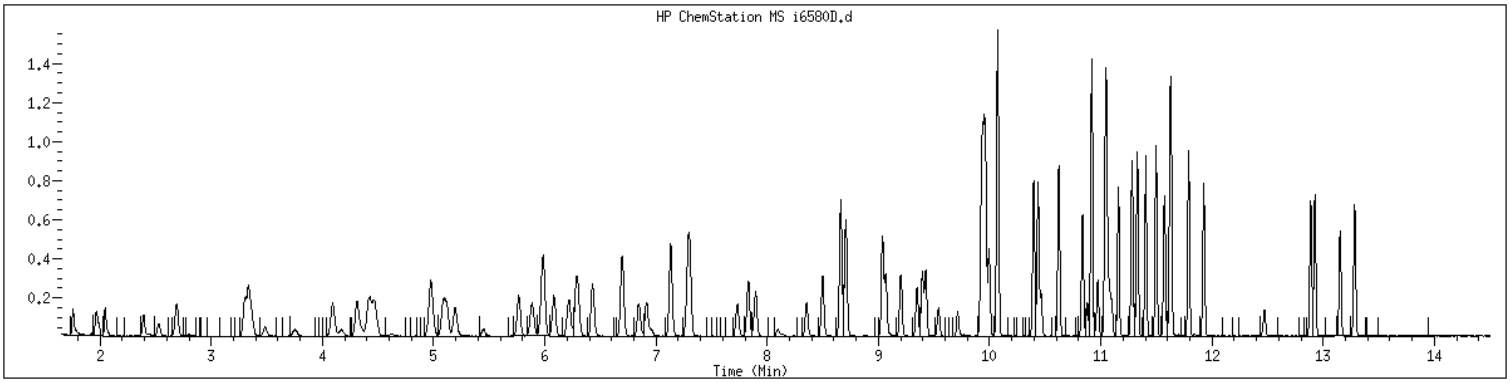
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1205 SampleType : CALIB_5
Injection Date: 04/14/2017 15:45 Instrument : msv11.i
Operator : JCK
Sample Info : 1205*V11STD050
Misc Info : MSV~38124~*1*JCK
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

GCAL, Inc.

Data file : /var/chem/msv11.i/2170414.s.b/i6581D.d
Lab Smp Id: 1206 Client Smp ID: V11STD100
Inj Date : 14-APR-2017 16:08
Operator : JCK Inst ID: msv11.i
Smp Info : 1206*V11STD100
Misc Info : MSV~38124~*1*JCK
Comment :
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Meth Date : 14-Apr-2017 18:18 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:08 Cal File: i6581D.d
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.754	1.754	(0.246)	241285	100.000	93.5	9500
2 Chloromethane ++	50	1.966	1.966	(0.276)	254523	100.000	92.3	9434
3 Vinyl Chloride +	62	2.044	2.044	(0.287)	219451	100.000	93.1	9559
6 Bromomethane	94	2.393	2.393	(0.336)	123673	100.000	91.9	9395
8 Chloroethane	64	2.515	2.515	(0.353)	124980	100.000	94.3	9253
9 Trichlorofluoromethane	101	2.688	2.688	(0.377)	296608	100.000	93.4	9707
12 1,1-Dichloroethene +	96	3.299	3.299	(0.463)	156003	100.000	92.6	9061
14 Carbon Disulfide	76	3.330	3.330	(0.467)	541710	100.000	92.3	8695
15 1,1,2Trichlotrifluoroethane	101	3.355	3.355	(0.470)	161304	100.000	93.7	9618
16 Methyl Iodide	142	3.486	3.486	(0.489)	166785	100.000	95.2	8861
17 Acrolein	56	3.754	3.754	(0.526)	93355	500.000	558	8818
18 Methylene Chloride	49	4.091	4.091	(0.574)	294099	100.000	94.0	9506
19 Acetone	43	4.166	4.166	(0.584)	114332	100.000	96.6	8515

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	13	trans-1,2-Dichloroethene	61	4.311	4.311	(0.605)	269417	100.000	92.2	9413
	22	Methyl Acetate	43	4.348	4.348	(0.610)	139648	100.000	107	8507
	23	Hexane	57	4.426	4.426	(0.621)	362434	100.000	90.9	9292
	25	MTBE	73	4.467	4.467	(0.627)	489064	100.000	106	9409
	31	1,1-Dichloroethane ++	63	5.114	5.114	(0.717)	363374	100.000	94.9	9525
	33	Acrylonitrile	53	5.193	5.193	(0.728)	301001	500.000	501	9738
	34	Vinyl Acetate	43	5.444	5.444	(0.763)	151923	100.000	101	
M	68	Total 1,2-Dichloroethene	61				565430	200.000	190	0
	21	cis-1,2-Dichloroethene	61	5.770	5.770	(0.809)	296013	100.000	97.4	9457
	35	2,2-Dichloropropane	77	5.890	5.890	(0.826)	247685	100.000	95.0	9246
	38	Cyclohexane	56	5.979	5.979	(0.838)	313973	100.000	90.0	9465
	39	Bromochloromethane	128	5.990	5.990	(0.840)	105969	100.000	107	9441
	40	Chloroform +	83	6.082	6.082	(0.853)	376202	100.000	94.7	9577
	41	Carbon Tetrachloride	117	6.222	6.222	(0.873)	281926	100.000	89.2	9729
$	42	Dibromofluoromethane	111	6.280	6.280	(0.881)	110080	50.0000	50.0	7914
	43	1,1,1-Trichloroethane	97	6.294	6.294	(0.883)	307509	100.000	91.7	9119
	45	2-Butanone	43	6.425	6.425	(0.901)	125286	100.000	113	
	44	1,1-Dichloropropene	75	6.433	6.433	(0.902)	245259	100.000	92.7	9326
	48	Benzene	78	6.696	6.696	(0.939)	781253	100.000	92.0	9349
$	50	1,2-Dichloroethane-d4	67	6.846	6.846	(0.960)	66172	50.0000	48.8	9619
	52	1,2-Dichloroethane	62	6.916	6.916	(0.970)	327078	100.000	98.2	9627
*	54	FLUOROBENZENE	96	7.131	7.131	(1.000)	435332	50.0000		9447
	56	Methyl cyclohexane	83	7.290	7.290	(1.022)	313224	100.000	91.9	9040
	57	Trichloroethene	130	7.306	7.306	(1.025)	205213	100.000	95.5	9526
	62	Dibromomethane	93	7.733	7.733	(1.084)	129843	100.000	103	9615
	63	1,2-Dichloropropane +	63	7.831	7.831	(1.098)	210554	100.000	93.6	9430
	64	Bromodichloromethane	83	7.897	7.897	(1.108)	319938	100.000	98.4	9637
	69	1-Bromo-2-chloroethane	63	8.355	8.355	(1.172)	285260	100.000	101	9676
	72	cis-1,3-Dichloropropene	75	8.497	8.497	(1.192)	351917	100.000	108	
$	74	Toluene-d8	98	8.662	8.662	(0.871)	429019	50.0000	49.5	9634
	77	Toluene +	91	8.706	8.706	(0.876)	832143	100.000	92.4	9392
M	71	1-3 Dichloropropene-Total	100				669542	200.000	221	0
	79	4-methyl-2-pentanone	43	9.035	9.035	(0.909)	204664	100.000	107	
	78	Tetrachloroethene	164	9.038	9.038	(0.909)	166394	100.000	92.8	9327
	81	trans-1,3-Dichloropropene	75	9.069	9.069	(1.272)	317625	100.000	112	
	82	1,1,2-Trichloroethane	97	9.200	9.200	(0.926)	187316	100.000	101	9423
	85	Dibromochloromethane	129	9.348	9.348	(0.941)	246555	100.000	101	9573
	86	1,3-Dichloropropane	76	9.426	9.426	(0.948)	335892	100.000	101	9353
	88	1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	177994	100.000	101	8955
	80	2-Hexanone	43	9.710	9.710	(0.977)	171724	100.000	106	8589
	91	1-Chlorohexane	91	9.925	9.925	(0.999)	231677	100.000	90.2	9018
*	90	Chlorobenzene-d5	82	9.939	9.939	(1.000)	192634	50.0000		8010
	92	Chlorobenzene ++	112	9.950	9.950	(1.001)	563020	100.000	95.9	8482
	93	Ethylbenzene +	106	9.964	9.964	(1.003)	290155	100.000	94.2	9536
	95	1,1,1,2-Tetrachloroethane	133	9.997	9.997	(1.006)	222696	100.000	101	9441
	96	p,m-Xylene	106	10.073	10.073	(1.013)	722608	200.000	189	9586
M	120	TOTAL XYLENE	106				1098500	300.000	289	0

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98 o-Xylene	106	10.396	10.396	(1.046)	375892	100.000	99.6	
99 Styrene	104	10.435	10.435	(1.050)	655896	100.000	103	9533
100 Bromoform ++	173	10.463	10.463	(1.053)	178005	100.000	103	9437
102 Isopropylbenzene	105	10.622	10.622	(1.069)	955077	100.000	95.2	9638
$ 103 Bromofluorobenzene	174	10.834	10.834	(1.090)	153293	50.0000	51.4	9504
104 Bromobenzene	77	10.915	10.915	(0.939)	467015	100.000	94.4	9483
106 n-Propylbenzene	91	10.918	10.918	(0.939)	1140314	100.000	91.7	9641
107 1,1,2,2-Tetrachloroethane++	83	10.971	10.971	(0.944)	232855	100.000	95.7	9580
108 2-Chlorotoluene	91	11.043	11.043	(0.950)	812038	100.000	91.9	9476
110 1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	852407	100.000	92.2	
109 1,2,3-Trichloropropane	75	11.074	11.074	(0.953)	272216	100.000	93.2	9504
111 trans-1,4-Dichloro-2-Butene	53	11.099	11.099	(0.955)	72532	100.000	103	9203
112 4-Chlorotoluene	91	11.157	11.157	(0.960)	737402	100.000	94.5	9602
113 tert-butylbenzene	91	11.280	11.280	(0.970)	494987	100.000	91.3	9640
114 1,2,4-Trimethylbenzene	105	11.328	11.328	(0.975)	884019	100.000	92.4	
115 sec-Butylbenzene	105	11.406	11.406	(0.981)	1046204	100.000	91.3	
116 p-Isopropyltoluene	119	11.498	11.498	(0.989)	937390	100.000	92.4	9612
117 1,3-Dichlorobenzene	146	11.573	11.573	(0.996)	522296	100.000	94.7	
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	189600	50.0000		8250
119 1,4-Dichlorobenzene	146	11.632	11.632	(1.001)	524395	100.000	93.3	
121 n-Butylbenzene	91	11.790	11.790	(1.014)	860378	100.000	93.6	9741
122 1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	522367	100.000	98.7	
125 1,2-Dibromo-3-Chloropropane	157	12.471	12.471	(1.073)	62180	100.000	104	9175
126 Hexachlorobutadiene	225	12.889	12.889	(1.109)	257558	100.000	93.0	9793
127 1,2,4-Trichlorobenzene	180	12.925	12.925	(1.112)	402361	100.000	112	
128 Napthalene	128	13.154	13.154	(1.132)	786385	100.000	102	9553
129 1,2,3-Trichlorobenzene	180	13.282	13.282	(1.143)	394298	100.000	114	
10 tert-butyl alcohol	59	4.618	4.618	(0.648)	28325	100.000	102	8061
26 Isopropyl Ether	45	4.978	4.978	(0.698)	712265	100.000	104	9494
20 Chloroprene	53	5.089	5.089	(0.714)	260127	100.000	94.7	9327
30 Isobutyl Alcohol	43	6.963	6.963	(0.977)	47230	500.000	548	8911
53 1,4-Dioxane	58	8.095	8.095	(1.135)	42743	2500.00	2670	9335
162 3,4-dichloro-1-butene	75	9.395	9.395	(0.945)	231414	100.000	107	9190
161 cis-1,4-dichloro-2-butene	53	10.879	10.879	(0.936)	73328	100.000	102	9335

Data File: /var/chem/msv11.i/2170414.s.b/i6581D.d

Date : 14-APR-2017 16:08

Client ID: V11STD100

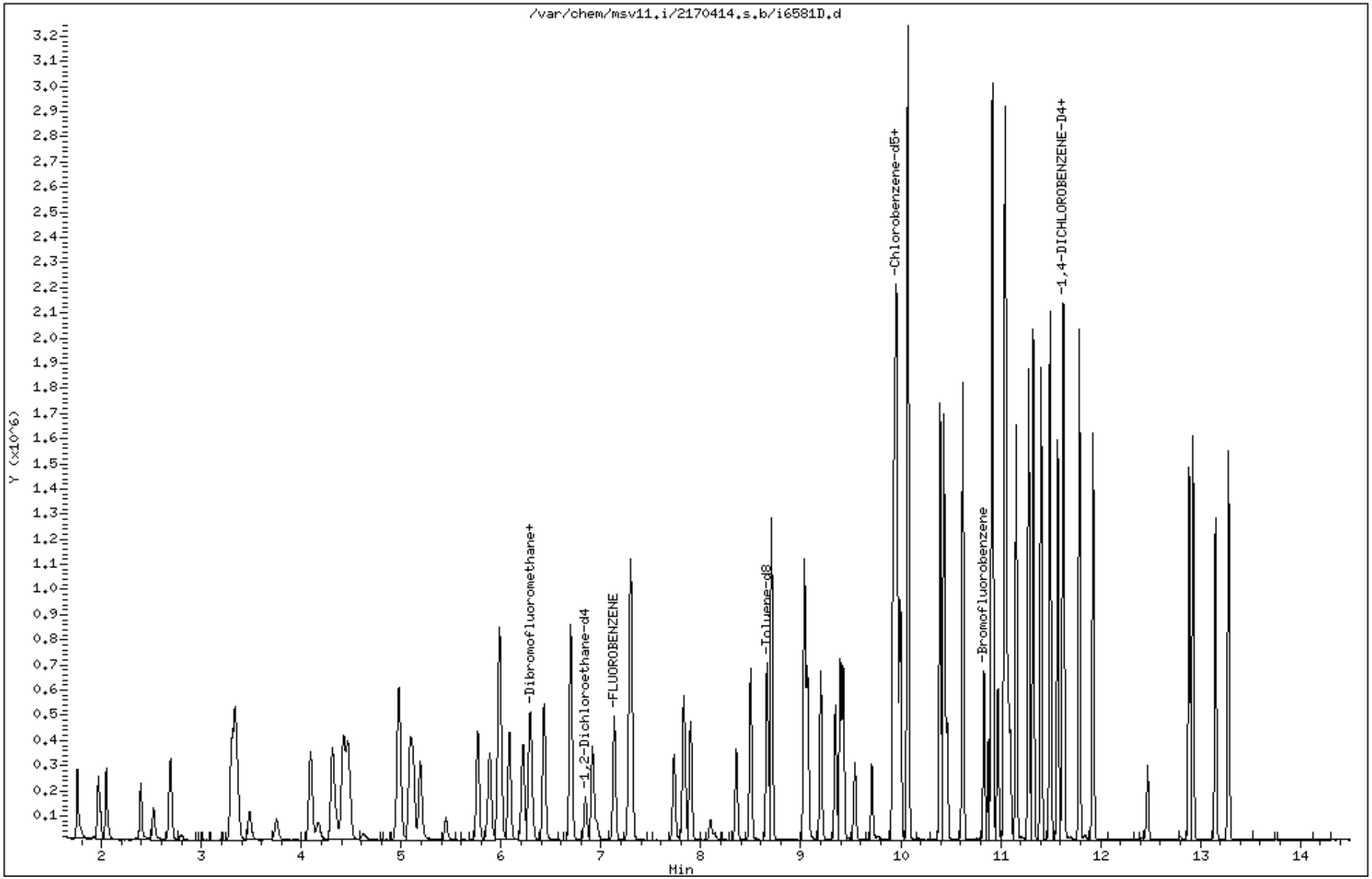
Instrument: msv11.i

Sample Info: 1206*V11STD100

Operator: JCK

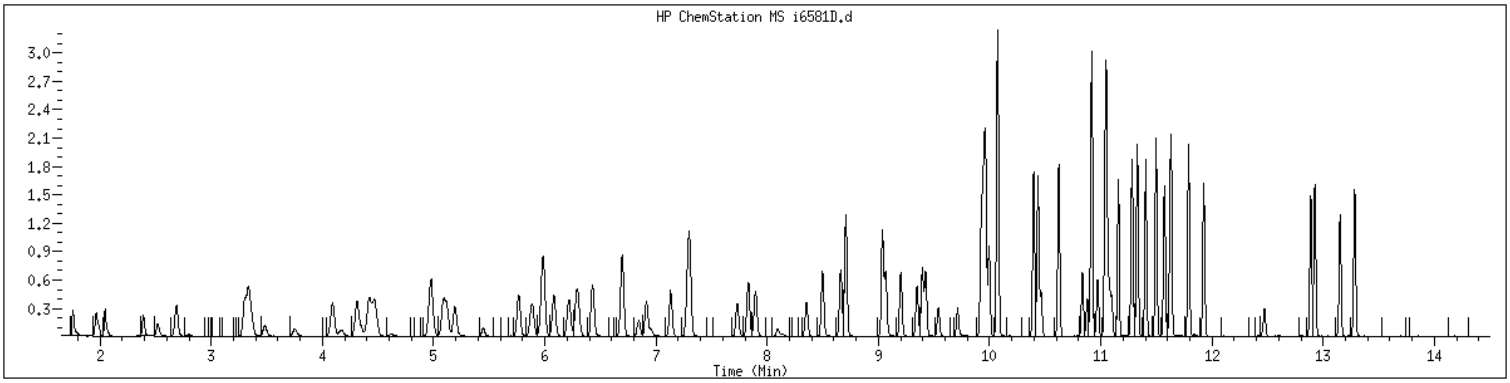
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1206 SampleType : CALIB_6
Injection Date: 04/14/2017 16:08 Instrument : msv11.i
Operator : JCK
Sample Info : 1206*V11STD100
Misc Info : MSV~38124~*1*JCK
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

GCAL, Inc.

Data file : /var/chem/msv11.i/2170414.s.b/i6582D.d
Lab Smp Id: 1207 Client Smp ID: V11STD200
Inj Date : 14-APR-2017 16:32
Operator : JCK Inst ID: msv11.i
Smp Info : 1207*V11STD200
Misc Info : MSV~38124~*1*JCK
Comment :
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Meth Date : 14-Apr-2017 18:18 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.757	1.757	(0.246)	498660	200.000	179	9549
2 Chloromethane ++	50	1.966	1.966	(0.276)	537537	200.000	181	9336
3 Vinyl Chloride +	62	2.044	2.044	(0.287)	469668	200.000	185	9614
6 Bromomethane	94	2.390	2.390	(0.335)	271095	200.000	187	9480
8 Chloroethane	64	2.510	2.510	(0.352)	245718	200.000	172	9340
9 Trichlorofluoromethane	101	2.685	2.685	(0.376)	611185	200.000	178	9756
12 1,1-Dichloroethene +	96	3.299	3.299	(0.462)	332127	200.000	183	8985
14 Carbon Disulfide	76	3.329	3.329	(0.467)	1161183	200.000	184	8807
15 1,1,2Trichlotrifluoroethane	101	3.349	3.349	(0.469)	329081	200.000	177	8823
16 Methyl Iodide	142	3.480	3.480	(0.488)	399198	200.000	203	8646(A)
17 Acrolein	56	3.753	3.753	(0.526)	192469	1000.00	1070	8551(A)
18 Methylene Chloride	49	4.091	4.091	(0.573)	597234	200.000	177	9542
19 Acetone	43	4.166	4.166	(0.584)	235250	200.000	184	8187

		QUANT SIG				AMOUNTS		
	Compounds	MASS	RT	EXP RT REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	13 trans-1,2-Dichloroethene	61	4.314	4.314 (0.605)	564841	200.000	179	9470
	22 Methyl Acetate	43	4.347	4.347 (0.609)	289130	200.000	205	8504(A)
	23 Hexane	57	4.420	4.420 (0.620)	746102	200.000	174	9231
	25 MTBE	73	4.464	4.464 (0.626)	1010576	200.000	203	9507(A)
	31 1,1-Dichloroethane ++	63	5.117	5.117 (0.717)	753230	200.000	183	9256
	33 Acrylonitrile	53	5.190	5.190 (0.728)	617672	1000.00	954	9634
	34 Vinyl Acetate	43	5.446	5.446 (0.763)	327526	200.000	201	(A)
M	68 Total 1,2-Dichloroethene	61			1176959	400.000	366	0
	21 cis-1,2-Dichloroethene	61	5.767	5.767 (0.808)	612118	200.000	187	9590
	35 2,2-Dichloropropane	77	5.889	5.889 (0.826)	520625	200.000	185	9500
	38 Cyclohexane	56	5.981	5.981 (0.839)	643846	200.000	171	9506
	39 Bromochloromethane	128	5.990	5.990 (0.840)	208139	200.000	194	9470
	40 Chloroform +	83	6.082	6.082 (0.853)	775948	200.000	181	9597
	41 Carbon Tetrachloride	117	6.216	6.216 (0.871)	589311	200.000	173	9733
$	42 Dibromofluoromethane	111	6.285	6.285 (0.881)	117831	50.0000	49.6	5728
	43 1,1,1-Trichloroethane	97	6.297	6.297 (0.883)	645642	200.000	179	8219
	45 2-Butanone	43	6.422	6.422 (0.900)	251162	200.000	210	(A)
	44 1,1-Dichloropropene	75	6.430	6.430 (0.901)	521453	200.000	183	9381
	48 Benzene	78	6.698	6.698 (0.939)	1648382	200.000	180	9456
$	50 1,2-Dichloroethane-d4	67	6.846	6.846 (0.960)	70948	50.0000	48.5	9538
	52 1,2-Dichloroethane	62	6.916	6.916 (0.970)	651122	200.000	181	9673
*	54 FLUOROBENZENE	96	7.133	7.133 (1.000)	469417	50.0000		9431
	56 Methyl cyclohexane	83	7.287	7.287 (1.022)	664116	200.000	181	8394
	57 Trichloroethene	130	7.306	7.306 (1.024)	437959	200.000	189	9482
	62 Dibromomethane	93	7.730	7.730 (1.084)	263497	200.000	195	9526
	63 1,2-Dichloropropane +	63	7.830	7.830 (1.098)	436202	200.000	180	9527
	64 Bromodichloromethane	83	7.897	7.897 (1.107)	655226	200.000	187	9690
	69 1-Bromo-2-chloroethane	63	8.357	8.357 (1.172)	592891	200.000	195	9610
	72 cis-1,3-Dichloropropene	75	8.497	8.497 (1.191)	741623	200.000	212	(A)
$	74 Toluene-d8	98	8.661	8.661 (0.872)	451744	50.0000	49.1	9634
	77 Toluene +	91	8.709	8.709 (0.876)	1748738	200.000	183	9510
M	71 1-3 Dichloropropene-Total	100			1417257	400.000	434	0
	79 4-methyl-2-pentanone	43	9.038	9.038 (0.910)	422890	200.000	208	(A)
	78 Tetrachloroethene	164	9.041	9.041 (0.910)	357022	200.000	187	9389
	81 trans-1,3-Dichloropropene	75	9.069	9.069 (1.271)	675634	200.000	222	(A)
	82 1,1,2-Trichloroethane	97	9.200	9.200 (0.926)	379750	200.000	192	9517
	85 Dibromochloromethane	129	9.347	9.347 (0.941)	507825	200.000	195	9511
	86 1,3-Dichloropropane	76	9.425	9.425 (0.949)	691161	200.000	195	9423
	88 1,2-Dibromoethane(EDB)	107	9.540	9.540 (0.960)	371726	200.000	199	8893
	80 2-Hexanone	43	9.710	9.710 (0.977)	361174	200.000	210	8607(A)
	91 1-Chlorohexane	91	9.922	9.922 (0.999)	532759	200.000	195	7509
*	90 Chlorobenzene-d5	82	9.936	9.936 (1.000)	204601	50.0000		7500
	92 Chlorobenzene ++	112	9.950	9.950 (1.001)	1181400	200.000	189	8143
	93 Ethylbenzene +	106	9.964	9.964 (1.003)	618420	200.000	189	9538
	95 1,1,1,2-Tetrachloroethane	133	9.997	9.997 (1.006)	462062	200.000	197	9477
	96 p,m-Xylene	106	10.075	10.075 (1.014)	1525614	400.000	376	9627
M	120 TOTAL XYLENE	106			2320035	600.000	574	0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98	o-Xylene	106	10.396	10.396	(1.046)	794421	200.000	198	
99	Styrene	104	10.435	10.435	(1.050)	1362585	200.000	202	9531(A)
100	Bromoform ++	173	10.466	10.466	(1.053)	369797	200.000	201	9404(A)
102	Isopropylbenzene	105	10.622	10.622	(1.069)	2005091	200.000	188	9635
$ 103	Bromofluorobenzene	174	10.837	10.837	(1.091)	163315	50.0000	51.5	9659
104	Bromobenzene	77	10.915	10.915	(0.939)	975991	200.000	184	9384
106	n-Propylbenzene	91	10.920	10.920	(0.940)	2373862	200.000	178	9721
107	1,1,2,2-Tetrachloroethane++	83	10.973	10.973	(0.944)	468744	200.000	180	9635
108	2-Chlorotoluene	91	11.040	11.040	(0.950)	1705875	200.000	180	8504
110	1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	1777272	200.000	179	
109	1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	616421	200.000	197	9549
111	trans-1,4-Dichloro-2-Butene	53	11.096	11.096	(0.955)	150711	200.000	200	9328(A)
112	4-Chlorotoluene	91	11.157	11.157	(0.960)	1526825	200.000	182	9597
113	tert-butylbenzene	91	11.280	11.280	(0.970)	1032938	200.000	177	9654
114	1,2,4-Trimethylbenzene	105	11.327	11.327	(0.975)	1826642	200.000	178	
115	sec-Butylbenzene	105	11.405	11.405	(0.981)	2187747	200.000	178	
116	p-Isopropyltoluene	119	11.497	11.497	(0.989)	1946595	200.000	179	9574
117	1,3-Dichlorobenzene	146	11.573	11.573	(0.996)	1095536	200.000	185	
* 118	1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	203429	50.0000		7479
119	1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	1099597	200.000	182	
121	n-Butylbenzene	91	11.790	11.790	(1.014)	1774471	200.000	180	9721
122	1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	1095396	200.000	193	
125	1,2-Dibromo-3-Chloropropane	157	12.471	12.471	(1.073)	128961	200.000	201	9269(A)
126	Hexachlorobutadiene	225	12.889	12.889	(1.109)	546190	200.000	184	9799
127	1,2,4-Trichlorobenzene	180	12.925	12.925	(1.112)	846676	200.000	220	(A)
128	Napthalene	128	13.154	13.154	(1.132)	1682663	200.000	200	9612(A)
129	1,2,3-Trichlorobenzene	180	13.282	13.282	(1.143)	816723	200.000	221	(A)
10	tert-butyl alcohol	59	4.615	4.615	(0.647)	56449	200.000	189	7811
26	Isopropyl Ether	45	4.978	4.978	(0.698)	1449134	200.000	197	9426
20	Chloroprene	53	5.086	5.086	(0.713)	546721	200.000	185	9500
30	Isobutyl Alcohol	43	6.958	6.958	(0.975)	96207	1000.00	1040	8748(A)
53	1,4-Dioxane	58	8.095	8.095	(1.135)	89900	5000.00	5200	9270(A)
162	3,4-dichloro-1-butene	75	9.395	9.395	(0.946)	488899	200.000	213	9243(A)
161	cis-1,4-dichloro-2-butene	53	10.878	10.878	(0.936)	152500	200.000	198	9363

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: /var/chem/msv11.i/2170414.s.b/i6582D.d

Date : 14-APR-2017 16:32

Client ID: V11STD200

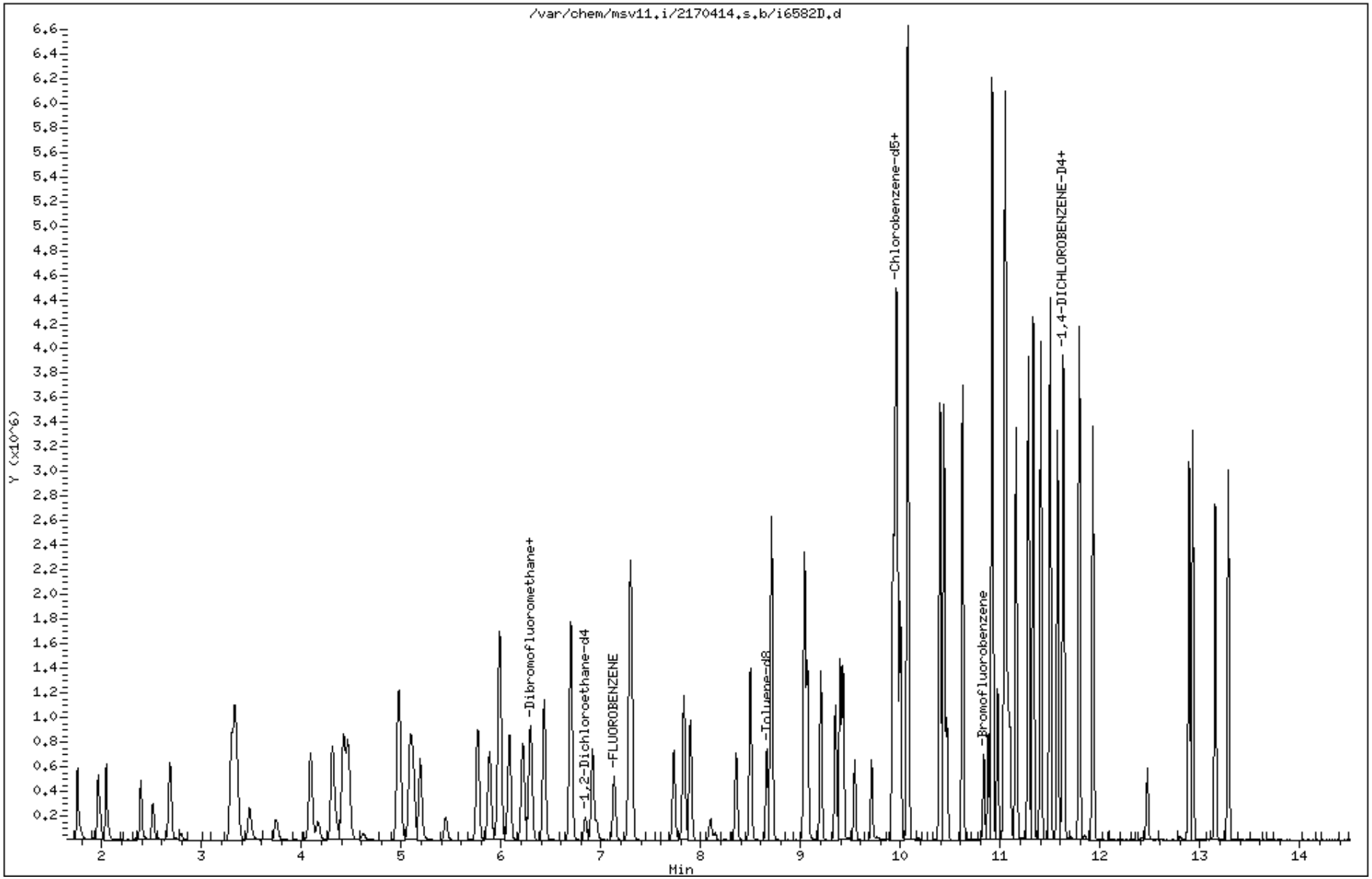
Instrument: msv11.i

Sample Info: 1207*V11STD200

Operator: JCK

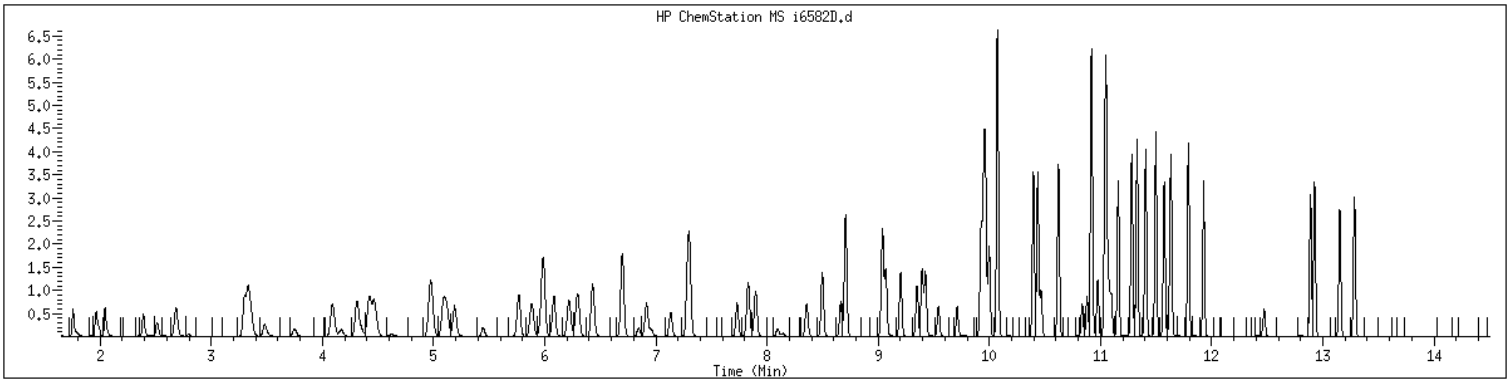
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1207 SampleType : CALIB_7
Injection Date: 04/14/2017 16:32 Instrument : msv11.i
Operator : JCK
Sample Info : 1207*V11STD200
Misc Info : MSV~38124~*1*JCK
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2170511p/d4102D ~ 1	
Report No:	217051110		Instrument ID:	MSV13		1204 ~ 2170511p/d4104D ~ 5	1205 ~ 2170511p/d4105D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2170511p/d4106D ~ 20	1207 ~ 2170511p/d4107D ~ 50	
Calib. Date 1:	05/11/17	Time 1: 1420	Analytical Batch:	610278		1208 ~ 2170511p/d4108D ~ 100	1209 ~ 2170511p/d4109D ~ 200	
Calib. Date 2:	05/11/17	Time 2: 1656	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.556	0.599	0.536	0.573	0.604	0.584	0.571	0.575			4.093	A
1,1,1-Trichloroethane			0.329	0.362	0.333	0.332	0.353	0.339	0.340	0.341			3.573	A
1,1,2,2-Tetrachloroethane			0.971	0.936	0.836	0.855	0.836	0.813	0.790	0.863			7.697	A
1,1,2-Trichloroethane			0.610	0.606	0.556	0.571	0.595	0.577	0.570	0.583			3.499	A
1,1-Dichloroethane			0.413	0.421	0.380	0.388	0.400	0.384	0.379	0.395			4.206	A
1,1-Dichloroethene			0.214	0.228	0.202	0.209	0.211	0.202	0.200	0.209			4.567	A
1,1-Dichloropropene			0.287	0.317	0.290	0.295	0.305	0.294	0.294	0.298			3.450	A
1,2,3-Trichlorobenzene (RSP)			1468	11537	24732	55259	161568	352746	724250	0.853	0.014		0.999	W
1,2,3-Trichlorobenzene			0.453	0.692	0.701	0.767	0.831	0.851	0.859					
1,2,3-Trichloropropane			1.120	1.107	0.925	0.953	1.013	0.982	0.973	1.010			7.479	A
1,2,4-Trichlorobenzene (RSP)			1535	11346	24995	54417	164162	357563	724566	0.857	0.014		0.998	W
1,2,4-Trichlorobenzene			0.474	0.680	0.709	0.755	0.845	0.863	0.860					
1,2,4-Trimethylbenzene			2.425	2.548	2.283	2.338	2.391	2.332	2.267	2.369			4.063	A
1,2-Dibromo-3-chloropropane			0.170	0.201	0.183	0.200	0.209	0.217	0.221	0.200			9.142	A
1,2-Dibromoethane			0.566	0.567	0.552	0.575	0.610	0.595	0.598	0.581			3.589	A
1,2-Dichlorobenzene			1.409	1.516	1.356	1.379	1.407	1.360	1.335	1.394			4.308	A
1,2-Dichloroethane			0.366	0.354	0.313	0.318	0.326	0.317	0.311	0.329			6.611	A
1,2-Dichloroethane-d4			0.139	0.141	0.142	0.142	0.143	0.142	0.144	0.142			1.057	A
1,2-Dichloroethene (total)			0.299	0.311	0.288	0.290	0.305	0.293	0.292	0.297			2.827	A
1,2-Dichloropropane			0.254	0.238	0.227	0.228	0.238	0.232	0.230	0.235			4.020	A
1,3,5-Trimethylbenzene			2.357	2.584	2.320	2.371	2.376	2.316	2.220	2.363			4.689	A
1,3-Dichlorobenzene			1.463	1.521	1.340	1.409	1.436	1.411	1.364	1.420			4.277	A
1,3-Dichloropropane			0.998	1.030	0.940	0.971	1.020	0.982	0.973	0.988			3.108	A
1,3-Dichloropropylene			0.300	0.338	0.318	0.339	0.378	0.375	0.381	0.347			9.189	A
1,4-Dichlorobenzene			1.503	1.561	1.358	1.399	1.440	1.390	1.359	1.430			5.364	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170511p/d4102D ~ 1		
Report No:	217051110		Instrument ID:	MSV13	1204 ~ 2170511p/d4104D ~ 5	1205 ~ 2170511p/d4105D ~ 10		
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2170511p/d4106D ~ 20	1207 ~ 2170511p/d4107D ~ 50		
Calib. Date 1:	05/11/17	Time 1: 1420	Analytical Batch:	610278	1208 ~ 2170511p/d4108D ~ 100	1209 ~ 2170511p/d4109D ~ 200		
Calib. Date 2:	05/11/17	Time 2: 1656	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1-Bromo-2-Chloroethane			0.315	0.348	0.321	0.321	0.346	0.337	0.335	0.332			3.941	A
1-Chlorohexane			0.709	0.847	0.678	0.724	0.733	0.733	0.801	0.746			7.775	A
2,2-Dichloropropane			0.348	0.348	0.315	0.324	0.336	0.331	0.330	0.333			3.652	A
2-Butanone			0.201	0.182	0.183	0.181	0.179	0.177	0.173	0.182			4.826	A
2-Chloroethylvinyl ether			0.126	0.142	0.123	0.146	0.152	0.148	0.146	0.140			8.120	A
2-Chlorotoluene			2.503	2.581	2.294	2.269	2.270	2.196	2.142	2.322			6.911	A
2-Hexanone			0.665	0.628	0.582	0.601	0.611	0.599	0.601	0.612			4.397	A
4-Bromofluorobenzene			0.774	0.780	0.783	0.813	0.831	0.828	0.845	0.808			3.556	A
4-Chlorotoluene			2.292	2.258	2.007	2.021	2.046	1.958	1.897	2.069			7.224	A
4-Isopropyltoluene			2.464	2.635	2.364	2.460	2.483	2.452	2.359	2.460			3.732	A
4-Methyl-2-pentanone			0.865	0.780	0.740	0.762	0.762	0.744	0.737	0.770			5.770	A
Acetone				0.215	0.190	0.166	0.165	0.162	0.154	0.175			13.07	A
Acrolein			0.026	0.019	0.019	0.020	0.018	0.019	0.020	0.020			13.76	A
Acrylonitrile			0.092	0.088	0.095	0.095	0.095	0.092	0.094	0.093			2.932	A
Benzene			1.026	0.994	0.909	0.934	0.978	0.939	0.931	0.959			4.330	A
Bromobenzene			1.433	1.427	1.259	1.240	1.243	1.210	1.203	1.288			7.699	A
Bromochloromethane			0.121	0.130	0.122	0.121	0.122	0.117	0.113	0.121			4.277	A
Bromodichloromethane			0.303	0.305	0.282	0.289	0.313	0.309	0.312	0.302			4.015	A
Bromoform			0.444	0.436	0.419	0.449	0.513	0.523	0.531	0.474			9.890	A
Bromomethane			0.219	0.189	0.171	0.166	0.168	0.159	0.162	0.176			12.06	A
Carbon disulfide			0.580	0.600	0.568	0.587	0.629	0.606	0.613	0.597			3.498	A
Carbon tetrachloride			0.241	0.289	0.269	0.271	0.293	0.288	0.291	0.278			6.754	A
Chlorobenzene			1.812	1.779	1.655	1.693	1.749	1.672	1.623	1.712			4.058	A
Chloroethane (RSP)			2526	8696	14956	30204	81144	167828	337855	0.165	-0.010		0.999	W
Chloroethane			0.267	0.184	0.157	0.161	0.169	0.166	0.166					

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170511p/d4102D ~ 1		
Report No:	217051110		Instrument ID:	MSV13	1204 ~ 2170511p/d4104D ~ 5	1205 ~ 2170511p/d4105D ~ 10		
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2170511p/d4106D ~ 20	1207 ~ 2170511p/d4107D ~ 50		
Calib. Date 1:	05/11/17	Time 1: 1420	Analytical Batch:	610278	1208 ~ 2170511p/d4108D ~ 100	1209 ~ 2170511p/d4109D ~ 200		
Calib. Date 2:	05/11/17	Time 2: 1656	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Chloroform			0.405	0.417	0.379	0.377	0.398	0.383	0.381	0.391			3.981	A
Chloromethane			0.262	0.230	0.213	0.213	0.218	0.200	0.198	0.219			9.922	A
Cyclohexane			0.296	0.394	0.356	0.360	0.370	0.360	0.355	0.356			8.350	A
Dibromochloromethane			0.515	0.603	0.544	0.588	0.653	0.650	0.660	0.602			9.458	A
Dibromofluoromethane			0.233	0.236	0.240	0.236	0.237	0.240	0.240	0.237			1.172	A
Dibromomethane			0.150	0.150	0.139	0.146	0.155	0.150	0.148	0.148			3.188	A
Dichlorodifluoromethane			0.188	0.271	0.244	0.246	0.251	0.239	0.236	0.239			10.57	A
Ethylbenzene			0.900	0.965	0.879	0.929	0.956	0.918	0.893	0.920			3.494	A
Hexachlorobutadiene			0.390	0.427	0.384	0.390	0.387	0.399	0.387	0.395			3.803	A
Isopropylbenzene (Cumene)			2.651	2.979	2.711	2.823	2.926	2.850	2.776	2.817			4.093	A
Methyl Acetate			0.258	0.251	0.212	0.206	0.207	0.206	0.203	0.220			10.69	A
Methyl iodide (RSP)			615	3804	8055	19717	73719	174743		0.178	0.089		0.994	L
Methyl iodide			0.065	0.080	0.084	0.105	0.153	0.173						
Methylcyclohexane			0.295	0.408	0.362	0.377	0.376	0.377	0.368	0.366			9.420	A
Methylene chloride			0.323	0.333	0.313	0.278	0.303	0.295	0.266	0.302			7.988	A
Naphthalene (RSP)			3509	26403	63242	150894	473159	1050981	2192258	2.556	0.021		0.996	W
Naphthalene			1.082	1.583	1.793	2.093	2.435	2.536	2.602					
Styrene			1.678	1.778	1.698	1.807	1.943	1.891	1.870	1.809			5.477	A
Tetrachloroethene			0.513	0.541	0.478	0.508	0.525	0.517	0.514	0.514			3.710	A
Toluene			2.785	2.769	2.538	2.609	2.673	2.553	2.530	2.637			4.091	A
Toluene-d8			2.477	2.444	2.440	2.480	2.424	2.408	2.412	2.441			1.187	A
Trichloroethene			0.264	0.270	0.250	0.252	0.266	0.253	0.253	0.259			3.197	A
Trichlorofluoromethane			0.285	0.376	0.335	0.340	0.352	0.330	0.327	0.335			8.300	A
Trichlorotrifluoroethane			0.140	0.228	0.207	0.202	0.206	0.197	0.195	0.196			13.76	A
Vinyl acetate			0.174	0.136	0.140	0.160	0.150	0.154	0.153	0.152			8.250	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170511p/d4102D ~ 1	
Report No:	217051110		Instrument ID:	MSV13	1204 ~ 2170511p/d4104D ~ 5	1205 ~ 2170511p/d4105D ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)		Analyst:	JCK	1206 ~ 2170511p/d4106D ~ 20	1207 ~ 2170511p/d4107D ~ 50	
Calib. Date 1:	05/11/17	Time 1: 1420	Analytical Batch:	610278	1208 ~ 2170511p/d4108D ~ 100	1209 ~ 2170511p/d4109D ~ 200	
Calib. Date 2:	05/11/17	Time 2: 1656	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
Vinyl chloride			0.237	0.270	0.244	0.249	0.255	0.241	0.236	0.247			4.870	A
Xylene (total)			1.137	1.162	1.091	1.139	1.182	1.131	1.098	1.134			2.850	A
cis-1,2-Dichloroethene			0.300	0.312	0.294	0.296	0.311	0.299	0.298	0.301			2.414	A
cis-1,3-Dichloropropene			0.337	0.366	0.342	0.362	0.399	0.391	0.396	0.371			6.933	A
m,p-Xylene			1.150	1.156	1.097	1.137	1.188	1.132	1.096	1.137			2.875	A
n-Butylbenzene			1.913	2.221	2.034	2.103	2.105	2.097	2.039	2.073			4.518	A
n-Hexane			0.222	0.295	0.261	0.274	0.274	0.283	0.275	0.269			8.574	A
n-Propylbenzene			3.377	3.714	3.292	3.350	3.305	3.209	3.109	3.337			5.683	A
o-Xylene			1.113	1.174	1.078	1.141	1.170	1.131	1.102	1.130			3.111	A
sec-Butylbenzene			2.868	3.244	2.899	2.942	2.912	2.837	2.714	2.917			5.559	A
tert-Butyl methyl ether (MTBE)			0.813	0.769	0.711	0.722	0.746	0.720	0.712	0.742			5.058	A
tert-Butylbenzene			1.439	1.477	1.303	1.298	1.285	1.236	1.199	1.320			7.738	A
trans-1,2-Dichloroethene			0.298	0.309	0.282	0.284	0.298	0.286	0.286	0.292			3.435	A
trans-1,3-Dichloropropene			0.263	0.310	0.295	0.317	0.358	0.359	0.366	0.324			11.89	A
trans-1,4-Dichloro-2-butene			0.214	0.197	0.195	0.197	0.212	0.220	0.228	0.209			6.143	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4102D.d
Lab Smp Id: 1203 Client Smp ID: V13STD001
Inj Date : 11-MAY-2017 14:20
Operator : JCK Inst ID: msv13.i
Smp Info : 1203*V13STD001
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 14:20 Cal File: d4102D.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	1779	1.00000	0.787	
2	Chloromethane ++	50	1.866	1.866	(0.285)	2478	1.00000	1.19	
3	Vinyl Chloride +	62	1.956	1.956	(0.299)	2239	1.00000	0.957	
6	Bromomethane	94	2.283	2.283	(0.348)	2075	1.00000	1.24	
7	Chloroethane	64	2.414	2.414	(0.368)	2526	1.00000	1.12	(M2)
8	Trichlorofluoromethane	101	2.556	2.556	(0.390)	2694	1.00000	0.850	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	2020	1.00000	1.02	
11	Carbon Disulfide	76	3.152	3.152	(0.481)	5485	1.00000	0.971	
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	1328	1.00000	0.715	
13	Methyl Iodide	142	3.295	3.295	(0.503)	615	1.00000	4.83	
14	Acrolein	56	3.576	3.576	(0.546)	1250	5.00000	6.53	
16	Methylene Chloride	49	3.857	3.857	(0.589)	3053	1.00000	1.07	
17	Acetone	43	3.928	3.928	(0.600)	2746	1.00000	1.66	
18	trans-1,2-Dichloroethene	61	4.044	4.044	(0.617)	2822	1.00000	1.02	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.086	4.086	(0.624)	2442	1.00000	1.17	5361(M2)
	20 Hexane	57	4.127	4.127	(0.630)	2103	1.00000	0.826	6610(M2)
	21 MTBE	73	4.191	4.191	(0.640)	7688	1.00000	1.10	8123
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	3909	1.00000	1.05	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	4350	5.00000	4.95	
	28 Vinyl Acetate	43	5.045	5.045	(0.770)	1642	1.00000	1.14	(M1)
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	2837	1.00000	0.995	
M	75 Total 1,2-Dichloroethene	61				5659	2.00000	2.02	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	3295	1.00000	1.05	
	32 Cyclohexane	56	5.514	5.514	(0.842)	2796	1.00000	0.831	8598
	34 Bromochloromethane	128	5.529	5.529	(0.844)	1143	1.00000	1.00	
	35 Chloroform +	83	5.604	5.604	(0.855)	3830	1.00000	1.03	
	36 Carbon Tetrachloride	117	5.724	5.724	(0.874)	2281	1.00000	0.869	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	110314	50.0000	49.1	7899
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	3108	1.00000	0.963	
	44 2-Butanone	43	5.922	5.922	(0.904)	1900	1.00000	1.10	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	2716	1.00000	0.965	
	46 Benzene	78	6.162	6.162	(0.941)	9704	1.00000	1.07	
$	50 1,2-Dichloroethane-d4	67	6.294	6.294	(0.961)	65786	50.0000	49.0	
	51 1,2-Dichloroethane	62	6.361	6.361	(0.971)	3460	1.00000	1.11	(M3)
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	472936	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.695	(1.022)	2793	1.00000	0.807	8620
	56 Trichloroethene	130	6.706	6.706	(1.023)	2501	1.00000	1.02	
	57 Dibromomethane	93	7.103	7.103	(1.084)	1415	1.00000	1.01	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	2403	1.00000	1.08	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	2868	1.00000	1.00	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	2980	1.00000	0.949	7540
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	1190	1.00000	0.896	
	67 cis-1,3-Dichloropropene	75	7.786	7.786	(1.188)	3185	1.00000	0.909	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	456900	50.0000	50.7	
	69 Toluene +	91	7.977	7.977	(0.881)	10275	1.00000	1.06	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	1893	1.00000	0.998	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.912)	3190	1.00000	1.12	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	2489	1.00000	0.812	
M	82 1-3 Dichloropropene total	100				5674	2.00000	1.72	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	2252	1.00000	1.05	
	78 Dibromochloromethane	129	8.535	8.535	(0.942)	1899	1.00000	0.855	
	79 1,3-Dichloropropane	76	8.603	8.603	(0.950)	3681	1.00000	1.01	
	80 1,2-Dibromoethane(EDB)	107	8.715	8.715	(0.962)	2090	1.00000	0.976	
	83 2-Hexanone	43	8.854	8.854	(0.978)	2453	1.00000	1.09	
	86 1-Chlorohexane	91	9.045	9.045	(0.999)	2615	1.00000	0.950	4122(H)
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	184479	50.0000		
	85 Chlorobenzene ++	112	9.068	9.068	(1.001)	6685	1.00000	1.06	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	3319	1.00000	0.978	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	2052	1.00000	0.968	
	89 p,m-Xylene	106	9.173	9.173	(1.013)	8483	2.00000	2.02	
	90 o-Xylene	106	9.457	9.457	(1.044)	4105	1.00000	0.985	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				12588	3.00000	3.01	
	91 Styrene	104	9.491	9.491	(1.048)	6192	1.00000	0.928	
	92 Bromoform ++	173	9.521	9.521	(1.051)	1640	1.00000	0.938	
	93 Isopropylbenzene	105	9.649	9.649	(1.065)	9782	1.00000	0.941	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	142748	50.0000	47.9	
	96 Bromobenzene	77	9.907	9.907	(0.943)	4646	1.00000	1.11	
	97 n-Propylbenzene	91	9.904	9.904	(0.942)	10947	1.00000	1.01	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	3149	1.00000	1.13	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	8113	1.00000	1.08	
	102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	7641	1.00000	0.997	
	100 1,2,3-Trichloropropane	75	10.046	10.046	(0.956)	3631	1.00000	1.11	
	101 trans-1,4-Dichloro-2-Butene	53	10.065	10.065	(0.958)	694	1.00000	1.02	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	7429	1.00000	1.11	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	4666	1.00000	1.09	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	7860	1.00000	1.02	
	108 sec-Butylbenzene	105	10.320	10.320	(0.982)	9296	1.00000	0.983	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	7988	1.00000	1.00	
	113 1,3-Dichlorobenzene	146	10.470	10.470	(0.996)	4743	1.00000	1.03	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	162080	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	4873	1.00000	1.05	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	6201	1.00000	0.923	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	4566	1.00000	1.01	
	119 1,2-Dibromo-3-Chloropropane	157	11.294	11.294	(1.075)	552	1.00000	0.850	
	120 Hexachlorobutadiene	225	11.737	11.737	(1.117)	1264	1.00000	0.987	
	122 1,2,4-Trichlorobenzene	180	11.782	11.782	(1.121)	1535	1.00000	1.24	
	124 Naphthalene	128	12.063	12.063	(1.148)	3509	1.00000	1.49	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	1468	1.00000	1.22	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.
M3- Compound response manually integrated because
Target system integrated incorrect peak.
H - Operator selected an alternate compound hit.

Data File: /var/chem/msv13.i/2170511p.s.b/d4102D.d

Date : 11-MAY-2017 14:20

Client ID: V13STD001

Instrument: msv13.i

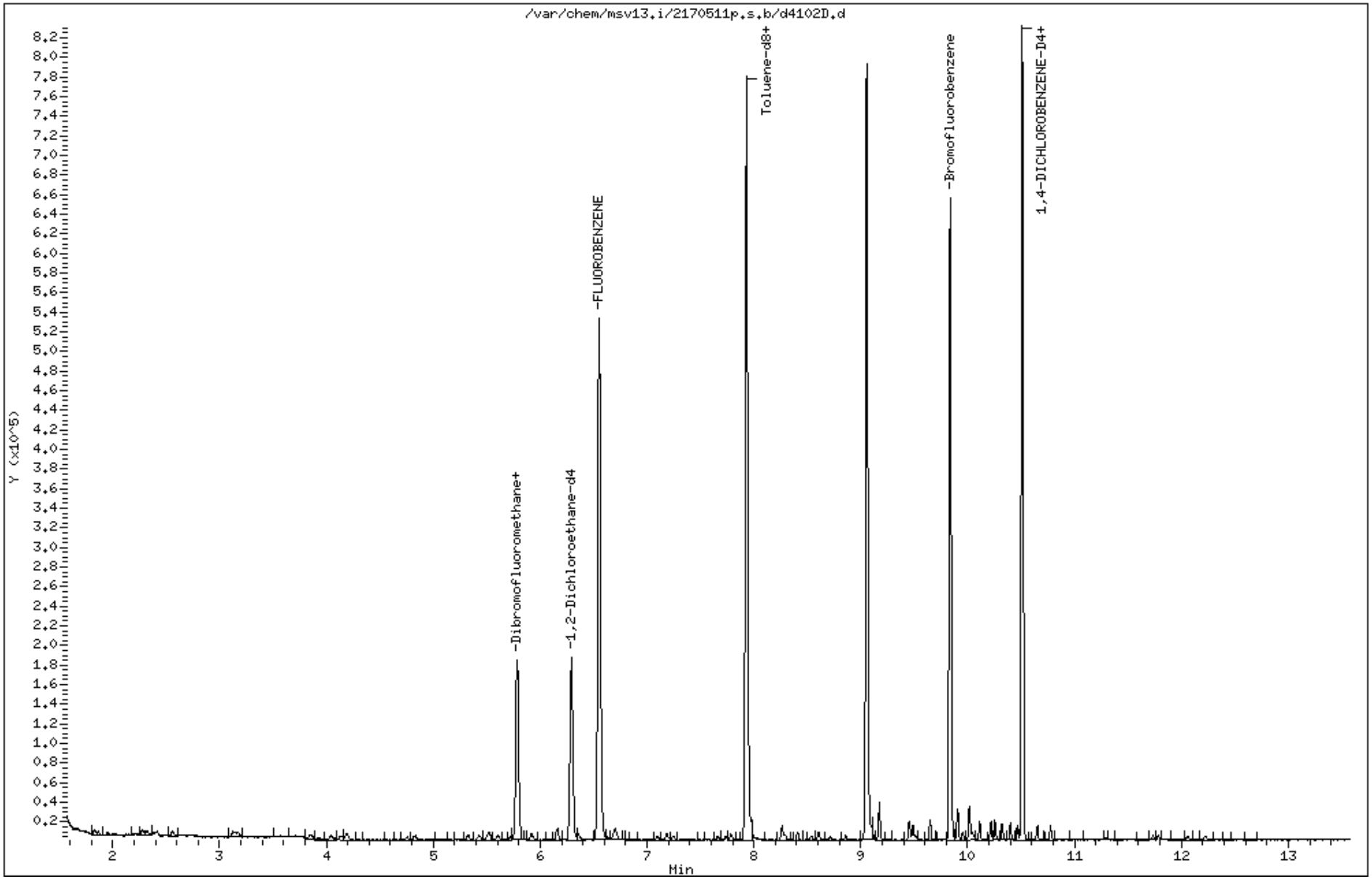
Sample Info: 1203*V13STD001

Purge Volume: 5.0

Operator: JCK

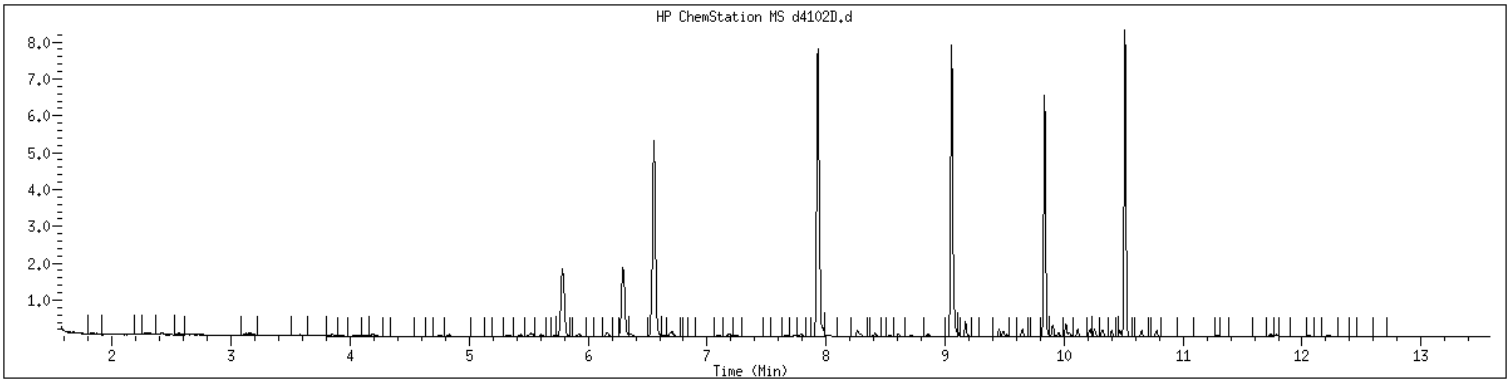
Column phase: RTX-VMS-30M

Column diameter: 0.25



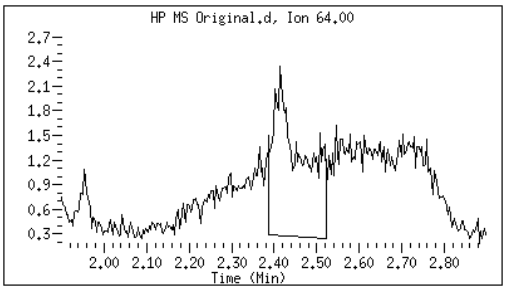
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1203 SampleType : CALIB_3
Injection Date: 05/11/2017 14:20 Instrument : msv13.i
Operator : JCK
Sample Info : 1203*V13STD001
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



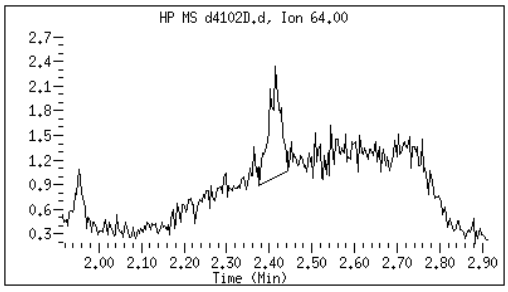
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2

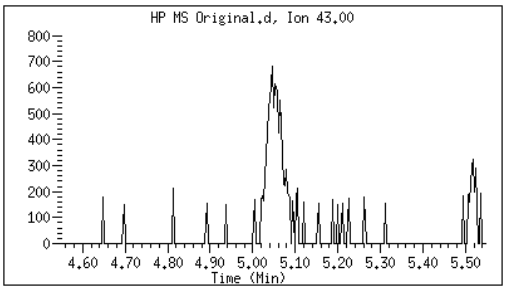


Electronic Signature Applied

User: jck2
Date: 05/11/2017 14:37



28 Vinyl Acetate CAS#: 108-05-4 Reason: M1



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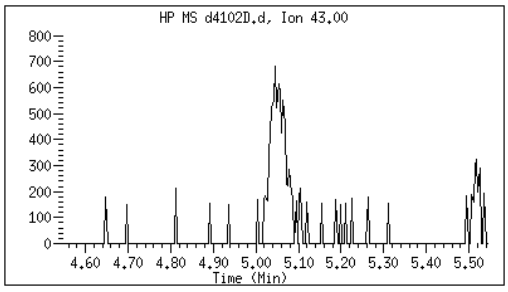
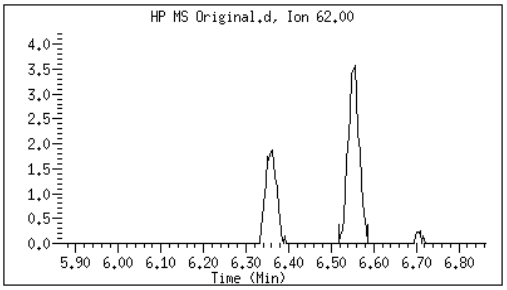
User: jck2
Date: 05/11/2017 14:37



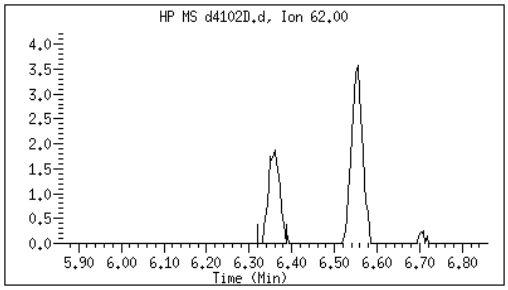
Original Final

51 1,2-Dichloroethane CAS#: 107-06-2 Reason: M3



Electronic Signature Applied

User: jck2
Date: 05/11/2017 14:37



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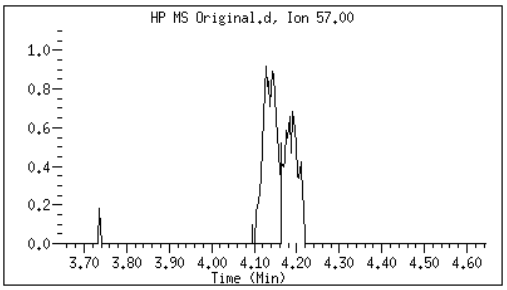
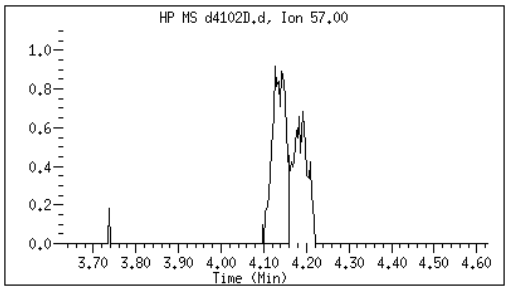
20 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 14:36



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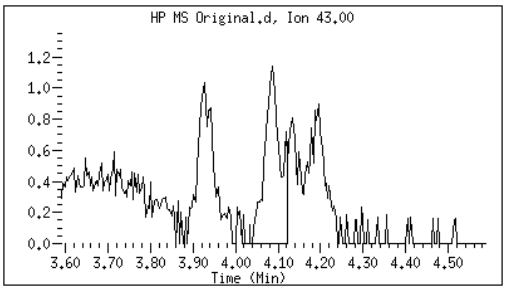
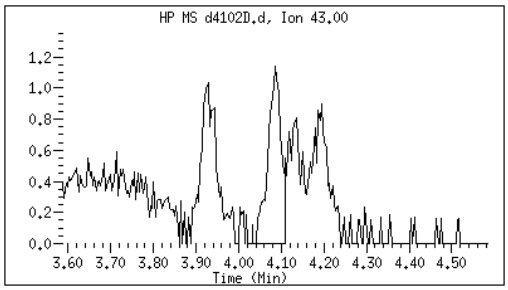
19 Methyl Acetate CAS#: 79-20-9 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 14:36



M1 - Target system did not integrate
M2 - Target system integrated incorrectly
M3 - Target system integrated incorrect peak

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4104D.d
Lab Smp Id: 1204 Client Smp ID: V13STD005
Inj Date : 11-MAY-2017 15:05
Operator : JCK Inst ID: msv13.i
Smp Info : 1204*V13STD005
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 15:05 Cal File: d4104D.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	12848	5.00000	5.67	
2	Chloromethane ++	50	1.870	1.870	(0.285)	10918	5.00000	5.25	
3	Vinyl Chloride +	62	1.956	1.956	(0.299)	12808	5.00000	5.46	
6	Bromomethane	94	2.279	2.279	(0.348)	8963	5.00000	5.36	
7	Chloroethane	64	2.414	2.414	(0.368)	8696	5.00000	5.06	(M2)
8	Trichlorofluoromethane	101	2.560	2.560	(0.391)	17831	5.00000	5.62	
10	1,1-Dichloroethene +	96	3.122	3.122	(0.476)	10792	5.00000	5.44	
11	Carbon Disulfide	76	3.160	3.160	(0.482)	28427	5.00000	5.02	
12	1,1,2Trichlotrifluoroethane	101	3.182	3.182	(0.486)	10823	5.00000	5.81	
13	Methyl Iodide	142	3.295	3.295	(0.503)	3804	5.00000	6.72	
14	Acrolein	56	3.549	3.549	(0.542)	4503	25.0000	23.5	
16	Methylene Chloride	49	3.853	3.853	(0.588)	15800	5.00000	5.53	
17	Acetone	43	3.928	3.928	(0.600)	10186	5.00000	6.14	
18	trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	14654	5.00000	5.30	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.089	4.089	(0.624)	11895	5.00000	5.69	8445
	20 Hexane	57	4.142	4.142	(0.632)	13984	5.00000	5.48	9088
	21 MTBE	73	4.187	4.187	(0.639)	36419	5.00000	5.18	8794
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	19942	5.00000	5.32	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	20749	25.0000	23.6	
	28 Vinyl Acetate	43	5.045	5.045	(0.770)	6442	5.00000	4.46	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	14791	5.00000	5.18	
M	75 Total 1,2-Dichloroethene	61				29445	10.0000	10.5	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	16508	5.00000	5.23	
	32 Cyclohexane	56	5.514	5.514	(0.842)	18662	5.00000	5.53	9281
	34 Bromochloromethane	128	5.521	5.521	(0.843)	6139	5.00000	5.36	
	35 Chloroform +	83	5.607	5.607	(0.856)	19778	5.00000	5.33	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	13704	5.00000	5.21	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	111627	50.0000	49.6	8462
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	17160	5.00000	5.31	
	44 2-Butanone	43	5.922	5.922	(0.904)	8618	5.00000	4.99	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	15029	5.00000	5.33	
	46 Benzene	78	6.159	6.159	(0.940)	47113	5.00000	5.18	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	66948	50.0000	49.8	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	16794	5.00000	5.38	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	473880	50.0000		
	55 Methyl Cyclohexane	83	6.698	6.698	(1.022)	19335	5.00000	5.57	8825
	56 Trichloroethene	130	6.706	6.706	(1.023)	12812	5.00000	5.23	
	57 Dibromomethane	93	7.096	7.096	(1.083)	7119	5.00000	5.07	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	11282	5.00000	5.06	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	14457	5.00000	5.05	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	16510	5.00000	5.25	9470
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	6753	5.00000	5.07	
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	17357	5.00000	4.94	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	459521	50.0000	50.1	
	69 Toluene +	91	7.973	7.973	(0.880)	52074	5.00000	5.25	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	10180	5.00000	5.27	
	73 4-methyl-2-pentanone	43	8.265	8.265	(0.913)	14666	5.00000	5.07	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	14696	5.00000	4.79	
M	82 1-3 Dichloropropene total	100				32053	10.0000	9.73	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	11386	5.00000	5.19	
	78 Dibromochloromethane	129	8.543	8.543	(0.943)	11332	5.00000	5.01	
	79 1,3-Dichloropropane	76	8.610	8.610	(0.951)	19365	5.00000	5.21	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	10659	5.00000	4.88	
	83 2-Hexanone	43	8.854	8.854	(0.978)	11800	5.00000	5.12	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	15933	5.00000	5.68	7927
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	188042	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	33449	5.00000	5.20	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	18152	5.00000	5.25	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.005)	11261	5.00000	5.21	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	43470	10.0000	10.2	
	90 o-Xylene	106	9.454	9.454	(1.044)	22084	5.00000	5.20	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				65554	15.0000	15.4	
91 Styrene	104	9.487	9.487	(1.048)	33428	5.00000	4.91	
92 Bromoform ++	173	9.514	9.514	(1.050)	8194	5.00000	4.60	
93 Isopropylbenzene	105	9.649	9.649	(1.065)	56019	5.00000	5.29	
$ 95 Bromofluorobenzene	174	9.836	9.836	(1.086)	146647	50.0000	48.3	
96 Bromobenzene	77	9.903	9.903	(0.942)	23811	5.00000	5.54	
97 n-Propylbenzene	91	9.907	9.907	(0.943)	61973	5.00000	5.57	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	15624	5.00000	5.43	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	43066	5.00000	5.56	
102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	43113	5.00000	5.47	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	18469	5.00000	5.48	
101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	3291	5.00000	4.72	
104 4-Chlorotoluene	91	10.113	10.113	(0.962)	37678	5.00000	5.46	
105 tert-butylbenzene	91	10.215	10.215	(0.972)	24640	5.00000	5.60	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	42503	5.00000	5.38	
108 sec-Butylbenzene	105	10.323	10.323	(0.982)	54120	5.00000	5.56	
110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	43958	5.00000	5.36	
113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	25377	5.00000	5.35	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	166841	50.0000		
115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	26037	5.00000	5.46	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	37052	5.00000	5.36	
118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	25300	5.00000	5.44	
119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	3355	5.00000	5.02	
120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	7129	5.00000	5.41	
122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	11346	5.00000	4.65	
124 Naphthalene	128	12.059	12.059	(1.147)	26403	5.00000	4.16	
125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	11537	5.00000	4.74	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4104D.d

Page 1

Date : 11-MAY-2017 15:05

Client ID: V13STD005

Instrument: msv13.i

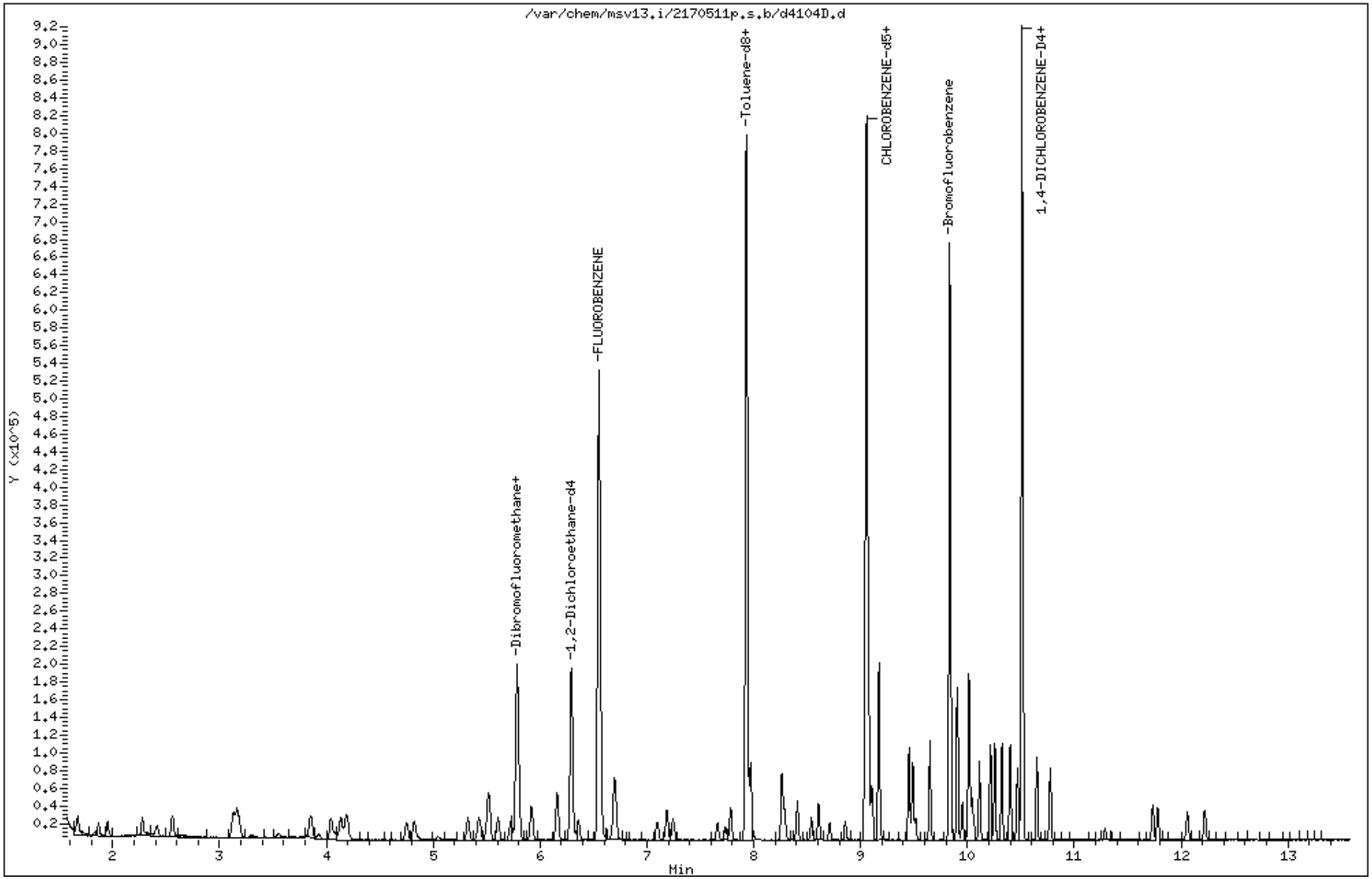
Sample Info: 1204*V13STD005

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

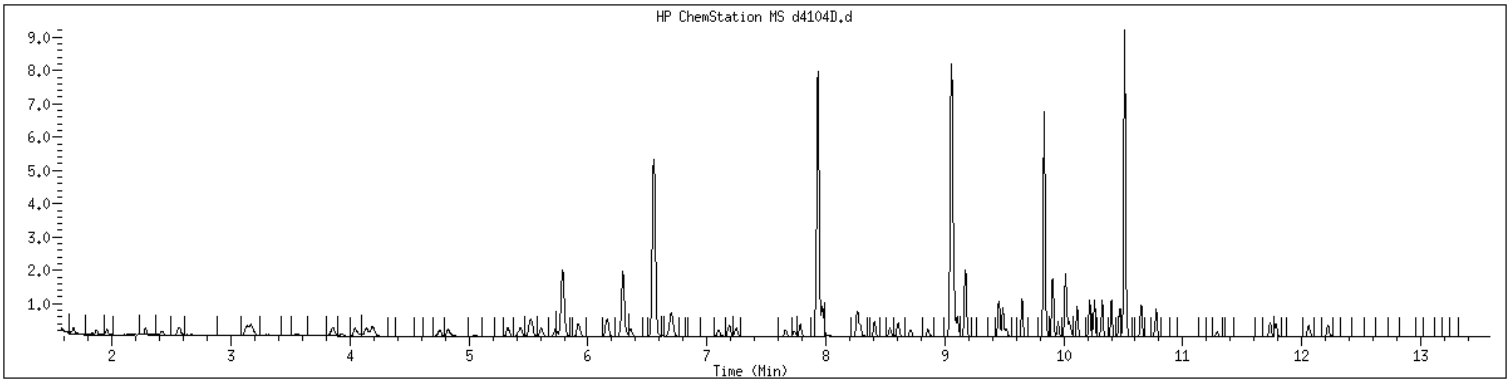
Column diameter: 0.25



Report Date: 05/12/2017 12:02

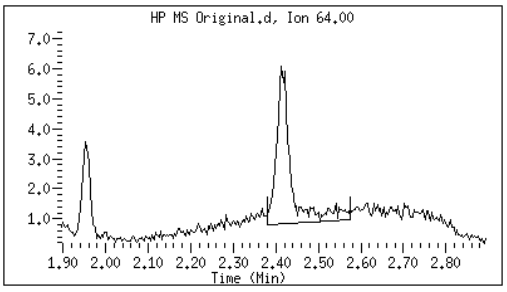
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1204 SampleType : CALIB_4
Injection Date: 05/11/2017 15:05 Instrument : msv13.i
Operator : JCK
Sample Info : 1204*V13STD005
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



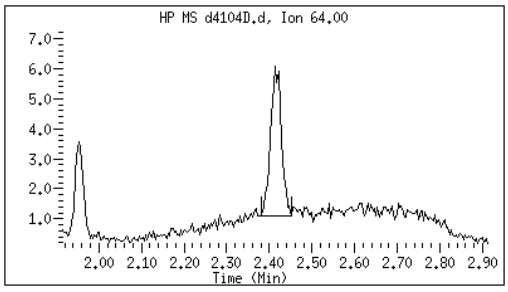
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 15:56



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4105D.d
Lab Smp Id: 1205 Client Smp ID: V13STD010
Inj Date : 11-MAY-2017 15:27
Operator : JCK Inst ID: msv13.i
Smp Info : 1205*V13STD010
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 15:27 Cal File: d4105D.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	23255	10.0000	10.2	
2 Chloromethane ++	50	1.870	1.870	(0.285)	20348	10.0000	9.72	
3 Vinyl Chloride +	62	1.952	1.952	(0.298)	23295	10.0000	9.87	
6 Bromomethane	94	2.279	2.279	(0.348)	16276	10.0000	9.67	
7 Chloroethane	64	2.414	2.414	(0.368)	14956	10.0000	9.01	(M2)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	31931	10.0000	9.99	
10 1,1-Dichloroethene +	96	3.130	3.130	(0.478)	19299	10.0000	9.66	
11 Carbon Disulfide	76	3.159	3.159	(0.482)	54166	10.0000	9.50	
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	19708	10.0000	10.5	
13 Methyl Iodide	142	3.291	3.291	(0.502)	8055	10.0000	9.20	
14 Acrolein	56	3.553	3.553	(0.542)	9073	50.0000	47.0	(M2)
16 Methylene Chloride	49	3.857	3.857	(0.589)	29911	10.0000	10.4	
17 Acetone	43	3.928	3.928	(0.600)	18088	10.0000	10.8	
18 trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	26939	10.0000	9.67	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	20236	10.0000	9.62	8664
	20 Hexane	57	4.134	4.134	(0.631)	24945	10.0000	9.71	9497
	21 MTBE	73	4.187	4.187	(0.639)	67840	10.0000	9.58	8938
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	36255	10.0000	9.61	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	45244	50.0000	51.0	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	13346	10.0000	9.18	
	29 cis-1,2-Dichloroethene	61	5.322	5.322	(0.812)	28017	10.0000	9.74	
M	75 Total 1,2-Dichloroethene	61				54956	20.0000	19.4	
	30 2,2-Dichloropropane	77	5.435	5.435	(0.830)	30064	10.0000	9.45	
	32 Cyclohexane	56	5.514	5.514	(0.842)	33929	10.0000	9.99	9380
	34 Bromochloromethane	128	5.529	5.529	(0.844)	11599	10.0000	10.1	
	35 Chloroform +	83	5.604	5.604	(0.855)	36160	10.0000	9.68	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	25633	10.0000	9.68	
$	40 Dibromofluoromethane	111	5.787	5.787	(0.883)	114398	50.0000	50.5	9258
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	31763	10.0000	9.76	
	44 2-Butanone	43	5.922	5.922	(0.904)	17429	10.0000	10.0	
	43 1,1-Dichloropropene	75	5.918	5.918	(0.903)	27706	10.0000	9.76	
	46 Benzene	78	6.162	6.162	(0.940)	86742	10.0000	9.48	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	67681	50.0000	50.0	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	29895	10.0000	9.51	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	477115	50.0000		
	55 Methyl Cyclohexane	83	6.694	6.694	(1.022)	34496	10.0000	9.87	9383
	56 Trichloroethene	130	6.709	6.709	(1.024)	23839	10.0000	9.66	
	57 Dibromomethane	93	7.099	7.099	(1.084)	13296	10.0000	9.40	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	21629	10.0000	9.64	
	60 Bromodichloromethane	83	7.249	7.249	(1.106)	26867	10.0000	9.32	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	30589	10.0000	9.66	9510
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	11713	10.0000	8.74	
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	32665	10.0000	9.24	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	464989	50.0000	50.0	
	69 Toluene +	91	7.969	7.969	(0.880)	96736	10.0000	9.63	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	18237	10.0000	9.31	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.912)	28193	10.0000	9.61	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	28114	10.0000	9.10	
M	82 1-3 Dichloropropene total	100				60779	20.0000	18.3	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	21179	10.0000	9.52	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	20754	10.0000	9.05	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	35843	10.0000	9.52	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	21055	10.0000	9.51	
	83 2-Hexanone	43	8.857	8.857	(0.978)	22192	10.0000	9.51	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	25831	10.0000	9.08	7435
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	190589	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	63087	10.0000	9.67	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	33522	10.0000	9.56	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	20447	10.0000	9.33	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	83625	20.0000	19.3	
	90 o-Xylene	106	9.453	9.453	(1.044)	41109	10.0000	9.55	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				124734	30.0000	28.8	
91 Styrene	104	9.487	9.487	(1.048)	64724	10.0000	9.38	
92 Bromoform ++	173	9.517	9.517	(1.051)	15974	10.0000	8.85	
93 Isopropylbenzene	105	9.648	9.648	(1.065)	103322	10.0000	9.62	
$ 95 Bromofluorobenzene	174	9.836	9.836	(1.086)	149162	50.0000	48.5	
96 Bromobenzene	77	9.907	9.907	(0.943)	44426	10.0000	9.78	
97 n-Propylbenzene	91	9.907	9.907	(0.943)	116118	10.0000	9.87	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	29497	10.0000	9.69	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	80932	10.0000	9.88	
102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	81841	10.0000	9.82	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	32612	10.0000	9.15	
101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	6877	10.0000	9.33	
104 4-Chlorotoluene	91	10.113	10.113	(0.962)	70801	10.0000	9.70	
105 tert-butylbenzene	91	10.218	10.218	(0.972)	45972	10.0000	9.88	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	80539	10.0000	9.64	
108 sec-Butylbenzene	105	10.323	10.323	(0.982)	102260	10.0000	9.94	
110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	83375	10.0000	9.61	
113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	47249	10.0000	9.43	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	176366	50.0000		
115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	47886	10.0000	9.49	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	71746	10.0000	9.81	
118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	47813	10.0000	9.72	
119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	6438	10.0000	9.11	
120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	13544	10.0000	9.72	
122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	24995	10.0000	8.95	
124 Naphthalene	128	12.059	12.059	(1.147)	63242	10.0000	8.08	
125 1,2,3-Trichlorobenzene	180	12.224	12.224	(1.163)	24732	10.0000	8.91	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4105D.d

Date : 11-MAY-2017 15:27

Client ID: V13STD010

Instrument: msv13.i

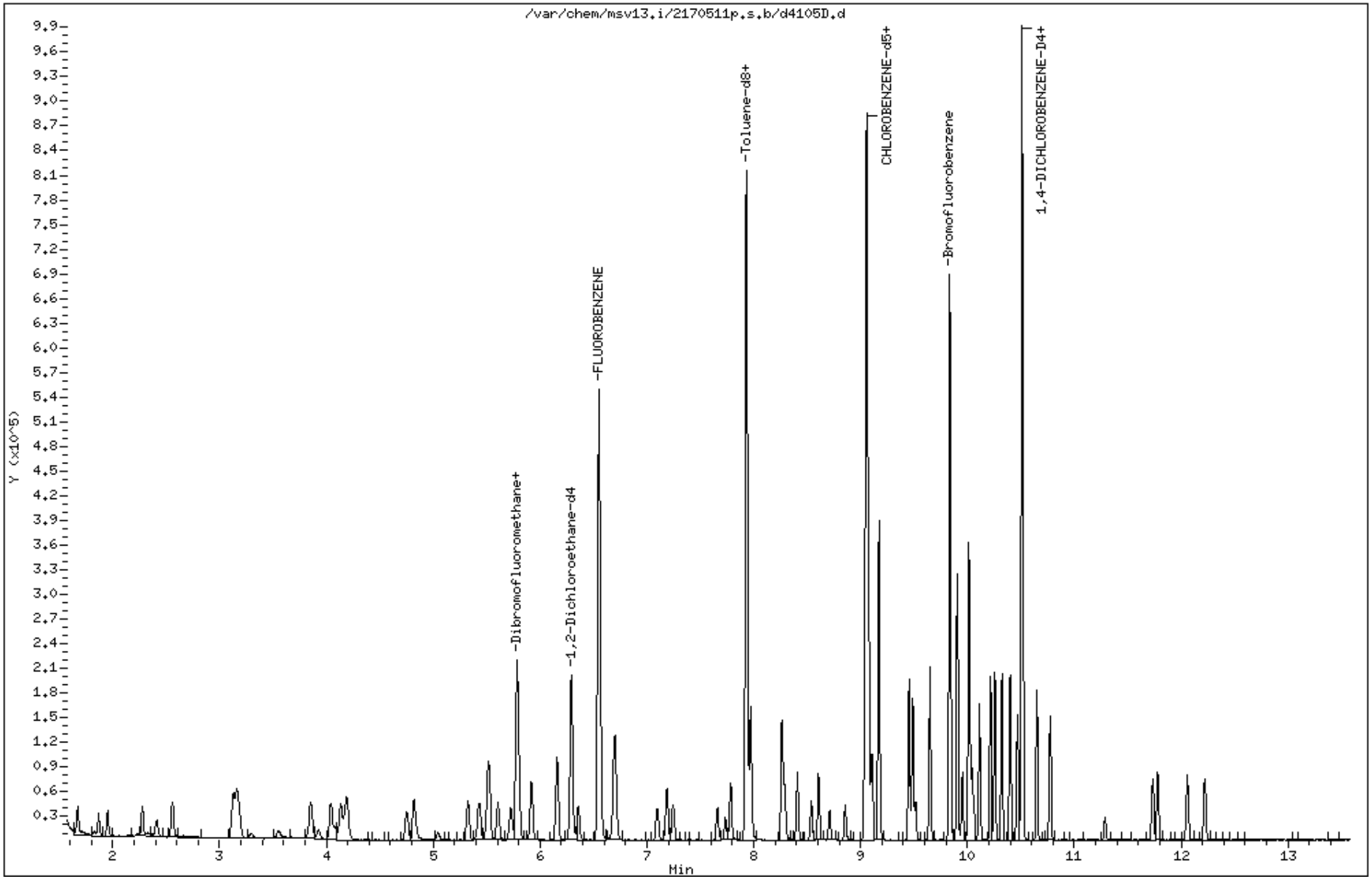
Sample Info: 1205*V13STD010

Purge Volume: 5.0

Operator: JCK

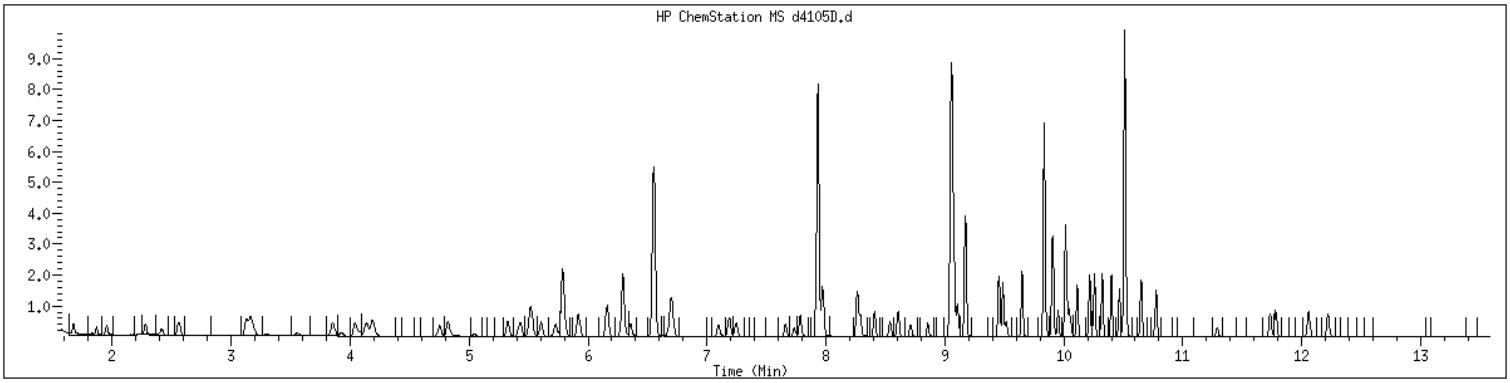
Column phase: RTX-VMS-30M

Column diameter: 0.25



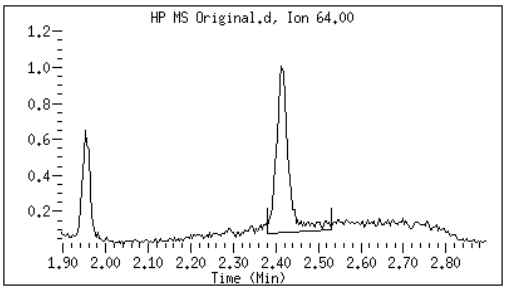
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1205 SampleType : CALIB_5
Injection Date: 05/11/2017 15:27 Instrument : msv13.i
Operator : JCK
Sample Info : 1205*V13STD010
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



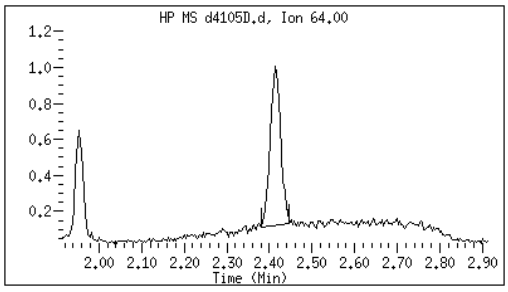
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2

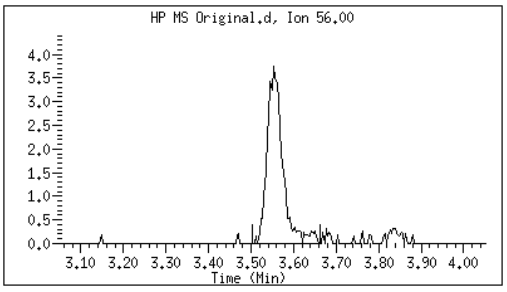


Electronic Signature Applied

User: jck2
Date: 05/11/2017 15:57

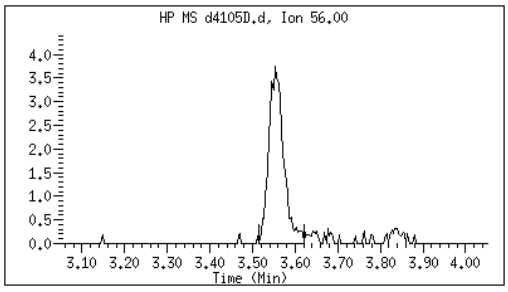


14 Acrolein CAS#: 107-02-8 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 15:57



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4106D.d
Lab Smp Id: 1206 Client Smp ID: V13STD020
Inj Date : 11-MAY-2017 15:49
Operator : JCK Inst ID: msv13.i
Smp Info : 1206*V13STD020
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 15:49 Cal File: d4106D.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.671	1.671	(0.255)	46214	20.0000	20.5	
2	Chloromethane ++	50	1.870	1.870	(0.285)	40090	20.0000	19.4	
3	Vinyl Chloride +	62	1.952	1.952	(0.298)	46825	20.0000	20.1	
6	Bromomethane	94	2.279	2.279	(0.348)	31257	20.0000	18.8	
7	Chloroethane	64	2.413	2.413	(0.368)	30204	20.0000	19.0	(M2)
8	Trichlorofluoromethane	101	2.560	2.560	(0.391)	63939	20.0000	20.3	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	39309	20.0000	20.0	
11	Carbon Disulfide	76	3.159	3.159	(0.482)	110364	20.0000	19.6	
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	38001	20.0000	20.6	
13	Methyl Iodide	142	3.294	3.294	(0.503)	19717	20.0000	16.2	
14	Acrolein	56	3.557	3.557	(0.543)	19082	100.000	100	
16	Methylene Chloride	49	3.857	3.857	(0.589)	52270	20.0000	18.4	
17	Acetone	43	3.928	3.928	(0.600)	31216	20.0000	18.9	
18	trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	53398	20.0000	19.4	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	38744	20.0000	18.7	9361
	20 Hexane	57	4.134	4.134	(0.631)	51633	20.0000	20.4	9479
	21 MTBE	73	4.187	4.187	(0.639)	135854	20.0000	19.5	8829
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	73084	20.0000	19.7	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	89533	100.000	102	
	28 Vinyl Acetate	43	5.045	5.045	(0.770)	30147	20.0000	21.0	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	55737	20.0000	19.7	
M	75 Total 1,2-Dichloroethene	61				109135	40.0000	39.1	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	60995	20.0000	19.5	
	32 Cyclohexane	56	5.514	5.514	(0.842)	67712	20.0000	20.2	9338
	34 Bromochloromethane	128	5.525	5.525	(0.843)	22754	20.0000	20.0	
	35 Chloroform +	83	5.607	5.607	(0.856)	70885	20.0000	19.2	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	51060	20.0000	19.6	
$	40 Dibromofluoromethane	111	5.787	5.787	(0.883)	110829	50.0000	49.6	9633
	41 1,1,1-Trichloroethane	97	5.802	5.802	(0.886)	62532	20.0000	19.5	
	44 2-Butanone	43	5.918	5.918	(0.903)	34021	20.0000	19.8	
	43 1,1-Dichloropropene	75	5.918	5.918	(0.903)	55484	20.0000	19.8	
	46 Benzene	78	6.162	6.162	(0.940)	175790	20.0000	19.5	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	66870	50.0000	50.1	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	59742	20.0000	19.3	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	470326	50.0000		
	55 Methyl Cyclohexane	83	6.694	6.694	(1.022)	70921	20.0000	20.6	9485
	56 Trichloroethene	130	6.709	6.709	(1.024)	47387	20.0000	19.5	
	57 Dibromomethane	93	7.096	7.096	(1.083)	27497	20.0000	19.7	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	42864	20.0000	19.4	
	60 Bromodichloromethane	83	7.249	7.249	(1.106)	54384	20.0000	19.1	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	60444	20.0000	19.4	9520
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	27491	20.0000	20.8	
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	68048	20.0000	19.5	
$	68 Toluene-d8	98	7.931	7.931	(0.876)	458470	50.0000	50.8	
	69 Toluene +	91	7.973	7.973	(0.880)	192958	20.0000	19.8	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	37569	20.0000	19.8	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.912)	56359	20.0000	19.8	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	59663	20.0000	19.6	
M	82 1-3 Dichloropropene total	100				127711	40.0000	39.1	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	42219	20.0000	19.6	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	43457	20.0000	19.5	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	71824	20.0000	19.7	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	42509	20.0000	19.8	
	83 2-Hexanone	43	8.854	8.854	(0.978)	44408	20.0000	19.6	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	53508	20.0000	19.4	9127
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	184868	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	125164	20.0000	19.8	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	68723	20.0000	20.2	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.005)	42395	20.0000	19.9	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	168211	40.0000	40.0	
	90 o-Xylene	106	9.453	9.453	(1.044)	84359	20.0000	20.2	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				252570	60.0000	60.2	
	91 Styrene	104	9.487	9.487	(1.048)	133614	20.0000	20.0	
	92 Bromoform ++	173	9.517	9.517	(1.051)	33206	20.0000	19.0	
	93 Isopropylbenzene	105	9.648	9.648	(1.065)	208754	20.0000	20.0	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	150234	50.0000	50.3	
	96 Bromobenzene	77	9.907	9.907	(0.943)	89359	20.0000	19.3	
	97 n-Propylbenzene	91	9.907	9.907	(0.943)	241432	20.0000	20.1	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	61627	20.0000	19.8	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	163573	20.0000	19.5	
	102 1,3,5-Trimethylbenzene	105	10.019	10.019	(0.953)	170921	20.0000	20.1	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	68665	20.0000	18.9	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	14184	20.0000	18.8	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	145665	20.0000	19.5	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	93549	20.0000	19.7	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	168530	20.0000	19.7	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	212079	20.0000	20.2	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	177335	20.0000	20.0	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	101561	20.0000	19.8	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	180198	50.0000		
	115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	100805	20.0000	19.6	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	151596	20.0000	20.3	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	99386	20.0000	19.8	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	14450	20.0000	20.0	
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	28118	20.0000	19.8	
	122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	54417	20.0000	18.3	
	124 Naphthalene	128	12.059	12.059	(1.147)	150894	20.0000	17.4	
	125 1,2,3-Trichlorobenzene	180	12.224	12.224	(1.163)	55259	20.0000	18.7	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4106D.d

Date : 11-MAY-2017 15:49

Client ID: V13STD020

Instrument: msv13.i

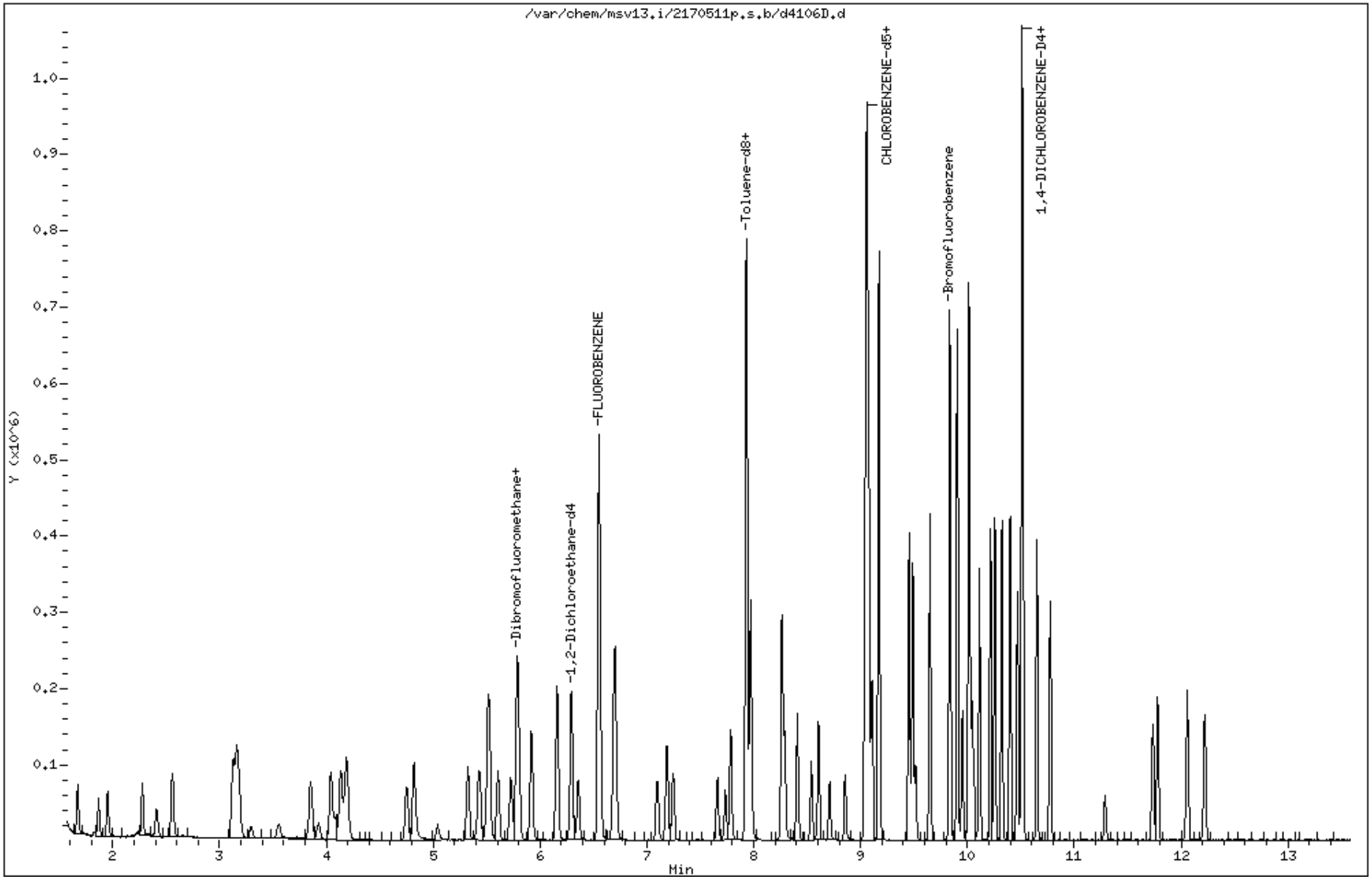
Sample Info: 1206*V13STD020

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

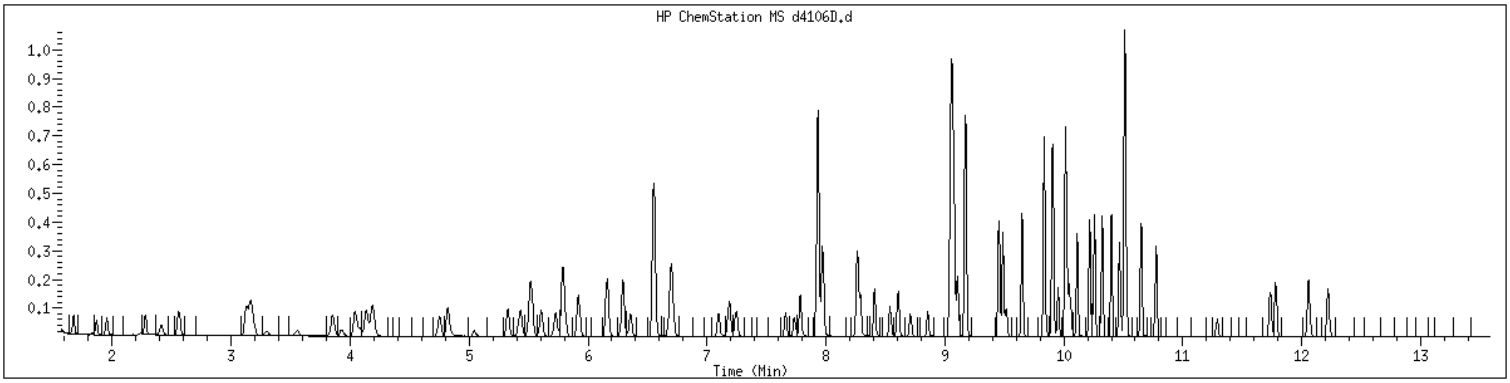
Column diameter: 0.25



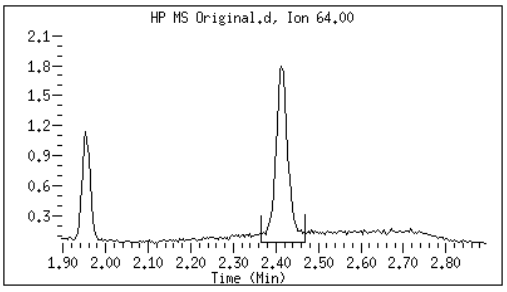
Report Date: 05/12/2017 12:02

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1206 SampleType : CALIB_6
Injection Date: 05/11/2017 15:49 Instrument : msv13.i
Operator : JCK
Sample Info : 1206*V13STD020
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b

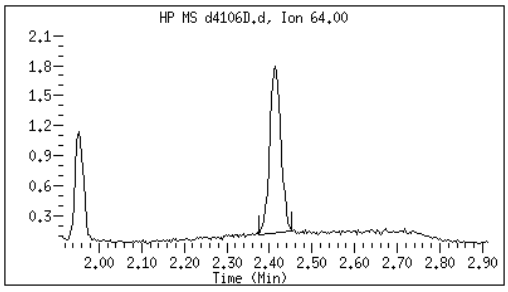


Original		Final
7 Chloroethane	CAS#: 75-00-3	Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 16:23



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4107D.d
Lab Smp Id: 1207 Client Smp ID: V13STD050
Inj Date : 11-MAY-2017 16:12
Operator : JCK Inst ID: msv13.i
Smp Info : 1207*V13STD050
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:12 Cal File: d4107D.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	120492	50.0000	52.4	
2 Chloromethane ++	50	1.870	1.870	(0.285)	105036	50.0000	49.8	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	122486	50.0000	51.5	
6 Bromomethane	94	2.279	2.279	(0.348)	80543	50.0000	47.5	
7 Chloroethane	64	2.410	2.410	(0.368)	81144	50.0000	50.7	(M2)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	169374	50.0000	52.6	
10 1,1-Dichloroethene +	96	3.130	3.130	(0.478)	101452	50.0000	50.4	
11 Carbon Disulfide	76	3.160	3.160	(0.482)	302346	50.0000	52.6	(M1)
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	98875	50.0000	52.4	
13 Methyl Iodide	142	3.295	3.295	(0.503)	73719	50.0000	47.5	
14 Acrolein	56	3.553	3.553	(0.542)	44281	250.000	227	
16 Methylene Chloride	49	3.853	3.853	(0.588)	145853	50.0000	50.3	
17 Acetone	43	3.928	3.928	(0.600)	79455	50.0000	47.2	
18 trans-1,2-Dichloroethene	61	4.044	4.044	(0.617)	143214	50.0000	51.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	99553	50.0000	47.0	9593
	20 Hexane	57	4.134	4.134	(0.631)	131529	50.0000	50.8	9523
	21 MTBE	73	4.187	4.187	(0.639)	358761	50.0000	50.3	8811
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	192406	50.0000	50.6	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	228544	250.000	256	
	28 Vinyl Acetate	43	5.038	5.038	(0.769)	72141	50.0000	49.2	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	149624	50.0000	51.6	
M	75 Total 1,2-Dichloroethene	61				292838	100.000	103	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	161554	50.0000	50.4	
	32 Cyclohexane	56	5.514	5.514	(0.842)	177646	50.0000	51.9	9373
	34 Bromochloromethane	128	5.525	5.525	(0.843)	58897	50.0000	50.7	
	35 Chloroform +	83	5.604	5.604	(0.855)	191589	50.0000	50.9	
	36 Carbon Tetrachloride	117	5.728	5.728	(0.874)	140778	50.0000	52.8	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	114098	50.0000	50.0	8231
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	169780	50.0000	51.8	
	44 2-Butanone	43	5.915	5.915	(0.903)	86039	50.0000	49.1	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	146665	50.0000	51.3	
	46 Benzene	78	6.159	6.159	(0.940)	470151	50.0000	51.0	
$	50 1,2-Dichloroethane-d4	67	6.294	6.294	(0.961)	68616	50.0000	50.3	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	156551	50.0000	49.4	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	480773	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.695	(1.022)	180915	50.0000	51.4	9283
	56 Trichloroethene	130	6.710	6.710	(1.024)	128068	50.0000	51.5	
	57 Dibromomethane	93	7.096	7.096	(1.083)	74375	50.0000	52.2	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	114336	50.0000	50.6	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	150675	50.0000	51.9	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	166205	50.0000	52.1	9557
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	72907	50.0000	54.0	
	67 cis-1,3-Dichloropropene	75	7.786	7.786	(1.188)	191917	50.0000	53.9	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	465716	50.0000	49.7	
	69 Toluene +	91	7.973	7.973	(0.880)	513551	50.0000	50.7	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	100893	50.0000	51.1	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.912)	146327	50.0000	49.5	
	74 trans-1,3-Dichloropropene	75	8.292	8.292	(1.265)	171956	50.0000	55.2	
M	82 1-3 Dichloropropene total	100				363873	100.000	109	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	114268	50.0000	51.0	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	125505	50.0000	54.3	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	195908	50.0000	51.6	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	117250	50.0000	52.6	
	83 2-Hexanone	43	8.854	8.854	(0.978)	117326	50.0000	49.9	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	140844	50.0000	49.1	8940
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	192153	50.0000		
	85 Chlorobenzene ++	112	9.068	9.068	(1.001)	336046	50.0000	51.1	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	183687	50.0000	51.9	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	115981	50.0000	52.5	
	89 p,m-Xylene	106	9.173	9.173	(1.013)	456552	100.000	105	
	90 o-Xylene	106	9.454	9.454	(1.044)	224767	50.0000	51.8	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				681319	150.000	156	
	91 Styrene	104	9.487	9.487	(1.048)	373439	50.0000	53.7	
	92 Bromoform ++	173	9.514	9.514	(1.050)	98581	50.0000	54.2	
	93 Isopropylbenzene	105	9.649	9.649	(1.065)	562223	50.0000	51.9	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	159624	50.0000	51.4	
	96 Bromobenzene	77	9.907	9.907	(0.943)	241546	50.0000	48.3	
	97 n-Propylbenzene	91	9.904	9.904	(0.942)	642292	50.0000	49.5	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	162430	50.0000	48.4	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	441206	50.0000	48.9	
	102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	461652	50.0000	50.3	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	196828	50.0000	50.1	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	41104	50.0000	50.6	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	397708	50.0000	49.5	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	249705	50.0000	48.7	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	464698	50.0000	50.5	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	565955	50.0000	49.9	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	482463	50.0000	50.5	
	113 1,3-Dichlorobenzene	146	10.470	10.470	(0.996)	278976	50.0000	50.5	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	194337	50.0000		
	115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	279758	50.0000	50.3	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	409077	50.0000	50.8	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	273381	50.0000	50.4	
	119 1,2-Dibromo-3-Chloropropane	157	11.291	11.291	(1.074)	40644	50.0000	52.2	
	120 Hexachlorobutadiene	225	11.737	11.737	(1.117)	75190	50.0000	49.0	
	122 1,2,4-Trichlorobenzene	180	11.782	11.782	(1.121)	164162	50.0000	49.9	
	124 Naphthalene	128	12.059	12.059	(1.147)	473159	50.0000	48.7	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	161568	50.0000	49.4	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4107D.d

Date : 11-MAY-2017 16:12

Client ID: V13STD050

Instrument: msv13.i

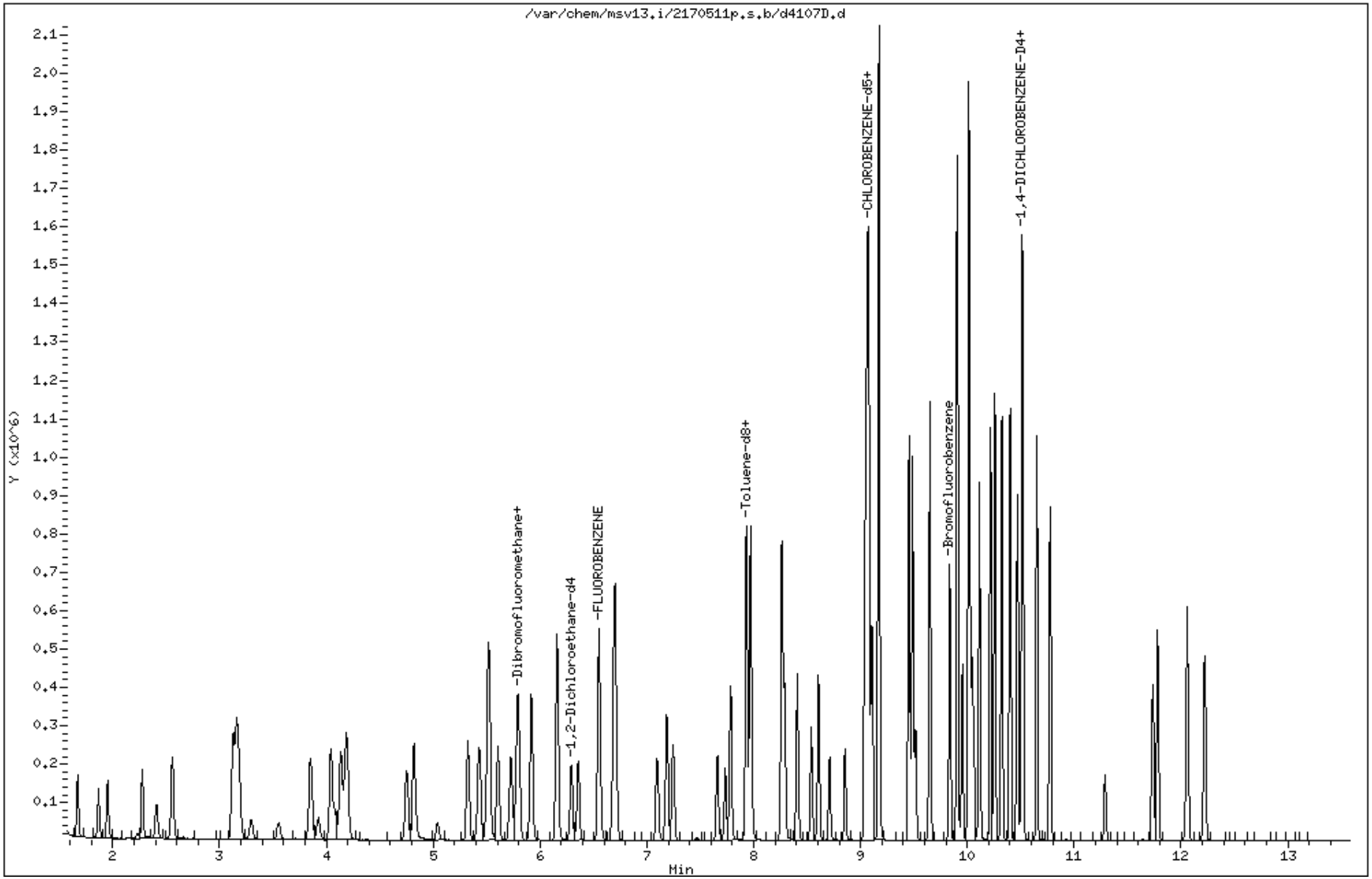
Sample Info: 1207*V13STD050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

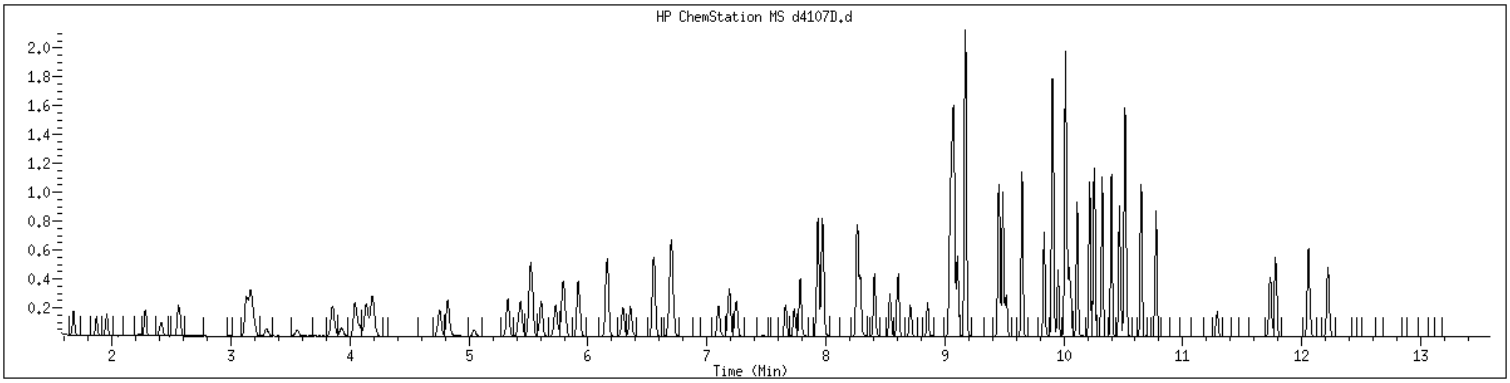
Column diameter: 0.25



Report Date: 05/12/2017 12:02

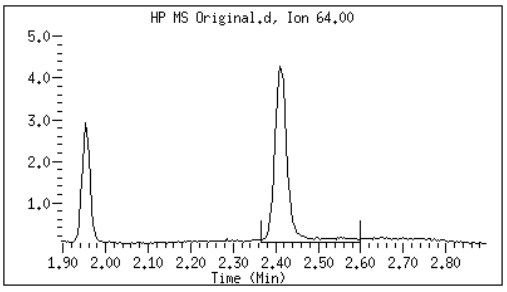
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1207 SampleType : CALIB_7
Injection Date: 05/11/2017 16:12 Instrument : msv13.i
Operator : JCK
Sample Info : 1207*V13STD050
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



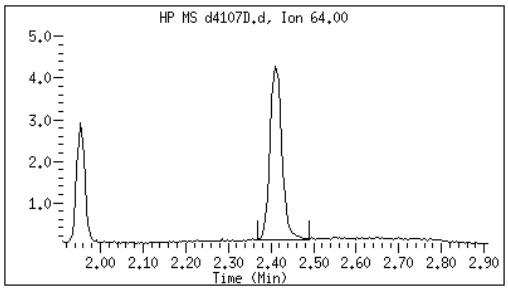
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2

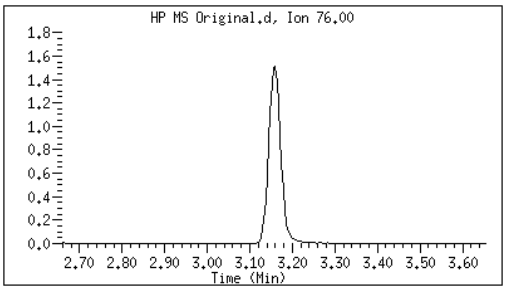


Electronic Signature Applied

User: jck2
Date: 05/11/2017 16:29

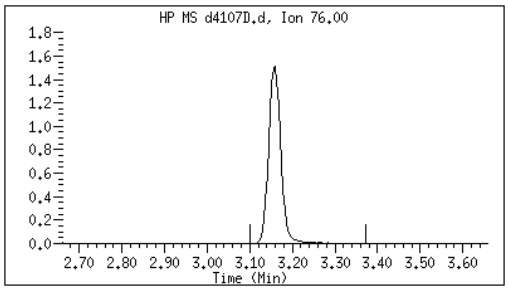


11 Carbon Disulfide CAS#: 75-15-0 Reason: M1



Electronic Signature Applied

User: jck2
Date: 05/11/2017 16:29



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4108D.d
Lab Smp Id: 1208 Client Smp ID: V13STD100
Inj Date : 11-MAY-2017 16:34
Operator : JCK Inst ID: msv13.i
Smp Info : 1208*V13STD100
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:34 Cal File: d4108D.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	241155	100.000	99.9	
2	Chloromethane ++	50	1.866	1.866	(0.285)	201880	100.000	91.2	
3	Vinyl Chloride +	62	1.953	1.953	(0.298)	243624	100.000	97.6	
6	Bromomethane	94	2.279	2.279	(0.348)	160727	100.000	90.3	
7	Chloroethane	64	2.402	2.402	(0.367)	167828	100.000	100	
8	Trichlorofluoromethane	101	2.556	2.556	(0.390)	333105	100.000	98.5	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	203609	100.000	96.4	
11	Carbon Disulfide	76	3.160	3.160	(0.482)	611353	100.000	101	
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	199016	100.000	100	
13	Methyl Iodide	142	3.295	3.295	(0.503)	174743	100.000	102	
14	Acrolein	56	3.553	3.553	(0.542)	96005	500.000	470	
16	Methylene Chloride	49	3.853	3.853	(0.588)	297496	100.000	97.7	
17	Acetone	43	3.928	3.928	(0.600)	163010	100.000	92.2	
18	trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	288620	100.000	98.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	208065	100.000	93.5	9644
	20 Hexane	57	4.138	4.138	(0.632)	285741	100.000	105	9550
	21 MTBE	73	4.187	4.187	(0.639)	726886	100.000	97.1	8775
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	387659	100.000	97.2	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	463689	500.000	495	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	155756	100.000	101	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	302236	100.000	99.3	
M	75 Total 1,2-Dichloroethene	61				590856	200.000	197	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	334041	100.000	99.3	
	32 Cyclohexane	56	5.517	5.517	(0.842)	363699	100.000	101	9367
	34 Bromochloromethane	128	5.529	5.529	(0.844)	118451	100.000	97.2	
	35 Chloroform +	83	5.604	5.604	(0.855)	386438	100.000	97.8	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	291051	100.000	104	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	121332	50.0000	50.6	6727
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	342247	100.000	99.4	
	44 2-Butanone	43	5.915	5.915	(0.903)	178800	100.000	97.2	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	296855	100.000	98.9	
	46 Benzene	78	6.162	6.162	(0.940)	947648	100.000	97.9	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	71452	50.0000	49.9	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	319907	100.000	96.3	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	504579	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.695	(1.022)	380483	100.000	103	9443
	56 Trichloroethene	130	6.710	6.710	(1.024)	255762	100.000	98.0	
	57 Dibromomethane	93	7.096	7.096	(1.083)	151315	100.000	101	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	234338	100.000	98.7	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	312005	100.000	102	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	340293	100.000	102	9577
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	149251	100.000	105	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	395050	100.000	106	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	489913	50.0000	49.3	
	69 Toluene +	91	7.973	7.973	(0.880)	1038831	100.000	96.8	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	210410	100.000	101	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.912)	302886	100.000	96.7	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	361830	100.000	111	
M	82 1-3 Dichloropropene total	100				756880	200.000	216	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.928)	234782	100.000	98.9	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	264685	100.000	108	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	399674	100.000	99.4	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	242218	100.000	103	
	83 2-Hexanone	43	8.854	8.854	(0.978)	243604	100.000	97.8	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	298481	100.000	98.3	7837
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	203484	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	680422	100.000	97.7	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	373776	100.000	99.8	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	237563	100.000	102	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	921198	200.000	199	
	90 o-Xylene	106	9.454	9.454	(1.044)	460243	100.000	100	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				1381441	300.000	299	
	91 Styrene	104	9.487	9.487	(1.048)	769592	100.000	105	
	92 Bromoform ++	173	9.517	9.517	(1.051)	212747	100.000	110	
	93 Isopropylbenzene	105	9.648	9.648	(1.065)	1159950	100.000	101	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	168495	50.0000	51.3	
	96 Bromobenzene	77	9.907	9.907	(0.943)	501293	100.000	93.9	
	97 n-Propylbenzene	91	9.903	9.903	(0.942)	1329907	100.000	96.2	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	336873	100.000	94.2	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	910064	100.000	94.6	
	102 1,3,5-Trimethylbenzene	105	10.020	10.020	(0.953)	959700	100.000	98.0	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	406872	100.000	97.2	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	91032	100.000	105	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	811630	100.000	94.7	
	105 tert-butylbenzene	91	10.215	10.215	(0.972)	512206	100.000	93.7	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	966401	100.000	98.4	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	1175829	100.000	97.3	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	1016147	100.000	99.7	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	584964	100.000	99.4	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	207221	50.0000		
	115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	576176	100.000	97.2	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	869166	100.000	101	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	563643	100.000	97.5	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	90104	100.000	109	
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	165389	100.000	101	
	122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	357563	100.000	101	
	124 Naphthalene	128	12.059	12.059	(1.147)	1050981	100.000	100	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	352746	100.000	100	

Data File: /var/chem/msv13.i/2170511p.s.b/d4108D.d

Page 1

Date : 11-MAY-2017 16:34

Client ID: V13STD100

Instrument: msv13.i

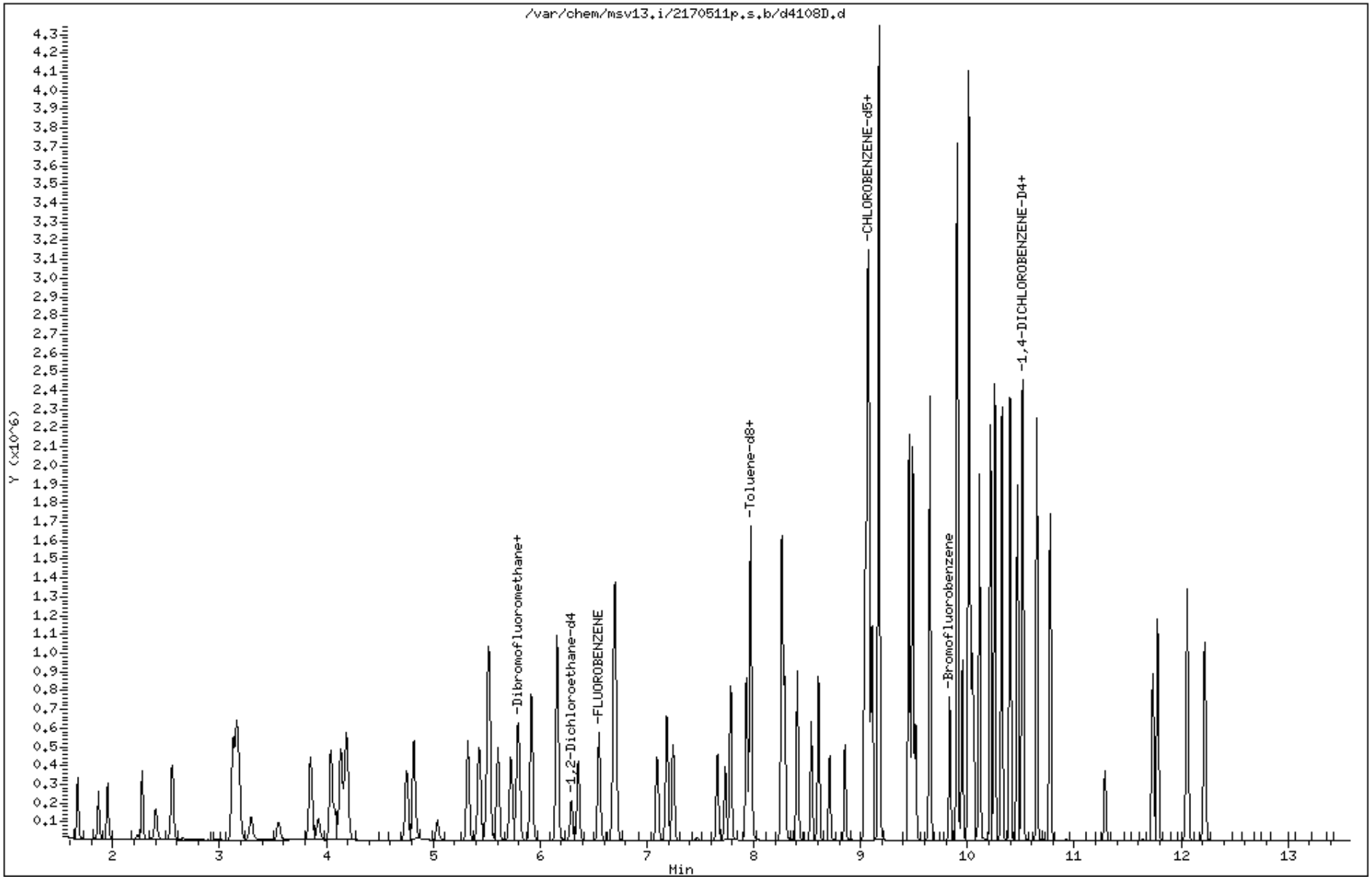
Sample Info: 1208*V13STD100

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

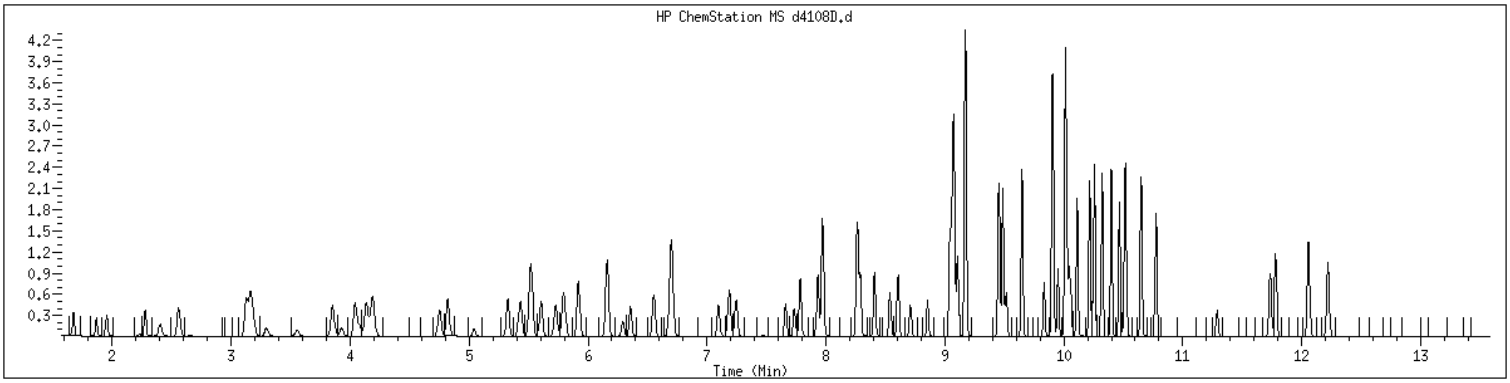
Column diameter: 0.25



Report Date: 05/12/2017 12:02

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1208 SampleType : CALIB_8
Injection Date: 05/11/2017 16:34 Instrument : msv13.i
Operator : JCK
Sample Info : 1208*V13STD100
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4109D.d
Lab Smp Id: 1209 Client Smp ID: V13STD200
Inj Date : 11-MAY-2017 16:56
Operator : JCK Inst ID: msv13.i
Smp Info : 1209*V13STD200
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.671	1.671	(0.255)	480826	200.000	197	
2 Chloromethane ++	50	1.866	1.866	(0.285)	404350	200.000	181	
3 Vinyl Chloride +	62	1.952	1.952	(0.298)	481708	200.000	191	
6 Bromomethane	94	2.275	2.275	(0.347)	331561	200.000	184	
7 Chloroethane	64	2.395	2.395	(0.365)	337855	200.000	200	(A)
8 Trichlorofluoromethane	101	2.556	2.556	(0.390)	666955	200.000	195	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	408906	200.000	191	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	1251548	200.000	205	(A)
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	397517	200.000	198	
13 Methyl Iodide	142	3.294	3.294	(0.503)	467983	200.000	262	(AM1)
14 Acrolein	56	3.553	3.553	(0.542)	199442	1000.00	965	
16 Methylene Chloride	49	3.853	3.853	(0.588)	542962	200.000	176	
17 Acetone	43	3.924	3.924	(0.599)	313630	200.000	175	
18 trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	583977	200.000	196	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	413806	200.000	184	9414
	20 Hexane	57	4.134	4.134	(0.631)	560480	200.000	204	9519(A)
	21 MTBE	73	4.187	4.187	(0.639)	1453940	200.000	192	8744
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	774520	200.000	192	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	956309	1000.00	1010	(A)
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	311411	200.000	200	(A)
	29 cis-1,2-Dichloroethene	61	5.322	5.322	(0.812)	607724	200.000	197	
M	75 Total 1,2-Dichloroethene	61				1191701	400.000	393	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	674534	200.000	198	
	32 Cyclohexane	56	5.517	5.517	(0.842)	725604	200.000	200	9420
	34 Bromochloromethane	128	5.525	5.525	(0.843)	229726	200.000	186	
	35 Chloroform +	83	5.604	5.604	(0.855)	777571	200.000	195	
	36 Carbon Tetrachloride	117	5.731	5.731	(0.875)	593932	200.000	210	(A)
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	122591	50.0000	50.6	5123
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	694126	200.000	199	
	44 2-Butanone	43	5.915	5.915	(0.903)	353958	200.000	190	
	43 1,1-Dichloropropene	75	5.922	5.922	(0.904)	599947	200.000	198	
	46 Benzene	78	6.162	6.162	(0.940)	1901116	200.000	194	
$	50 1,2-Dichloroethane-d4	67	6.297	6.297	(0.961)	73498	50.0000	50.8	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	635536	200.000	189	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	510351	50.0000		
	55 Methyl Cyclohexane	83	6.694	6.694	(1.022)	750616	200.000	201	9420(A)
	56 Trichloroethene	130	6.706	6.706	(1.023)	516982	200.000	196	
	57 Dibromomethane	93	7.096	7.096	(1.083)	301916	200.000	200	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	468931	200.000	195	
	60 Bromodichloromethane	83	7.245	7.245	(1.106)	637384	200.000	207	(A)
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	684252	200.000	202	9596(A)
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	298881	200.000	208	(A)
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	809119	200.000	214	(A)
$	68 Toluene-d8	98	7.931	7.931	(0.876)	494769	50.0000	49.4	
	69 Toluene +	91	7.973	7.973	(0.880)	2075446	200.000	192	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	421581	200.000	200	(A)
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.912)	604806	200.000	192	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	747504	200.000	226	(A)
M	82 1-3 Dichloropropene total	100				1556623	400.000	440	0
	76 1,1,2-Trichloroethane	97	8.411	8.411	(0.929)	467363	200.000	195	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	541348	200.000	219	(A)
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	798121	200.000	197	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	490462	200.000	206	(A)
	83 2-Hexanone	43	8.854	8.854	(0.978)	493341	200.000	196	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	657403	200.000	215	7200(A)
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	205098	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	1331410	200.000	190	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	732980	200.000	194	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	468811	200.000	199	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	1798717	400.000	386	
	90 o-Xylene	106	9.453	9.453	(1.044)	904038	200.000	195	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				2702755	600.000	581	
	91 Styrene	104	9.487	9.487	(1.048)	1534110	200.000	207	(A)
	92 Bromoform ++	173	9.517	9.517	(1.051)	435954	200.000	224	(A)
	93 Isopropylbenzene	105	9.648	9.648	(1.065)	2277439	200.000	197	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	173408	50.0000	52.3	
	96 Bromobenzene	77	9.907	9.907	(0.943)	1013806	200.000	187	
	97 n-Propylbenzene	91	9.907	9.907	(0.943)	2619739	200.000	186	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	666096	200.000	183	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	1804636	200.000	184	
	102 1,3,5-Trimethylbenzene	105	10.019	10.019	(0.953)	1870569	200.000	188	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	820327	200.000	193	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	192069	200.000	218	(A)
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	1598354	200.000	183	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	1010369	200.000	182	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	1910089	200.000	191	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	2287076	200.000	186	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	1987963	200.000	192	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	1149114	200.000	192	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	210667	50.0000		
	115 1,4-Dichlorobenzene	146	10.522	10.522	(1.001)	1145587	200.000	190	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	1718265	200.000	197	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	1125313	200.000	192	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	186104	200.000	221	(A)
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	326461	200.000	196	
	122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	724566	200.000	201	(A)
	124 Naphthalene	128	12.059	12.059	(1.147)	2192258	200.000	205	(A)
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	724250	200.000	202	(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M1- Compound response manually integrated because Target system did not integrate.

Data File: /var/chem/msv13.i/2170511p.s.b/d4109D.d

Date : 11-MAY-2017 16:56

Client ID: V13STD200

Instrument: msv13.i

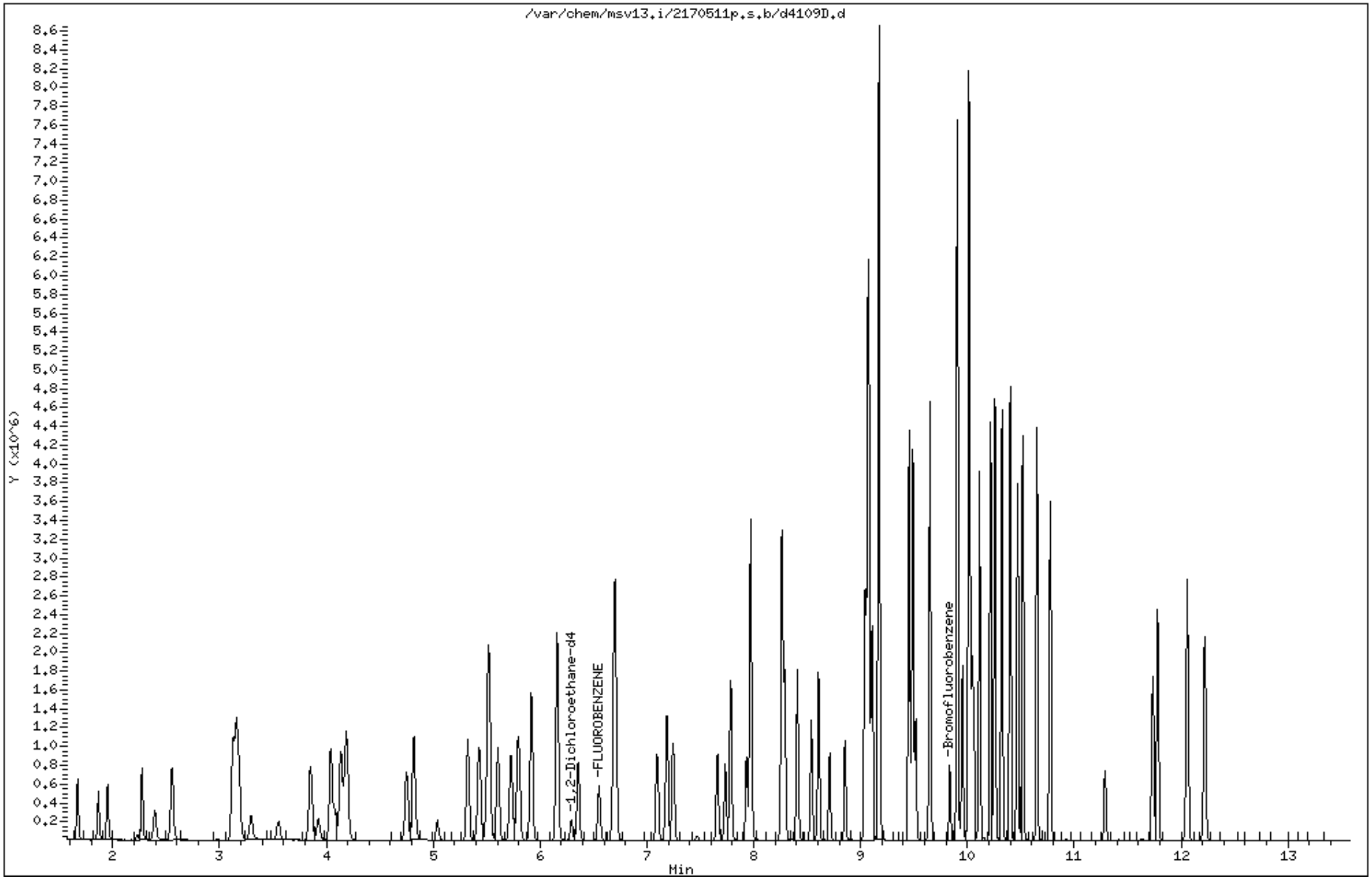
Sample Info: 1209*V13STD200

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

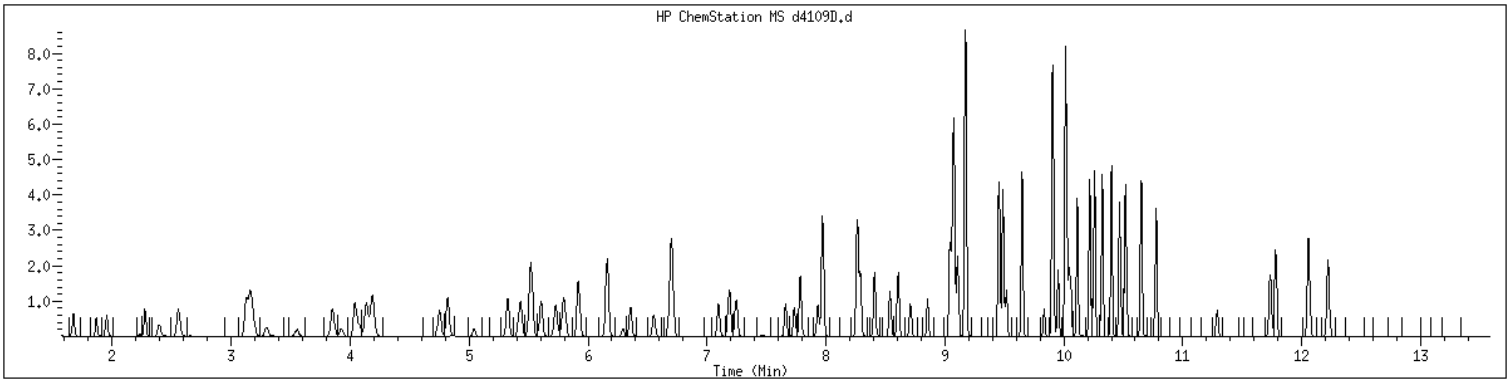
Column diameter: 0.25



Report Date: 05/12/2017 12:02

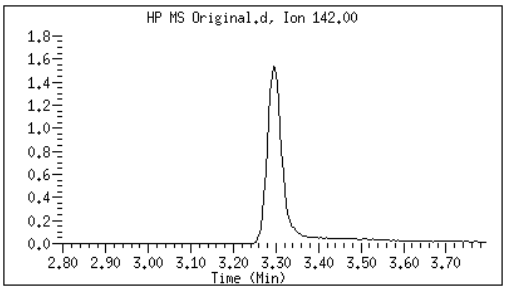
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1209 SampleType : CALIB_9
Injection Date: 05/11/2017 16:56 Instrument : msv13.i
Operator : JCK
Sample Info : 1209*V13STD200
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



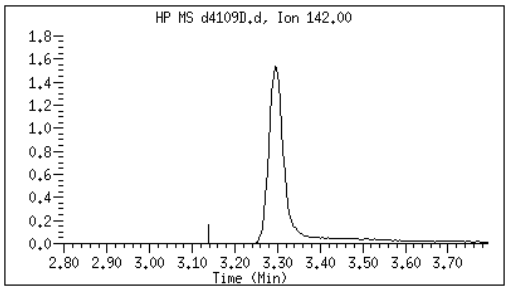
Original Final

13 Methyl Iodide CAS#: 74-88-4 Reason: M1



Electronic Signature Applied

User: jck2
Date: 05/11/2017 17:29



M1 - Target system did not integrate

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1		
Report No:	217051110		Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10		
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50		
Calib. Date 1:	05/05/17	Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200		
Calib. Date 2:	05/05/17	Time 2: 1332	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.635	0.520	0.570	0.561	0.601	0.583	0.612	0.583			6.460	A
1,1,1-Trichloroethane			0.388	0.316	0.388	0.387	0.405	0.393	0.403	0.383			7.872	A
1,1,2,2-Tetrachloroethane			1.204	1.087	1.124	1.081	1.103	1.088	1.098	1.112			3.852	A
1,1,2-Trichloroethane			0.621	0.550	0.570	0.578	0.606	0.601	0.654	0.597			5.848	A
1,1-Dichloroethane			0.480	0.410	0.472	0.479	0.504	0.477	0.436	0.465			6.836	A
1,1-Dichloroethene			0.183	0.135	0.166	0.160	0.164	0.151	0.160	0.160			9.152	A
1,1-Dichloropropene			0.306	0.220	0.297	0.305	0.343	0.343	0.355	0.310			14.77	A
1,2,3-Trichlorobenzene (RSP)			3345	11100	27878	60299	167545	341487	722816	0.862	0.114		0.992	L
1,2,3-Trichlorobenzene			0.691	0.474	0.579	0.604	0.681	0.711	0.863					
1,2,3-Trichloropropane			1.473	1.313	1.414	1.373	1.445	1.462	1.486	1.424			4.375	A
1,2,4-Trichlorobenzene (RSP)			3882	11133	28084	59851	168927	354038	745871	0.891	0.118		0.992	L
1,2,4-Trichlorobenzene			0.802	0.475	0.584	0.600	0.687	0.737	0.890					
1,2,4-Trimethylbenzene			2.247	1.903	2.556	2.570	2.734	2.650	2.692	2.479			12.09	A
1,2-Dibromo-3-chloropropane			0.159	0.176	0.185	0.175	0.183	0.189	0.218	0.184			9.765	A
1,2-Dibromoethane			0.554	0.509	0.575	0.565	0.605	0.603	0.660	0.582			8.173	A
1,2-Dichlorobenzene			1.442	1.177	1.333	1.293	1.348	1.326	1.392	1.330			6.246	A
1,2-Dichloroethane			0.429	0.364	0.373	0.366	0.382	0.371	0.378	0.380			5.860	A
1,2-Dichloroethane-d4			0.167	0.172	0.169	0.170	0.169	0.170	0.165	0.169			1.403	A
1,2-Dichloroethene (total)			0.356	0.271	0.337	0.331	0.362	0.360	0.330	0.335			9.384	A
1,2-Dichloropropane			0.253	0.221	0.258	0.253	0.273	0.269	0.274	0.257			7.058	A
1,3,5-Trimethylbenzene			2.287	1.836	2.411	2.461	2.621	2.512	2.498	2.375			10.89	A
1,3-Dichlorobenzene			1.545	1.200	1.426	1.351	1.422	1.402	1.439	1.398			7.491	A
1,3-Dichloropropane			0.973	0.942	1.060	1.052	1.129	1.110	1.217	1.069			8.777	A
1,3-Dichloropropylene			0.356	0.310	0.363	0.375	0.420	0.421	0.435	0.383			11.69	A
1,4 Dioxane				0.002	0.002	0.002	0.002	0.002	0.002	0.002			6.031	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217051110		Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17	Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17	Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	1201	1202	1203	1204	1205	1206	1207	1208	1209	$\overline{RF}$ / b / A	m / B	C	FIT	TYPE
1,4-Dichlorobenzene			1.794	1.270	1.417	1.351	1.412	1.368	1.420	1.433			11.69	A
1-Bromo-2-Chloroethane			0.379	0.338	0.371	0.370	0.396	0.388	0.394	0.376			5.270	A
1-Chlorohexane (RSP)			4203	14315	40501	83069	237528	485734	971106	0.722	0.013		0.995	W
1-Chlorohexane			0.621	0.441	0.599	0.593	0.687	0.699	0.747					
2,2-Dichloropropane			0.386	0.297	0.378	0.375	0.404	0.400	0.408	0.378			10.02	A
2-Butanone			0.161	0.163	0.172	0.170	0.185	0.184	0.191	0.175			6.489	A
2-Chlorotoluene			2.553	1.948	2.435	2.474	2.666	2.599	2.644	2.474			9.989	A
2-Hexanone			0.460	0.456	0.493	0.499	0.565	0.588	0.641	0.529			13.29	A
4-Bromofluorobenzene			0.599	0.596	0.598	0.592	0.606	0.616	0.603	0.601			1.300	A
4-Chlorotoluene			2.290	1.830	2.220	2.191	2.386	2.406	2.538	2.266			9.973	A
4-Isopropyltoluene			2.072	1.669	2.263	2.268	2.465	2.442	2.501	2.240			13.08	A
4-Methyl-2-pentanone			0.614	0.574	0.595	0.615	0.694	0.721	0.788	0.657			11.92	A
Acetone			0.188	0.169	0.153	0.154	0.151	0.151	0.152	0.160			8.691	A
Acrolein			0.014	0.012	0.013	0.014	0.014	0.014	0.016	0.014			8.865	A
Acrylonitrile			0.090	0.092	0.092	0.101	0.102	0.098	0.096	0.096			4.849	A
Benzene			0.959	0.797	0.979	0.989	1.048	1.020	1.041	0.976			8.734	A
Bromobenzene			1.795	1.424	1.620	1.610	1.683	1.649	1.670	1.636			6.828	A
Bromochloromethane			0.111	0.099	0.115	0.111	0.109	0.101	0.099	0.106			6.332	A
Bromodichloromethane			0.345	0.316	0.350	0.346	0.368	0.360	0.367	0.350			5.088	A
Bromoform			0.478	0.426	0.436	0.430	0.461	0.461	0.470	0.452			4.632	A
Bromomethane (RSP)			2057	5130	15541	28202	79796	159518	329925	0.090	0.000		0.998	W
Bromomethane			0.121	0.064	0.093	0.083	0.092	0.090	0.090					
Carbon disulfide (RSP)			11996	32679	86485	172907	455635	894083	1937226	0.520	-0.002		0.998	W
Carbon disulfide			0.706	0.410	0.516	0.506	0.526	0.503	0.530					
Carbon tetrachloride			0.294	0.249	0.314	0.317	0.341	0.335	0.350	0.314			10.94	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217051110		Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17	Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17	Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Chlorobenzene			1.701	1.370	1.562	1.522	1.589	1.514	1.510	1.538			6.468	A
Chloroethane			0.146	0.183	0.181	0.157	0.154	0.143	0.144	0.158			10.79	A
Chloroform			0.447	0.408	0.449	0.453	0.471	0.451	0.446	0.446			4.248	A
Chloromethane			0.252	0.167	0.211	0.189	0.186	0.181	0.180	0.195			14.52	A
Chloroprene (RSP)			4533	18411	48580	105339	323501	658501	1377145	0.373	0.015		0.996	W
Chloroprene			0.267	0.231	0.290	0.308	0.373	0.370	0.377					
Cyclohexane (RSP)			5437	18392	60316	130128	375949	756009	1589625	0.431	0.015		0.997	W
Cyclohexane			0.320	0.231	0.360	0.381	0.434	0.425	0.435					
Dibromochloromethane			0.621	0.566	0.615	0.618	0.674	0.685	0.758	0.648			9.671	A
Dibromofluoromethane			0.254	0.263	0.257	0.260	0.257	0.255	0.232	0.254			3.954	A
Dibromomethane			0.166	0.155	0.163	0.163	0.170	0.165	0.165	0.164			2.740	A
Dichlorodifluoromethane			0.267	0.203	0.251	0.250	0.261	0.245	0.243	0.246			8.438	A
Ethylbenzene			0.804	0.647	0.782	0.779	0.833	0.793	0.791	0.776			7.663	A
Hexachlorobutadiene				0.221	0.281	0.270	0.281	0.287	0.340	0.280			13.62	A
Isobutyl alcohol				0.008	0.011	0.010	0.011	0.011	0.011	0.011			10.85	A
Isopropylbenzene (Cumene) (			12369	48453	138755	297649	828151	1628942	3032269	2.341	0.011		0.998	W
Isopropylbenzene (Cumene)			1.828	1.492	2.053	2.126	2.397	2.343	2.333					
Methyl Acetate			0.224	0.223	0.225	0.217	0.225	0.214	0.201	0.218			3.956	A
Methyl iodide (RSP)			805	2262	9589	18651	67934	169998	422952	0.117	0.165		0.990	L
Methyl iodide			0.047	0.028	0.057	0.055	0.078	0.096	0.116					
Methylcyclohexane			0.331	0.237	0.332	0.336	0.374	0.368	0.367	0.335			14.10	A
Methylene chloride			0.359	0.300	0.288	0.282	0.285	0.271	0.282	0.295			9.944	A
Naphthalene (RSP)			8192	28823	74077	168458	520416	1091856	2323190	2.786	0.134		0.991	L
Naphthalene			1.691	1.230	1.539	1.688	2.116	2.274	2.773					
Styrene (RSP)			7981	32589	91391	199707	545885	1078634	2028936	1.559	0.012		0.998	W

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

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Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

				GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217051110	Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)	Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17 Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Styrene			1.179	1.004	1.352	1.427	1.580	1.551	1.561					
Tetrachloroethene			0.529	0.360	0.439	0.436	0.465	0.449	0.478	0.451			11.39	A
Toluene			2.650	2.186	2.445	2.438	2.601	2.548	2.763	2.519			7.379	A
Toluene-d8			2.339	2.303	2.324	2.305	2.331	2.356	2.555	2.359			3.752	A
Trichloroethene			0.261	0.213	0.263	0.255	0.267	0.253	0.249	0.252			7.222	A
Trichlorofluoromethane			0.284	0.241	0.297	0.291	0.300	0.284	0.300	0.285			7.238	A
Trichlorotrifluoroethane			0.162	0.128	0.170	0.169	0.178	0.169	0.178	0.165			10.37	A
Vinyl acetate			0.140	0.125	0.143	0.150	0.166	0.174	0.174	0.153			12.21	A
Vinyl chloride			0.269	0.187	0.250	0.246	0.259	0.248	0.254	0.245			10.91	A
Xylene (total) (RSP)			16030	63921	171598	357948	982352	1897304	3510335	0.909	0.022		0.998	W
Xylene (total)			0.790	0.656	0.846	0.852	0.948	0.910	0.900					
cis-1,2-Dichloroethene			0.328	0.271	0.336	0.332	0.369	0.366	0.343	0.335			9.664	A
cis-1,3-Dichloropropene			0.346	0.305	0.368	0.380	0.433	0.438	0.457	0.390			14.20	A
diisopropyl Ether (DIPE)			0.776	0.582	0.691	0.690	0.823	0.834	0.842	0.748			13.01	A
m,p-Xylene (RSP)			11442	44293	119572	246346	660583	1263391	2303027	0.903	0.009		0.998	W
m,p-Xylene			0.845	0.682	0.885	0.880	0.956	0.908	0.886					
n-Butylbenzene			2.258	1.479	2.022	2.038	2.175	2.111	2.211	2.042			12.88	A
n-Hexane (RSP)			5412	15224	46012	89119	276985	581818	1045897	0.302	0.007		0.993	W
n-Hexane			0.318	0.191	0.274	0.261	0.320	0.327	0.286					
n-Propylbenzene			3.907	2.738	3.474	3.479	3.720	3.679	3.720	3.531			10.78	A
o-Xylene (RSP)			4588	19628	52026	111602	321769	633913	1207308	0.922	0.013		0.997	W
o-Xylene			0.678	0.604	0.770	0.797	0.931	0.912	0.929					
sec-Butylbenzene			2.558	2.047	2.679	2.719	2.955	2.930	3.007	2.699			12.28	A
t-Butanol (TBA)				0.029	0.033	0.028	0.029	0.028	0.029	0.029			6.460	A
tert-Butyl methyl ether (MTBE)			0.628	0.601	0.690	0.688	0.760	0.765	0.678	0.687			8.904	A

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Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

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m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170505/b2900d ~ 1	
Report No:	217051110		Instrument ID:	MSV14	1204 ~ 2170505/b2892d ~ 5	1205 ~ 2170505/b2901d ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)		Analyst:	LBH	1206 ~ 2170505/b2894d ~ 20	1207 ~ 2170505/b2895d ~ 50	
Calib. Date 1:	05/05/17	Time 1: 0959	Analytical Batch:	609837	1208 ~ 2170505/b2896d ~ 100	1209 ~ 2170505/b2897d ~ 200	
Calib. Date 2:	05/05/17	Time 2: 1332	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
tert-Butylbenzene			1.307	0.983	1.253	1.294	1.445	1.451	1.509	1.320			13.38	A
trans-1,2-Dichloroethene			0.384	0.270	0.338	0.330	0.355	0.353	0.318	0.335			10.61	A
trans-1,3-Dichloropropene			0.367	0.315	0.359	0.369	0.407	0.405	0.413	0.376			9.270	A
trans-1,4-Dichloro-2-butene			0.356	0.308	0.325	0.306	0.321	0.332	0.349	0.328			5.835	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

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$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2900d.d
Lab Smp Id: 1203 Client Smp ID: V14STD001
Inj Date : 05-MAY-2017 13:10
Operator : LBH Inst ID: msv14.i
Smp Info : 1203*V14STD001
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 13:10 Cal File: b2900d.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.744	1.744	(0.261)	4540	1.00000	1.00	
2 Chloromethane ++	50	1.953	1.953	(0.292)	4289	1.00000	1.00	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	4580	1.00000	1.00	
5 Bromomethane	94	2.377	2.377	(0.356)	2057	1.00000	1.00	
6 Chloroethane	64	2.512	2.512	(0.376)	2488	1.00000	1.00	(M2)
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	4833	1.00000	1.00	
11 1,1-Dichloroethene +	96	3.254	3.254	(0.487)	3104	1.00000	1.00	
14 Carbon Disulfide	76	3.299	3.299	(0.494)	11996	1.00000	1.00	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	2756	1.00000	1.00	
13 Methyl Iodide	142	3.442	3.442	(0.515)	805	1.00000	1.00	
9 Acrolein	56	3.697	3.697	(0.553)	1227	5.00000	5.00	
17 Methylene Chloride	49	3.993	3.993	(0.598)	6100	1.00000	1.00	
12 Acetone	43	4.071	4.071	(0.609)	3191	1.00000	1.00	(M2)
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	6525	1.00000	1.00	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	3801	1.00000	1.00	7396
	23 Hexane	57	4.289	4.289	(0.642)	5412	1.00000	1.00	8500
	21 MTBE	73	4.330	4.330	(0.648)	10673	1.00000	1.00	8606
	26 tert-Butyl Alcohol	59	4.473	4.473	(0.669)	314	1.00000		0(M2)
	27 Isopropyl Ether	45	4.784	4.784	(0.716)	13184	1.00000	1.00	9069
	29 Chloroprene	53	4.862	4.862	(0.728)	4533	1.00000	1.00	8443
	24 1,1-Dichloroethane ++	63	4.885	4.885	(0.731)	8157	1.00000	1.00	
	22 Acrylonitrile	53	4.964	4.964	(0.743)	7626	5.00000	5.00	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	2376	1.00000	1.00	(M2)
M	48 Total 1,2-Dichloroethene	61				12107	2.00000	2.00	
	30 cis-1,2-Dichloroethene	61	5.455	5.455	(0.817)	5582	1.00000	1.00	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	6555	1.00000	1.00	
	38 Cyclohexane	56	5.650	5.650	(0.846)	5437	1.00000	1.00	8418
	34 Bromochloromethane	128	5.657	5.657	(0.847)	1889	1.00000	1.00	
	41 Chloroform +	83	5.732	5.732	(0.858)	7598	1.00000	1.00	
	39 Carbon Tetrachloride	117	5.860	5.860	(0.877)	4998	1.00000	1.00	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	215920	50.0000	50.0	6911
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	6587	1.00000	1.00	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	5201	1.00000	1.00	
	32 2-Butanone	43	6.047	6.047	(0.905)	2743	1.00000	1.00	
	44 Benzene	78	6.291	6.291	(0.942)	16302	1.00000	1.00	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	141971	50.0000	50.0	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	7289	1.00000	1.00	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	629	5.00000		6766
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	849937	50.0000		
	50 Methyl Cyclohexane	83	6.830	6.830	(1.022)	5632	1.00000	1.00	7438
	49 Trichloroethene	130	6.830	6.830	(1.022)	4437	1.00000	1.00	
	52 Dibromomethane	93	7.213	7.213	(1.080)	2816	1.00000	1.00	
	51 1,2-Dichloropropane +	63	7.306	7.306	(1.094)	4303	1.00000	1.00	
	54 Bromodichloromethane	83	7.359	7.359	(1.102)	5871	1.00000	1.00	
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	1640	25.0000		8228
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	6447	1.00000	1.00	8463
	58 cis-1,3-Dichloropropene	75	7.891	7.891	(1.181)	5881	1.00000	1.00	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	791386	50.0000	50.0	
	61 Toluene +	91	8.082	8.082	(0.883)	17936	1.00000	1.00	
M	145 1-3 Dichloropropene total	100				12118	2.00000	2.00	0
	66 Tetrachloroethene	164	8.375	8.375	(0.915)	3583	1.00000	1.00	
	59 4-methyl-2-pentanone	43	8.364	8.364	(0.914)	4152	1.00000	1.00	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	6237	1.00000	1.00	
	65 1,1,2-Trichloroethane	97	8.506	8.506	(0.930)	4201	1.00000	1.00	
	162 3,4-dichloro-1-butene	75	8.678	8.678	(0.948)	4953	1.00000	1.00	9319(a)
	69 Dibromochloromethane	129	8.634	8.634	(0.943)	4204	1.00000	1.00	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	6584	1.00000	1.00	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	3747	1.00000	1.00	
	68 2-Hexanone	43	8.952	8.952	(0.978)	3112	1.00000	1.00	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	4203	1.00000	1.00	2594(H)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	338382	50.0000		

		QUANT SIG					AMOUNTS		
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	72 Chlorobenzene ++	112	9.162	9.162	(1.001)	11509	1.00000	1.00	
	73 Ethylbenzene +	106	9.173	9.173	(1.002)	5442	1.00000	1.00	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	4299	1.00000	1.00	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	11442	2.00000	2.00	
M	99 TOTAL XYLENE	106				16030	3.00000	3.00	
	76 o-Xylene	106	9.552	9.552	(1.044)	4588	1.00000	1.00	
	77 Styrene	104	9.582	9.582	(1.047)	7981	1.00000	1.00	
	78 Bromoform ++	173	9.604	9.604	(1.050)	3238	1.00000	1.00	
	79 Isopropylbenzene	105	9.747	9.747	(1.065)	12369	1.00000	1.00	
	161 cis-1,4-dichloro-2-butene	53	9.964	9.964	(0.940)	2527	1.00000	1.00	9151(a)
$	80 Bromofluorobenzene	174	9.931	9.931	(1.085)	202599	50.0000	50.0	
	84 Bromobenzene	77	9.998	9.998	(0.943)	8696	1.00000	1.00	
	86 n-Propylbenzene	91	9.998	9.998	(0.943)	18924	1.00000	1.00	
	81 1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	5831	1.00000	1.00	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	12366	1.00000	1.00	
	88 1,3,5-Trimethylbenzene	105	10.110	10.110	(0.954)	11077	1.00000	1.00	
	85 1,2,3-Trichloropropane	75	10.137	10.137	(0.956)	7133	1.00000	1.00	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	1723	1.00000	1.00	
	90 4-Chlorotoluene	91	10.208	10.208	(0.963)	11091	1.00000	1.00	
	91 tert-butylbenzene	91	10.313	10.313	(0.973)	6331	1.00000	1.00	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	10884	1.00000	1.00	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	12387	1.00000	1.00	
	92 p-Isopropyltoluene	119	10.493	10.493	(0.990)	10035	1.00000	1.00	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	7482	1.00000	1.00	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	242170	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	8687	1.00000	1.00	
	100 n-Butylbenzene	91	10.748	10.748	(1.014)	10936	1.00000	1.00	
	102 1,2-Dichlorobenzene	146	10.868	10.868	(1.025)	6982	1.00000	1.00	
	106 1,2-Dibromo-3-Chloropropane	157	11.393	11.393	(1.075)	769	1.00000	1.00	
	109 Hexachlorobutadiene	225	11.857	11.857	(1.118)	2392	1.00000		
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	3882	1.00000	1.00	
	110 Naphthalene	128	12.191	12.191	(1.150)	8192	1.00000	1.00	
	111 1,2,3-Trichlorobenzene	180	12.356	12.356	(1.165)	3345	1.00000	1.00	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M2- Compound response manually integrated because
Target system integrated incorrectly.
H - Operator selected an alternate compound hit.

Data File: /var/chem/msv14.i/2170505.s.b/b2900d.d

Date : 05-MAY-2017 13:10

Client ID: V14STD001

Instrument: msv14.i

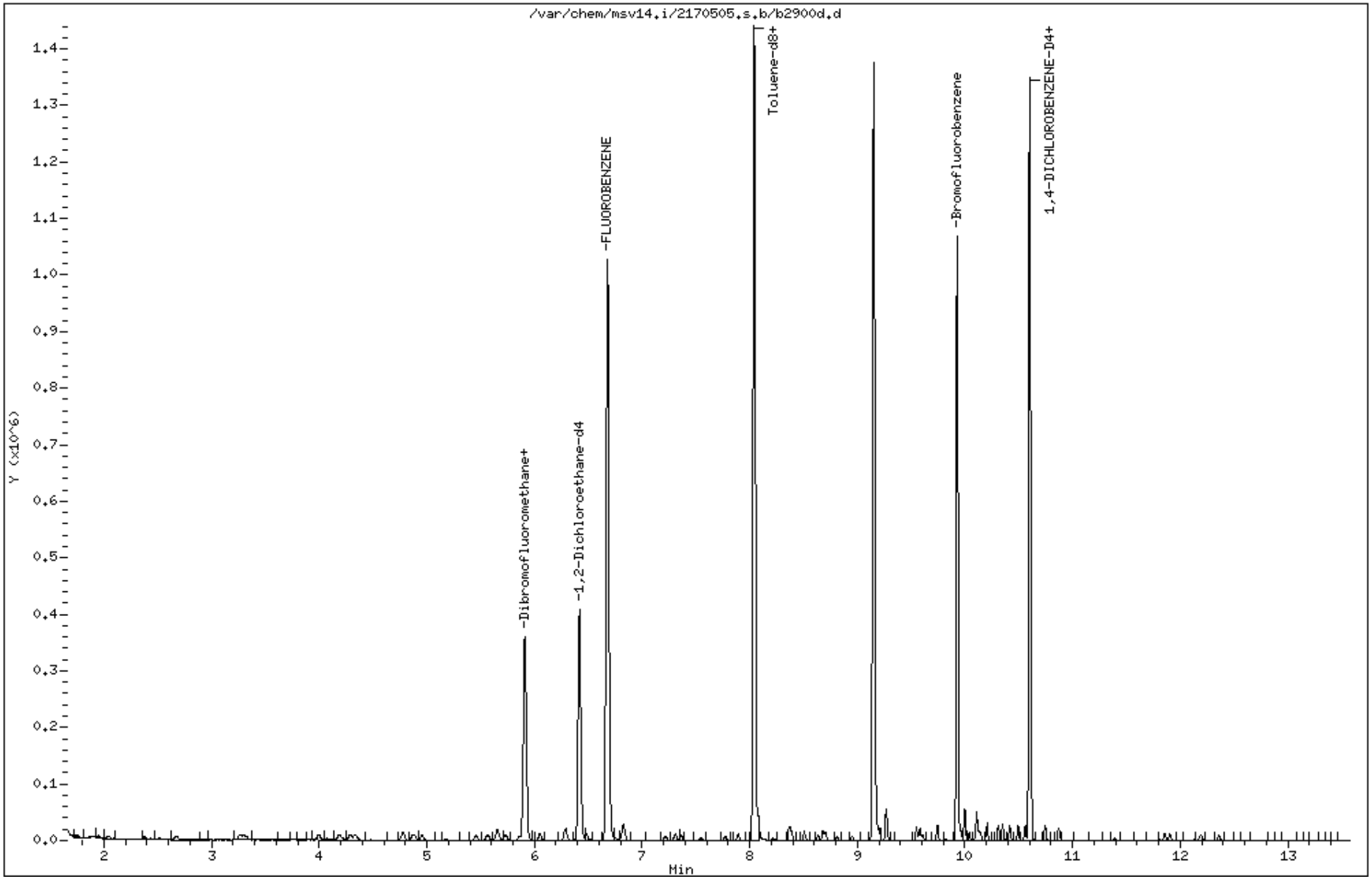
Sample Info: 1203*V14STD001

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

Column diameter: 0.25



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Data file  : /var/chem/msv14.i/2170505.s.b/b2900d.d
Report Date: 05/06/2017 11:41
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MANUAL INTEGRATION GRAPHIC REPORT

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Injection Date: 05/05/2017 13:10           Instrument      : msv14.i
Operator       : LBH
Sample Info    : 1203*V14STD001
Misc Info      : MSV~38274~*1*LBH
Method         : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution       : 1.00
Matrix         : WATER
Integrator     : HP RTE                    Compound Sublist: 8260b+AppIX1
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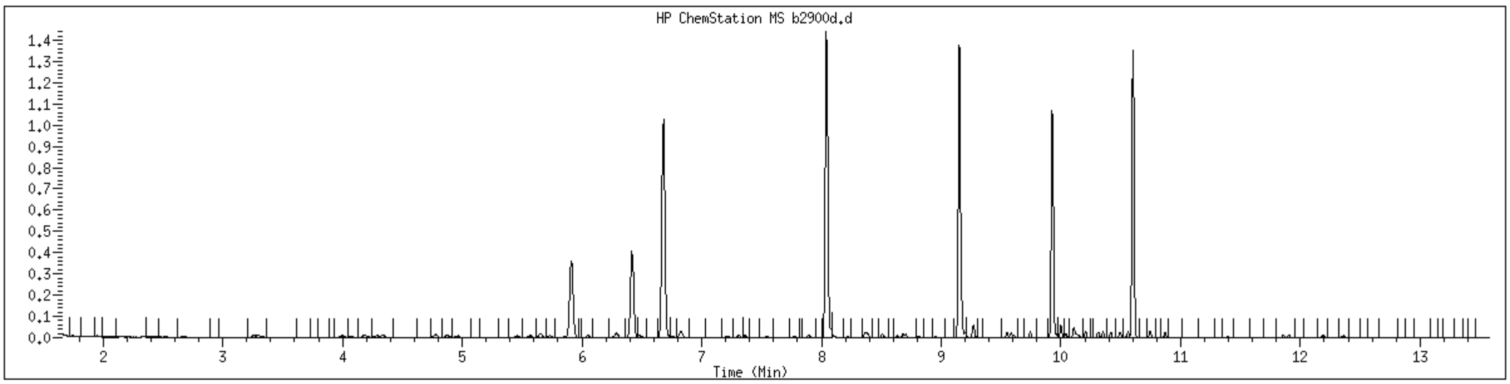

Original   Final

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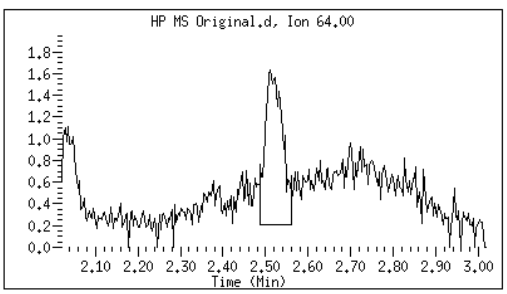
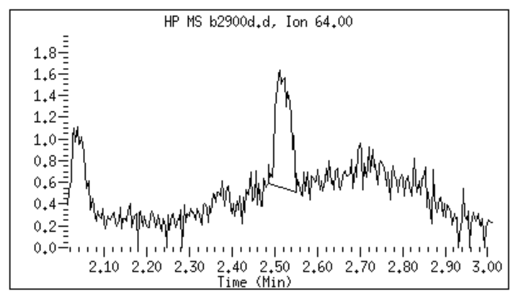
6 Chloroethane   CAS#: 75-00-3   Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:23



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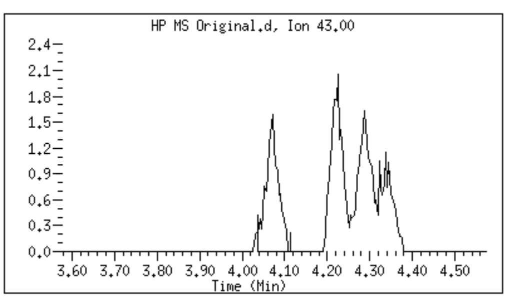
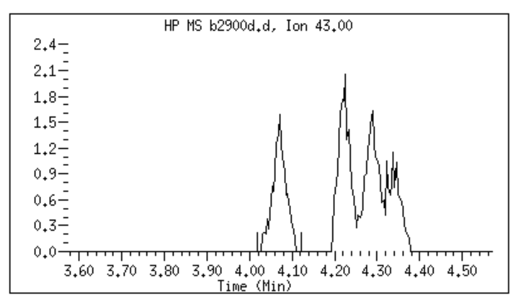
12 Acetone   CAS#: 67-64-1   Reason: M2



Electronic Signature Applied

User: lbh
Date: 05/05/2017 13:31



Original   Final

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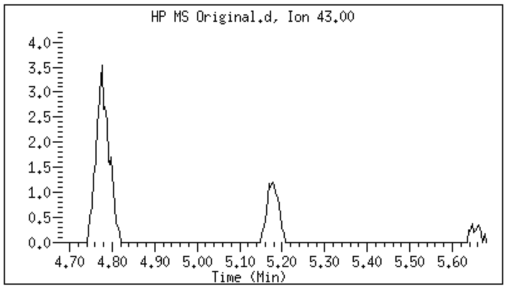
25 Vinyl Acetate   CAS#: 108-05-4   Reason: M2



Electronic Signature Applied

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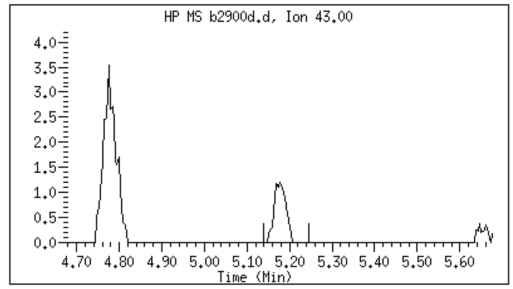
Date: 05/05/2017 13:31



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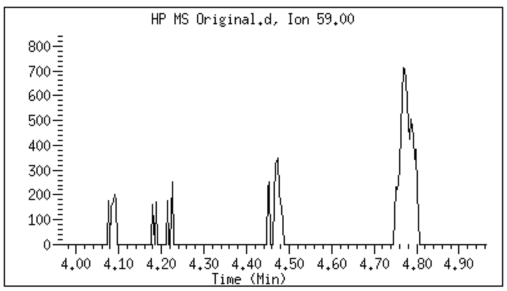
26 tert-Butyl Alcohol   CAS#: 75-65-0   Reason: M2



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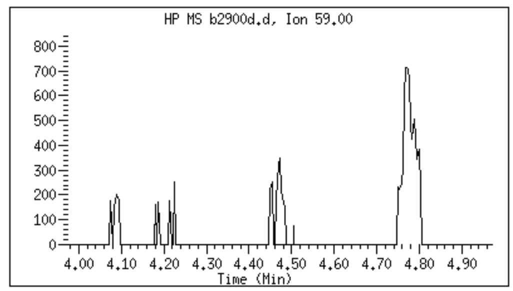


M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2892d.d
Lab Smp Id: 1204 Client Smp ID: V14STD005
Inj Date : 05-MAY-2017 09:59
Operator : LBH Inst ID: msv14.i
Smp Info : 1204*V14STD005
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 09:59 Cal File: b2892d.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	16178	5.00000	4.32	
2 Chloromethane ++	50	1.953	1.953	(0.292)	13336	5.00000	3.99	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	14909	5.00000	4.10	
5 Bromomethane	94	2.373	2.373	(0.355)	5130	5.00000	5.00	
6 Chloroethane	64	2.519	2.519	(0.377)	14584	5.00000	5.55	
7 Trichlorofluoromethane	101	2.677	2.677	(0.401)	19212	5.00000	4.59	
11 1,1-Dichloroethene +	96	3.265	3.265	(0.489)	10731	5.00000	4.24	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	32679	5.00000	5.00	
10 1,1,2Trichlotrifluoroethane	101	3.325	3.325	(0.498)	10227	5.00000	4.42	
13 Methyl Iodide	142	3.434	3.434	(0.514)	2262	5.00000	5.00	
9 Acrolein	56	3.700	3.700	(0.554)	4635	25.0000	22.3	
17 Methylene Chloride	49	3.996	3.996	(0.598)	23959	5.00000	4.56	
12 Acetone	43	4.075	4.075	(0.610)	13507	5.00000	4.74	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	21562	5.00000	4.13	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	17758	5.00000	4.99	8452
	23 Hexane	57	4.293	4.293	(0.643)	15224	5.00000	5.00	9093(M2)
	21 MTBE	73	4.338	4.338	(0.649)	47921	5.00000	4.89	9212
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	2341	5.00000	5.00	5029(M1)
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	46396	5.00000	4.29	9234
	29 Chloroprene	53	4.866	4.866	(0.728)	18411	5.00000	5.00	8785
	24 1,1-Dichloroethane ++	63	4.889	4.889	(0.732)	32659	5.00000	4.61	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	36776	25.0000	25.3	
	25 Vinyl Acetate	43	5.181	5.181	(0.776)	9986	5.00000	4.73	
M	48 Total 1,2-Dichloroethene	61				43192	10.0000	8.66	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	21630	5.00000	4.52	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	23704	5.00000	4.35	
	38 Cyclohexane	56	5.653	5.653	(0.846)	18392	5.00000	5.00	7874
	34 Bromochloromethane	128	5.653	5.653	(0.846)	7872	5.00000	4.70	
	41 Chloroform +	83	5.732	5.732	(0.858)	32522	5.00000	4.77	
	39 Carbon Tetrachloride	117	5.859	5.859	(0.877)	19840	5.00000	4.58	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	209855	50.0000	50.9	6900
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	25231	5.00000	4.50	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	17502	5.00000	4.18	
	32 2-Butanone	43	6.051	6.051	(0.906)	12998	5.00000	5.03	
	44 Benzene	78	6.291	6.291	(0.942)	63584	5.00000	4.54	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	137289	50.0000	50.8	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	29004	5.00000	4.59	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	3320	25.0000	25.0	8553
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	797336	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	18866	5.00000	4.17	8355
	49 Trichloroethene	130	6.830	6.830	(1.022)	16979	5.00000	4.49	
	52 Dibromomethane	93	7.217	7.217	(1.080)	12342	5.00000	4.83	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	17656	5.00000	4.67	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	25218	5.00000	4.78	
	55 1,4- Dioxane	58	7.546	7.546	(1.130)	4041	125.000	125	8800
	57 1-Bromo-2-chloroethane	63	7.775	7.775	(1.164)	26931	5.00000	4.71	9510
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	24348	5.00000	4.69	
$	60 Toluene-d8	98	8.041	8.041	(0.878)	747859	50.0000	49.6	
	61 Toluene +	91	8.082	8.082	(0.883)	70987	5.00000	4.52	
M	145 1-3 Dichloropropene total	100				49462	10.0000	9.31	0
	66 Tetrachloroethene	164	8.371	8.371	(0.914)	11676	5.00000	4.04	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	18645	5.00000	4.83	
	62 trans-1,3-Dichloropropene	75	8.394	8.394	(1.256)	25114	5.00000	4.62	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	17844	5.00000	4.70	
	162 3,4-dichloro-1-butene	75	8.678	8.678	(0.948)	18093	5.00000	4.32	9612(a)
	69 Dibromochloromethane	129	8.637	8.637	(0.943)	18366	5.00000	4.77	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	30596	5.00000	4.92	
	70 1,2-Dibromoethane(EDB)	107	8.813	8.813	(0.963)	16533	5.00000	4.79	
	68 2-Hexanone	43	8.952	8.952	(0.978)	14803	5.00000	4.98	
	140 1-Chlorohexane	91	9.140	9.140	(0.998)	14315	5.00000	5.00	3585(M2)
*	71 CHLOROBENZENE-d5	82	9.155	9.155	(1.000)	324732	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	72 Chlorobenzene ++	112	9.166	9.166	(1.001)	44493	5.00000	4.46	
	73 Ethylbenzene +	106	9.173	9.173	(1.002)	21015	5.00000	4.46	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.005)	16885	5.00000	4.50	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	44293	10.0000	10.0	
M	99 TOTAL XYLENE	106				63921	15.0000	15.0	
	76 o-Xylene	106	9.552	9.552	(1.043)	19628	5.00000	5.00	
	77 Styrene	104	9.582	9.582	(1.047)	32589	5.00000	5.00	
	78 Bromoform ++	173	9.608	9.608	(1.050)	13829	5.00000	4.71	
	79 Isopropylbenzene	105	9.747	9.747	(1.065)	48453	5.00000	5.00	
	161 cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	8618	5.00000	4.13	9486(a)
$	80 Bromofluorobenzene	174	9.927	9.927	(1.084)	193466	50.0000	49.9	
	84 Bromobenzene	77	10.002	10.002	(0.943)	33372	5.00000	4.42	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	64168	5.00000	4.12	
	81 1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	25470	5.00000	4.74	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	45641	5.00000	4.33	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	43025	5.00000	4.45	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	30763	5.00000	4.71	
	83 trans-1,4-Dichloro-2-Butene	53	10.152	10.152	(0.958)	7212	5.00000	4.64	
	90 4-Chlorotoluene	91	10.204	10.204	(0.963)	42882	5.00000	4.44	
	91 tert-butylbenzene	91	10.309	10.309	(0.972)	23036	5.00000	4.29	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	44608	5.00000	4.59	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	47975	5.00000	4.45	
	92 p-Isopropyltoluene	119	10.493	10.493	(0.990)	39110	5.00000	4.46	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	28132	5.00000	4.37	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	234349	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	29762	5.00000	4.15	
	100 n-Butylbenzene	91	10.744	10.744	(1.013)	34660	5.00000	3.96	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	27580	5.00000	4.49	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	4124	5.00000	5.26	
	109 Hexachlorobutadiene	225	11.861	11.861	(1.119)	5179	5.00000	5.00	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	11133	5.00000	5.00	
	110 Naphthalene	128	12.191	12.191	(1.150)	28823	5.00000	5.00	
	111 1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	11100	5.00000	5.00	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2892d.d

Page 1

Date : 05-MAY-2017 09:59

Client ID: V14STD005

Instrument: msv14.i

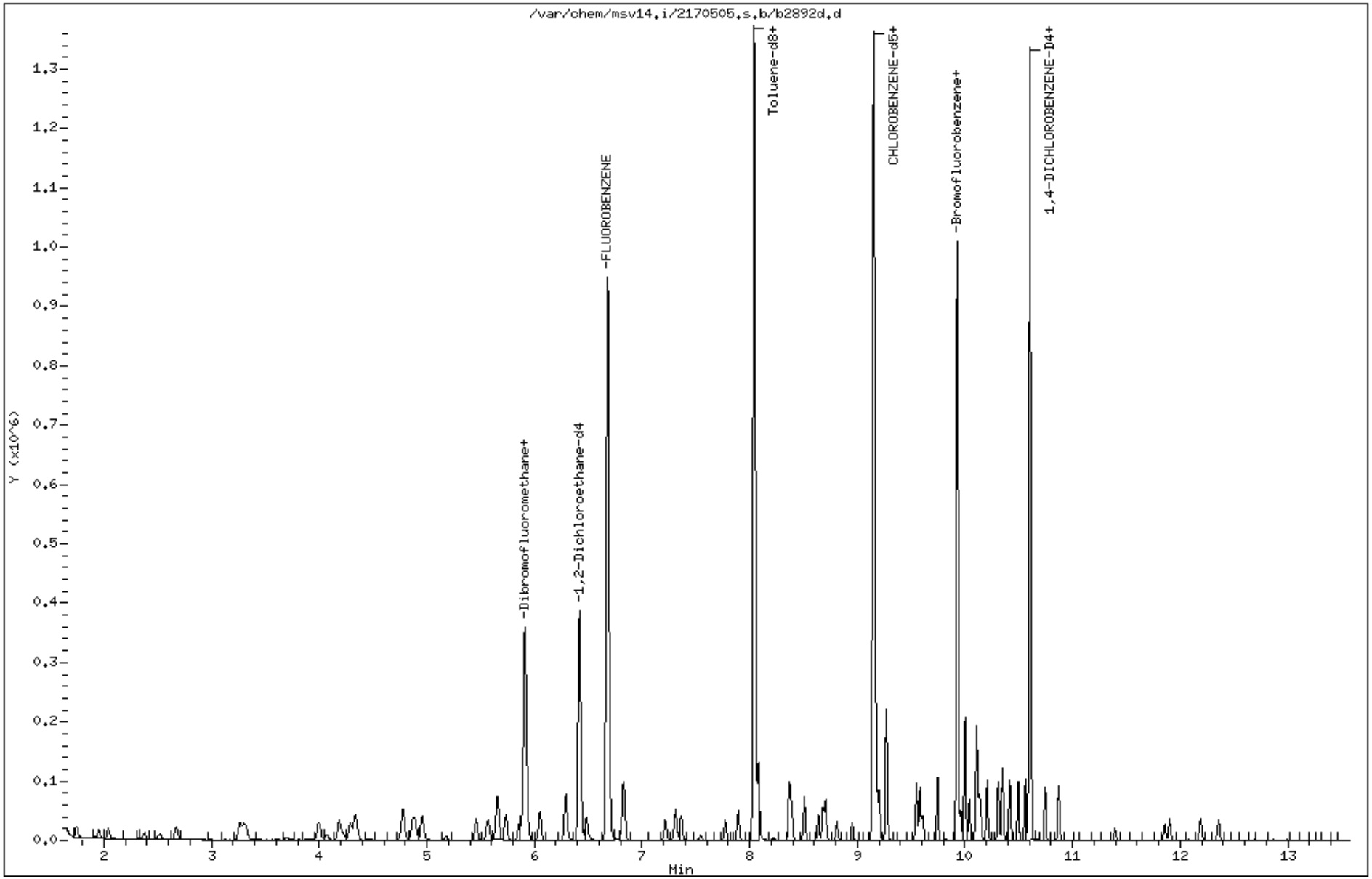
Sample Info: 1204*V14STD005

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

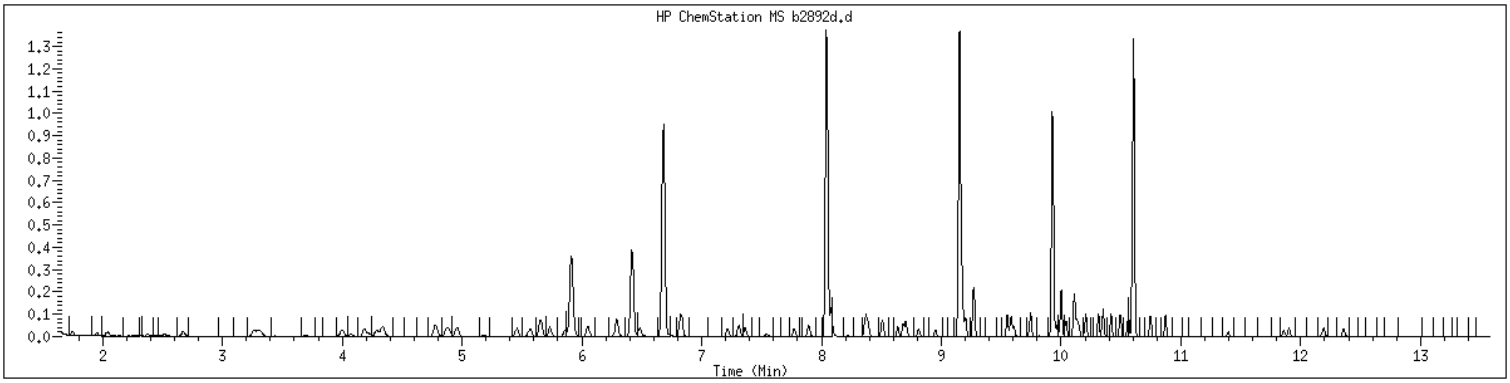
Column diameter: 0.25



Report Date: 05/06/2017 11:41

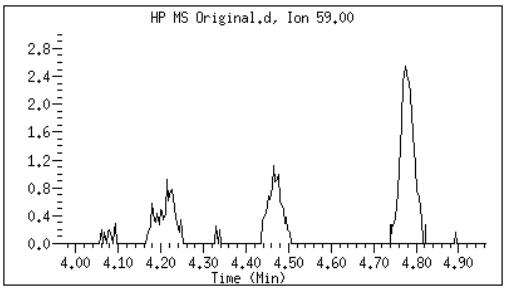
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1204 SampleType : CALIB_4
Injection Date: 05/05/2017 09:59 Instrument : msv14.i
Operator : LBH
Sample Info : 1204*V14STD005
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



Original Final

26 tert-Butyl Alcohol CAS#: 75-65-0 Reason: M1



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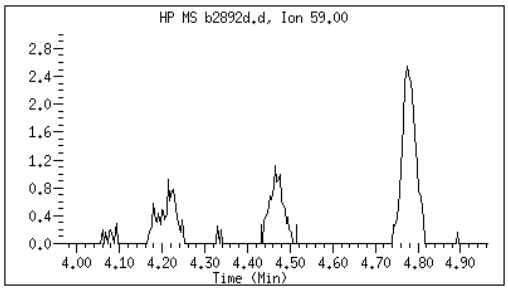
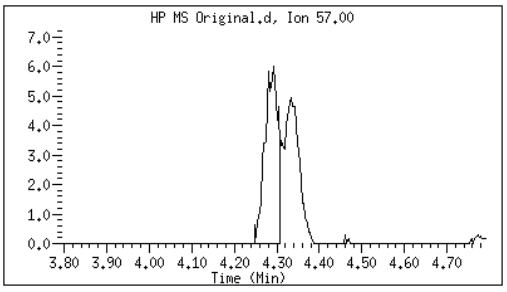
User: lbh
Date: 05/05/2017 10:31

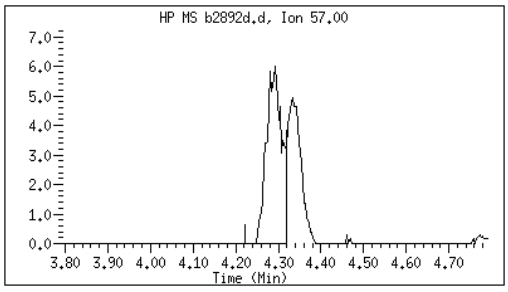


23 Hexane CAS#: 110-54-3 Reason: M2



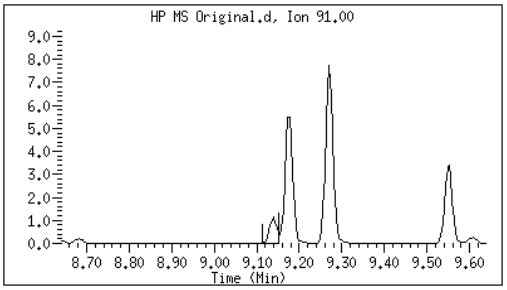
Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



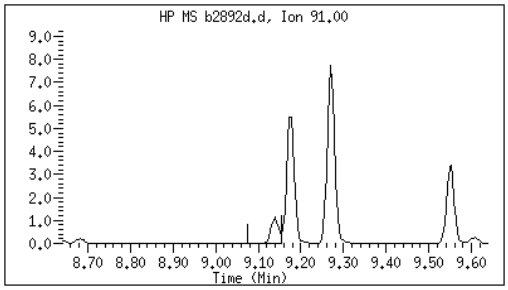
Original Final

140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2901d.d
Lab Smp Id: 1205 Client Smp ID: V14STD010
Inj Date : 05-MAY-2017 13:32
Operator : LBH Inst ID: msv14.i
Smp Info : 1205*V14STD010
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 13:32 Cal File: b2901d.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	42080	10.0000	10.4	
2 Chloromethane ++	50	1.953	1.953	(0.292)	35346	10.0000	10.0	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	42017	10.0000	10.6	
5 Bromomethane	94	2.377	2.377	(0.356)	15541	10.0000	10.7	
6 Chloroethane	64	2.519	2.519	(0.377)	30368	10.0000	10.6	
7 Trichlorofluoromethane	101	2.669	2.669	(0.400)	49857	10.0000	10.8	
11 1,1-Dichloroethene +	96	3.262	3.262	(0.488)	27886	10.0000	10.3	
14 Carbon Disulfide	76	3.295	3.295	(0.493)	86485	10.0000	10.6	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	28466	10.0000	11.1	
13 Methyl Iodide	142	3.438	3.438	(0.515)	9589	10.0000	10.3	
9 Acrolein	56	3.693	3.693	(0.553)	11092	50.0000	50.5	
17 Methylene Chloride	49	3.996	3.996	(0.598)	48359	10.0000	9.13	
12 Acetone	43	4.075	4.075	(0.610)	25729	10.0000	9.01	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	56687	10.0000	10.2	

		QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	37757	10.0000	10.1	8955
	23 Hexane	57	4.292	4.292	(0.643)	46012	10.0000	10.7	9249(M1)
	21 MTBE	73	4.337	4.337	(0.649)	115703	10.0000	10.8	9487
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	5565	10.0000	10.6	8479
	27 Isopropyl Ether	45	4.780	4.780	(0.716)	115936	10.0000	10.1	9626
	29 Chloroprene	53	4.866	4.866	(0.728)	48580	10.0000	10.5	8798
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	79126	10.0000	10.4	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	76922	50.0000	50.3	
	25 Vinyl Acetate	43	5.181	5.181	(0.776)	24032	10.0000	10.5	
M	48 Total 1,2-Dichloroethene	61				113129	20.0000	21.0	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	56442	10.0000	10.8	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	63482	10.0000	10.7	
	38 Cyclohexane	56	5.657	5.657	(0.847)	60316	10.0000	10.7	8531
	34 Bromochloromethane	128	5.657	5.657	(0.847)	19327	10.0000	10.6	
	41 Chloroform +	83	5.736	5.736	(0.859)	75378	10.0000	10.3	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	52749	10.0000	11.0	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	215978	50.0000	49.9	6922
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	65034	10.0000	10.7	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	49768	10.0000	10.8	
	32 2-Butanone	43	6.047	6.047	(0.905)	28805	10.0000	10.4	
	44 Benzene	78	6.290	6.290	(0.942)	164257	10.0000	10.7	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	141603	50.0000	49.8	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	62559	10.0000	9.60	
	45 Isobutyl Alcohol	43	6.515	6.515	(0.975)	9322	50.0000	57.2	9114
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	838837	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	55626	10.0000	11.1	8080
	49 Trichloroethene	130	6.834	6.834	(1.023)	44185	10.0000	10.7	
	52 Dibromomethane	93	7.220	7.220	(1.081)	27368	10.0000	10.1	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	43253	10.0000	10.6	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	58772	10.0000	10.4	
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	9497	250.000	264	9297
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	62312	10.0000	10.2	9629
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	61683	10.0000	10.8	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	785306	50.0000	50.0	
	61 Toluene +	91	8.082	8.082	(0.883)	165234	10.0000	10.1	
M	145 1-3 Dichloropropene total	100				121923	20.0000	21.2	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	29659	10.0000	9.92	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	40206	10.0000	10.0	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	60240	10.0000	10.3	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	38521	10.0000	9.83	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	47868	10.0000	10.6	9603
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	41531	10.0000	10.2	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	71664	10.0000	10.7	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	38867	10.0000	10.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	33341	10.0000	10.5	
	140 1-Chlorohexane	91	9.139	9.139	(0.999)	40501	10.0000	10.6	5157(M2)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	337912	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	72 Chlorobenzene ++	112	9.166	9.166	(1.002)	105576	10.0000	10.1	
	73 Ethylbenzene +	106	9.177	9.177	(1.003)	52844	10.0000	10.5	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	38496	10.0000	9.91	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	119572	20.0000	21.1	
M	99 TOTAL XYLENE	106				171598	30.0000	31.6	
	76 o-Xylene	106	9.552	9.552	(1.044)	52026	10.0000	10.5	
	77 Styrene	104	9.582	9.582	(1.047)	91391	10.0000	10.6	
	78 Bromoform ++	173	9.608	9.608	(1.050)	29461	10.0000	9.76	
	79 Isopropylbenzene	105	9.743	9.743	(1.065)	138755	10.0000	10.6	
	161 cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	19649	10.0000	9.44	9716
$	80 Bromofluorobenzene	174	9.930	9.930	(1.085)	202021	50.0000	50.0	
	84 Bromobenzene	77	9.998	9.998	(0.943)	77956	10.0000	10.0	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	167194	10.0000	10.3	
	81 1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	54083	10.0000	9.87	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	117180	10.0000	10.5	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	116043	10.0000	11.1	
	85 1,2,3-Trichloropropane	75	10.137	10.137	(0.956)	68041	10.0000	10.1	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	15651	10.0000	9.87	
	90 4-Chlorotoluene	91	10.208	10.208	(0.963)	106829	10.0000	10.5	
	91 tert-butylbenzene	91	10.313	10.313	(0.973)	60292	10.0000	10.6	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	123013	10.0000	11.4	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	128924	10.0000	11.0	
	92 p-Isopropyltoluene	119	10.496	10.496	(0.990)	108917	10.0000	11.3	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	68649	10.0000	10.3	
*	97 1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	240641	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	68186	10.0000	9.49	
	100 n-Butylbenzene	91	10.744	10.744	(1.013)	97300	10.0000	10.5	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	64136	10.0000	10.1	
	106 1,2-Dibromo-3-Chloropropane	157	11.392	11.392	(1.075)	8923	10.0000	10.7	
	109 Hexachlorobutadiene	225	11.857	11.857	(1.118)	13526	10.0000	11.2	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	28084	10.0000	10.2	
	110 Naphthalene	128	12.191	12.191	(1.150)	74077	10.0000	10.2	
	111 1,2,3-Trichlorobenzene	180	12.356	12.356	(1.165)	27878	10.0000	10.2	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2901d.d

Page 1

Date : 05-MAY-2017 13:32

Client ID: V14STD010

Instrument: msv14.i

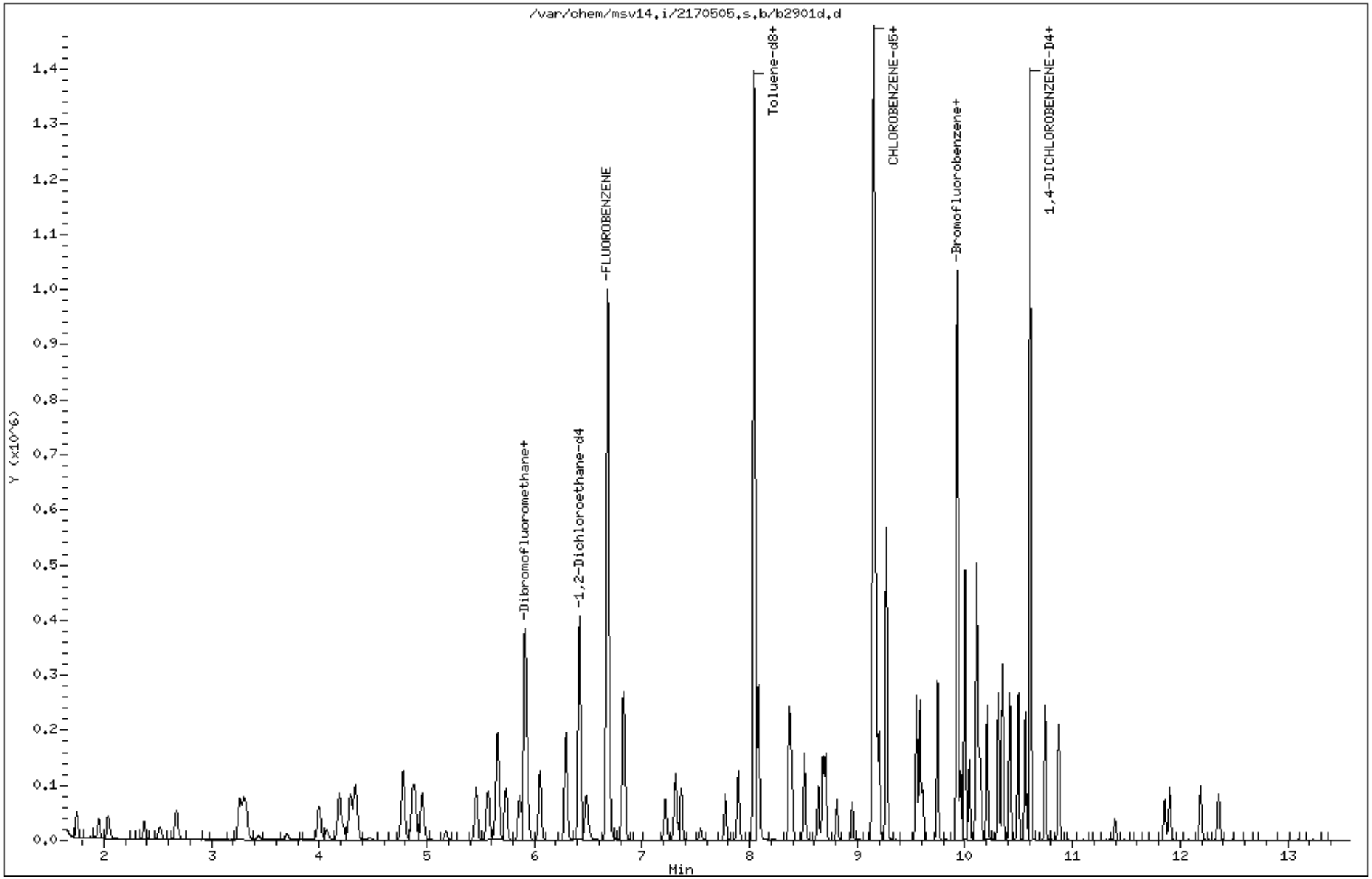
Sample Info: 1205*V14STD010

Purge Volume: 5.0

Operator: LBH

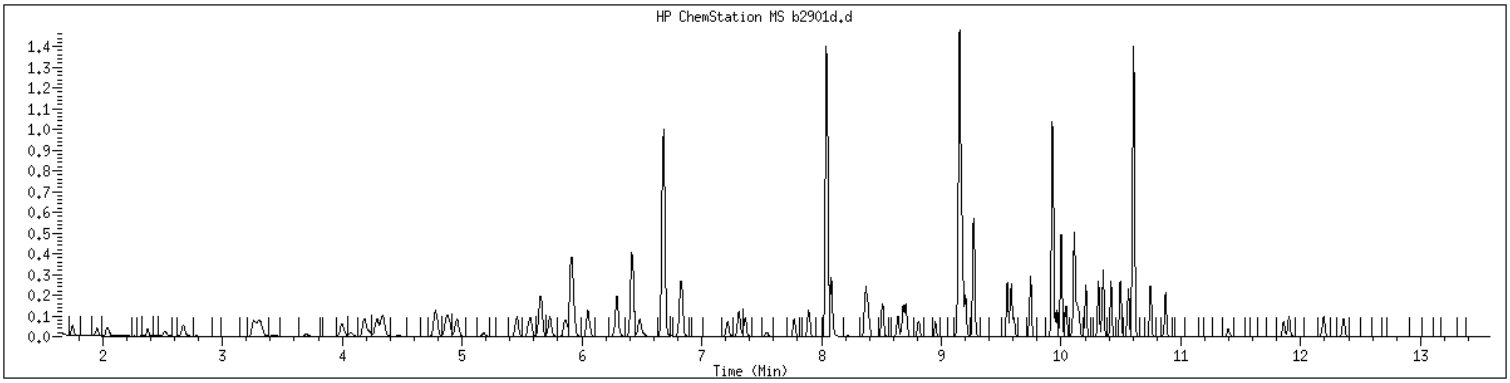
Column phase: RTX-VMS-30M

Column diameter: 0.25



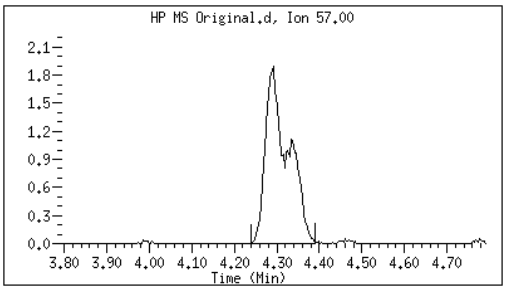
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1205 SampleType : CALIB_5
Injection Date: 05/05/2017 13:32 Instrument : msv14.i
Operator : LBH
Sample Info : 1205*V14STD010
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



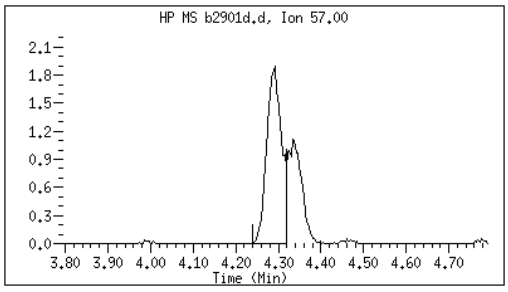
Original Final

23 Hexane CAS#: 110-54-3 Reason: M1

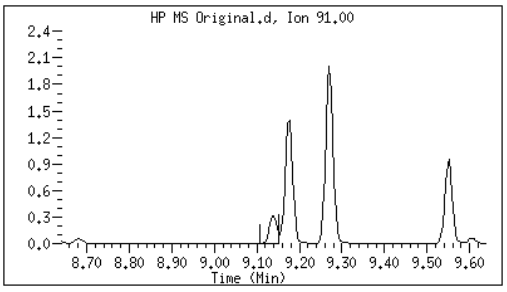


Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



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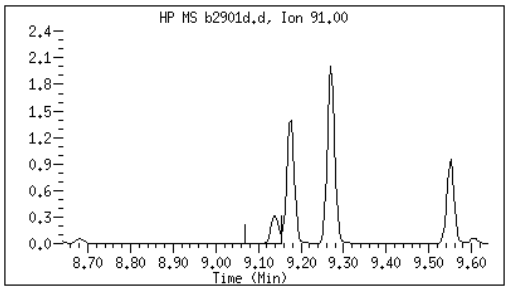
User: jck2
Date: 05/06/2017 11:35



M1 - Target system integrated incorrectly
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2894d.d
Lab Smp Id: 1206 Client Smp ID: V14STD020
Inj Date : 05-MAY-2017 10:43
Operator : LBH Inst ID: msv14.i
Smp Info : 1206*V14STD020
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 10:43 Cal File: b2894d.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.747	1.747	(0.262)	85385	20.0000	20.6	
2	Chloromethane ++	50	1.953	1.953	(0.292)	64622	20.0000	18.5	
3	Vinyl Chloride +	62	2.036	2.036	(0.305)	84113	20.0000	20.7	
5	Bromomethane	94	2.377	2.377	(0.356)	28202	20.0000	19.7	
6	Chloroethane	64	2.519	2.519	(0.377)	53701	20.0000	18.8	
7	Trichlorofluoromethane	101	2.669	2.669	(0.400)	99304	20.0000	20.9	
11	1,1-Dichloroethene +	96	3.262	3.262	(0.488)	54802	20.0000	19.9	
14	Carbon Disulfide	76	3.292	3.292	(0.493)	172907	20.0000	20.4	
10	1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	57809	20.0000	21.5	
13	Methyl Iodide	142	3.434	3.434	(0.514)	18651	20.0000	19.7	
9	Acrolein	56	3.696	3.696	(0.553)	23215	100.000	103	
17	Methylene Chloride	49	4.000	4.000	(0.599)	96269	20.0000	18.3	
12	Acetone	43	4.068	4.068	(0.609)	52766	20.0000	18.6	
19	trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	112654	20.0000	19.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	74004	20.0000	19.5	8273
	23 Hexane	57	4.289	4.289	(0.642)	89119	20.0000	20.1	9274(M2)
	21 MTBE	73	4.334	4.334	(0.649)	235030	20.0000	21.1	9563
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	9676	20.0000	18.7	8914
	27 Isopropyl Ether	45	4.780	4.780	(0.715)	235852	20.0000	20.2	9692
	29 Chloroprene	53	4.866	4.866	(0.728)	105339	20.0000	20.7	9017
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	163829	20.0000	20.8	
	22 Acrylonitrile	53	4.960	4.960	(0.742)	172327	100.000	108	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	51211	20.0000	21.5	
M	48 Total 1,2-Dichloroethene	61				226006	40.0000	40.9	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	113352	20.0000	20.9	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	128100	20.0000	20.9	
	38 Cyclohexane	56	5.653	5.653	(0.846)	130128	20.0000	20.7	8965
	34 Bromochloromethane	128	5.661	5.661	(0.847)	37851	20.0000	20.3	
	41 Chloroform +	83	5.732	5.732	(0.858)	154793	20.0000	20.6	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	108255	20.0000	21.6	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	221955	50.0000	50.2	6895
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	132208	20.0000	20.9	
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	104278	20.0000	21.7	
	32 2-Butanone	43	6.043	6.043	(0.905)	58238	20.0000	20.5	
	44 Benzene	78	6.290	6.290	(0.942)	338045	20.0000	21.2	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	144916	50.0000	50.1	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	125088	20.0000	19.1	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	17653	100.000	104	9374
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	854503	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	114730	20.0000	21.7	8286
	49 Trichloroethene	130	6.834	6.834	(1.023)	87021	20.0000	20.5	
	52 Dibromomethane	93	7.216	7.216	(1.080)	55706	20.0000	20.2	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	86327	20.0000	20.5	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	118222	20.0000	20.4	
	55 1,4- Dioxane	58	7.546	7.546	(1.130)	18309	500.000	500	9442
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	126460	20.0000	20.3	9583
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	129981	20.0000	21.7	
$	60 Toluene-d8	98	8.045	8.045	(0.879)	806647	50.0000	49.7	
	61 Toluene +	91	8.082	8.082	(0.883)	341235	20.0000	20.1	
M	145 1-3 Dichloropropene total	100				256263	40.0000	42.7	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	61058	20.0000	19.8	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	86150	20.0000	20.5	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	126282	20.0000	21.0	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	80881	20.0000	19.9	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	92215	20.0000	19.8	9662
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	86538	20.0000	20.4	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	147210	20.0000	20.9	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	79104	20.0000	20.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	69895	20.0000	20.9	
	140 1-Chlorohexane	91	9.139	9.139	(0.999)	83069	20.0000	20.3	6854(M2)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	349979	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	213118	20.0000	19.8	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	109051	20.0000	20.7	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	78543	20.0000	19.6	
75	p,m-Xylene	106	9.271	9.271	(1.013)	246346	40.0000	40.6	
M 99	TOTAL XYLENE	106				357948	60.0000	61.1	
76	o-Xylene	106	9.552	9.552	(1.044)	111602	20.0000	20.5	
77	Styrene	104	9.582	9.582	(1.047)	199707	20.0000	20.6	
78	Bromoform ++	173	9.608	9.608	(1.050)	60161	20.0000	19.4	
79	Isopropylbenzene	105	9.747	9.747	(1.065)	297649	20.0000	20.5	
161	cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.940)	35530	20.0000	17.2	9627
$ 80	Bromofluorobenzene	174	9.930	9.930	(1.085)	207258	50.0000	49.7	
84	Bromobenzene	77	9.998	9.998	(0.943)	160630	20.0000	20.0	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	347183	20.0000	20.5	
81	1,1,2,2-Tetrachloroethane++	83	10.039	10.039	(0.947)	107872	20.0000	19.2	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	246892	20.0000	21.0	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	245548	20.0000	21.9	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	136968	20.0000	19.7	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	30496	20.0000	18.9	
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	218651	20.0000	20.5	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	129090	20.0000	21.4	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	256452	20.0000	22.2	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	271314	20.0000	21.7	
92	p-Isopropyltoluene	119	10.496	10.496	(0.990)	226272	20.0000	21.9	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	134834	20.0000	19.6	
* 97	1,4-DICHLOROBENZENE-D4	152	10.601	10.601	(1.000)	249455	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	134807	20.0000	18.5	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	203306	20.0000	20.9	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	129008	20.0000	19.7	
106	1,2-Dibromo-3-Chloropropane	157	11.392	11.392	(1.075)	17507	20.0000	20.2	
109	Hexachlorobutadiene	225	11.861	11.861	(1.119)	26962	20.0000	21.0	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	59851	20.0000	20.1	
110	Naphthalene	128	12.191	12.191	(1.150)	168458	20.0000	20.2	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	60299	20.0000	20.1	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2894d.d

Page 1

Date : 05-MAY-2017 10:43

Client ID: V14STD020

Instrument: msv14.i

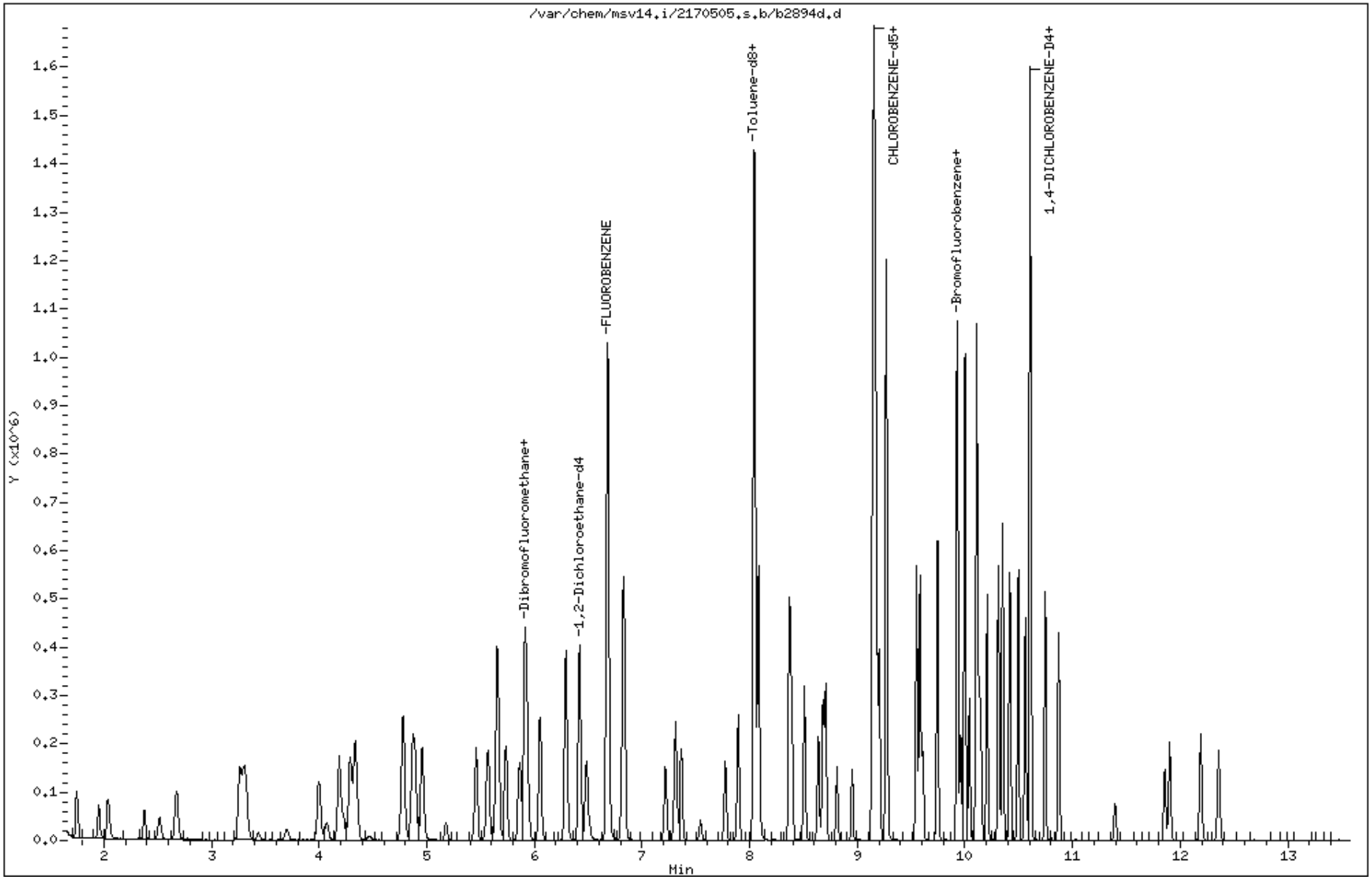
Sample Info: 1206*V14STD020

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

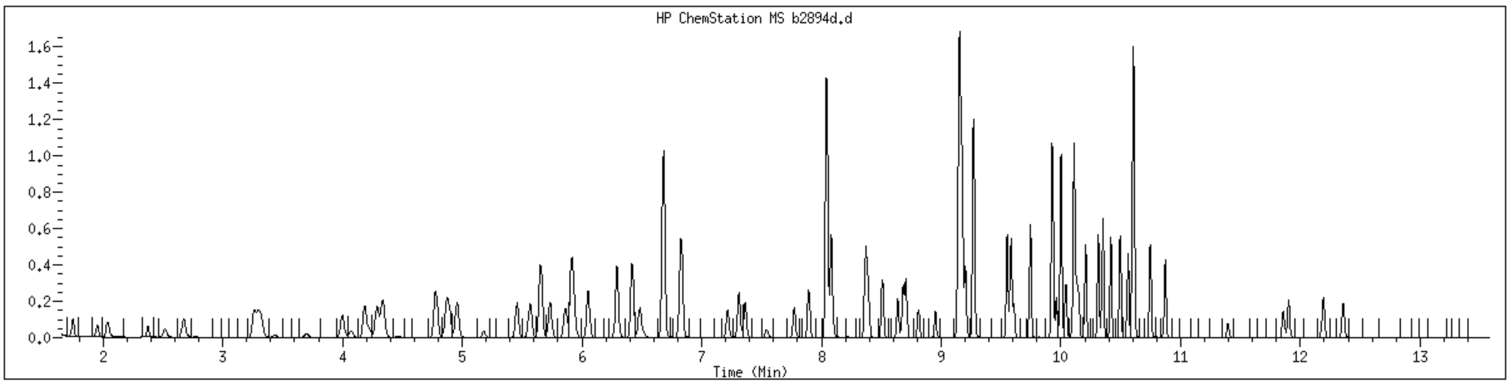
Column diameter: 0.25



Report Date: 05/06/2017 11:41

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID   : 1206   SampleType   : CALIB_6
Injection Date: 05/05/2017 10:43   Instrument   : msv14.i
Operator   : LBH
Sample Info   : 1206*V14STD020
Misc Info   : MSV~38274~*1*LBH
Method   : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution   : 1.00
Matrix   : WATER
Integrator   : HP RTE   Compound Sublist: 8260b+AppIX1



Original   Final

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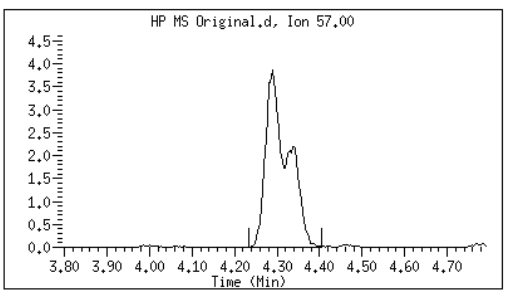
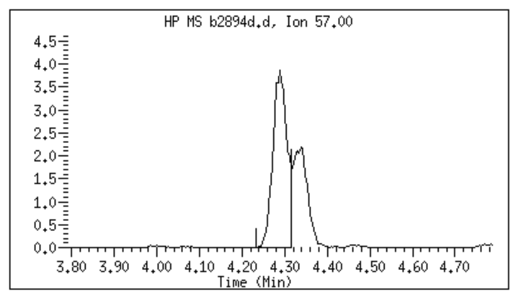
23 Hexane   CAS#: 110-54-3   Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



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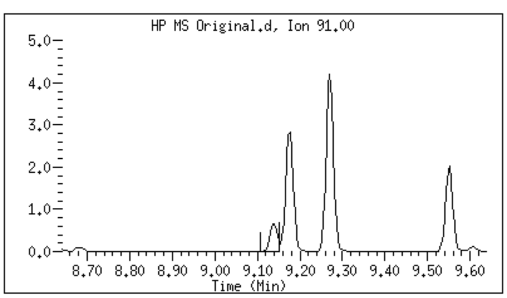
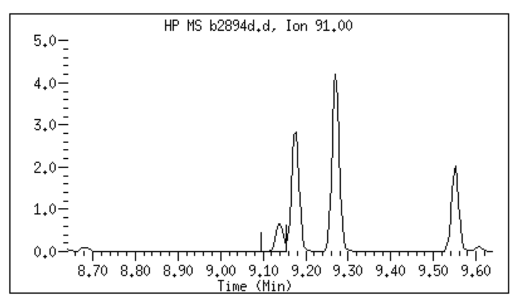
140 1-Chlorohexane   CAS#: 544-10-5   Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2895d.d
Lab Smp Id: 1207 Client Smp ID: V14STD050
Inj Date : 05-MAY-2017 11:05
Operator : LBH Inst ID: msv14.i
Smp Info : 1207*V14STD050
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:05 Cal File: b2895d.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	226282	50.0000	53.0	
2 Chloromethane ++	50	1.953	1.953	(0.292)	161243	50.0000	46.3	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	224477	50.0000	53.4	
5 Bromomethane	94	2.373	2.373	(0.355)	79796	50.0000	51.6	
6 Chloroethane	64	2.512	2.512	(0.376)	133514	50.0000	46.9	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	259664	50.0000	53.0	
11 1,1-Dichloroethene +	96	3.265	3.265	(0.489)	141833	50.0000	50.7	
14 Carbon Disulfide	76	3.295	3.295	(0.493)	455635	50.0000	51.1	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	154455	50.0000	55.2	
13 Methyl Iodide	142	3.438	3.438	(0.515)	67934	50.0000	51.0	
9 Acrolein	56	3.693	3.693	(0.553)	60570	250.000	261	
17 Methylene Chloride	49	3.996	3.996	(0.598)	246548	50.0000	47.0	
12 Acetone	43	4.068	4.068	(0.609)	130879	50.0000	46.3	
19 trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	307651	50.0000	52.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	194771	50.0000	50.5	8700
	23 Hexane	57	4.289	4.289	(0.642)	276985	50.0000	53.0	9305(M2)
	21 MTBE	73	4.334	4.334	(0.649)	658406	50.0000	56.4	9719
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	24812	50.0000	47.9	9359
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	713077	50.0000	57.8	9882
	29 Chloroprene	53	4.866	4.866	(0.728)	323501	50.0000	53.1	9053
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	436914	50.0000	53.8	
	22 Acrylonitrile	53	4.960	4.960	(0.742)	439660	250.000	267	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	143693	50.0000	57.3	
M	48 Total 1,2-Dichloroethene	61				627248	100.000	109	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	319597	50.0000	56.4	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	349939	50.0000	54.9	
	38 Cyclohexane	56	5.653	5.653	(0.846)	375949	50.0000	52.3	9195
	34 Bromochloromethane	128	5.657	5.657	(0.847)	94788	50.0000	50.2	
	41 Chloroform +	83	5.732	5.732	(0.858)	407996	50.0000	52.8	
	39 Carbon Tetrachloride	117	5.859	5.859	(0.877)	295305	50.0000	56.3	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	222322	50.0000	49.7	6913
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	350493	50.0000	53.7	
	42 1,1-Dichloropropene	75	6.051	6.051	(0.906)	297028	50.0000	58.3	
	32 2-Butanone	43	6.047	6.047	(0.905)	159914	50.0000	54.2	
	44 Benzene	78	6.291	6.291	(0.942)	907887	50.0000	54.9	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	146288	50.0000	49.9	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	331013	50.0000	49.9	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	47281	250.000	268	9363
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	866312	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	324043	50.0000	58.1	8787
	49 Trichloroethene	130	6.834	6.834	(1.023)	231527	50.0000	53.1	
	52 Dibromomethane	93	7.217	7.217	(1.080)	146875	50.0000	51.9	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	236689	50.0000	54.3	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	319111	50.0000	53.3	
	55 1,4- Dioxane	58	7.539	7.539	(1.129)	47547	1250.00	1270	9430
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	342840	50.0000	53.4	9587
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	375211	50.0000	59.1	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	805356	50.0000	50.2	
	61 Toluene +	91	8.082	8.082	(0.883)	898726	50.0000	52.8	
M	145 1-3 Dichloropropene total	100				727976	100.000	115	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	160780	50.0000	52.2	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	239664	50.0000	56.1	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	352765	50.0000	56.0	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	209391	50.0000	51.8	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	264205	50.0000	55.9	9684
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	232953	50.0000	54.5	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	389962	50.0000	54.7	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	209109	50.0000	53.9	
	68 2-Hexanone	43	8.952	8.952	(0.978)	195373	50.0000	57.1	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	237528	50.0000	52.4	9022(M2)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	345523	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	548987	50.0000	51.3	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	287800	50.0000	54.2	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	207751	50.0000	52.1	
75	p,m-Xylene	106	9.271	9.271	(1.013)	660583	100.000	103	
M 99	TOTAL XYLENE	106				982352	150.000	155	
76	o-Xylene	106	9.552	9.552	(1.044)	321769	50.0000	52.5	
77	Styrene	104	9.582	9.582	(1.047)	545885	50.0000	51.9	
78	Bromoform ++	173	9.608	9.608	(1.050)	159257	50.0000	51.7	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	828151	50.0000	52.1	
161	cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	86579	50.0000	43.9	9533
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	209409	50.0000	50.7	
84	Bromobenzene	77	9.998	9.998	(0.943)	414018	50.0000	51.7	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	914970	50.0000	53.7	
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	271209	50.0000	49.2	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	655761	50.0000	55.2	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	644685	50.0000	56.4	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	355465	50.0000	51.5	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	78911	50.0000	49.7	
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	586805	50.0000	54.6	
91	tert-butylbenzene	91	10.313	10.313	(0.973)	355409	50.0000	57.5	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	672478	50.0000	56.9	
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	726686	50.0000	57.0	
92	p-Isopropyltoluene	119	10.497	10.497	(0.990)	606247	50.0000	57.4	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	349689	50.0000	51.2	
* 97	1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	245954	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	347316	50.0000	48.7	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	534869	50.0000	54.5	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	331615	50.0000	51.1	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	44954	50.0000	52.0	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	69112	50.0000	53.4	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	168927	50.0000	50.5	
110	Naphthalene	128	12.191	12.191	(1.150)	520416	50.0000	50.8	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	167545	50.0000	50.5	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2895d.d

Date : 05-MAY-2017 11:05

Client ID: V14STD050

Instrument: msv14.i

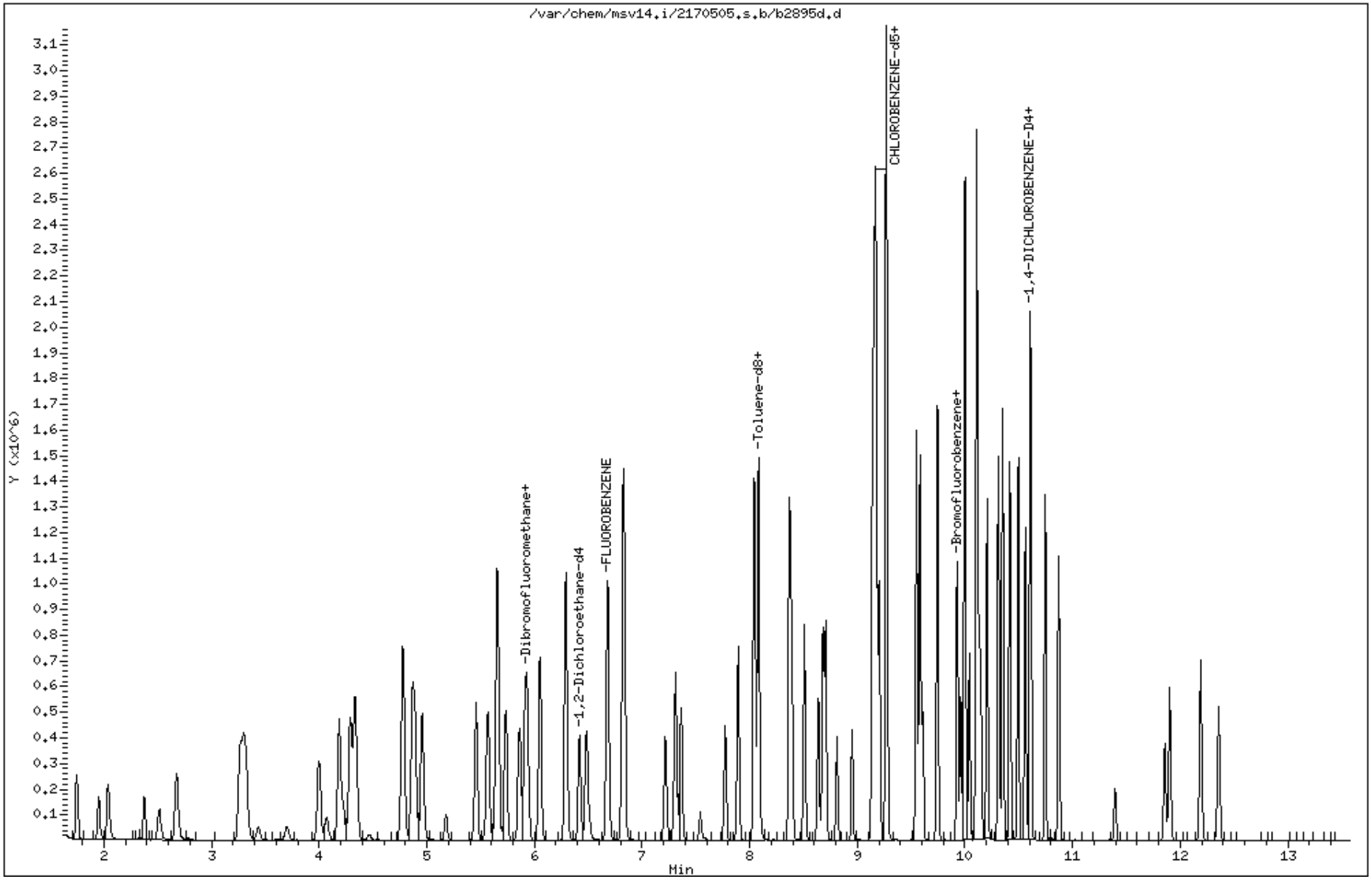
Sample Info: 1207*V14STD050

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

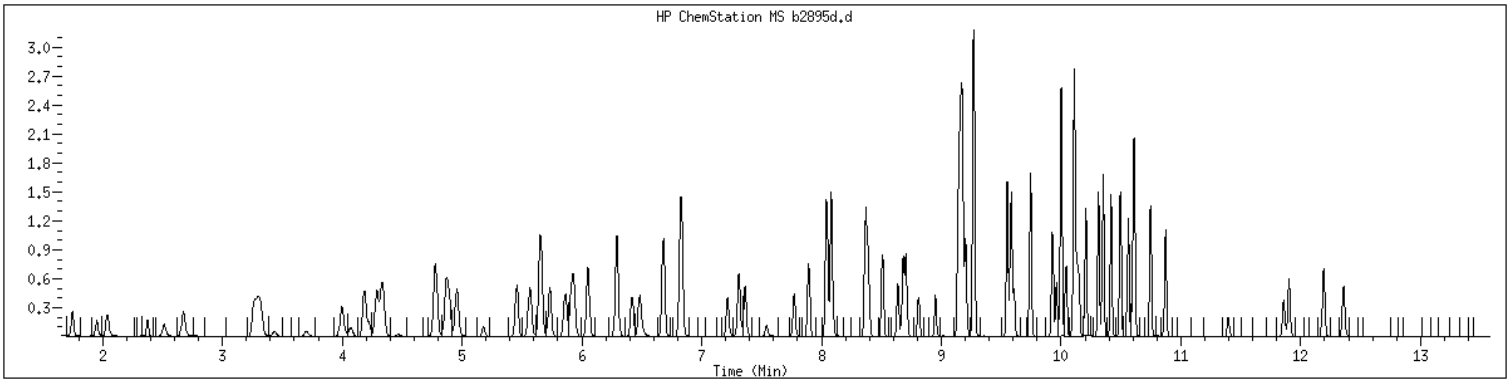
Column diameter: 0.25



Report Date: 05/06/2017 11:41

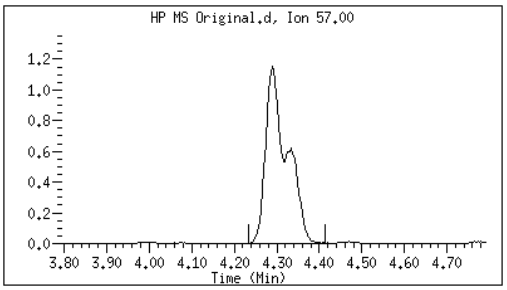
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1207 SampleType : CALIB_7
Injection Date: 05/05/2017 11:05 Instrument : msv14.i
Operator : LBH
Sample Info : 1207*V14STD050
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



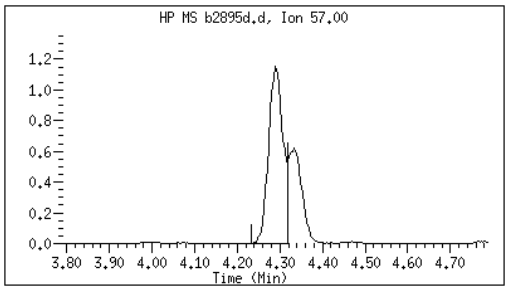
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2

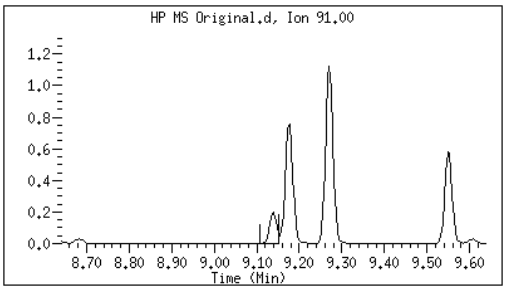


Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35

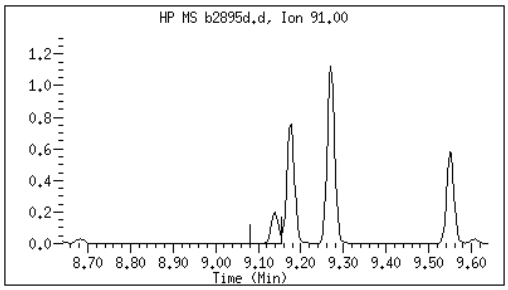


140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/06/2017 11:35



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2896d.d
Lab Smp Id: 1208 Client Smp ID: V14STD100
Inj Date : 05-MAY-2017 11:27
Operator : LBH Inst ID: msv14.i
Smp Info : 1208*V14STD100
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:27 Cal File: b2896d.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	434782	100.000	99.4	
2 Chloromethane ++	50	1.953	1.953	(0.292)	321871	100.000	91.6	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	440682	100.000	102	
5 Bromomethane	94	2.373	2.373	(0.355)	159518	100.000	100	
6 Chloroethane	64	2.505	2.505	(0.375)	253346	100.000	88.7	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	505185	100.000	100	
11 1,1-Dichloroethene +	96	3.269	3.269	(0.489)	269048	100.000	94.7	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	894083	100.000	99.1	
10 1,1,2Trichlotrifluoroethane	101	3.314	3.314	(0.496)	300694	100.000	104	
13 Methyl Iodide	142	3.434	3.434	(0.514)	169998	100.000	102	
9 Acrolein	56	3.700	3.700	(0.554)	124609	500.000	520	
17 Methylene Chloride	49	3.996	3.996	(0.598)	481777	100.000	91.1	
12 Acetone	43	4.071	4.071	(0.609)	268958	100.000	93.9	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	627308	100.000	104	

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20	Methyl Acetate	43	4.225	4.225	(0.632)	380761	100.000	96.9	8297
	23	Hexane	57	4.289	4.289	(0.642)	581818	100.000	103	9387(M1)
	21	MTBE	73	4.334	4.334	(0.649)	1360315	100.000	111	9838
	26	tert-Butyl Alcohol	59	4.469	4.469	(0.669)	50195	100.000	95.6	9421
	27	Isopropyl Ether	45	4.776	4.776	(0.715)	1482352	100.000	114	9849
	29	Chloroprene	53	4.862	4.862	(0.728)	658501	100.000	102	9461
	24	1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	848454	100.000	101	
	22	Acrylonitrile	53	4.956	4.956	(0.742)	870910	500.000	512	
	25	Vinyl Acetate	43	5.177	5.177	(0.775)	308759	100.000	116	
M	48	Total 1,2-Dichloroethene	61				1277976	200.000	214	
	30	cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	650668	100.000	110	
	31	2,2-Dichloropropane	77	5.567	5.567	(0.833)	710381	100.000	107	
	38	Cyclohexane	56	5.653	5.653	(0.846)	756009	100.000	101	9380
	34	Bromochloromethane	128	5.657	5.657	(0.847)	180192	100.000	94.1	
	41	Chloroform +	83	5.732	5.732	(0.858)	801694	100.000	101	
	39	Carbon Tetrachloride	117	5.863	5.863	(0.878)	595092	100.000	109	
$	36	Dibromofluoromethane	111	5.912	5.912	(0.885)	226217	50.0000	49.4	6932
	37	1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	699363	100.000	104	
	42	1,1-Dichloropropene	75	6.051	6.051	(0.906)	609203	100.000	113	
	32	2-Butanone	43	6.043	6.043	(0.905)	326259	100.000	106	
	44	Benzene	78	6.291	6.291	(0.942)	1812603	100.000	106	
$	43	1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	151264	50.0000	50.2	
	46	1,2-Dichloroethane	62	6.482	6.482	(0.970)	659435	100.000	97.4	
	45	Isobutyl Alcohol	43	6.508	6.508	(0.974)	101575	500.000	548	9602
*	47	FLUOROBENZENE	96	6.681	6.681	(1.000)	888686	50.0000		
	50	Methyl Cyclohexane	83	6.827	6.827	(1.022)	654473	100.000	112	8383
	49	Trichloroethene	130	6.834	6.834	(1.023)	449873	100.000	100	
	52	Dibromomethane	93	7.217	7.217	(1.080)	292580	100.000	101	
	51	1,2-Dichloropropane +	63	7.310	7.310	(1.094)	477807	100.000	106	
	54	Bromodichloromethane	83	7.363	7.363	(1.102)	639838	100.000	104	
	55	1,4- Dioxane	58	7.543	7.543	(1.129)	97299	2500.00	2530	9450
	57	1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	688838	100.000	104	9631
	58	cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	778640	100.000	116	
$	60	Toluene-d8	98	8.041	8.041	(0.879)	819042	50.0000	50.6	
	61	Toluene +	91	8.082	8.082	(0.883)	1771791	100.000	103	
M	145	1-3 Dichloropropene total	100				1497962	200.000	225	0
	66	Tetrachloroethene	164	8.371	8.371	(0.915)	312114	100.000	101	
	59	4-methyl-2-pentanone	43	8.367	8.367	(0.914)	501248	100.000	113	
	62	trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	719322	100.000	109	
	65	1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	417915	100.000	102	
	162	3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	549729	100.000	113	9702
	69	Dibromochloromethane	129	8.637	8.637	(0.944)	476115	100.000	109	
	67	1,3-Dichloropropane	76	8.705	8.705	(0.951)	771730	100.000	106	
	70	1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	419505	100.000	106	
	68	2-Hexanone	43	8.952	8.952	(0.978)	408541	100.000	115	
	140	1-Chlorohexane	91	9.140	9.140	(0.999)	485734	100.000	102	9551(M2)
*	71	CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	347670	50.0000		

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	72	Chlorobenzene ++	112	9.166	9.166	(1.002)	1052415	100.000	98.1	
	73	Ethylbenzene +	106	9.177	9.177	(1.003)	551421	100.000	103	
	74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	405437	100.000	101	
	75	p,m-Xylene	106	9.271	9.271	(1.013)	1263391	200.000	198	
M	99	TOTAL XYLENE	106				1897304	300.000	299	
	76	o-Xylene	106	9.552	9.552	(1.044)	633913	100.000	101	
	77	Styrene	104	9.582	9.582	(1.047)	1078634	100.000	101	
	78	Bromoform ++	173	9.608	9.608	(1.050)	320444	100.000	103	
	79	Isopropylbenzene	105	9.743	9.743	(1.065)	1628942	100.000	101	
	161	cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	181473	100.000	95.1	9497
$	80	Bromofluorobenzene	174	9.927	9.927	(1.085)	214092	50.0000	51.2	
	84	Bromobenzene	77	9.998	9.998	(0.943)	791728	100.000	101	
	86	n-Propylbenzene	91	10.002	10.002	(0.943)	1766465	100.000	105	
	81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	522507	100.000	97.6	
	87	2-Chlorotoluene	91	10.107	10.107	(0.953)	1247893	100.000	106	
	88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	1206294	100.000	107	
	85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	702143	100.000	103	
	83	trans-1,4-Dichloro-2-Butene	53	10.152	10.152	(0.958)	159471	100.000	102	
	90	4-Chlorotoluene	91	10.208	10.208	(0.963)	1155215	100.000	108	
	91	tert-butylbenzene	91	10.313	10.313	(0.973)	696517	100.000	113	
	93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	1272417	100.000	108	
	94	sec-Butylbenzene	105	10.418	10.418	(0.983)	1406629	100.000	111	
	92	p-Isopropyltoluene	119	10.497	10.497	(0.990)	1172653	100.000	111	
	96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	673139	100.000	101	
*	97	1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	240077	50.0000		
	98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	656694	100.000	95.3	
	100	n-Butylbenzene	91	10.748	10.748	(1.014)	1013377	100.000	105	
	102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	636901	100.000	101	
	106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	90964	100.000	106	
	109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	137785	100.000	107	
	108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	354038	100.000	101	
	110	Naphthalene	128	12.191	12.191	(1.150)	1091856	100.000	101	
	111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	341487	100.000	101	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2896d.d

Date : 05-MAY-2017 11:27

Client ID: V14STD100

Instrument: msv14.i

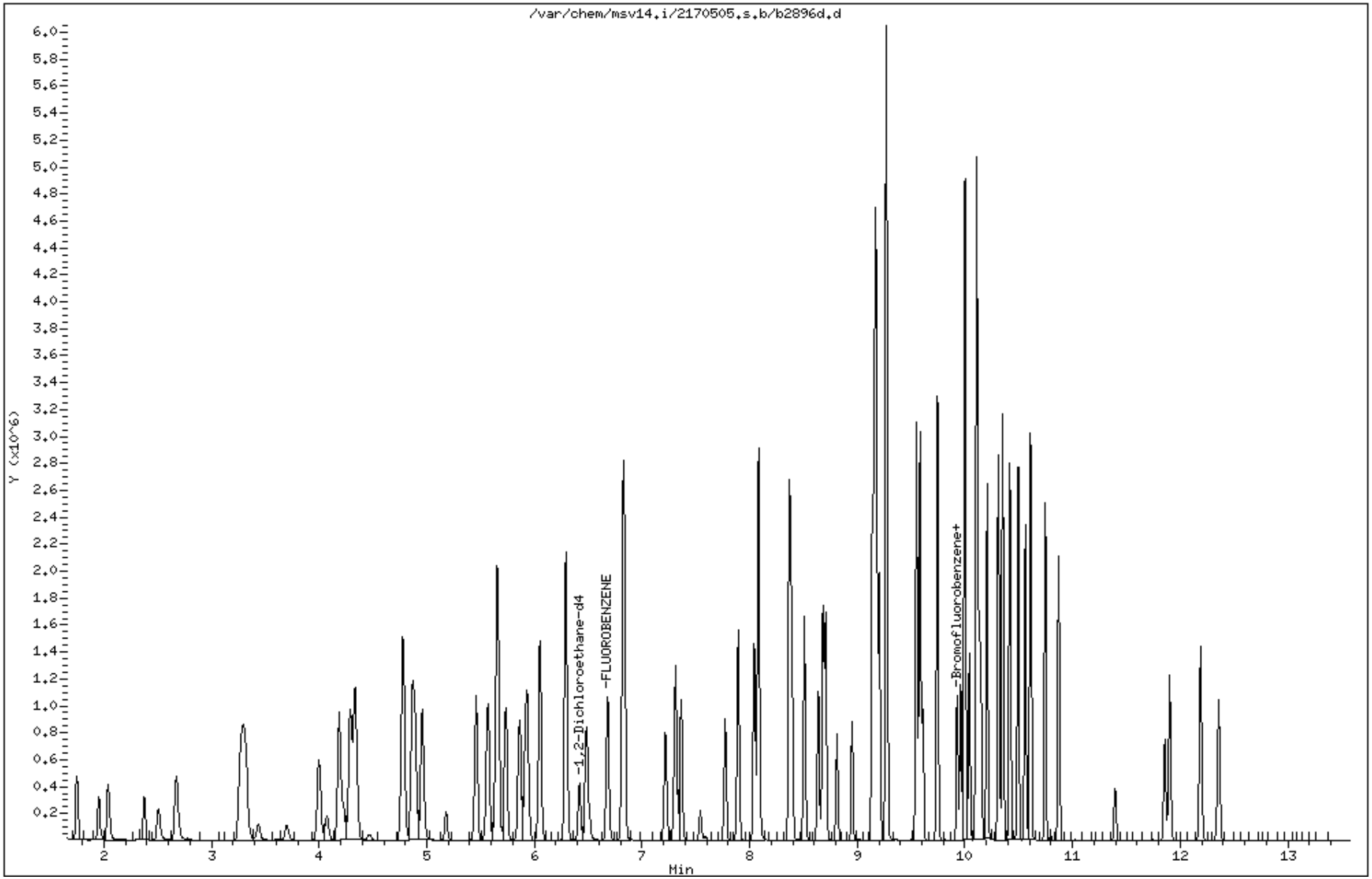
Sample Info: 1208*V14STD100

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

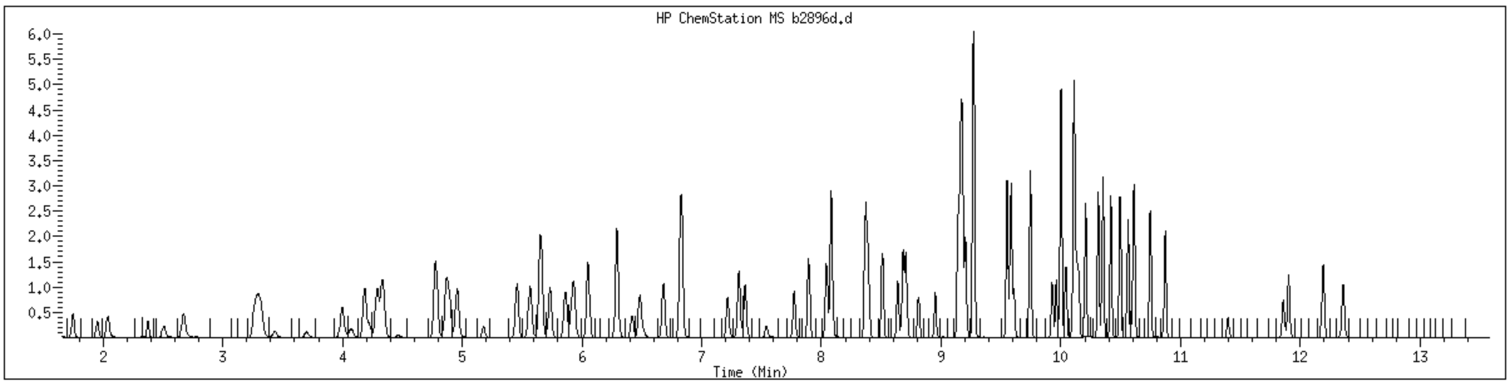
Column diameter: 0.25



Data file : /var/chem/msv14.i/2170505.s.b/b2896d.d Page: 1
Report Date: 05/06/2017 11:41

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1208 SampleType : CALIB_8
Injection Date: 05/05/2017 11:27 Instrument : msv14.i
Operator : LBH
Sample Info : 1208*V14STD100
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



Original Final

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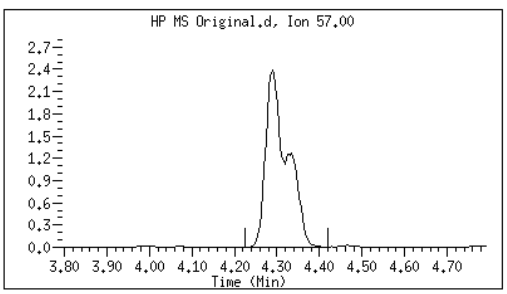
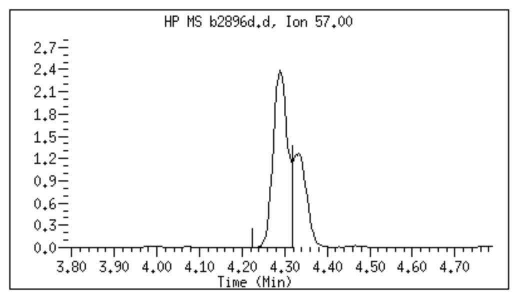
23 Hexane CAS#: 110-54-3 Reason: M1



Electronic Signature
Applied

User: jck2
Date: 05/06/2017 11:34



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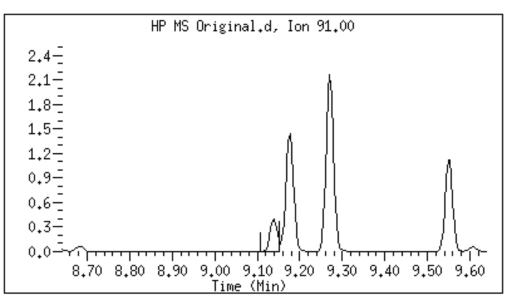
140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



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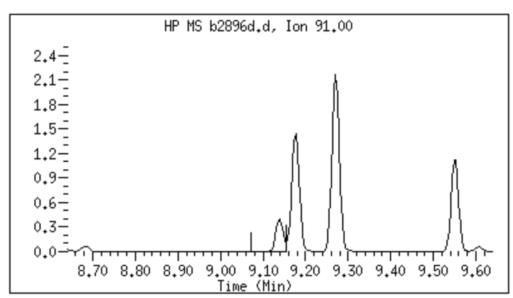
Date: 05/06/2017 11:34



M1 - Target system integrated incorrectly
M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2897d.d
Lab Smp Id: 1209 Client Smp ID: V14STD200
Inj Date : 05-MAY-2017 11:50
Operator : LBH Inst ID: msv14.i
Smp Info : 1209*V14STD200
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	889333	200.000	198	
2 Chloromethane ++	50	1.950	1.950	(0.292)	659054	200.000	185	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	928345	200.000	207	(A)
5 Bromomethane	94	2.373	2.373	(0.355)	329925	200.000	201	(A)
6 Chloroethane	64	2.501	2.501	(0.374)	524484	200.000	181	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	1096008	200.000	210	(A)
11 1,1-Dichloroethene +	96	3.269	3.269	(0.489)	583888	200.000	200	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	1937226	200.000	204	(A)
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	650009	200.000	216	(A)
13 Methyl Iodide	142	3.438	3.438	(0.515)	422952	200.000	206	(AM1)
9 Acrolein	56	3.700	3.700	(0.554)	285751	1000.00	1130	(A)
17 Methylene Chloride	49	4.000	4.000	(0.599)	1031544	200.000	191	
12 Acetone	43	4.068	4.068	(0.609)	554038	200.000	190	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	1162213	200.000	190	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	735425	200.000	184	9120
	23 Hexane	57	4.289	4.289	(0.642)	1045897	200.000	190	9359(M1)
	21 MTBE	73	4.330	4.330	(0.648)	2477043	200.000	197	9706
	26 tert-Butyl Alcohol	59	4.465	4.465	(0.668)	104432	200.000	194	9380
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	3079307	200.000	225	9793(A)
	29 Chloroprene	53	4.866	4.866	(0.728)	1377145	200.000	203	9488(A)
	24 1,1-Dichloroethane ++	63	4.896	4.896	(0.733)	1593783	200.000	187	
	22 Acrylonitrile	53	4.960	4.960	(0.742)	1762446	1000.00	1010	(A)
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	637147	200.000	228	(A)
M	48 Total 1,2-Dichloroethene	61				2414169	400.000	394	
	30 cis-1,2-Dichloroethene	61	5.462	5.462	(0.818)	1251956	200.000	204	(A)
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	1491743	200.000	216	(A)
	38 Cyclohexane	56	5.653	5.653	(0.846)	1589625	200.000	202	9497(A)
	34 Bromochloromethane	128	5.661	5.661	(0.847)	360355	200.000	185	
	41 Chloroform +	83	5.736	5.736	(0.859)	1630864	200.000	200	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	1278476	200.000	223	(A)
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	212313	50.0000	45.7	6957
	37 1,1,1-Trichloroethane	97	5.935	5.935	(0.888)	1471606	200.000	210	(A)
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	1296341	200.000	229	(A)
	32 2-Butanone	43	6.043	6.043	(0.905)	697083	200.000	218	(A)
	44 Benzene	78	6.291	6.291	(0.942)	3803066	200.000	213	(A)
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	150532	50.0000	48.8	
	46 1,2-Dichloroethane	62	6.486	6.486	(0.971)	1381080	200.000	199	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	203428	1000.00	1060	9660(A)
*	47 FLUOROBENZENE	96	6.681	6.681	(1.000)	913743	50.0000		
	50 Methyl Cyclohexane	83	6.827	6.827	(1.022)	1343066	200.000	219	8418(A)
	49 Trichloroethene	130	6.834	6.834	(1.023)	911653	200.000	198	
	52 Dibromomethane	93	7.217	7.217	(1.080)	603142	200.000	202	(A)
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	1000025	200.000	213	(A)
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	1342324	200.000	210	(A)
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	175099	5000.00	4510	9442
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	1438616	200.000	209	9638(A)
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	1670934	200.000	235	(A)
$	60 Toluene-d8	98	8.041	8.041	(0.879)	830261	50.0000	54.2	
	61 Toluene +	91	8.082	8.082	(0.883)	3590948	200.000	219	(A)
M	145 1-3 Dichloropropene total	100				3180799	400.000	454	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	621664	200.000	212	(A)
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	1023930	200.000	240	(A)
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	1509865	200.000	219	(A)
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	850562	200.000	219	(A)
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	1105776	200.000	235	9714(A)
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	984612	200.000	234	(A)
	67 1,3-Dichloropropane	76	8.709	8.709	(0.952)	1581698	200.000	228	(A)
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	858136	200.000	227	(A)
	68 2-Hexanone	43	8.952	8.952	(0.978)	833683	200.000	243	(A)
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	971106	200.000	208	8959(AM2)
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	324924	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	1962736	200.000	196	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	1028171	200.000	204	(A)
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	794912	200.000	210	(A)
75	p,m-Xylene	106	9.271	9.271	(1.013)	2303027	400.000	393	
M 99	TOTAL XYLENE	106				3510335	600.000	595	
76	o-Xylene	106	9.552	9.552	(1.044)	1207308	200.000	202	(A)
77	Styrene	104	9.582	9.582	(1.047)	2028936	200.000	201	(A)
78	Bromoform ++	173	9.608	9.608	(1.050)	611181	200.000	208	(A)
79	Isopropylbenzene	105	9.747	9.747	(1.065)	3032269	200.000	200	
161	cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	333314	200.000	200	9472(A)
$ 80	Bromofluorobenzene	174	9.931	9.931	(1.085)	195879	50.0000	50.1	
84	Bromobenzene	77	9.998	9.998	(0.943)	1399347	200.000	204	(A)
86	n-Propylbenzene	91	10.002	10.002	(0.943)	3117022	200.000	211	(A)
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	920358	200.000	198	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	2215727	200.000	214	(A)
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	2092706	200.000	210	(A)
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	1245220	200.000	209	(A)
83	trans-1,4-Dichloro-2-Butene	53	10.152	10.152	(0.958)	292440	200.000	213	(A)
90	4-Chlorotoluene	91	10.208	10.208	(0.963)	2126455	200.000	224	(A)
91	tert-butylbenzene	91	10.313	10.313	(0.973)	1264553	200.000	229	(A)
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	2255891	200.000	217	(A)
94	sec-Butylbenzene	105	10.418	10.418	(0.983)	2519626	200.000	223	(A)
92	p-Isopropyltoluene	119	10.497	10.497	(0.990)	2095889	200.000	223	(A)
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	1205368	200.000	206	(A)
* 97	1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	209473	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	1189589	200.000	198	
100	n-Butylbenzene	91	10.748	10.748	(1.014)	1852735	200.000	217	(A)
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	1166016	200.000	209	(A)
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	182252	200.000	237	(A)
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	285230	200.000	243	(A)
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	745871	200.000	206	(A)
110	Naphthalene	128	12.191	12.191	(1.150)	2323190	200.000	206	(A)
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	722816	200.000	206	(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M1- Compound response manually integrated because Target system did not integrate.
M2- Compound response manually integrated because Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2897d.d

Date : 05-MAY-2017 11:50

Client ID: V14STD200

Instrument: msv14.i

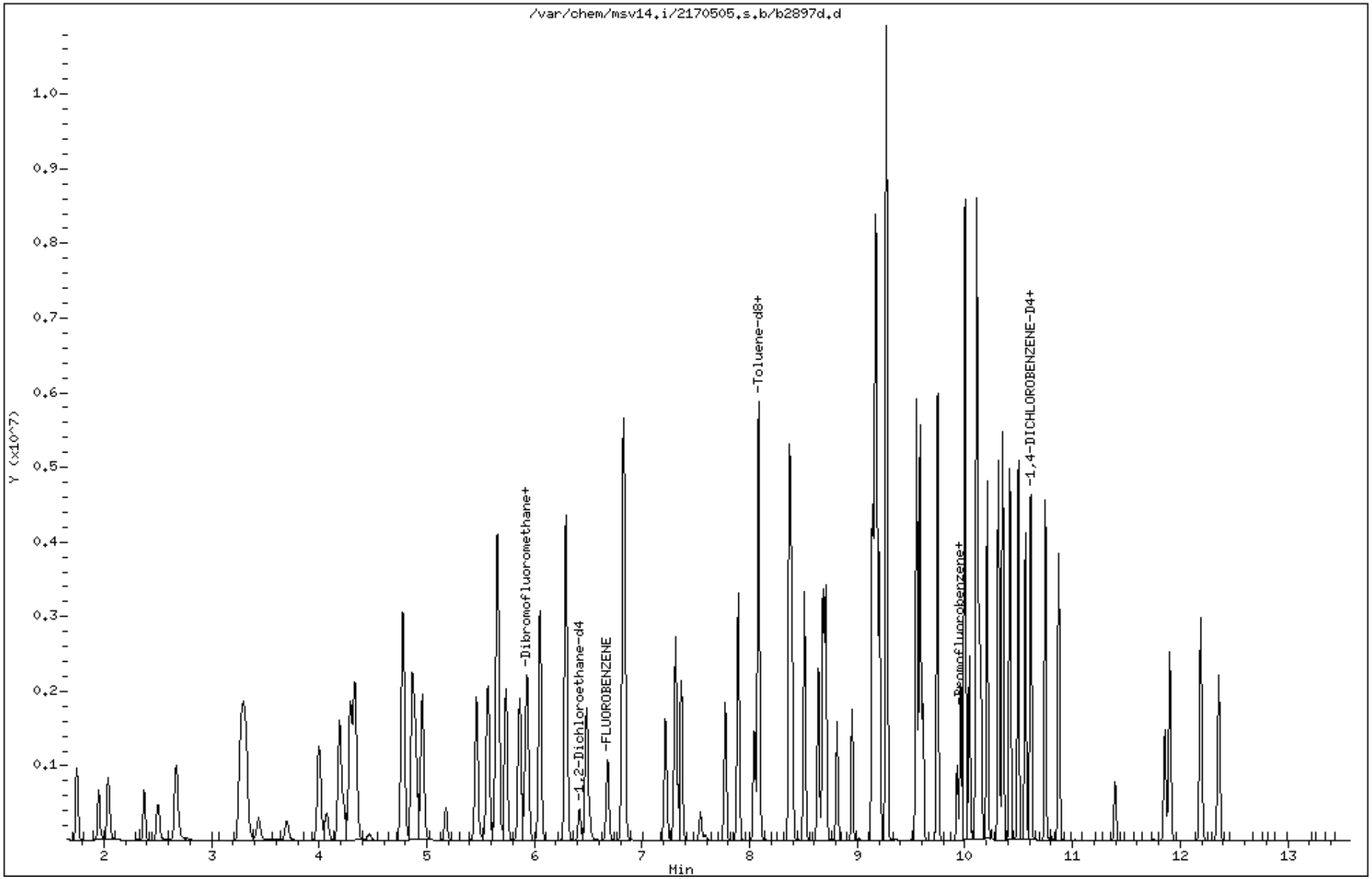
Sample Info: 1209*V14STD200

Purge Volume: 5.0

Operator: LBH

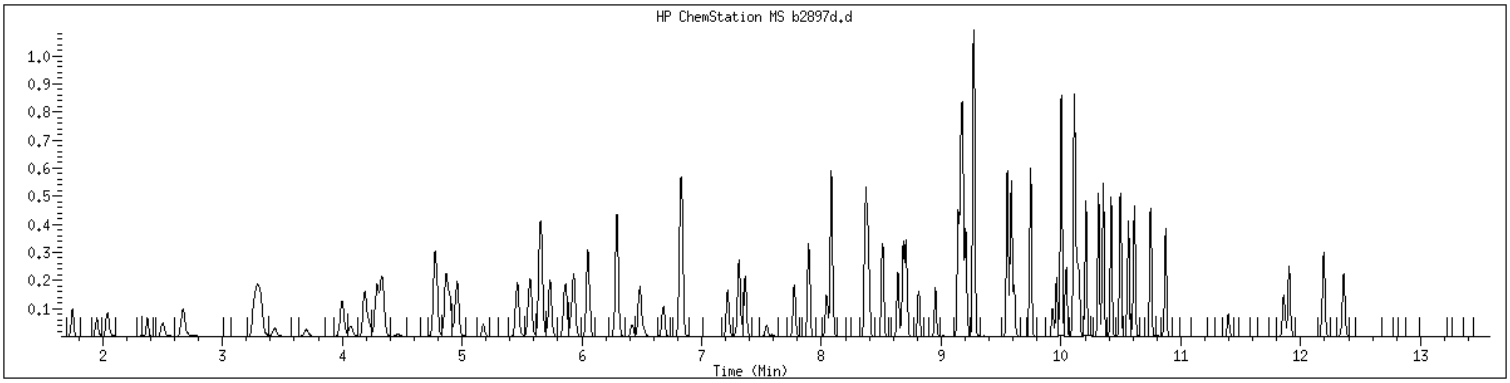
Column phase: RTX-VMS-30M

Column diameter: 0.25



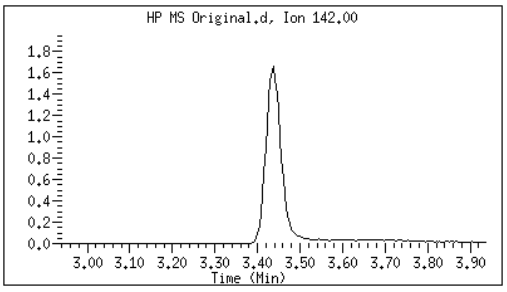
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1209 SampleType : CALIB_9
Injection Date: 05/05/2017 11:50 Instrument : msv14.i
Operator : LBH
Sample Info : 1209*V14STD200
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



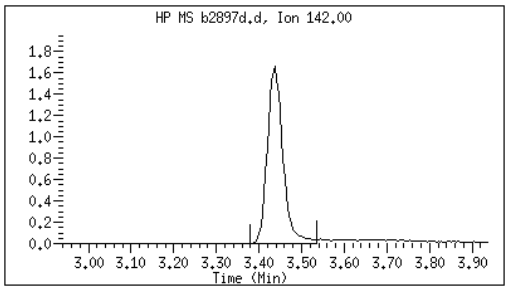
Original Final

13 Methyl Iodide CAS#: 74-88-4 Reason: M1

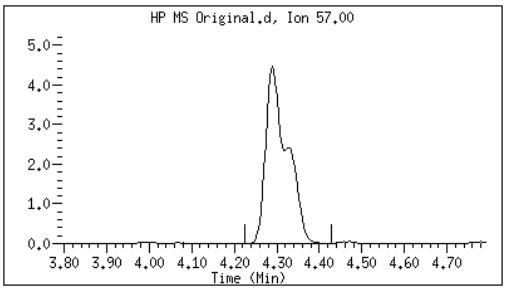


Electronic Signature Applied

User: lbh
Date: 05/05/2017 13:43



23 Hexane CAS#: 110-54-3 Reason: M1



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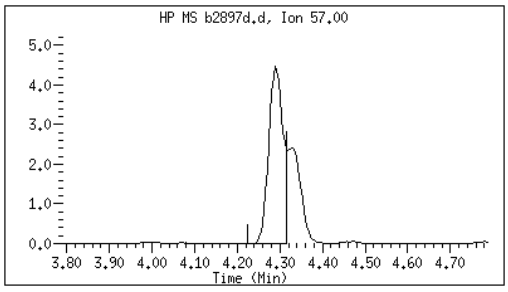
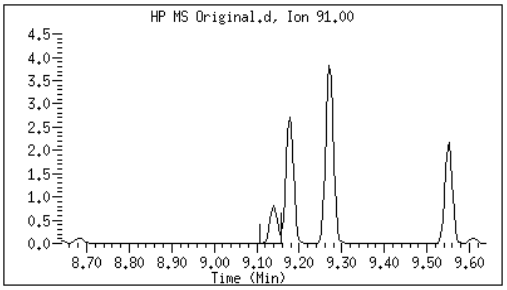
User: jck2
Date: 05/06/2017 11:33



Original Final

140 1-Chlorohexane CAS#: 544-10-5 Reason: M2



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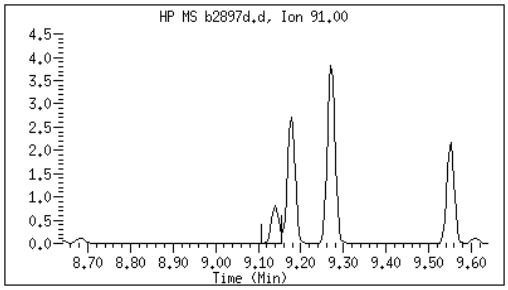
Date: 05/06/2017 11:33



M1 - Target system integrated incorrectly
M2 - Target system integrated incorrectly

Form 6I

ICAL Verifications

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217051110	Instrument ID:	MSV11
Analysis Date:	04/14/17 1718	Lab File ID:	2170414/i6584D
Analysis Method:	EPA 8260B	Analytical Batch:	608399

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
1,1,1-Trichloroethane	ug/kg	50.0	49.5	99	80	120	
1,1,2,2-Tetrachloroethane	ug/kg	50.0	50.4	101	80	120	
1,1,2-Trichloroethane	ug/kg	50.0	49.0	98	80	120	
1,1-Dichloroethane	ug/kg	50.0	48.8	98	80	120	
1,1-Dichloroethene	ug/kg	50.0	50.9	102	80	120	
1,2,3-Trichlorobenzene	ug/kg	50.0	57.8	116	80	120	
1,2,4-Trichlorobenzene	ug/kg	50.0	59.2	118	80	120	
1,2-Dibromo-3-chloropropane	ug/kg	50.0	51.9	104	80	120	
1,2-Dibromoethane	ug/kg	50.0	50.1	100	80	120	
1,2-Dichlorobenzene	ug/kg	50.0	50.9	102	80	120	
1,2-Dichloroethane	ug/kg	50.0	45.4	91	80	120	
1,2-Dichloropropane	ug/kg	50.0	46.0	92	80	120	
1,3-Dichlorobenzene	ug/kg	50.0	50.2	100	80	120	
1,4-Dichlorobenzene	ug/kg	50.0	48.7	97	80	120	
2-Butanone	ug/kg	50.0	50.5	101	80	120	
2-Hexanone	ug/kg	50.0	52.0	104	80	120	
4-Methyl-2-pentanone	ug/kg	50.0	51.9	104	80	120	
Acetone	ug/kg	50.0	46.2	92	80	120	
Benzene	ug/kg	50.0	48.1	96	80	120	
Bromochloromethane	ug/kg	50.0	49.5	99	80	120	
Bromodichloromethane	ug/kg	50.0	47.2	94	80	120	
Bromoform	ug/kg	50.0	48.8	98	80	120	
Bromomethane	ug/kg	50.0	47.9	96	80	120	
Carbon disulfide	ug/kg	50.0	51.2	102	80	120	
Carbon tetrachloride	ug/kg	50.0	49.3	99	80	120	
Chlorobenzene	ug/kg	50.0	49.5	99	80	120	
Chloroethane	ug/kg	50.0	51.3	103	80	120	
Chloroform	ug/kg	50.0	47.0	94	80	120	
Chloromethane	ug/kg	50.0	49.9	100	80	120	
cis-1,2-Dichloroethene	ug/kg	50.0	47.6	95	80	120	
cis-1,3-Dichloropropene	ug/kg	50.0	51.1	102	80	120	
Cyclohexane	ug/kg	50.0	51.2	102	80	120	
Dibromochloromethane	ug/kg	50.0	49.2	98	80	120	
Dichlorodifluoromethane	ug/kg	50.0	53.2	106	80	120	

FORM 6I - ORG

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217051110	Instrument ID:	MSV11
Analysis Date:	04/14/17 1718	Lab File ID:	2170414/i6584D
Analysis Method:	EPA 8260B	Analytical Batch:	608399

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
Ethylbenzene	ug/kg	50.0	52.1	104	80	120	
Isopropylbenzene (Cumene)	ug/kg	50.0	52.8	106	80	120	
Methyl Acetate	ug/kg	50.0	48.5	97	80	120	
Methylcyclohexane	ug/kg	50.0	52.5	105	80	120	
Methylene chloride	ug/kg	50.0	44.9	90	80	120	
Styrene	ug/kg	50.0	51.9	104	80	120	
tert-Butyl methyl ether (MTBE)	ug/kg	50.0	49.7	99	80	120	
Tetrachloroethene	ug/kg	50.0	54.4	109	80	120	
Toluene	ug/kg	50.0	50.0	100	80	120	
trans-1,2-Dichloroethene	ug/kg	50.0	48.5	97	80	120	
trans-1,3-Dichloropropene	ug/kg	50.0	50.8	102	80	120	
Trichloroethene	ug/kg	50.0	50.8	102	80	120	
Trichlorofluoromethane	ug/kg	50.0	52.8	106	80	120	
Trichlorotrifluoroethane	ug/kg	50.0	55.1	110	80	120	
Vinyl chloride	ug/kg	50.0	51.3	103	80	120	
Xylene (total)	ug/kg	150	155	103	80	120	

GCAL, Inc.

Data file : /var/chem/msv11.i/2170414.s.b/i6584D.d
Lab Smp Id: 1600 Client Smp ID: ICV050
Inj Date : 14-APR-2017 17:18
Operator : JCK Inst ID: msv11.i
Smp Info : 1600*ICV050
Misc Info : MSV~38124~*1*JCK
Comment :
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Meth Date : 14-Apr-2017 18:18 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 11 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/Kg)	SIMILARITY
1 Dichlorodifluoromethane	85	1.760	1.757	(0.247)	149633	53.2428	53.2	9565
2 Chloromethane ++	50	1.966	1.966	(0.276)	149888	49.8830	49.9	9577
3 Vinyl Chloride +	62	2.044	2.044	(0.287)	131666	51.2880	51.3	9468
6 Bromomethane	94	2.390	2.390	(0.335)	70239	47.9093	47.9	9521
8 Chloroethane	64	2.527	2.510	(0.354)	74017	51.2544	51.3	9391
9 Trichlorofluoromethane	101	2.688	2.685	(0.377)	182721	52.8147	52.8	9714
12 1,1-Dichloroethene +	96	3.302	3.299	(0.463)	93522	50.9382	50.9	9056
14 Carbon Disulfide	76	3.332	3.329	(0.467)	327459	51.2333	51.2	9050
15 1,1,2Trichlotrifluoroethane	101	3.352	3.349	(0.470)	103310	55.0840	55.1	9248
16 Methyl Iodide	142	3.486	3.480	(0.489)	82935	46.9900	47.0	9064
17 Acrolein	56	3.751	3.753	(0.526)	48036	263.702	264	8866
18 Methylene Chloride	49	4.091	4.091	(0.573)	153172	44.9468	44.9	9656
19 Acetone	43	4.169	4.166	(0.584)	59590	46.2058	46.2	8316

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ug/Kg)	SIMILARITY
	13	trans-1,2-Dichloroethene	61	4.308	4.314	(0.604)	154262	48.4647	48.5	9510
	22	Methyl Acetate	43	4.348	4.347	(0.609)	69062	48.4601	48.5	8934
	23	Hexane	57	4.420	4.420	(0.620)	222504	51.2463	51.2	9217
	25	MTBE	73	4.465	4.464	(0.626)	250562	49.7324	49.7	9374
	31	1,1-Dichloroethane ++	63	5.120	5.117	(0.718)	203450	48.7930	48.8	8874
	33	Acrylonitrile	53	5.192	5.190	(0.728)	156415	239.141	239	9760
	34	Vinyl Acetate	43	5.443	5.446	(0.763)	81338	50.7739	50.8	
M	68	Total 1,2-Dichloroethene	61				311917	96.0687	96.1	0
	21	cis-1,2-Dichloroethene	61	5.770	5.767	(0.809)	157655	47.6040	47.6	9614
	35	2,2-Dichloropropane	77	5.887	5.889	(0.825)	143153	50.3988	50.4	9444
	38	Cyclohexane	56	5.982	5.981	(0.839)	194734	51.2113	51.2	9501
	39	Bromochloromethane	128	5.990	5.990	(0.840)	53602	49.4744	49.5	9532
	40	Chloroform +	83	6.085	6.082	(0.853)	203503	46.9987	47.0	9570
	41	Carbon Tetrachloride	117	6.213	6.216	(0.871)	169577	49.2767	49.3	9642
$	42	Dibromofluoromethane	111	6.280	6.285	(0.880)	118696	49.4483	49.4	9065
	43	1,1,1-Trichloroethane	97	6.294	6.297	(0.882)	180961	49.5260	49.5	9265
	45	2-Butanone	43	6.428	6.422	(0.901)	61165	50.5318	50.5	
	44	1,1-Dichloropropene	75	6.431	6.430	(0.901)	149996	52.0394	52.0	9322
	48	Benzene	78	6.698	6.698	(0.939)	445339	48.1242	48.1	9492
$	50	1,2-Dichloroethane-d4	67	6.843	6.846	(0.959)	72005	48.6995	48.7	9711
	52	1,2-Dichloroethane	62	6.913	6.916	(0.969)	164782	45.4263	45.4	9611
*	54	FLUOROBENZENE	96	7.133	7.133	(1.000)	474256	50.0000		9490
	56	Methyl cyclohexane	83	7.292	7.287	(1.022)	194918	52.4689	52.5	9400
	57	Trichloroethene	130	7.303	7.306	(1.024)	118918	50.7734	50.8	9163
	62	Dibromomethane	93	7.730	7.730	(1.084)	66991	48.9642	49.0	9560
	63	1,2-Dichloropropane +	63	7.828	7.830	(1.097)	112677	45.9582	46.0	9479
	64	Bromodichloromethane	83	7.895	7.897	(1.107)	167237	47.2131	47.2	9662
	69	1-Bromo-2-chloroethane	63	8.355	8.357	(1.171)	145113	47.3540	47.4	9697
	72	cis-1,3-Dichloropropene	75	8.497	8.497	(1.191)	180861	51.1341	51.1	
$	74	Toluene-d8	98	8.662	8.661	(0.872)	458887	50.9633	51.0	9612
	77	Toluene +	91	8.709	8.709	(0.876)	468172	50.0020	50.0	9462
M	71	1-3 Dichloropropene-Total	100				337175	101.932	102	0
	79	4-methyl-2-pentanone	43	9.038	9.038	(0.910)	103384	51.8639	51.9	
	78	Tetrachloroethene	164	9.038	9.041	(0.910)	101492	54.4456	54.4	9580
	81	trans-1,3-Dichloropropene	75	9.069	9.069	(1.271)	156314	50.7980	50.8	
	82	1,1,2-Trichloroethane	97	9.203	9.200	(0.926)	94985	49.0425	49.0	9537
	85	Dibromochloromethane	129	9.348	9.347	(0.941)	125396	49.2227	49.2	9468
	86	1,3-Dichloropropane	76	9.426	9.425	(0.949)	173900	50.1534	50.2	9410
	88	1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	91343	50.0682	50.1	8963
	80	2-Hexanone	43	9.713	9.710	(0.978)	87420	51.9891	52.0	8773
	91	1-Chlorohexane	91	9.925	9.922	(0.999)	154260	57.7804	57.8	9510
*	90	Chlorobenzene-d5	82	9.936	9.936	(1.000)	200288	50.0000		8928
	92	Chlorobenzene ++	112	9.947	9.950	(1.001)	302425	49.5296	49.5	9410
	93	Ethylbenzene +	106	9.961	9.964	(1.003)	166777	52.0533	52.1	9254
	95	1,1,1,2-Tetrachloroethane	133	9.995	9.997	(1.006)	118131	51.5608	51.6	9436
	96	p,m-Xylene	106	10.073	10.075	(1.014)	409152	102.906	103	9629
M	120	TOTAL XYLENE	106				612081	154.625	155	0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/Kg)	SIMILARITY
	98 o-Xylene	106	10.396	10.396	(1.046)	202929	51.7189	51.7	
	99 Styrene	104	10.435	10.435	(1.050)	343316	51.9450	51.9	9536
	100 Bromoform ++	173	10.466	10.466	(1.053)	87958	48.8106	48.8	9478
	102 Isopropylbenzene	105	10.622	10.622	(1.069)	550039	52.7542	52.8	9598
$	103 Bromofluorobenzene	174	10.837	10.837	(1.091)	160533	51.7621	51.8	9627
	104 Bromobenzene	77	10.915	10.915	(0.939)	246147	49.4785	49.5	9590
	106 n-Propylbenzene	91	10.918	10.920	(0.939)	652285	52.1525	52.2	9604
	107 1,1,2,2-Tetrachloroethane++	83	10.976	10.973	(0.944)	123251	50.4030	50.4	9529
	108 2-Chlorotoluene	91	11.043	11.040	(0.950)	445549	50.1533	50.2	9526
	110 1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	474194	51.0237	51.0	
	109 1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	138960	47.3040	47.3	9453
	111 trans-1,4-Dichloro-2-Butene	53	11.096	11.096	(0.955)	36304	51.5190	51.5	9184
	112 4-Chlorotoluene	91	11.157	11.157	(0.960)	403995	51.4953	51.5	9602
	113 tert-butylbenzene	91	11.280	11.280	(0.970)	279029	51.1721	51.2	9631
	114 1,2,4-Trimethylbenzene	105	11.327	11.327	(0.975)	480639	49.9589	50.0	
	115 sec-Butylbenzene	105	11.406	11.405	(0.981)	607387	52.7095	52.7	
	116 p-Isopropyltoluene	119	11.498	11.497	(0.989)	530717	52.0524	52.1	9587
	117 1,3-Dichlorobenzene	146	11.573	11.573	(0.996)	278385	50.1888	50.2	
*	118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	190596	50.0000		8907
	119 1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	274956	48.6599	48.7	
	121 n-Butylbenzene	91	11.790	11.790	(1.014)	494343	53.4909	53.5	9713
	122 1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	270802	50.8921	50.9	
	125 1,2-Dibromo-3-Chloropropane	157	12.471	12.471	(1.073)	31195	51.8935	51.9	9026
	126 Hexachlorobutadiene	225	12.892	12.889	(1.109)	149746	53.8051	53.8	9652
	127 1,2,4-Trichlorobenzene	180	12.928	12.925	(1.112)	213578	59.2341	59.2	
	128 Napthalene	128	13.154	13.154	(1.132)	380290	50.9744	51.0	9552
	129 1,2,3-Trichlorobenzene	180	13.282	13.282	(1.143)	200336	57.8374	57.8	
	10 tert-butyl alcohol	59	4.626	4.615	(0.649)	15660	51.8624	51.9	8535
	26 Isopropyl Ether	45	4.975	4.978	(0.697)	390918	52.5257	52.5	9464
	20 Chloroprene	53	5.084	5.086	(0.713)	157641	52.6561	52.7	9260
	30 Isobutyl Alcohol	43	6.966	6.958	(0.977)	25440	270.992	271	8884
	53 1,4-Dioxane	58	8.098	8.095	(1.135)	25086	1436.36	1440	9611
	162 3,4-dichloro-1-butene	75	9.395	9.395	(0.946)	124656	55.4382	55.4	9242
	161 cis-1,4-dichloro-2-butene	53	10.879	10.878	(0.936)	37653	52.1691	52.2	9174

Data File: /var/chem/msv11.i/2170414.s.b/i6584D.d

Page 1

Date : 14-APR-2017 17:18

Client ID: ICV050

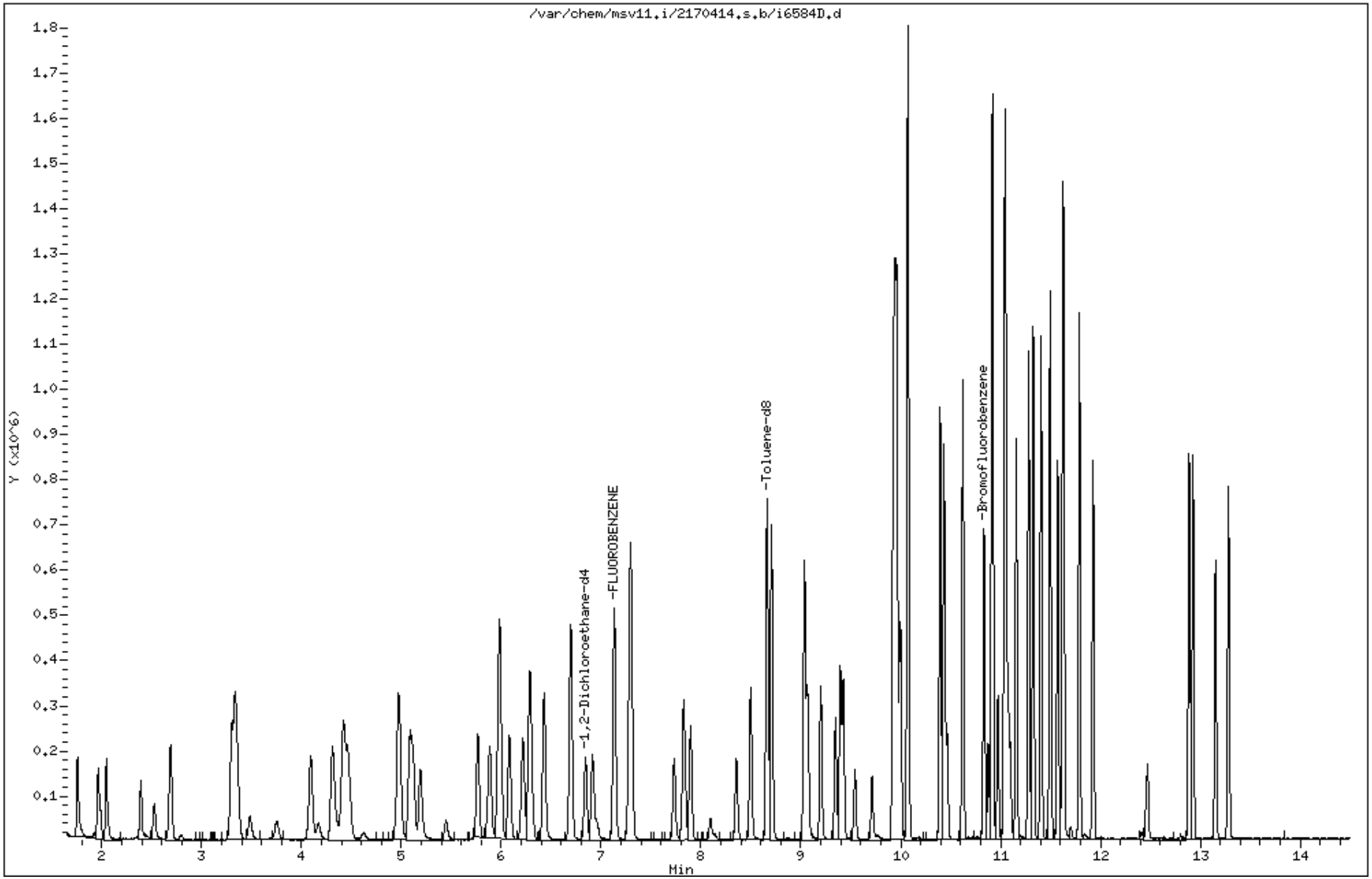
Instrument: msv11.i

Sample Info: 1600*ICV050

Operator: JCK

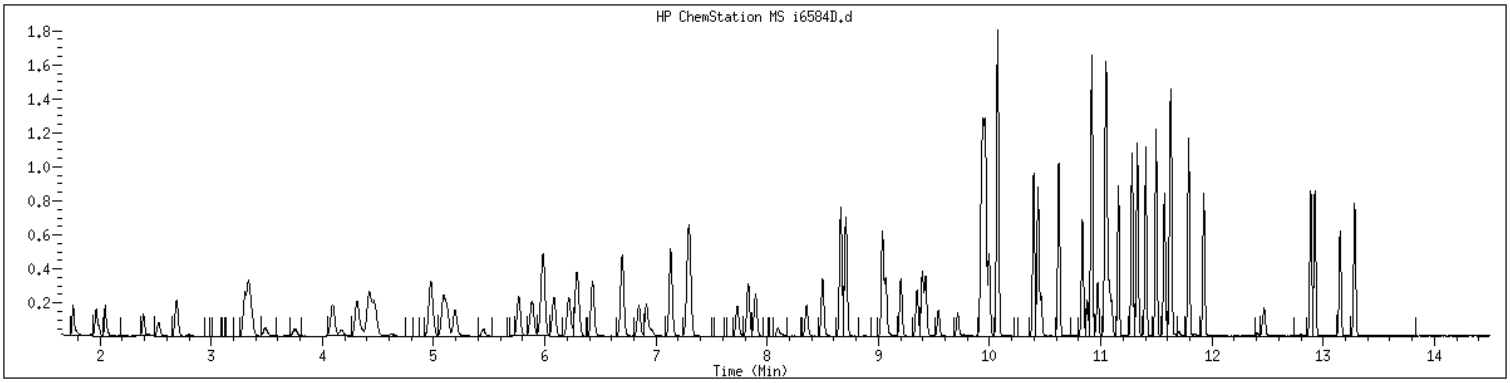
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1600 SampleType : LCS
Injection Date: 04/14/2017 17:18 Instrument : msv11.i
Operator : JCK
Sample Info : 1600*ICV050
Misc Info : MSV~38124~*1*JCK
Method : /var/chem/msv11.i/2170414.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217051110	Instrument ID:	MSV13
Analysis Date:	05/11/17 1741	Lab File ID:	2170511p/d4111D
Analysis Method:	EPA 8260B	Analytical Batch:	610278

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
1,1,1-Trichloroethane	ug/L	50.0	50.2	100	80	120	
1,1,2,2-Tetrachloroethane	ug/L	50.0	48.0	96	80	120	
1,1,2-Trichloroethane	ug/L	50.0	50.4	101	80	120	
1,1-Dichloroethane	ug/L	50.0	49.3	99	80	120	
1,1-Dichloroethene	ug/L	50.0	49.3	99	80	120	
1,2,3-Trichlorobenzene	ug/L	50.0	49.0	98	80	120	
1,2,4-Trichlorobenzene	ug/L	50.0	50.0	100	80	120	
1,2-Dibromo-3-chloropropane	ug/L	50.0	52.2	104	80	120	
1,2-Dibromoethane	ug/L	50.0	51.4	103	80	120	
1,2-Dichlorobenzene	ug/L	50.0	50.0	100	80	120	
1,2-Dichloroethane	ug/L	50.0	48.6	97	80	120	
1,2-Dichloropropane	ug/L	50.0	49.5	99	80	120	
1,3-Dichlorobenzene	ug/L	50.0	50.2	100	80	120	
1,4-Dichlorobenzene	ug/L	50.0	49.7	99	80	120	
2-Butanone	ug/L	50.0	47.9	96	80	120	
2-Hexanone	ug/L	50.0	48.4	97	80	120	
4-Methyl-2-pentanone	ug/L	50.0	48.2	96	80	120	
Acetone	ug/L	50.0	45.5	91	80	120	
Benzene	ug/L	50.0	49.7	99	80	120	
Bromochloromethane	ug/L	50.0	51.1	102	80	120	
Bromodichloromethane	ug/L	50.0	51.2	102	80	120	
Bromoform	ug/L	50.0	53.3	107	80	120	
Bromomethane	ug/L	50.0	49.5	99	80	120	
Carbon disulfide	ug/L	50.0	51.7	103	80	120	
Carbon tetrachloride	ug/L	50.0	51.8	104	80	120	
Chlorobenzene	ug/L	50.0	49.8	100	80	120	
Chloroethane	ug/L	50.0	48.6	97	80	120	
Chloroform	ug/L	50.0	49.7	99	80	120	
Chloromethane	ug/L	50.0	50.0	100	80	120	
cis-1,2-Dichloroethene	ug/L	50.0	50.4	101	80	120	
cis-1,3-Dichloropropene	ug/L	50.0	52.6	105	80	120	
Cyclohexane	ug/L	50.0	50.4	101	80	120	
Dibromochloromethane	ug/L	50.0	53.1	106	80	120	
Dichlorodifluoromethane	ug/L	50.0	51.3	103	80	120	

FORM 6I - ORG

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217051110	Instrument ID:	MSV13
Analysis Date:	05/11/17 1741	Lab File ID:	2170511p/d4111D
Analysis Method:	EPA 8260B	Analytical Batch:	610278

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
Ethylbenzene	ug/L	50.0	50.5	101	80	120	
Isopropylbenzene (Cumene)	ug/L	50.0	50.7	101	80	120	
Methyl Acetate	ug/L	50.0	47.4	95	80	120	
Methylcyclohexane	ug/L	50.0	50.9	102	80	120	
Methylene chloride	ug/L	50.0	46.3	93	80	120	
Styrene	ug/L	50.0	52.6	105	80	120	
tert-Butyl methyl ether (MTBE)	ug/L	50.0	49.1	98	80	120	
Tetrachloroethene	ug/L	50.0	50.0	100	80	120	
Toluene	ug/L	50.0	49.4	99	80	120	
trans-1,2-Dichloroethene	ug/L	50.0	49.9	100	80	120	
trans-1,3-Dichloropropene	ug/L	50.0	53.9	108	80	120	
Trichloroethene	ug/L	50.0	50.1	100	80	120	
Trichlorofluoromethane	ug/L	50.0	50.9	102	80	120	
Trichlorotrifluoroethane	ug/L	50.0	50.9	102	80	120	
Vinyl chloride	ug/L	50.0	49.9	100	80	120	
Xylene (total)	ug/L	150	152	101	80	120	

GCAL, Inc.

Data file : /var/chem/msv13.i/2170511p.s.b/d4111D.d
Lab Smp Id: 1600 Client Smp ID: ICV050
Inj Date : 11-MAY-2017 17:41
Operator : JCK Inst ID: msv13.i
Smp Info : 1600*ICV050
Misc Info : MSV~38318~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Meth Date : 12-May-2017 12:02 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.671	(0.256)	119495	51.3293	51.3	
2 Chloromethane ++	50	1.866	1.866	(0.285)	106758	49.9912	50.0	
3 Vinyl Chloride +	62	1.953	1.952	(0.298)	120280	49.9222	49.9	
6 Bromomethane	94	2.279	2.275	(0.348)	85075	49.5473	49.5	
7 Chloroethane	64	2.414	2.395	(0.368)	78789	48.6226	48.6	(M2)
8 Trichlorofluoromethane	101	2.560	2.556	(0.391)	166154	50.9468	50.9	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	100427	49.2642	49.3	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	300795	51.7125	51.7	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.178	(0.484)	97271	50.8625	50.9	
13 Methyl Iodide	142	3.298	3.294	(0.503)	63465	41.0188	41.0	
14 Acrolein	56	3.557	3.553	(0.543)	50346	255.392	255	
16 Methylene Chloride	49	3.857	3.853	(0.589)	136085	46.3321	46.3	
17 Acetone	43	3.928	3.924	(0.600)	77613	45.5125	45.5	
18 trans-1,2-Dichloroethene	61	4.041	4.040	(0.617)	141832	49.8942	49.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.078	(0.623)	101653	47.3589	47.4	9711
	20 Hexane	57	4.134	4.134	(0.631)	135327	51.6248	51.6	9511
	21 MTBE	73	4.191	4.187	(0.640)	354914	49.1342	49.1	8797
	26 1,1-Dichloroethane ++	63	4.753	4.749	(0.725)	189520	49.2551	49.3	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	228504	252.652	253	
	28 Vinyl Acetate	43	5.038	5.041	(0.769)	70332	47.4074	47.4	
	29 cis-1,2-Dichloroethene	61	5.323	5.322	(0.812)	147820	50.3580	50.4	
M	75 Total 1,2-Dichloroethene	61				289652	100.252	100	
	30 2,2-Dichloropropane	77	5.428	5.431	(0.828)	159637	49.1839	49.2	
	32 Cyclohexane	56	5.518	5.517	(0.842)	174580	50.4013	50.4	9315
	34 Bromochloromethane	128	5.525	5.525	(0.843)	60064	51.0846	51.1	
	35 Chloroform +	83	5.604	5.604	(0.855)	189584	49.7377	49.7	
	36 Carbon Tetrachloride	117	5.727	5.731	(0.874)	139985	51.8084	51.8	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	115957	50.1531	50.2	8367
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	166669	50.1721	50.2	
	44 2-Butanone	43	5.915	5.915	(0.903)	84928	47.8603	47.9	
	43 1,1-Dichloropropene	75	5.919	5.922	(0.903)	145063	50.0754	50.1	
	46 Benzene	78	6.162	6.162	(0.941)	464189	49.7216	49.7	
$	50 1,2-Dichloroethane-d4	67	6.293	6.297	(0.961)	69788	50.5393	50.5	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	155850	48.6101	48.6	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	486832	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.694	(1.022)	181359	50.8759	50.9	9328
	56 Trichloroethene	130	6.710	6.706	(1.024)	125994	50.0573	50.1	
	57 Dibromomethane	93	7.096	7.096	(1.083)	72835	50.4534	50.5	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	113249	49.4533	49.5	
	60 Bromodichloromethane	83	7.246	7.245	(1.106)	150524	51.1972	51.2	
	65 1-Bromo-2-chloroethane	63	7.662	7.662	(1.169)	166674	51.5743	51.6	9593
	64 2-Chloroethyl vinyl ether	63	7.737	7.733	(1.181)	72345	52.9031	52.9	
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	189782	52.5980	52.6	
$	68 Toluene-d8	98	7.932	7.931	(0.876)	475388	49.8944	49.9	
	69 Toluene +	91	7.973	7.973	(0.880)	508554	49.4058	49.4	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	100327	50.0126	50.0	
	73 4-methyl-2-pentanone	43	8.262	8.261	(0.912)	144783	48.1697	48.2	
	74 trans-1,3-Dichloropropene	75	8.288	8.291	(1.265)	170106	53.9360	53.9	
M	82 1-3 Dichloropropene total	100				359888	106.534	107	0
	76 1,1,2-Trichloroethane	97	8.408	8.411	(0.928)	114805	50.4077	50.4	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	124832	53.1296	53.1	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.950)	193217	50.1107	50.1	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	116489	51.3982	51.4	
	83 2-Hexanone	43	8.854	8.854	(0.978)	115671	48.3949	48.4	
	86 1-Chlorohexane	91	9.041	9.041	(0.998)	140361	48.1664	48.2	8898
*	84 CHLOROBENZENE-d5	82	9.056	9.056	(1.000)	195200	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.001)	332725	49.7902	49.8	
	87 Ethylbenzene +	106	9.079	9.079	(1.002)	181310	50.4688	50.5	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	114902	51.2047	51.2	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	449250	101.250	101	
	90 o-Xylene	106	9.454	9.453	(1.044)	223191	50.5999	50.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
M	121 TOTAL XYLENE	106				672441	151.850	152	
	91 Styrene	104	9.487	9.487	(1.048)	371873	52.6464	52.6	
	92 Bromoform ++	173	9.517	9.517	(1.051)	98587	53.3152	53.3	
	93 Isopropylbenzene	105	9.649	9.648	(1.065)	557535	50.7037	50.7	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.086)	161751	51.3028	51.3	
	96 Bromobenzene	77	9.903	9.907	(0.942)	241667	48.0059	48.0	
	97 n-Propylbenzene	91	9.903	9.907	(0.942)	636430	48.7986	48.8	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	161793	47.9846	48.0	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	438605	48.3196	48.3	
	102 1,3,5-Trimethylbenzene	105	10.020	10.019	(0.953)	459323	49.7207	49.7	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	190200	48.1615	48.2	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	41164	50.4161	50.4	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	391509	48.4206	48.4	
	105 tert-butylbenzene	91	10.218	10.218	(0.972)	245689	47.6316	47.6	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	464770	50.1900	50.2	
	108 sec-Butylbenzene	105	10.323	10.323	(0.982)	566502	49.6907	49.7	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	482174	50.1547	50.2	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	278593	50.1752	50.2	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	195441	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.522	(1.001)	277790	49.7013	49.7	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	409632	50.5491	50.5	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	272281	49.9521	50.0	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	40831	52.1633	52.2	
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	75951	49.1973	49.2	
	122 1,2,4-Trichlorobenzene	180	11.781	11.781	(1.121)	165133	49.9570	50.0	
	124 Naphthalene	128	12.055	12.059	(1.147)	471077	48.2162	48.2	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	161183	49.0392	49.0	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170511p.s.b/d4111D.d

Page 1

Date : 11-MAY-2017 17:41

Client ID: ICV050

Instrument: msv13.i

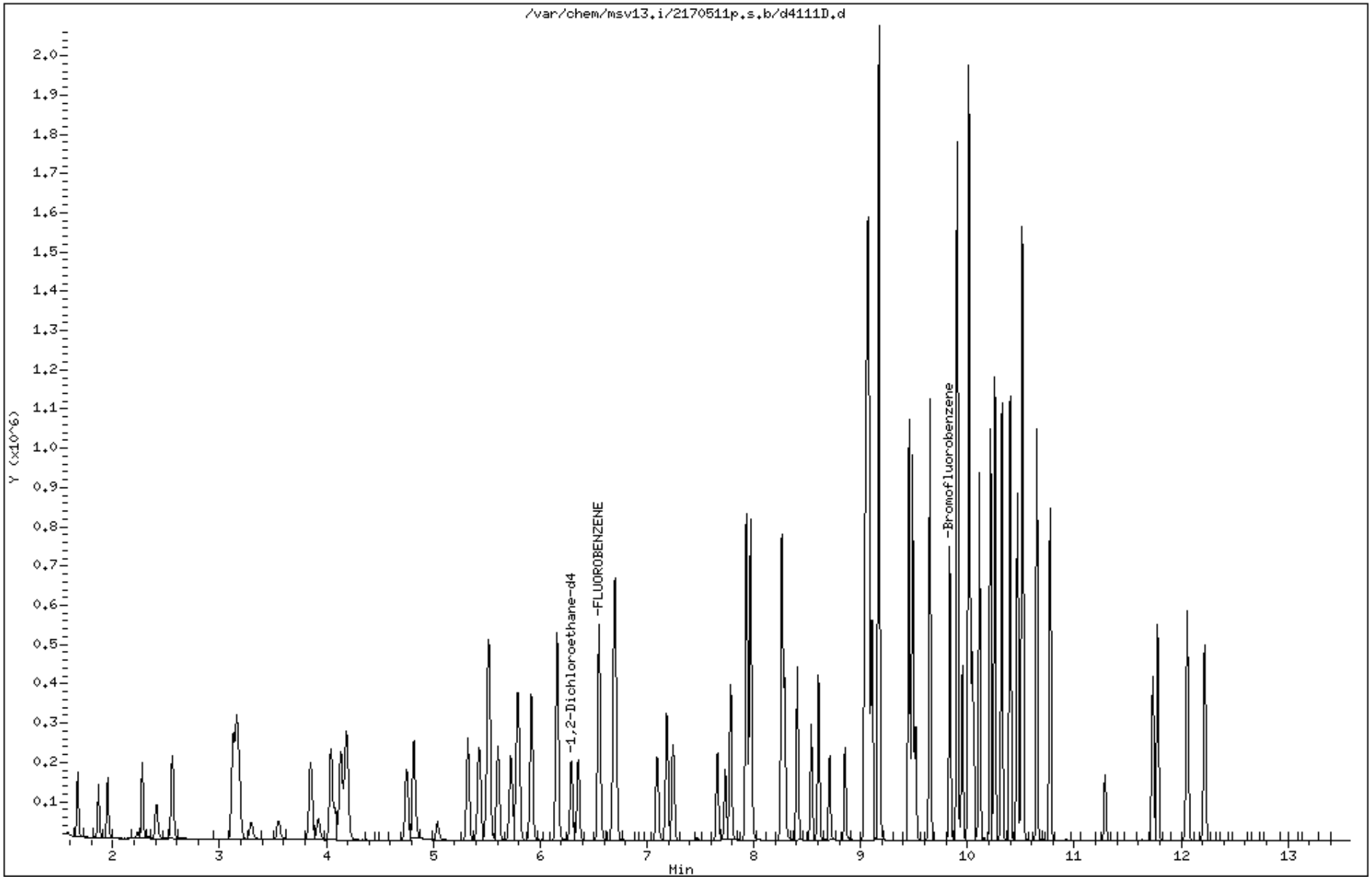
Sample Info: 1600*ICV050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

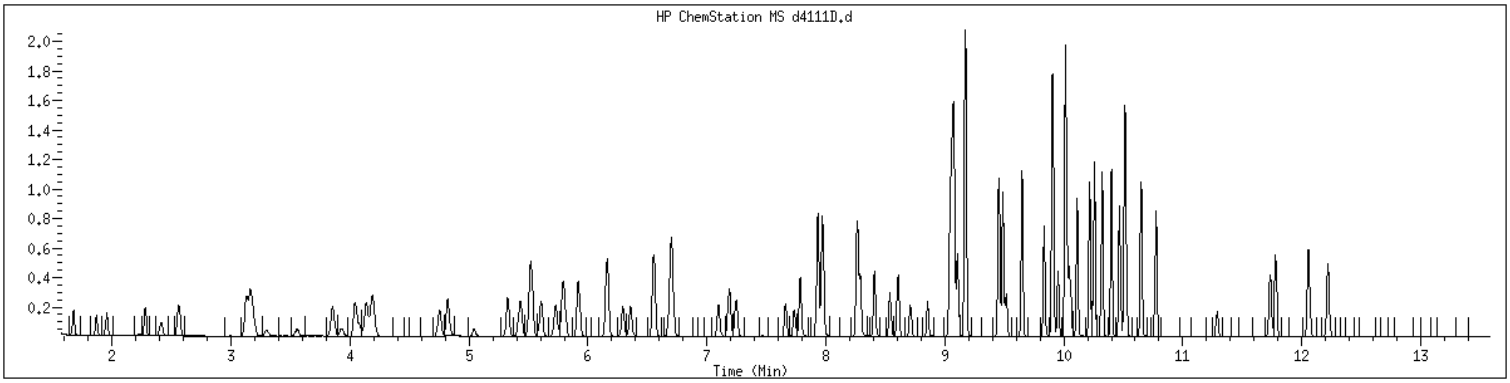
Column diameter: 0.25



Report Date: 05/12/2017 12:02

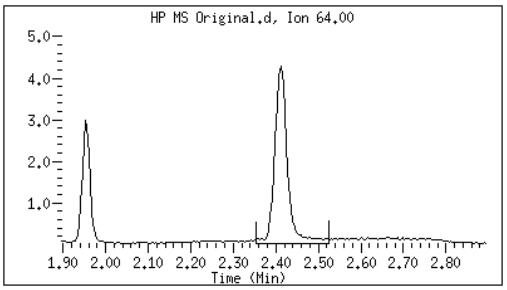
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1600 SampleType : LCS
Injection Date: 05/11/2017 17:41 Instrument : msv13.i
Operator : JCK
Sample Info : 1600*ICV050
Misc Info : MSV~38318~*1*JCK
Method : /var/chem/msv13.i/2170511p.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



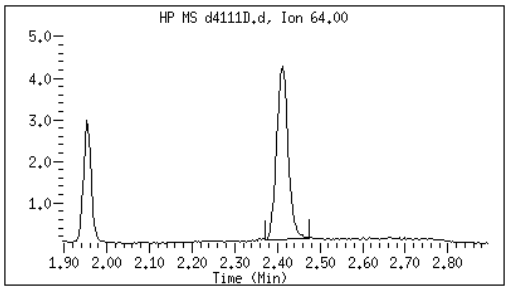
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/11/2017 17:57



M2 - Target system integrated incorrectly

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217051110	Instrument ID:	MSV14
Analysis Date:	05/05/17 1415	Lab File ID:	2170505/b2902d
Analysis Method:	EPA 8260B	Analytical Batch:	609837

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
1,1,1-Trichloroethane	ug/L	50.0	49.0	98	80	120	
1,1,2,2-Tetrachloroethane	ug/L	50.0	47.4	95	80	120	
1,1,2-Trichloroethane	ug/L	50.0	48.5	97	80	120	
1,1-Dichloroethane	ug/L	50.0	51.4	103	80	120	
1,1-Dichloroethene	ug/L	50.0	49.4	99	80	120	
1,2,3-Trichlorobenzene	ug/L	50.0	45.1	90	80	120	
1,2,4-Trichlorobenzene	ug/L	50.0	45.3	91	80	120	
1,2-Dibromo-3-chloropropane	ug/L	50.0	44.9	90	80	120	
1,2-Dibromoethane	ug/L	50.0	49.5	99	80	120	
1,2-Dichlorobenzene	ug/L	50.0	49.5	99	80	120	
1,2-Dichloroethane	ug/L	50.0	47.8	96	80	120	
1,2-Dichloropropane	ug/L	50.0	51.5	103	80	120	
1,3-Dichlorobenzene	ug/L	50.0	50.5	101	80	120	
1,4-Dichlorobenzene	ug/L	50.0	48.6	97	80	120	
2-Butanone	ug/L	50.0	48.6	97	80	120	
2-Hexanone	ug/L	50.0	48.9	98	80	120	
4-Methyl-2-pentanone	ug/L	50.0	50.1	100	80	120	
Acetone	ug/L	50.0	42.2	84	80	120	
Benzene	ug/L	50.0	49.4	99	80	120	
Bromochloromethane	ug/L	50.0	48.4	97	80	120	
Bromodichloromethane	ug/L	50.0	51.3	103	80	120	
Bromoform	ug/L	50.0	48.7	97	80	120	
Bromomethane	ug/L	50.0	48.5	97	80	120	
Carbon disulfide	ug/L	50.0	49.9	100	80	120	
Carbon tetrachloride	ug/L	50.0	51.0	102	80	120	
Chlorobenzene	ug/L	50.0	50.5	101	80	120	
Chloroethane	ug/L	50.0	44.7	89	80	120	
Chloroform	ug/L	50.0	49.9	100	80	120	
Chloromethane	ug/L	50.0	45.8	92	80	120	
cis-1,2-Dichloroethene	ug/L	50.0	52.4	105	80	120	
cis-1,3-Dichloropropene	ug/L	50.0	53.5	107	80	120	
Cyclohexane	ug/L	50.0	50.0	100	80	120	
Dibromochloromethane	ug/L	50.0	51.3	103	80	120	
Dichlorodifluoromethane	ug/L	50.0	41.4	83	80	120	

FORM 6I - ORG

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217051110	Instrument ID:	MSV14
Analysis Date:	05/05/17 1415	Lab File ID:	2170505/b2902d
Analysis Method:	EPA 8260B	Analytical Batch:	609837

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
Ethylbenzene	ug/L	50.0	51.1	102	80	120	
Isopropylbenzene (Cumene)	ug/L	50.0	49.8	100	80	120	
Methyl Acetate	ug/L	50.0	46.6	93	80	120	
Methylcyclohexane	ug/L	50.0	56.1	112	80	120	
Methylene chloride	ug/L	50.0	44.4	89	80	120	
Styrene	ug/L	50.0	49.2	98	80	120	
tert-Butyl methyl ether (MTBE)	ug/L	50.0	54.3	109	80	120	
Tetrachloroethene	ug/L	50.0	49.6	99	80	120	
Toluene	ug/L	50.0	49.4	99	80	120	
trans-1,2-Dichloroethene	ug/L	50.0	49.1	98	80	120	
trans-1,3-Dichloropropene	ug/L	50.0	53.5	107	80	120	
Trichloroethene	ug/L	50.0	48.9	98	80	120	
Trichlorofluoromethane	ug/L	50.0	49.4	99	80	120	
Trichlorotrifluoroethane	ug/L	50.0	53.4	107	80	120	
Vinyl chloride	ug/L	50.0	48.0	96	80	120	
Xylene (total)	ug/L	150	151	101	80	120	

GCAL, Inc.

Data file : /var/chem/msv14.i/2170505.s.b/b2902d.d
Lab Smp Id: 1600 Client Smp ID: V14ICV050
Inj Date : 05-MAY-2017 14:15
Operator : LBH Inst ID: msv14.i
Smp Info : 1600*V14ICV050
Misc Info : MSV~38274~*1*LBH
Comment :
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Meth Date : 06-May-2017 11:41 jck2 Quant Type: ISTD
Cal Date : 05-MAY-2017 11:50 Cal File: b2897d.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.747	1.747	(0.262)	175550	41.4060	41.4	
2 Chloromethane ++	50	1.953	1.950	(0.292)	154350	45.8050	45.8	
3 Vinyl Chloride +	62	2.040	2.040	(0.305)	202927	48.0238	48.0	
5 Bromomethane	94	2.373	2.373	(0.355)	75210	48.4543	48.5	
6 Chloroethane	64	2.516	2.501	(0.377)	122093	44.7152	44.7	
7 Trichlorofluoromethane	101	2.673	2.673	(0.400)	243315	49.4266	49.4	
11 1,1-Dichloroethene +	96	3.262	3.269	(0.488)	136324	49.4347	49.4	
14 Carbon Disulfide	76	3.292	3.292	(0.493)	448128	49.8811	49.9	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	151963	53.3910	53.4	
13 Methyl Iodide	142	3.438	3.438	(0.515)	70317	43.0123	43.0	
9 Acrolein	56	3.697	3.700	(0.553)	63266	265.902	266	
17 Methylene Chloride	49	3.996	4.000	(0.598)	226484	44.4426	44.4	
12 Acetone	43	4.068	4.068	(0.609)	116431	42.2112	42.2	
19 trans-1,2-Dichloroethene	61	4.184	4.188	(0.626)	283917	49.0521	49.1	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	175673	46.6301	46.6	8254
	23 Hexane	57	4.293	4.289	(0.643)	286506	55.2857	55.3	9264(M2)
	21 MTBE	73	4.334	4.330	(0.649)	643497	54.2748	54.3	9779
	26 tert-Butyl Alcohol	59	4.461	4.465	(0.668)	22355	44.0877	44.1	9332
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	761543	58.9715	59.0	9868
	29 Chloroprene	53	4.866	4.866	(0.728)	332273	52.3856	52.4	9001
	24 1,1-Dichloroethane ++	63	4.889	4.896	(0.732)	412628	51.3704	51.4	
	22 Acrylonitrile	53	4.956	4.960	(0.742)	424528	256.844	257	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	156175	59.0944	59.1	
M	48 Total 1,2-Dichloroethene	61				586975	101.468	101	
	30 cis-1,2-Dichloroethene	61	5.455	5.462	(0.817)	303058	52.4161	52.4	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	333930	51.1555	51.2	
	38 Cyclohexane	56	5.653	5.653	(0.846)	366985	50.0190	50.0	9217
	34 Bromochloromethane	128	5.657	5.661	(0.847)	88839	48.3580	48.4	
	41 Chloroform +	83	5.732	5.736	(0.858)	384363	49.8868	49.9	
	39 Carbon Tetrachloride	117	5.860	5.863	(0.877)	276671	51.0240	51.0	
$	36 Dibromofluoromethane	111	5.908	5.912	(0.884)	220748	50.3610	50.4	6915
	37 1,1,1-Trichloroethane	97	5.931	5.935	(0.888)	323655	49.0034	49.0	
	42 1,1-Dichloropropene	75	6.051	6.054	(0.906)	276636	51.7700	51.8	
	32 2-Butanone	43	6.043	6.043	(0.905)	146827	48.6047	48.6	
	44 Benzene	78	6.291	6.291	(0.942)	831913	49.3858	49.4	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	143874	49.3970	49.4	
	46 1,2-Dichloroethane	62	6.482	6.486	(0.970)	313906	47.8252	47.8	
	45 Isobutyl Alcohol	43	6.508	6.512	(0.974)	43218	237.578	238	9594
*	47 FLUOROBENZENE	96	6.681	6.681	(1.000)	862858	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.827	(1.021)	324304	56.0993	56.1	8846
	49 Trichloroethene	130	6.830	6.834	(1.022)	212371	48.8973	48.9	
	52 Dibromomethane	93	7.213	7.217	(1.080)	138607	49.0717	49.1	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	228562	51.4890	51.5	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	310228	51.2897	51.3	
	55 1,4- Dioxane	58	7.539	7.543	(1.128)	44951	1227.16	1230	9449
	57 1-Bromo-2-chloroethane	63	7.771	7.771	(1.163)	339174	52.2054	52.2	9605
	58 cis-1,3-Dichloropropene	75	7.891	7.895	(1.181)	359869	53.5161	53.5	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	813067	49.6792	49.7	
	61 Toluene +	91	8.082	8.082	(0.883)	862431	49.3528	49.4	
M	145 1-3 Dichloropropene total	100				707329	106.995	107	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	155122	49.5823	49.6	
	59 4-methyl-2-pentanone	43	8.364	8.367	(0.914)	228366	50.0847	50.1	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	347460	53.4789	53.5	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	201071	48.5389	48.5	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	271168	54.0467	54.0	9672
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	230451	51.2590	51.3	
	67 1,3-Dichloropropane	76	8.705	8.709	(0.951)	377220	50.8639	50.9	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	199638	49.4681	49.5	
	68 2-Hexanone	43	8.952	8.952	(0.978)	179294	48.8543	48.9	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	241712	48.8941	48.9	8920
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	346903	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	72 Chlorobenzene ++	112	9.162	9.166	(1.001)	538835	50.4880	50.5	
	73 Ethylbenzene +	106	9.177	9.177	(1.003)	275053	51.1139	51.1	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	200242	49.4950	49.5	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	638206	102.360	102	
M	99 TOTAL XYLENE	106				944604	150.930	151	
	76 o-Xylene	106	9.552	9.552	(1.044)	306398	48.5697	48.6	
	77 Styrene	104	9.582	9.582	(1.047)	526135	49.2220	49.2	
	78 Bromoform ++	173	9.608	9.608	(1.050)	152531	48.6695	48.7	
	79 Isopropylbenzene	105	9.743	9.747	(1.065)	800127	49.8192	49.8	
	161 cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	88707	45.4259	45.4	9554
$	80 Bromofluorobenzene	174	9.931	9.931	(1.085)	210419	50.4359	50.4	
	84 Bromobenzene	77	9.998	9.998	(0.943)	401426	49.9330	49.9	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	887935	51.1694	51.2	
	81 1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	258793	47.3522	47.4	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	628749	51.7112	51.7	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	638530	54.7056	54.7	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	329863	47.1488	47.1	
	83 trans-1,4-Dichloro-2-Butene	53	10.148	10.152	(0.957)	72004	44.6651	44.7	
	90 4-Chlorotoluene	91	10.208	10.208	(0.963)	587261	52.7420	52.7	
	91 tert-butylbenzene	91	10.313	10.313	(0.973)	344749	53.1377	53.1	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	668355	54.8611	54.9	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	713757	53.8111	53.8	
	92 p-Isopropyltoluene	119	10.497	10.497	(0.990)	603823	54.8532	54.9	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	346914	50.5002	50.5	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	245714	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	342373	48.6182	48.6	
	100 n-Butylbenzene	91	10.748	10.748	(1.014)	530386	52.8595	52.9	
	102 1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	323574	49.5050	49.5	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	40542	44.9290	44.9	
	109 Hexachlorobutadiene	225	11.861	11.857	(1.119)	71526	51.9622	52.0	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	172339	45.2642	45.3	
	110 Naphthalene	128	12.191	12.191	(1.150)	488024	42.3449	42.3	
	111 1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	166898	45.0529	45.1	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170505.s.b/b2902d.d

Date : 05-MAY-2017 14:15

Client ID: V14ICV050

Instrument: msv14.i

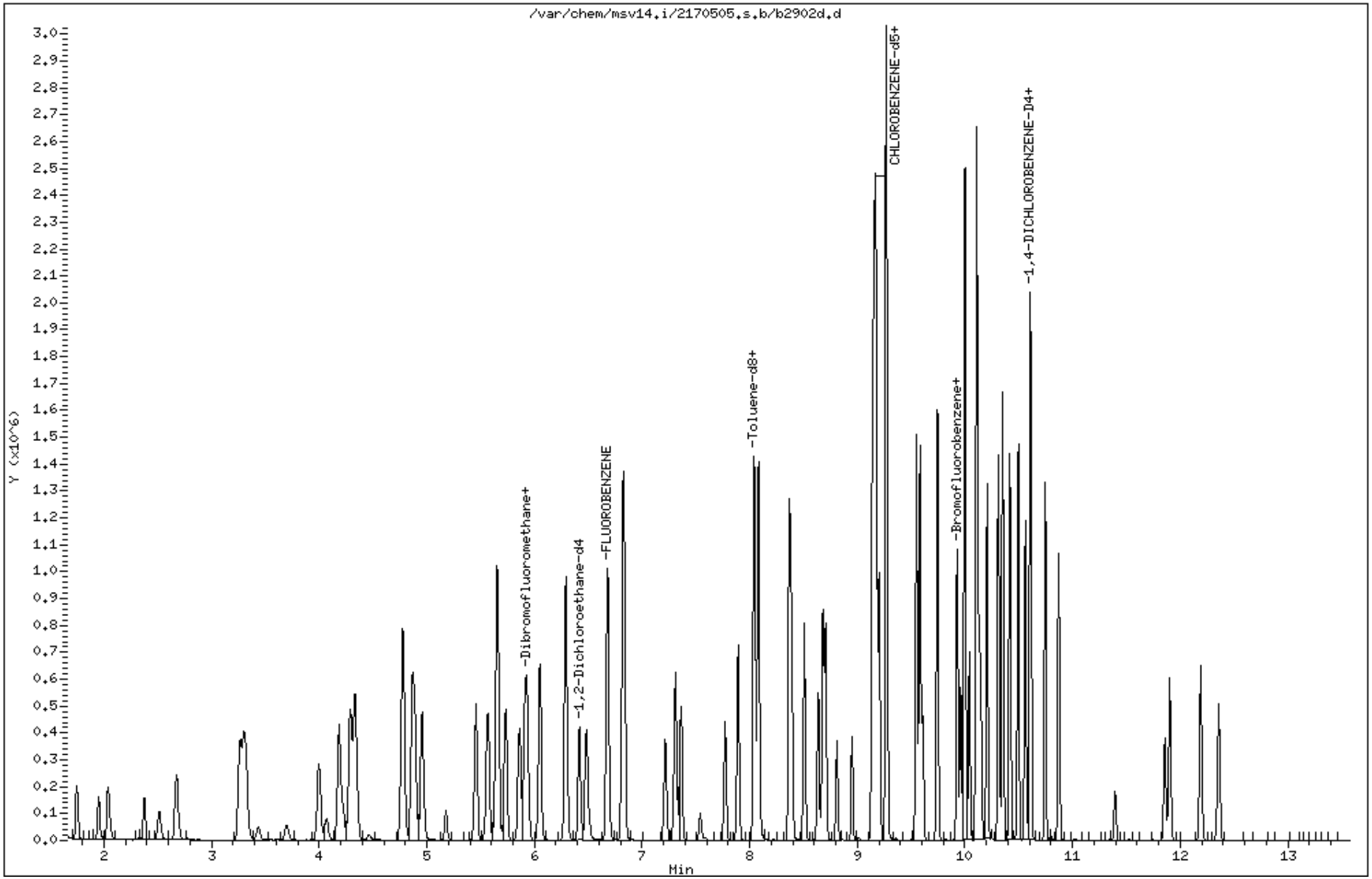
Sample Info: 1600*V14ICV050

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

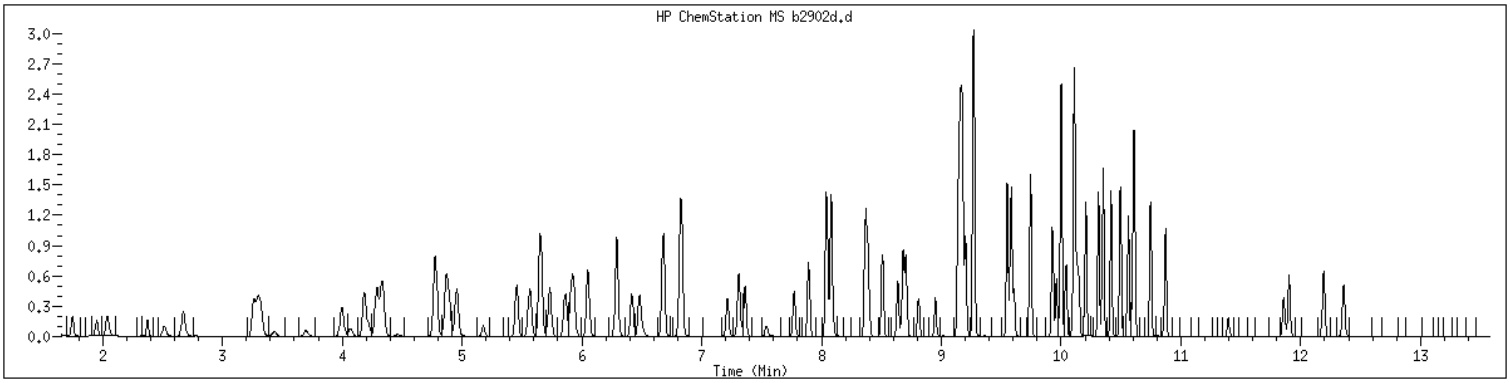
Column diameter: 0.25



Report Date: 05/06/2017 11:41

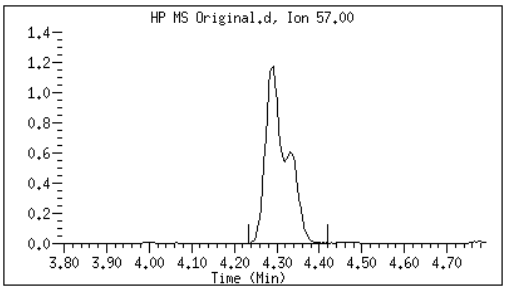
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1600 SampleType : LCS
Injection Date: 05/05/2017 14:15 Instrument : msv14.i
Operator : LBH
Sample Info : 1600*V14ICV050
Misc Info : MSV~38274~*1*LBH
Method : /var/chem/msv14.i/2170505.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



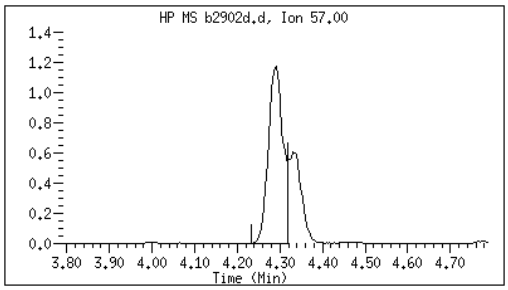
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: lbh
Date: 05/05/2017 14:32



M2 - Target system integrated incorrectly

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV11
Injection Vol.:	1.0 (µL)	Lab File ID:	2170514/i7163
Init. Calib. Date 1:	04/14/17 Time 1: 1412	Analyst:	JMC2
Init. Calib. Date 2:	04/14/17 Time 2: 1632	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1219	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.572	0.622	.01	8.8	20	A	
1,1,1-Trichloroethane	0.385	0.390	.01	1.35	20	A	
1,1,2,2-Tetrachloroethane	0.641	0.642	.3	.15	20	A	
1,1,2-Trichloroethane	0.484	0.498	.01	2.98	20	A	
1,1-Dichloroethane	0.440	0.427	.1	-2.79	20	A	
1,1-Dichloroethene	0.194	0.188	.01	-3.12	20	A	
1,1-Dichloropropene	0.304	0.312	.01	2.64	20	A	
1,2,3-Trichlorobenzene	0.909	0.928	.01	2.11	20	A	
1,2,3-Trichloropropane	0.771	0.794	.01	3.06	20	A	
1,2,4-Trichlorobenzene	0.946	1.020	.01	7.82	20	A	
1,2,4-Trimethylbenzene	2.524	2.515	.01	-.35	20	A	
1,2-Dibromo-3-chloropropane	0.158	0.167	.01	6.16	20	A	
1,2-Dibromoethane	0.455	0.450	.01	-1.3	20	A	
1,2-Dichlorobenzene	1.396	1.422	.01	1.84	20	A	
1,2-Dichloroethane	0.382	0.339	.01	-11.3	20	A	
1,2-Dichloroethane-d4	0.156	0.152	.01	-2.62	20	A	
1,2-Dichloroethene (total)	0.342	0.323	.01	-5.68	20	A	
1,2-Dichloropropane	0.258	0.235	.01	-9.27	20	A	
1,3,5-Trimethylbenzene	2.438	2.460	.01	.91	20	A	
1,3-Dichlorobenzene	1.455	1.463	.01	.54	20	A	
1,3-Dichloropropane	0.866	0.880	.01	1.66	20	A	
1,3-Dichloropropylene	0.349	0.357	.01	2.48	20	A	
1,4 Dioxane	0.002	0.002	.001	12.8	20	A	
1,4-Dichlorobenzene	1.482	1.421	.01	-4.14	20	A	
1-Bromo-2-Chloroethane	0.323	0.293	.01	-9.28	20	A	
1-Chlorohexane	0.666	0.727	.01	9.03	20	A	
2,2-Dichloropropane	0.299	0.341	.01	14	20	A	
2-Butanone	0.128	0.124	.01	-3.05	20	A	
2-Chlorotoluene	2.331	2.324	.01	-.26	20	A	
2-Hexanone	0.420	0.423	.01	.75	20	A	
4-Bromofluorobenzene	0.774	0.813	.01	4.98	20	A	
4-Chlorotoluene	2.058	2.040	.01	-.86	20	A	
4-Isopropyltoluene	2.675	2.750	.01	2.8	20	A	
4-Methyl-2-pentanone	0.498	0.513	.01	3.08	20	A	
Acetone	0.136	0.118	.01	-12.9	20	A	
Acrolein	0.019	0.012	.01	-35.0	20	A	*
Acrylonitrile	0.069	0.060	.01	-12.7	20	A	
Benzene	0.976	0.951	.01	-2.52	20	A	
Bromobenzene	1.305	1.267	.01	-2.88	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV11
Injection Vol.:	1.0 (µL)	Lab File ID:	2170514/i7163
Init. Calib. Date 1:	04/14/17 Time 1: 1412	Analyst:	JMC2
Init. Calib. Date 2:	04/14/17 Time 2: 1632	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1219	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.114	0.114	.01	-.13	20	A	
Bromodichloromethane	0.373	0.356	.01	-4.56	20	A	
Bromoform	0.450	0.468	.1	3.96	20	A	
Bromomethane	0.155	0.146	.01	-5.73	20	A	
Carbon disulfide	0.674	0.661	.01	-1.87	20	A	
Carbon tetrachloride	0.363	0.358	.01	-1.32	20	A	
Chlorobenzene	1.524	1.549	.3	1.63	20	A	
Chloroethane	0.152	0.146	.01	-4.14	20	A	
Chloroform	0.456	0.440	.01	-3.65	20	A	
Chloromethane	0.317	0.286	.1	-9.57	20	A	
Chloroprene	0.316	0.375	.01	18.8	20	A	
Cyclohexane	0.401	0.386	.01	-3.64	20	A	
Dibromochloromethane	0.636	0.650	.01	2.2	20	A	
Dibromofluoromethane	0.253	0.251	.01	-.69	20	A	
Dibromomethane	0.144	0.137	.01	-4.96	20	A	
Dichlorodifluoromethane	0.296	0.255	.01	-14.0	20	A	
Ethylbenzene	0.800	0.861	.01	7.68	20	A	
Hexachlorobutadiene	0.730	0.728	.01	-.24	20	A	
Isobutyl alcohol	0.010	0.011	.01	15.3	20	A	
Isopropylbenzene (Cumene)	2.603	2.837	.01	8.99	20	A	
Methyl Acetate	0.150	0.139	.01	-7.33	20	A	
Methyl iodide	0.216	0.154	.01	-15.8	20	L	
Methylcyclohexane	0.392	0.396	.01	1.01	20	A	
Methylene chloride	0.359	0.329	.01	-8.39	20	A	
Naphthalene	2.105	1.646	.01	-14.6	20	W	
Styrene	1.650	1.713	.01	3.85	20	A	
Tetrachloroethene	0.465	0.523	.01	12.3	20	A	
Toluene	2.337	2.407	.01	2.97	20	A	
Toluene-d8	2.248	2.319	.01	3.16	20	A	
Trichloroethene	0.247	0.254	.01	2.87	20	A	
Trichlorofluoromethane	0.365	0.358	.01	-1.86	20	A	
Trichlorotrifluoroethane	0.198	0.202	.01	2.4	20	A	
Vinyl acetate	0.176	0.095	.01	-42.2	20	W	*
Vinyl chloride	0.271	0.253	.01	-6.48	20	A	
Xylene (total)	0.988	1.046	.01	5.83	20	A	
cis-1,2-Dichloroethene	0.349	0.326	.01	-6.66	20	A	
cis-1,3-Dichloropropene	0.373	0.381	.01	2.05	20	A	
diisopropyl Ether (DIPE)	0.785	0.878	.01	11.9	20	A	
m,p-Xylene	0.993	1.059	.01	6.69	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV11
Injection Vol.:	1.0 (µL)	Lab File ID:	2170514/i7163
Init. Calib. Date 1:	04/14/17 Time 1: 1412	Analyst:	JMC2
Init. Calib. Date 2:	04/14/17 Time 2: 1632	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 1219	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
n-Butylbenzene	2.424	2.518	.01	3.87	20	A	
n-Hexane	0.458	0.434	.01	-5.29	20	A	
n-Propylbenzene	3.281	3.371	.01	2.73	20	A	
o-Xylene	0.980	1.020	.01	4.11	20	A	
sec-Butylbenzene	3.023	3.133	.01	3.65	20	A	
t-Butanol (TBA)	0.032	0.052	.01	62.2	20	A	*
tert-Butyl methyl ether (MTBE)	0.531	0.502	.01	-5.51	20	A	
tert-Butylbenzene	1.430	1.443	.01	.86	20	A	
trans-1,2-Dichloroethene	0.336	0.320	.01	-4.66	20	A	
trans-1,3-Dichloropropene	0.324	0.334	.01	2.98	20	A	
trans-1,4-Dichloro-2-butene	0.185	0.173	.01	-6.31	20	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7163.d
Lab Smp Id: 1400 Client Smp ID: V11STD050
Inj Date : 14-MAY-2017 12:19
Operator : JMC2 Inst ID: msv11.i
Smp Info : 1400*V11STD050
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Meth Date : 15-May-2017 13:58 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.757	1.757	(0.246)	122034	50.0000	43.0	9493
2 Chloromethane ++	50	1.969	1.969	(0.276)	137342	50.0000	45.2	9567
3 Vinyl Chloride +	62	2.044	2.044	(0.287)	121346	50.0000	46.8	9612
6 Bromomethane	94	2.393	2.393	(0.335)	69856	50.0000	47.1	9512
8 Chloroethane	64	2.524	2.524	(0.354)	69970	50.0000	47.9	9424
9 Trichlorofluoromethane	101	2.691	2.691	(0.377)	171609	50.0000	49.1	9690
12 1,1-Dichloroethene +	96	3.302	3.302	(0.463)	89907	50.0000	48.4	9367
14 Carbon Disulfide	76	3.332	3.332	(0.467)	317016	50.0000	49.1	9288
15 1,1,2Trichlotrifluoroethane	101	3.355	3.355	(0.470)	97068	50.0000	51.2	9542
16 Methyl Iodide	142	3.480	3.480	(0.488)	73764	50.0000	42.1	8702
17 Acrolein	56	3.745	3.745	(0.525)	29914	250.000	162	8966
18 Methylene Chloride	49	4.091	4.091	(0.573)	157801	50.0000	45.8	9480
19 Acetone	43	4.166	4.166	(0.584)	56751	50.0000	43.5	8396

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	13	trans-1,2-Dichloroethene	61	4.311	4.311	(0.604)	153389	50.0000	47.7	9505
	22	Methyl Acetate	43	4.345	4.345	(0.609)	66756	50.0000	46.3	9142
	23	Hexane	57	4.417	4.417	(0.619)	207856	50.0000	47.4	9171
	25	MTBE	73	4.470	4.470	(0.627)	240624	50.0000	47.2	9593
	31	1,1-Dichloroethane ++	63	5.114	5.114	(0.717)	204870	50.0000	48.6	9457
	33	Acrylonitrile	53	5.192	5.192	(0.728)	144255	250.000	218	9788
	34	Vinyl Acetate	43	5.443	5.443	(0.763)	45457	50.0000	28.9	
M	68	Total 1,2-Dichloroethene	61				309630	100.000	94.3	0
	21	cis-1,2-Dichloroethene	61	5.767	5.767	(0.808)	156241	50.0000	46.7	9604
	35	2,2-Dichloropropane	77	5.884	5.884	(0.825)	163608	50.0000	57.0	9470
	38	Cyclohexane	56	5.979	5.979	(0.838)	185202	50.0000	48.2	9547
	39	Bromochloromethane	128	5.987	5.987	(0.839)	54689	50.0000	49.9	9609
	40	Chloroform +	83	6.079	6.079	(0.852)	210875	50.0000	48.2	9675
	41	Carbon Tetrachloride	117	6.219	6.219	(0.872)	171652	50.0000	49.3	9708
$	42	Dibromofluoromethane	111	6.283	6.283	(0.881)	120493	50.0000	49.7	8802
	43	1,1,1-Trichloroethane	97	6.297	6.297	(0.883)	187170	50.0000	50.7	9530
	45	2-Butanone	43	6.419	6.419	(0.900)	59316	50.0000	48.5	
	44	1,1-Dichloropropene	75	6.430	6.430	(0.901)	149531	50.0000	51.3	9439
	48	Benzene	78	6.693	6.693	(0.938)	455971	50.0000	48.7	9518
$	50	1,2-Dichloroethane-d4	67	6.843	6.843	(0.959)	72776	50.0000	48.7	9546
	52	1,2-Dichloroethane	62	6.916	6.916	(0.970)	162620	50.0000	44.3	9630
*	54	FLUOROBENZENE	96	7.133	7.133	(1.000)	479422	50.0000		9479
	56	Methyl cyclohexane	83	7.289	7.289	(1.022)	189661	50.0000	50.5	9395
	57	Trichloroethene	130	7.301	7.301	(1.023)	121775	50.0000	51.4	9008
	62	Dibromomethane	93	7.730	7.730	(1.084)	65726	50.0000	47.5	9433
	63	1,2-Dichloropropane +	63	7.830	7.830	(1.098)	112439	50.0000	45.4	9509
	64	Bromodichloromethane	83	7.894	7.894	(1.107)	170880	50.0000	47.7	9661
	69	1-Bromo-2-chloroethane	63	8.355	8.355	(1.171)	140511	50.0000	45.4	9576
	72	cis-1,3-Dichloropropene	75	8.497	8.497	(1.191)	182443	50.0000	51.0	
$	74	Toluene-d8	98	8.661	8.661	(0.872)	462901	50.0000	51.6	9656
	77	Toluene +	91	8.706	8.706	(0.876)	480437	50.0000	51.5	9451
M	71	1-3 Dichloropropene-Total	100				342617	100.000	103	0
	79	4-methyl-2-pentanone	43	9.035	9.035	(0.910)	102395	50.0000	51.5	
	78	Tetrachloroethene	164	9.038	9.038	(0.910)	104354	50.0000	56.2	9557
	81	trans-1,3-Dichloropropene	75	9.069	9.069	(1.271)	160174	50.0000	51.5	
	82	1,1,2-Trichloroethane	97	9.202	9.202	(0.926)	99392	50.0000	51.5	9484
	85	Dibromochloromethane	129	9.347	9.347	(0.941)	129743	50.0000	51.1	9533
	86	1,3-Dichloropropane	76	9.423	9.423	(0.949)	175662	50.0000	50.8	9413
	88	1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	89736	50.0000	49.4	8970
	80	2-Hexanone	43	9.710	9.710	(0.978)	84420	50.0000	50.4	8842
	91	1-Chlorohexane	91	9.922	9.922	(0.999)	145062	50.0000	54.5	9216
*	90	Chlorobenzene-d5	82	9.933	9.933	(1.000)	199619	50.0000		8942
	92	Chlorobenzene ++	112	9.947	9.947	(1.001)	309244	50.0000	50.8	9522
	93	Ethylbenzene +	106	9.961	9.961	(1.003)	171924	50.0000	53.8	9193
	95	1,1,1,2-Tetrachloroethane	133	9.997	9.997	(1.006)	124219	50.0000	54.4	9437
	96	p,m-Xylene	106	10.072	10.072	(1.014)	422767	100.000	107	9665
M	120	TOTAL XYLENE	106				626328	150.000	159	0

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98 o-Xylene	106	10.396	10.396	(1.047)	203561	50.0000	52.1	
99 Styrene	104	10.435	10.435	(1.051)	342037	50.0000	51.9	9505
100 Bromoform ++	173	10.463	10.463	(1.053)	93352	50.0000	52.0	9243
102 Isopropylbenzene	105	10.619	10.619	(1.069)	566280	50.0000	54.5	9713
$ 103 Bromofluorobenzene	174	10.834	10.834	(1.091)	162254	50.0000	52.5	9394
104 Bromobenzene	77	10.915	10.915	(0.939)	247206	50.0000	48.6	9571
106 n-Propylbenzene	91	10.920	10.920	(0.940)	657429	50.0000	51.4	9595
107 1,1,2,2-Tetrachloroethane++	83	10.973	10.973	(0.944)	125303	50.0000	50.1	9665
108 2-Chlorotoluene	91	11.043	11.043	(0.950)	453354	50.0000	49.9	9430
110 1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	479839	50.0000	50.5	
109 1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	154907	50.0000	51.5	9572
111 trans-1,4-Dichloro-2-Butene	53	11.099	11.099	(0.955)	33781	50.0000	46.8	9252
112 4-Chlorotoluene	91	11.157	11.157	(0.960)	397949	50.0000	49.6	9627
113 tert-butylbenzene	91	11.283	11.283	(0.971)	281400	50.0000	50.4	9653
114 1,2,4-Trimethylbenzene	105	11.327	11.327	(0.975)	490532	50.0000	49.8	
115 sec-Butylbenzene	105	11.403	11.403	(0.981)	611138	50.0000	51.8	
116 p-Isopropyltoluene	119	11.497	11.497	(0.989)	536288	50.0000	51.4	9629
117 1,3-Dichlorobenzene	146	11.573	11.573	(0.996)	285329	50.0000	50.3	
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	195042	50.0000		9021
119 1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	277142	50.0000	47.9	
121 n-Butylbenzene	91	11.790	11.790	(1.014)	491154	50.0000	51.9	9704
122 1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	277274	50.0000	50.9	
125 1,2-Dibromo-3-Chloropropane	157	12.473	12.473	(1.073)	32652	50.0000	53.1	9375
126 Hexachlorobutadiene	225	12.892	12.892	(1.109)	142065	50.0000	49.9	9772
127 1,2,4-Trichlorobenzene	180	12.928	12.928	(1.112)	198907	50.0000	53.9	
128 Napthalene	128	13.154	13.154	(1.132)	321073	50.0000	42.7	9521
129 1,2,3-Trichlorobenzene	180	13.285	13.285	(1.143)	180963	50.0000	51.1	
10 tert-butyl alcohol	59	4.615	4.615	(0.647)	24761	50.0000	81.1	8194
26 Isopropyl Ether	45	4.969	4.969	(0.697)	420949	50.0000	56.0	9437
20 Chloroprene	53	5.081	5.081	(0.712)	179717	50.0000	59.4	9259
30 Isobutyl Alcohol	43	6.958	6.958	(0.975)	27345	250.000	288	8856
53 1,4-Dioxane	58	8.092	8.092	(1.134)	24903	1250.00	1410	9536
162 3,4-dichloro-1-butene	75	9.398	9.398	(0.946)	141529	50.0000	63.2	9279
161 cis-1,4-dichloro-2-butene	53	10.876	10.876	(0.936)	43509	50.0000	58.9	9462

Data File: /var/chem/msv11.i/2170514.s.b/i7163.d

Page 1

Date : 14-MAY-2017 12:19

Client ID: V11STD050

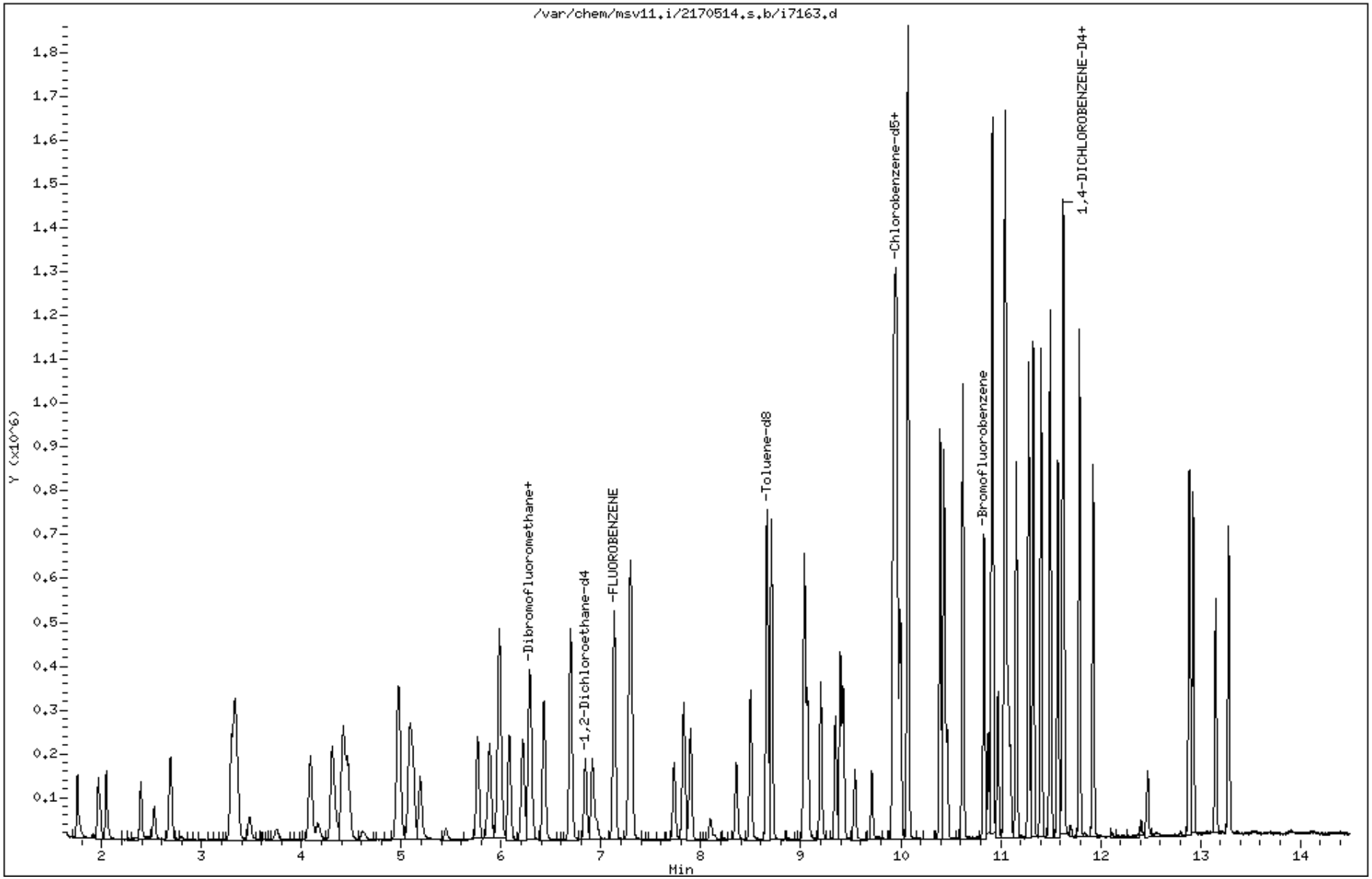
Instrument: msv11.i

Sample Info: 1400*V11STD050

Operator: JMC2

Column phase: RTX-VMS-30M

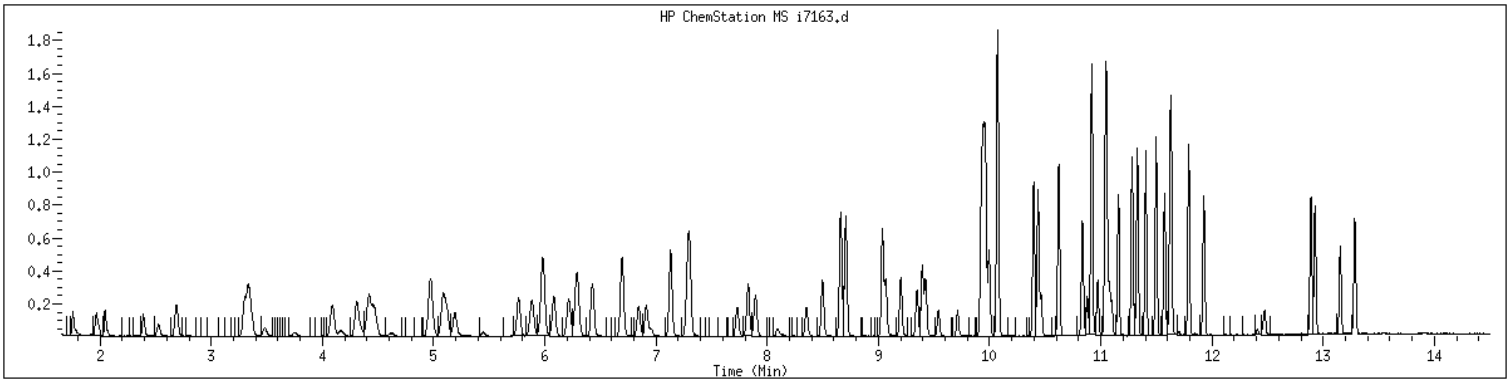
Column diameter: 0.25



Report Date: 05/15/2017 13:58

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1400 SampleType : CCALIB_5
Injection Date: 05/14/2017 12:19 Instrument : msv11.i
Operator : JMC2
Sample Info : 1400*V11STD050
Misc Info : MSV~38316~*1*JMC2
Method : /var/chem/msv11.i/2170514.s.b/8260dods11.m
Dilution : 1.00
Matrix : SOIL
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



NO MANUAL INTEGRATIONS

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV11
Injection Vol.:	1.0		(µL)	Lab File ID:	2170514/i7183
Init. Calib. Date 1:	04/14/17	Time 1: 1412		Analyst:	GDG
Init. Calib. Date 2:	04/14/17	Time 2: 1632		Analytical Batch:	610274
Analysis Date:	05/14/17	Time: 2044		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.572	0.607	.01	6.07	50	A	
1,1,1-Trichloroethane	0.385	0.374	.01	-2.88	50	A	
1,1,2,2-Tetrachloroethane	0.641	0.656	.3	2.31	50	A	
1,1,2-Trichloroethane	0.484	0.482	.01	-.23	50	A	
1,1-Dichloroethane	0.440	0.410	.1	-6.69	50	A	
1,1-Dichloroethene	0.194	0.180	.01	-6.78	50	A	
1,1-Dichloropropene	0.304	0.299	.01	-1.53	50	A	
1,2,3-Trichlorobenzene	0.909	1.023	.01	12.6	50	A	
1,2,3-Trichloropropane	0.771	0.829	.01	7.63	50	A	
1,2,4-Trichlorobenzene	0.946	1.037	.01	9.65	50	A	
1,2,4-Trimethylbenzene	2.524	2.484	.01	-1.58	50	A	
1,2-Dibromo-3-chloropropane	0.158	0.166	.01	5.58	50	A	
1,2-Dibromoethane	0.455	0.459	.01	.88	50	A	
1,2-Dichlorobenzene	1.396	1.435	.01	2.78	50	A	
1,2-Dichloroethane	0.382	0.348	.01	-9.08	50	A	
1,2-Dichloroethane-d4	0.156	0.149	.01	-4.46	50	A	
1,2-Dichloroethene (total)	0.342	0.314	.01	-8.25	50	A	
1,2-Dichloropropane	0.258	0.234	.01	-9.66	50	A	
1,3,5-Trimethylbenzene	2.438	2.454	.01	.65	50	A	
1,3-Dichlorobenzene	1.455	1.473	.01	1.2	50	A	
1,3-Dichloropropane	0.866	0.869	.01	.43	50	A	
1,3-Dichloropropylene	0.349	0.355	.01	1.92	50	A	
1,4 Dioxane	0.002	0.002	.001	28.8	50	A	
1,4-Dichlorobenzene	1.482	1.428	.01	-3.66	50	A	
1-Bromo-2-Chloroethane	0.323	0.301	.01	-6.93	50	A	
1-Chlorohexane	0.666	0.683	.01	2.42	50	A	
2,2-Dichloropropane	0.299	0.317	.01	5.85	50	A	
2-Butanone	0.128	0.134	.01	4.86	50	A	
2-Chlorotoluene	2.331	2.269	.01	-2.63	50	A	
2-Hexanone	0.420	0.424	.01	1.08	50	A	
4-Bromofluorobenzene	0.774	0.810	.01	4.59	50	A	
4-Chlorotoluene	2.058	2.063	.01	.26	50	A	
4-Isopropyltoluene	2.675	2.696	.01	.8	50	A	
4-Methyl-2-pentanone	0.498	0.512	.01	2.96	50	A	
Acetone	0.136	0.148	.01	8.77	50	A	
Acrolein	0.019	0.011	.01	-43.2	50	A	
Acrylonitrile	0.069	0.055	.01	-20.7	50	A	
Benzene	0.976	0.906	.01	-7.15	50	A	
Bromobenzene	1.305	1.266	.01	-2.98	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV11
Injection Vol.:	1.0 (µL)	Lab File ID:	2170514/i7183
Init. Calib. Date 1:	04/14/17 Time 1: 1412	Analyst:	GDG
Init. Calib. Date 2:	04/14/17 Time 2: 1632	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 2044	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.114	0.113	.01	-1.28	50	A	
Bromodichloromethane	0.373	0.353	.01	-5.39	50	A	
Bromoform	0.450	0.464	.1	3.18	50	A	
Bromomethane	0.155	0.134	.01	-13.2	50	A	
Carbon disulfide	0.674	0.617	.01	-8.48	50	A	
Carbon tetrachloride	0.363	0.347	.01	-4.41	50	A	
Chlorobenzene	1.524	1.529	.3	.33	50	A	
Chloroethane	0.152	0.138	.01	-9.63	50	A	
Chloroform	0.456	0.429	.01	-6.07	50	A	
Chloromethane	0.317	0.261	.1	-17.6	50	A	
Chloroprene	0.316	0.342	.01	8.2	50	A	
Cyclohexane	0.401	0.356	.01	-11.3	50	A	
Dibromochloromethane	0.636	0.645	.01	1.36	50	A	
Dibromofluoromethane	0.253	0.255	.01	.93	50	A	
Dibromomethane	0.144	0.141	.01	-2.19	50	A	
Dichlorodifluoromethane	0.296	0.245	.01	-17.3	50	A	
Ethylbenzene	0.800	0.813	.01	1.59	50	A	
Hexachlorobutadiene	0.730	0.747	.01	2.34	50	A	
Isobutyl alcohol	0.010	0.012	.01	19.7	50	A	
Isopropylbenzene (Cumene)	2.603	2.685	.01	3.14	50	A	
Methyl Acetate	0.150	0.147	.01	-1.98	50	A	
Methyl iodide	0.216	0.157	.01	-14.2	50	L	
Methylcyclohexane	0.392	0.375	.01	-4.24	50	A	
Methylene chloride	0.359	0.322	.01	-10.4	50	A	
Naphthalene	2.105	1.824	.01	-6.2	50	W	
Styrene	1.650	1.687	.01	2.23	50	A	
Tetrachloroethene	0.465	0.497	.01	6.89	50	A	
Toluene	2.337	2.291	.01	-2	50	A	
Toluene-d8	2.248	2.270	.01	.97	50	A	
Trichloroethene	0.247	0.254	.01	2.69	50	A	
Trichlorofluoromethane	0.365	0.335	.01	-8.21	50	A	
Trichlorotrifluoroethane	0.198	0.194	.01	-1.78	50	A	
Vinyl acetate	0.176	0.067	.01	-57.8	50	W	*
Vinyl chloride	0.271	0.239	.01	-11.8	50	A	
Xylene (total)	0.988	1.010	.01	2.25	50	A	
cis-1,2-Dichloroethene	0.349	0.319	.01	-8.63	50	A	
cis-1,3-Dichloropropene	0.373	0.375	.01	.62	50	A	
diisopropyl Ether (DIPE)	0.785	0.852	.01	8.63	50	A	
m,p-Xylene	0.993	1.009	.01	1.62	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV11
Injection Vol.:	1.0 (µL)	Lab File ID:	2170514/i7183
Init. Calib. Date 1:	04/14/17 Time 1: 1412	Analyst:	GDG
Init. Calib. Date 2:	04/14/17 Time 2: 1632	Analytical Batch:	610274
Analysis Date:	05/14/17 Time: 2044	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
n-Butylbenzene	2.424	2.422	.01	-.09	50	A	
n-Hexane	0.458	0.416	.01	-9.17	50	A	
n-Propylbenzene	3.281	3.314	.01	1.01	50	A	
o-Xylene	0.980	1.014	.01	3.53	50	A	
sec-Butylbenzene	3.023	3.045	.01	.74	50	A	
t-Butanol (TBA)	0.032	0.051	.01	58.9	50	A	*
tert-Butyl methyl ether (MTBE)	0.531	0.506	.01	-4.81	50	A	
tert-Butylbenzene	1.430	1.415	.01	-1.06	50	A	
trans-1,2-Dichloroethene	0.336	0.309	.01	-7.86	50	A	
trans-1,3-Dichloropropene	0.324	0.335	.01	3.41	50	A	
trans-1,4-Dichloro-2-butene	0.185	0.178	.01	-3.54	50	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv11.i/2170514.s.b/i7183.d
Lab Smp Id: 1440 Client Smp ID: V11STD50
Inj Date : 14-MAY-2017 20:44
Operator : GDG Inst ID: msv11.i
Smp Info : 1440*V11STD50
Misc Info : MSV~38316~*1*JMC2
Comment :
Method : /var/chem/msv11.i/2170514.s.b/8260dod5s11.m
Meth Date : 15-May-2017 14:05 jck2 Quant Type: ISTD
Cal Date : 14-APR-2017 16:32 Cal File: i6582D.d
Als bottle: 15 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * (Uf/Ws)/((100-M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
M	0.00000	% Moisture (not decanted)
Va	100.00000	Volume of aliquot extract added (uL)
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.754	1.754	(0.246)	106313	50.0000	41.3	9598
2 Chloromethane ++	50	1.966	1.966	(0.276)	113279	50.0000	41.2	9489
3 Vinyl Chloride +	62	2.044	2.044	(0.287)	103607	50.0000	44.1	9557
6 Bromomethane	94	2.393	2.393	(0.336)	58225	50.0000	43.4	9359
8 Chloroethane	64	2.524	2.524	(0.354)	59749	50.0000	45.2	9317
9 Trichlorofluoromethane	101	2.685	2.685	(0.377)	145397	50.0000	45.9	9725
12 1,1-Dichloroethene +	96	3.299	3.299	(0.463)	78357	50.0000	46.6	9163
14 Carbon Disulfide	76	3.330	3.330	(0.467)	267804	50.0000	45.8	8990
15 1,1,2Trichlotrifluoroethane	101	3.360	3.360	(0.471)	84337	50.0000	49.1	8916
16 Methyl Iodide	142	3.480	3.480	(0.488)	68338	50.0000	42.9	8693
17 Acrolein	56	3.753	3.753	(0.526)	23672	250.000	142	8997
18 Methylene Chloride	49	4.091	4.091	(0.574)	139784	50.0000	44.8	9452
19 Acetone	43	4.172	4.172	(0.585)	64227	50.0000	54.4	7898

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	13	trans-1,2-Dichloroethene	61	4.314	4.314	(0.605)	134272	50.0000	46.1	9537
	22	Methyl Acetate	43	4.342	4.342	(0.609)	63958	50.0000	49.0	9273
	23	Hexane	57	4.423	4.423	(0.620)	180565	50.0000	45.4	9267
	25	MTBE	73	4.462	4.462	(0.626)	219565	50.0000	47.6	9465
	31	1,1-Dichloroethane ++	63	5.114	5.114	(0.717)	178141	50.0000	46.7	9539
	33	Acrylonitrile	53	5.190	5.190	(0.728)	118602	250.000	198	9604
	34	Vinyl Acetate	43	5.449	5.449	(0.764)	29281	50.0000	21.1	
M	68	Total 1,2-Dichloroethene	61				272812	100.000	91.8	0
	21	cis-1,2-Dichloroethene	61	5.761	5.761	(0.808)	138540	50.0000	45.7	9619
	35	2,2-Dichloropropane	77	5.884	5.884	(0.825)	137658	50.0000	52.9	9516
	38	Cyclohexane	56	5.979	5.979	(0.838)	154385	50.0000	44.3	9572
	39	Bromochloromethane	128	5.987	5.987	(0.840)	48971	50.0000	49.4	9575
	40	Chloroform +	83	6.079	6.079	(0.853)	186218	50.0000	47.0	9612
	41	Carbon Tetrachloride	117	6.219	6.219	(0.872)	150616	50.0000	47.8	9789
$	42	Dibromofluoromethane	111	6.280	6.280	(0.881)	110928	50.0000	50.5	9173
	43	1,1,1-Trichloroethane	97	6.294	6.294	(0.883)	162467	50.0000	48.6	9441
	45	2-Butanone	43	6.428	6.428	(0.901)	58110	50.0000	52.4	
	44	1,1-Dichloropropene	75	6.431	6.431	(0.902)	129948	50.0000	49.2	9422
	48	Benzene	78	6.693	6.693	(0.939)	393399	50.0000	46.4	9479
$	50	1,2-Dichloroethane-d4	67	6.843	6.843	(0.960)	64674	50.0000	47.8	9675
	52	1,2-Dichloroethane	62	6.913	6.913	(0.969)	151005	50.0000	45.5	9676
*	54	FLUOROBENZENE	96	7.131	7.131	(1.000)	434268	50.0000		9505
	56	Methyl cyclohexane	83	7.284	7.284	(1.022)	162876	50.0000	47.9	8261
	57	Trichloroethene	130	7.303	7.303	(1.024)	110113	50.0000	51.3	9398
	62	Dibromomethane	93	7.733	7.733	(1.084)	61269	50.0000	48.9	9499
	63	1,2-Dichloropropane +	63	7.830	7.830	(1.098)	101405	50.0000	45.2	9545
	64	Bromodichloromethane	83	7.895	7.895	(1.107)	153442	50.0000	47.3	9644
	69	1-Bromo-2-chloroethane	63	8.355	8.355	(1.172)	130581	50.0000	46.5	9467
	72	cis-1,3-Dichloropropene	75	8.497	8.497	(1.192)	162938	50.0000	50.3	
$	74	Toluene-d8	98	8.661	8.661	(0.872)	418113	50.0000	50.5	9603
	77	Toluene +	91	8.706	8.706	(0.876)	421978	50.0000	49.0	9548
M	71	1-3 Dichloropropene-Total	100				308630	100.000	102	0
	79	4-methyl-2-pentanone	43	9.035	9.035	(0.910)	94385	50.0000	51.5	
	78	Tetrachloroethene	164	9.035	9.035	(0.910)	91632	50.0000	53.4	9531
	81	trans-1,3-Dichloropropene	75	9.066	9.066	(1.271)	145692	50.0000	51.7	
	82	1,1,2-Trichloroethane	97	9.202	9.202	(0.926)	88864	50.0000	49.9	9421
	85	Dibromochloromethane	129	9.348	9.348	(0.941)	118748	50.0000	50.7	9514
	86	1,3-Dichloropropane	76	9.426	9.426	(0.949)	160136	50.0000	50.2	9540
	88	1,2-Dibromoethane(EDB)	107	9.540	9.540	(0.960)	84636	50.0000	50.4	8999
	80	2-Hexanone	43	9.710	9.710	(0.978)	78163	50.0000	50.5	8801
	91	1-Chlorohexane	91	9.922	9.922	(0.999)	125749	50.0000	51.2	9451
*	90	Chlorobenzene-d5	82	9.933	9.933	(1.000)	184212	50.0000		8947
	92	Chlorobenzene ++	112	9.947	9.947	(1.001)	281713	50.0000	50.2	9488
	93	Ethylbenzene +	106	9.961	9.961	(1.003)	149676	50.0000	50.8	9411
	95	1,1,1,2-Tetrachloroethane	133	9.997	9.997	(1.006)	111760	50.0000	53.0	9400
	96	p,m-Xylene	106	10.073	10.073	(1.014)	371600	100.000	102	9668
M	120	TOTAL XYLENE	106				558408	150.000	153	0

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
98 o-Xylene	106	10.393	10.393	(1.046)	186808	50.0000	51.8	
99 Styrene	104	10.435	10.435	(1.051)	310715	50.0000	51.1	9624
100 Bromoform ++	173	10.466	10.466	(1.054)	85505	50.0000	51.6	9454
102 Isopropylbenzene	105	10.622	10.622	(1.069)	494527	50.0000	51.6	9674
$ 103 Bromofluorobenzene	174	10.834	10.834	(1.091)	149175	50.0000	52.3	9442
104 Bromobenzene	77	10.915	10.915	(0.939)	222524	50.0000	48.5	9658
106 n-Propylbenzene	91	10.918	10.918	(0.939)	582419	50.0000	50.5	9719
107 1,1,2,2-Tetrachloroethane++	83	10.970	10.970	(0.944)	115341	50.0000	51.2	9629
108 2-Chlorotoluene	91	11.040	11.040	(0.950)	398775	50.0000	48.7	8967
110 1,3,5-Trimethylbenzene	105	11.051	11.051	(0.951)	431227	50.0000	50.3	
109 1,2,3-Trichloropropane	75	11.076	11.076	(0.953)	145762	50.0000	53.8	9522
111 trans-1,4-Dichloro-2-Butene	53	11.099	11.099	(0.955)	31336	50.0000	48.2	9308
112 4-Chlorotoluene	91	11.157	11.157	(0.960)	362610	50.0000	50.1	9662
113 tert-butylbenzene	91	11.280	11.280	(0.970)	248712	50.0000	49.5	9634
114 1,2,4-Trimethylbenzene	105	11.330	11.330	(0.975)	436527	50.0000	49.2	
115 sec-Butylbenzene	105	11.406	11.406	(0.981)	535188	50.0000	50.4	
116 p-Isopropyltoluene	119	11.495	11.495	(0.989)	473815	50.0000	50.4	9598
117 1,3-Dichlorobenzene	146	11.573	11.573	(0.996)	258783	50.0000	50.6	
* 118 1,4-DICHLOROBENZENE-D4	152	11.623	11.623	(1.000)	175739	50.0000		8827
119 1,4-Dichlorobenzene	146	11.634	11.634	(1.001)	250969	50.0000	48.2	
121 n-Butylbenzene	91	11.790	11.790	(1.014)	425658	50.0000	50.0	9753
122 1,2-Dichlorobenzene	146	11.927	11.927	(1.026)	252140	50.0000	51.4	
125 1,2-Dibromo-3-Chloropropane	157	12.474	12.474	(1.073)	29261	50.0000	52.8	9130
126 Hexachlorobutadiene	225	12.892	12.892	(1.109)	131316	50.0000	51.2	9782
127 1,2,4-Trichlorobenzene	180	12.925	12.925	(1.112)	182274	50.0000	54.8	
128 Napthalene	128	13.154	13.154	(1.132)	320523	50.0000	46.9	9542
129 1,2,3-Trichlorobenzene	180	13.282	13.282	(1.143)	179843	50.0000	56.3	
10 tert-butyl alcohol	59	4.612	4.612	(0.647)	21964	50.0000	79.4	8433
26 Isopropyl Ether	45	4.972	4.972	(0.697)	370152	50.0000	54.3	9646
20 Chloroprene	53	5.092	5.092	(0.714)	148304	50.0000	54.1	9043
30 Isobutyl Alcohol	43	6.958	6.958	(0.976)	25721	250.000	299	8822
53 1,4-Dioxane	58	8.093	8.093	(1.135)	25739	1250.00	1610	9299
162 3,4-dichloro-1-butene	75	9.395	9.395	(0.946)	123521	50.0000	59.7	9354
161 cis-1,4-dichloro-2-butene	53	10.876	10.876	(0.936)	38344	50.0000	57.6	9338

Data File: /var/chem/msv11.i/2170514.s.b/i7183.d

Page 1

Date : 14-MAY-2017 20:44

Client ID: V11STD50

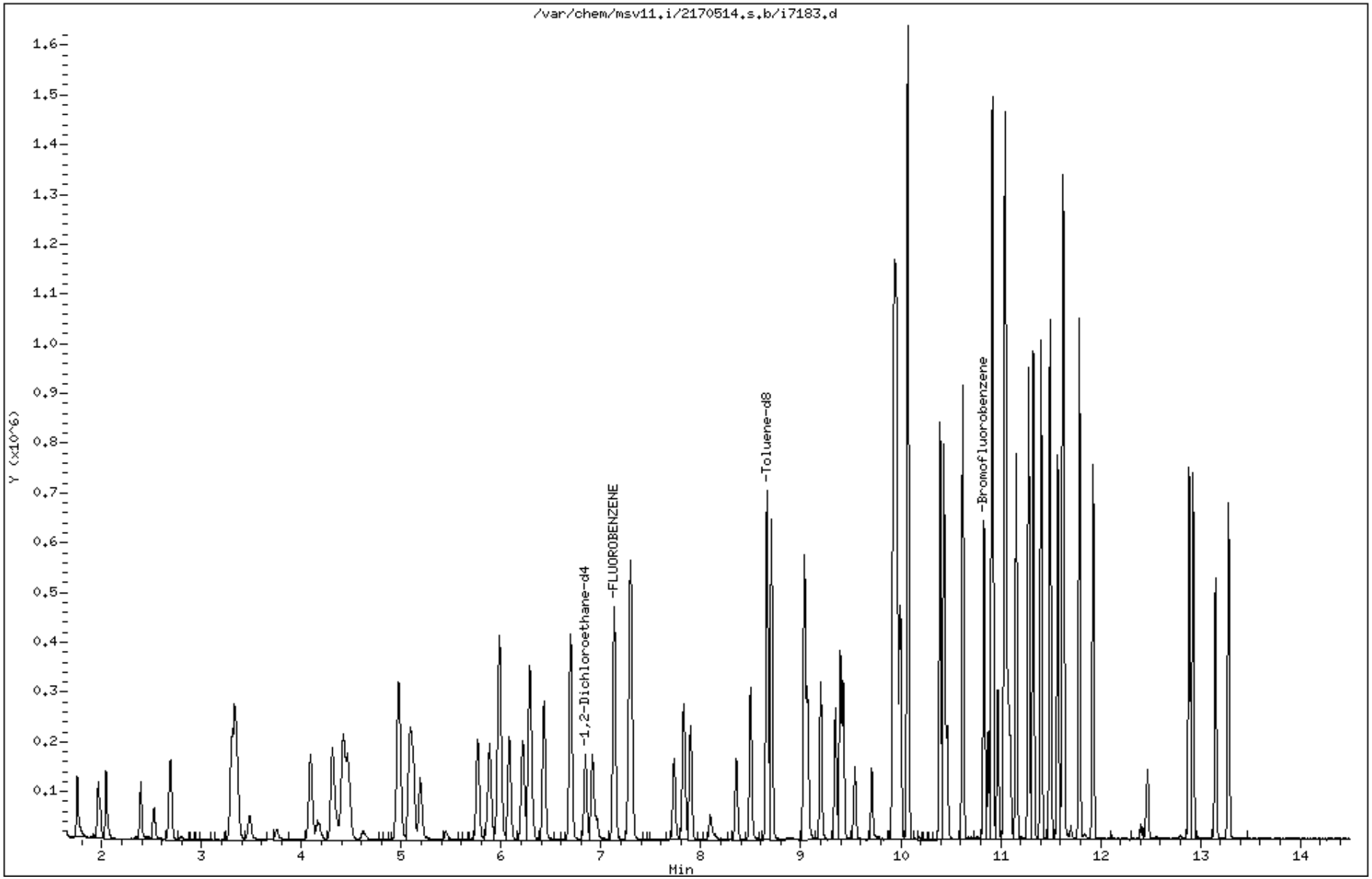
Instrument: msv11.i

Sample Info: 1440*V11STD50

Operator: GDG

Column phase: RTX-VMS-30M

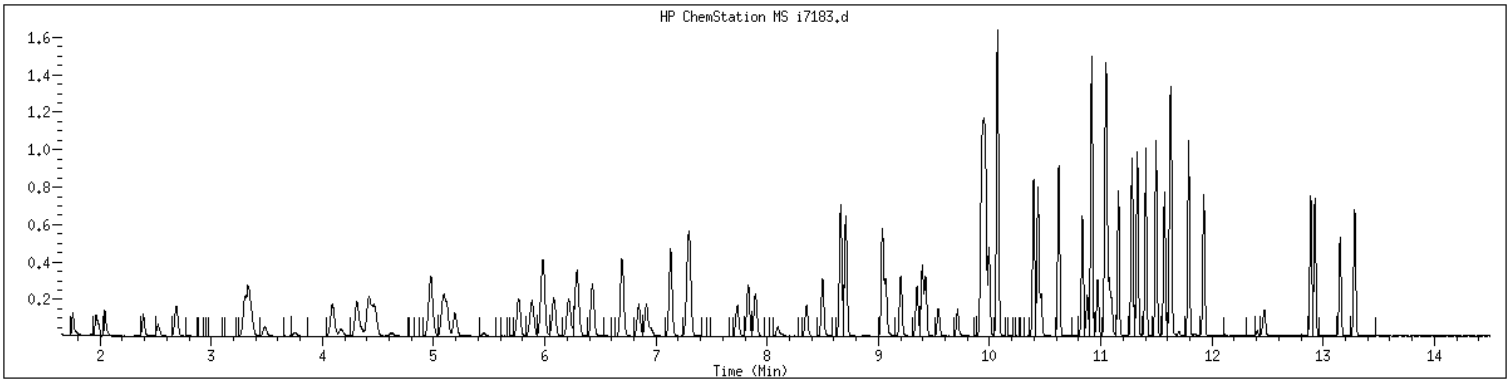
Column diameter: 0.25



Report Date: 05/15/2017 14:05

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID	: 1440	SampleType	: CCALIB_5
Injection Date	: 05/14/2017 20:44	Instrument	: msv11.i
Operator	: GDG		
Sample Info	: 1440*V11STD50		
Misc Info	: MSV~38316~*1*JMC2		
Method	: /var/chem/msv11.i/2170514.s.b/8260dod5s11.m		
Dilution	: 1.00		
Matrix	: SOIL		
Integrator	: HP RTE	Compound Sublist	: 8260b+AppIX1



NO MANUAL INTEGRATIONS

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170519/d4389s
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 0900	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.575	0.534	.01	-7.1	20	A	
1,1,1-Trichloroethane	0.341	0.316	.01	-7.38	20	A	
1,1,2,2-Tetrachloroethane	0.863	0.895	.3	3.8	20	A	
1,1,2-Trichloroethane	0.583	0.542	.01	-7.09	20	A	
1,1-Dichloroethane	0.395	0.409	.1	3.43	20	A	
1,1-Dichloroethene	0.209	0.197	.01	-5.99	20	A	
1,1-Dichloropropene	0.298	0.302	.01	1.52	20	A	
1,2,3-Trichlorobenzene	0.853	0.810	.01	-3.8	20	W	
1,2,3-Trichloropropane	1.010	1.007	.01	-.29	20	A	
1,2,4-Trichlorobenzene	0.857	0.806	.01	-4.6	20	W	
1,2,4-Trimethylbenzene	2.369	2.350	.01	-.81	20	A	
1,2-Dibromo-3-chloropropane	0.200	0.178	.01	-11.3	20	A	
1,2-Dibromoethane	0.581	0.518	.01	-10.7	20	A	
1,2-Dichlorobenzene	1.394	1.357	.01	-2.72	20	A	
1,2-Dichloroethane	0.329	0.317	.01	-3.62	20	A	
1,2-Dichloroethane-d4	0.142	0.148	.01	4.44	20	A	
1,2-Dichloroethene (total)	0.297	0.309	.01	4.05	20	A	
1,2-Dichloropropane	0.235	0.249	.01	5.82	20	A	
1,3,5-Trimethylbenzene	2.363	2.388	.01	1.04	20	A	
1,3-Dichlorobenzene	1.420	1.388	.01	-2.32	20	A	
1,3-Dichloropropane	0.988	0.964	.01	-2.38	20	A	
1,3-Dichloropropylene	0.347	0.354	.01	1.92	20	A	
1,4-Dichlorobenzene	1.430	1.402	.01	-1.93	20	A	
1-Bromo-2-Chloroethane	0.332	0.354	.01	6.61	20	A	
1-Chlorohexane	0.746	0.701	.01	-6.13	20	A	
2,2-Dichloropropane	0.333	0.289	.01	-13.2	20	A	
2-Butanone	0.182	0.170	.01	-6.49	20	A	
2-Chloroethylvinyl ether	0.140	0.119	.01	-15.0	20	A	
2-Chlorotoluene	2.322	2.333	.01	.47	20	A	
2-Hexanone	0.612	0.506	.01	-17.3	20	A	
4-Bromofluorobenzene	0.808	0.721	.01	-10.7	20	A	
4-Chlorotoluene	2.069	2.062	.01	-.34	20	A	
4-Isopropyltoluene	2.460	2.460	.01	.02	20	A	
4-Methyl-2-pentanone	0.770	0.672	.01	-12.7	20	A	
Acetone	0.175	0.149	.01	-15.1	20	A	
Acrolein	0.020	0.030	.01	46.3	20	A	*
Acrylonitrile	0.093	0.105	.01	13.6	20	A	
Benzene	0.959	0.973	.01	1.51	20	A	
Bromobenzene	1.288	1.322	.01	2.65	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170519/d4389s
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 0900	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.121	0.113	.01	-6.79	20	A	
Bromodichloromethane	0.302	0.310	.01	2.55	20	A	
Bromoform	0.474	0.429	.1	-9.43	20	A	
Bromomethane	0.176	0.175	.01	-.75	20	A	
Carbon disulfide	0.597	0.657	.01	10	20	A	
Carbon tetrachloride	0.278	0.264	.01	-4.97	20	A	
Chlorobenzene	1.712	1.605	.3	-6.24	20	A	
Chloroethane	0.165	0.198	.01	19	20	W	
Chloroform	0.391	0.388	.01	-.81	20	A	
Chloromethane	0.219	0.218	.1	-.78	20	A	
Cyclohexane	0.356	0.385	.01	8.21	20	A	
Dibromochloromethane	0.602	0.570	.01	-5.32	20	A	
Dibromofluoromethane	0.237	0.232	.01	-2.42	20	A	
Dibromomethane	0.148	0.146	.01	-1.42	20	A	
Dichlorodifluoromethane	0.239	0.226	.01	-5.32	20	A	
Ethylbenzene	0.920	0.858	.01	-6.76	20	A	
Hexachlorobutadiene	0.395	0.379	.01	-4.14	20	A	
Isopropylbenzene (Cumene)	2.817	2.637	.01	-6.39	20	A	
Methyl Acetate	0.220	0.209	.01	-5.06	20	A	
Methyl iodide	0.178	0.124	.01	-21.4	20	L	*
Methylcyclohexane	0.366	0.374	.01	2.1	20	A	
Methylene chloride	0.302	0.308	.01	2.22	20	A	
Naphthalene	2.556	2.179	.01	-12.6	20	W	
Styrene	1.809	1.701	.01	-5.97	20	A	
Tetrachloroethene	0.514	0.443	.01	-13.7	20	A	
Toluene	2.637	2.439	.01	-7.5	20	A	
Toluene-d8	2.441	2.254	.01	-7.64	20	A	
Trichloroethene	0.259	0.237	.01	-8.37	20	A	
Trichlorofluoromethane	0.335	0.345	.01	2.88	20	A	
Trichlorotrifluoroethane	0.196	0.191	.01	-2.76	20	A	
Vinyl acetate	0.152	0.174	.01	14.1	20	A	
Vinyl chloride	0.247	0.265	.01	7.03	20	A	
Xylene (total)	1.134	1.053	.01	-7.14	20	A	
cis-1,2-Dichloroethene	0.301	0.315	.01	4.63	20	A	
cis-1,3-Dichloropropene	0.371	0.383	.01	3.35	20	A	
m,p-Xylene	1.137	1.063	.01	-6.47	20	A	
n-Butylbenzene	2.073	2.248	.01	8.45	20	A	
n-Hexane	0.269	0.298	.01	10.5	20	A	
n-Propylbenzene	3.337	3.455	.01	3.55	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170519/d4389s
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 0900	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	1.130	1.034	.01	-8.49	20	A	
sec-Butylbenzene	2.917	2.982	.01	2.24	20	A	
tert-Butyl methyl ether (MTBE)	0.742	0.620	.01	-16.4	20	A	
tert-Butylbenzene	1.320	1.301	.01	-1.38	20	A	
trans-1,2-Dichloroethene	0.292	0.302	.01	3.44	20	A	
trans-1,3-Dichloropropene	0.324	0.325	.01	.29	20	A	
trans-1,4-Dichloro-2-butene	0.209	0.204	.01	-2.15	20	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170519.s.b/d4389s.d
Lab Smp Id: 1400 Client Smp ID: V13STD050
Inj Date : 19-MAY-2017 09:00
Operator : LBH Inst ID: msv13.i
Smp Info : 1400*V13STD050
Misc Info : MSV~38363~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Meth Date : 20-May-2017 12:42 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.671	1.671	(0.255)	101282	50.0000	47.3	
2 Chloromethane ++	50	1.866	1.866	(0.285)	97358	50.0000	49.6	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	118493	50.0000	53.5	
6 Bromomethane	94	2.275	2.275	(0.347)	78306	50.0000	49.6	
7 Chloroethane	64	2.410	2.410	(0.368)	88450	50.0000	59.5	(M1)
8 Trichlorofluoromethane	101	2.556	2.556	(0.390)	154174	50.0000	51.4	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	88058	50.0000	47.0	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	294030	50.0000	55.0	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.175	(0.485)	85453	50.0000	48.6	
13 Methyl Iodide	142	3.295	3.295	(0.503)	55651	50.0000	39.3	
14 Acrolein	56	3.553	3.553	(0.542)	66256	250.000	366	
16 Methylene Chloride	49	3.849	3.849	(0.588)	137951	50.0000	51.1	
17 Acetone	43	3.924	3.924	(0.599)	66510	50.0000	42.4	
18 trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	135112	50.0000	51.7	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	93639	50.0000	47.5	9488
	20 Hexane	57	4.134	4.134	(0.631)	133099	50.0000	55.3	9776
	21 MTBE	73	4.187	4.187	(0.639)	277427	50.0000	41.8	9840
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	182861	50.0000	51.7	
	27 Acrylonitrile	53	4.817	4.817	(0.735)	235965	250.000	284	
	28 Vinyl Acetate	43	5.038	5.038	(0.769)	77767	50.0000	57.0	(M1)
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	141129	50.0000	52.3	
M	75 Total 1,2-Dichloroethene	61				276241	100.000	104	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	129339	50.0000	43.4	
	32 Cyclohexane	56	5.514	5.514	(0.842)	172232	50.0000	54.1	9772
	34 Bromochloromethane	128	5.521	5.521	(0.843)	50360	50.0000	46.6	
	35 Chloroform +	83	5.604	5.604	(0.855)	173734	50.0000	49.6	
	36 Carbon Tetrachloride	117	5.724	5.724	(0.874)	117988	50.0000	47.5	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	103663	50.0000	48.8	9504
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	141374	50.0000	46.3	
	44 2-Butanone	43	5.915	5.915	(0.903)	76245	50.0000	46.8	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	135129	50.0000	50.8	
	46 Benzene	78	6.159	6.159	(0.940)	435459	50.0000	50.8	
$	50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	66270	50.0000	52.2	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	141987	50.0000	48.2	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	447393	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	167230	50.0000	51.0	9788
	56 Trichloroethene	130	6.706	6.706	(1.023)	105971	50.0000	45.8	
	57 Dibromomethane	93	7.096	7.096	(1.083)	65389	50.0000	49.3	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	111346	50.0000	52.9	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	138538	50.0000	51.3	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	158315	50.0000	53.3	9793
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	53388	50.0000	42.5	(M1)
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	171355	50.0000	51.7	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	422876	50.0000	46.2	
	69 Toluene +	91	7.969	7.969	(0.880)	457530	50.0000	46.2	
	71 Tetrachloroethene	164	8.262	8.262	(0.913)	83132	50.0000	43.1	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	126014	50.0000	43.6	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	145335	50.0000	50.1	
M	82 1-3 Dichloropropene total	100				316690	100.000	102	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	101678	50.0000	46.5	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	106897	50.0000	47.3	
	79 1,3-Dichloropropane	76	8.603	8.603	(0.950)	180868	50.0000	48.8	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	97209	50.0000	44.6	
	83 2-Hexanone	43	8.854	8.854	(0.978)	94951	50.0000	41.3	
	86 1-Chlorohexane	91	9.038	9.038	(0.998)	131444	50.0000	46.9	3269(M2)
*	84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	187600	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	301088	50.0000	46.9	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	160958	50.0000	46.6	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	100169	50.0000	46.4	
	89 p,m-Xylene	106	9.169	9.169	(1.013)	398838	100.000	93.5	
	90 o-Xylene	106	9.454	9.454	(1.044)	193958	50.0000	45.8	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				592796	150.000	139	
	91 Styrene	104	9.487	9.487	(1.048)	319153	50.0000	47.0	
	92 Bromoform ++	173	9.514	9.514	(1.051)	80478	50.0000	45.3	
	93 Isopropylbenzene	105	9.649	9.649	(1.066)	494634	50.0000	46.8	
$	95 Bromofluorobenzene	174	9.832	9.832	(1.086)	135289	50.0000	44.6	
	96 Bromobenzene	77	9.903	9.903	(0.943)	227512	50.0000	51.3	
	97 n-Propylbenzene	91	9.903	9.903	(0.943)	594584	50.0000	51.8	
	98 1,1,2,2-Tetrachloroethane++	83	9.948	9.948	(0.947)	154081	50.0000	51.9	
	99 2-Chlorotoluene	91	10.008	10.008	(0.953)	401515	50.0000	50.2	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	410946	50.0000	50.5	
	100 1,2,3-Trichloropropane	75	10.038	10.038	(0.955)	173356	50.0000	49.9	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	35174	50.0000	48.9	
	104 4-Chlorotoluene	91	10.110	10.110	(0.962)	354776	50.0000	49.8	
	105 tert-butylbenzene	91	10.215	10.215	(0.972)	223950	50.0000	49.3	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	404388	50.0000	49.6	
	108 sec-Butylbenzene	105	10.320	10.320	(0.982)	513182	50.0000	51.1	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.990)	423336	50.0000	50.0	
	113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	238790	50.0000	48.8	
*	114 1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	172090	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	241312	50.0000	49.0	
	117 n-Butylbenzene	91	10.649	10.649	(1.014)	386929	50.0000	54.2	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	233442	50.0000	48.6	
	119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	30569	50.0000	44.4	
	120 Hexachlorobutadiene	225	11.733	11.733	(1.117)	65153	50.0000	47.9	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	138735	50.0000	47.7	
	124 Naphthalene	128	12.055	12.055	(1.147)	375035	50.0000	43.7	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	139312	50.0000	48.1	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170519.s.b/d4389s.d

Page 1

Date : 19-MAY-2017 09:00

Client ID: V13STD050

Instrument: msv13.i

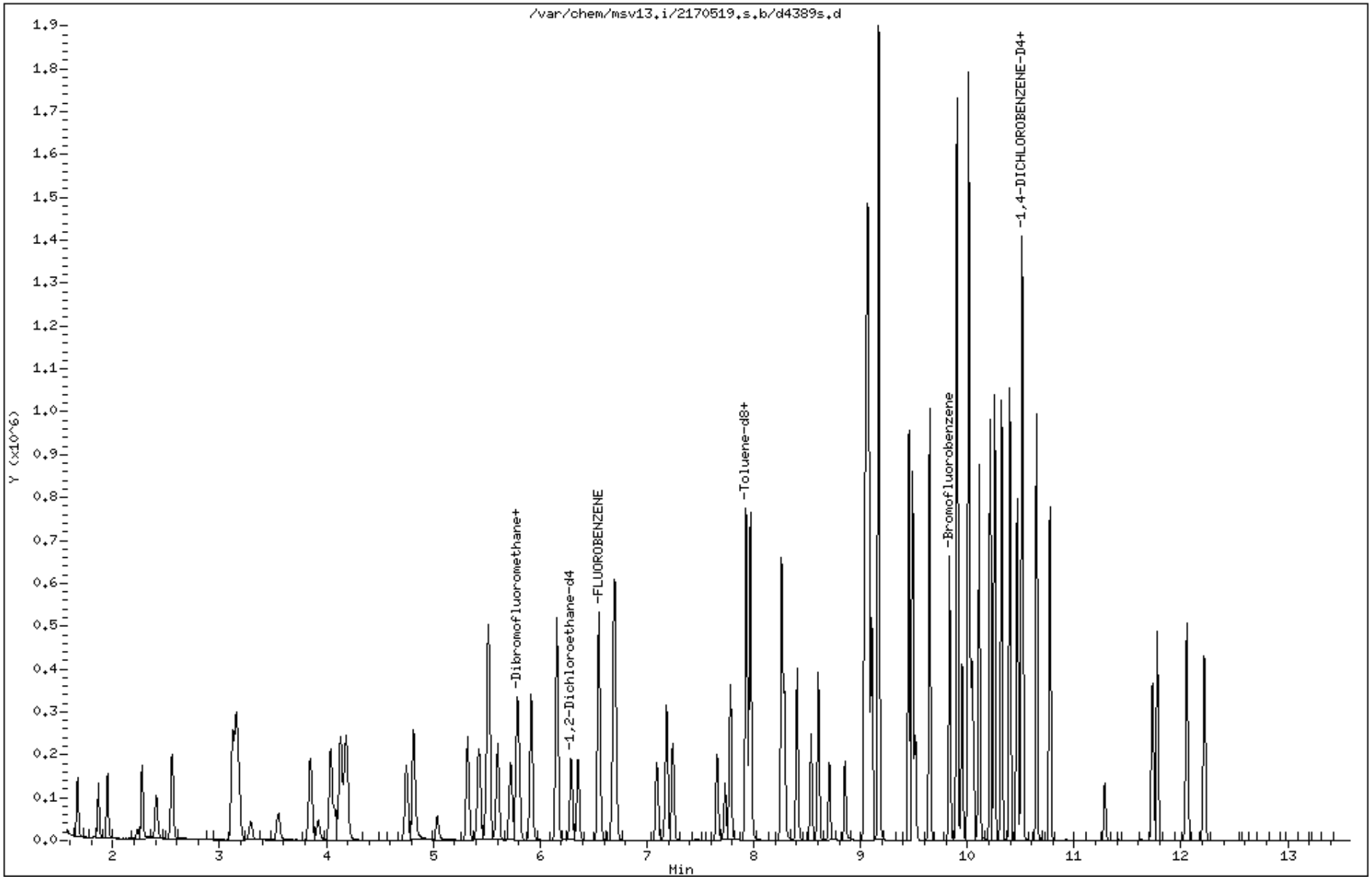
Sample Info: 1400*V13STD050

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

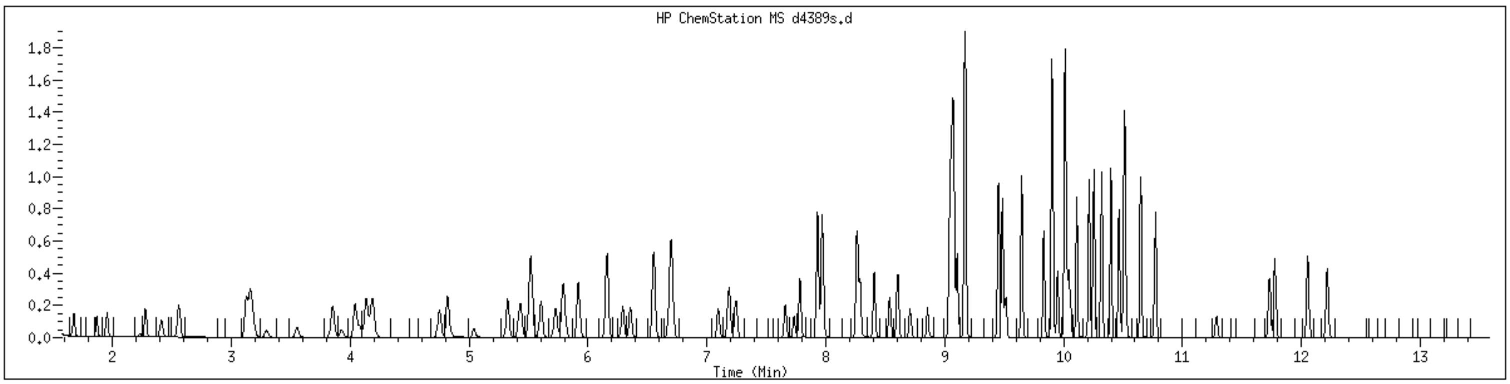
Column diameter: 0.25



Report Date: 05/20/2017 12:42

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1400 SampleType : CCALIB_7
Injection Date: 05/19/2017 09:00 Instrument : msv13.i
Operator : LBH
Sample Info : 1400*V13STD050
Misc Info : MSV~38363~*1*LBH
Method : /var/chem/msv13.i/2170519.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



Original Final

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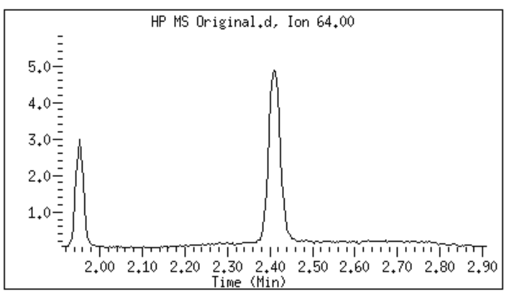
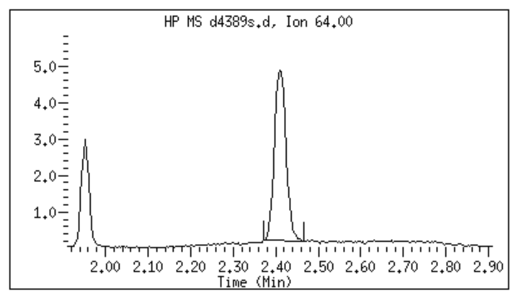
7 Chloroethane CAS#: 75-00-3 Reason: M1



Electronic Signature Applied

User: lbh
Date: 05/19/2017 09:19



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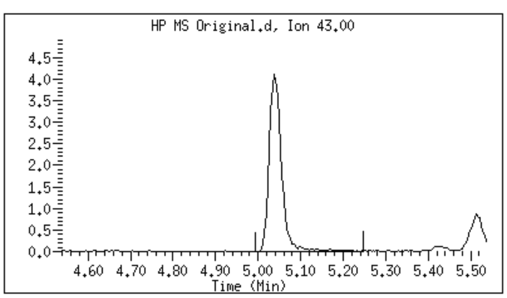
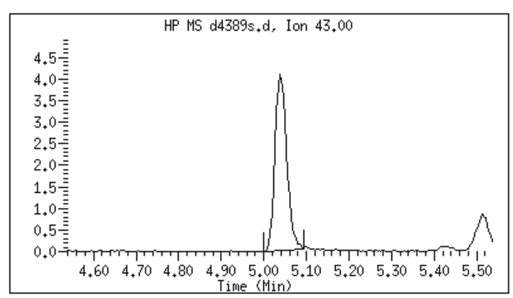
28 Vinyl Acetate CAS#: 108-05-4 Reason: M1



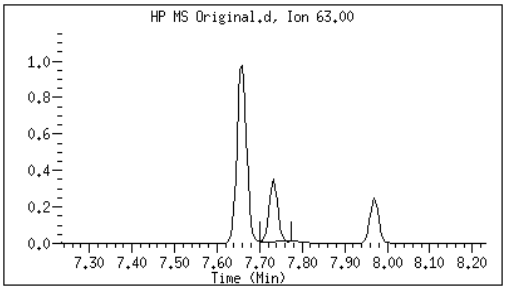
Electronic Signature Applied

User: lbh
Date: 05/19/2017 09:19



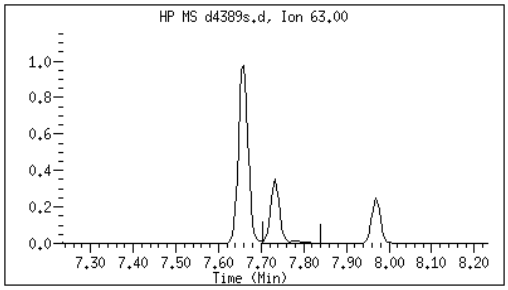
Original Final

64 2-Chloroethyl vinyl ether CAS#: 110-75-8 Reason: M1



Electronic Signature Applied

User: lbh
Date: 05/19/2017 09:20



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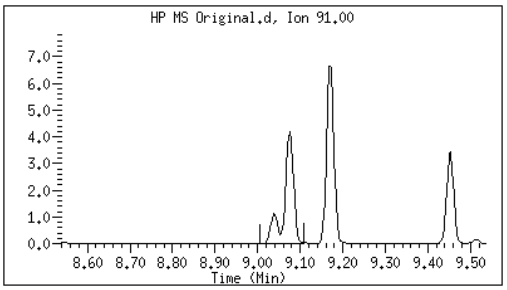
86 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

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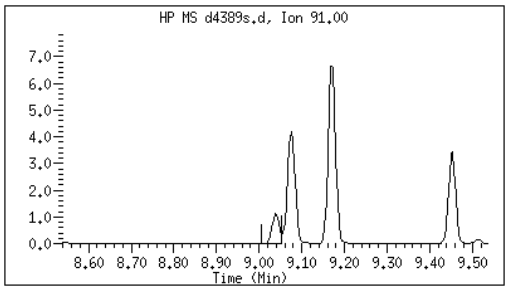
Date: 05/19/2017 09:20



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2170519/d4407c
Init. Calib. Date 1:	05/11/17	Time 1: 1420		Analyst:	LBH
Init. Calib. Date 2:	05/11/17	Time 2: 1656		Analytical Batch:	610743
Analysis Date:	05/19/17	Time: 1542		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.575	0.557	.01	-3.06	50	A	
1,1,1-Trichloroethane	0.341	0.326	.01	-4.42	50	A	
1,1,2,2-Tetrachloroethane	0.863	0.887	.3	2.88	50	A	
1,1,2-Trichloroethane	0.583	0.568	.01	-2.68	50	A	
1,1-Dichloroethane	0.395	0.424	.1	7.22	50	A	
1,1-Dichloroethene	0.209	0.201	.01	-4.04	50	A	
1,1-Dichloropropene	0.298	0.312	.01	4.87	50	A	
1,2,3-Trichlorobenzene	0.853	0.825	.01	-1.8	50	W	
1,2,3-Trichloropropane	1.010	1.040	.01	2.92	50	A	
1,2,4-Trichlorobenzene	0.857	0.824	.01	-2.6	50	W	
1,2,4-Trimethylbenzene	2.369	2.395	.01	1.08	50	A	
1,2-Dibromo-3-chloropropane	0.200	0.194	.01	-3.18	50	A	
1,2-Dibromoethane	0.581	0.553	.01	-4.74	50	A	
1,2-Dichlorobenzene	1.394	1.401	.01	.46	50	A	
1,2-Dichloroethane	0.329	0.332	.01	.84	50	A	
1,2-Dichloroethane-d4	0.142	0.150	.01	5.94	50	A	
1,2-Dichloroethene (total)	0.297	0.322	.01	8.53	50	A	
1,2-Dichloropropane	0.235	0.260	.01	10.4	50	A	
1,3,5-Trimethylbenzene	2.363	2.414	.01	2.15	50	A	
1,3-Dichlorobenzene	1.420	1.422	.01	.11	50	A	
1,3-Dichloropropane	0.988	1.014	.01	2.71	50	A	
1,3-Dichloropropylene	0.347	0.361	.01	4.1	50	A	
1,4-Dichlorobenzene	1.430	1.417	.01	-.89	50	A	
1-Bromo-2-Chloroethane	0.332	0.374	.01	12.7	50	A	
1-Chlorohexane	0.746	0.700	.01	-6.26	50	A	
2,2-Dichloropropane	0.333	0.280	.01	-16.0	50	A	
2-Butanone	0.182	0.190	.01	4.33	50	A	
2-Chloroethylvinyl ether	0.140	0.116	.01	-17.4	50	A	
2-Chlorotoluene	2.322	2.369	.01	1.99	50	A	
2-Hexanone	0.612	0.584	.01	-4.69	50	A	
4-Bromofluorobenzene	0.808	0.731	.01	-9.51	50	A	
4-Chlorotoluene	2.069	2.092	.01	1.14	50	A	
4-Isopropyltoluene	2.460	2.458	.01	-.06	50	A	
4-Methyl-2-pentanone	0.770	0.753	.01	-2.23	50	A	
Acetone	0.175	0.173	.01	-1.32	50	A	
Acrolein	0.020	0.031	.01	51	50	A	*
Acrylonitrile	0.093	0.109	.01	17.2	50	A	
Benzene	0.959	1.010	.01	5.31	50	A	
Bromobenzene	1.288	1.337	.01	3.8	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170519/d4407c
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 1542	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.121	0.116	.01	-4.13	50	A	
Bromodichloromethane	0.302	0.313	.01	3.79	50	A	
Bromoform	0.474	0.453	.1	-4.35	50	A	
Bromomethane	0.176	0.169	.01	-3.9	50	A	
Carbon disulfide	0.597	0.654	.01	9.51	50	A	
Carbon tetrachloride	0.278	0.268	.01	-3.51	50	A	
Chlorobenzene	1.712	1.672	.3	-2.33	50	A	
Chloroethane	0.165	0.209	.01	26	50	W	
Chloroform	0.391	0.403	.01	2.93	50	A	
Chloromethane	0.219	0.222	.1	1.08	50	A	
Cyclohexane	0.356	0.394	.01	10.8	50	A	
Dibromochloromethane	0.602	0.582	.01	-3.3	50	A	
Dibromofluoromethane	0.237	0.232	.01	-2.13	50	A	
Dibromomethane	0.148	0.154	.01	4.21	50	A	
Dichlorodifluoromethane	0.239	0.211	.01	-11.7	50	A	
Ethylbenzene	0.920	0.905	.01	-1.7	50	A	
Hexachlorobutadiene	0.395	0.356	.01	-9.8	50	A	
Isopropylbenzene (Cumene)	2.817	2.727	.01	-3.18	50	A	
Methyl Acetate	0.220	0.217	.01	-1.47	50	A	
Methyl iodide	0.178	0.131	.01	-17.8	50	L	
Methylcyclohexane	0.366	0.375	.01	2.35	50	A	
Methylene chloride	0.302	0.319	.01	5.85	50	A	
Naphthalene	2.556	2.342	.01	-6.2	50	W	
Styrene	1.809	1.803	.01	-.38	50	A	
Tetrachloroethene	0.514	0.461	.01	-10.2	50	A	
Toluene	2.637	2.557	.01	-3.01	50	A	
Toluene-d8	2.441	2.302	.01	-5.68	50	A	
Trichloroethene	0.259	0.255	.01	-1.31	50	A	
Trichlorofluoromethane	0.335	0.343	.01	2.53	50	A	
Trichlorotrifluoroethane	0.196	0.195	.01	-.6	50	A	
Vinyl acetate	0.152	0.134	.01	-12.2	50	A	
Vinyl chloride	0.247	0.267	.01	8.1	50	A	
Xylene (total)	1.134	1.097	.01	-3.27	50	A	
cis-1,2-Dichloroethene	0.301	0.329	.01	9.16	50	A	
cis-1,3-Dichloropropene	0.371	0.388	.01	4.7	50	A	
m,p-Xylene	1.137	1.106	.01	-2.65	50	A	
n-Butylbenzene	2.073	2.194	.01	5.83	50	A	
n-Hexane	0.269	0.273	.01	1.52	50	A	
n-Propylbenzene	3.337	3.463	.01	3.8	50	A	

FORM V II VOA

7A
VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170519/d4407c
Init. Calib. Date 1:	05/11/17 Time 1: 1420	Analyst:	LBH
Init. Calib. Date 2:	05/11/17 Time 2: 1656	Analytical Batch:	610743
Analysis Date:	05/19/17 Time: 1542	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	1.130	1.079	.01	-4.54	50	A	
sec-Butylbenzene	2.917	2.933	.01	.56	50	A	
tert-Butyl methyl ether (MTBE)	0.742	0.645	.01	-13.0	50	A	
tert-Butylbenzene	1.320	1.302	.01	-1.37	50	A	
trans-1,2-Dichloroethene	0.292	0.315	.01	7.88	50	A	
trans-1,3-Dichloropropene	0.324	0.335	.01	3.42	50	A	
trans-1,4-Dichloro-2-butene	0.209	0.213	.01	1.77	50	A	

GCAL, Inc.

Data file : /var/chem/msv13.i/2170519.s.b/d4407c.d
Lab Smp Id: 1440 Client Smp ID: V13STD050
Inj Date : 19-MAY-2017 15:42
Operator : LBH Inst ID: msv13.i
Smp Info : 1440*V13STD050
Misc Info : MSV~38363~*1*LBH
Comment :
Method : /var/chem/msv13.i/2170519.s.b/8260bdod5w13.m
Meth Date : 20-May-2017 12:54 jck2 Quant Type: ISTD
Cal Date : 11-MAY-2017 16:56 Cal File: d4109D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	93523	50.0000	44.1	
2 Chloromethane ++	50	1.866	1.866	(0.285)	98252	50.0000	50.5	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	118545	50.0000	54.0	
6 Bromomethane	94	2.279	2.279	(0.348)	75107	50.0000	48.1	
7 Chloroethane	64	2.410	2.410	(0.368)	92643	50.0000	63.0	(M1)
8 Trichlorofluoromethane	101	2.556	2.556	(0.390)	152197	50.0000	51.3	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	89035	50.0000	48.0	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	289930	50.0000	54.8	
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	86527	50.0000	49.7	
13 Methyl Iodide	142	3.298	3.298	(0.503)	57922	50.0000	41.1	
14 Acrolein	56	3.553	3.553	(0.542)	67743	250.000	377	
16 Methylene Chloride	49	3.853	3.853	(0.588)	141507	50.0000	52.9	
17 Acetone	43	3.928	3.928	(0.600)	76598	50.0000	49.3	
18 trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	139583	50.0000	53.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	96260	50.0000	49.3	9487
	20 Hexane	57	4.134	4.134	(0.631)	121123	50.0000	50.8	9780
	21 MTBE	73	4.187	4.187	(0.639)	285903	50.0000	43.5	9758
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	187779	50.0000	53.6	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	241344	250.000	293	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	59288	50.0000	43.9	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	145853	50.0000	54.6	
M	75 Total 1,2-Dichloroethene	61				285436	100.000	109	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	124026	50.0000	42.0	
	32 Cyclohexane	56	5.518	5.518	(0.842)	174639	50.0000	55.4	9705
	34 Bromochloromethane	128	5.525	5.525	(0.843)	51306	50.0000	47.9	
	35 Chloroform +	83	5.604	5.604	(0.855)	178582	50.0000	51.5	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	118673	50.0000	48.2	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	102998	50.0000	48.9	9467
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	144520	50.0000	47.8	
	44 2-Butanone	43	5.915	5.915	(0.903)	84263	50.0000	52.2	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	138277	50.0000	52.4	
	46 Benzene	78	6.159	6.159	(0.940)	447507	50.0000	52.7	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	66586	50.0000	53.0	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	147155	50.0000	50.4	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	443179	50.0000		
	55 Methyl Cyclohexane	83	6.695	6.695	(1.022)	166068	50.0000	51.2	9353
	56 Trichloroethene	130	6.706	6.706	(1.023)	113062	50.0000	49.3	
	57 Dibromomethane	93	7.096	7.096	(1.083)	68472	50.0000	52.1	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	115109	50.0000	55.2	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	138891	50.0000	51.9	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	165723	50.0000	56.3	9805
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	51398	50.0000	41.3	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	171954	50.0000	52.4	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	428299	50.0000	47.2	
	69 Toluene +	91	7.969	7.969	(0.880)	475806	50.0000	48.5	
	71 Tetrachloroethene	164	8.262	8.262	(0.913)	85816	50.0000	44.9	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	140052	50.0000	48.9	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	148455	50.0000	51.7	
M	82 1-3 Dichloropropene total	100				320409	100.000	104	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	105634	50.0000	48.7	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	108280	50.0000	48.4	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	188733	50.0000	51.4	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	102891	50.0000	47.6	
	83 2-Hexanone	43	8.854	8.854	(0.978)	108569	50.0000	47.7	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	130185	50.0000	46.9	3268(M2)
*	84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	186052	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	311037	50.0000	48.8	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	168300	50.0000	49.2	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	103663	50.0000	48.5	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	411721	100.000	97.4	
	90 o-Xylene	106	9.454	9.454	(1.044)	200672	50.0000	47.7	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				612393	150.000	145	
	91 Styrene	104	9.487	9.487	(1.048)	335365	50.0000	49.8	
	92 Bromoform ++	173	9.514	9.514	(1.051)	84288	50.0000	47.8	
	93 Isopropylbenzene	105	9.649	9.649	(1.066)	507381	50.0000	48.4	
$	95 Bromofluorobenzene	174	9.832	9.832	(1.086)	135972	50.0000	45.2	
	96 Bromobenzene	77	9.903	9.903	(0.943)	232901	50.0000	51.9	
	97 n-Propylbenzene	91	9.903	9.903	(0.943)	603383	50.0000	51.9	
	98 1,1,2,2-Tetrachloroethane++	83	9.948	9.948	(0.947)	154608	50.0000	51.4	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	412640	50.0000	51.0	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	420619	50.0000	51.1	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.956)	181157	50.0000	51.5	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	37036	50.0000	50.9	
	104 4-Chlorotoluene	91	10.110	10.110	(0.962)	364479	50.0000	50.6	
	105 tert-butylbenzene	91	10.215	10.215	(0.972)	226757	50.0000	49.3	(M2)
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	417201	50.0000	50.5	
	108 sec-Butylbenzene	105	10.320	10.320	(0.982)	510993	50.0000	50.3	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.990)	428252	50.0000	50.0	
	113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	247740	50.0000	50.1	
*	114 1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	174219	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	246896	50.0000	49.6	
	117 n-Butylbenzene	91	10.649	10.649	(1.014)	382229	50.0000	52.9	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	244055	50.0000	50.2	
	119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	33780	50.0000	48.4	
	120 Hexachlorobutadiene	225	11.733	11.733	(1.117)	62067	50.0000	45.1	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	143583	50.0000	48.7	
	124 Naphthalene	128	12.055	12.055	(1.147)	408024	50.0000	46.9	
	125 1,2,3-Trichlorobenzene	180	12.216	12.216	(1.163)	143769	50.0000	49.1	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170519.s.b/d4407c.d

Date : 19-MAY-2017 15:42

Client ID: V13STD050

Instrument: msv13.i

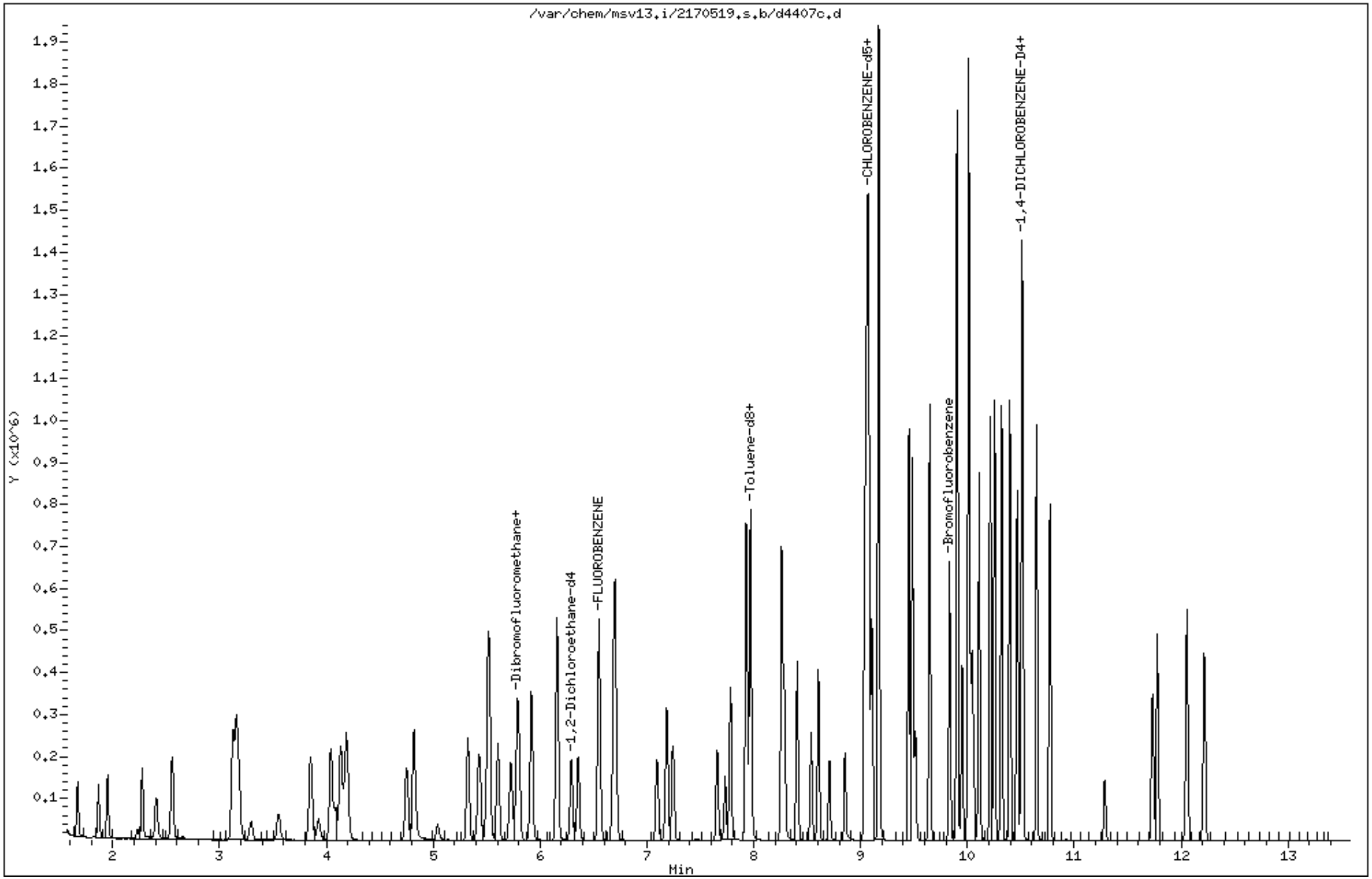
Sample Info: 1440*V13STD050

Purge Volume: 5.0

Operator: LBH

Column phase: RTX-VMS-30M

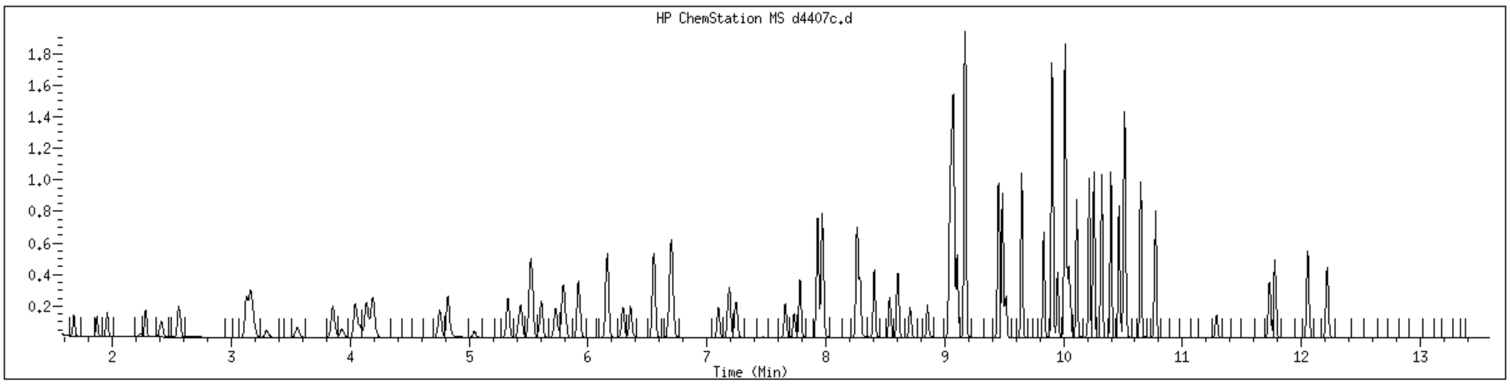
Column diameter: 0.25



Data file : /var/chem/msv13.i/2170519.s.b/d4407c.d   Page: 1
Report Date: 05/20/2017 12:54

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID   : 1440   SampleType   : CCALIB_7
Injection Date: 05/19/2017 15:42   Instrument   : msv13.i
Operator   : LBH
Sample Info   : 1440*V13STD050
Misc Info   : MSV~38363~*1*LBH
Method   : /var/chem/msv13.i/2170519.s.b/8260bdod5w13.m
Dilution   : 1.00
Matrix   : WATER
Integrator   : HP RTE   Compound Sublist: 8260b



Original   Final

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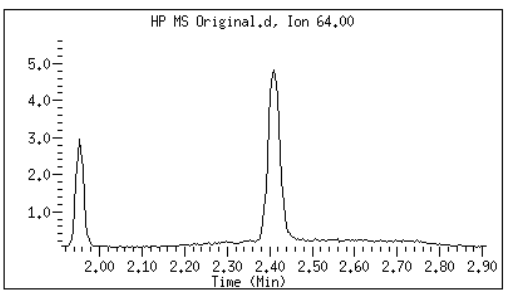
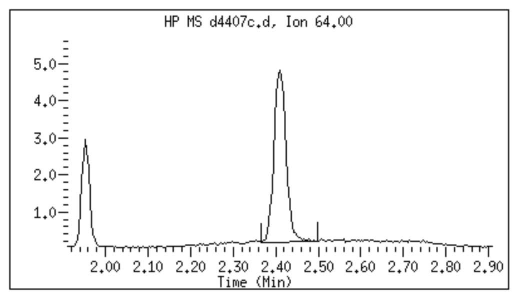
7 Chloroethane   CAS#: 75-00-3   Reason: M1



Electronic Signature Applied

User: lbh
Date: 05/19/2017 18:51



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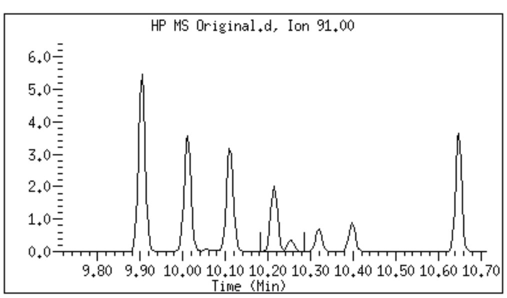
105 tert-butylbenzene   CAS#: 98-06-6   Reason: M2



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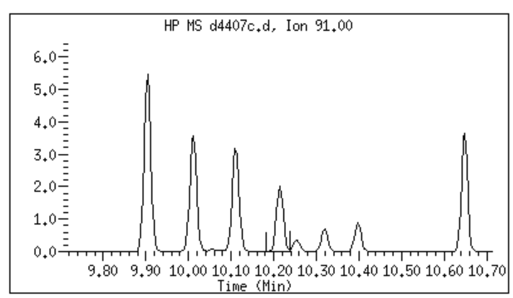
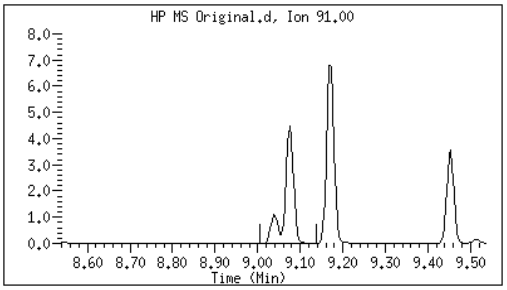
Date: 05/19/2017 18:54



Original Final

86 1-Chlorohexane CAS#: 544-10-5 Reason: M2



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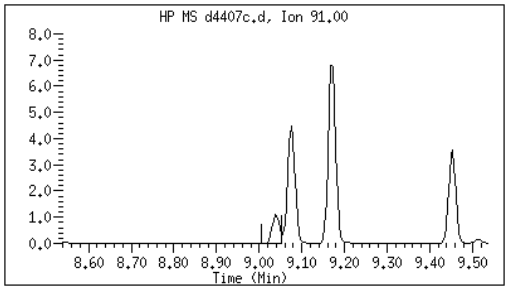
Date: 05/19/2017 18:53



M1 - Target system did not integrate
M2 - Target system integrated incorrectly

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170513/b3251
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	IXE
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 0857	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.583	0.571	.01	-2.03	20	A	
1,1,1-Trichloroethane	0.383	0.386	.01	.74	20	A	
1,1,2,2-Tetrachloroethane	1.112	1.060	.3	-4.65	20	A	
1,1,2-Trichloroethane	0.597	0.572	.01	-4.21	20	A	
1,1-Dichloroethane	0.465	0.468	.1	.45	20	A	
1,1-Dichloroethene	0.160	0.170	.01	6.6	20	A	
1,1-Dichloropropene	0.310	0.325	.01	4.8	20	A	
1,2,3-Trichlorobenzene	0.862	0.671	.01	-10.8	20	L	
1,2,3-Trichloropropane	1.424	1.403	.01	-1.46	20	A	
1,2,4-Trichlorobenzene	0.891	0.657	.01	-14.4	20	L	
1,2,4-Trimethylbenzene	2.479	2.611	.01	5.31	20	A	
1,2-Dibromo-3-chloropropane	0.184	0.176	.01	-4.35	20	A	
1,2-Dibromoethane	0.582	0.562	.01	-3.33	20	A	
1,2-Dichlorobenzene	1.330	1.313	.01	-1.26	20	A	
1,2-Dichloroethane	0.380	0.355	.01	-6.75	20	A	
1,2-Dichloroethane-d4	0.169	0.169	.01	.19	20	A	
1,2-Dichloroethene (total)	0.335	0.327	.01	-2.31	20	A	
1,2-Dichloropropane	0.257	0.252	.01	-1.95	20	A	
1,3,5-Trimethylbenzene	2.375	2.555	.01	7.59	20	A	
1,3-Dichlorobenzene	1.398	1.365	.01	-2.32	20	A	
1,3-Dichloropropane	1.069	1.054	.01	-1.42	20	A	
1,3-Dichloropropylene	0.383	0.396	.01	3.28	20	A	
1,4 Dioxane	0.002	0.002	.001	-8.78	20	A	
1,4-Dichlorobenzene	1.433	1.353	.01	-5.59	20	A	
1-Bromo-2-Chloroethane	0.376	0.372	.01	-1.27	20	A	
1-Chlorohexane	0.722	0.652	.01	-8.4	20	W	
2,2-Dichloropropane	0.378	0.385	.01	1.81	20	A	
2-Butanone	0.175	0.174	.01	-.39	20	A	
2-Chlorotoluene	2.474	2.550	.01	3.06	20	A	
2-Hexanone	0.529	0.541	.01	2.27	20	A	
4-Bromofluorobenzene	0.601	0.604	.01	.44	20	A	
4-Chlorotoluene	2.266	2.309	.01	1.89	20	A	
4-Isopropyltoluene	2.240	2.420	.01	8.06	20	A	
4-Methyl-2-pentanone	0.657	0.662	.01	.71	20	A	
Acetone	0.160	0.155	.01	-3.14	20	A	
Acrolein	0.014	0.020	.01	42.1	20	A	*
Acrylonitrile	0.096	0.099	.01	3.62	20	A	
Benzene	0.976	0.971	.01	-.49	20	A	
Bromobenzene	1.636	1.607	.01	-1.75	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170513/b3251
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	IXE
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 0857	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.106	0.107	.01	.95	20	A	
Bromodichloromethane	0.350	0.349	.01	-.35	20	A	
Bromoform	0.452	0.447	.1	-1.13	20	A	
Bromomethane	0.090	0.102	.01	13.8	20	W	
Carbon disulfide	0.520	0.546	.01	4.8	20	W	
Carbon tetrachloride	0.314	0.329	.01	4.63	20	A	
Chlorobenzene	1.538	1.520	.3	-1.18	20	A	
Chloroethane	0.158	0.148	.01	-6.66	20	A	
Chloroform	0.446	0.440	.01	-1.35	20	A	
Chloromethane	0.195	0.194	.1	-.73	20	A	
Chloroprene	0.373	0.344	.01	-6.4	20	W	
Cyclohexane	0.431	0.414	.01	-2.4	20	W	
Dibromochloromethane	0.648	0.644	.01	-.68	20	A	
Dibromofluoromethane	0.254	0.256	.01	.86	20	A	
Dibromomethane	0.164	0.156	.01	-4.73	20	A	
Dichlorodifluoromethane	0.246	0.242	.01	-1.32	20	A	
Ethylbenzene	0.776	0.801	.01	3.25	20	A	
Hexachlorobutadiene	0.280	0.299	.01	6.66	20	A	
Isobutyl alcohol	0.011	0.010	.01	-.35	20	A	
Isopropylbenzene (Cumene)	2.341	2.318	.01	.2	20	W	
Methyl Acetate	0.218	0.206	.01	-5.61	20	A	
Methyl iodide	0.117	0.110	.01	10.4	20	L	
Methylcyclohexane	0.335	0.371	.01	10.7	20	A	
Methylene chloride	0.295	0.280	.01	-5.04	20	A	
Naphthalene	2.786	2.012	.01	-14.4	20	L	
Styrene	1.559	1.521	.01	-1.2	20	W	
Tetrachloroethene	0.451	0.450	.01	-.12	20	A	
Toluene	2.519	2.465	.01	-2.14	20	A	
Toluene-d8	2.359	2.314	.01	-1.9	20	A	
Trichloroethene	0.252	0.252	.01	-.04	20	A	
Trichlorofluoromethane	0.285	0.317	.01	11.2	20	A	
Trichlorotrifluoroethane	0.165	0.187	.01	13.4	20	A	
Vinyl acetate	0.153	0.152	.01	-1.03	20	A	
Vinyl chloride	0.245	0.237	.01	-3.18	20	A	
Xylene (total)	0.909	0.912	.01	1.33	20	W	
cis-1,2-Dichloroethene	0.335	0.339	.01	1.28	20	A	
cis-1,3-Dichloropropene	0.390	0.405	.01	3.89	20	A	
diisopropyl Ether (DIPE)	0.748	0.746	.01	-.31	20	A	
m,p-Xylene	0.903	0.929	.01	3	20	W	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170513/b3251
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	IXE
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 0857	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
n-Butylbenzene	2.042	2.124	.01	4.03	20	A	
n-Hexane	0.302	0.296	.01	-1.2	20	W	
n-Propylbenzene	3.531	3.636	.01	2.97	20	A	
o-Xylene	0.922	0.878	.01	-3.4	20	W	
sec-Butylbenzene	2.699	2.951	.01	9.35	20	A	
t-Butanol (TBA)	0.029	0.027	.01	-7.48	20	A	
tert-Butyl methyl ether (MTBE)	0.687	0.641	.01	-6.72	20	A	
tert-Butylbenzene	1.320	1.429	.01	8.21	20	A	
trans-1,2-Dichloroethene	0.335	0.316	.01	-5.89	20	A	
trans-1,3-Dichloropropene	0.376	0.386	.01	2.64	20	A	
trans-1,4-Dichloro-2-butene	0.328	0.317	.01	-3.37	20	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170513.s.b/b3251.d
Lab Smp Id: 1400 Client Smp ID: V14STD050
Inj Date : 13-MAY-2017 08:57
Operator : IXE Inst ID: msv14.i
Smp Info : 1400*V14STD050
Misc Info : MSV~38321~*1*IXE
Comment :
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Meth Date : 16-May-2017 11:14 jck2 Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.743	1.743	(0.261)	195645	50.0000	49.3	
2 Chloromethane ++	50	1.953	1.953	(0.292)	156429	50.0000	49.6	
3 Vinyl Chloride +	62	2.036	2.036	(0.305)	191332	50.0000	48.4	
5 Bromomethane	94	2.377	2.377	(0.356)	82526	50.0000	56.9	
6 Chloroethane	64	2.516	2.516	(0.377)	119188	50.0000	46.7	
7 Trichlorofluoromethane	101	2.677	2.677	(0.401)	256095	50.0000	55.6	
11 1,1-Dichloroethene +	96	3.265	3.265	(0.489)	137476	50.0000	53.3	
14 Carbon Disulfide	76	3.295	3.295	(0.493)	440265	50.0000	52.4	
10 1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	150875	50.0000	56.7	
13 Methyl Iodide	142	3.438	3.438	(0.515)	88768	50.0000	55.2	
9 Acrolein	56	3.697	3.697	(0.553)	79031	250.000	355	
17 Methylene Chloride	49	4.000	4.000	(0.599)	226298	50.0000	47.5	
12 Acetone	43	4.068	4.068	(0.609)	124938	50.0000	48.4	
19 trans-1,2-Dichloroethene	61	4.188	4.188	(0.627)	254720	50.0000	47.1	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.221	4.221	(0.632)	166297	50.0000	47.2	8925
	23 Hexane	57	4.293	4.293	(0.643)	239057	50.0000	49.4	9227(M2)
	21 MTBE	73	4.334	4.334	(0.649)	517204	50.0000	46.6	9654
	26 tert-Butyl Alcohol	59	4.461	4.461	(0.668)	21938	50.0000	46.3	9309
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	602057	50.0000	49.8	9856
	29 Chloroprene	53	4.866	4.866	(0.728)	277237	50.0000	46.8	9066
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	377319	50.0000	50.2	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	400472	250.000	259	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	122311	50.0000	49.5	
M	48 Total 1,2-Dichloroethene	61				528556	100.000	97.7	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	273836	50.0000	50.6	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	310799	50.0000	50.9	
	38 Cyclohexane	56	5.653	5.653	(0.846)	334473	50.0000	48.8	9153
	34 Bromochloromethane	128	5.657	5.657	(0.847)	86730	50.0000	50.5	
	41 Chloroform +	83	5.736	5.736	(0.859)	355426	50.0000	49.3	
	39 Carbon Tetrachloride	117	5.863	5.863	(0.878)	265325	50.0000	52.3	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	206751	50.0000	50.4	6908
	37 1,1,1-Trichloroethane	97	5.934	5.934	(0.888)	311168	50.0000	50.4	
	42 1,1-Dichloropropene	75	6.054	6.054	(0.906)	261894	50.0000	52.4	
	32 2-Butanone	43	6.043	6.043	(0.905)	140712	50.0000	49.8	
	44 Benzene	78	6.294	6.294	(0.942)	783881	50.0000	49.8	
$	43 1,2-Dichloroethane-d4	67	6.422	6.422	(0.961)	136470	50.0000	50.1	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	286214	50.0000	46.6	
	45 Isobutyl Alcohol	43	6.508	6.508	(0.974)	42384	250.000	249	9541
*	47 FLUOROBENZENE	96	6.680	6.680	(1.000)	807023	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	299388	50.0000	55.4	8923
	49 Trichloroethene	130	6.830	6.830	(1.022)	203026	50.0000	50.0	
	52 Dibromomethane	93	7.216	7.216	(1.080)	125840	50.0000	47.6	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	203538	50.0000	49.0	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	281872	50.0000	49.8	
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	39065	1250.00	1140	9467
	57 1-Bromo-2-chloroethane	63	7.775	7.775	(1.164)	299968	50.0000	49.4	9680
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	326709	50.0000	51.9	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	761158	50.0000	49.0	
	61 Toluene +	91	8.082	8.082	(0.883)	810749	50.0000	48.9	
M	145 1-3 Dichloropropene total	100				638577	100.000	103	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	148148	50.0000	49.9	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	217691	50.0000	50.4	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	311868	50.0000	51.3	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	188126	50.0000	47.9	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	226820	50.0000	47.7	9679
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	211695	50.0000	49.7	
	67 1,3-Dichloropropane	76	8.705	8.705	(0.951)	346599	50.0000	49.3	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	184946	50.0000	48.3	
	68 2-Hexanone	43	8.952	8.952	(0.978)	177932	50.0000	51.1	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	214458	50.0000	45.8	9066
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	328923	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
72	Chlorobenzene ++	112	9.166	9.166	(1.002)	499986	50.0000	49.4	
73	Ethylbenzene +	106	9.177	9.177	(1.003)	263393	50.0000	51.6	
74	1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	187910	50.0000	49.0	
75	p,m-Xylene	106	9.271	9.271	(1.013)	610938	100.000	103	
M 99	TOTAL XYLENE	106				899758	150.000	152	
76	o-Xylene	106	9.552	9.552	(1.044)	288820	50.0000	48.3	
77	Styrene	104	9.582	9.582	(1.047)	500414	50.0000	49.4	
78	Bromoform ++	173	9.608	9.608	(1.050)	146906	50.0000	49.4	
79	Isopropylbenzene	105	9.743	9.743	(1.065)	762402	50.0000	50.1	
161	cis-1,4-dichloro-2-butene	53	9.960	9.960	(0.939)	81003	50.0000	44.0	9568
$ 80	Bromofluorobenzene	174	9.927	9.927	(1.085)	198667	50.0000	50.2	
84	Bromobenzene	77	9.998	9.998	(0.943)	372129	50.0000	49.1	
86	n-Propylbenzene	91	10.002	10.002	(0.943)	841831	50.0000	51.5	
81	1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	245520	50.0000	47.7	
87	2-Chlorotoluene	91	10.107	10.107	(0.953)	590386	50.0000	51.5	
88	1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	591655	50.0000	53.8	
85	1,2,3-Trichloropropane	75	10.133	10.133	(0.955)	324799	50.0000	49.3	
83	trans-1,4-Dichloro-2-Butene	53	10.148	10.148	(0.957)	73390	50.0000	48.3	
90	4-Chlorotoluene	91	10.204	10.204	(0.962)	534508	50.0000	50.9	
91	tert-butylbenzene	91	10.313	10.313	(0.972)	330770	50.0000	54.1	
93	1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	604435	50.0000	52.7	
94	sec-Butylbenzene	105	10.418	10.418	(0.982)	683328	50.0000	54.7	
92	p-Isopropyltoluene	119	10.497	10.497	(0.990)	560406	50.0000	54.0	
96	1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	316141	50.0000	48.8	
* 97	1,4-DICHLOROBENZENE-D4	152	10.605	10.605	(1.000)	231531	50.0000		
98	1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	313222	50.0000	47.2	
100	n-Butylbenzene	91	10.748	10.748	(1.013)	491784	50.0000	52.0	
102	1,2-Dichlorobenzene	146	10.871	10.871	(1.025)	304077	50.0000	49.4	
106	1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	40664	50.0000	47.8	
109	Hexachlorobutadiene	225	11.857	11.857	(1.118)	69170	50.0000	53.3	
108	1,2,4-Trichlorobenzene	180	11.902	11.902	(1.122)	152199	50.0000	42.8	
110	Naphthalene	128	12.191	12.191	(1.150)	465945	50.0000	42.8	
111	1,2,3-Trichlorobenzene	180	12.360	12.360	(1.165)	155320	50.0000	44.6	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170513.s.b/b3251.d

Date : 13-MAY-2017 08:57

Client ID: V14STD050

Instrument: msv14.i

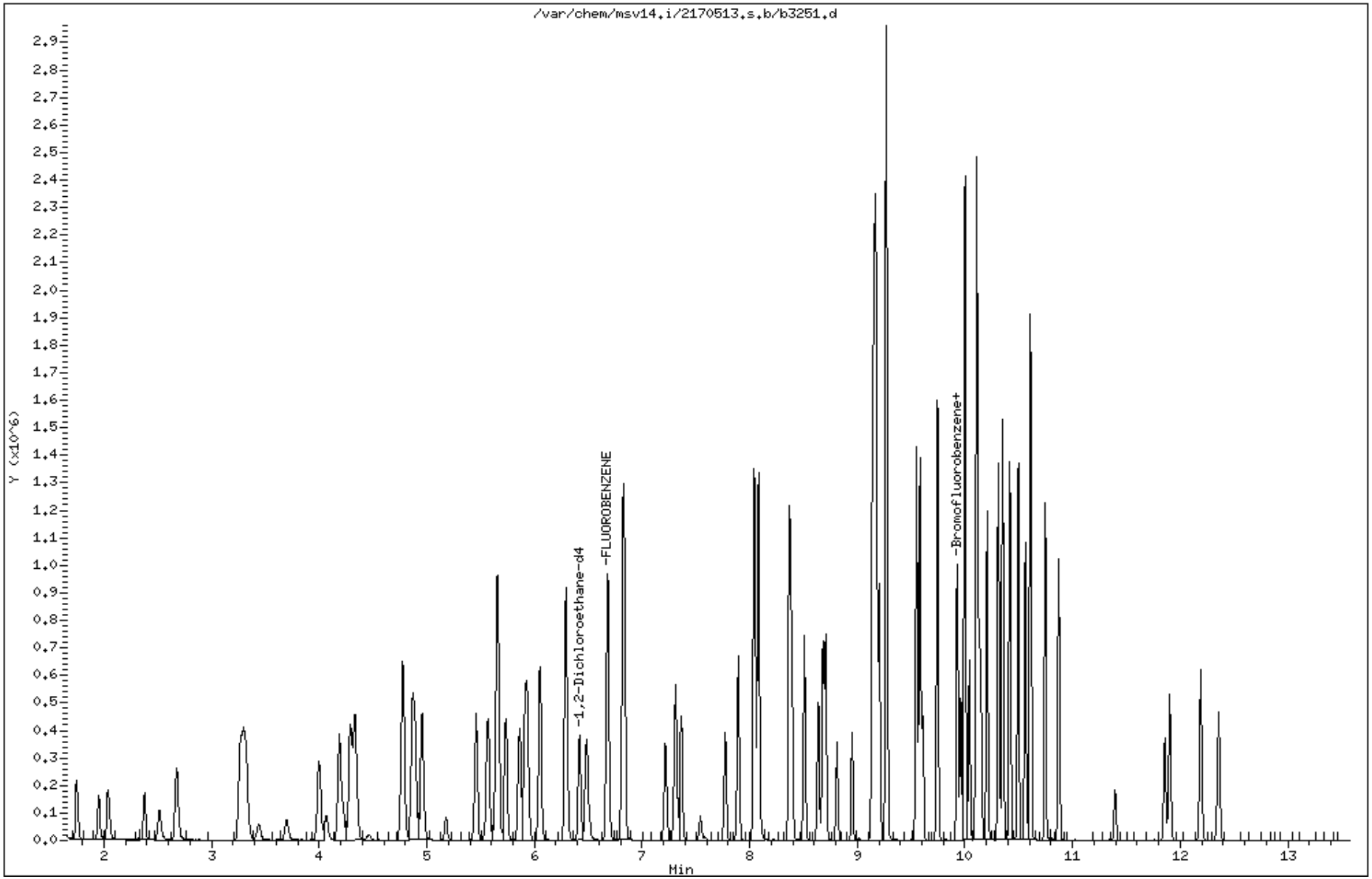
Sample Info: 1400*V14STD050

Purge Volume: 5.0

Operator: IXE

Column phase: RTX-VMS-30M

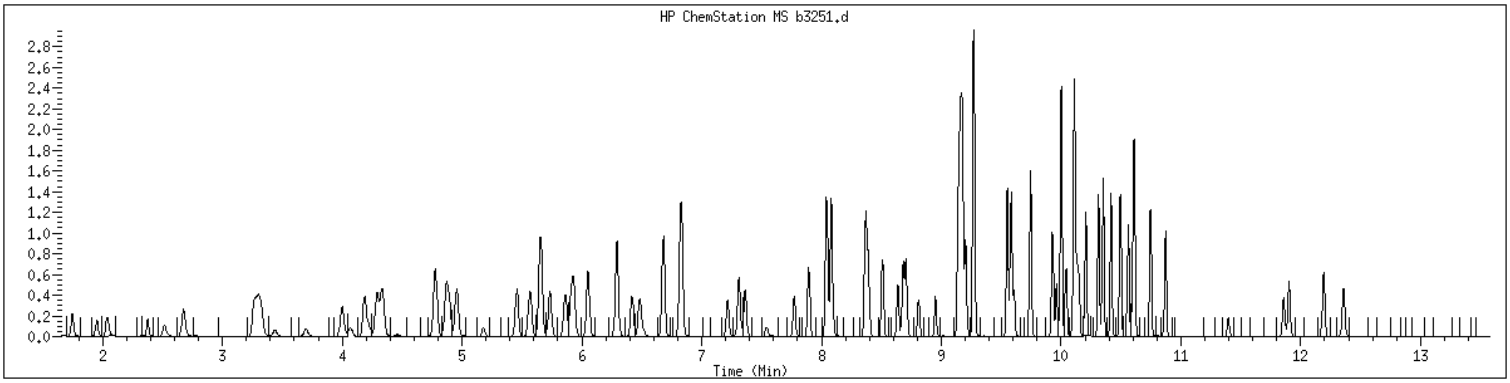
Column diameter: 0.25



Report Date: 05/16/2017 11:14

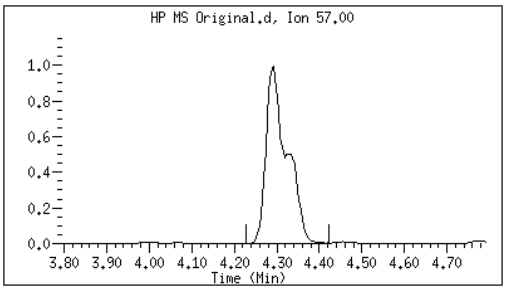
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1400 SampleType : CCALIB_7
Injection Date: 05/13/2017 08:57 Instrument : msv14.i
Operator : IXE
Sample Info : 1400*V14STD050
Misc Info : MSV~38321~*1*IXE
Method : /var/chem/msv14.i/2170513.s.b/8260bdodw14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



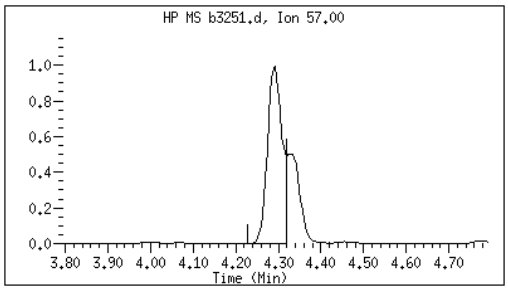
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: ixe
Date: 05/13/2017 09:21



M2 - Target system integrated incorrectly

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV14
Injection Vol.:	1.0		(µL)	Lab File ID:	2170513/b3273
Init. Calib. Date 1:	05/05/17	Time 1: 0959		Analyst:	IXE
Init. Calib. Date 2:	05/05/17	Time 2: 1332		Analytical Batch:	610316
Analysis Date:	05/13/17	Time: 1706		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.583	0.592	.01	1.58	50	A	
1,1,1-Trichloroethane	0.383	0.396	.01	3.53	50	A	
1,1,2,2-Tetrachloroethane	1.112	1.065	.3	-4.22	50	A	
1,1,2-Trichloroethane	0.597	0.592	.01	-.91	50	A	
1,1-Dichloroethane	0.465	0.482	.1	3.64	50	A	
1,1-Dichloroethene	0.160	0.164	.01	2.33	50	A	
1,1-Dichloropropene	0.310	0.334	.01	7.71	50	A	
1,2,3-Trichlorobenzene	0.862	0.687	.01	-9	50	L	
1,2,3-Trichloropropane	1.424	1.445	.01	1.5	50	A	
1,2,4-Trichlorobenzene	0.891	0.701	.01	-9.6	50	L	
1,2,4-Trimethylbenzene	2.479	2.687	.01	8.4	50	A	
1,2-Dibromo-3-chloropropane	0.184	0.192	.01	4.41	50	A	
1,2-Dibromoethane	0.582	0.589	.01	1.2	50	A	
1,2-Dichlorobenzene	1.330	1.356	.01	1.94	50	A	
1,2-Dichloroethane	0.380	0.369	.01	-2.97	50	A	
1,2-Dichloroethane-d4	0.169	0.167	.01	-.85	50	A	
1,2-Dichloroethene (total)	0.335	0.348	.01	3.8	50	A	
1,2-Dichloropropane	0.257	0.265	.01	3.14	50	A	
1,3,5-Trimethylbenzene	2.375	2.595	.01	9.27	50	A	
1,3-Dichlorobenzene	1.398	1.448	.01	3.56	50	A	
1,3-Dichloropropane	1.069	1.093	.01	2.23	50	A	
1,3-Dichloropropylene	0.383	0.416	.01	8.52	50	A	
1,4 Dioxane	0.002	0.002	.001	.29	50	A	
1,4-Dichlorobenzene	1.433	1.416	.01	-1.2	50	A	
1-Bromo-2-Chloroethane	0.376	0.385	.01	2.24	50	A	
1-Chlorohexane	0.722	0.665	.01	-6.6	50	W	
2,2-Dichloropropane	0.378	0.384	.01	1.42	50	A	
2-Butanone	0.175	0.171	.01	-2.15	50	A	
2-Chlorotoluene	2.474	2.640	.01	6.7	50	A	
2-Hexanone	0.529	0.547	.01	3.4	50	A	
4-Bromofluorobenzene	0.601	0.615	.01	2.24	50	A	
4-Chlorotoluene	2.266	2.392	.01	5.56	50	A	
4-Isopropyltoluene	2.240	2.485	.01	11	50	A	
4-Methyl-2-pentanone	0.657	0.677	.01	3.01	50	A	
Acetone	0.160	0.144	.01	-9.97	50	A	
Acrolein	0.014	0.019	.01	36.5	50	A	
Acrylonitrile	0.096	0.097	.01	.8	50	A	
Benzene	0.976	1.016	.01	4.04	50	A	
Bromobenzene	1.636	1.667	.01	1.9	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170513/b3273
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	IXE
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1706	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.106	0.112	.01	5.59	50	A	
Bromodichloromethane	0.350	0.366	.01	4.31	50	A	
Bromoform	0.452	0.465	.1	2.92	50	A	
Bromomethane	0.090	0.098	.01	8.4	50	W	
Carbon disulfide	0.520	0.530	.01	1.8	50	W	
Carbon tetrachloride	0.314	0.338	.01	7.69	50	A	
Chlorobenzene	1.538	1.574	.3	2.35	50	A	
Chloroethane	0.158	0.151	.01	-4.25	50	A	
Chloroform	0.446	0.455	.01	1.85	50	A	
Chloromethane	0.195	0.187	.1	-4.37	50	A	
Chloroprene	0.373	0.355	.01	-3.2	50	W	
Cyclohexane	0.431	0.422	.01	-.8	50	W	
Dibromochloromethane	0.648	0.665	.01	2.58	50	A	
Dibromofluoromethane	0.254	0.255	.01	.24	50	A	
Dibromomethane	0.164	0.164	.01	.07	50	A	
Dichlorodifluoromethane	0.246	0.245	.01	-.41	50	A	
Ethylbenzene	0.776	0.827	.01	6.58	50	A	
Hexachlorobutadiene	0.280	0.308	.01	9.8	50	A	
Isobutyl alcohol	0.011	0.011	.01	2.73	50	A	
Isopropylbenzene (Cumene)	2.341	2.390	.01	3.2	50	W	
Methyl Acetate	0.218	0.218	.01	-.1	50	A	
Methyl iodide	0.117	0.093	.01	-4.6	50	L	
Methylcyclohexane	0.335	0.374	.01	11.7	50	A	
Methylene chloride	0.295	0.282	.01	-4.4	50	A	
Naphthalene	2.786	2.065	.01	-12.4	50	L	
Styrene	1.559	1.589	.01	3	50	W	
Tetrachloroethene	0.451	0.466	.01	3.37	50	A	
Toluene	2.519	2.546	.01	1.06	50	A	
Toluene-d8	2.359	2.317	.01	-1.76	50	A	
Trichloroethene	0.252	0.266	.01	5.84	50	A	
Trichlorofluoromethane	0.285	0.300	.01	5.21	50	A	
Trichlorotrifluoroethane	0.165	0.179	.01	8.31	50	A	
Vinyl acetate	0.153	0.126	.01	-18.0	50	A	
Vinyl chloride	0.245	0.241	.01	-1.58	50	A	
Xylene (total)	0.909	0.944	.01	4.67	50	W	
cis-1,2-Dichloroethene	0.335	0.354	.01	5.73	50	A	
cis-1,3-Dichloropropene	0.390	0.426	.01	9.42	50	A	
diisopropyl Ether (DIPE)	0.748	0.779	.01	4.04	50	A	
m,p-Xylene	0.903	0.956	.01	6	50	W	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217051110	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170513/b3273
Init. Calib. Date 1:	05/05/17 Time 1: 0959	Analyst:	IXE
Init. Calib. Date 2:	05/05/17 Time 2: 1332	Analytical Batch:	610316
Analysis Date:	05/13/17 Time: 1706	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
n-Butylbenzene	2.042	2.135	.01	4.55	50	A	
n-Hexane	0.302	0.311	.01	3.6	50	W	
n-Propylbenzene	3.531	3.728	.01	5.58	50	A	
o-Xylene	0.922	0.921	.01	1.2	50	W	
sec-Butylbenzene	2.699	2.993	.01	10.9	50	A	
t-Butanol (TBA)	0.029	0.028	.01	-5.94	50	A	
tert-Butyl methyl ether (MTBE)	0.687	0.733	.01	6.74	50	A	
tert-Butylbenzene	1.320	1.453	.01	10	50	A	
trans-1,2-Dichloroethene	0.335	0.342	.01	1.87	50	A	
trans-1,3-Dichloropropene	0.376	0.405	.01	7.59	50	A	
trans-1,4-Dichloro-2-butene	0.328	0.328	.01	-.06	50	A	

FORM V II VOA

GCAL, Inc.

Data file : /var/chem/msv14.i/2170513.s.b/b3273.d
Lab Smp Id: 1440 Client Smp ID: V14STD050
Inj Date : 13-MAY-2017 17:06
Operator : IXE Inst ID: msv14.i
Smp Info : 1440*V14STD050
Misc Info : MSV~38321~*1*IXE
Comment :
Method : /var/chem/msv14.i/2170513.s.b/8260bdod5w14.m
Meth Date : 13-May-2017 17:25 ixe Quant Type: ISTD
Cal Date : 09-MAY-2017 22:17 Cal File: b3140.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.744	1.744	(0.261)	191991	50.0000	49.8	
2	Chloromethane ++	50	1.954	1.954	(0.292)	146529	50.0000	47.8	
3	Vinyl Chloride +	62	2.036	2.036	(0.305)	189110	50.0000	49.2	
5	Bromomethane	94	2.377	2.377	(0.356)	76524	50.0000	54.2	
6	Chloroethane	64	2.512	2.512	(0.376)	118876	50.0000	47.9	
7	Trichlorofluoromethane	101	2.673	2.673	(0.400)	235504	50.0000	52.6	
11	1,1-Dichloroethene +	96	3.266	3.266	(0.489)	128311	50.0000	51.2	
14	Carbon Disulfide	76	3.292	3.292	(0.493)	416198	50.0000	50.9	
10	1,1,2Trichlotrifluoroethane	101	3.318	3.318	(0.497)	140180	50.0000	54.2	
13	Methyl Iodide	142	3.438	3.438	(0.515)	72596	50.0000	47.7	
9	Acrolein	56	3.697	3.697	(0.553)	73838	250.000	341	
17	Methylene Chloride	49	3.997	3.997	(0.598)	221542	50.0000	47.8	
12	Acetone	43	4.071	4.071	(0.609)	112921	50.0000	45.0	
19	trans-1,2-Dichloroethene	61	4.184	4.184	(0.626)	268123	50.0000	50.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	20 Methyl Acetate	43	4.225	4.225	(0.632)	171134	50.0000	49.9	8384
	23 Hexane	57	4.289	4.289	(0.642)	244014	50.0000	51.8	9336(M2)
	21 MTBE	73	4.334	4.334	(0.649)	575480	50.0000	53.4	9782
	26 tert-Butyl Alcohol	59	4.469	4.469	(0.669)	21687	50.0000	47.0	9371
	27 Isopropyl Ether	45	4.776	4.776	(0.715)	610908	50.0000	52.0	9873
	29 Chloroprene	53	4.866	4.866	(0.728)	278713	50.0000	48.4	9082
	24 1,1-Dichloroethane ++	63	4.892	4.892	(0.732)	378532	50.0000	51.8	
	22 Acrylonitrile	53	4.956	4.956	(0.742)	378810	250.000	252	
	25 Vinyl Acetate	43	5.177	5.177	(0.775)	98524	50.0000	41.0	
M	48 Total 1,2-Dichloroethene	61				546088	100.000	104	
	30 cis-1,2-Dichloroethene	61	5.458	5.458	(0.817)	277965	50.0000	52.9	
	31 2,2-Dichloropropane	77	5.567	5.567	(0.833)	301045	50.0000	50.7	
	38 Cyclohexane	56	5.653	5.653	(0.846)	330958	50.0000	49.6	9125
	34 Bromochloromethane	128	5.661	5.661	(0.847)	88207	50.0000	52.8	
	41 Chloroform +	83	5.732	5.732	(0.858)	356820	50.0000	50.9	
	39 Carbon Tetrachloride	117	5.860	5.860	(0.877)	265526	50.0000	53.8	
$	36 Dibromofluoromethane	111	5.912	5.912	(0.885)	199788	50.0000	50.1	6910
	37 1,1,1-Trichloroethane	97	5.931	5.931	(0.888)	310925	50.0000	51.8	
	42 1,1-Dichloropropene	75	6.055	6.055	(0.906)	261708	50.0000	53.9	
	32 2-Butanone	43	6.047	6.047	(0.905)	134412	50.0000	48.9	
	44 Benzene	78	6.294	6.294	(0.942)	796938	50.0000	52.0	
$	43 1,2-Dichloroethane-d4	67	6.418	6.418	(0.961)	131313	50.0000	49.6	
	46 1,2-Dichloroethane	62	6.482	6.482	(0.970)	289590	50.0000	48.5	
	45 Isobutyl Alcohol	43	6.512	6.512	(0.975)	42490	250.000	257	9575
*	47 FLUOROBENZENE	96	6.681	6.681	(1.000)	784712	50.0000		
	50 Methyl Cyclohexane	83	6.823	6.823	(1.021)	293586	50.0000	55.8	8869
	49 Trichloroethene	130	6.834	6.834	(1.023)	209024	50.0000	52.9	
	52 Dibromomethane	93	7.217	7.217	(1.080)	128527	50.0000	50.0	
	51 1,2-Dichloropropane +	63	7.310	7.310	(1.094)	208189	50.0000	51.6	
	54 Bromodichloromethane	83	7.363	7.363	(1.102)	286882	50.0000	52.2	
	55 1,4- Dioxane	58	7.543	7.543	(1.129)	41761	1250.00	1250	9444
	57 1-Bromo-2-chloroethane	63	7.775	7.775	(1.164)	302041	50.0000	51.1	9626
	58 cis-1,3-Dichloropropene	75	7.895	7.895	(1.182)	334580	50.0000	54.7	
$	60 Toluene-d8	98	8.041	8.041	(0.879)	748483	50.0000	49.1	
	61 Toluene +	91	8.083	8.083	(0.883)	822143	50.0000	50.5	
M	145 1-3 Dichloropropene total	100				652431	100.000	109	0
	66 Tetrachloroethene	164	8.371	8.371	(0.915)	150546	50.0000	51.7	
	59 4-methyl-2-pentanone	43	8.367	8.367	(0.914)	218641	50.0000	51.5	
	62 trans-1,3-Dichloropropene	75	8.390	8.390	(1.256)	317851	50.0000	53.8	
	65 1,1,2-Trichloroethane	97	8.510	8.510	(0.930)	191092	50.0000	49.5	
	162 3,4-dichloro-1-butene	75	8.682	8.682	(0.949)	234441	50.0000	50.2	9675
	69 Dibromochloromethane	129	8.637	8.637	(0.944)	214684	50.0000	51.3	
	67 1,3-Dichloropropane	76	8.709	8.709	(0.952)	352939	50.0000	51.1	
	70 1,2-Dibromoethane(EDB)	107	8.810	8.810	(0.963)	190125	50.0000	50.6	
	68 2-Hexanone	43	8.952	8.952	(0.978)	176654	50.0000	51.7	
	140 1-Chlorohexane	91	9.140	9.140	(0.999)	214848	50.0000	46.7	9170
*	71 CHLOROBENZENE-d5	82	9.151	9.151	(1.000)	322979	50.0000		

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	72 Chlorobenzene ++	112	9.166	9.166	(1.002)	508524	50.0000	51.2	
	73 Ethylbenzene +	106	9.177	9.177	(1.003)	266986	50.0000	53.3	
	74 1,1,1,2-Tetrachloroethane	133	9.203	9.203	(1.006)	191315	50.0000	50.8	
	75 p,m-Xylene	106	9.271	9.271	(1.013)	617358	100.000	106	
M	99 TOTAL XYLENE	106				914946	150.000	157	
	76 o-Xylene	106	9.552	9.552	(1.044)	297588	50.0000	50.6	
	77 Styrene	104	9.582	9.582	(1.047)	513101	50.0000	51.5	
	78 Bromoform ++	173	9.608	9.608	(1.050)	150149	50.0000	51.5	
	79 Isopropylbenzene	105	9.747	9.747	(1.065)	772072	50.0000	51.6	
	161 cis-1,4-dichloro-2-butene	53	9.961	9.961	(0.940)	80620	50.0000	44.5	9565
$	80 Bromofluorobenzene	174	9.931	9.931	(1.085)	198568	50.0000	51.1	
	84 Bromobenzene	77	9.998	9.998	(0.943)	380299	50.0000	50.9	
	86 n-Propylbenzene	91	10.002	10.002	(0.943)	850533	50.0000	52.8	
	81 1,1,2,2-Tetrachloroethane++	83	10.043	10.043	(0.947)	243024	50.0000	47.9	
	87 2-Chlorotoluene	91	10.107	10.107	(0.953)	602309	50.0000	53.4	
	88 1,3,5-Trimethylbenzene	105	10.114	10.114	(0.954)	592089	50.0000	54.6	
	85 1,2,3-Trichloropropane	75	10.133	10.133	(0.956)	329679	50.0000	50.8	
	83 trans-1,4-Dichloro-2-Butene	53	10.152	10.152	(0.958)	74799	50.0000	50.0	
	90 4-Chlorotoluene	91	10.208	10.208	(0.963)	545678	50.0000	52.8	
	91 tert-butylbenzene	91	10.313	10.313	(0.973)	331469	50.0000	55.0	
	93 1,2,4-Trimethylbenzene	105	10.350	10.350	(0.976)	613097	50.0000	54.2	
	94 sec-Butylbenzene	105	10.418	10.418	(0.983)	682936	50.0000	55.5	
	92 p-Isopropyltoluene	119	10.497	10.497	(0.990)	567008	50.0000	55.5	
	96 1,3-Dichlorobenzene	146	10.560	10.560	(0.996)	330263	50.0000	51.8	
*	97 1,4-DICHLOROBENZENE-D4	152	10.602	10.602	(1.000)	228145	50.0000		
	98 1,4-Dichlorobenzene	146	10.613	10.613	(1.001)	323019	50.0000	49.4	
	100 n-Butylbenzene	91	10.748	10.748	(1.014)	487024	50.0000	52.3	
	102 1,2-Dichlorobenzene	146	10.872	10.872	(1.025)	309334	50.0000	51.0	
	106 1,2-Dibromo-3-Chloropropane	157	11.396	11.396	(1.075)	43740	50.0000	52.2	
	109 Hexachlorobutadiene	225	11.857	11.857	(1.118)	70165	50.0000	54.9	
	108 1,2,4-Trichlorobenzene	180	11.902	11.902	(1.123)	159850	50.0000	45.2	
	110 Naphthalene	128	12.191	12.191	(1.150)	471064	50.0000	43.8	
	111 1,2,3-Trichlorobenzene	180	12.360	12.360	(1.166)	156684	50.0000	45.5	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv14.i/2170513.s.b/b3273.d

Date : 13-MAY-2017 17:06

Client ID: V14STD050

Instrument: msv14.i

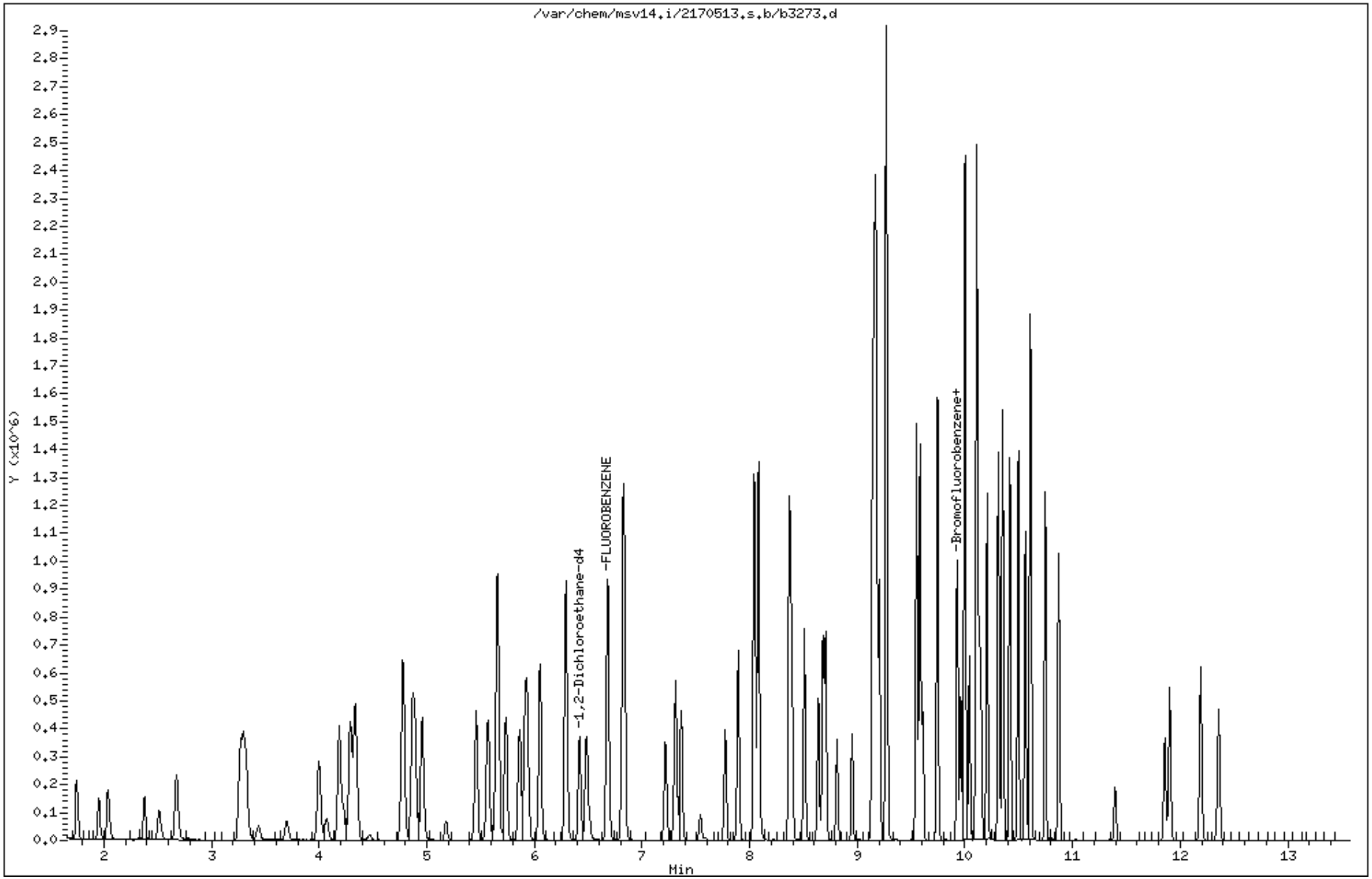
Sample Info: 1440*V14STD050

Purge Volume: 5.0

Operator: IXE

Column phase: RTX-VMS-30M

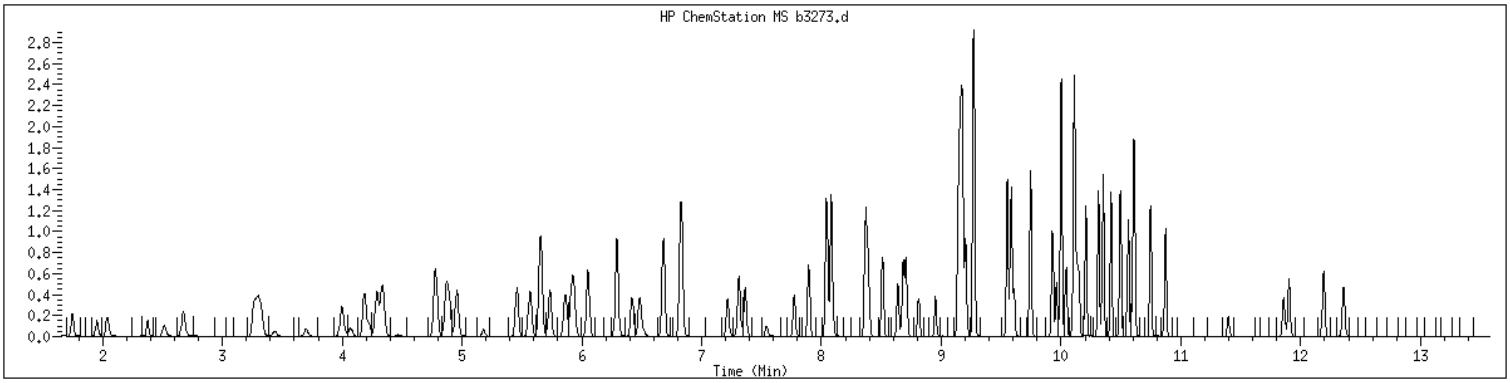
Column diameter: 0.25



Report Date: 05/13/2017 17:25

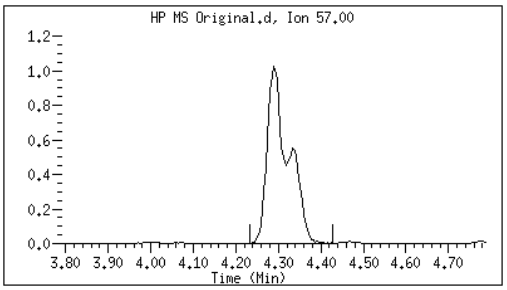
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1440 SampleType : CCALIB_7
Injection Date: 05/13/2017 17:06 Instrument : msv14.i
Operator : IXE
Sample Info : 1440*V14STD050
Misc Info : MSV~38321~*1*IXE
Method : /var/chem/msv14.i/2170513.s.b/8260bdod5w14.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



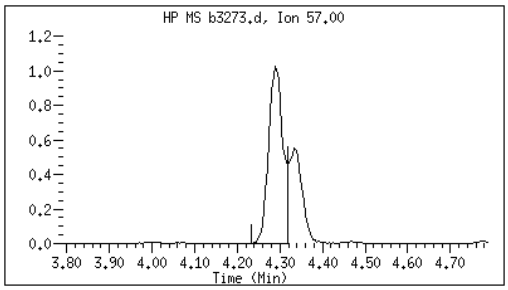
Original Final

23 Hexane CAS#: 110-54-3 Reason: M2



Electronic Signature Applied

User: ixe
Date: 05/13/2017 17:24



M2 - Target system integrated incorrectly

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	217051110	Standard ID:	1205
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV11
Injection Vol.:	1.0 (µL)	Lab File ID:	2170414/i6580D
Analyst:	JCK	Analytical Batch:	608399
Analysis Date:	04/14/17 Time: 1545	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	181863	9.94	172359	11.62	425272	7.13

CLIENT SAMPLE ID	GCAL SAMP ID		#		#		#		#		#	
LCS1684002	1684002	201463		9.93		198219		11.62		487392		7.13	
LCSD1684003	1684003	214923		9.93		206709		11.62		524026		7.13	
MB1684001	1684001	190728		9.94		171624		11.62		481145		7.13	
OMS-28-SB04-1-S	21705111001	170745		9.94		162213		11.62		423894		7.13	
OMS-28-SB01-2-S	21705111002	186191		9.94		167283		11.62		465515		7.13	
OMS-28-SB11-6-S	21705111003	172286		9.94		156549		11.62		419909		7.13	
OMS-28-SB14-1-S	21705111004	182256		9.94		162564		11.62		437591		7.13	
OMS-28-SB22-1.5-S	21705111007	177848		9.94		158628		11.62		416575		7.13	
OMS-28-SB16-5-S	21705111008	175019		9.93		158532		11.62		431683		7.13	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	217051110	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170511p/d4107D
Analyst:	JCK	Analytical Batch:	610278
Analysis Date:	05/11/17 Time: 1612	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	192153	9.06	194337	10.51	480773	6.55

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#		#	
LCS1686052	1686052	187600		9.05		172090		10.51		447393		6.55	
LCSD1686053	1686053	185602		9.05		171344		10.51		444820		6.55	
MB1686051	1686051	164833		9.05		135307		10.51		416168		6.55	
OMS-28-SB24-1-S	21705111009	166533		9.05		130515		10.51		429169		6.55	
OMS-28-SB24-3-S	21705111010	170592		9.05		132807		10.51		437381		6.55	
OMS-28-SB24-5-S	21705111011	166290		9.05		128793		10.51		426444		6.55	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	217051110	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV14
Injection Vol.:	1.0 (µL)	Lab File ID:	2170505/b2895d
Analyst:	LBH	Analytical Batch:	609837
Analysis Date:	05/05/17 Time: 1105	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	345523	9.15	245954	10.6	866312	6.68

CLIENT SAMPLE ID	GCAL SAMP ID		#		#		#		#		#	
LCS1684272	1684272	328923		9.15		231531		10.6		807023		6.68	
LCSD1684273	1684273	335431		9.15		240925		10.6		817698		6.68	
MB1684271	1684271	304061		9.15		218386		10.6		771869		6.68	
OMS-28-GW13-32-S	21705111005	292089		9.16		211971		10.6		734659		6.68	
OMS-28-GW13-32-C	21705111006	294987		9.15		213774		10.6		729447		6.68	
OMS-28-GW28-12-S	21705111012	291037		9.15		208923		10.6		723977		6.68	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 14-APR-2017
Instrument: msv11.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1201-1207 (ICAL)	8260	250	126-72-8	04/24/17
	Ac/Ac/VA	MC	126-72-9	07/31/17
	APP9-1	250	126-72-4	10/01/17
1600 (ICV)	8260	250	126-66-10	06/15/17
	Ac/Ac/VA	MC	126-72-10	07/31/17
	APP9-1	250	126-72-5	10/01/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		i6573.d	0.00 ml	14-APR-2017 12:39	1.0	JCK	2
1000		i6573D.d	0.00 ml	14-APR-2017 12:39	1.0	JCK	2
BLANK		i6574.d	5.00 g	14-APR-2017 13:25	1.0	JCK	1
0.5PPB		i6575.d	5.00 g	14-APR-2017 13:49	1.0	JCK	2
1201		i6576.d	5.00 g	14-APR-2017 14:12	1.0	JCK	3
1201		i6576D.d	5.00 g	14-APR-2017 14:12	1.0	JCK	3
1202		i6577.d	5.00 g	14-APR-2017 14:35	1.0	JCK	4
1202		i6577D.d	5.00 g	14-APR-2017 14:35	1.0	JCK	4
5PPB		i6577LOQ.d	5.00 g	14-APR-2017 14:35	1.0	JCK	4
1203		i6578.d	5.00 g	14-APR-2017 14:58	1.0	JCK	5
1203		i6578D.d	5.00 g	14-APR-2017 14:58	1.0	JCK	5
1204		i6579.d	5.00 g	14-APR-2017 15:22	1.0	JCK	6
1204		i6579D.d	5.00 g	14-APR-2017 15:22	1.0	JCK	6
1205		i6580.d	5.00 g	14-APR-2017 15:45	1.0	JCK	7
1205		i6580D.d	5.00 g	14-APR-2017 15:45	1.0	JCK	7
1206		i6581.d	5.00 g	14-APR-2017 16:08	1.0	JCK	8
1206		i6581D.d	5.00 g	14-APR-2017 16:08	1.0	JCK	8
1207		i6582.d	5.00 g	14-APR-2017 16:32	1.0	JCK	9
1207		i6582D.d	5.00 g	14-APR-2017 16:32	1.0	JCK	9
BLANK		i6583.d	5.00 g	14-APR-2017 16:55	1.0	JCK	10
1600		i6584.d	5.00 g	14-APR-2017 17:18	1.0	JCK	11
1600		i6584D.d	5.00 g	14-APR-2017 17:18	1.0	JCK	11
1675105		i6585.d	5.00 g	14-APR-2017 17:41	1.0	JCK	12
1675106		i6586.d	5.00 g	14-APR-2017 18:05	1.0	JCK	13
MB		i6587.d	5.00 g	14-APR-2017 18:28	1.0	JCK	14
MB		i6588.d	5.00 g	14-APR-2017 18:51	1.0	JCK	15
1675104		i6589.d	5.00 g	14-APR-2017 19:14	1.0	JCK	16
21704122801		i6590.d	5.94 g	14-APR-2017 19:38	1.0	JCK	1
21704111601		i6591.d	5.02 g	14-APR-2017 20:01	1.0	JCK	2
21704111602		i6592.d	5.53 g	14-APR-2017 20:24	1.0	JCK	3
21704111603		i6593.d	7.04 g	14-APR-2017 20:48	1.0	JCK	4
21704111604		i6594.d	5.88 g	14-APR-2017 21:11	1.0	JMC2	5
21704123901		i6595.d	5.15 g	14-APR-2017 21:34	1.0	JMC2	6
21704123902		i6596.d	5.01 g	14-APR-2017 21:57	1.0	JMC2	7
21704123903		i6597ms.d	3.53 g	14-APR-2017 22:20	1.0	JMC2	8
21704123904		i6598msd.d	4.50 g	14-APR-2017 22:44	1.0	JMC2	9

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 14-APR-2017
Instrument: msv11.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1440		i6599.d	5.00 g	14-APR-2017 23:07	1.0	JMC2	10

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 00:39

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 14-MAY-2017
Instrument: msv11.i
Analyst(s): JMC2

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1400 (CCV)	8260	250	126-73-9	05/04/17
	Ac/Ac/VA	MC	126-73-7	07/31/17
	APP9-1	250	126-72-4	10/01/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		i7161.d	0.00 ml	14-MAY-2017 10:58	1.0	JMC2	2
1000		i7161D.d	0.00 ml	14-MAY-2017 10:58	1.0	JMC2	2
BLANK		i7162.d	5.00 g	14-MAY-2017 11:56	1.0	JMC2	1
1400		i7163.d	5.00 g	14-MAY-2017 12:19	1.0	JMC2	2
1400		i7163D.d	5.00 g	14-MAY-2017 12:19	1.0	JMC2	2
LCS		i7164.d	5.00 g	14-MAY-2017 12:42	1.0	JMC2	3
LCS		i7164D.d	5.00 g	14-MAY-2017 12:42	1.0	JMC2	3
1684003		i7165.d	5.00 g	14-MAY-2017 13:06	1.0	JMC2	4
1684003		i7165D.d	5.00 g	14-MAY-2017 13:06	1.0	JMC2	4
BLANK		i7166.d	5.00 g	14-MAY-2017 13:29	1.0	JMC2	5
BLANK		i7167.d	5.00 g	14-MAY-2017 13:52	1.0	JMC2	6
1684001		i7168.d	5.00 g	14-MAY-2017 14:15	1.0	JMC2	7
1684001		i7168D.d	5.00 g	14-MAY-2017 14:15	1.0	JMC2	7
21705111001		i7169.d	6.84 g	14-MAY-2017 14:51	1.0	JMC2	1
21705111002		i7170.d	8.13 g	14-MAY-2017 15:15	1.0	JMC2	2
21705111003		i7171.d	6.43 g	14-MAY-2017 15:38	1.0	JMC2	3
21705111004		i7172.d	6.94 g	14-MAY-2017 16:01	1.0	JMC2	4
21705111007		i7173.d	6.44 g	14-MAY-2017 16:24	1.0	JMC2	5
21705111008		i7174.d	6.66 g	14-MAY-2017 16:48	1.0	JMC2	6
21705111009		i7175.d	5.07 g	14-MAY-2017 17:11	1.0	JMC2	7
BLANK		i7176.d	5.00 g	14-MAY-2017 17:45	1.0	JMC2	8
BLANK		i7177.d	5.00 g	14-MAY-2017 18:08	1.0	JMC2	9
BLANK		i7178.d	5.00 g	14-MAY-2017 18:31	1.0	JMC2	10
BLANK		i7179.d	5.00 g	14-MAY-2017 19:11	1.0	JMC2	11
1440		i7180.d	5.00 g	14-MAY-2017 19:34	1.0	JMC2	12
BLANK		i7181.d	5.00 g	14-MAY-2017 19:58	1.0	GDG	13
BLANK		i7182.d	5.00 g	14-MAY-2017 20:21	1.0	GDG	14
1440		i7183.d	5.00 g	14-MAY-2017 20:44	1.0	GDG	15
1440		i7184.d	5.00 g	14-MAY-2017 21:07	1.0	GDG	16
BLANK		i7185.d	5.00 g	14-MAY-2017 21:30	1.0	GDG	17
BLANK		i7186.d	5.00 g	14-MAY-2017 21:54	1.0	GDG	18

REVISED 1-28-15 Supervisor Review: TUNE TIME: :

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 11-MAY-2017
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		d4099bfb.d	0.00 ml	11-MAY-2017 13:07	1.0	JCK	2
1201		d4100.d	5.00 ml	11-MAY-2017 13:36	1.0	JCK	1
1202		d4101.d	5.00 ml	11-MAY-2017 13:58	1.0	JCK	1
1203		d4102.d	5.00 ml	11-MAY-2017 14:20	1.0	JCK	1
2PPB		d4103.d	5.00 ml	11-MAY-2017 14:43	1.0	JCK	1
1204		d4104.d	5.00 ml	11-MAY-2017 15:05	1.0	JCK	1
1205		d4105.d	5.00 ml	11-MAY-2017 15:27	1.0	JCK	1
1206		d4106.d	5.00 ml	11-MAY-2017 15:49	1.0	JCK	1
1207		d4107.d	5.00 ml	11-MAY-2017 16:12	1.0	JCK	1
1208		d4108.d	5.00 ml	11-MAY-2017 16:34	1.0	JCK	1
1209		d4109.d	5.00 ml	11-MAY-2017 16:56	1.0	JCK	1
BLANK		d4110.d	5.00 ml	11-MAY-2017 17:18	1.0	JCK	1
1600		d4111.d	5.00 ml	11-MAY-2017 17:41	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: TUNE TIME: :

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 19-MAY-2017
Instrument: msv13.i
Analyst(s): LBH

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1400 (CCV)	8260	250	126-74-9	05/29/17
	Ac/Ac/VA	MC	126-74-10	07/31/17
	2-CVE	250	126-74-7	11/05/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		d4388.d	0.00 ml	19-MAY-2017 08:19	1.0	LBH	2
1000		d4388s.d	0.00 ml	19-MAY-2017 08:19	1.0	LBH	2
1400		d4389.d	5.00 ml	19-MAY-2017 09:00	1.0	LBH	1
1685903		d4389L.d	5.00 ml	19-MAY-2017 09:00	1.0	LBH	1
1686052		d4389Ls.d	5.00 g	19-MAY-2017 09:00	50.0	LBH	1
1400		d4389s.d	5.00 ml	19-MAY-2017 09:00	1.0	LBH	1
1685904		d4390.d	5.00 ml	19-MAY-2017 09:23	1.0	LBH	1
1686053		d4390s.d	5.00 g	19-MAY-2017 09:23	50.0	LBH	1
BLANK		d4391.d	5.00 ml	19-MAY-2017 09:46	1.0	LBH	1
BLANK		d4392.d	5.00 ml	19-MAY-2017 10:08	1.0	LBH	1
1685902 pH		d4393.d	5.00 ml	19-MAY-2017 10:30	1.0	LBH	1
21705182101 1		d4394.d	5.00 ml	19-MAY-2017 10:52	1.0	LBH	1
21705182102 1		d4395.d	5.00 ml	19-MAY-2017 11:15	1.0	LBH	1
21705182104 1		d4396.d	5.00 ml	19-MAY-2017 11:37	1.0	LBH	1
21705182105 1		d4397.d	5.00 ml	19-MAY-2017 11:59	1.0	LBH	1
21705182106 1		d4398.d	5.00 ml	19-MAY-2017 12:22	1.0	LBH	1
21705182107 1		d4399.d	5.00 ml	19-MAY-2017 12:44	1.0	LBH	1
BLANK		d4400.d	5.00 ml	19-MAY-2017 13:06	1.0	LBH	1
21705182108 1		d4401.d	5.00 ml	19-MAY-2017 13:28	1.0	LBH	1
21705182109 1		d4402.d	5.00 ml	19-MAY-2017 13:51	1.0	LBH	1
1686051		d4403s.d	5.00 g	19-MAY-2017 14:13	50.0	LBH	1
21705111009 NA		d4404.d	4.55 g	19-MAY-2017 14:35	5000.0	LBH	1
21705111010 NA		d4405.d	6.51 g	19-MAY-2017 14:58	1000.0	LBH	1
21705111011 NA		d4406.d	6.58 g	19-MAY-2017 15:20	500.0	LBH	1
1440		d4407c.d	5.00 ml	19-MAY-2017 15:42	1.0	LBH	1
BLANK		d4408.d	5.00 ml	19-MAY-2017 16:05	1.0	LBH	1
21705181601 1		d4409.d	5.00 ml	19-MAY-2017 16:27	1.0	LBH	1
21705181602 1		d4410.d	5.00 ml	19-MAY-2017 16:49	1.0	LBH	1
21705181603 1		d4411.d	5.00 ml	19-MAY-2017 17:11	1.0	LBH	1
21705181607 1		d4412.d	5.00 ml	19-MAY-2017 17:34	1.0	LBH	1
21705181608 1		d4413.d	5.00 ml	19-MAY-2017 17:56	1.0	LBH	1
21705181609 1		d4414.d	5.00 ml	19-MAY-2017 18:18	1.0	LBH	1
21705181610 1		d4415.d	5.00 ml	19-MAY-2017 18:40	1.0	JCK	1
21705181611 1		d4416.d	5.00 ml	19-MAY-2017 19:03	1.0	JCK	1
BLANK		d4417.d	5.00 ml	19-MAY-2017 19:25	1.0	JCK	1
BLANK		d4418.d	5.00 ml	19-MAY-2017 19:47	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 20:19

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 05-MAY-2017
Instrument: msv14.i
Analyst(s): LBH

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b2888.d	0.00 ml	05-MAY-2017 07:59	1.0	LBH	2
1000		b2888d.d	0.00 ml	05-MAY-2017 07:59	1.0	LBH	2
1202		b2889.d	5.00 ml	05-MAY-2017 08:52	1.0	LBH	1
1203		b2890.d	5.00 ml	05-MAY-2017 09:15	1.0	LBH	1
2PPB		b2891.d	5.00 ml	05-MAY-2017 09:37	1.0	LBH	1
1204		b2892.d	5.00 ml	05-MAY-2017 09:59	1.0	LBH	1
1204		b2892d.d	5.00 ml	05-MAY-2017 09:59	1.0	LBH	1
1205		b2893.d	5.00 ml	05-MAY-2017 10:21	1.0	LBH	1
1206		b2894.d	5.00 ml	05-MAY-2017 10:43	1.0	LBH	1
1206		b2894d.d	5.00 ml	05-MAY-2017 10:43	1.0	LBH	1
1207		b2895.d	5.00 ml	05-MAY-2017 11:05	1.0	LBH	1
1207		b2895d.d	5.00 ml	05-MAY-2017 11:05	1.0	LBH	1
1208		b2896.d	5.00 ml	05-MAY-2017 11:27	1.0	LBH	1
1208		b2896d.d	5.00 ml	05-MAY-2017 11:27	1.0	LBH	1
1209		b2897.d	5.00 ml	05-MAY-2017 11:50	1.0	LBH	1
1209		b2897d.d	5.00 ml	05-MAY-2017 11:50	1.0	LBH	1
BLANK		b2898.d	5.00 ml	05-MAY-2017 12:12	1.0	LBH	1
BLANK		b2899.d	5.00 ml	05-MAY-2017 12:34	1.0	LBH	1
1203		b2900.d	5.00 ml	05-MAY-2017 13:10	1.0	LBH	1
1203		b2900d.d	5.00 ml	05-MAY-2017 13:10	1.0	LBH	1
1205		b2901.d	5.00 ml	05-MAY-2017 13:32	1.0	LBH	1
1205		b2901d.d	5.00 ml	05-MAY-2017 13:32	1.0	LBH	1
1600		b2902.d	5.00 ml	05-MAY-2017 14:15	1.0	LBH	1
1600		b2902d.d	5.00 ml	05-MAY-2017 14:15	1.0	LBH	1

REVISED 1-28-15 Supervisor Review: TUNE TIME: :

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 13-MAY-2017
Instrument: msv14.i
Analyst(s): IXE

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1400 (CCV)	8260	250	126-73-12	05/14/17
	Ac/Ac/VA	MC	126-74-5	07/31/17
	APP9-1	250	126-72-4	10/01/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		b3249.d	0.00 ml	13-MAY-2017 07:50	1.0	IXE	2
1400		b3250.d	5.00 ml	13-MAY-2017 08:35	1.0	IXE	1
1400		b3251.d	5.00 ml	13-MAY-2017 08:57	1.0	IXE	1
1684272		b3251L.d	5.00 ml	13-MAY-2017 08:57	1.0	IXE	1
1684273		b3252.d	5.00 ml	13-MAY-2017 09:21	1.0	IXE	1
BLANK		b3253.d	5.00 ml	13-MAY-2017 09:43	1.0	IXE	1
BLANK		b3254.d	5.00 ml	13-MAY-2017 10:05	1.0	IXE	1
1684271 pH		b3255.d	5.00 ml	13-MAY-2017 10:27	1.0	IXE	1
21705104908 1		b3256.d	5.00 ml	13-MAY-2017 10:49	1.0	IXE	1
21705104909 1		b3257.d	5.00 ml	13-MAY-2017 11:11	1.0	IXE	1
21705104910 1		b3258.d	5.00 ml	13-MAY-2017 11:34	1.0	IXE	1
21705104911 1		b3259.d	5.00 ml	13-MAY-2017 11:56	1.0	IXE	1
21705104912 1		b3260.d	5.00 ml	13-MAY-2017 12:18	1.0	IXE	1
21705104913 1		b3261.d	5.00 ml	13-MAY-2017 12:40	1.0	IXE	1
21705104914 1		b3262.d	5.00 ml	13-MAY-2017 13:02	1.0	IXE	1
21705111005 1		b3263.d	5.00 ml	13-MAY-2017 13:25	1.0	IXE	1
21705111006 1		b3264.d	5.00 ml	13-MAY-2017 13:47	1.0	IXE	1
21705111012 1		b3265.d	5.00 ml	13-MAY-2017 14:09	1.0	IXE	1
21705111201 1		b3266.d	5.00 ml	13-MAY-2017 14:31	1.0	IXE	1
21705111202 1		b3267.d	5.00 ml	13-MAY-2017 14:53	1.0	IXE	1
21705111101 1		b3268.d	5.00 ml	13-MAY-2017 15:15	1.0	IXE	1
21705111104 1		b3269.d	5.00 ml	13-MAY-2017 15:38	1.0	IXE	1
21705111105 1		b3270.d	5.00 ml	13-MAY-2017 16:00	1.0	IXE	1
21705111102 1		b3271ms.d	5.00 ml	13-MAY-2017 16:22	1.0	IXE	1
21705111103 1		b3272msd.d	5.00 ml	13-MAY-2017 16:44	1.0	IXE	1
1440		b3273.d	5.00 ml	13-MAY-2017 17:06	1.0	IXE	1
BLANK		b3274.d	5.00 ml	13-MAY-2017 17:48	1.0	IXE	1
21705121601 1	RR, RELOGGED AS 8260C DOD5	b3275.d	5.00 ml	13-MAY-2017 18:10	1.0	IXE	1
21705121602 1		b3276.d	5.00 ml	13-MAY-2017 18:33	1.0	IXE	1
21705121603 1		b3277.d	5.00 ml	13-MAY-2017 18:55	1.0	IXE	1
BLANK		b3278.d	5.00 ml	13-MAY-2017 19:17	1.0	IXE	1
BLANK		b3279.d	5.00 ml	13-MAY-2017 19:39	1.0	IXE	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 19:50

MS VOA Sample Weights

Container ID	Vial	Inital Wgt	Final Wgt	Sample Wgt	Analyst	Date	Bal ID	Preservative	Comments
21705111001-1	A	35.74	42.58	6.84	GDG	05/11/2017 15:01	BAL08	SODIUM BISULFATE	TERRACORE
21705111001-2	B	35.27	41.60	6.33	GDG	05/11/2017 15:01	BAL08	SODIUM BISULFATE	TERRACORE
21705111001-3	C	33.08	39.46	6.38	GDG	05/11/2017 15:02	BAL08	METHANOL	TERRACORE
21705111002-1	A	35.86	43.99	8.13	GDG	05/11/2017 15:02	BAL08	SODIUM BISULFATE	TERRACORE
21705111002-2	B	35.89	42.06	6.17	GDG	05/11/2017 15:02	BAL08	SODIUM BISULFATE	TERRACORE
21705111002-3	C	33.15	38.99	5.84	GDG	05/11/2017 15:02	BAL08	METHANOL	TERRACORE
21705111003-1	A	35.76	42.19	6.43	GDG	05/11/2017 15:02	BAL08	SODIUM BISULFATE	TERRACORE
21705111003-2	B	36.31	42.60	6.29	GDG	05/11/2017 15:03	BAL08	SODIUM BISULFATE	TERRACORE
21705111003-3	C	33.88	39.87	5.99	GDG	05/11/2017 15:03	BAL08	METHANOL	TERRACORE
21705111004-1	A	35.44	42.38	6.94	GDG	05/11/2017 15:03	BAL08	SODIUM BISULFATE	TERRACORE
21705111004-2	B	35.66	42.15	6.49	GDG	05/11/2017 15:03	BAL08	SODIUM BISULFATE	TERRACORE
21705111004-3	C	33.09	39.52	6.43	GDG	05/11/2017 15:03	BAL08	METHANOL	TERRACORE
21705111007-1	A	35.70	42.14	6.44	GDG	05/11/2017 15:04	BAL08	SODIUM BISULFATE	TERRACORE
21705111007-2	B	36.41	42.09	5.68	GDG	05/11/2017 15:04	BAL08	SODIUM BISULFATE	TERRACORE
21705111007-3	C	33.19	39.28	6.09	GDG	05/11/2017 15:04	BAL08	METHANOL	TERRACORE
21705111008-1	A	35.71	42.37	6.66	GDG	05/11/2017 15:04	BAL08	SODIUM BISULFATE	TERRACORE
21705111008-2	B	35.37	41.69	6.32	GDG	05/11/2017 15:04	BAL08	SODIUM BISULFATE	TERRACORE
21705111008-3	C	33.22	39.65	6.43	GDG	05/11/2017 15:04	BAL08	METHANOL	TERRACORE
21705111009-1	A	35.54	40.61	5.07	GDG	05/11/2017 15:05	BAL08	SODIUM BISULFATE	TERRACORE
21705111009-2	B	35.11	39.91	4.80	GDG	05/11/2017 15:05	BAL08	SODIUM BISULFATE	TERRACORE
21705111009-3	C	33.42	37.97	4.55	GDG	05/11/2017 15:05	BAL08	METHANOL	TERRACORE
21705111010-1	A	35.62	42.27	6.65	GDG	05/11/2017 15:05	BAL08	SODIUM BISULFATE	TERRACORE
21705111010-2	B	35.71	42.16	6.45	GDG	05/11/2017 15:05	BAL08	SODIUM BISULFATE	TERRACORE
21705111010-3	C	32.98	39.49	6.51	GDG	05/11/2017 15:05	BAL08	METHANOL	TERRACORE
21705111011-1	A	35.17	41.64	6.47	GDG	05/11/2017 15:06	BAL08	SODIUM BISULFATE	TERRACORE
21705111011-2	B	35.58	42.78	7.20	GDG	05/11/2017 15:06	BAL08	SODIUM BISULFATE	TERRACORE
21705111011-3	C	32.97	39.55	6.58	GDG	05/11/2017 15:06	BAL08	METHANOL	TERRACORE

GCAL ANALYTICAL LABORATORIES, LLC

SOLIDS DATA SHEET

TS/TSS Oven Temp: 103 - 105 °C
TDS Oven Temp: 180 ± 2 °C
TVS/VSS Muffle Furnace Temp: 550 ± 5% (27) °C
Ash Muffle Furnace Temp: 800 ± 5% (40) °C

Test: Dry Weight/TM_S HBN: 610526/610626 SOLI Batch Number: 27496/27509

LCS Standard ID: — LCS True Value: — LCS Exp. Date: —

Initial Weight
Balance ID: Bal15
Date/Time: 5-16-17 16:15
Analyst: AJE

Oven ID: O11
Date/Time IN: 5-16-17 16:34
Oven Temp °C IN: 103
Date/Time OUT: 5-17-17 8:16
Oven Temp °C OUT: 104
Analyst: AJE

Oven ID: NA
Date/Time IN:
Oven Temp °C IN:
Date/Time OUT:
Oven Temp °C OUT:
Analyst:

Desiccator ID: 4
Date/Time IN: 5-17-17 8:16
Date/Time OUT: 5-17-17 9:05
Analyst: AJE

Final Weight 1
Balance ID: Bal15
Date/Time: 5-17-17 9:05
Analyst: AJE

Oven ID: O11
Date/Time IN: 5-17-17 9:09
Oven Temp °C IN: 104
Date/Time OUT: 5-17-17 10:09
Oven Temp °C OUT: 104
Analyst: AJE

Desiccator ID: 4
Date/Time IN: 5-17-17 10:09
Date/Time OUT: 5-17-17 10:41
Analyst: AJE

Final Weight 2
Balance ID: Bal15
Date/Time: 5-17-17 10:41
Analyst: AJE

Oven ID:
Date/Time IN:
Oven Temp °C IN:
Date/Time OUT:
Oven Temp °C OUT:
Analyst:

Desiccator ID:
Date/Time IN:
Date/Time OUT:
Analyst:

Final Weight 3 (if needed)
Balance ID:
Date/Time:
Analyst:

Oven ID:
Date/Time IN:
Oven Temp °C IN:
Date/Time OUT:
Oven Temp °C OUT:
Analyst:

Desiccator ID:
Date/Time IN:
Date/Time OUT:
Analyst:

Final Weight 4 (if needed)
Balance ID:
Date/Time:
Analyst:

Comments:

Rev 004: 07/01/2014

Secondary Reviewer/Date: AMT 5/17/17
Jen 5-18-17

TOTAL SOLIDS AND MOISTURE ANALYSIS (SOLID MATRIX)

Method 2540G

HBN	610526			ANALYST:	AJE							DATE:	5/16/2017
SOLI	27496			REVIEW:	DMT 5/17/17							TIME:	16:15:00
Sample ID	Pan ID	Pan Mass (g)	Initial Mass (g) (Sample & Pan)	Final Wt. 1 (g) (Sample & Pan)	Final Wt. 2 (g) (Sample & Pan)	Diff (g)	Final Wt. 3 (g) (Sample & Pan)	Diff (g)	Initial Mass Less Pan (g)	Final Mass Less Pan (g)	Total Solid %	Totol Moisture %	
21705161411	45	1.0520	10.5531	8.0717	8.0637	0.0080			9.5011	7.0117	73.80	26.20	
21705111001	46	1.0595	10.7352	10.0221	10.0180	0.0041			9.6757	8.9585	92.59	7.41	RPD 1%.
1684991 DUP	47	1.0867	10.5464	9.7337	9.7283	0.0054			9.4597	8.6416	91.35	8.65	
21705111002	48	1.1057	10.4784	9.1703	9.1670	0.0033			9.3727	8.0613	86.01	13.99	
21705111003	49	1.1095	10.6050	8.4741	8.4608	0.0133			9.4955	7.3513	77.42	22.58	
21705111004	50	1.0966	10.6080	9.0010	8.9956	0.0054			9.7114	7.8990	81.34	18.66	
21705111007	51	1.0738	10.5125	8.9070	8.9041	0.0029			9.4387	7.8303	82.96	17.04	
21705111008	52	1.0941	10.4253	8.6366	8.6280	0.0086			9.3312	7.7339	82.88	17.12	
21705111009	53	1.0905	10.4394	9.4528	9.4518	0.0010			9.3489	8.3613	89.44	10.56	
21705111010	54	1.0986	10.4431	8.8288	8.8242	0.0046			9.3445	7.7256	82.68	17.32	
21705111011	55	1.0844	10.2527	8.6654	8.6603	0.0051			9.1683	7.5759	82.63	17.37	
21705113501	56	1.0779	10.9160	9.8508	9.8805	0.0003			9.8381	8.8026	89.47	10.53	
21705113502	57	1.0550	10.2704	8.5658	8.5661	0.0003			9.2154	7.5111	81.51	18.49	
21705113503	58	1.0634	10.5733	9.0325	9.0327	0.0002			9.5099	7.9893	83.80	16.20	
21705113504	59	1.0272	10.2508	8.8595	8.8596	0.0001			9.2236	7.8314	84.91	15.09	
21705113509	60	1.0662	10.6353	9.4805	9.4803	0.0002			9.5691	8.4141	87.93	12.07	
21705113510	61	1.0482	10.4817	8.9275	8.9269	0.0006			9.4435	7.8787	83.43	16.57	
21705113511	62	1.0495	10.4899	8.7825	8.7820	0.0005			9.4404	7.7325	81.91	18.09	
21705113512	63	1.0858	10.2843	9.3990	9.3983	0.0007			9.1985	8.3125	90.37	9.63	
21705113513	64	1.1081	10.4070	8.7059	8.7045	0.0014			9.2989	7.5964	81.69	18.31	
21705113514	65	1.0963	10.4115	8.6536	8.6519	0.0017			9.3152	7.5556	81.11	18.89	
1684992 DUP	66	1.0617	10.7738	9.0167	9.0150	0.0017			9.7121	7.9533	81.89	18.11	RPD 1%.

TS % = ((Final Sample Mass - Initial Sample Mass) x 100) / Initial Sample Mass

TM % = 100-TS%

Method 2540G

Total Solids Solid Spreadsheet, Version 2, 01/26/11

Client ID: 4838 - AECOM
SDG: 217051110
PM: AMK

AECOM

Chain of Custody and Analytical Reque

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (10 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	TCL VOCs (8260B)	Comments	Cooler ID
OMS-28-SB04-1-S	5/8/17	0910	0.1	Split	SO	4	X		1
OMS-28-SB01-2-S	5/8/17	1138	1.2	Split	SO	4	X		2
OMS-28-SB11-6-S	5/8/17	1315	5.6	Split	SO	4	X		3
OMS-28-SB14-1-S	5/8/17	1520	0.1	Split	SO	4	X		4
OMS-28-GW13-32-S	5/9/17	1045	28.32	Split	WG	3	X		5
OMS-28-GW13-32-C	5/9/17			TB	WQ	3	X		6
OMS-28-SB22-1.5-S	5/10/17	0821	1.0.1.5	Split	SO	4	X		7
OMS-28-SB16-5-S	5/10/17	0914	4.5	Split	SO	4	X		8
OMS-28-SB24-1-S	5/10/17	1040	1.5.1.0	Split	SO	4	X		9
OMS-28-SB24-3-S	5/10/17	1045	2.5.3.0	Split	SO	4	X	* High PID readings potentially Hit	10
OMS-28-SB24-5-S	5/10/17	1050	4.5.5.0	Split	SO	4	X		11
OMS-28-GW28-12-S	5/10/17	1205	8.12	Split	WG	3	X		12

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	5/10/17	1745	1.		
2. FedEx	5-11-17	1000	2.	5-11-17	1000
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: Gulf Coast
Lab Receipient:

Shipped: XX
Airbill #: 8024 7813 4725
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

8024 7813 4725 1.0 E29 58 CAM

Page 1 of 1

AECOM Project Name: ARNG OMS 28 Mobile AL

AECOM Project Number: 60439687 / 2.3

Project Manager: Steve Holt

Purchase Order Number: 70775

Analytical Data To: Vasi Kourlas and Dwight Parks

SAMPLE RECEIVING CHECKLIST

217051110

SAMPLE DELIVERY GROUP 217051110	
Client PM AMK 4838 - AECOM	**Transport Method** FED EX
Profile Number 264814	**Received By** Savage, Tiffany R
Line Item(s) 1 - W - VOCs 2 - S - VOCs	**Receive Date(s)** 05/11/17

CHECKLIST	YES	NO	NA
Samples received with proper thermal and chemical preservation?	☑	☐	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐	☐
When used, were custody seals intact?	☑	☐	☐
COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	☑	☐	☐
Short holds or RUSH samples received?	☐	☑	☐
All containers received in good condition and within hold time?	☑	☐	☐
All sample labels and containers received match the chain of custody?	☐	☑	☐
Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	☐	☐	☑
Preservative added to any containers?	☐	☐	☑
VOC water containers received with headspace < 6mm?	☑	☐	☐
Received filtered sample volume for dissolved analysis?	☐	☐	☑
Trip blank present in all coolers containing VOC waters?	☑	☐	☐
Samples collected in containers provided by GCAL?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E29	Temp(°C)
8024 7813 4725		1.0

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Appendix B7
GCAL Report 217052202 dated May 26, 2017

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 05/26/2017

GCAL Report 217052202

Project ARNG OMS 28 / 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____

Authorized Signature
GCAL Report 217052202

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 217052202

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES MASS SPECTROMETRY

In the EPA 8260B analysis for analytical batch 611089, the LCS/LCSD RPD is above the control limit for Acetone, 1,1-Dichloroethane, trans-1,2-Dichloroethene, Methylene chloride, tert-Butyl methyl ether (MTBE) and Methyl Acetate.

Q Flag Summary

Client Sample ID: **OMS-28-GW11-11-s** Lab Sample ID: **21705220201**

Method: **EPA 8260B** Analysis Date: **5/25/2017 10:29:00 AM**						
Analyte	**CAS**	**CCV OUL**	**LCS/LCSD OUL**	**SURROGATE OUL**	**IS OUL**	**CLCCV OUL**
1,1-Dichloroethane	75-34-3		X			
Acetone	67-64-1		X			
Methyl Acetate	79-20-9		X			
Methylene chloride	75-09-2		X			
tert-Butyl methyl ether (MTBE)	1634-04-4		X			
trans-1,2-Dichloroethene	156-60-5		X			

Client Sample ID: **OMS-28-GW11-11-c** Lab Sample ID: **21705220202**

Method: **EPA 8260B** Analysis Date: **5/25/2017 10:51:00 AM**						
Analyte	**CAS**	**CCV OUL**	**LCS/LCSD OUL**	**SURROGATE OUL**	**IS OUL**	**CLCCV OUL**
1,1-Dichloroethane	75-34-3		X			
Acetone	67-64-1		X			
Methyl Acetate	79-20-9		X			
Methylene chloride	75-09-2		X			
tert-Butyl methyl ether (MTBE)	1634-04-4		X			
trans-1,2-Dichloroethene	156-60-5		X			

Client Sample ID: **OMS-28-GW58-31-s** Lab Sample ID: **21705220203**

Method: **EPA 8260B** Analysis Date: **5/25/2017 2:56:00 PM**						
Analyte	**CAS**	**CCV OUL**	**LCS/LCSD OUL**	**SURROGATE OUL**	**IS OUL**	**CLCCV OUL**
1,1-Dichloroethane	75-34-3		X			
Acetone	67-64-1		X			
Methyl Acetate	79-20-9		X			
Methylene chloride	75-09-2		X			
tert-Butyl methyl ether (MTBE)	1634-04-4		X			
trans-1,2-Dichloroethene	156-60-5		X			

Client Sample ID: **OMS-28-GW49-12-s** Lab Sample ID: **21705220204**

Method: **EPA 8260B** Analysis Date: **5/25/2017 11:36:00 AM**						
Analyte	**CAS**	**CCV OUL**	**LCS/LCSD OUL**	**SURROGATE OUL**	**IS OUL**	**CLCCV OUL**
1,1-Dichloroethane	75-34-3		X			
Acetone	67-64-1		X			
Methyl Acetate	79-20-9		X			
Methylene chloride	75-09-2		X			
tert-Butyl methyl ether (MTBE)	1634-04-4		X			
trans-1,2-Dichloroethene	156-60-5		X			

Client Sample ID: **OMS-28-GW62-19-s** Lab Sample ID: **21705220205**

Method: **EPA 8260B** Analysis Date: **5/25/2017 11:58:00 AM**						
Analyte	**CAS**	**CCV OUL**	**LCS/LCSD OUL**	**SURROGATE OUL**	**IS OUL**	**CLCCV OUL**
1,1-Dichloroethane	75-34-3		X			
Acetone	67-64-1		X			
Methyl Acetate	79-20-9		X			
Methylene chloride	75-09-2		X			
tert-Butyl methyl ether (MTBE)	1634-04-4		X			
trans-1,2-Dichloroethene	156-60-5		X			

Client Sample ID: **OMS-28-GW34-31-s** Lab Sample ID: **21705220206**

Method: **EPA 8260B** Analysis Date: **5/25/2017 12:20:00 PM**						
Analyte	**CAS**	**CCV OUL**	**LCS/LCSD OUL**	**SURROGATE OUL**	**IS OUL**	**CLCCV OUL**
1,1-Dichloroethane	75-34-3		X			
Acetone	67-64-1		X			
Methyl Acetate	79-20-9		X			
Methylene chloride	75-09-2		X			
tert-Butyl methyl ether (MTBE)	1634-04-4		X			
trans-1,2-Dichloroethene	156-60-5		X			

Client Sample ID: **OMS-28-GW06-11-s** Lab Sample ID: **21705220207**

Method: **EPA 8260B** Analysis Date: **5/25/2017 12:43:00 PM**						
Analyte	**CAS**	**CCV OUL**	**LCS/LCSD OUL**	**SURROGATE OUL**	**IS OUL**	**CLCCV OUL**
1,1-Dichloroethane	75-34-3		X			
Acetone	67-64-1		X			
Methyl Acetate	79-20-9		X			
Methylene chloride	75-09-2		X			
tert-Butyl methyl ether (MTBE)	1634-04-4		X			
trans-1,2-Dichloroethene	156-60-5		X			

Client Sample ID: **OMS-28-GW12-12-s** Lab Sample ID: **21705220208**

Method: **EPA 8260B** Analysis Date: **5/25/2017 1:05:00 PM**						
Analyte	**CAS**	**CCV OUL**	**LCS/LCSD OUL**	**SURROGATE OUL**	**IS OUL**	**CLCCV OUL**
1,1-Dichloroethane	75-34-3		X			
Acetone	67-64-1		X			
Methyl Acetate	79-20-9		X			
Methylene chloride	75-09-2		X			
tert-Butyl methyl ether (MTBE)	1634-04-4		X			
trans-1,2-Dichloroethene	156-60-5		X			

CCV OUL=CCV out of limits
LCS/LCSD OUL=LCS/LCSD out of limits
SURROGATE OUL=Surrogate out of limits
IS OUL=Internal Standard out of limits
CLCCV OUL=Closing CCV out of limits

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21705220201	OMS-28-GW11-11-s	Water	05/13/2017 11:50	05/20/2017 09:30
21705220202	OMS-28-GW11-11-c	Water	05/13/2017 00:01	05/20/2017 09:30
21705220203	OMS-28-GW58-31-s	Water	05/15/2017 08:50	05/20/2017 09:30
21705220204	OMS-28-GW49-12-s	Water	05/15/2017 14:45	05/20/2017 09:30
21705220205	OMS-28-GW62-19-s	Water	05/16/2017 14:30	05/20/2017 09:30
21705220206	OMS-28-GW34-31-s	Water	05/17/2017 11:00	05/20/2017 09:30
21705220207	OMS-28-GW06-11-s	Water	05/17/2017 16:00	05/20/2017 09:30
21705220208	OMS-28-GW12-12-s	Water	05/19/2017 08:25	05/20/2017 09:30

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21705220201	OMS-28-GW11-11-s	W	EPA 8260B DOD Water
21705220202	OMS-28-GW11-11-c	W	EPA 8260B DOD Water
21705220203	OMS-28-GW58-31-s	W	EPA 8260B DOD Water
21705220204	OMS-28-GW49-12-s	W	EPA 8260B DOD Water
21705220205	OMS-28-GW62-19-s	W	EPA 8260B DOD Water
21705220206	OMS-28-GW34-31-s	W	EPA 8260B DOD Water
21705220207	OMS-28-GW06-11-s	W	EPA 8260B DOD Water
21705220208	OMS-28-GW12-12-s	W	EPA 8260B DOD Water

Manual Integrations

GCAL ID	Client ID	Procedure	CAS	Analyte
21705220201	OMS-28-GW11-11-s	EPA 8260B	75-15-0	Carbon disulfide

Summary of Compounds Detected

OMS-28-GW11-11-s				
	Collect Date	05/13/2017 11:50	**GCAL ID**	21705220201
	Receive Date	05/20/2017 09:30	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
75-15-0	Carbon disulfide	0.666J	0.200	0.500	1.00	ug/L
98-82-8	Isopropylbenzene (Cumene)	0.374J	0.200	0.500	1.00	ug/L

OMS-28-GW62-19-s				
	Collect Date	05/16/2017 14:30	**GCAL ID**	21705220205
	Receive Date	05/20/2017 09:30	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
67-64-1	Acetone	5.05Q	0.500	1.00	5.00	ug/L
156-59-2	cis-1,2-Dichloroethene	3.41	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	45.1	0.200	0.500	1.00	ug/L

OMS-28-GW06-11-s				
	Collect Date	05/17/2017 16:00	**GCAL ID**	21705220207
	Receive Date	05/20/2017 09:30	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	1.07	0.200	0.500	1.00	ug/L

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	OMS-28-GW11-11-s
Collect Date:	05/13/17 Time: 1150	GCAL Sample ID:	21705220201
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4547
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1029	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	UQ	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	UQ	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.666	J	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.374	J	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	OMS-28-GW11-11-s
Collect Date:	05/13/17	Time:	1150	GCAL Sample ID:	21705220201
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4547
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	1029	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	UQ	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	UQ	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	UQ	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	UQ	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4547.d
Lab Smp Id: 21705220201
Inj Date : 25-MAY-2017 10:29
Operator : JCK Inst ID: msv13.i
Smp Info : 21705220201*
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY	
	11 Carbon Disulfide	76	3.171	3.156	(0.484)	4374	0.66557	0.666		(M2H)
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	101156	49.6460	49.6	9438	
$	50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	65907	50.2542	50.3		
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	445706	50.0000			
$	68 Toluene-d8	98	7.928	7.928	(0.876)	418071	51.2136	51.2		
*	84 CHLOROBENZENE-d5	82	9.053	9.052	(1.000)	173776	50.0000			
	93 Isopropylbenzene	105	9.645	9.648	(1.065)	3273	0.37384	0.374		(H)
$	95 Bromofluorobenzene	174	9.832	9.832	(1.086)	116507	47.1751	47.2		
	105 tert-butylbenzene	91	10.215	10.214	(0.972)	2578	0.72330	0.723		(H)
	108 sec-Butylbenzene	105	10.320	10.319	(0.982)	9949	1.23721	1.24		
*	114 1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	135691	50.0000			

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.
H - Operator selected an alternate compound hit.

Data File: /var/chem/msv13.i/2170525.s.b/d4547.d

Page 1

Date : 25-MAY-2017 10:29

Client ID:

Instrument: msv13.i

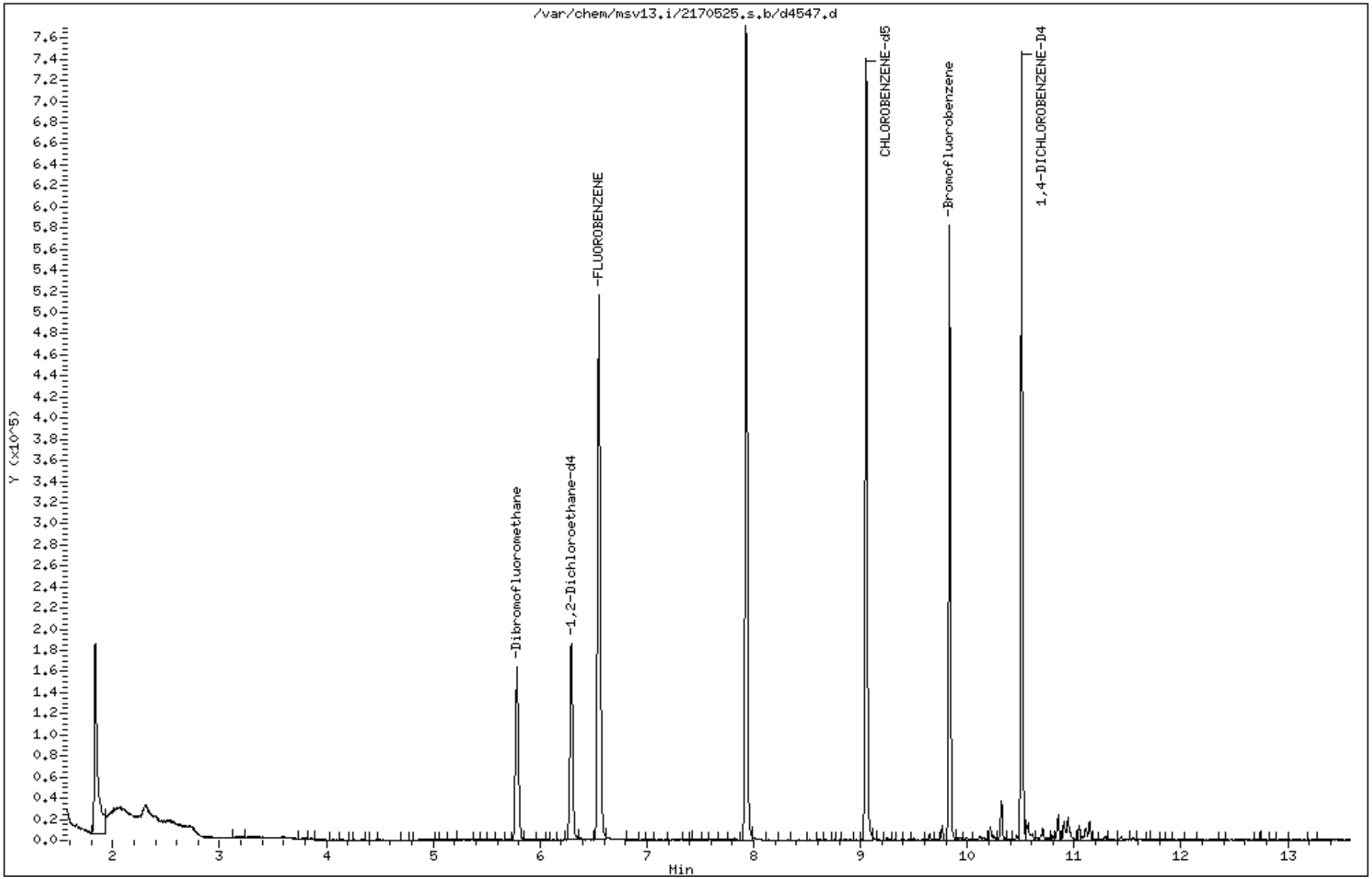
Sample Info: 21705220201*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170525.s.b/d4547.d

Date : 25-MAY-2017 10:29

Client ID:

Instrument: msv13.i

Sample Info: 21705220201*

Purge Volume: 5.0

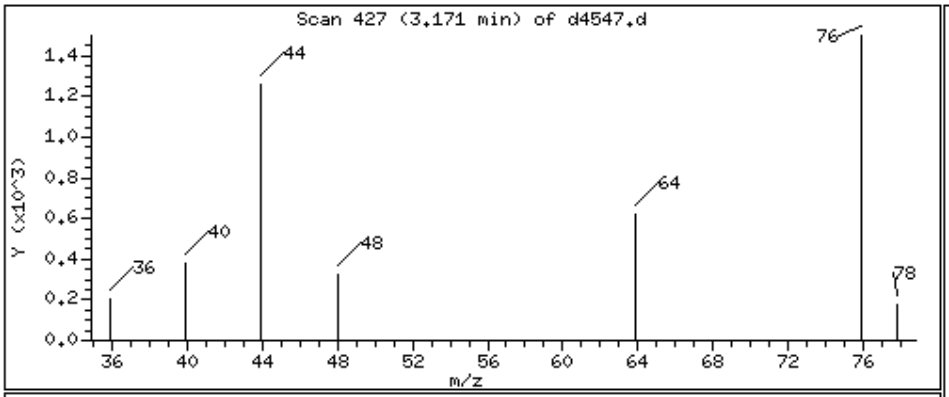
Operator: JCK

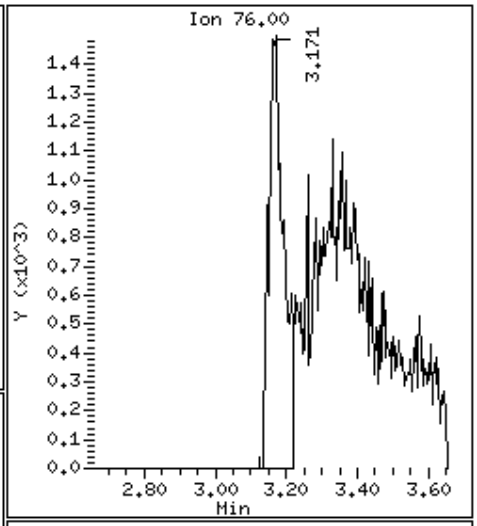
Column phase: RTX-VMS-30M

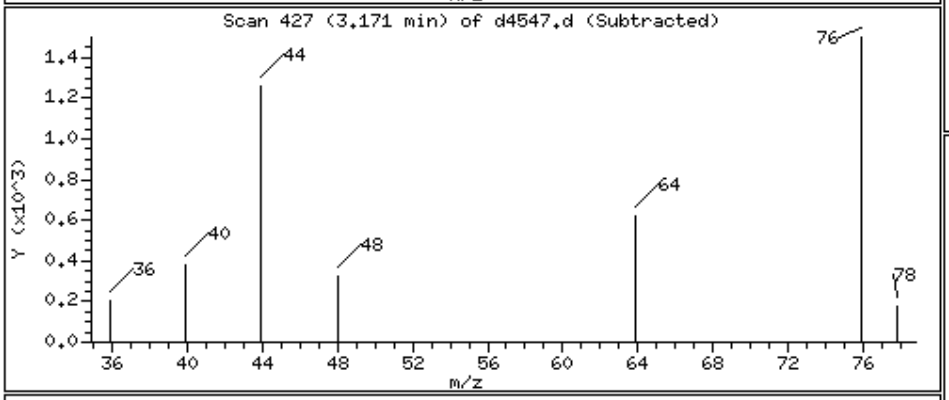
Column diameter: 0.25

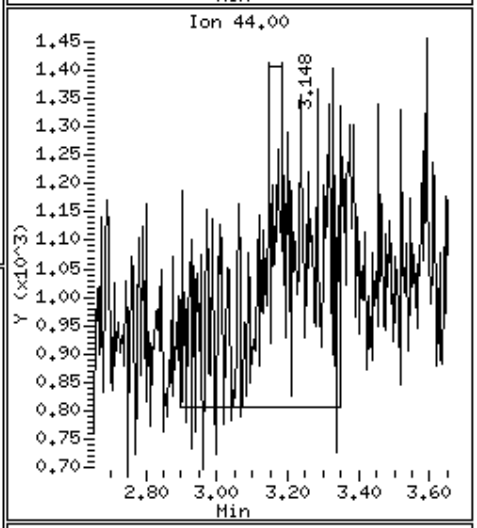
11 Carbon Disulfide

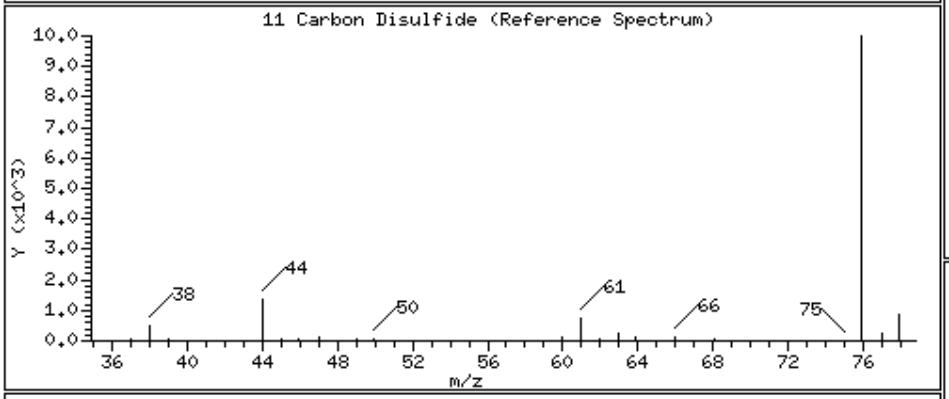
Concentration: 0.666 ug/L

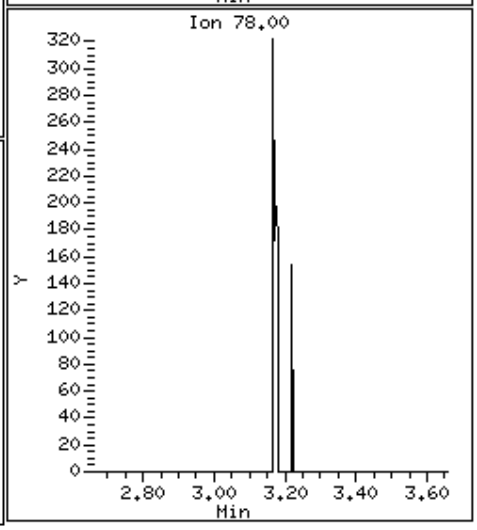


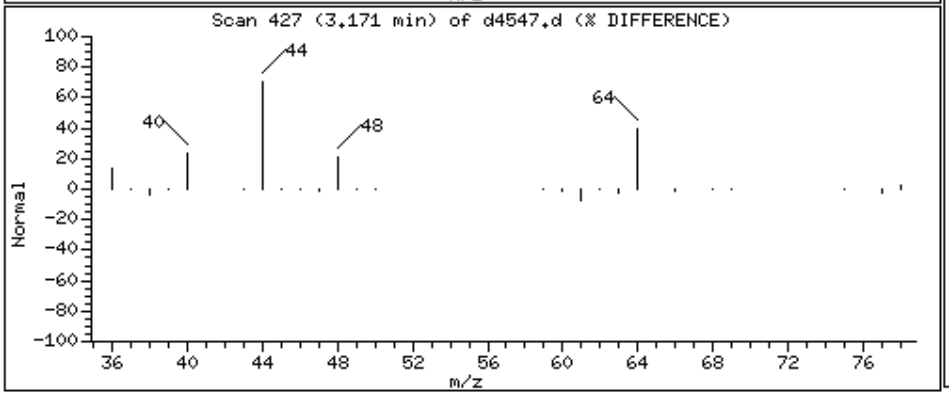












Data File: /var/chem/msv13.i/2170525.s.b/d4547.d

Date : 25-MAY-2017 10:29

Client ID:

Instrument: msv13.i

Sample Info: 21705220201*

Purge Volume: 5.0

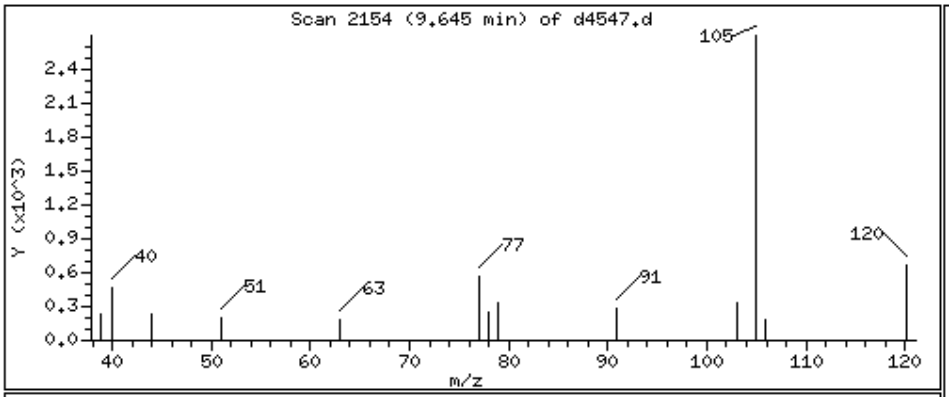
Operator: JCK

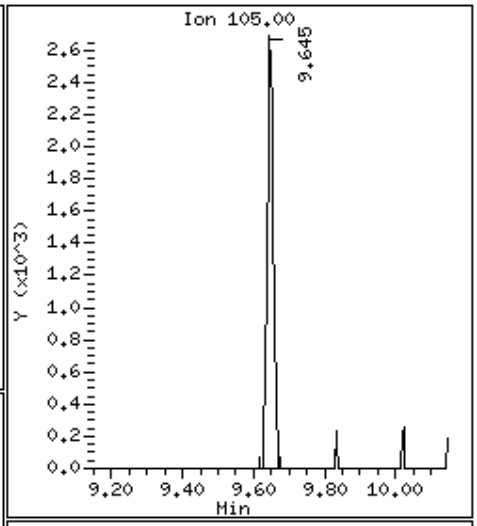
Column phase: RTX-VMS-30M

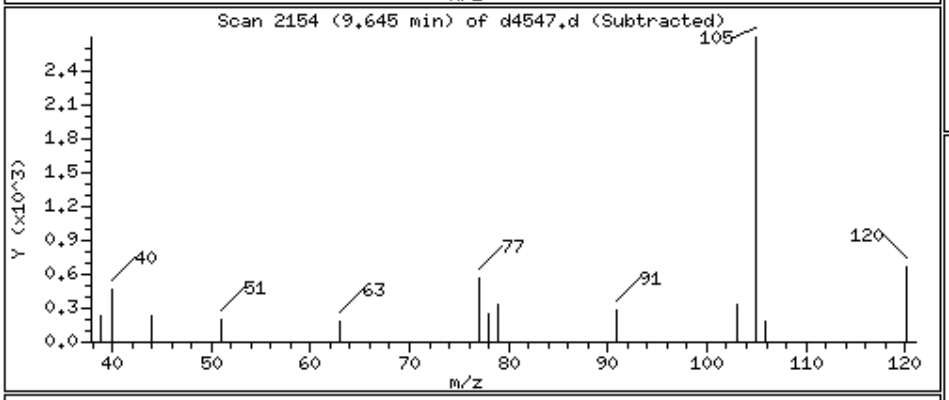
Column diameter: 0.25

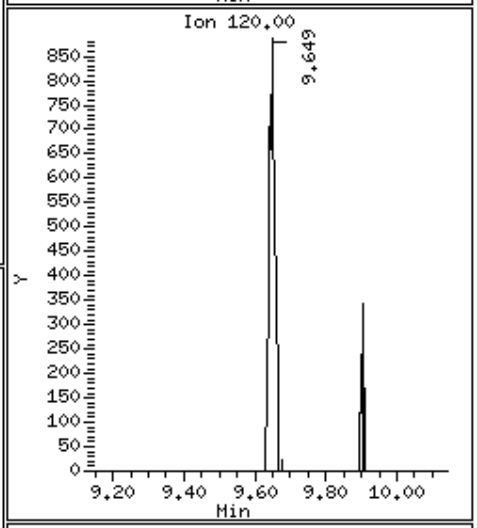
93 Isopropylbenzene

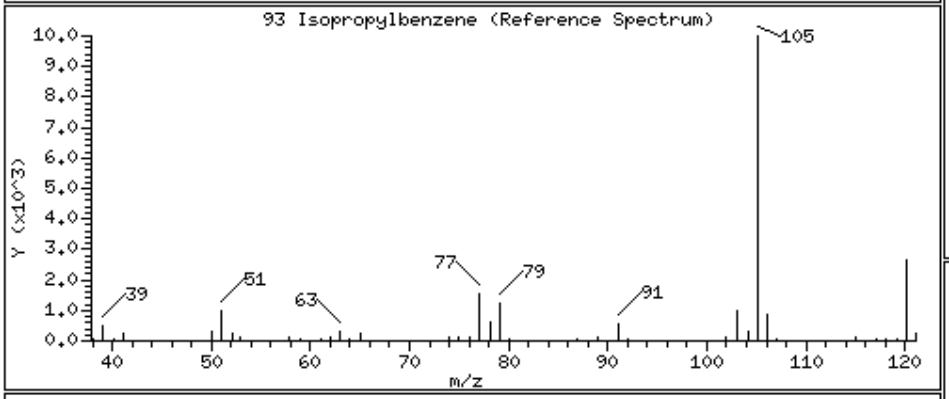
Concentration: 0.374 ug/L

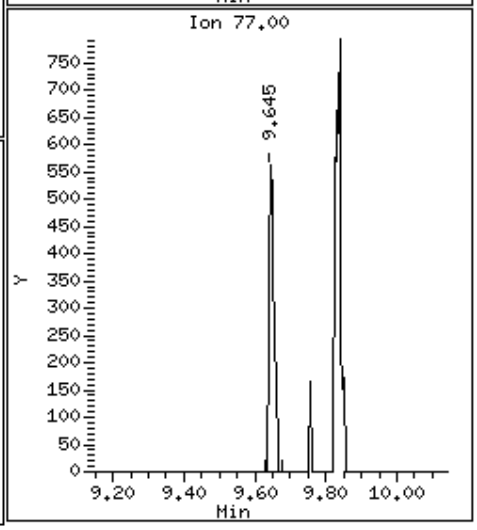


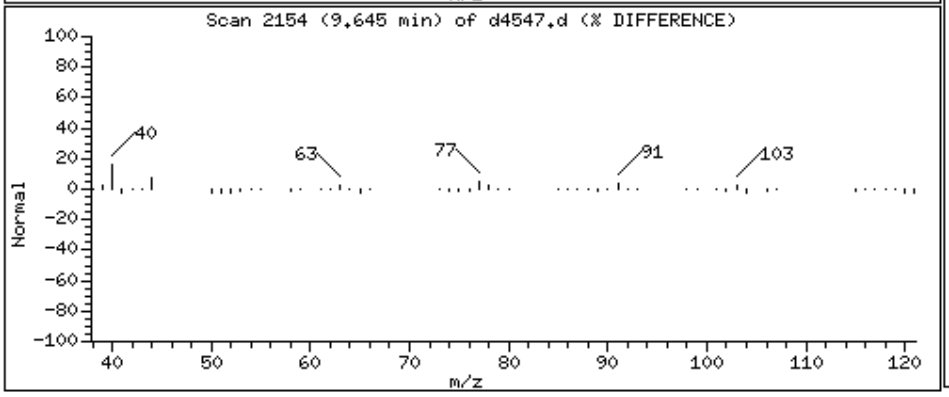












Data File: /var/chem/msv13.i/2170525.s.b/d4547.d

Date : 25-MAY-2017 10:29

Client ID:

Instrument: msv13.i

Sample Info: 21705220201*

Purge Volume: 5.0

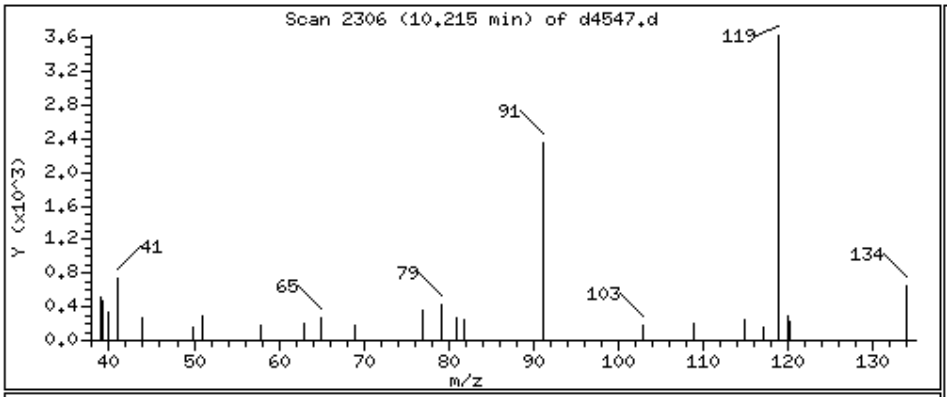
Operator: JCK

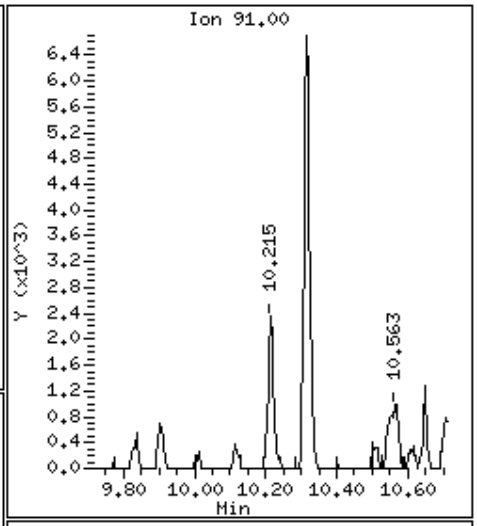
Column phase: RTX-VMS-30M

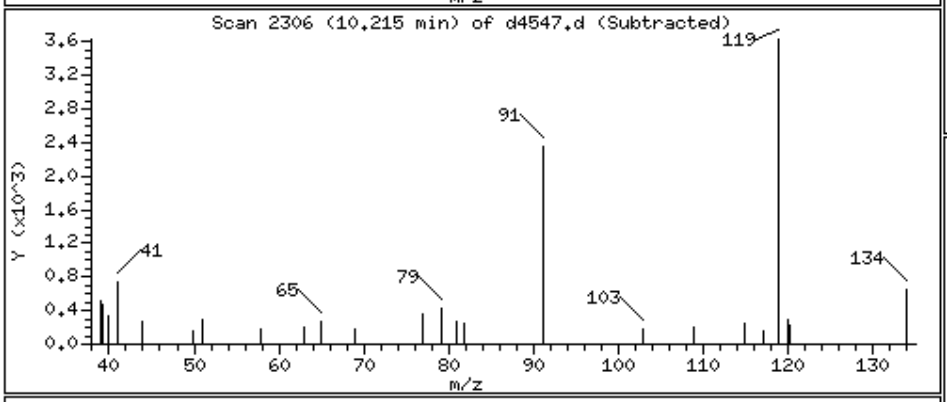
Column diameter: 0.25

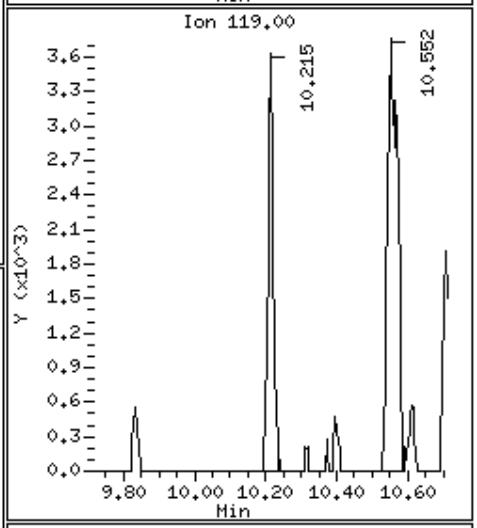
105 tert-butylbenzene

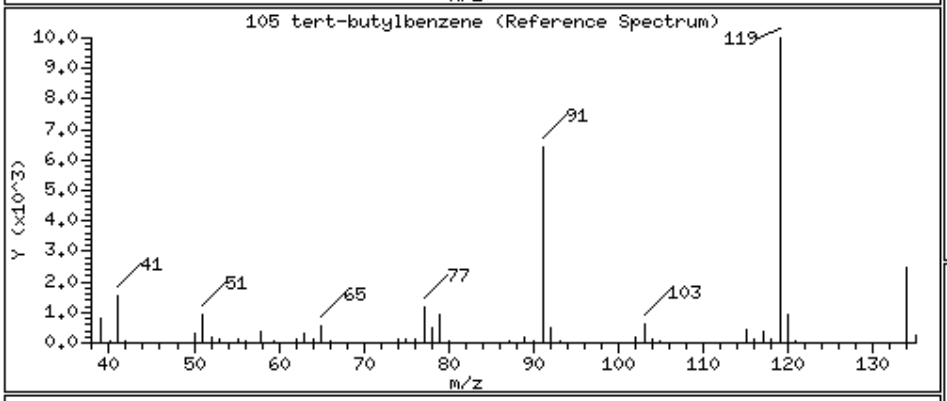
Concentration: 0.723 ug/L

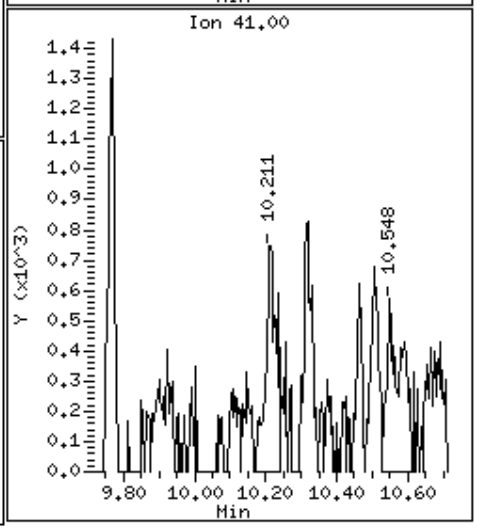


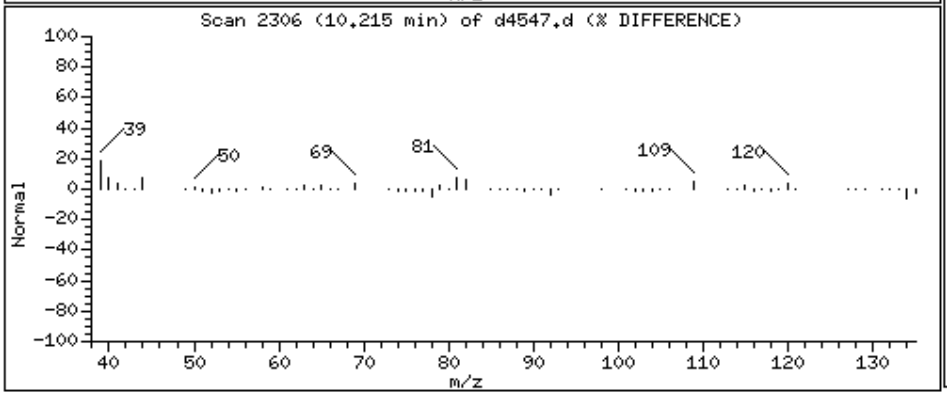












Data File: /var/chem/msv13.i/2170525.s.b/d4547.d

Date : 25-MAY-2017 10:29

Client ID:

Instrument: msv13.i

Sample Info: 21705220201*

Purge Volume: 5.0

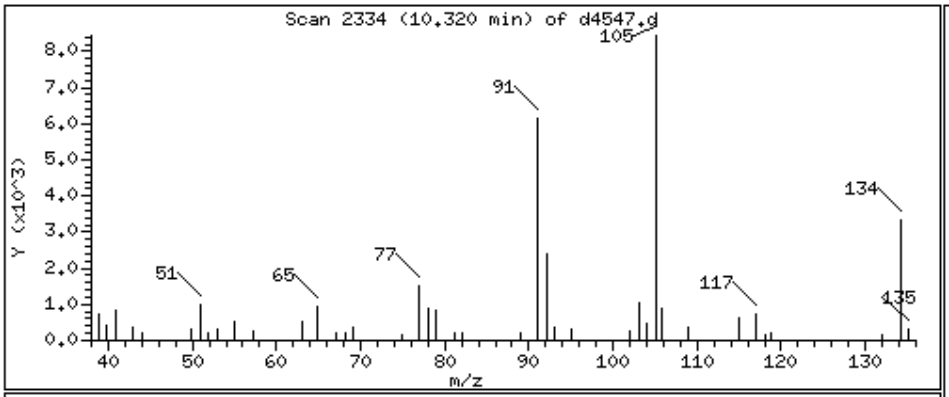
Operator: JCK

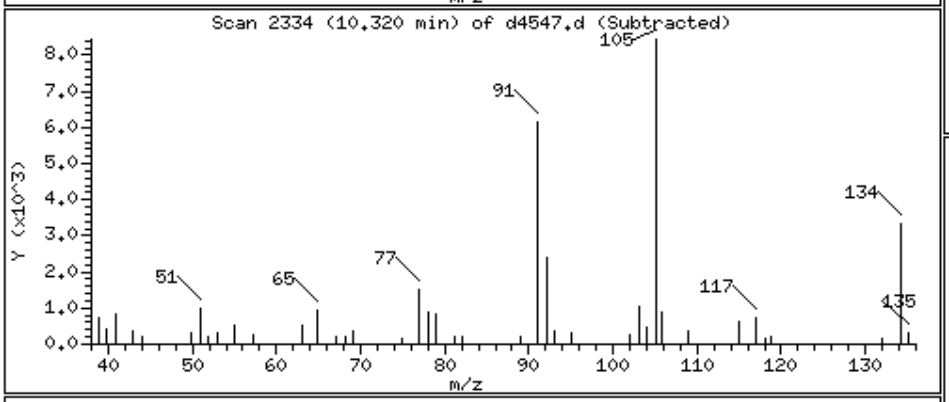
Column phase: RTX-VMS-30M

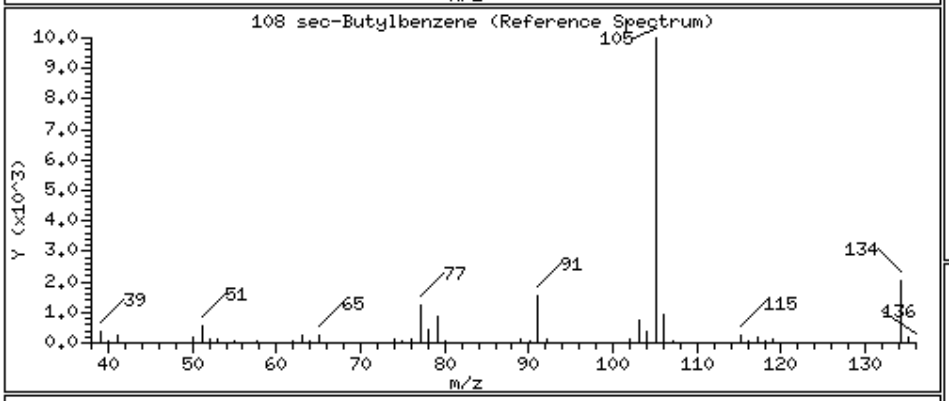
Column diameter: 0.25

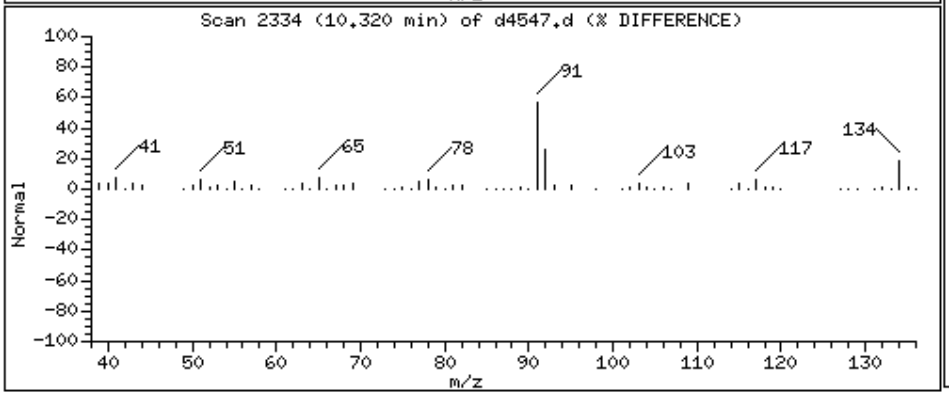
108 sec-Butylbenzene

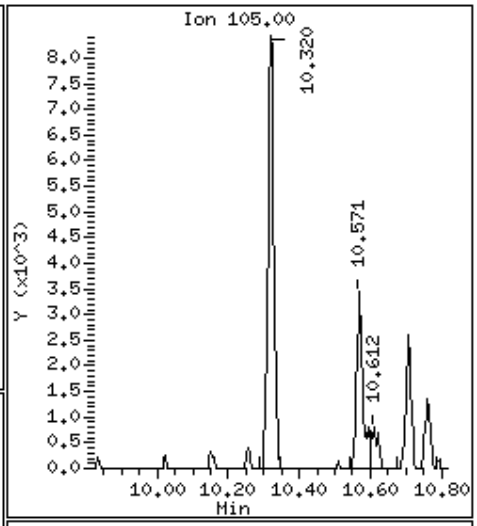
Concentration: 1.24 ug/L

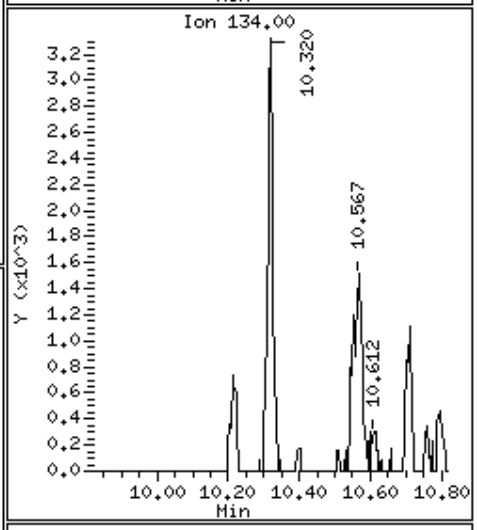


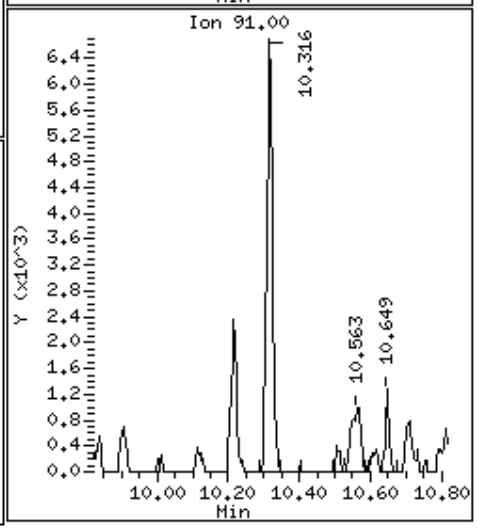








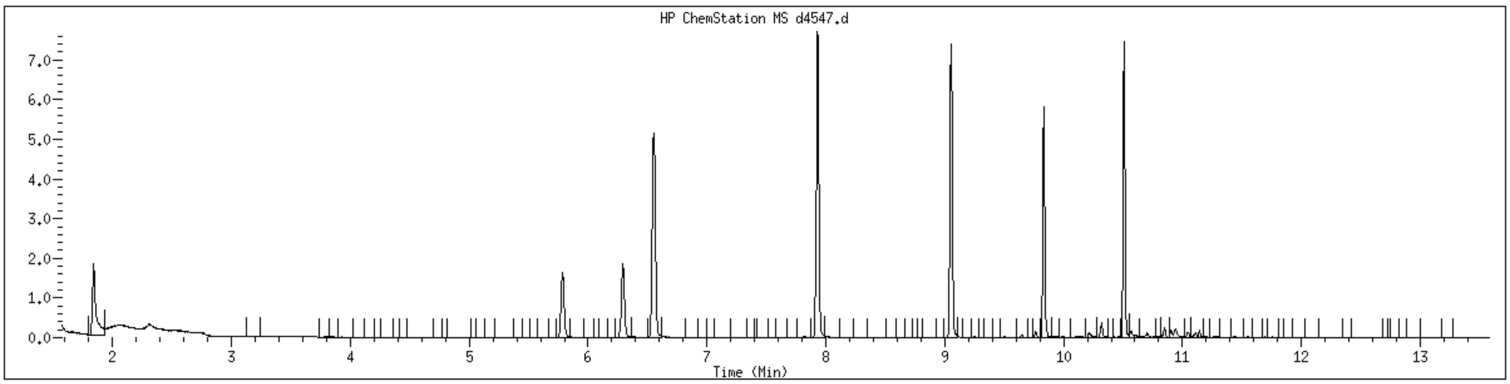




Data file : /var/chem/msv13.i/2170525.s.b/d4547.d
Report Date: 05/25/2017 12:30

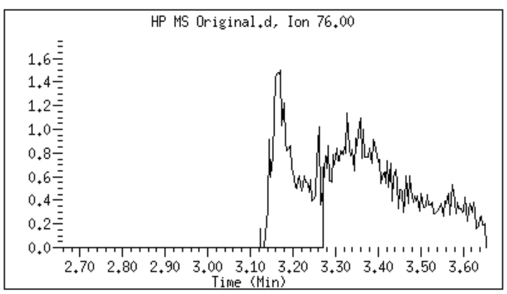
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705220201
SampleType : SAMPLE
Injection Date: 05/25/2017 10:29
Instrument : msv13.i
Operator : JCK
Sample Info : 21705220201*
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE
Compound Sublist: 8260b



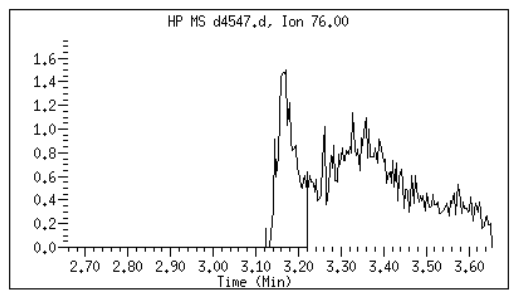
Original | Final

11 Carbon Disulfide CAS#: 75-15-0 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/25/2017 11:58



M2 - Target system integrated incorrectly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	OMS-28-GW11-11-c
Collect Date:	05/13/17 Time: 0001	GCAL Sample ID:	21705220202
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4548
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1051	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	UQ	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	UQ	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	OMS-28-GW11-11-c
Collect Date:	05/13/17	Time:	0001	GCAL Sample ID:	21705220202
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4548
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	1051	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	UQ	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	UQ	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	UQ	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	UQ	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4548.d
Lab Smp Id: 21705220202
Inj Date : 25-MAY-2017 10:51
Operator : JCK Inst ID: msv13.i
Smp Info : 21705220202*
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	100027	48.7231	48.7	9415
$ 50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	66097	50.0205	50.0	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	449080	50.0000		
$ 68 Toluene-d8	98	7.928	7.928	(0.876)	425253	51.9463	51.9	
* 84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	174268	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	114096	46.0685	46.1	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	131175	50.0000		

Data File: /var/chem/msv13.i/2170525.s.b/d4548.d

Date : 25-MAY-2017 10:51

Client ID:

Instrument: msv13.i

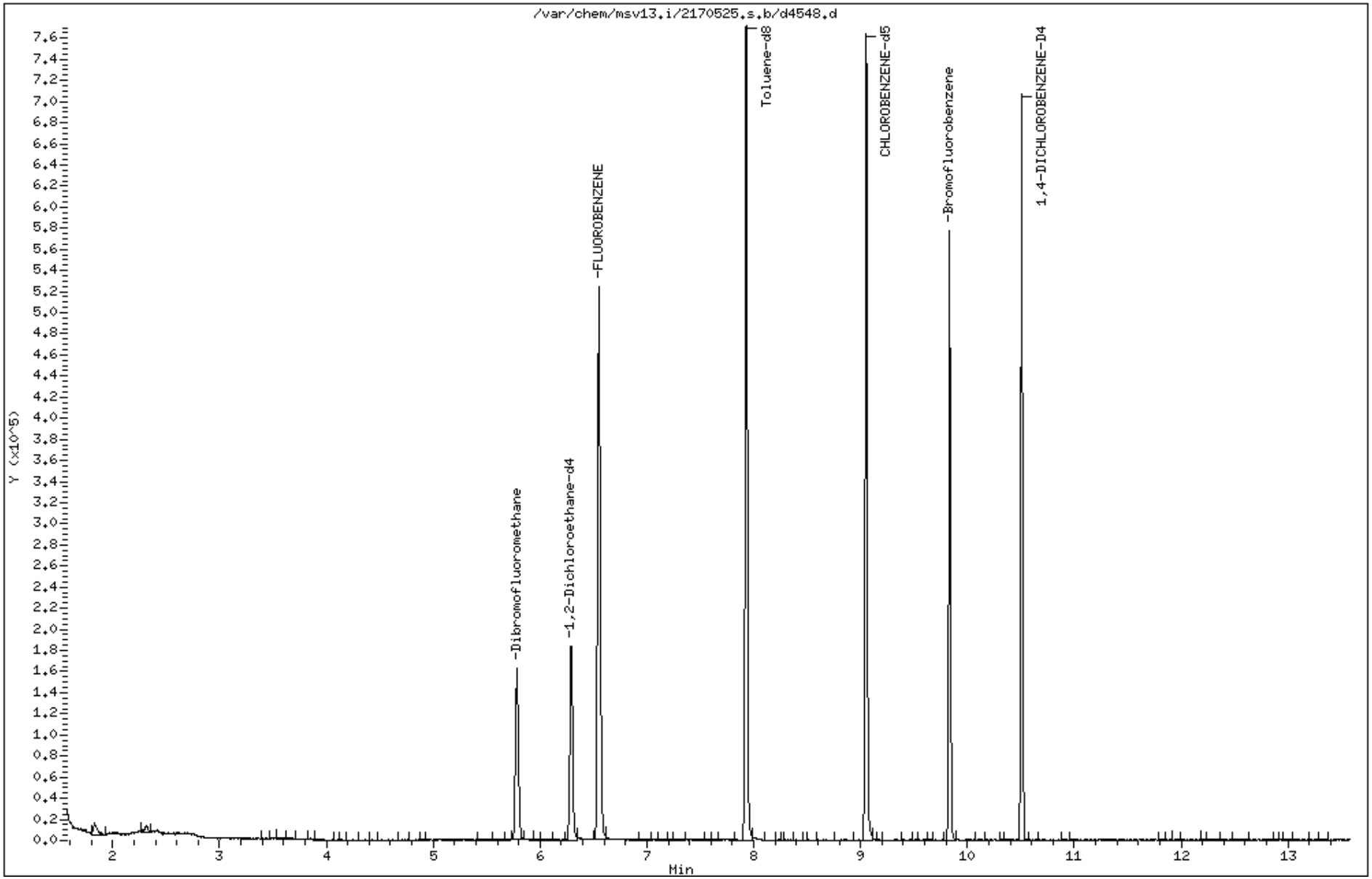
Sample Info: 21705220202*

Purge Volume: 5.0

Operator: JCK

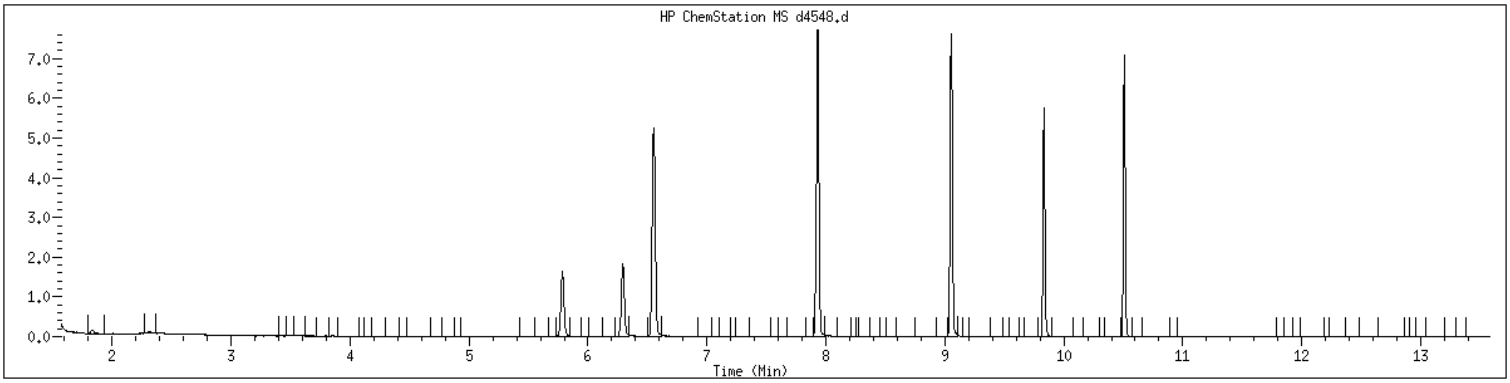
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705220202 SampleType : SAMPLE
Injection Date: 05/25/2017 10:51 Instrument : msv13.i
Operator : JCK
Sample Info : 21705220202*
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	OMS-28-GW58-31-s
Collect Date:	05/15/17 Time: 0850	GCAL Sample ID:	21705220203
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4559
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1456	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	UQ	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	UQ	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	OMS-28-GW58-31-s
Collect Date:	05/15/17	Time:	0850	GCAL Sample ID:	21705220203
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4559
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	1456	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	UQ	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	UQ	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	UQ	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	UQ	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4559.d
Lab Smp Id: 21705220203
Inj Date : 25-MAY-2017 14:56
Operator : JCK Inst ID: msv13.i
Smp Info : 21705220203*
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.787	5.784	(0.883)	140879	51.9299	51.9	9556
$ 50 1,2-Dichloroethane-d4	67	6.293	6.290	(0.961)	89555	51.2872	51.3	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	593431	50.0000		
$ 68 Toluene-d8	98	7.928	7.928	(0.876)	551710	51.9596	52.0	
* 84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	226032	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	160690	50.0230	50.0	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	181709	50.0000		

Data File: /var/chem/msv13.i/2170525.s.b/d4559.d

Page 1

Date : 25-MAY-2017 14:56

Client ID:

Instrument: msv13.i

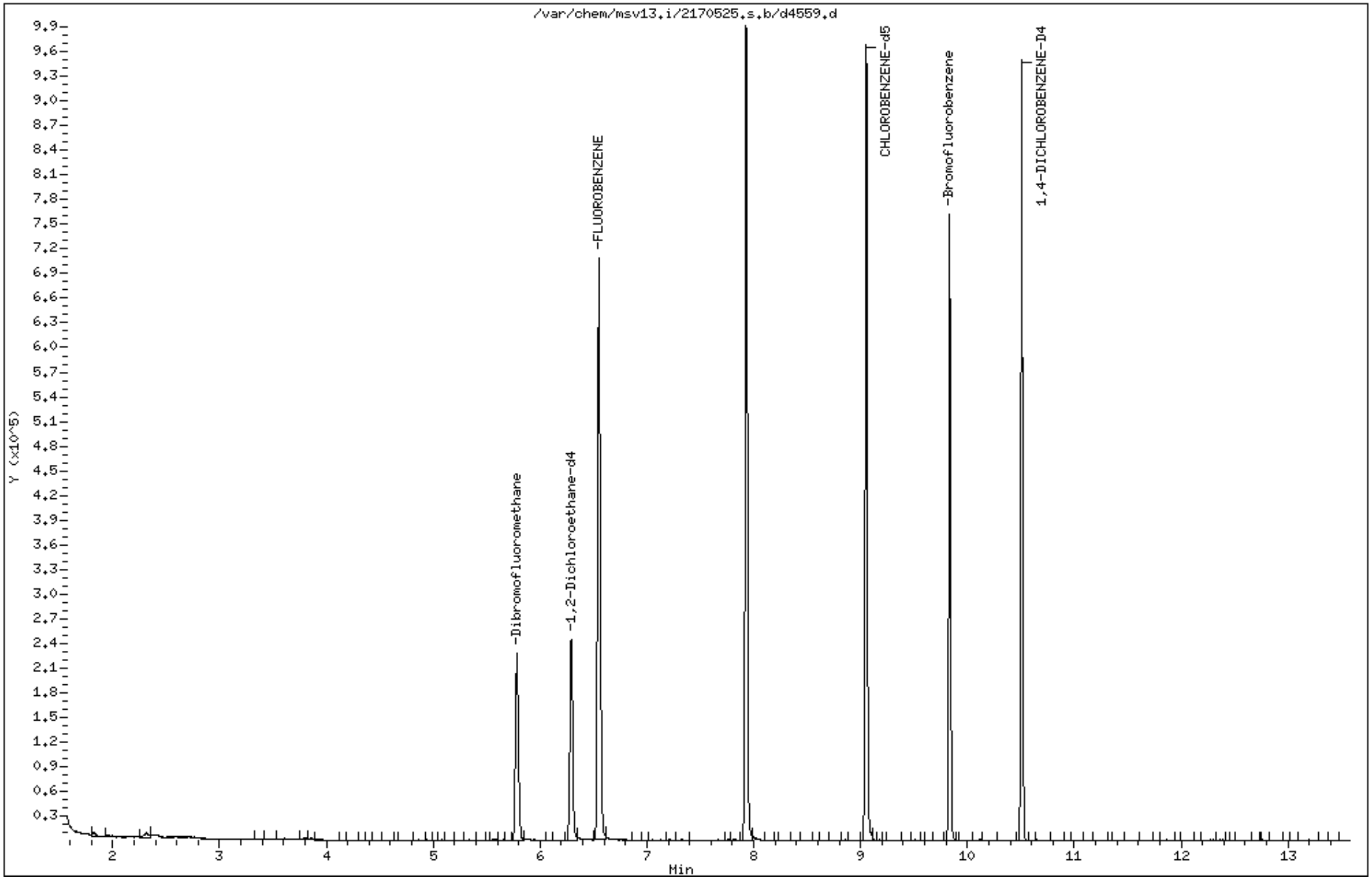
Sample Info: 21705220203*

Purge Volume: 5.0

Operator: JCK

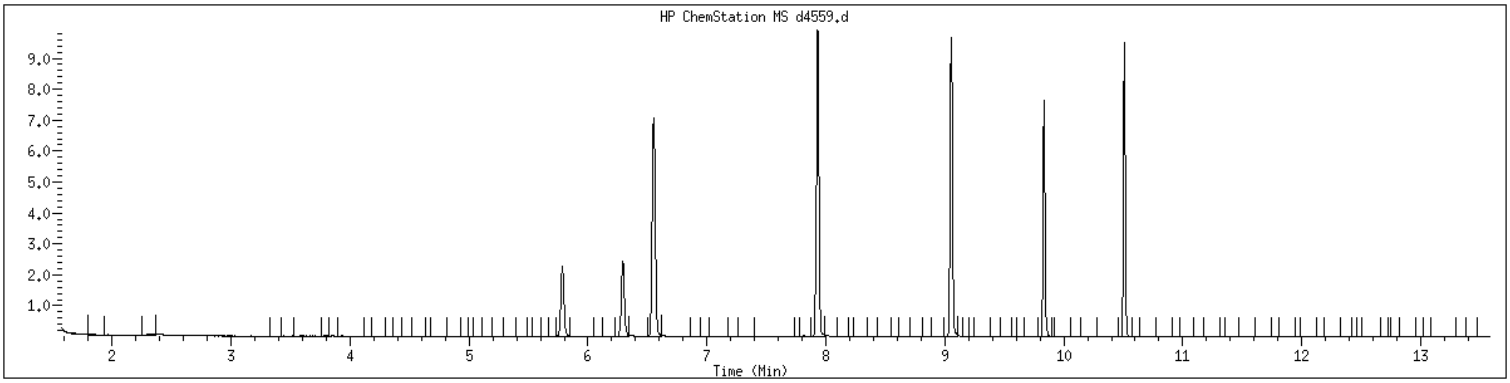
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705220203 SampleType : SAMPLE
Injection Date: 05/25/2017 14:56 Instrument : msv13.i
Operator : JCK
Sample Info : 21705220203*
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	OMS-28-GW49-12-s
Collect Date:	05/15/17 Time: 1445	GCAL Sample ID:	21705220204
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4550
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1136	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	UQ	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	UQ	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	OMS-28-GW49-12-s
Collect Date:	05/15/17	Time:	1445	GCAL Sample ID:	21705220204
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4550
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	1136	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	UQ	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	UQ	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	UQ	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	UQ	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4550.d
Lab Smp Id: 21705220204
Inj Date : 25-MAY-2017 11:36
Operator : JCK Inst ID: msv13.i
Smp Info : 21705220204*
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	101236	49.9289	49.9	9462
$ 50 1,2-Dichloroethane-d4	67	6.294	6.290	(0.961)	64188	49.1835	49.2	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	443531	50.0000		
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	423275	51.7730	51.8	
* 84 CHLOROBENZENE-d5	82	9.053	9.052	(1.000)	174038	50.0000		
$ 95 Bromofluorobenzene	174	9.832	9.832	(1.086)	113383	45.8411	45.8	
* 114 1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	129537	50.0000		

Data File: /var/chem/msv13.i/2170525.s.b/d4550.d

Page 1

Date : 25-MAY-2017 11:36

Client ID:

Instrument: msv13.i

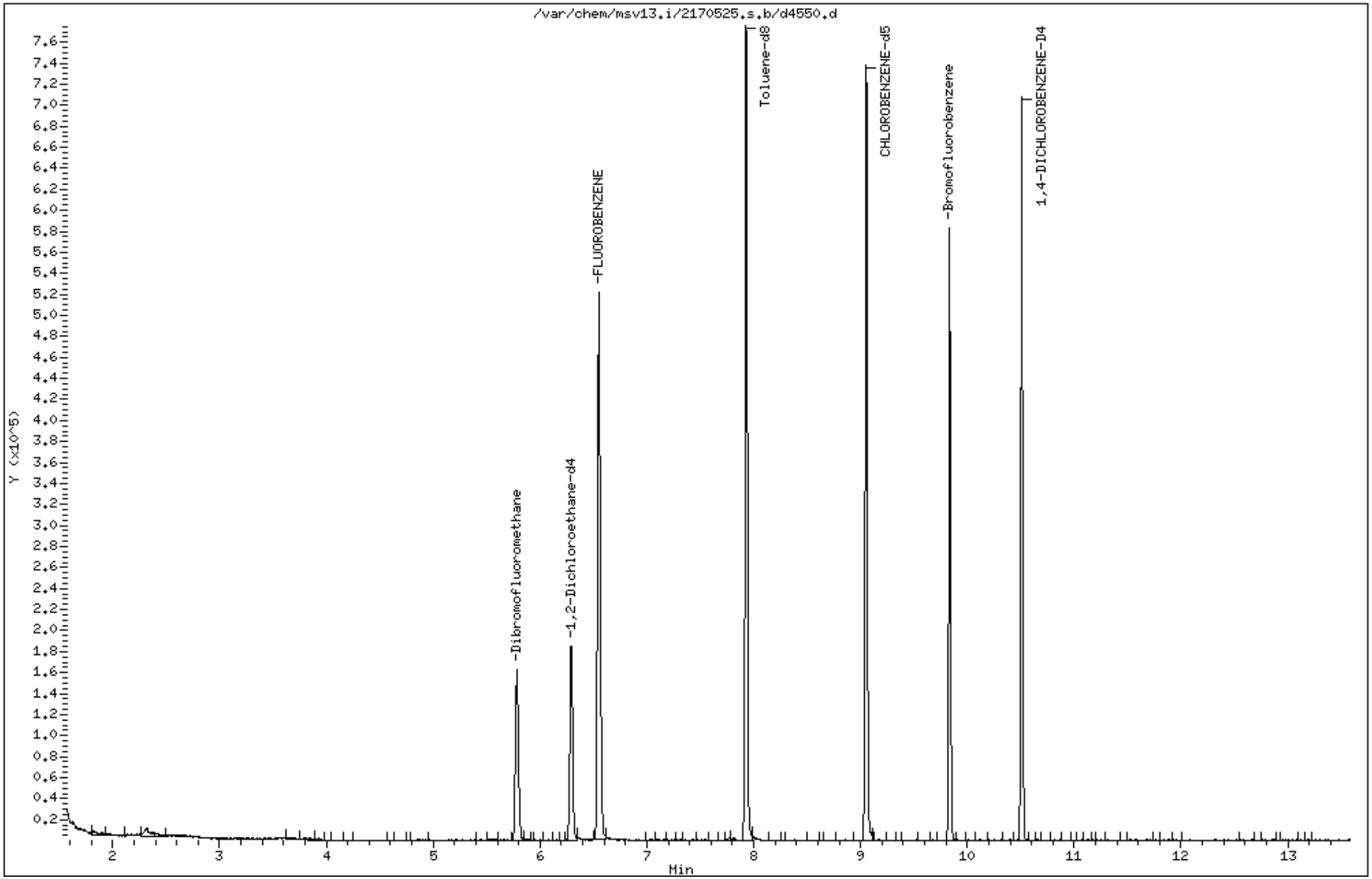
Sample Info: 21705220204*

Purge Volume: 5.0

Operator: JCK

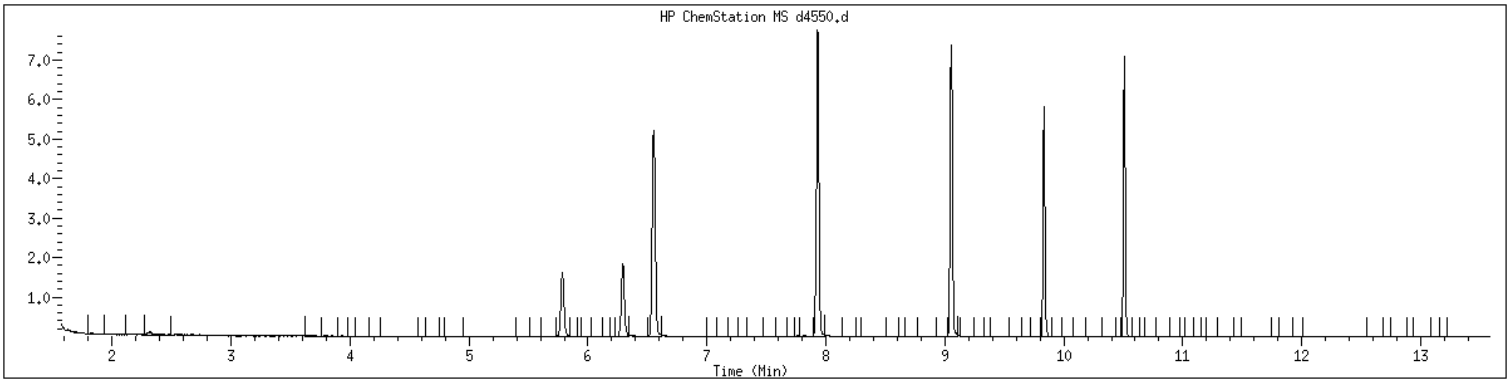
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705220204 SampleType : SAMPLE
Injection Date: 05/25/2017 11:36 Instrument : msv13.i
Operator : JCK
Sample Info : 21705220204*
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	OMS-28-GW62-19-s
Collect Date:	05/16/17 Time: 1430	GCAL Sample ID:	21705220205
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4551
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1158	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	UQ	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	5.05	Q	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	3.41		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	OMS-28-GW62-19-s
Collect Date:	05/16/17	Time:	1430	GCAL Sample ID:	21705220205
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4551
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	1158	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	UQ	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	UQ	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	UQ	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	UQ	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	45.1		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4551.d
Lab Smp Id: 21705220205
Inj Date : 25-MAY-2017 11:58
Operator : JCK Inst ID: msv13.i
Smp Info : 21705220205*
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	17 Acetone	43	3.928	3.928	(0.600)	6413	5.05201	5.05	
	29 cis-1,2-Dichloroethene	61	5.326	5.322	(0.813)	9276	3.40859	3.41	
M	75 Total 1,2-Dichloroethene	61				9276	3.40859	3.41	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	102894	50.1917	50.2	9411
$	50 1,2-Dichloroethane-d4	67	6.293	6.290	(0.961)	66804	50.6282	50.6	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	448435	50.0000		
	56 Trichloroethene	130	6.706	6.706	(1.023)	97886	45.0551	45.1	
$	68 Toluene-d8	98	7.932	7.928	(0.876)	433018	52.1541	52.2	
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	176743	50.0000		
$	95 Bromofluorobenzene	174	9.832	9.832	(1.086)	116537	46.3951	46.4	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	135915	50.0000		

Data File: /var/chem/msv13.i/2170525.s.b/d4551.d

Date : 25-MAY-2017 11:58

Client ID:

Instrument: msv13.i

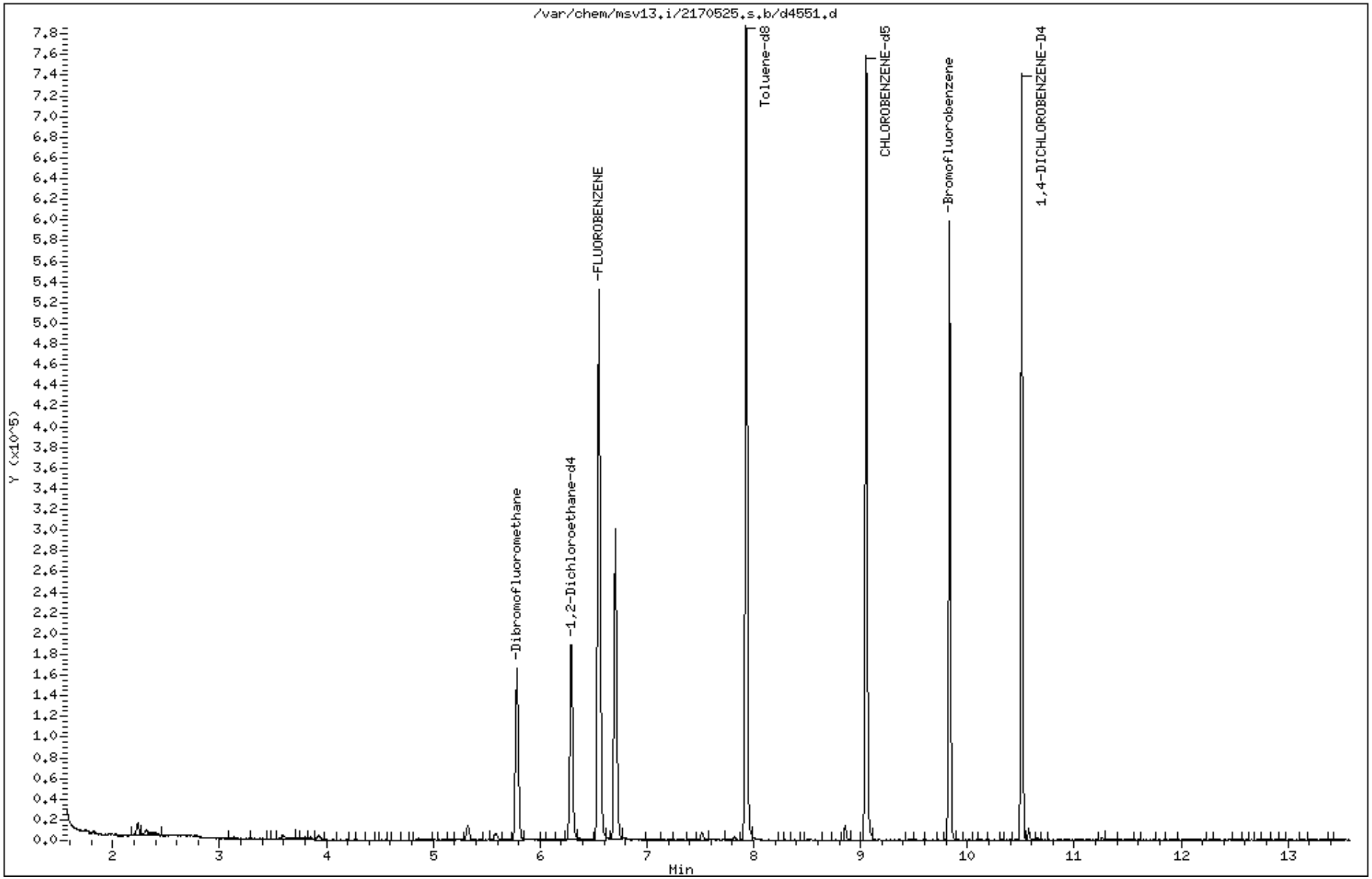
Sample Info: 21705220205*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170525.s.b/d4551.d

Date : 25-MAY-2017 11:58

Client ID:

Instrument: msv13.i

Sample Info: 21705220205x

Purge Volume: 5.0

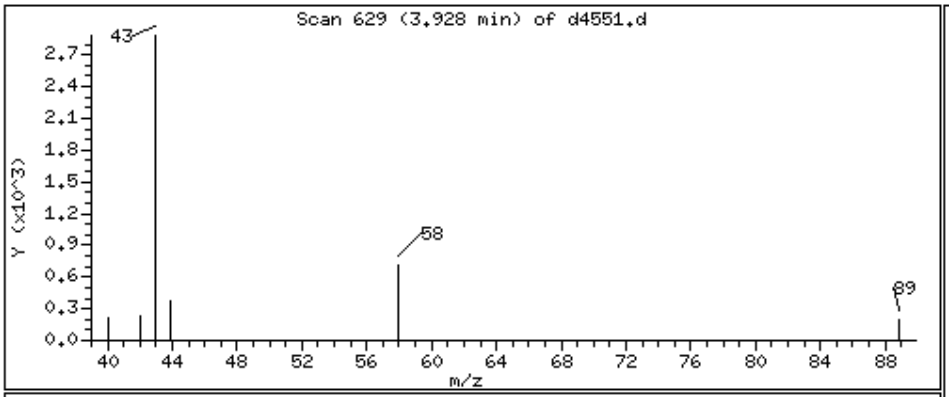
Operator: JCK

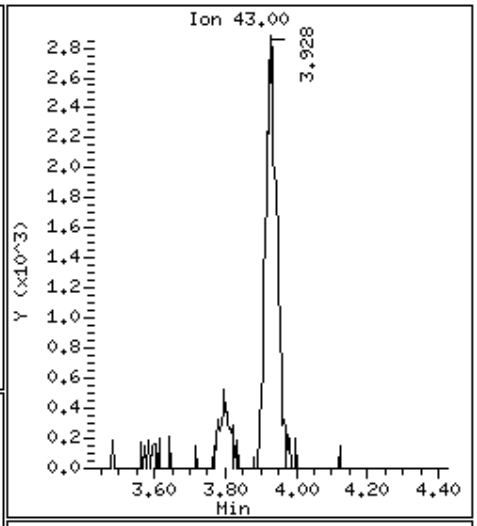
Column phase: RTX-VMS-30M

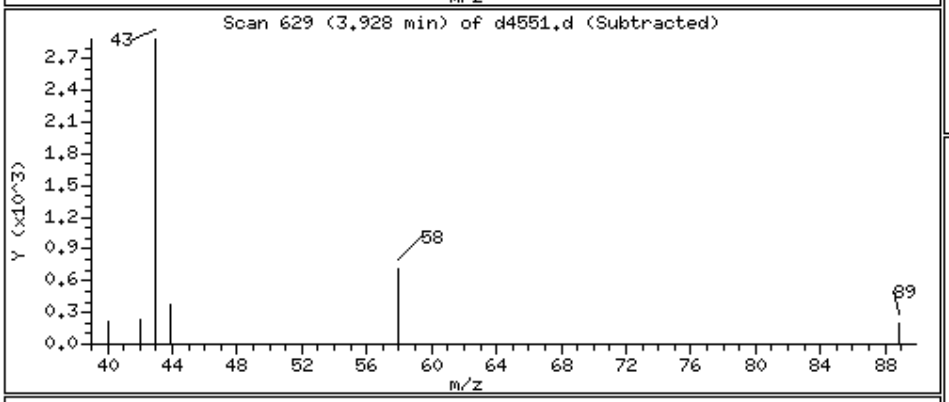
Column diameter: 0.25

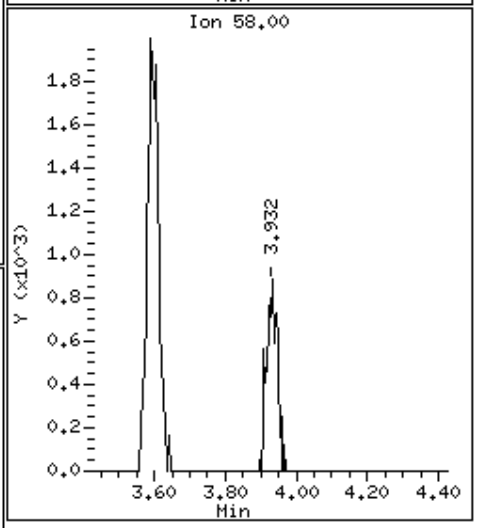
17 Acetone

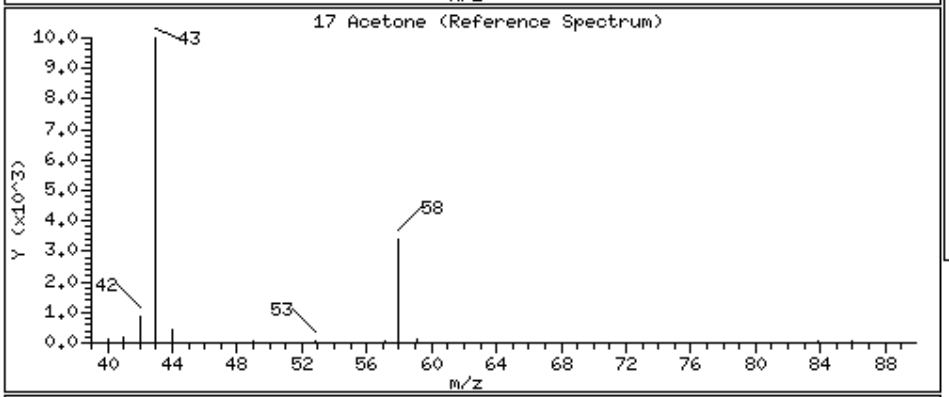
Concentration: 5.05 ug/L

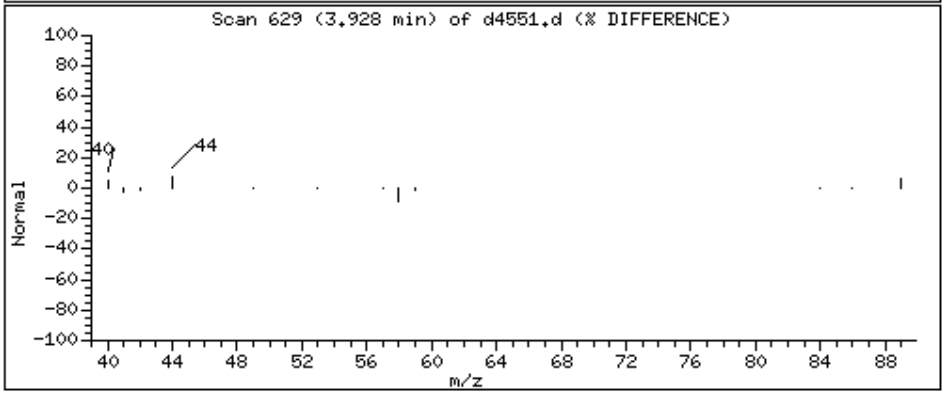












Data File: /var/chem/msv13.i/2170525.s.b/d4551.d

Date : 25-MAY-2017 11:58

Client ID:

Instrument: msv13.i

Sample Info: 21705220205x

Purge Volume: 5.0

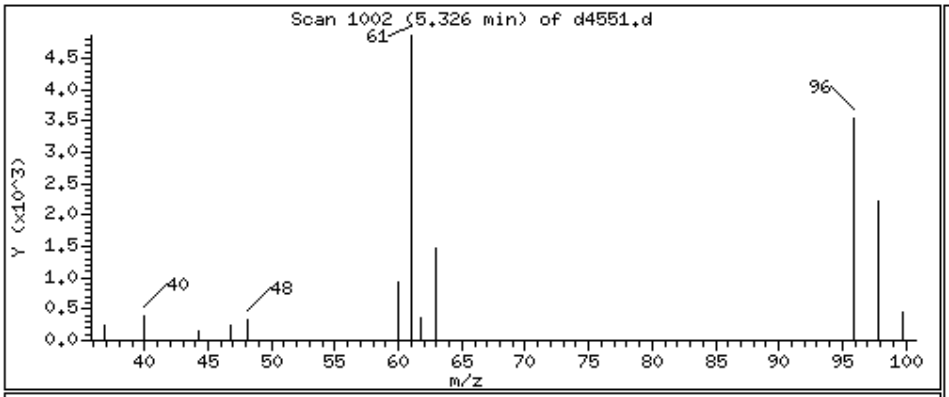
Operator: JCK

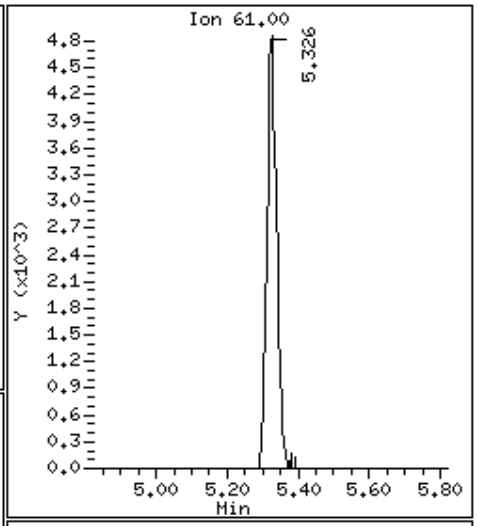
Column phase: RTX-VMS-30M

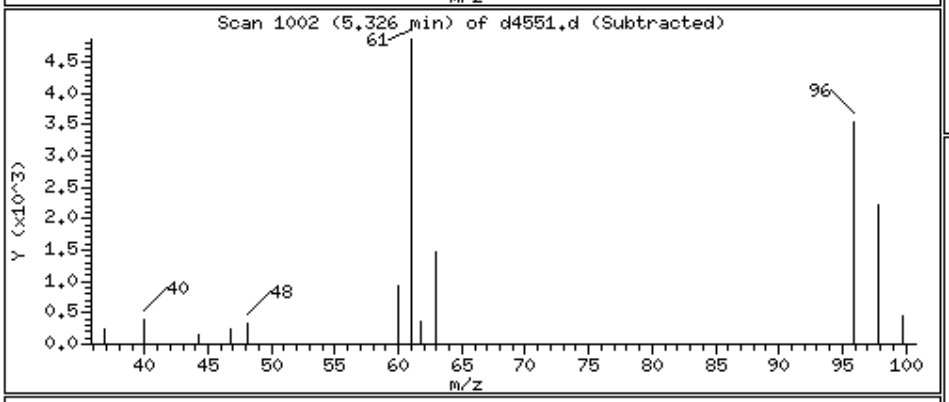
Column diameter: 0.25

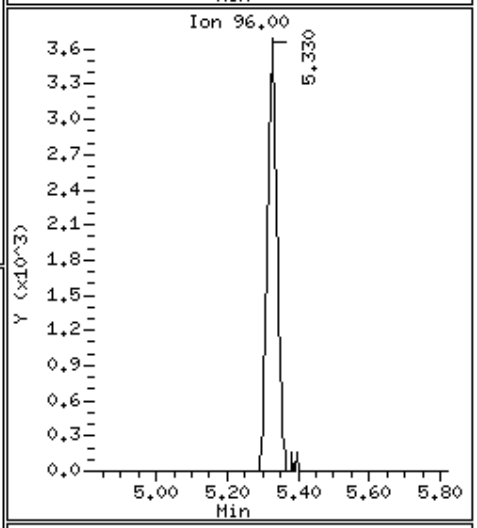
29 cis-1,2-Dichloroethene

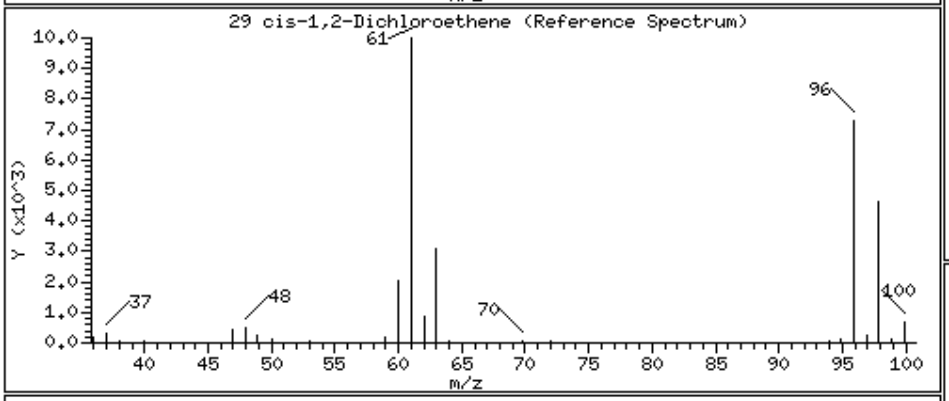
Concentration: 3.41 ug/L

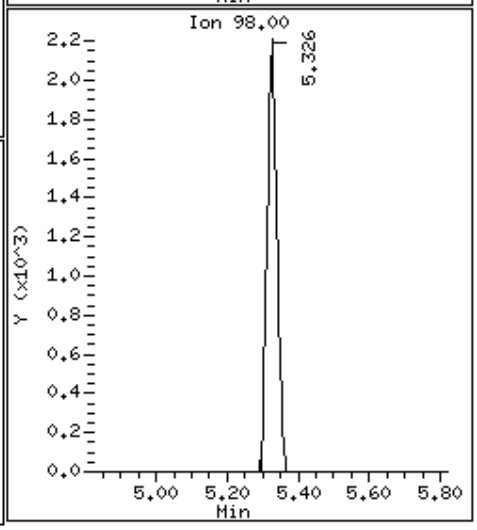


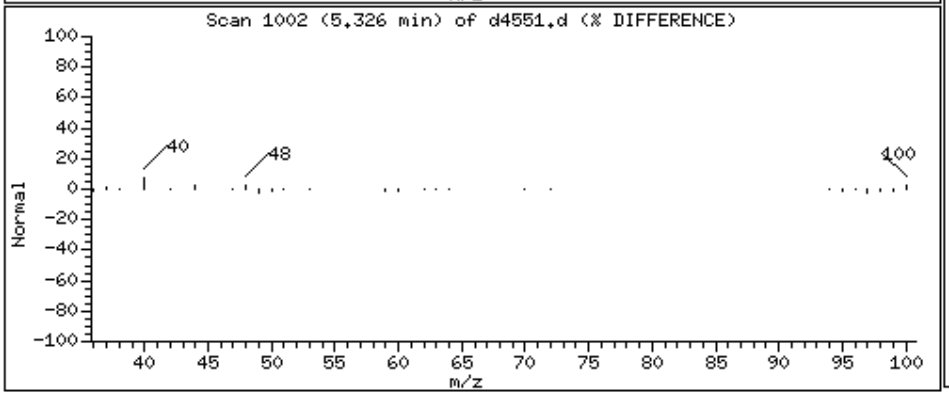












Data File: /var/chem/msv13.i/2170525.s.b/d4551.d

Date : 25-MAY-2017 11:58

Client ID:

Instrument: msv13.i

Sample Info: 21705220205x

Purge Volume: 5.0

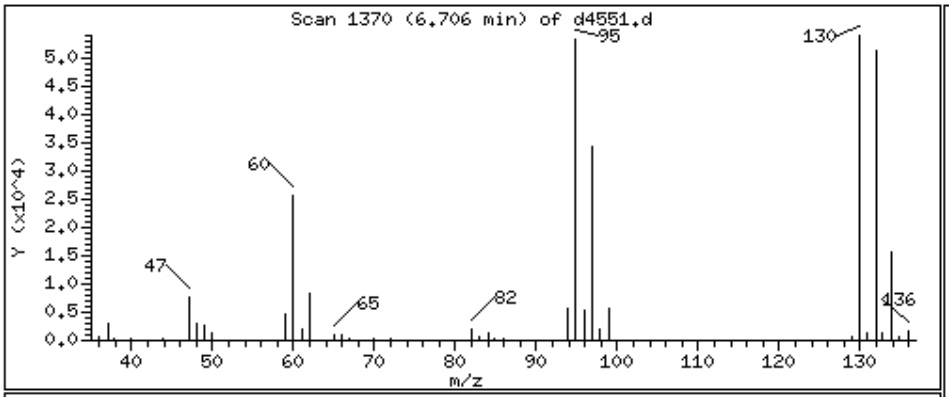
Operator: JCK

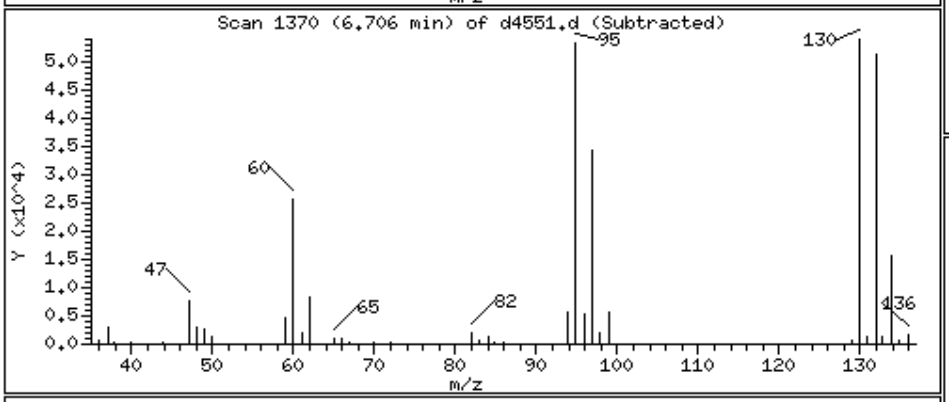
Column phase: RTX-VMS-30M

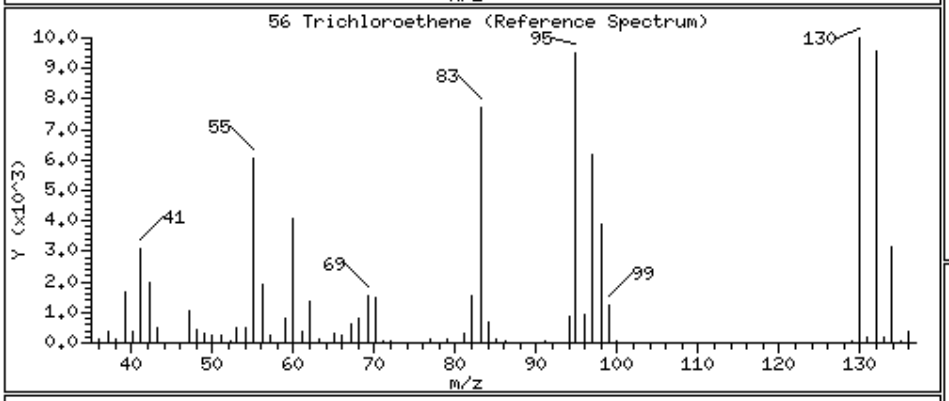
Column diameter: 0.25

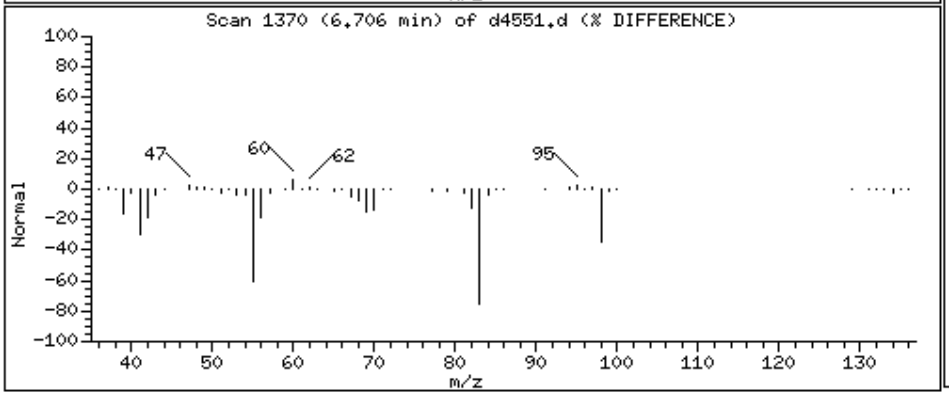
56 Trichloroethene

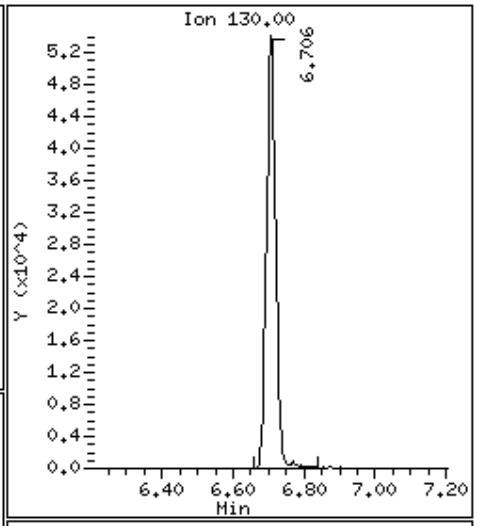
Concentration: 45.1 ug/L

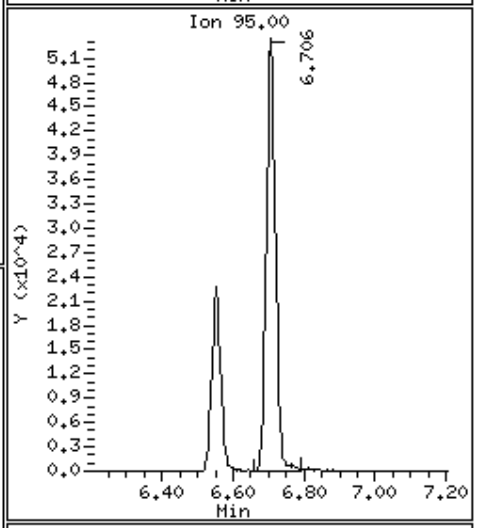


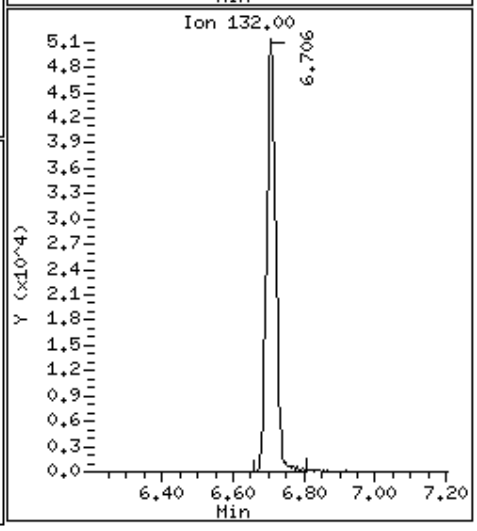








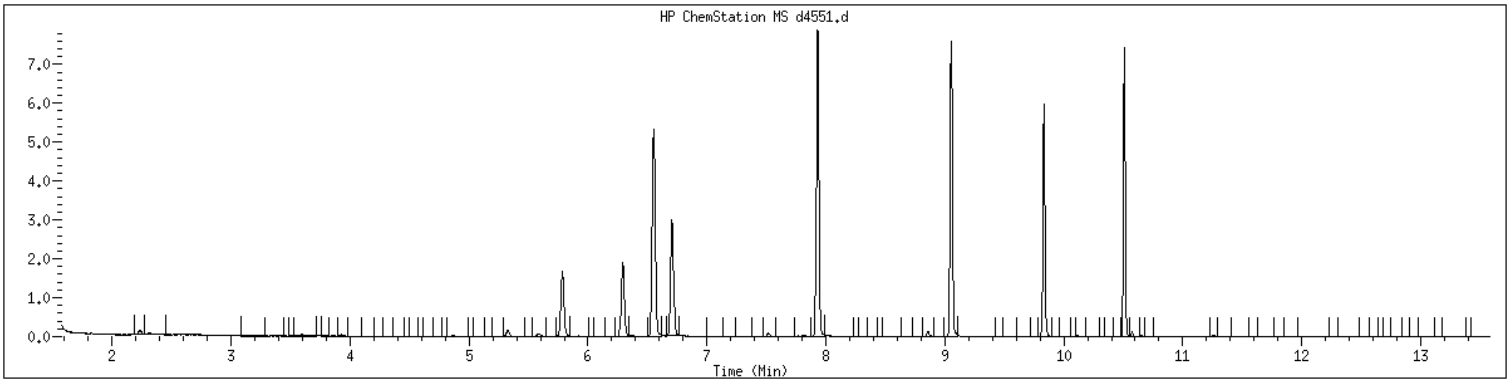




Report Date: 05/26/2017 08:34

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705220205 SampleType : SAMPLE
Injection Date: 05/25/2017 11:58 Instrument : msv13.i
Operator : JCK
Sample Info : 21705220205*
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	OMS-28-GW34-31-s
Collect Date:	05/17/17 Time: 1100	GCAL Sample ID:	21705220206
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4552
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1220	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	UQ	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	UQ	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	OMS-28-GW34-31-s
Collect Date:	05/17/17	Time:	1100	GCAL Sample ID:	21705220206
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4552
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	1220	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	UQ	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	UQ	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	UQ	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	UQ	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4552.d
Lab Smp Id: 21705220206
Inj Date : 25-MAY-2017 12:20
Operator : JCK Inst ID: msv13.i
Smp Info : 21705220206*
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	100318	49.7495	49.7	9519
$ 50 1,2-Dichloroethane-d4	67	6.294	6.290	(0.961)	65760	50.6664	50.7	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	441094	50.0000		
$ 68 Toluene-d8	98	7.928	7.928	(0.876)	417645	51.7272	51.7	
* 84 CHLOROBENZENE-d5	82	9.053	9.052	(1.000)	171875	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	112620	46.1056	46.1	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	131771	50.0000		

Data File: /var/chem/msv13.i/2170525.s.b/d4552.d

Page 1

Date : 25-MAY-2017 12:20

Client ID:

Instrument: msv13.i

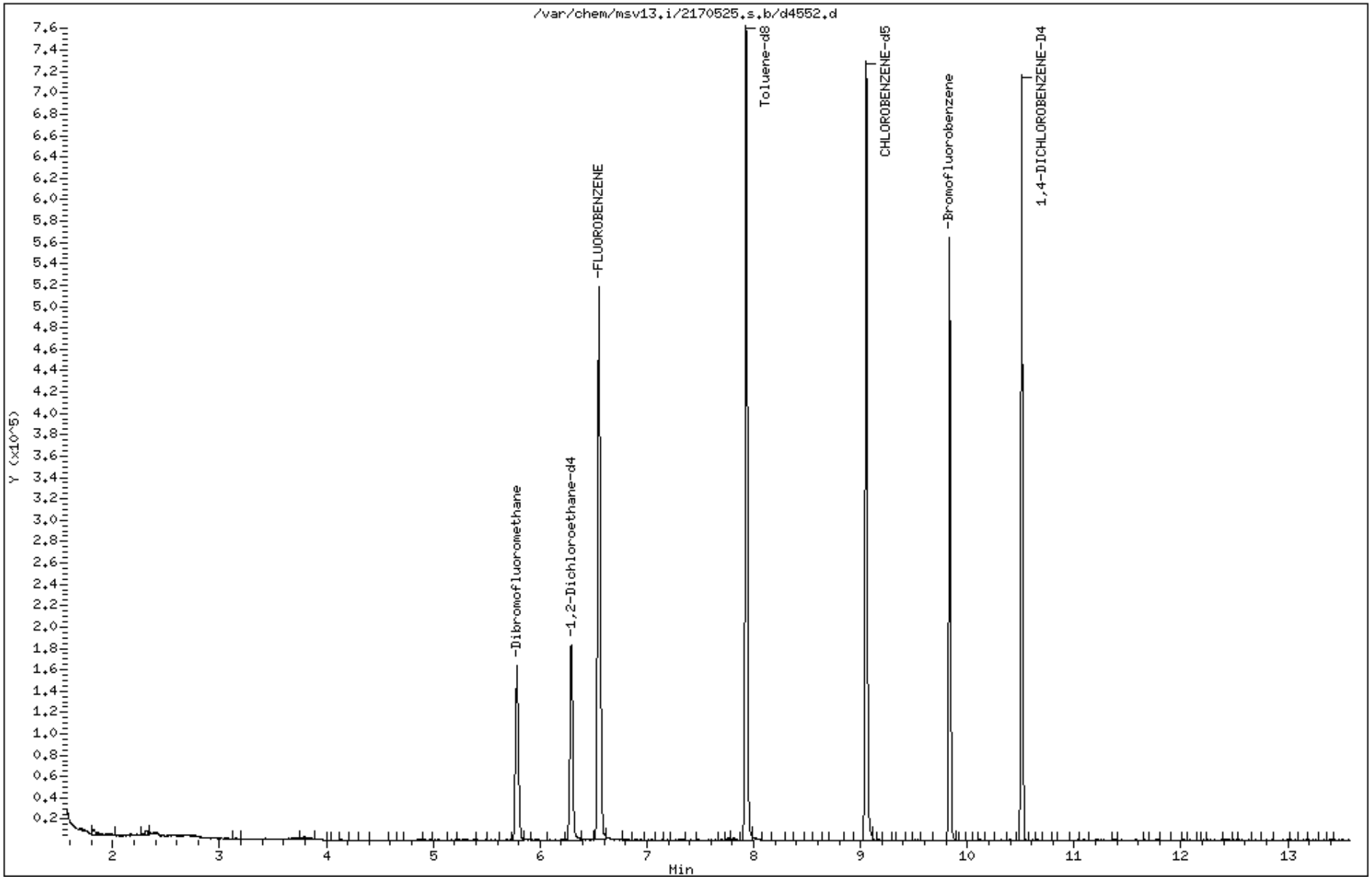
Sample Info: 21705220206*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

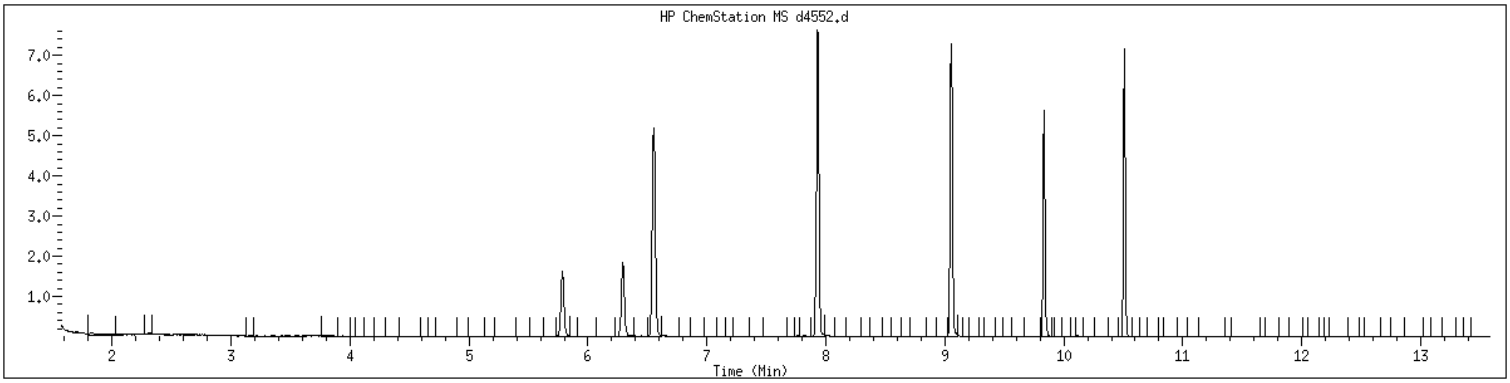
Column diameter: 0.25



Report Date: 05/25/2017 12:39

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705220206 SampleType : SAMPLE
Injection Date: 05/25/2017 12:20 Instrument : msv13.i
Operator : JCK
Sample Info : 21705220206*
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	OMS-28-GW06-11-s
Collect Date:	05/17/17 Time: 1600	GCAL Sample ID:	21705220207
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4553
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1243	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	UQ	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	UQ	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	OMS-28-GW06-11-s
Collect Date:	05/17/17	Time:	1600	GCAL Sample ID:	21705220207
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4553
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	1243	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	UQ	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	UQ	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	UQ	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	UQ	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	1.07		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4553.d
Lab Smp Id: 21705220207
Inj Date : 25-MAY-2017 12:43
Operator : JCK Inst ID: msv13.i
Smp Info : 21705220207*
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	139713	51.0661	51.1	9569
$ 50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	89813	51.0016	51.0	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	598474	50.0000		
56 Trichloroethene	130	6.706	6.706	(1.023)	3092	1.06639	1.07	
$ 68 Toluene-d8	98	7.932	7.928	(0.876)	542843	51.1723	51.2	
* 84 CHLOROBENZENE-d5	82	9.053	9.052	(1.000)	225821	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	159612	49.7338	49.7	
* 114 1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	180563	50.0000		

Data File: /var/chem/msv13.i/2170525.s.b/d4553.d

Page 1

Date : 25-MAY-2017 12:43

Client ID:

Instrument: msv13.i

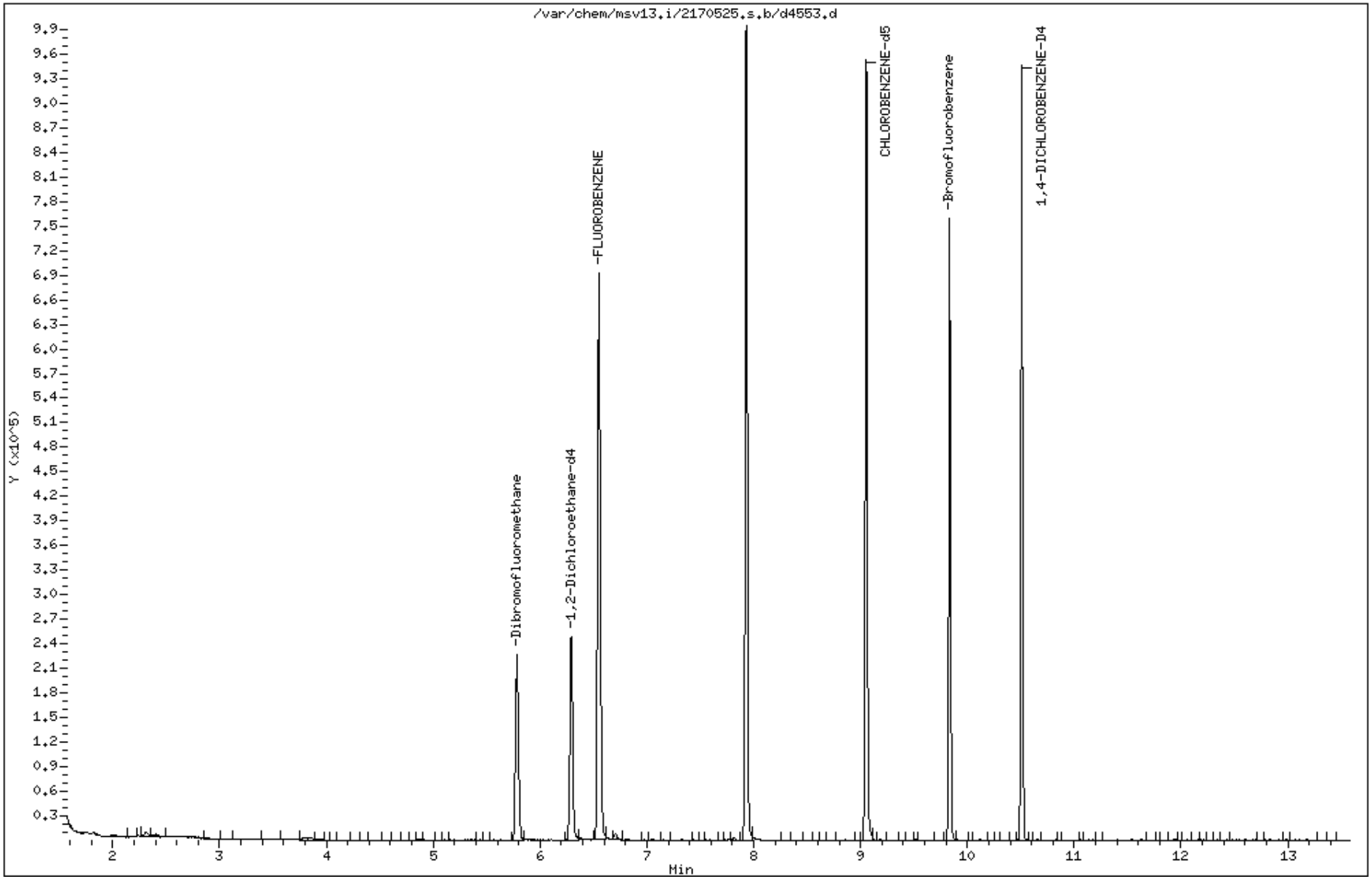
Sample Info: 21705220207*

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170525.s.b/d4553.d

Date : 25-MAY-2017 12:43

Client ID:

Instrument: msv13.i

Sample Info: 21705220207*

Purge Volume: 5.0

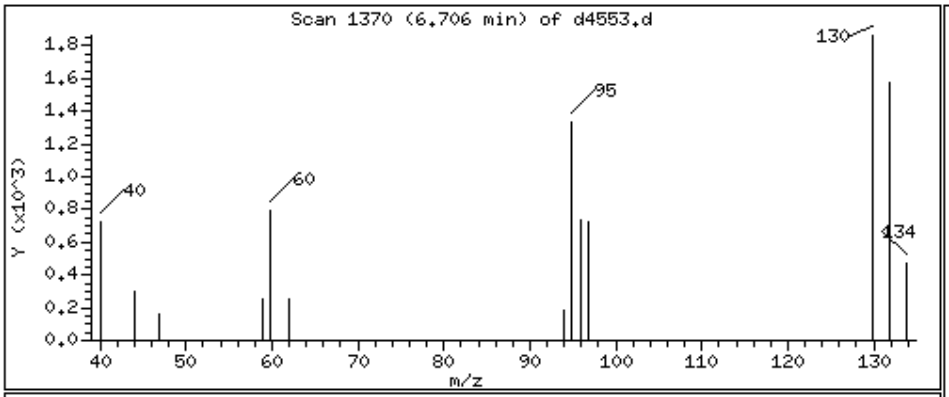
Operator: JCK

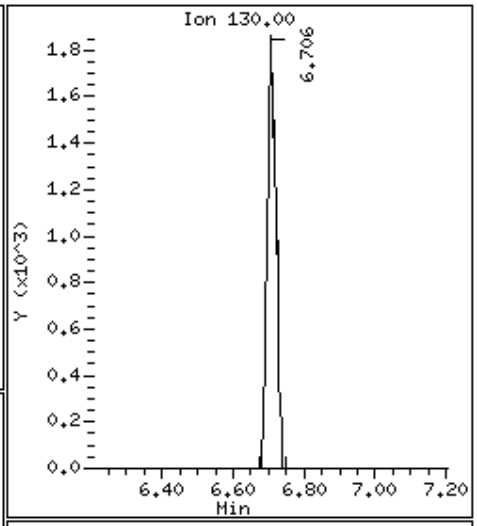
Column phase: RTX-VMS-30M

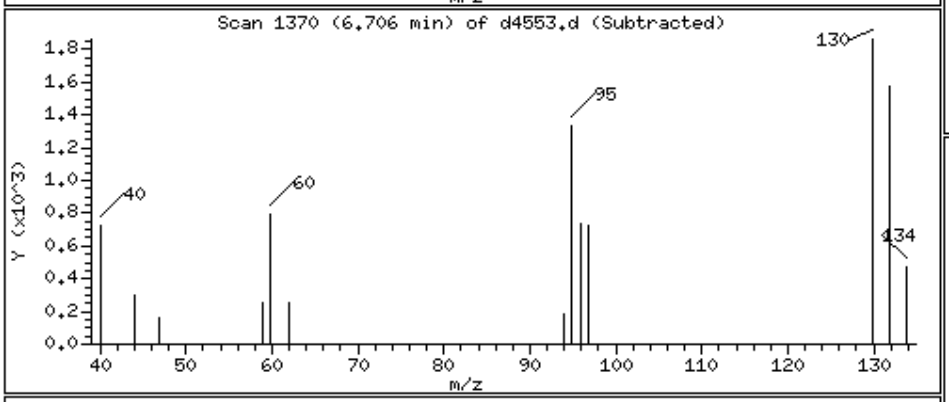
Column diameter: 0.25

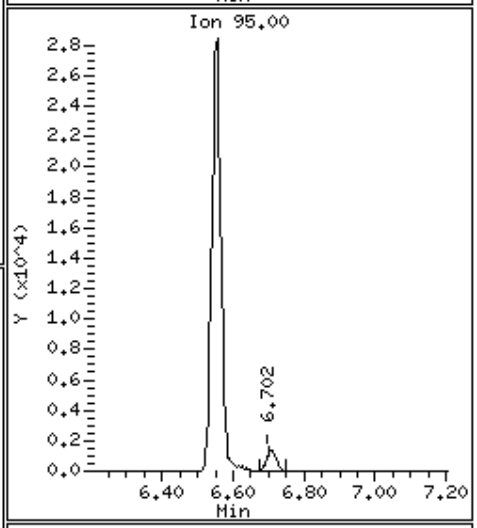
56 Trichloroethene

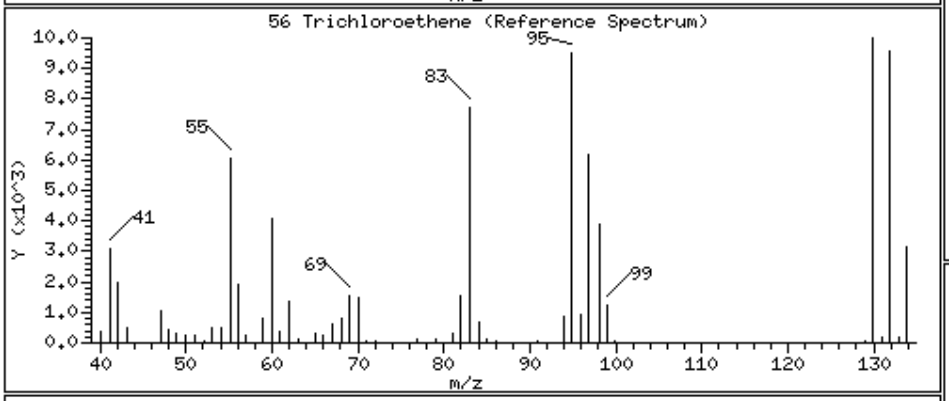
Concentration: 1.07 ug/L

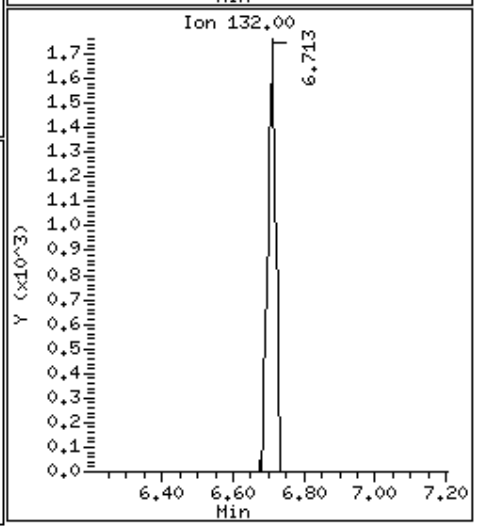


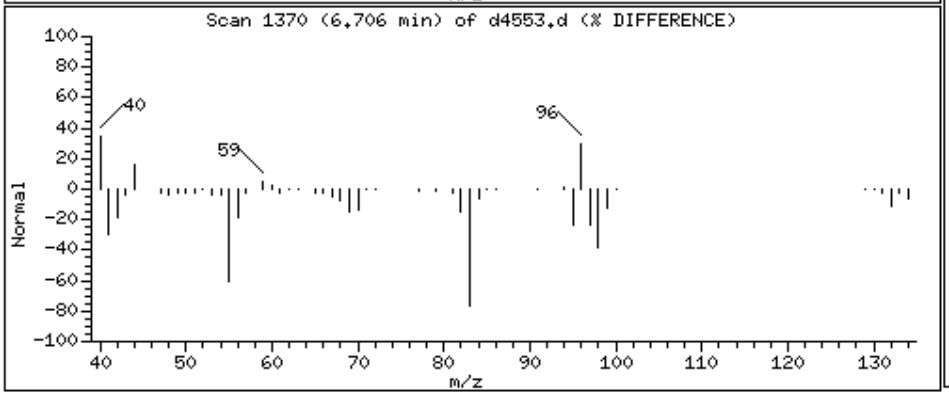






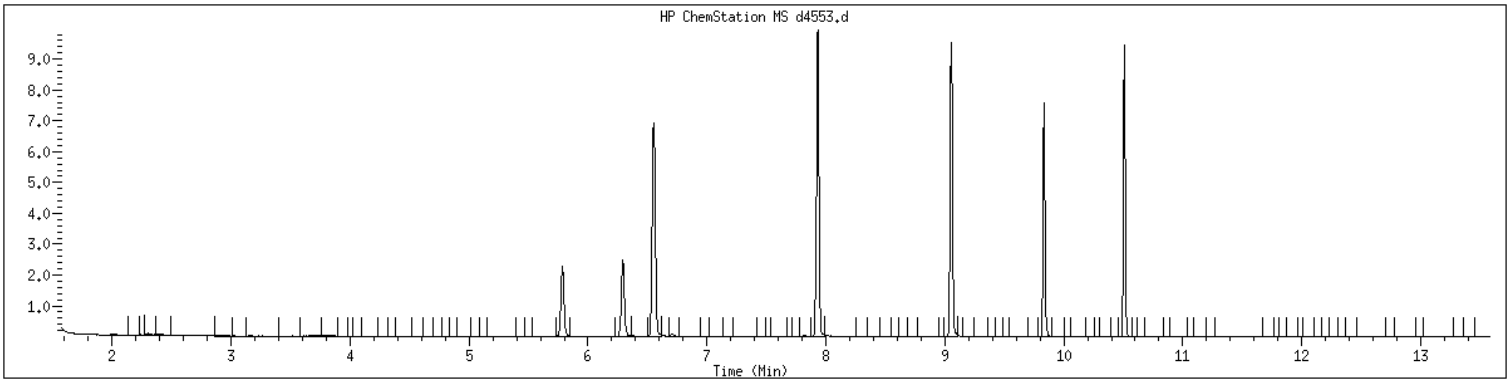






MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705220207 SampleType : SAMPLE
Injection Date: 05/25/2017 12:43 Instrument : msv13.i
Operator : JCK
Sample Info : 21705220207*
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	OMS-28-GW12-12-s
Collect Date:	05/19/17 Time: 0825	GCAL Sample ID:	21705220208
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4554
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1305	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	UQ	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	UQ	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	OMS-28-GW12-12-s
Collect Date:	05/19/17	Time:	0825	GCAL Sample ID:	21705220208
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4554
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	1305	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	UQ	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	UQ	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	UQ	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	UQ	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4554.d
Lab Smp Id: 21705220208
Inj Date : 25-MAY-2017 13:05
Operator : JCK Inst ID: msv13.i
Smp Info : 21705220208*
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	100201	49.8368	49.8	9551
$ 50 1,2-Dichloroethane-d4	67	6.293	6.290	(0.961)	65964	50.9722	51.0	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	439808	50.0000		
$ 68 Toluene-d8	98	7.928	7.928	(0.876)	418164	51.6114	51.6	
* 84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	172475	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	113395	46.2614	46.3	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	130918	50.0000		

Data File: /var/chem/msv13.i/2170525.s.b/d4554.d

Page 1

Date : 25-MAY-2017 13:05

Client ID:

Instrument: msv13.i

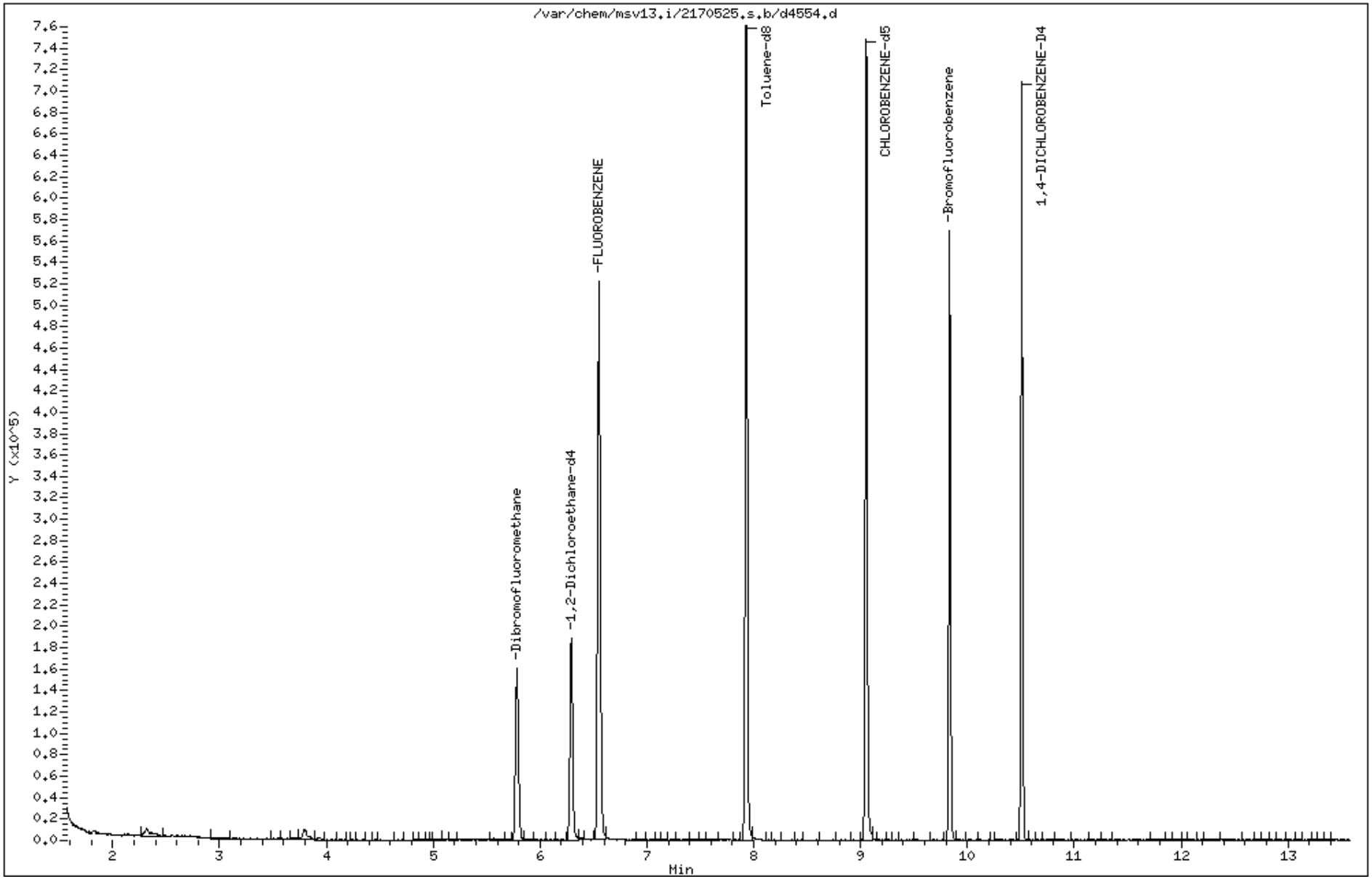
Sample Info: 21705220208*

Purge Volume: 5.0

Operator: JCK

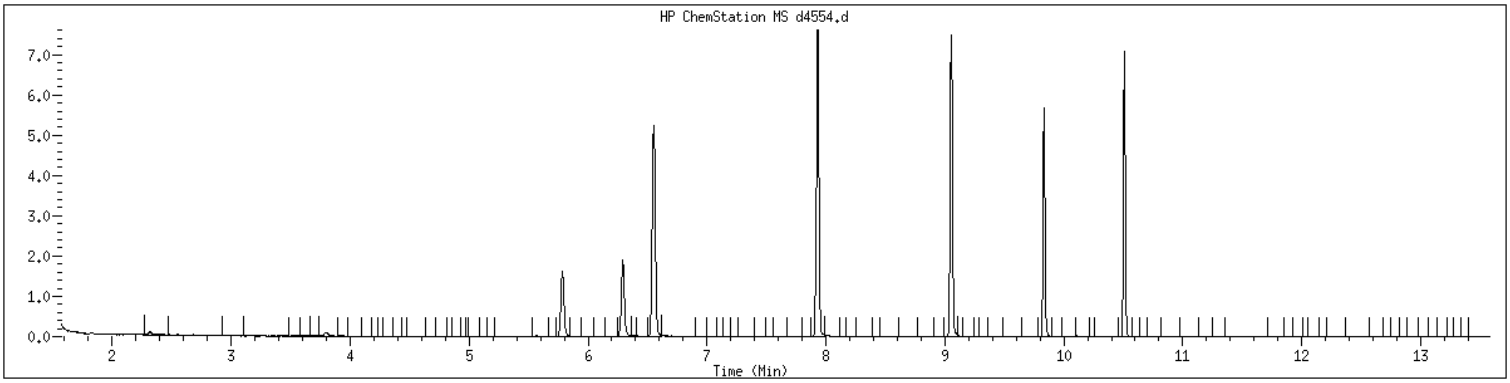
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 21705220208 SampleType : SAMPLE
Injection Date: 05/25/2017 13:05 Instrument : msv13.i
Operator : JCK
Sample Info : 21705220208*
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	MB1687620
Collect Date:	NA Time: NA	GCAL Sample ID:	1687620
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4545
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 0945	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	0.500	U	0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	0.500	U	0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	0.500	U	0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	0.500	U	0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	0.500	U	0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	0.500	U	0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	0.500	U	0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	0.500	U	0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	0.500	U	0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	0.500	U	0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	0.500	U	0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	0.500	U	0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	0.500	U	0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	0.500	U	0.200	0.500	1.00
78-93-3	2-Butanone	0.500	U	0.200	0.500	5.00
591-78-6	2-Hexanone	1.00	U	0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	0.500	U	0.200	0.500	5.00
67-64-1	Acetone	1.00	U	0.500	1.00	5.00
71-43-2	Benzene	0.500	U	0.200	0.500	1.00
74-97-5	Bromochloromethane	0.500	U	0.200	0.500	1.00
75-27-4	Bromodichloromethane	0.500	U	0.200	0.500	1.00
75-25-2	Bromoform	0.500	U	0.250	0.500	1.00
74-83-9	Bromomethane	1.00	U	0.500	1.00	1.00
75-15-0	Carbon disulfide	0.500	U	0.200	0.500	1.00
56-23-5	Carbon tetrachloride	0.500	U	0.250	0.500	1.00
108-90-7	Chlorobenzene	0.500	U	0.200	0.500	1.00
75-00-3	Chloroethane	0.500	U	0.250	0.500	1.00
67-66-3	Chloroform	0.500	U	0.200	0.500	1.00
74-87-3	Chloromethane	0.500	U	0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
110-82-7	Cyclohexane	1.00	U	0.500	1.00	2.00
124-48-1	Dibromochloromethane	0.500	U	0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	0.500	U	0.200	0.500	1.00
100-41-4	Ethylbenzene	0.500	U	0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	MB1687620
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1687620
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4545
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	0945	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	2.00	U	1.00	2.00	5.00
108-87-2	Methylcyclohexane	0.500	U	0.200	0.500	1.00
75-09-2	Methylene chloride	0.500	U	0.200	0.500	5.00
100-42-5	Styrene	0.500	U	0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
108-88-3	Toluene	0.500	U	0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	0.500	U	0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	0.500	U	0.200	0.500	1.00
1330-20-7	Xylene (total)	1.00	U	0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4545.d
Lab Smp Id: 1687620 Client Smp ID: MB
Inj Date : 25-MAY-2017 09:45
Operator : JCK Inst ID: msv13.i
Smp Info : 1687620*MB
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
$ 40 Dibromofluoromethane	111	5.784	5.784	(0.883)	139560	51.1822	51.2	9565
$ 50 1,2-Dichloroethane-d4	67	6.293	6.290	(0.961)	87571	49.8962	49.9	
* 53 FLUOROBENZENE	96	6.552	6.552	(1.000)	596462	50.0000		
$ 68 Toluene-d8	98	7.928	7.928	(0.876)	549822	51.7122	51.7	
* 84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	226336	50.0000		
$ 95 Bromofluorobenzene	174	9.836	9.832	(1.087)	160732	49.9689	50.0	
* 114 1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	181705	50.0000		

Data File: /var/chem/msv13.i/2170525.s.b/d4545.d

Date : 25-MAY-2017 09:45

Client ID: MB

Instrument: msv13.i

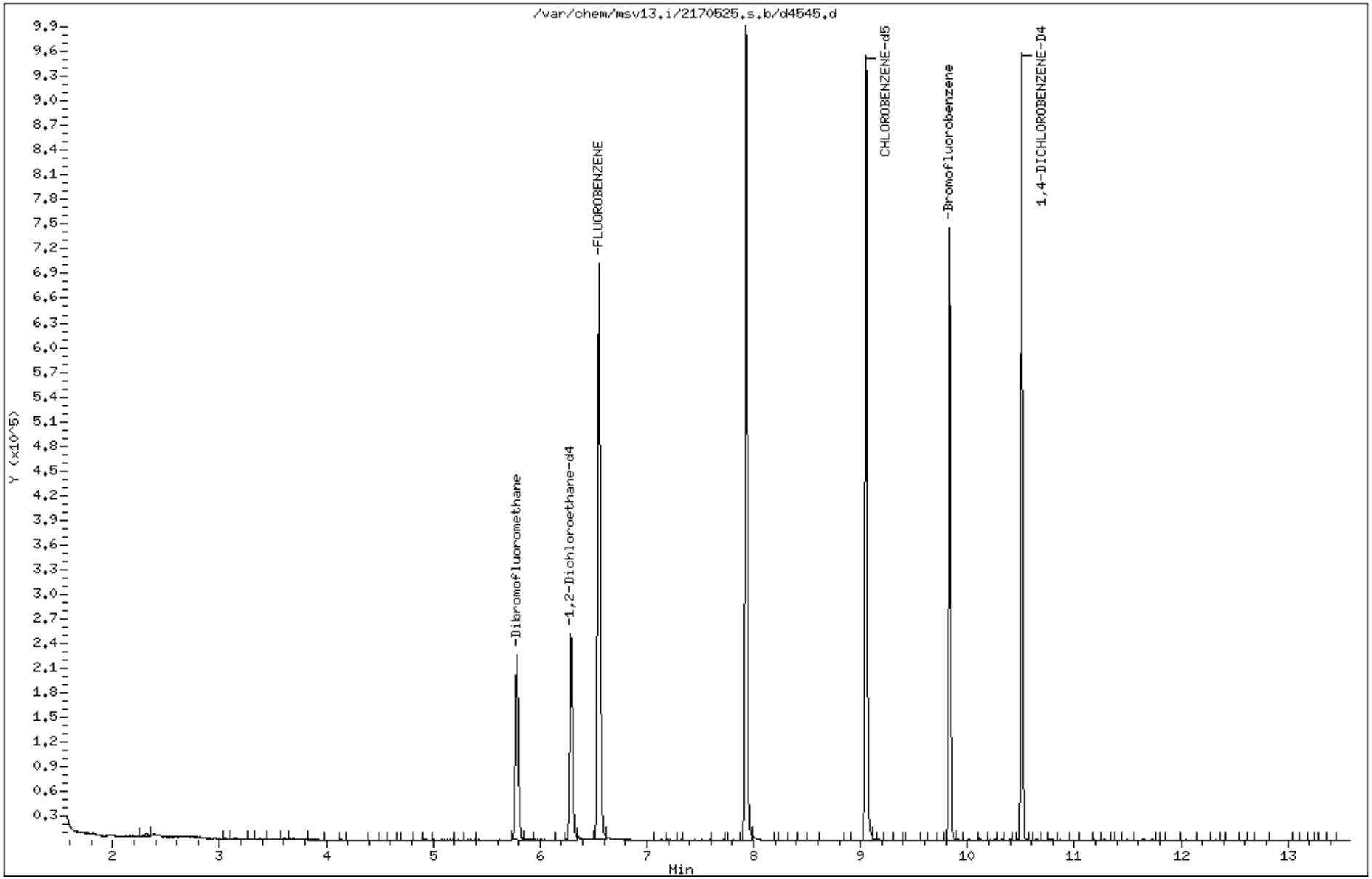
Sample Info: 1687620*MB

Purge Volume: 5.0

Operator: JCK

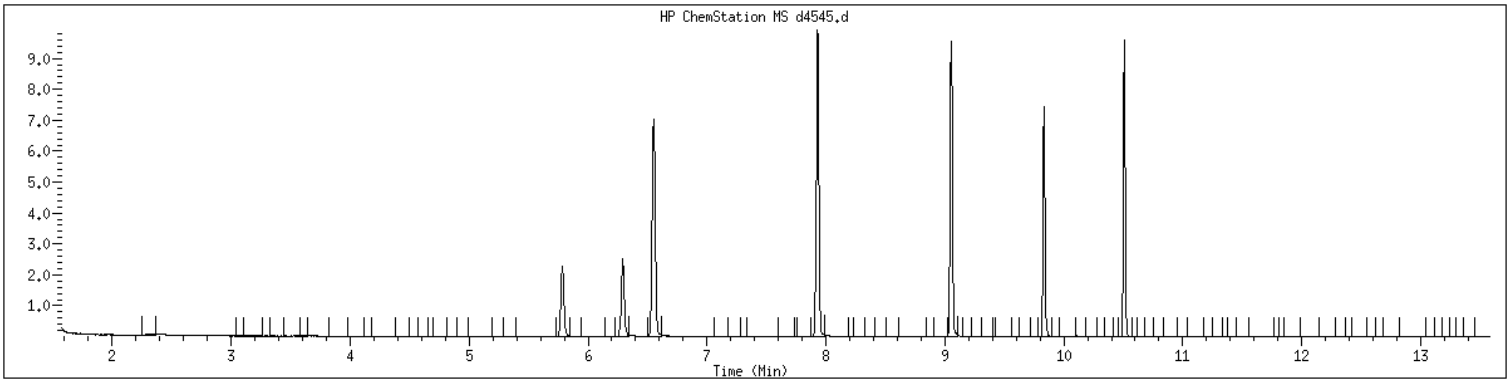
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1687620 SampleType : BLANK
Injection Date: 05/25/2017 09:45 Instrument : msv13.i
Operator : JCK
Sample Info : 1687620*MB
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	LCS1687621
Collect Date:	NA Time: NA	GCAL Sample ID:	1687621
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4541L
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 0815	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	47.7		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	44.2		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	46.9		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	49.2		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	42.8		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	44.7		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	45.5		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	43.4		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	48.9		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	48.0		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	47.1		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	49.3		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	48.9		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	48.2		0.200	0.500	1.00
78-93-3	2-Butanone	45.6		0.200	0.500	5.00
591-78-6	2-Hexanone	46.5		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	47.9		0.200	0.500	5.00
67-64-1	Acetone	42.2		0.500	1.00	5.00
71-43-2	Benzene	49.1		0.200	0.500	1.00
74-97-5	Bromochloromethane	47.3		0.200	0.500	1.00
75-27-4	Bromodichloromethane	49.4		0.200	0.500	1.00
75-25-2	Bromoform	48.4		0.250	0.500	1.00
74-83-9	Bromomethane	45.9		0.500	1.00	1.00
75-15-0	Carbon disulfide	45.0		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	47.5		0.250	0.500	1.00
108-90-7	Chlorobenzene	47.6		0.200	0.500	1.00
75-00-3	Chloroethane	47.2		0.250	0.500	1.00
67-66-3	Chloroform	47.9		0.200	0.500	1.00
74-87-3	Chloromethane	45.6		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	49.6		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	45.1		0.200	0.500	1.00
110-82-7	Cyclohexane	51.1		0.500	1.00	2.00
124-48-1	Dibromochloromethane	47.7		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	47.6		0.200	0.500	1.00
100-41-4	Ethylbenzene	49.7		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	52.0		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	LCS1687621
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1687621
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4541L
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	0815	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	40.5		1.00	2.00	5.00
108-87-2	Methylcyclohexane	50.8		0.200	0.500	1.00
75-09-2	Methylene chloride	44.0		0.200	0.500	5.00
100-42-5	Styrene	53.6		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	45.4		0.200	0.500	1.00
127-18-4	Tetrachloroethene	45.7		0.200	0.500	1.00
108-88-3	Toluene	47.2		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	45.9		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	44.2		0.200	0.500	1.00
79-01-6	Trichloroethene	47.0		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	48.3		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	43.7		0.200	0.500	1.00
1330-20-7	Xylene (total)	153		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4541L.d
Lab Smp Id: 1687621 Client Smp ID: LCS
Inj Date : 25-MAY-2017 08:15
Operator : JCK Inst ID: msv13.i
Smp Info : 1687621*LCS
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	102475	47.5952	47.6	
2 Chloromethane ++	50	1.866	1.866	(0.285)	108686	45.5766	45.6	
3 Vinyl Chloride +	62	1.952	1.952	(0.298)	123258	46.4209	46.4	
6 Bromomethane	94	2.279	2.279	(0.348)	92488	45.8930	45.9	
7 Chloroethane	64	2.413	2.413	(0.368)	108677	47.1586	47.2	(M1)
8 Trichlorofluoromethane	101	2.556	2.556	(0.390)	183868	48.2807	48.3	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	99532	42.8426	42.8	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	335850	44.9650	45.0	
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	97768	43.7491	43.7	
13 Methyl Iodide	142	3.294	3.294	(0.503)	59997	34.6543	34.7	
14 Acrolein	56	3.549	3.549	(0.542)	59886	200.085	200	
16 Methylene Chloride	49	3.849	3.849	(0.587)	148131	44.0127	44.0	
17 Acetone	43	3.928	3.928	(0.600)	60563	42.2355	42.2	
18 trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	142219	45.8691	45.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	91380	40.4761	40.5	9378
	20 Hexane	57	4.134	4.134	(0.631)	140608	46.7827	46.8	9732
	21 MTBE	73	4.187	4.187	(0.639)	289455	45.4498	45.4	9821
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	205609	49.2075	49.2	
	27 Acrylonitrile	53	4.816	4.816	(0.735)	247767	249.345	249	
	28 Vinyl Acetate	43	5.038	5.038	(0.769)	96008	45.5410	45.5	
	29 cis-1,2-Dichloroethene	61	5.322	5.322	(0.812)	152499	49.6077	49.6	
M	75 Total 1,2-Dichloroethene	61				294718	95.4769	95.5	
	30 2,2-Dichloropropane	77	5.427	5.427	(0.828)	138939	50.3688	50.4	
	32 Cyclohexane	56	5.514	5.514	(0.842)	189254	51.0661	51.1	9832
	34 Bromochloromethane	128	5.525	5.525	(0.843)	53492	47.2652	47.3	
	35 Chloroform +	83	5.604	5.604	(0.855)	190929	47.9286	47.9	
	36 Carbon Tetrachloride	117	5.724	5.724	(0.874)	123818	47.5040	47.5	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	112716	48.6738	48.7	9562
	41 1,1,1-Trichloroethane	97	5.798	5.798	(0.885)	150709	47.7396	47.7	
	44 2-Butanone	43	5.915	5.915	(0.903)	74641	45.5517	45.6	
	43 1,1-Dichloropropene	75	5.918	5.918	(0.903)	146582	50.0781	50.1	
	46 Benzene	78	6.158	6.158	(0.940)	488796	49.1196	49.1	
$	50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	75945	50.9515	51.0	
	51 1,2-Dichloroethane	62	6.353	6.353	(0.970)	157305	47.1252	47.1	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	506561	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	188316	50.7780	50.8	9759
	56 Trichloroethene	130	6.706	6.706	(1.023)	115372	47.0101	47.0	
	57 Dibromomethane	93	7.096	7.096	(1.083)	73180	48.7328	48.7	
	59 1,2-Dichloropropane +	63	7.185	7.185	(1.097)	124736	49.2564	49.3	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	156728	49.4421	49.4	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	180467	49.8991	49.9	9891
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	182759	45.1411	45.1	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	483068	47.7204	47.7	
	69 Toluene +	91	7.969	7.969	(0.880)	526089	47.2099	47.2	
	71 Tetrachloroethene	164	8.261	8.261	(0.913)	90123	45.6541	45.7	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	140747	47.8680	47.9	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	161430	44.2130	44.2	
M	82 1-3 Dichloropropene total	100				344189	89.3541	89.4	0
	76 1,1,2-Trichloroethane	97	8.404	8.404	(0.928)	114125	46.8916	46.9	
	78 Dibromochloromethane	129	8.535	8.535	(0.943)	114567	47.6874	47.7	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	209767	49.1733	49.2	
	80 1,2-Dibromoethane(EDB)	107	8.707	8.707	(0.962)	109934	48.8789	48.9	
	83 2-Hexanone	43	8.854	8.854	(0.978)	101764	46.4725	46.5	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	148922	51.8687	51.9	9729
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	215491	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	339276	47.6003	47.6	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	185081	49.6977	49.7	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	111000	48.6536	48.7	
	89 p,m-Xylene	106	9.169	9.169	(1.013)	454989	101.723	102	
	90 o-Xylene	106	9.453	9.453	(1.044)	217382	51.4372	51.4	
M	121 TOTAL XYLENE	106				672371	153.161	153	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
	91 Styrene	104	9.487	9.487	(1.048)	370031	53.6297	53.6	
	92 Bromoform ++	173	9.513	9.513	(1.051)	92669	48.4280	48.4	
	93 Isopropylbenzene	105	9.648	9.648	(1.066)	564364	51.9831	52.0	
$	95 Bromofluorobenzene	174	9.832	9.832	(1.086)	155044	50.6264	50.6	
	96 Bromobenzene	77	9.903	9.903	(0.943)	266707	46.8333	46.8	
	97 n-Propylbenzene	91	9.903	9.903	(0.943)	705597	49.6951	49.7	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	182527	44.2110	44.2	
	99 2-Chlorotoluene	91	10.008	10.008	(0.953)	470023	48.1137	48.1	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	472130	50.6690	50.7	
	100 1,2,3-Trichloropropane	75	10.038	10.038	(0.955)	216665	48.9749	49.0	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	45224	49.4400	49.4	
	104 4-Chlorotoluene	91	10.109	10.109	(0.962)	419130	49.4862	49.5	
	105 tert-butylbenzene	91	10.214	10.214	(0.972)	259424	49.1508	49.2	
	107 1,2,4-Trimethylbenzene	105	10.252	10.252	(0.976)	467383	50.7989	50.8	
	108 sec-Butylbenzene	105	10.319	10.319	(0.982)	600863	50.4572	50.5	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.990)	492447	53.1191	53.1	
	113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	280933	48.8550	48.9	
*	114 1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	200940	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	282023	48.2075	48.2	
	117 n-Butylbenzene	91	10.649	10.649	(1.014)	460893	53.0250	53.0	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	273164	47.9801	48.0	
	119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	34669	43.3743	43.4	
	120 Hexachlorobutadiene	225	11.733	11.733	(1.117)	72811	50.1789	50.2	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	155102	45.4795	45.5	
	124 Naphthalene	128	12.055	12.055	(1.147)	422857	42.0470	42.0	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	154199	44.6596	44.7	
	22 tert-Butyl Alcohol	59	4.337	4.337	(0.662)	9218	31.9185	31.9	9346
	24 Isopropyl Ether	45	4.629	4.629	(0.706)	355239	49.7720	49.8	9794
	25 Chloroprene	53	4.723	4.723	(0.721)	143980	48.4221	48.4	9748
	52 Isobutyl Alcohol	43	6.391	6.391	(0.975)	26431	195.276	195	9319
	62 1,4- Dioxane	58	7.422	7.422	(1.133)	23599	996.009	996	9618
	170 3,4-dichloro-1-butene	75	8.576	8.576	(0.947)	139083	53.0951	53.1	9746
	169 cis-1,4-dichloro-2-butene	53	9.870	9.870	(0.939)	55240	51.7679	51.8	9818

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.

Data File: /var/chem/msv13.i/2170525.s.b/d4541L.d

Page 1

Date : 25-MAY-2017 08:15

Client ID: LCS

Instrument: msv13.i

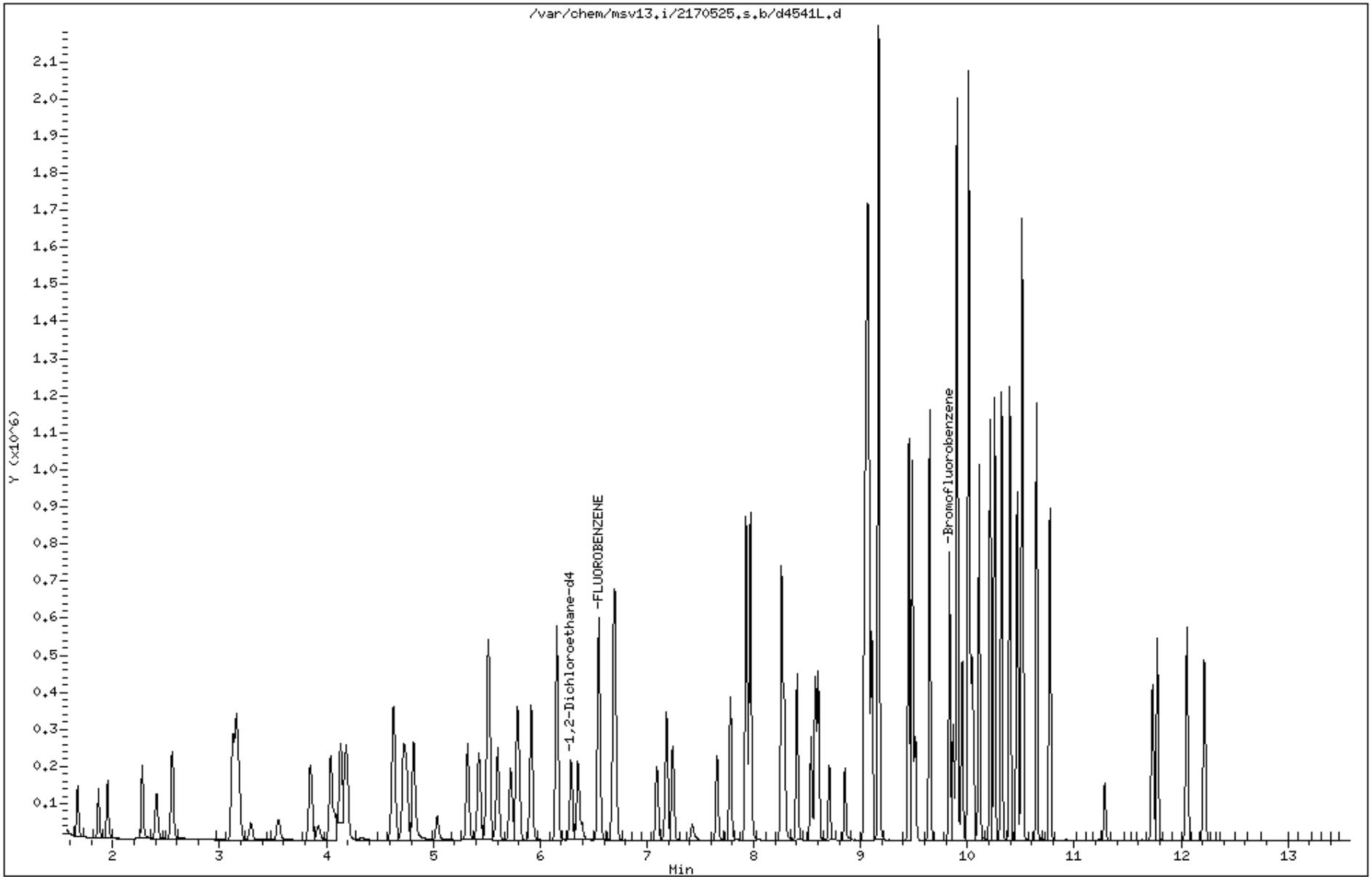
Sample Info: 1687621*LCS

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

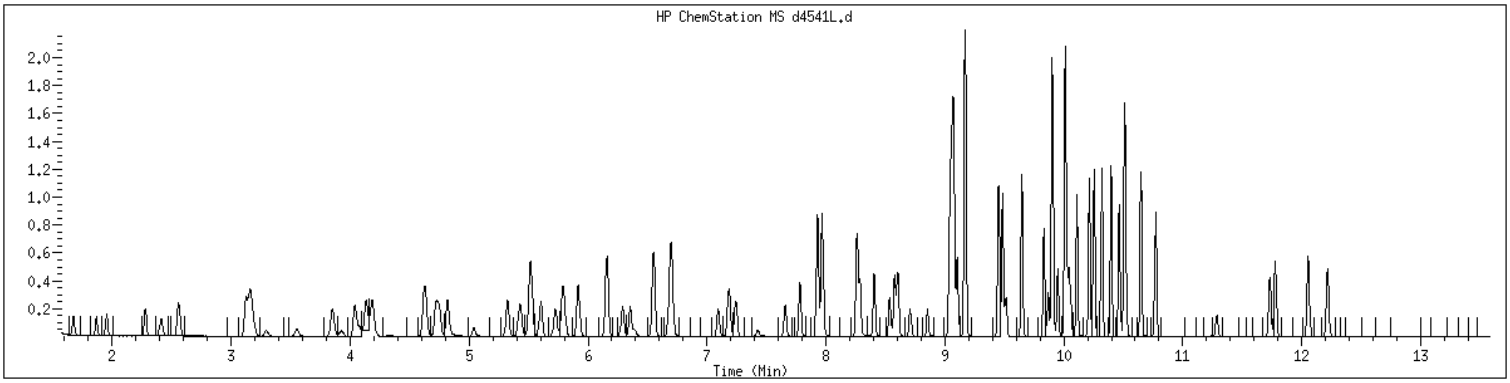
Column diameter: 0.25



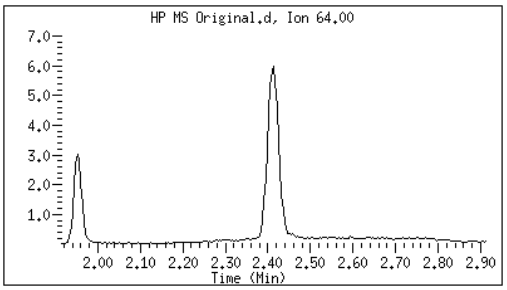
Data file : /var/chem/msv13.i/2170525.s.b/d4541L.d Page: 1
Report Date: 05/25/2017 12:30

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1687621 SampleType : LCS
Injection Date: 05/25/2017 08:15 Instrument : msv13.i
Operator : JCK
Sample Info : 1687621*LCS
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1

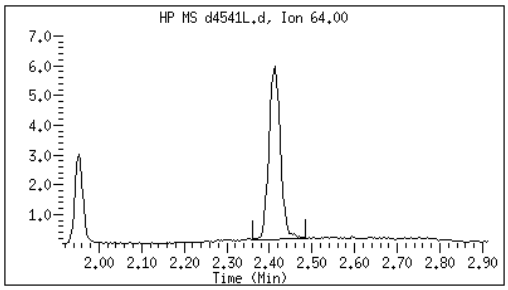


Original		Final
7 Chloroethane	CAS#: 75-00-3	Reason: M1



Electronic Signature
Applied

User: jck2
Date: 05/25/2017 08:33



M1 - Target system did not integrate

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202	Client Sample ID:	LCSD1687622
Collect Date:	NA Time: NA	GCAL Sample ID:	1687622
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4542
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 0838	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
71-55-6	1,1,1-Trichloroethane	47.1		0.200	0.500	1.00
79-34-5	1,1,2,2-Tetrachloroethane	44.8		0.200	0.500	1.00
79-00-5	1,1,2-Trichloroethane	47.7		0.200	0.500	1.00
75-34-3	1,1-Dichloroethane	60.9		0.200	0.500	1.00
75-35-4	1,1-Dichloroethene	47.8		0.200	0.500	1.00
87-61-6	1,2,3-Trichlorobenzene	44.9		0.200	0.500	1.00
120-82-1	1,2,4-Trichlorobenzene	45.6		0.200	0.500	1.00
96-12-8	1,2-Dibromo-3-chloropropane	47.6		0.200	0.500	1.00
106-93-4	1,2-Dibromoethane	50.1		0.200	0.500	1.00
95-50-1	1,2-Dichlorobenzene	47.4		0.200	0.500	1.00
107-06-2	1,2-Dichloroethane	46.9		0.200	0.500	1.00
78-87-5	1,2-Dichloropropane	48.6		0.200	0.500	1.00
541-73-1	1,3-Dichlorobenzene	48.5		0.200	0.500	1.00
106-46-7	1,4-Dichlorobenzene	47.1		0.200	0.500	1.00
78-93-3	2-Butanone	48.8		0.200	0.500	5.00
591-78-6	2-Hexanone	51.1		0.500	1.00	5.00
108-10-1	4-Methyl-2-pentanone	49.9		0.200	0.500	5.00
67-64-1	Acetone	57.9		0.500	1.00	5.00
71-43-2	Benzene	47.6		0.200	0.500	1.00
74-97-5	Bromochloromethane	47.2		0.200	0.500	1.00
75-27-4	Bromodichloromethane	47.3		0.200	0.500	1.00
75-25-2	Bromoform	49.7		0.250	0.500	1.00
74-83-9	Bromomethane	44.3		0.500	1.00	1.00
75-15-0	Carbon disulfide	49.2		0.200	0.500	1.00
56-23-5	Carbon tetrachloride	47.0		0.250	0.500	1.00
108-90-7	Chlorobenzene	47.3		0.200	0.500	1.00
75-00-3	Chloroethane	46.3		0.250	0.500	1.00
67-66-3	Chloroform	47.0		0.200	0.500	1.00
74-87-3	Chloromethane	45.5		0.200	0.500	1.00
156-59-2	cis-1,2-Dichloroethene	60.3		0.200	0.500	1.00
10061-01-5	cis-1,3-Dichloropropene	44.7		0.200	0.500	1.00
110-82-7	Cyclohexane	49.7		0.500	1.00	2.00
124-48-1	Dibromochloromethane	49.0		0.200	0.500	1.00
75-71-8	Dichlorodifluoromethane	45.0		0.200	0.500	1.00
100-41-4	Ethylbenzene	48.4		0.200	0.500	1.00
98-82-8	Isopropylbenzene (Cumene)	50.6		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	217052202			Client Sample ID:	LCSD1687622
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1687622
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2170525/d4542
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17	Time:	0838	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
79-20-9	Methyl Acetate	58.7		1.00	2.00	5.00
108-87-2	Methylcyclohexane	48.0		0.200	0.500	1.00
75-09-2	Methylene chloride	57.7		0.200	0.500	5.00
100-42-5	Styrene	52.6		0.200	0.500	1.00
1634-04-4	tert-Butyl methyl ether (MTBE)	60.3		0.200	0.500	1.00
127-18-4	Tetrachloroethene	45.7		0.200	0.500	1.00
108-88-3	Toluene	46.2		0.200	0.500	1.00
156-60-5	trans-1,2-Dichloroethene	60.6		0.200	0.500	1.00
10061-02-6	trans-1,3-Dichloropropene	43.6		0.200	0.500	1.00
79-01-6	Trichloroethene	46.2		0.200	0.500	1.00
75-69-4	Trichlorofluoromethane	45.6		0.200	0.500	1.00
76-13-1	Trichlorotrifluoroethane	48.4		0.200	0.500	1.00
1330-20-7	Xylene (total)	150		0.400	1.00	3.00

FORM I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4542.d
Lab Smp Id: 1687622 Client Smp ID: LCSD
Inj Date : 25-MAY-2017 08:38
Operator : JCK Inst ID: msv13.i
Smp Info : 1687622*LCSD
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	101709	44.9625	45.0	
2 Chloromethane ++	50	1.870	1.866	(0.285)	114123	45.5500	45.5	
3 Vinyl Chloride +	62	1.953	1.952	(0.298)	129194	46.3113	46.3	
6 Bromomethane	94	2.279	2.279	(0.348)	93750	44.2770	44.3	
7 Chloroethane	64	2.414	2.413	(0.368)	112074	46.2886	46.3	
8 Trichlorofluoromethane	101	2.560	2.556	(0.391)	182387	45.5835	45.6	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	116589	47.7657	47.8	
11 Carbon Disulfide	76	3.160	3.156	(0.482)	386108	49.2022	49.2	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.178	(0.484)	113721	48.4350	48.4	
13 Methyl Iodide	142	3.298	3.294	(0.503)	78297	41.8305	41.8	
14 Acrolein	56	3.553	3.549	(0.542)	74594	237.214	237	
16 Methylene Chloride	49	3.849	3.849	(0.587)	204083	57.7145	57.7	
17 Acetone	43	3.928	3.928	(0.600)	87157	57.8521	57.9	
18 trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	197353	60.5833	60.6	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.078	(0.623)	139181	58.6777	58.7	9499
	20 Hexane	57	4.138	4.134	(0.632)	181934	57.6150	57.6	9785
	21 MTBE	73	4.190	4.187	(0.640)	403218	60.2612	60.3	9806
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	267259	60.8791	60.9	
	27 Acrylonitrile	53	4.816	4.816	(0.735)	334762	320.656	321	
	28 Vinyl Acetate	43	5.041	5.038	(0.769)	122167	55.0120	55.0	
	29 cis-1,2-Dichloroethene	61	5.326	5.322	(0.813)	194807	60.3161	60.3	
M	75 Total 1,2-Dichloroethene	61				392160	120.899	121	
	30 2,2-Dichloropropane	77	5.431	5.427	(0.829)	173681	59.9289	59.9	
	32 Cyclohexane	56	5.514	5.514	(0.842)	193326	49.6505	49.7	9746
	34 Bromochloromethane	128	5.525	5.525	(0.843)	56124	47.2006	47.2	
	35 Chloroform +	83	5.604	5.604	(0.855)	196546	46.9606	47.0	
	36 Carbon Tetrachloride	117	5.727	5.724	(0.874)	128600	46.9606	47.0	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	119562	49.1415	49.1	9512
	41 1,1,1-Trichloroethane	97	5.799	5.798	(0.885)	156170	47.0851	47.1	
	44 2-Butanone	43	5.915	5.915	(0.903)	84013	48.8000	48.8	
	43 1,1-Dichloropropene	75	5.919	5.918	(0.903)	151399	49.2307	49.2	
	46 Benzene	78	6.158	6.158	(0.940)	497812	47.6145	47.6	
$	50 1,2-Dichloroethane-d4	67	6.293	6.290	(0.961)	78621	50.2045	50.2	
	51 1,2-Dichloroethane	62	6.357	6.353	(0.970)	164508	46.9076	46.9	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	532213	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	186915	47.9710	48.0	9739
	56 Trichloroethene	130	6.706	6.706	(1.023)	119211	46.2332	46.2	
	57 Dibromomethane	93	7.096	7.096	(1.083)	75539	47.8792	47.9	
	59 1,2-Dichloropropane +	63	7.186	7.185	(1.097)	129180	48.5526	48.6	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	157599	47.3206	47.3	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	190377	50.1021	50.1	9843
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	190241	44.7297	44.7	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	502480	48.0532	48.1	
	69 Toluene +	91	7.969	7.969	(0.880)	531292	46.1546	46.2	
	71 Tetrachloroethene	164	8.261	8.261	(0.913)	93167	45.6893	45.7	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	151586	49.9083	49.9	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	167398	43.6492	43.6	
M	82 1-3 Dichloropropene total	100				357639	88.3789	88.4	0
	76 1,1,2-Trichloroethane	97	8.408	8.404	(0.929)	119804	47.6533	47.7	
	78 Dibromochloromethane	129	8.539	8.535	(0.943)	121545	48.9766	49.0	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	219552	49.8239	49.8	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.707	(0.962)	116366	50.0868	50.1	
	83 2-Hexanone	43	8.854	8.854	(0.978)	115527	51.0732	51.1	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	149708	50.4776	50.5	3280(M2)
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	222598	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	348357	47.3140	47.3	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	186212	48.4050	48.4	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	115160	48.8654	48.9	
	89 p,m-Xylene	106	9.169	9.169	(1.013)	457201	98.9544	99.0	
	90 o-Xylene	106	9.454	9.453	(1.044)	221306	50.6938	50.7	
M	121 TOTAL XYLENE	106				678507	149.648	150	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY	
	91 Styrene	104	9.487	9.487	(1.048)	375230	52.6469	52.6		
	92 Bromoform ++	173	9.514	9.513	(1.051)	98156	49.6577	49.7		
	93 Isopropylbenzene	105	9.648	9.648	(1.066)	567093	50.5667	50.6		
$	95 Bromofluorobenzene	174	9.832	9.832	(1.086)	161406	51.0210	51.0		
	96 Bromobenzene	77	9.903	9.903	(0.942)	267763	45.7985	45.8		
	97 n-Propylbenzene	91	9.903	9.903	(0.942)	694148	47.6200	47.6		
	98 1,1,2,2-Tetrachloroethane++	83	9.948	9.952	(0.947)	190086	44.8469	44.8		
	99 2-Chlorotoluene	91	10.012	10.008	(0.953)	470080	46.8707	46.9		
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	471390	49.2766	49.3		
	100 1,2,3-Trichloropropane	75	10.042	10.038	(0.955)	221738	48.8208	48.8		
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	47553	50.6369	50.6		
	104 4-Chlorotoluene	91	10.110	10.109	(0.962)	414011	47.6132	47.6		
	105 tert-butylbenzene	91	10.215	10.214	(0.972)	255523	47.1553	47.2		(M2)
	107 1,2,4-Trimethylbenzene	105	10.256	10.252	(0.976)	472890	50.0635	50.1		
	108 sec-Butylbenzene	105	10.319	10.319	(0.982)	591601	48.3900	48.4		
	110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	489823	51.4648	51.5		
	113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	286049	48.4537	48.5		
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.507	(1.000)	206294	50.0000			
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	283013	47.1212	47.1		
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	443383	49.6866	49.7		
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	277309	47.4440	47.4		
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.287	(1.074)	39043	47.5789	47.6		
	120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	72971	48.9840	49.0		
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	159544	45.5660	45.6		
	124 Naphthalene	128	12.055	12.055	(1.147)	455973	44.0905	44.1		
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	159209	44.9086	44.9		
	22 tert-Butyl Alcohol	59	4.340	4.337	(0.662)	15091	49.7359	49.7	9302	
	24 Isopropyl Ether	45	4.629	4.629	(0.706)	483031	64.4148	64.4	9774	
	25 Chloroprene	53	4.726	4.723	(0.721)	187734	60.0939	60.1	9557	
	52 Isobutyl Alcohol	43	6.391	6.391	(0.975)	33267	233.936	234	9348	
	62 1,4- Dioxane	58	7.426	7.422	(1.133)	29202	1173.08	1170	9764	
	170 3,4-dichloro-1-butene	75	8.580	8.576	(0.948)	146274	54.0574	54.1	9810	
	169 cis-1,4-dichloro-2-butene	53	9.870	9.870	(0.939)	53015	48.3933	48.4	9827	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170525.s.b/d4542.d

Page 1

Date : 25-MAY-2017 08:38

Client ID: LCSD

Instrument: msv13.i

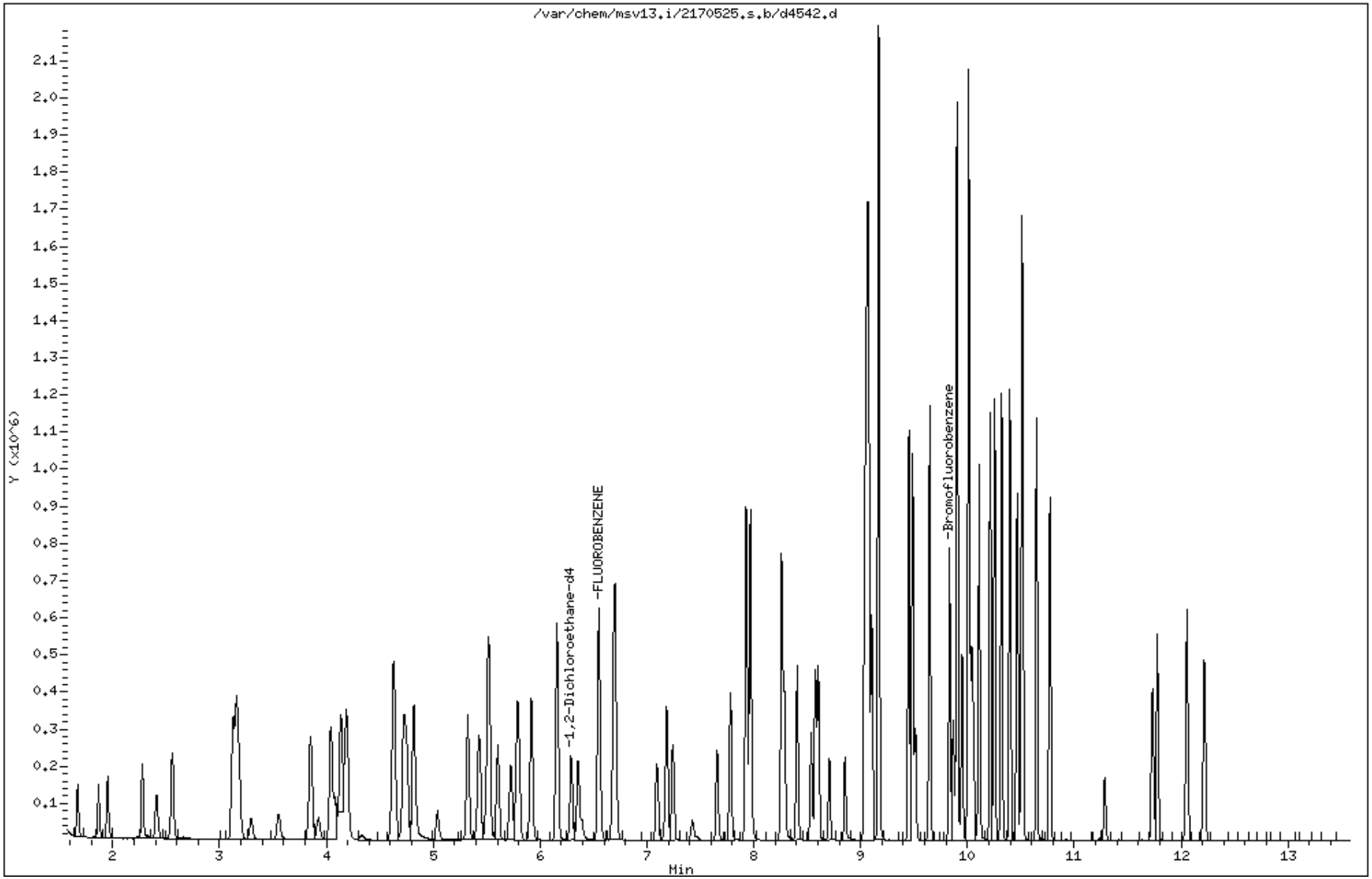
Sample Info: 1687622*LCSD

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

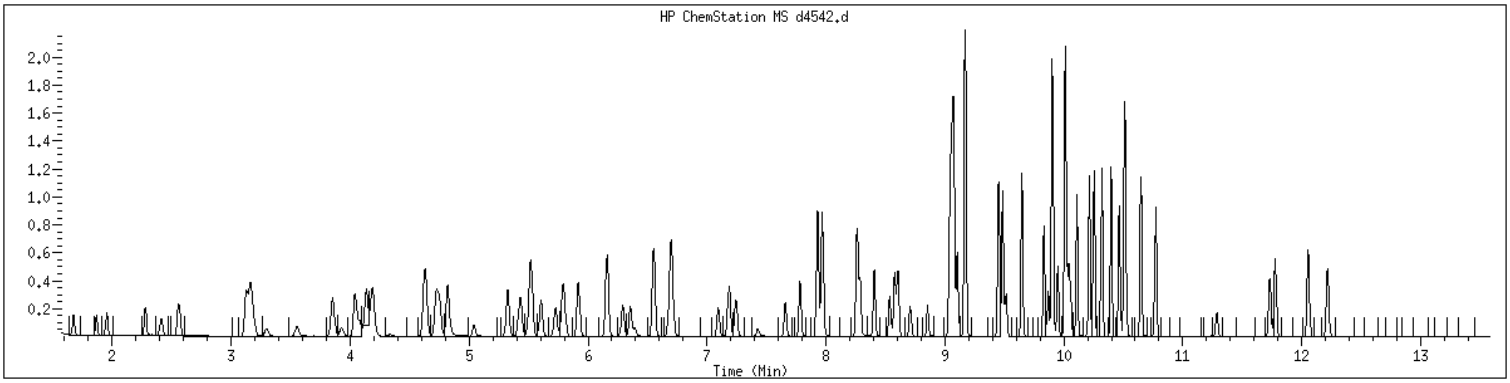
Column diameter: 0.25



Report Date: 05/25/2017 12:30

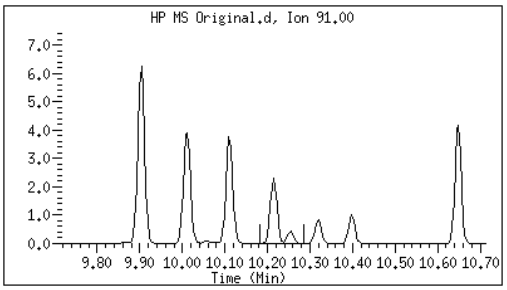
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1687622 SampleType : LCSD
Injection Date: 05/25/2017 08:38 Instrument : msv13.i
Operator : JCK
Sample Info : 1687622*LCSD
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



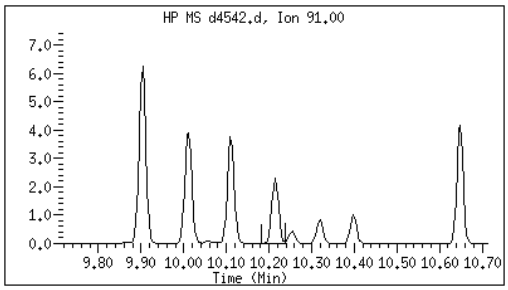
Original Final

105 tert-butylbenzene CAS#: 98-06-6 Reason: M2

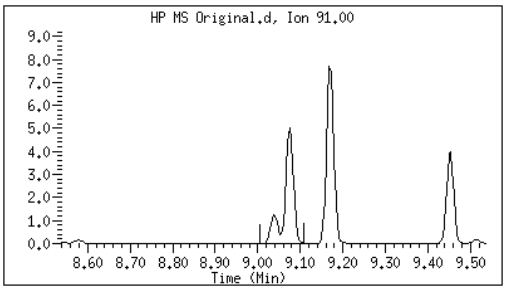


Electronic Signature Applied

User: jck2
Date: 05/25/2017 08:59

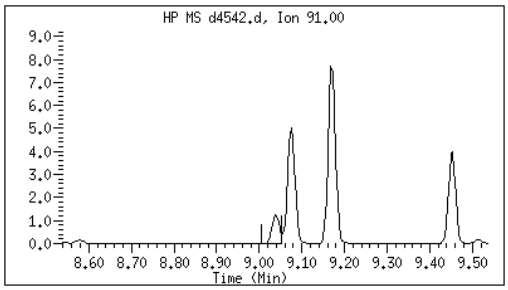


86 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/25/2017 08:59



M2 - Target system integrated incorrectly

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 217052202 Analytical Method: EPA 8260B

	Client Sample ID	GCALSample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1 .	OMS-28-GW11-11-s	21705220201	101		94		99		102		0
2 .	LCS1687621	1687621	102		101		97		95		0
3 .	LCSD1687622	1687622	100		102		98		96		0
4 .	OMS-28-GW11-11-c	21705220202	100		92		97		104		0
5 .	OMS-28-GW58-31-s	21705220203	103		100		104		104		0
6 .	OMS-28-GW49-12-s	21705220204	98		92		100		104		0
7 .	OMS-28-GW62-19-s	21705220205	101		93		100		104		0
8 .	OMS-28-GW34-31-s	21705220206	101		92		99		103		0
9 .	OMS-28-GW06-11-s	21705220207	102		99		102		102		0
10 .	OMS-28-GW12-12-s	21705220208	102		93		100		103		0
11 .	MB1687620	1687620	100		100		102		103		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217052202

Analytical Method: EPA 8260B Analytical Batch: 611089

GCAL QC ID: 1687621

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
1,1,1-Trichloroethane	ug/L	50	0	47.7	95		74 - 131
1,1,2,2-Tetrachloroethane	ug/L	50	0	44.2	88		71 - 121
1,1,2-Trichloroethane	ug/L	50	0	46.9	94		80 - 119
1,1-Dichloroethane	ug/L	50	0	49.2	98		77 - 125
1,1-Dichloroethene	ug/L	50	0	42.8	86		71 - 131
1,2,3-Trichlorobenzene	ug/L	50	0	44.7	89		69 - 129
1,2,4-Trichlorobenzene	ug/L	50	0	45.5	91		69 - 130
1,2-Dibromo-3-chloropropane	ug/L	50	0	43.4	87		62 - 128
1,2-Dibromoethane	ug/L	50	0	48.9	98		77 - 121
1,2-Dichlorobenzene	ug/L	50	0	48	96		80 - 119
1,2-Dichloroethane	ug/L	50	0	47.1	94		73 - 128
1,2-Dichloropropane	ug/L	50	0	49.3	99		78 - 122
1,3-Dichlorobenzene	ug/L	50	0	48.9	98		80 - 119
1,4-Dichlorobenzene	ug/L	50	0	48.2	96		79 - 118
2-Butanone	ug/L	50	0	45.6	91		56 - 143
2-Hexanone	ug/L	50	0	46.5	93		57 - 139
4-Methyl-2-pentanone	ug/L	50	0	47.9	96		67 - 130
Acetone	ug/L	50	0	42.2	84		39 - 160
Benzene	ug/L	50	0	49.1	98		79 - 120
Bromochloromethane	ug/L	50	0	47.3	95		78 - 123
Bromodichloromethane	ug/L	50	0	49.4	99		79 - 125
Bromoform	ug/L	50	0	48.4	97		66 - 130
Bromomethane	ug/L	50	0	45.9	92		53 - 141
Carbon disulfide	ug/L	50	0	45	90		64 - 133
Carbon tetrachloride	ug/L	50	0	47.5	95		72 - 136
Chlorobenzene	ug/L	50	0	47.6	95		82 - 118
Chloroethane	ug/L	50	0	47.2	94		60 - 138
Chloroform	ug/L	50	0	47.9	96		79 - 124
Chloromethane	ug/L	50	0	45.6	91		50 - 139
Cyclohexane	ug/L	50	0	51.1	102		71 - 130
Dibromochloromethane	ug/L	50	0	47.7	95		74 - 126
Dichlorodifluoromethane	ug/L	50	0	47.6	95		32 - 152
Ethylbenzene	ug/L	50	0	49.7	99		79 - 121
Isopropylbenzene (Cumene)	ug/L	50	0	52	104		72 - 131
Methyl Acetate	ug/L	50	0	40.5	81		56 - 136
Methylcyclohexane	ug/L	50	0	50.8	102		72 - 132
Methylene chloride	ug/L	50	0	44	88		74 - 124
Styrene	ug/L	50	0	53.6	107		78 - 123
Tetrachloroethene	ug/L	50	0	45.7	91		74 - 129

RPD : 6 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217052202

Analytical Method: EPA 8260B Analytical Batch: 611089

Toluene	ug/L	50	0	47.2	94		80	-	121
Trichloroethene	ug/L	50	0	47	94		79	-	123
Trichlorofluoromethane	ug/L	50	0	48.3	97		65	-	141
Trichlorotrifluoroethane	ug/L	50	0	43.7	87		70	-	136
Xylene (total)	ug/L	150	0	153	102		79	-	121
cis-1,2-Dichloroethene	ug/L	50	0	49.6	99		78	-	123
cis-1,3-Dichloropropene	ug/L	50	0	45.1	90		75	-	124
tert-Butyl methyl ether (MTBE)	ug/L	50	0	45.4	91		71	-	124
trans-1,2-Dichloroethene	ug/L	50	0	45.9	92		75	-	124
trans-1,3-Dichloropropene	ug/L	50	0	44.2	88		73	-	127

RPD : 6 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217052202

Analytical Method: EPA 8260B

Analytical Batch: 611089

GCAL QC ID: 1687622

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
1,1,1-Trichloroethane	ug/L	50	47.1	94		1		74 - 131	0 - 20
1,1,2,2-Tetrachloroethane	ug/L	50	44.8	90		1		71 - 121	0 - 20
1,1,2-Trichloroethane	ug/L	50	47.7	95		2		80 - 119	0 - 20
1,1-Dichloroethane	ug/L	50	60.9	122		21	*	77 - 125	0 - 20
1,1-Dichloroethene	ug/L	50	47.8	96		11		71 - 131	0 - 20
1,2,3-Trichlorobenzene	ug/L	50	44.9	90		.4		69 - 129	0 - 20
1,2,4-Trichlorobenzene	ug/L	50	45.6	91		.2		69 - 130	0 - 20
1,2-Dibromo-3-chloropropane	ug/L	50	47.6	95		9		62 - 128	0 - 20
1,2-Dibromoethane	ug/L	50	50.1	100		2		77 - 121	0 - 20
1,2-Dichlorobenzene	ug/L	50	47.4	95		1		80 - 119	0 - 20
1,2-Dichloroethane	ug/L	50	46.9	94		.4		73 - 128	0 - 20
1,2-Dichloropropane	ug/L	50	48.6	97		1		78 - 122	0 - 20
1,3-Dichlorobenzene	ug/L	50	48.5	97		.8		80 - 119	0 - 20
1,4-Dichlorobenzene	ug/L	50	47.1	94		2		79 - 118	0 - 20
2-Butanone	ug/L	50	48.8	98		7		56 - 143	0 - 20
2-Hexanone	ug/L	50	51.1	102		9		57 - 139	0 - 20
4-Methyl-2-pentanone	ug/L	50	49.9	100		4		67 - 130	0 - 20
Acetone	ug/L	50	57.9	116		31	*	39 - 160	0 - 20
Benzene	ug/L	50	47.6	95		3		79 - 120	0 - 20
Bromochloromethane	ug/L	50	47.2	94		.2		78 - 123	0 - 20
Bromodichloromethane	ug/L	50	47.3	95		4		79 - 125	0 - 20
Bromoform	ug/L	50	49.7	99		3		66 - 130	0 - 20
Bromomethane	ug/L	50	44.3	89		4		53 - 141	0 - 20
Carbon disulfide	ug/L	50	49.2	98		9		64 - 133	0 - 30
Carbon tetrachloride	ug/L	50	47	94		1		72 - 136	0 - 20
Chlorobenzene	ug/L	50	47.3	95		.6		82 - 118	0 - 20
Chloroethane	ug/L	50	46.3	93		2		60 - 138	0 - 20
Chloroform	ug/L	50	47	94		2		79 - 124	0 - 20
Chloromethane	ug/L	50	45.5	91		.2		50 - 139	0 - 20
Cyclohexane	ug/L	50	49.7	99		3		71 - 130	0 - 20
Dibromochloromethane	ug/L	50	49	98		3		74 - 126	0 - 20
Dichlorodifluoromethane	ug/L	50	45	90		6		32 - 152	0 - 20
Ethylbenzene	ug/L	50	48.4	97		3		79 - 121	0 - 20
Isopropylbenzene (Cumene)	ug/L	50	50.6	101		3		72 - 131	0 - 20
Methyl Acetate	ug/L	50	58.7	117		37	*	56 - 136	0 - 20
Methylcyclohexane	ug/L	50	48	96		6		72 - 132	0 - 20
Methylene chloride	ug/L	50	57.7	115		27	*	74 - 124	0 - 20
Styrene	ug/L	50	52.6	105		2		78 - 123	0 - 20

RPD : 6 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 217052202

Analytical Method: EPA 8260B Analytical Batch: 611089

Tetrachloroethene	ug/L	50	45.7	91		0		74 - 129	0 - 20
Toluene	ug/L	50	46.2	92		2		80 - 121	0 - 20
Trichloroethene	ug/L	50	46.2	92		2		79 - 123	0 - 20
Trichlorofluoromethane	ug/L	50	45.6	91		6		65 - 141	0 - 20
Trichlorotrifluoroethane	ug/L	50	48.4	97		10		70 - 136	0 - 20
Xylene (total)	ug/L	150	150	100		2		79 - 121	0 - 20
cis-1,2-Dichloroethene	ug/L	50	60.3	121		19		78 - 123	0 - 20
cis-1,3-Dichloropropene	ug/L	50	44.7	89		.9		75 - 124	0 - 20
tert-Butyl methyl ether (MTBE)	ug/L	50	60.3	121		28	*	71 - 124	0 - 20
trans-1,2-Dichloroethene	ug/L	50	60.6	121		28	*	75 - 124	0 - 20
trans-1,3-Dichloropropene	ug/L	50	43.6	87		1		73 - 127	0 - 20

RPD : 6 out of 49 outside limits

Spike Recovery: 0 out of 98 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	217052202	Method Blank ID:	1687620
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2170525/d4545
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 0945	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1687621	1687621	2170525/d4541L	05/25/17	0815
2 .	LCSD1687622	1687622	2170525/d4542	05/25/17	0838
3 .	OMS-28-GW11-11-s	21705220201	2170525/d4547	05/25/17	1029
4 .	OMS-28-GW11-11-c	21705220202	2170525/d4548	05/25/17	1051
5 .	OMS-28-GW49-12-s	21705220204	2170525/d4550	05/25/17	1136
6 .	OMS-28-GW62-19-s	21705220205	2170525/d4551	05/25/17	1158
7 .	OMS-28-GW34-31-s	21705220206	2170525/d4552	05/25/17	1220
8 .	OMS-28-GW06-11-s	21705220207	2170525/d4553	05/25/17	1243
9 .	OMS-28-GW12-12-s	21705220208	2170525/d4554	05/25/17	1305
10 .	OMS-28-GW58-31-s	21705220203	2170525/d4559	05/25/17	1456

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217052202	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170524/d4509bfbD
Analyst:	JCK	Analytical Batch:	611054
Analysis Date:	05/24/17 Time: 1018	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	20.56	(	)	
75	30.0 - 60.0% of mass 95	50.68	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.43	(	)	
173	Less than 2.0% of mass 174	1	(1.2	)	1
174	50.0 - 120.0% of mass 95	83.45	(	)	
175	5.0 - 9.0% of mass 174	6.78	(8.13	)	1
176	95.0 - 101.0% of mass 174	79.71	(95.53	)	1
177	5.0 - 9.0% of mass 176	5.38	(6.76	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2170524/d4511D	05/24/17	1128
2 .	V13STD005	1204	2170524/d4512D	05/24/17	1151
3 .	V13STD010	1205	2170524/d4513D	05/24/17	1213
4 .	V13STD020	1206	2170524/d4514D	05/24/17	1235
5 .	V13STD050	1207	2170524/d4515D	05/24/17	1257
6 .	V13STD100	1208	2170524/d4516D	05/24/17	1320
7 .	V13STD200	1209	2170524/d4517D	05/24/17	1342
8 .	ICV050	1600	2170524/d4521D	05/24/17	1511
9 .	V13A9STD	1410	2170524/d4524	05/24/17	1618

FORM V VOA

Data File: /var/chem/msv13.i/2170524.s.b/d4509bfbD.d

Date : 24-MAY-2017 10:18

Client ID: V13BFB

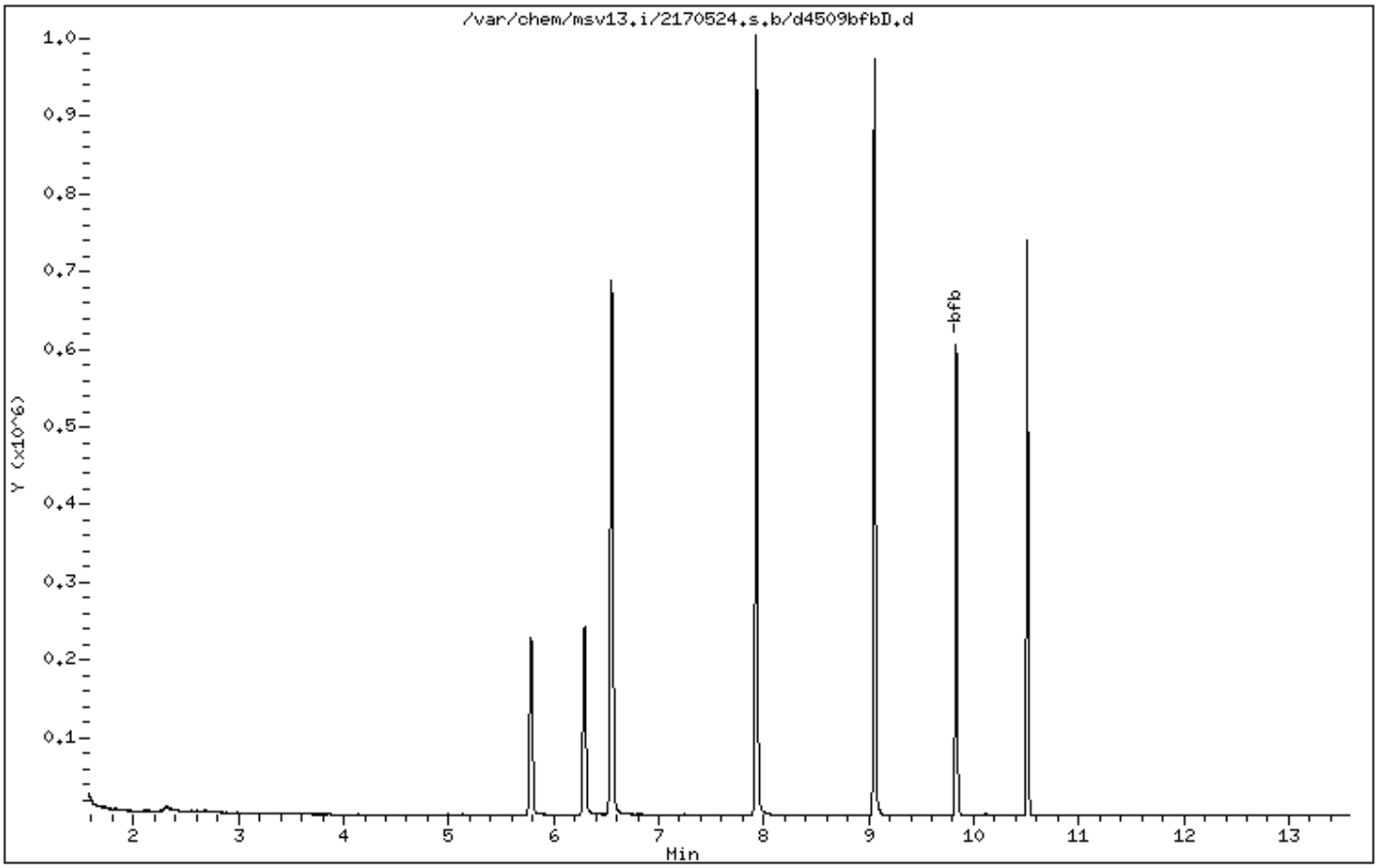
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170524.s.b/d4509bfbD.d

Date : 24-MAY-2017 10:18

Client ID: V13BFB

Instrument: msv13.i

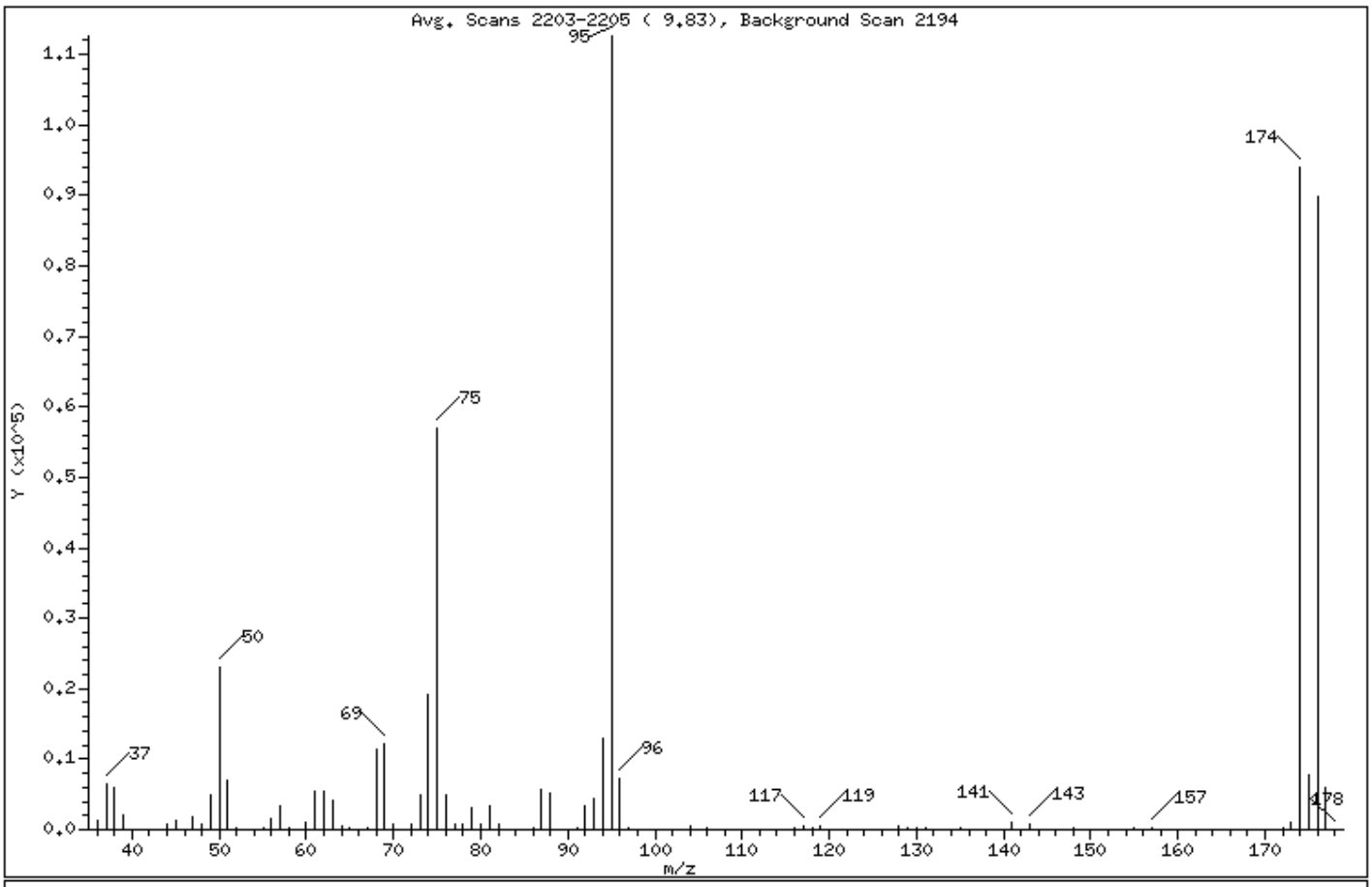
Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.56
75	30.00 - 60.00% of mass 95	50.68
96	5.00 - 9.00% of mass 95	6.43
173	Less than 2.00% of mass 174	1.00 (1.20)
174	50.00 - 120.00% of mass 95	83.45
175	5.00 - 9.00% of mass 174	6.79 (8.13)
176	95.00 - 101.00% of mass 174	79.72 (95.53)
177	5.00 - 9.00% of mass 176	5.39 (6.76)

Date : 24-MAY-2017 10:18

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: d4509bfbD.d
Spectrum: Avg. Scans 2203-2205 (9.83), Background Scan 2194
Location of Maximum: 95.00
Number of points: 78

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1168	63.00	4111	88.00	5260	131.00	149
37.00	6489	64.00	465	91.00	361	135.00	209
38.00	5886	65.00	242	92.00	3293	137.00	109
39.00	2178	67.00	309	93.00	4438	141.00	985
40.00	119	68.00	11374	94.00	13028	143.00	867
44.00	782	69.00	12260	95.00	112632	145.00	71
45.00	1227	70.00	898	96.00	7243	146.00	68
47.00	1758	72.00	665	97.00	285	148.00	267
48.00	700	73.00	4967	104.00	398	155.00	137
49.00	4837	74.00	19064	105.00	121	157.00	161
50.00	23160	75.00	57080	106.00	374	161.00	57
51.00	7034	76.00	4903	107.00	116	172.00	388
52.00	309	77.00	667	112.00	70	173.00	1126
55.00	341	78.00	658	116.00	303	174.00	93992
56.00	1677	79.00	3062	117.00	580	175.00	7645
57.00	3358	80.00	771	118.00	373	176.00	89792
58.00	145	81.00	3298	119.00	469	177.00	6067
60.00	1128	82.00	689	128.00	467	178.00	50
61.00	5366	86.00	136	129.00	137		
62.00	5452	87.00	5683	130.00	319		

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	217052202	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170525/d4540
Analyst:	JCK	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 0738	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	21.43	(	)	
75	30.0 - 60.0% of mass 95	50.69	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.62	(	)	
173	Less than 2.0% of mass 174	.75	(.91	)	1
174	50.0 - 120.0% of mass 95	83.47	(	)	
175	5.0 - 9.0% of mass 174	6.11	(7.33	)	1
176	95.0 - 101.0% of mass 174	80.7	(96.69	)	1
177	5.0 - 9.0% of mass 176	5.35	(6.63	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2170525/d4541	05/25/17	0815
2 .	LCS1687621	1687621	2170525/d4541L	05/25/17	0815
3 .	LCSD1687622	1687622	2170525/d4542	05/25/17	0838
4 .	MB1687620	1687620	2170525/d4545	05/25/17	0945
5 .	OMS-28-GW11-11-s	21705220201	2170525/d4547	05/25/17	1029
6 .	OMS-28-GW11-11-c	21705220202	2170525/d4548	05/25/17	1051
7 .	OMS-28-GW49-12-s	21705220204	2170525/d4550	05/25/17	1136
8 .	OMS-28-GW62-19-s	21705220205	2170525/d4551	05/25/17	1158
9 .	OMS-28-GW34-31-s	21705220206	2170525/d4552	05/25/17	1220
10 .	OMS-28-GW06-11-s	21705220207	2170525/d4553	05/25/17	1243
11 .	OMS-28-GW12-12-s	21705220208	2170525/d4554	05/25/17	1305
12 .	OMS-28-GW58-31-s	21705220203	2170525/d4559	05/25/17	1456
13 .	V13STD050	1440	2170525/d4564	05/25/17	1648

FORM V VOA

Data File: /var/chem/msv13.i/2170525.s.b/d4540.d

Page 1

Date : 25-MAY-2017 07:38

Client ID: V13BFB

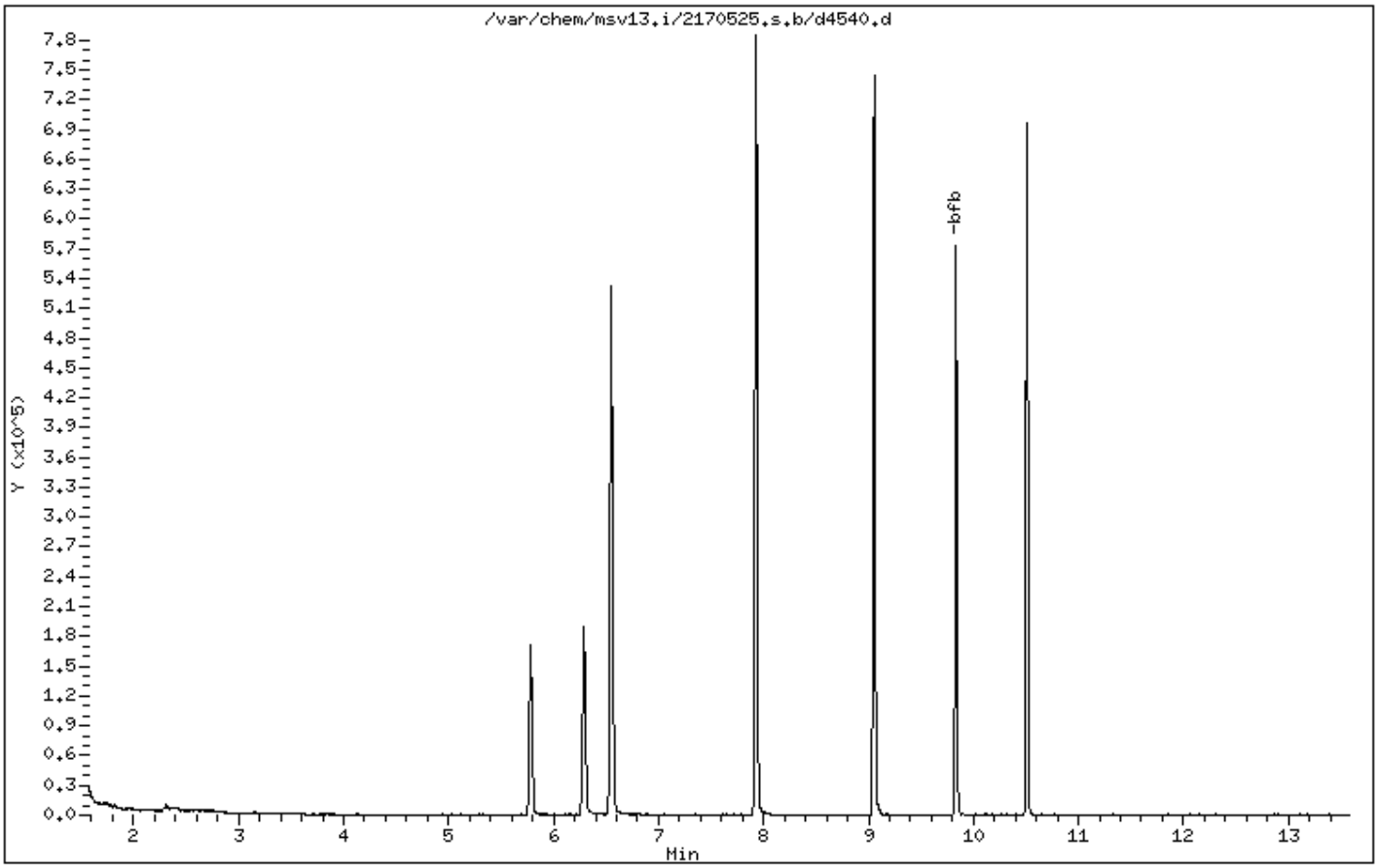
Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Data File: /var/chem/msv13.i/2170525.s.b/d4540.d

Date : 25-MAY-2017 07:38

Client ID: V13BFB

Instrument: msv13.i

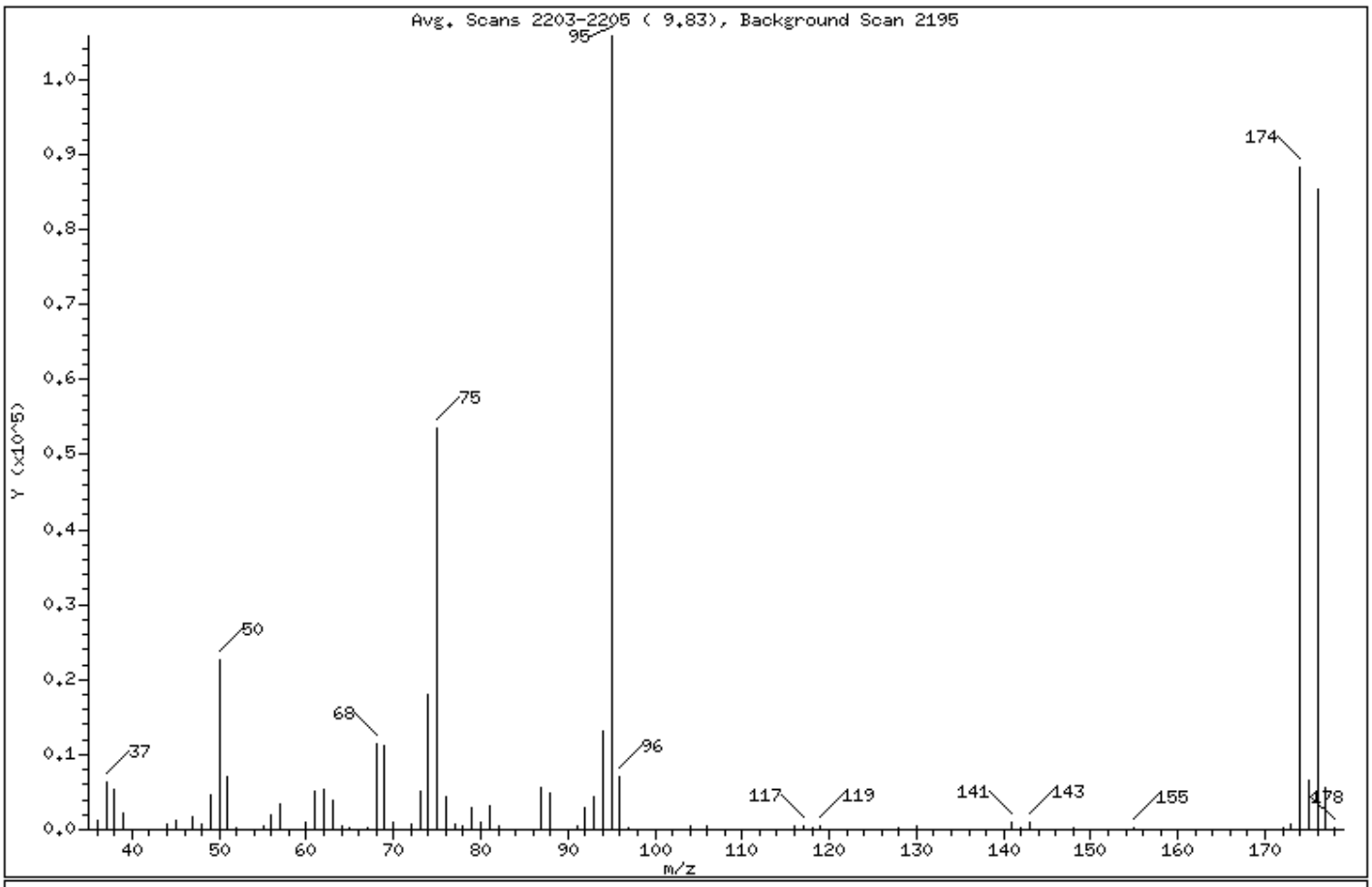
Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.43
75	30.00 - 60.00% of mass 95	50.69
96	5.00 - 9.00% of mass 95	6.62
173	Less than 2.00% of mass 174	0.76 (0.91)
174	50.00 - 120.00% of mass 95	83.47
175	5.00 - 9.00% of mass 174	6.12 (7.33)
176	95.00 - 101.00% of mass 174	80.71 (96.69)
177	5.00 - 9.00% of mass 176	5.35 (6.63)

Date : 25-MAY-2017 07:38

Client ID: V13BFB Instrument: msv13.i

Sample Info: 1000*V13BFB

Operator: JCK

Column phase: RTX-VMS-30M Column diameter: 0.25

Data File: d4540.d
Spectrum: Avg. Scans 2203-2205 (9.83), Background Scan 2195
Location of Maximum: 95.00
Number of points: 77

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1166	62.00	5426	87.00	5561	137.00	86
37.00	6315	63.00	3998	88.00	4959	141.00	895
38.00	5445	64.00	402	91.00	379	142.00	125
39.00	2256	65.00	226	92.00	2984	143.00	943
40.00	72	67.00	308	93.00	4293	146.00	54
44.00	740	68.00	11317	94.00	13250	148.00	180
45.00	1126	69.00	11148	95.00	105792	155.00	259
46.00	118	70.00	931	96.00	7004	157.00	105
47.00	1736	72.00	639	97.00	241	161.00	56
48.00	653	73.00	5043	104.00	425	171.00	72
49.00	4717	74.00	18104	105.00	66	172.00	310
50.00	22672	75.00	53624	106.00	483	173.00	803
51.00	6978	76.00	4452	115.00	72	174.00	88304
52.00	322	77.00	693	116.00	385	175.00	6470
55.00	366	78.00	369	117.00	512	176.00	85384
56.00	1922	79.00	2849	118.00	335	177.00	5660
57.00	3324	80.00	984	119.00	530	178.00	145
58.00	68	81.00	3050	128.00	295		
60.00	910	82.00	579	130.00	367		
61.00	5185	86.00	52	135.00	109		

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2170524/d4511D ~ 1	
Report No:	217052202		Instrument ID:	MSV13		1204 ~ 2170524/d4512D ~ 5	1205 ~ 2170524/d4513D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2170524/d4514D ~ 20	1207 ~ 2170524/d4515D ~ 50	
Calib. Date 1:	05/24/17	Time 1: 1128	Analytical Batch:	611054		1208 ~ 2170524/d4516D ~ 100	1209 ~ 2170524/d4517D ~ 200	
Calib. Date 2:	05/24/17	Time 2: 1342	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.518	0.531	0.514	0.515	0.550	0.547	0.530	0.529			2.805	A
1,1,1-Trichloroethane			0.329	0.303	0.298	0.303	0.312	0.319	0.318	0.312			3.531	A
1,1,2,2-Tetrachloroethane			1.309	1.078	1.047	0.995	0.951	0.924	0.887	1.027			13.73	A
1,1,2-Trichloroethane			0.568	0.577	0.548	0.572	0.579	0.568	0.542	0.565			2.535	A
1,1-Dichloroethane			0.474	0.411	0.401	0.410	0.399	0.398	0.395	0.412			6.725	A
1,1-Dichloroethene			0.240	0.250	0.217	0.220	0.237	0.226	0.214	0.229			5.864	A
1,1-Dichloropropene			0.274	0.267	0.275	0.286	0.304	0.308	0.308	0.289			6.121	A
1,2,3-Trichlorobenzene (RSP)			991	9362	21953	52792	164355	383233	813418	0.877	0.018		0.997	W
1,2,3-Trichlorobenzene			0.366	0.617	0.696	0.766	0.805	0.886	0.889					
1,2,3-Trichloropropane			1.186	1.099	1.071	1.083	1.069	1.089	1.108	1.101			3.657	A
1,2,4-Trichlorobenzene (RSP)			985	9407	21132	50285	163486	375944	806946	0.867	0.019		0.997	W
1,2,4-Trichlorobenzene			0.364	0.620	0.670	0.730	0.801	0.869	0.882					
1,2,4-Trimethylbenzene			2.074	2.169	2.290	2.364	2.386	2.394	2.348	2.289			5.357	A
1,2-Dibromo-3-chloropropane			0.196	0.185	0.185	0.192	0.195	0.216	0.223	0.199			7.454	A
1,2-Dibromoethane			0.430	0.517	0.490	0.523	0.566	0.570	0.556	0.522			9.553	A
1,2-Dichlorobenzene			1.540	1.426	1.405	1.421	1.393	1.391	1.342	1.417			4.301	A
1,2-Dichloroethane			0.364	0.341	0.319	0.318	0.325	0.323	0.316	0.329			5.250	A
1,2-Dichloroethane-d4			0.146	0.143	0.148	0.148	0.148	0.149	0.148	0.147			1.282	A
1,2-Dichloroethene (total)			0.300	0.345	0.288	0.297	0.300	0.299	0.304	0.305			6.059	A
1,2-Dichloropropane			0.248	0.253	0.235	0.250	0.256	0.256	0.253	0.250			2.849	A
1,3,5-Trimethylbenzene			2.212	2.198	2.329	2.383	2.374	2.390	2.345	2.319			3.477	A
1,3-Dichlorobenzene			1.487	1.451	1.405	1.445	1.429	1.424	1.375	1.431			2.475	A
1,3-Dichloropropane			0.992	0.994	0.966	0.990	1.017	1.007	0.962	0.990			1.992	A
1,3-Dichloropropylene (RSP)			4814	26096	54298	124034	373008	833670	1783061	0.386	0.029		0.997	W
1,3-Dichloropropylene			0.268	0.281	0.293	0.328	0.367	0.386	0.393					

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

				GCALID - FileID - Conc	1203 ~ 2170524/d4511D ~ 1	
Report No:	217052202	Instrument ID:	MSV13	1204 ~ 2170524/d4512D ~ 5	1205 ~ 2170524/d4513D ~ 10	
GC Column:	RTX-VMS-30 ID .25 (mm)	Analyst:	JCK	1206 ~ 2170524/d4514D ~ 20	1207 ~ 2170524/d4515D ~ 50	
Calib. Date 1:	05/24/17 Time 1: 1128	Analytical Batch:	611054	1208 ~ 2170524/d4516D ~ 100	1209 ~ 2170524/d4517D ~ 200	
Calib. Date 2:	05/24/17 Time 2: 1342	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,4-Dichlorobenzene			1.596	1.485	1.426	1.449	1.445	1.415	1.374	1.456			4.847	A
1-Bromo-2-Chloroethane			0.361	0.339	0.342	0.350	0.368	0.370	0.368	0.357			3.675	A
1-Chlorohexane			0.666	0.591	0.608	0.662	0.702	0.727	0.706	0.666			7.677	A
2,2-Dichloropropane			0.267	0.260	0.253	0.259	0.280	0.290	0.298	0.272			6.251	A
2-Butanone				0.142	0.155	0.155	0.166	0.173	0.179	0.162			8.275	A
2-Chloroethylvinyl ether (RSP)			535	3912	8127	16801	62097	134690	299843	0.128	0.022		0.993	W
2-Chloroethylvinyl ether			0.060	0.084	0.088	0.089	0.122	0.125	0.132					
2-Chlorotoluene			2.662	2.486	2.429	2.428	2.341	2.349	2.321	2.431			4.848	A
2-Hexanone				0.415	0.439	0.481	0.552	0.577	0.585	0.508			14.44	A
4-Bromofluorobenzene			0.655	0.682	0.691	0.695	0.736	0.760	0.755	0.711			5.641	A
4-Chlorotoluene			2.157	2.140	2.139	2.140	2.079	2.090	2.007	2.108			2.510	A
4-Isopropyltoluene			2.003	2.136	2.251	2.404	2.425	2.500	2.429	2.307			7.917	A
4-Methyl-2-pentanone			0.537	0.610	0.632	0.671	0.766	0.781	0.778	0.682			14.02	A
Acetone			0.132	0.185	0.135	0.139	0.134	0.133	0.132	0.142			13.64	A
Acrolein			0.022	0.030	0.031	0.032	0.032	0.031	0.030	0.030			11.86	A
Acrylonitrile			0.078	0.087	0.104	0.105	0.102	0.101	0.108	0.098			11.39	A
Benzene			1.016	0.949	0.948	0.978	1.006	0.996	0.981	0.982			2.699	A
Bromobenzene			1.623	1.458	1.436	1.395	1.339	1.345	1.324	1.417			7.326	A
Bromochloromethane			0.117	0.116	0.112	0.112	0.111	0.108	0.106	0.112			3.551	A
Bromodichloromethane			0.319	0.306	0.301	0.309	0.321	0.318	0.316	0.313			2.468	A
Bromoform			0.456	0.383	0.389	0.414	0.473	0.497	0.496	0.444			10.97	A
Bromomethane			0.262	0.200	0.193	0.202	0.182	0.177	0.177	0.199			14.98	A
Carbon disulfide			0.737	0.780	0.689	0.712	0.774	0.747	0.721	0.737			4.435	A
Carbon tetrachloride			0.272	0.245	0.245	0.252	0.254	0.263	0.269	0.257			4.218	A
Chlorobenzene			1.743	1.665	1.641	1.624	1.674	1.657	1.572	1.654			3.152	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170524/d4511D ~ 1		
Report No:	217052202		Instrument ID:	MSV13	1204 ~ 2170524/d4512D ~ 5	1205 ~ 2170524/d4513D ~ 10		
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2170524/d4514D ~ 20	1207 ~ 2170524/d4515D ~ 50		
Calib. Date 1:	05/24/17	Time 1: 1128	Analytical Batch:	611054	1208 ~ 2170524/d4516D ~ 100	1209 ~ 2170524/d4517D ~ 200		
Calib. Date 2:	05/24/17	Time 2: 1342	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Chloroethane			0.269	0.256	0.209	0.247	0.226	0.200	0.185	0.227			13.77	A
Chloroform			0.414	0.395	0.379	0.392	0.392	0.392	0.388	0.393			2.724	A
Chloromethane			0.291	0.245	0.228	0.233	0.218	0.216	0.217	0.235			11.31	A
Cyclohexane			0.348	0.341	0.346	0.366	0.381	0.388	0.392	0.366			5.795	A
Dibromochloromethane			0.511	0.556	0.525	0.545	0.586	0.592	0.588	0.557			5.822	A
Dibromofluoromethane			0.228	0.226	0.228	0.228	0.228	0.228	0.234	0.229			1.158	A
Dibromomethane			0.138	0.148	0.144	0.150	0.152	0.153	0.152	0.148			3.865	A
Dichlorodifluoromethane			0.255	0.213	0.211	0.209	0.201	0.196	0.201	0.213			9.218	A
Ethylbenzene			0.848	0.838	0.843	0.885	0.896	0.891	0.847	0.864			2.947	A
Hexachlorobutadiene			0.338	0.350	0.360	0.362	0.357	0.382	0.379	0.361			4.263	A
Isopropylbenzene (Cumene)			2.157	2.345	2.424	2.585	2.755	2.755	2.613	2.519			8.810	A
Methyl Acetate			0.208	0.278	0.205	0.216	0.221	0.214	0.218	0.223			11.25	A
Methyl iodide (RSP)			614	4094	8035	19745	82402	212977	440045	0.200	0.100		0.997	L
Methyl iodide			0.068	0.088	0.087	0.105	0.162	0.197	0.194					
Methylcyclohexane			0.368	0.345	0.353	0.363	0.375	0.381	0.376	0.366			3.573	A
Methylene chloride			0.350	0.434	0.305	0.318	0.304	0.330	0.286	0.332			14.79	A
Naphthalene (RSP)			2154	17253	46470	135769	476915	1119070	2429271	2.592	0.029		0.992	W
Naphthalene			0.796	1.137	1.472	1.970	2.335	2.587	2.654					
Styrene			1.257	1.395	1.511	1.671	1.827	1.811	1.734	1.601			13.65	A
Tetrachloroethene			0.512	0.455	0.439	0.441	0.456	0.452	0.452	0.458			5.416	A
Toluene			2.836	2.611	2.552	2.574	2.591	2.537	2.398	2.586			5.050	A
Toluene-d8			2.430	2.392	2.397	2.346	2.344	2.301	2.231	2.349			2.853	A
Trichloroethene			0.270	0.232	0.233	0.238	0.239	0.242	0.242	0.242			5.412	A
Trichlorofluoromethane			0.432	0.394	0.388	0.388	0.372	0.344	0.312	0.376			10.21	A
Trichlorotrifluoroethane			0.233	0.244	0.210	0.209	0.227	0.218	0.203	0.221			6.696	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2170524/d4511D ~ 1	
Report No:	217052202		Instrument ID:	MSV13	1204 ~ 2170524/d4512D ~ 5	1205 ~ 2170524/d4513D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2170524/d4514D ~ 20	1207 ~ 2170524/d4515D ~ 50	
Calib. Date 1:	05/24/17	Time 1: 1128	Analytical Batch:	611054	1208 ~ 2170524/d4516D ~ 100	1209 ~ 2170524/d4517D ~ 200	
Calib. Date 2:	05/24/17	Time 2: 1342	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Vinyl acetate (RSP)			1155	7078	17148	34832	104288	225126	486334	0.211	0.014		0.998	W
Vinyl acetate			0.129	0.152	0.185	0.184	0.205	0.208	0.214					
Vinyl chloride			0.308	0.259	0.254	0.264	0.254	0.251	0.244	0.262			8.156	A
Xylene (total)			0.922	0.967	0.984	1.044	1.094	1.086	1.034	1.019			6.251	A
cis-1,2-Dichloroethene			0.290	0.294	0.296	0.299	0.312	0.314	0.319	0.303			3.702	A
cis-1,3-Dichloropropene (RSP)			2830	14361	29828	66999	198458	441032	927392	0.405	0.012		0.998	W
cis-1,3-Dichloropropene			0.315	0.309	0.322	0.355	0.391	0.408	0.409					
m,p-Xylene			0.963	0.985	1.006	1.067	1.103	1.097	1.045	1.038			5.293	A
n-Butylbenzene			1.956	2.084	2.180	2.258	2.225	2.248	2.189	2.163			5.002	A
n-Hexane			0.289	0.363	0.263	0.288	0.287	0.292	0.294	0.297			10.45	A
n-Propylbenzene			3.635	3.577	3.606	3.603	3.439	3.464	3.408	3.533			2.629	A
o-Xylene			0.841	0.931	0.939	0.999	1.075	1.064	1.014	0.981			8.445	A
sec-Butylbenzene			2.774	3.015	3.047	3.099	2.963	2.976	2.868	2.963			3.722	A
tert-Butyl methyl ether (MTBE)			0.586	0.775	0.564	0.592	0.615	0.625	0.644	0.629			11.09	A
tert-Butylbenzene			1.391	1.302	1.319	1.340	1.285	1.303	1.254	1.313			3.307	A
trans-1,2-Dichloroethene			0.310	0.397	0.280	0.294	0.287	0.284	0.289	0.306			13.44	A
trans-1,3-Dichloropropene (RS			1984	11735	24470	57035	174550	392638	855669	0.368	0.018		0.996	W
trans-1,3-Dichloropropene			0.221	0.253	0.264	0.302	0.344	0.363	0.377					
trans-1,4-Dichloro-2-butene			0.213	0.220	0.223	0.226	0.226	0.239	0.247	0.228			5.058	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

GCAL, Inc.

Data file : /var/chem/msv13.i/2170524.s.b/d4511D.d
Lab Smp Id: 1203 Client Smp ID: V13STD001
Inj Date : 24-MAY-2017 11:28
Operator : JCK Inst ID: msv13.i
Smp Info : 1203*V13STD001
Misc Info : MSV~38389~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Meth Date : 24-May-2017 17:30 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 11:28 Cal File: d4511D.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	2288	1.00000	1.20	
2 Chloromethane ++	50	1.870	1.870	(0.285)	2614	1.00000	1.24	
3 Vinyl Chloride +	62	1.952	1.952	(0.298)	2770	1.00000	1.18	
6 Bromomethane	94	2.282	2.282	(0.348)	2357	1.00000	1.32	
7 Chloroethane	64	2.414	2.414	(0.368)	2418	1.00000	1.18	(M2)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	3881	1.00000	1.15	
10 1,1-Dichloroethene +	96	3.130	3.130	(0.478)	2158	1.00000	1.05	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	6623	1.00000	1.00	
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	2096	1.00000	1.06	
13 Methyl Iodide	142	3.298	3.298	(0.503)	614	1.00000	5.36	
14 Acrolein	56	3.557	3.557	(0.543)	981	5.00000	3.70	
16 Methylene Chloride	49	3.846	3.846	(0.587)	3140	1.00000	1.05	
17 Acetone	43	3.932	3.932	(0.600)	1186	1.00000	0.933	(M1)
18 trans-1,2-Dichloroethene	61	4.048	4.048	(0.618)	2789	1.00000	1.01	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.093	4.093	(0.625)	1868	1.00000	0.933	6842
	20 Hexane	57	4.142	4.142	(0.632)	2598	1.00000	0.975	8644
	21 MTBE	73	4.194	4.194	(0.640)	5265	1.00000	0.932	8194
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	4257	1.00000	1.15	
	27 Acrylonitrile	53	4.824	4.824	(0.736)	3496	5.00000	3.97	
	28 Vinyl Acetate	43	5.060	5.060	(0.772)	1155	1.00000	1.29	(M1)
	29 cis-1,2-Dichloroethene	61	5.319	5.319	(0.812)	2609	1.00000	0.957	
M	75 Total 1,2-Dichloroethene	61				5398	2.00000	1.97	
	30 2,2-Dichloropropane	77	5.435	5.435	(0.830)	2397	1.00000	0.980	
	32 Cyclohexane	56	5.514	5.514	(0.842)	3123	1.00000	0.950	8915
	34 Bromochloromethane	128	5.529	5.529	(0.844)	1051	1.00000	1.05	
	35 Chloroform +	83	5.604	5.604	(0.855)	3721	1.00000	1.05	
	36 Carbon Tetrachloride	117	5.724	5.724	(0.874)	2440	1.00000	1.06	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	102477	50.0000	49.9	7918
	41 1,1,1-Trichloroethane	97	5.787	5.787	(0.883)	2952	1.00000	1.05	
	44 2-Butanone	43	5.926	5.926	(0.904)	887	1.00000	0.610	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	2460	1.00000	0.948	
	46 Benzene	78	6.162	6.162	(0.940)	9130	1.00000	1.03	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	65656	50.0000	49.7	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	3270	1.00000	1.10	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	449161	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	3310	1.00000	1.01	9093
	56 Trichloroethene	130	6.709	6.709	(1.024)	2430	1.00000	1.12	
	57 Dibromomethane	93	7.103	7.103	(1.084)	1236	1.00000	0.928	
	59 1,2-Dichloropropane +	63	7.189	7.189	(1.097)	2232	1.00000	0.994	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	2868	1.00000	1.02	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	3243	1.00000	1.01	7870
	64 2-Chloroethyl vinyl ether	63	7.748	7.748	(1.183)	535	1.00000	1.58	(M1)
	67 cis-1,3-Dichloropropene	75	7.785	7.785	(1.188)	2830	1.00000	1.36	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	434054	50.0000	51.7	
	69 Toluene +	91	7.969	7.969	(0.880)	10132	1.00000	1.10	
	71 Tetrachloroethene	164	8.258	8.258	(0.912)	1830	1.00000	1.12	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	1919	1.00000	0.787	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	1984	1.00000	1.48	
M	82 1-3 Dichloropropene total	100				4814	2.00000	2.84	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	2029	1.00000	1.01	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	1825	1.00000	0.916	
	79 1,3-Dichloropropane	76	8.610	8.610	(0.951)	3544	1.00000	1.00	
	80 1,2-Dibromoethane(EDB)	107	8.715	8.715	(0.963)	1537	1.00000	0.824	
	83 2-Hexanone	43	8.854	8.854	(0.978)	1273	1.00000	0.701	(M3)
	86 1-Chlorohexane	91	9.041	9.041	(0.999)	2380	1.00000	1.00	4327
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	178621	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	6228	1.00000	1.05	
	87 Ethylbenzene +	106	9.079	9.079	(1.003)	3028	1.00000	0.981	
	88 1,1,1,2-Tetrachloroethane	133	9.101	9.101	(1.005)	1852	1.00000	0.979	
	89 p,m-Xylene	106	9.169	9.169	(1.013)	6879	2.00000	1.86	
	90 o-Xylene	106	9.453	9.453	(1.044)	3004	1.00000	0.858	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				9883	3.00000	2.71	
	91 Styrene	104	9.487	9.487	(1.048)	4491	1.00000	0.785	
	92 Bromoform ++	173	9.517	9.517	(1.051)	1630	1.00000	1.03	
	93 Isopropylbenzene	105	9.648	9.648	(1.066)	7704	1.00000	0.856	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.087)	116982	50.0000	46.1	
	96 Bromobenzene	77	9.903	9.903	(0.942)	4389	1.00000	1.15	
	97 n-Propylbenzene	91	9.903	9.903	(0.942)	9832	1.00000	1.03	
	98 1,1,2,2-Tetrachloroethane++	83	9.948	9.948	(0.947)	3540	1.00000	1.27	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	7201	1.00000	1.10	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	5983	1.00000	0.954	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	3209	1.00000	1.08	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	577	1.00000	0.937	
	104 4-Chlorotoluene	91	10.109	10.109	(0.962)	5835	1.00000	1.02	
	105 tert-butylbenzene	91	10.214	10.214	(0.972)	3762	1.00000	1.06	
	107 1,2,4-Trimethylbenzene	105	10.252	10.252	(0.975)	5610	1.00000	0.906	
	108 sec-Butylbenzene	105	10.319	10.319	(0.982)	7505	1.00000	0.936	
	110 p-Isopropyltoluene	119	10.402	10.402	(0.990)	5419	1.00000	0.868	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	4023	1.00000	1.04	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	135252	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	4316	1.00000	1.10	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	5291	1.00000	0.904	
	118 1,2-Dichlorobenzene	146	10.777	10.777	(1.025)	4165	1.00000	1.09	
	119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	530	1.00000	0.985	
	120 Hexachlorobutadiene	225	11.736	11.736	(1.117)	915	1.00000	0.937	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	985	1.00000	1.36	
	124 Naphthalene	128	12.059	12.059	(1.147)	2154	1.00000	1.75	
	125 1,2,3-Trichlorobenzene	180	12.224	12.224	(1.163)	991	1.00000	1.34	

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.
M2- Compound response manually integrated because
Target system integrated incorrectly.
M3- Compound response manually integrated because
Target system integrated incorrect peak.

Data File: /var/chem/msv13.i/2170524.s.b/d4511D.d

Date : 24-MAY-2017 11:28

Client ID: V13STD001

Instrument: msv13.i

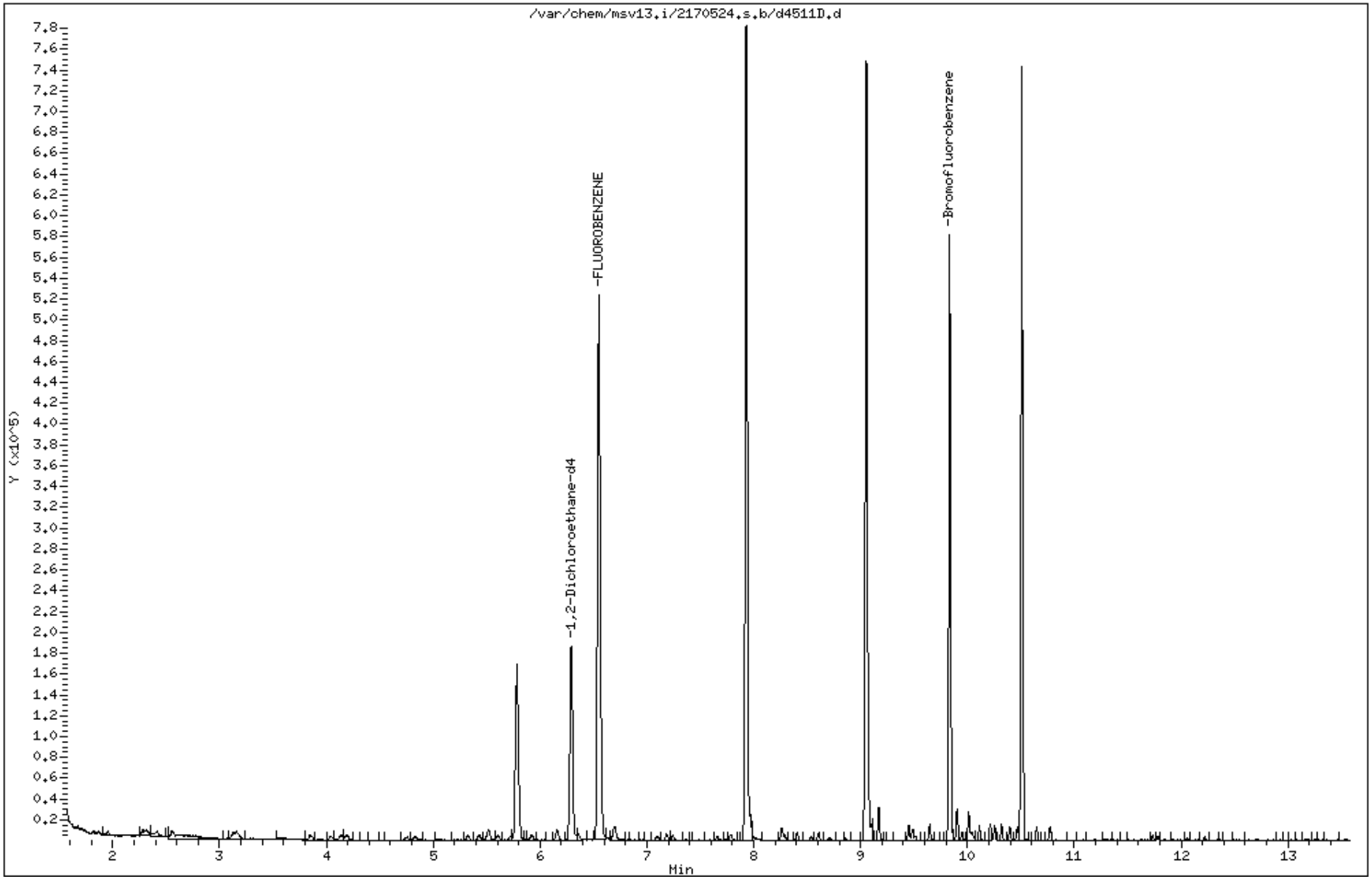
Sample Info: 1203*V13STD001

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

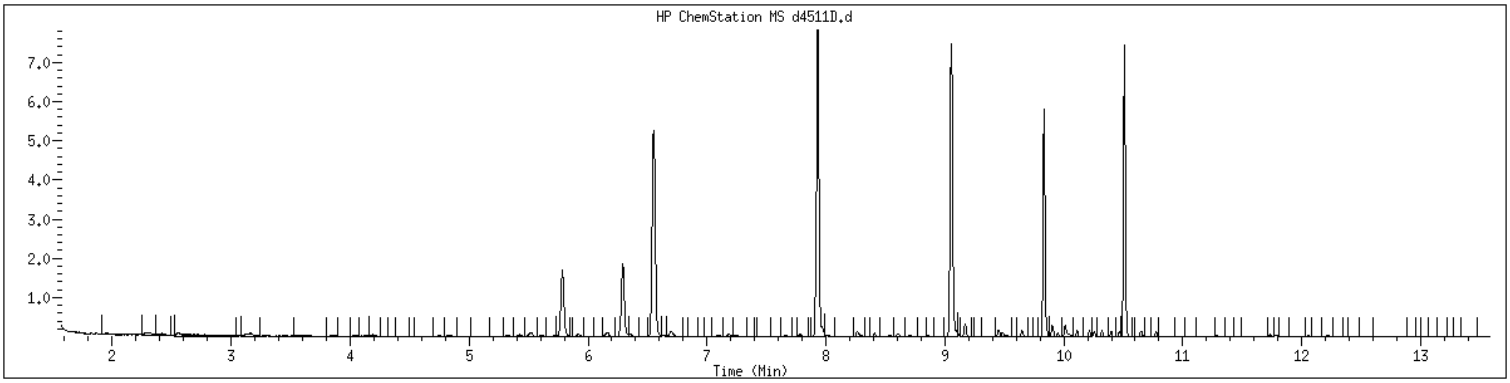
Column diameter: 0.25



Report Date: 05/24/2017 17:30

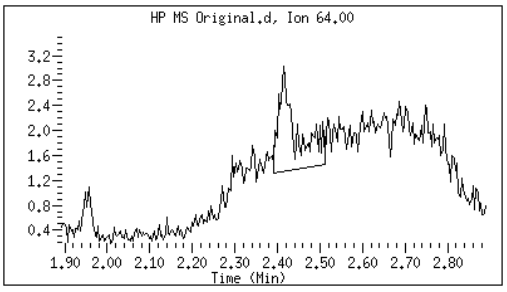
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1203 SampleType : CALIB_3
Injection Date: 05/24/2017 11:28 Instrument : msv13.i
Operator : JCK
Sample Info : 1203*V13STD001
Misc Info : MSV~38389~*1*JCK
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



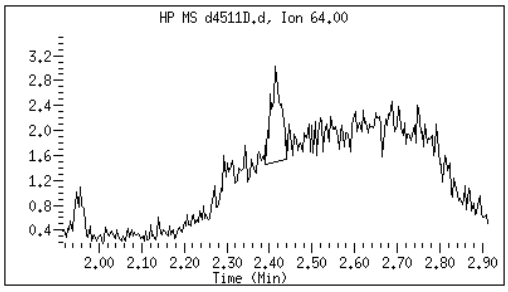
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2

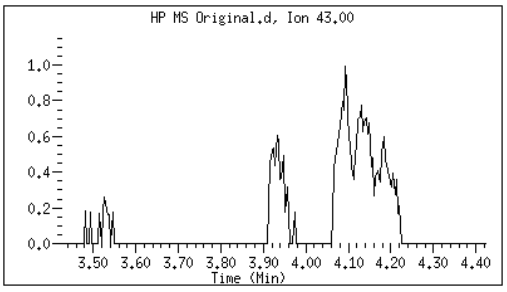


Electronic Signature Applied

User: jck2
Date: 05/24/2017 11:45

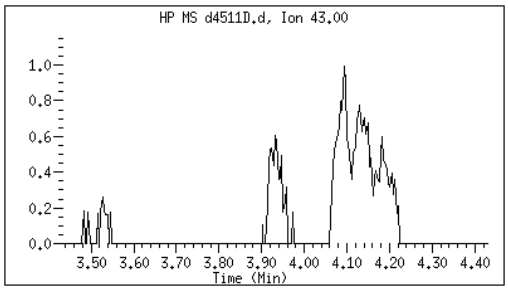


17 Acetone CAS#: 67-64-1 Reason: M1



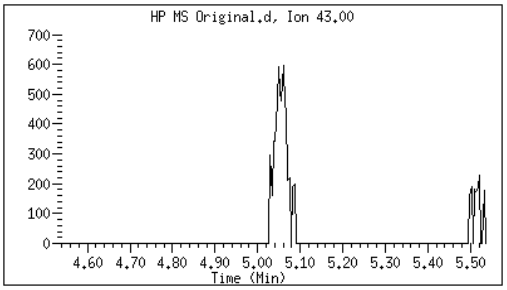
Electronic Signature Applied

User: jck2
Date: 05/24/2017 11:45



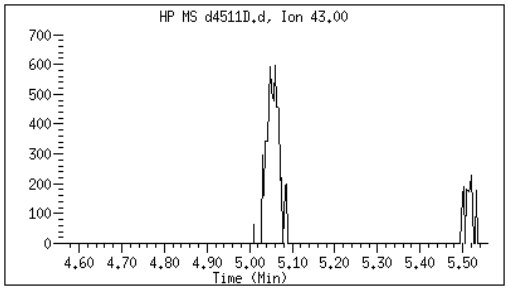
Original Final

28 Vinyl Acetate CAS#: 108-05-4 Reason: M1



Electronic Signature Applied

User: jck2
Date: 05/24/2017 11:45



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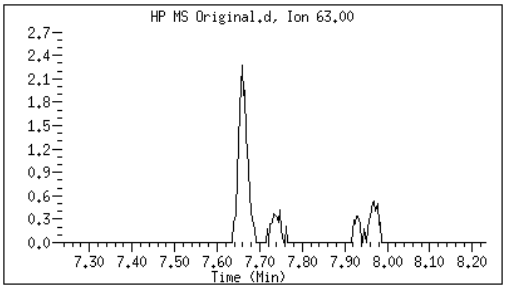
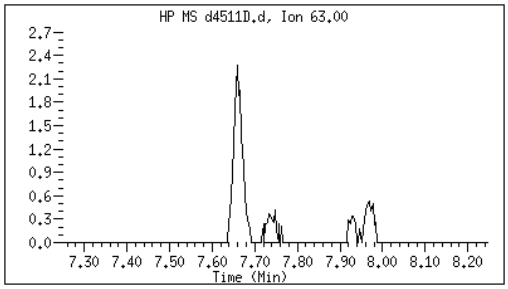
64 2-Chloroethyl vinyl ether CAS#: 110-75-8 Reason: M1



Electronic Signature Applied

User: jck2
Date: 05/24/2017 11:45



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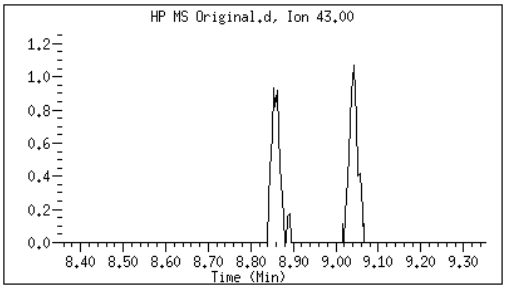
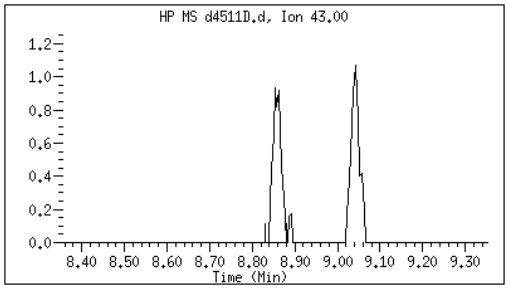
83 2-Hexanone CAS#: 591-78-6 Reason: M3



Electronic Signature Applied

User: jck2
Date: 05/24/2017 11:45



M1 - Target system did not integrate
M2 - Target system integrated incorrectly
M3 - Target system integrated incorrect peak

GCAL, Inc.

Data file : /var/chem/msv13.i/2170524.s.b/d4512D.d
Lab Smp Id: 1204 Client Smp ID: V13STD005
Inj Date : 24-MAY-2017 11:51
Operator : JCK Inst ID: msv13.i
Smp Info : 1204*V13STD005
Misc Info : MSV~38389~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Meth Date : 24-May-2017 17:30 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 11:51 Cal File: d4512D.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.671	1.671	(0.255)	9908	5.00000	5.02	
2	Chloromethane ++	50	1.870	1.870	(0.285)	11370	5.00000	5.20	
3	Vinyl Chloride +	62	1.953	1.953	(0.298)	12047	5.00000	4.95	
6	Bromomethane	94	2.279	2.279	(0.348)	9262	5.00000	5.01	
7	Chloroethane	64	2.414	2.414	(0.368)	11896	5.00000	5.63	(M2)
8	Trichlorofluoromethane	101	2.556	2.556	(0.390)	18289	5.00000	5.24	
10	1,1-Dichloroethene +	96	3.130	3.130	(0.478)	11628	5.00000	5.46	
11	Carbon Disulfide	76	3.160	3.160	(0.482)	36193	5.00000	5.29	
12	1,1,2Trichlotrifluoroethane	101	3.175	3.175	(0.485)	11329	5.00000	5.53	
13	Methyl Iodide	142	3.291	3.291	(0.502)	4094	5.00000	7.22	
14	Acrolein	56	3.557	3.557	(0.543)	6955	25.0000	25.4	(M2)
16	Methylene Chloride	49	3.853	3.853	(0.588)	20133	5.00000	6.53	
17	Acetone	43	3.928	3.928	(0.600)	8589	5.00000	6.54	
18	trans-1,2-Dichloroethene	61	4.044	4.044	(0.617)	18416	5.00000	6.48	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.086	4.086	(0.624)	12915	5.00000	6.24	9078
	20 Hexane	57	4.134	4.134	(0.631)	16844	5.00000	6.11	9696
	21 MTBE	73	4.187	4.187	(0.639)	35986	5.00000	6.17	9322
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	19067	5.00000	4.98	
	27 Acrylonitrile	53	4.828	4.828	(0.737)	20266	25.0000	22.3	
	28 Vinyl Acetate	43	5.045	5.045	(0.770)	7078	5.00000	4.29	
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	13632	5.00000	4.84	
M	75 Total 1,2-Dichloroethene	61				32048	10.0000	11.3	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	12063	5.00000	4.77	
	32 Cyclohexane	56	5.518	5.518	(0.842)	15826	5.00000	4.66	9422
	34 Bromochloromethane	128	5.525	5.525	(0.843)	5402	5.00000	5.21	
	35 Chloroform +	83	5.604	5.604	(0.855)	18351	5.00000	5.03	
	36 Carbon Tetrachloride	117	5.731	5.731	(0.875)	11394	5.00000	4.77	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	104848	50.0000	49.4	8488
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	14074	5.00000	4.86	
	44 2-Butanone	43	5.919	5.919	(0.903)	6606	5.00000	4.40	
	43 1,1-Dichloropropene	75	5.915	5.915	(0.903)	12392	5.00000	4.62	
	46 Benzene	78	6.159	6.159	(0.940)	44053	5.00000	4.83	
$	50 1,2-Dichloroethane-d4	67	6.294	6.294	(0.961)	66539	50.0000	48.7	
	51 1,2-Dichloroethane	62	6.354	6.354	(0.970)	15823	5.00000	5.17	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	464264	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	16037	5.00000	4.72	9526
	56 Trichloroethene	130	6.710	6.710	(1.024)	10753	5.00000	4.78	
	57 Dibromomethane	93	7.103	7.103	(1.084)	6867	5.00000	4.99	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	11724	5.00000	5.05	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	14225	5.00000	4.90	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	15742	5.00000	4.75	9661
	64 2-Chloroethyl vinyl ether	63	7.737	7.737	(1.181)	3912	5.00000	4.40	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	14361	5.00000	4.40	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	447343	50.0000	50.9	
	69 Toluene +	91	7.973	7.973	(0.881)	48840	5.00000	5.05	
	71 Tetrachloroethene	164	8.262	8.262	(0.913)	8507	5.00000	4.97	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	11403	5.00000	4.47	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	11735	5.00000	4.32	
M	82 1-3 Dichloropropene total	100				26096	10.0000	8.72	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	10787	5.00000	5.11	
	78 Dibromochloromethane	129	8.535	8.535	(0.943)	10404	5.00000	4.99	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	18597	5.00000	5.02	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	9666	5.00000	4.95	
	83 2-Hexanone	43	8.854	8.854	(0.978)	7755	5.00000	4.08	
	86 1-Chlorohexane	91	9.038	9.038	(0.998)	11049	5.00000	4.43	6984
*	84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	187036	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	31150	5.00000	5.04	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	15677	5.00000	4.85	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	9931	5.00000	5.02	
	89 p,m-Xylene	106	9.173	9.173	(1.013)	36840	10.0000	9.49	
	90 o-Xylene	106	9.454	9.454	(1.044)	17409	5.00000	4.75	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				54249	15.0000	14.2	
	91 Styrene	104	9.487	9.487	(1.048)	26085	5.00000	4.36	
	92 Bromoform ++	173	9.514	9.514	(1.051)	7157	5.00000	4.31	
	93 Isopropylbenzene	105	9.649	9.649	(1.066)	43857	5.00000	4.65	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.087)	127615	50.0000	48.0	
	96 Bromobenzene	77	9.904	9.904	(0.942)	22120	5.00000	5.14	
	97 n-Propylbenzene	91	9.904	9.904	(0.942)	54284	5.00000	5.06	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	16366	5.00000	5.25	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	37722	5.00000	5.11	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	33358	5.00000	4.74	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	16685	5.00000	4.99	
	101 trans-1,4-Dichloro-2-Butene	53	10.061	10.061	(0.957)	3332	5.00000	4.82	
	104 4-Chlorotoluene	91	10.110	10.110	(0.962)	32477	5.00000	5.08	
	105 tert-butylbenzene	91	10.215	10.215	(0.972)	19754	5.00000	4.96	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	32917	5.00000	4.74	
	108 sec-Butylbenzene	105	10.320	10.320	(0.982)	45762	5.00000	5.09	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	32409	5.00000	4.63	
	113 1,3-Dichlorobenzene	146	10.470	10.470	(0.996)	22015	5.00000	5.07	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	151757	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	22541	5.00000	5.10	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	31619	5.00000	4.82	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	21643	5.00000	5.03	
	119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	2814	5.00000	4.66	
	120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	5305	5.00000	4.84	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	9407	5.00000	4.52	
	124 Naphthalene	128	12.059	12.059	(1.147)	17253	5.00000	3.64	
	125 1,2,3-Trichlorobenzene	180	12.224	12.224	(1.163)	9362	5.00000	4.43	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170524.s.b/d4512D.d

Page 1

Date : 24-MAY-2017 11:51

Client ID: V13STD005

Instrument: msv13.i

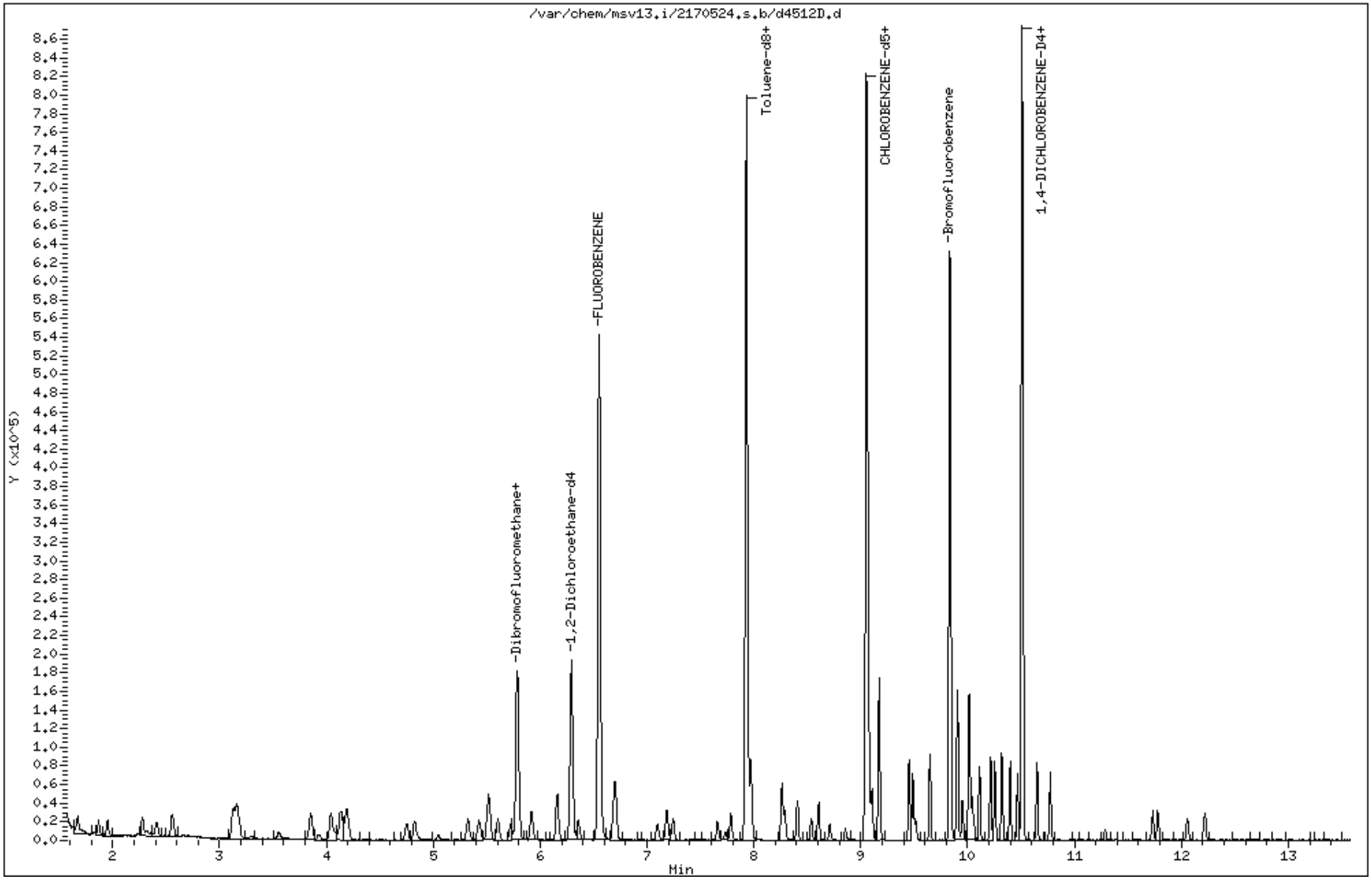
Sample Info: 1204*V13STD005

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

Column diameter: 0.25



Report Date: 05/24/2017 17:30

MANUAL INTEGRATION GRAPHIC REPORT

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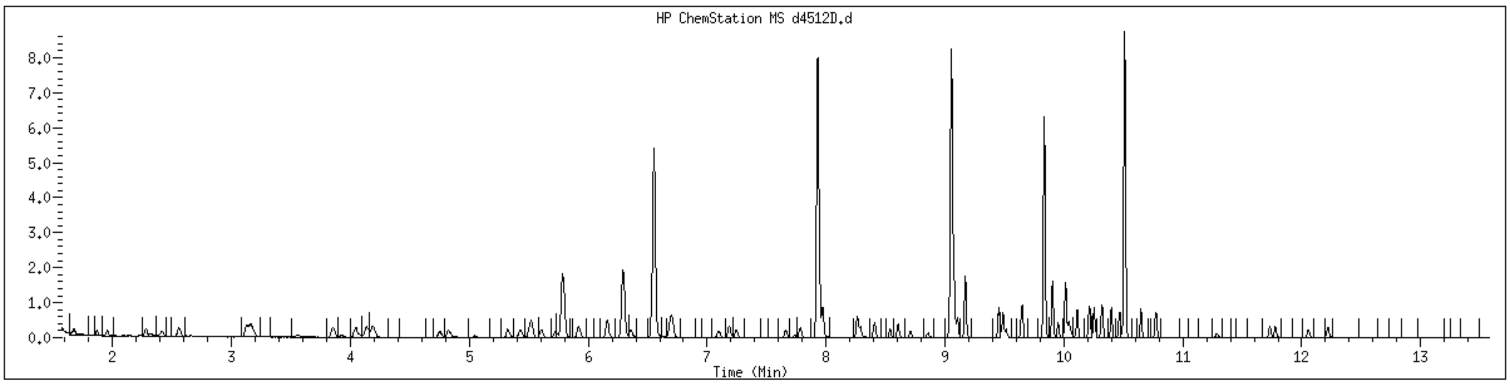
Injection Date: 05/24/2017 11:51   Instrument : msv13.i
Operator : JCK
Sample Info : 1204*V13STD005
Misc Info : MSV~38389~*1*JCK
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE   Compound Sublist: 8260b



Original   Final

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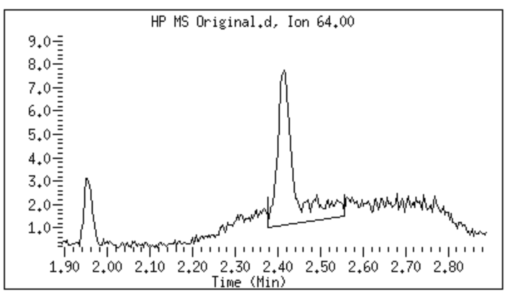
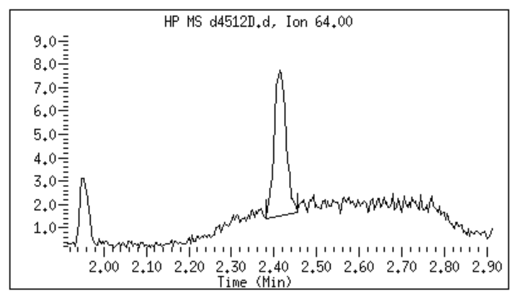
7 Chloroethane   CAS#: 75-00-3   Reason: M2



Electronic Signature
Applied

User: jck2
Date: 05/24/2017 12:43



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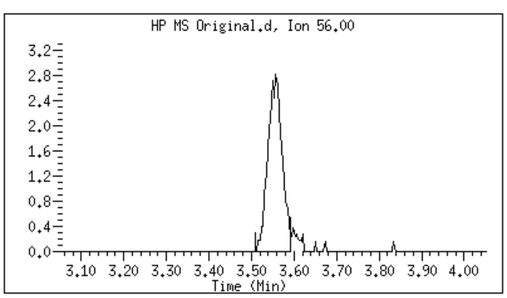
14 Acrolein   CAS#: 107-02-8   Reason: M2



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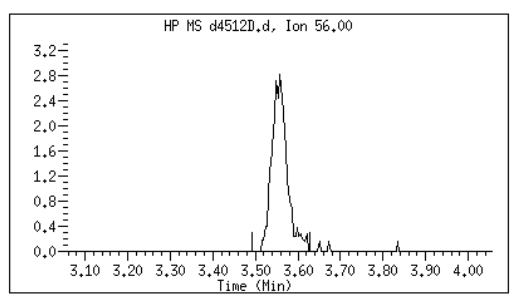
Date: 05/24/2017 12:43



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170524.s.b/d4513D.d
Lab Smp Id: 1205 Client Smp ID: V13STD010
Inj Date : 24-MAY-2017 12:13
Operator : JCK Inst ID: msv13.i
Smp Info : 1205*V13STD010
Misc Info : MSV~38389~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Meth Date : 24-May-2017 17:30 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 12:13 Cal File: d4513D.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.675	1.675	(0.256)	19563	10.0000	9.93	
2 Chloromethane ++	50	1.867	1.867	(0.285)	21132	10.0000	9.68	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	23522	10.0000	9.68	
6 Bromomethane	94	2.279	2.279	(0.348)	17890	10.0000	9.70	
7 Chloroethane	64	2.418	2.418	(0.369)	19416	10.0000	9.21	(M2)
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	36011	10.0000	10.3	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	20128	10.0000	9.47	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	63905	10.0000	9.35	
12 1,1,2Trichlotrifluoroethane	101	3.182	3.182	(0.486)	19439	10.0000	9.51	
13 Methyl Iodide	142	3.295	3.295	(0.503)	8035	10.0000	9.35	
14 Acrolein	56	3.550	3.550	(0.542)	14468	50.0000	52.8	
16 Methylene Chloride	49	3.853	3.853	(0.588)	28264	10.0000	9.18	
17 Acetone	43	3.928	3.928	(0.600)	12560	10.0000	9.57	
18 trans-1,2-Dichloroethene	61	4.044	4.044	(0.617)	25983	10.0000	9.16	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	18969	10.0000	9.18	9346
	20 Hexane	57	4.138	4.138	(0.632)	24362	10.0000	8.86	9747
	21 MTBE	73	4.187	4.187	(0.639)	52315	10.0000	8.98	9533
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	37133	10.0000	9.71	
	27 Acrylonitrile	53	4.824	4.824	(0.736)	48195	50.0000	53.0	
	28 Vinyl Acetate	43	5.045	5.045	(0.770)	17148	10.0000	9.44	
	29 cis-1,2-Dichloroethene	61	5.327	5.327	(0.813)	27456	10.0000	9.76	
M	75 Total 1,2-Dichloroethene	61				53439	20.0000	18.9	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	23462	10.0000	9.29	
	32 Cyclohexane	56	5.510	5.510	(0.841)	32106	10.0000	9.47	9329
	34 Bromochloromethane	128	5.529	5.529	(0.844)	10366	10.0000	10.0	
	35 Chloroform +	83	5.604	5.604	(0.855)	35093	10.0000	9.63	
	36 Carbon Tetrachloride	117	5.728	5.728	(0.874)	22749	10.0000	9.54	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	105662	50.0000	49.9	8949
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	27590	10.0000	9.55	
	44 2-Butanone	43	5.923	5.923	(0.904)	14386	10.0000	9.59	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	25496	10.0000	9.52	
	46 Benzene	78	6.159	6.159	(0.940)	87907	10.0000	9.65	
$	50 1,2-Dichloroethane-d4	67	6.294	6.294	(0.961)	68464	50.0000	50.2	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	29573	10.0000	9.68	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	463548	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	32733	10.0000	9.65	9598
	56 Trichloroethene	130	6.702	6.702	(1.023)	21572	10.0000	9.61	
	57 Dibromomethane	93	7.096	7.096	(1.083)	13327	10.0000	9.70	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	21791	10.0000	9.40	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	27864	10.0000	9.61	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	31687	10.0000	9.57	9651
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	8127	10.0000	7.95	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	29828	10.0000	8.53	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	455117	50.0000	51.0	
	69 Toluene +	91	7.973	7.973	(0.881)	96897	10.0000	9.87	
	71 Tetrachloroethene	164	8.262	8.262	(0.913)	16651	10.0000	9.57	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	24012	10.0000	9.27	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	24470	10.0000	8.06	
M	82 1-3 Dichloropropene total	100				54298	20.0000	16.6	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	20797	10.0000	9.70	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	19922	10.0000	9.41	
	79 1,3-Dichloropropane	76	8.607	8.607	(0.951)	36692	10.0000	9.76	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	18611	10.0000	9.39	
	83 2-Hexanone	43	8.854	8.854	(0.978)	16654	10.0000	8.63	
	86 1-Chlorohexane	91	9.041	9.041	(0.999)	23101	10.0000	9.13	6757
*	84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	189849	50.0000		
	85 Chlorobenzene ++	112	9.068	9.068	(1.002)	62318	10.0000	9.92	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	32008	10.0000	9.76	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	19499	10.0000	9.70	
	89 p,m-Xylene	106	9.173	9.173	(1.013)	76365	20.0000	19.4	
	90 o-Xylene	106	9.454	9.454	(1.044)	35670	10.0000	9.58	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				112035	30.0000	29.0	
91 Styrene	104	9.487	9.487	(1.048)	57389	10.0000	9.44	
92 Bromoform ++	173	9.514	9.514	(1.051)	14759	10.0000	8.75	
93 Isopropylbenzene	105	9.649	9.649	(1.066)	92022	10.0000	9.62	
$ 95 Bromofluorobenzene	174	9.832	9.832	(1.086)	131102	50.0000	48.6	
96 Bromobenzene	77	9.904	9.904	(0.942)	45327	10.0000	10.1	
97 n-Propylbenzene	91	9.904	9.904	(0.942)	113815	10.0000	10.2	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	33043	10.0000	10.2	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	76661	10.0000	9.99	
102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	73498	10.0000	10.0	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	33797	10.0000	9.73	
101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	7048	10.0000	9.81	
104 4-Chlorotoluene	91	10.110	10.110	(0.962)	67512	10.0000	10.1	
105 tert-butylbenzene	91	10.215	10.215	(0.972)	41638	10.0000	10.0	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	72294	10.0000	10.0	
108 sec-Butylbenzene	105	10.320	10.320	(0.982)	96160	10.0000	10.3	
110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	71057	10.0000	9.76	
113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	44361	10.0000	9.82	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	157820	50.0000		
115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	45018	10.0000	9.80	
117 n-Butylbenzene	91	10.650	10.650	(1.013)	68817	10.0000	10.1	
118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	44335	10.0000	9.91	
119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	5844	10.0000	9.31	
120 Hexachlorobutadiene	225	11.729	11.729	(1.116)	11371	10.0000	9.98	
122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	21132	10.0000	8.67	
124 Naphthalene	128	12.055	12.055	(1.147)	46470	10.0000	7.13	
125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	21953	10.0000	8.85	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170524.s.b/d4513D.d

Page 1

Date : 24-MAY-2017 12:13

Client ID: V13STD010

Instrument: msv13.i

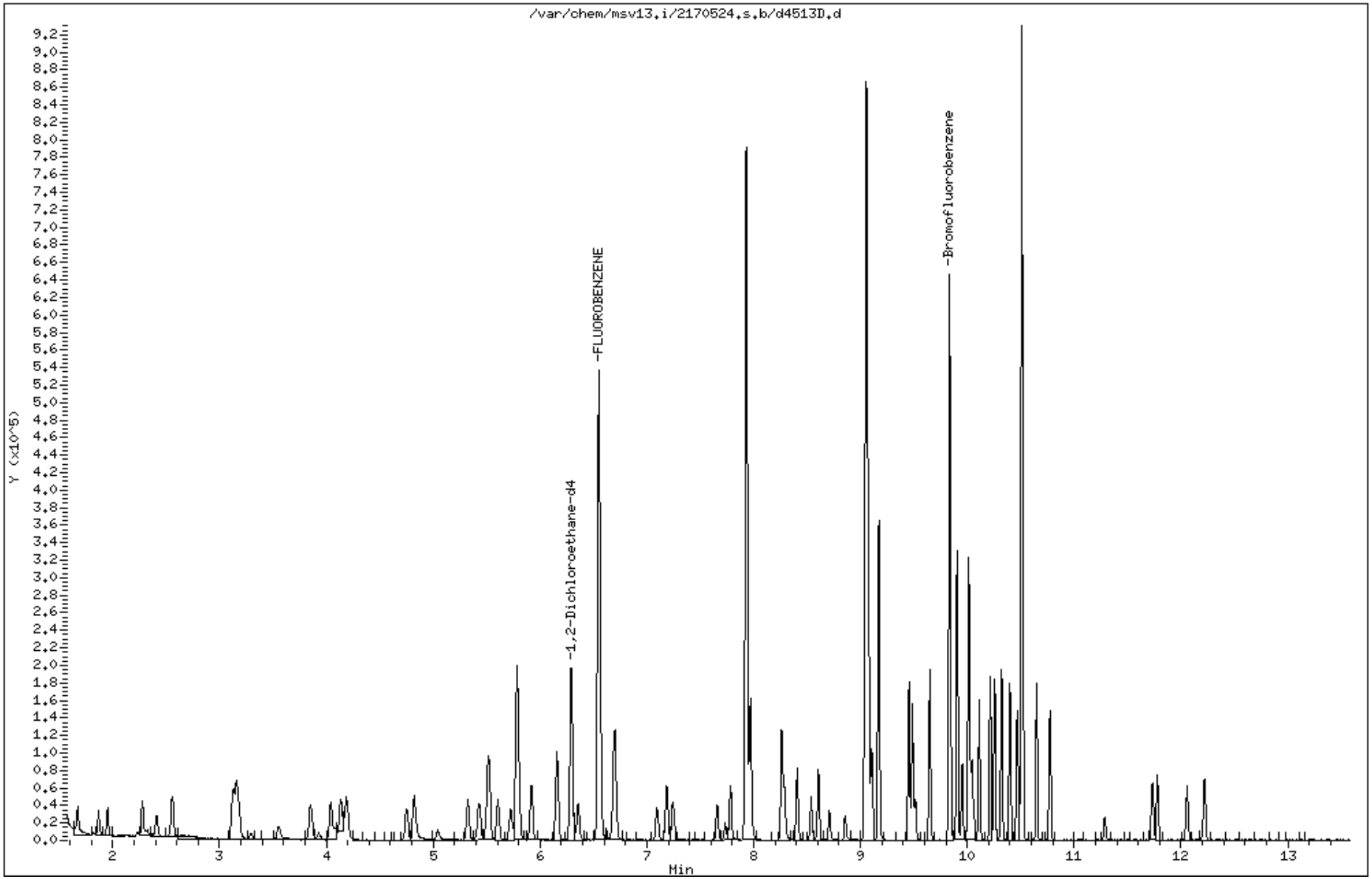
Sample Info: 1205*V13STD010

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

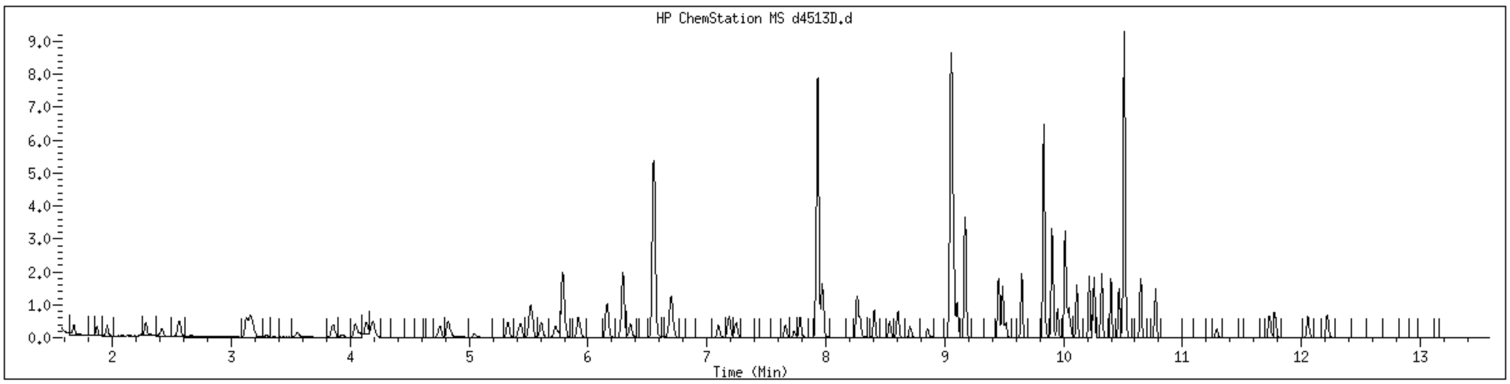
Column diameter: 0.25



Report Date: 05/24/2017 17:30

MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1205 SampleType : CALIB_5
Injection Date: 05/24/2017 12:13 Instrument : msv13.i
Operator : JCK
Sample Info : 1205*V13STD010
Misc Info : MSV~38389~*1*JCK
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



Original Final

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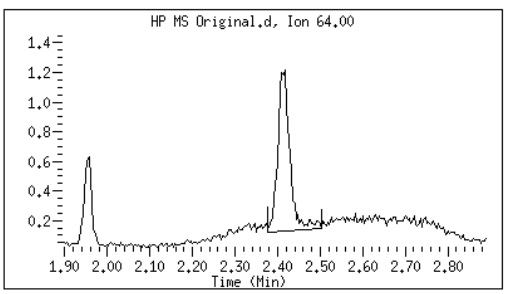
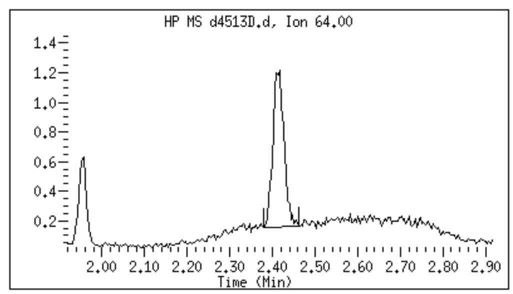
7 Chloroethane CAS#: 75-00-3 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/24/2017 12:44



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170524.s.b/d4514D.d
Lab Smp Id: 1206 Client Smp ID: V13STD020
Inj Date : 24-MAY-2017 12:35
Operator : JCK Inst ID: msv13.i
Smp Info : 1206*V13STD020
Misc Info : MSV~38389~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Meth Date : 24-May-2017 17:30 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 12:35 Cal File: d4514D.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	39543	20.0000	19.7	
2	Chloromethane ++	50	1.866	1.866	(0.285)	43914	20.0000	19.8	
3	Vinyl Chloride +	62	1.952	1.952	(0.298)	49837	20.0000	20.1	
6	Bromomethane	94	2.279	2.279	(0.348)	38116	20.0000	20.3	
7	Chloroethane	64	2.414	2.414	(0.368)	46662	20.0000	21.7	(M2)
8	Trichlorofluoromethane	101	2.560	2.560	(0.391)	73326	20.0000	20.7	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	41579	20.0000	19.2	
11	Carbon Disulfide	76	3.160	3.160	(0.482)	134485	20.0000	19.3	
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	39429	20.0000	18.9	
13	Methyl Iodide	142	3.298	3.298	(0.503)	19745	20.0000	15.5	
14	Acrolein	56	3.557	3.557	(0.543)	30059	100.000	108	
16	Methylene Chloride	49	3.853	3.853	(0.588)	60025	20.0000	19.1	
17	Acetone	43	3.928	3.928	(0.600)	26197	20.0000	19.6	
18	trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	55576	20.0000	19.2	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	40732	20.0000	19.4	9630
	20 Hexane	57	4.134	4.134	(0.631)	54390	20.0000	19.4	9614(M2)
	21 MTBE	73	4.190	4.190	(0.640)	111714	20.0000	18.8	9422
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	77372	20.0000	19.9	
	27 Acrylonitrile	53	4.824	4.824	(0.736)	99404	100.000	107	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	34832	20.0000	18.2	
	29 cis-1,2-Dichloroethene	61	5.326	5.326	(0.813)	56433	20.0000	19.7	
M	75 Total 1,2-Dichloroethene	61				112009	40.0000	38.9	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	48874	20.0000	19.0	
	32 Cyclohexane	56	5.514	5.514	(0.842)	69075	20.0000	20.0	9433
	34 Bromochloromethane	128	5.525	5.525	(0.843)	21053	20.0000	20.0	
	35 Chloroform +	83	5.607	5.607	(0.856)	73946	20.0000	19.9	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	47547	20.0000	19.6	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	107416	50.0000	49.8	9694
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	57166	20.0000	19.4	
	44 2-Butanone	43	5.919	5.919	(0.903)	29316	20.0000	19.2	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	54051	20.0000	19.8	
	46 Benzene	78	6.162	6.162	(0.940)	184723	20.0000	19.9	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	69823	50.0000	50.3	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	60109	20.0000	19.3	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	471966	50.0000		
	55 Methyl Cyclohexane	83	6.694	6.694	(1.022)	68494	20.0000	19.8	9560
	56 Trichloroethene	130	6.706	6.706	(1.023)	44885	20.0000	19.6	
	57 Dibromomethane	93	7.096	7.096	(1.083)	28400	20.0000	20.3	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	47128	20.0000	20.0	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	58302	20.0000	19.7	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	66166	20.0000	19.6	9655
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	16801	20.0000	15.0	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	66999	20.0000	18.1	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	459041	50.0000	50.0	
	69 Toluene +	91	7.969	7.969	(0.880)	201426	20.0000	19.9	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	34537	20.0000	19.3	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	52524	20.0000	19.7	
	74 trans-1,3-Dichloropropene	75	8.291	8.291	(1.265)	57035	20.0000	17.3	
M	82 1-3 Dichloropropene total	100				124034	40.0000	35.4	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	44763	20.0000	20.3	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	42630	20.0000	19.5	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	77477	20.0000	20.0	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	40940	20.0000	20.1	
	83 2-Hexanone	43	8.857	8.857	(0.978)	37634	20.0000	18.9	
	86 1-Chlorohexane	91	9.041	9.041	(0.999)	51810	20.0000	19.9	8546
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	195629	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.002)	127064	20.0000	19.6	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	69276	20.0000	20.5	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	40306	20.0000	19.5	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	166944	40.0000	41.1	
	90 o-Xylene	106	9.453	9.453	(1.044)	78195	20.0000	20.4	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				245139	60.0000	61.5	
	91 Styrene	104	9.487	9.487	(1.048)	130766	20.0000	20.9	
	92 Bromoform ++	173	9.513	9.513	(1.051)	32397	20.0000	18.6	
	93 Isopropylbenzene	105	9.648	9.648	(1.066)	202299	20.0000	20.5	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.087)	135948	50.0000	48.9	
	96 Bromobenzene	77	9.903	9.903	(0.942)	96138	20.0000	19.7	
	97 n-Propylbenzene	91	9.903	9.903	(0.942)	248259	20.0000	20.4	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	68566	20.0000	19.4	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	167328	20.0000	20.0	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	164217	20.0000	20.6	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	74630	20.0000	19.7	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	15539	20.0000	19.8	
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	147472	20.0000	20.3	
	105 tert-butylbenzene	91	10.214	10.214	(0.972)	92341	20.0000	20.4	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	162883	20.0000	20.7	
	108 sec-Butylbenzene	105	10.319	10.319	(0.982)	213527	20.0000	20.9	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	165656	20.0000	20.8	
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	99540	20.0000	20.2	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	172260	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	99856	20.0000	19.9	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	155602	20.0000	20.9	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	97925	20.0000	20.1	
	119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	13218	20.0000	19.3	
	120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	24920	20.0000	20.0	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	50285	20.0000	17.8	
	124 Naphthalene	128	12.055	12.055	(1.147)	135769	20.0000	16.7	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	52792	20.0000	18.4	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170524.s.b/d4514D.d

Date : 24-MAY-2017 12:35

Client ID: V13STD020

Instrument: msv13.i

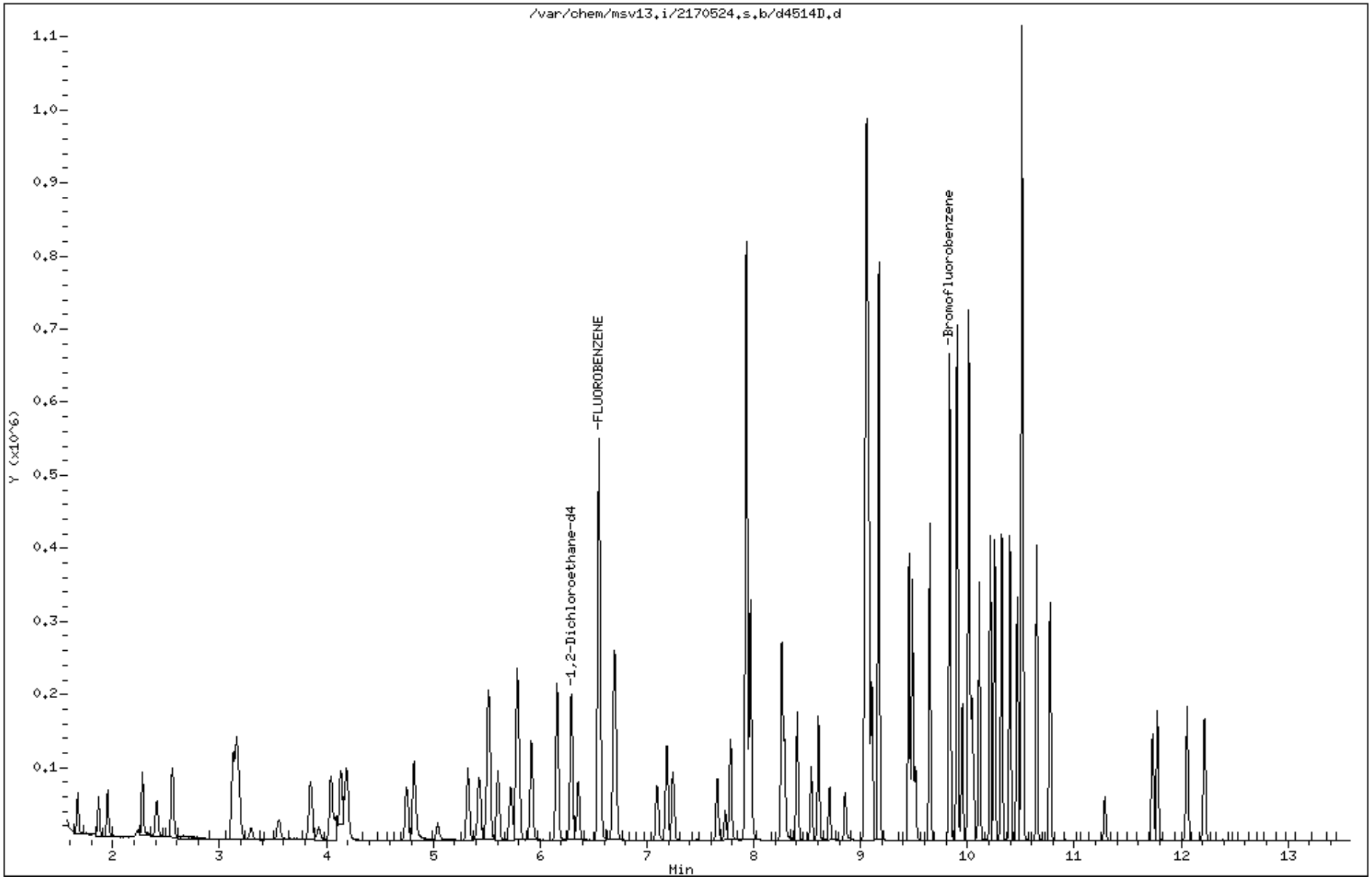
Sample Info: 1206*V13STD020

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

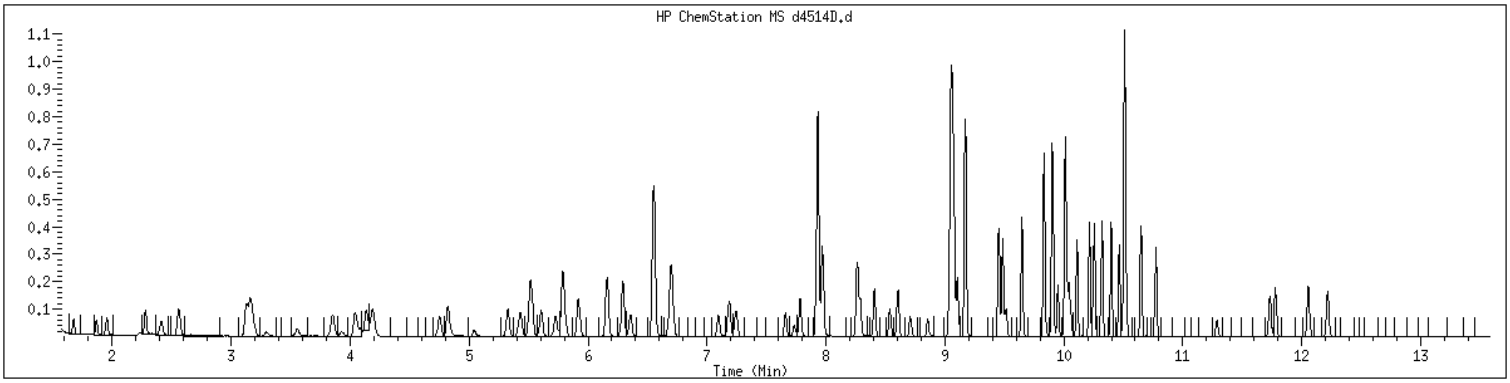
Column diameter: 0.25



Report Date: 05/24/2017 17:30

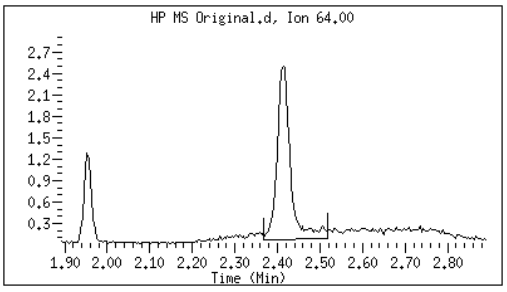
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1206 SampleType : CALIB_6
Injection Date: 05/24/2017 12:35 Instrument : msv13.i
Operator : JCK
Sample Info : 1206*V13STD020
Misc Info : MSV~38389~*1*JCK
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



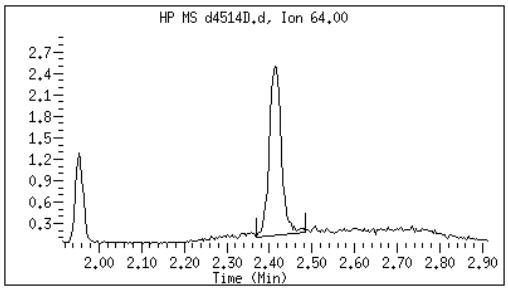
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M2

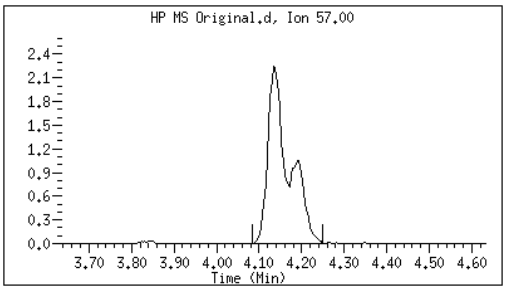


Electronic Signature Applied

User: jck2
Date: 05/24/2017 13:03



20 Hexane CAS#: 110-54-3 Reason: M2



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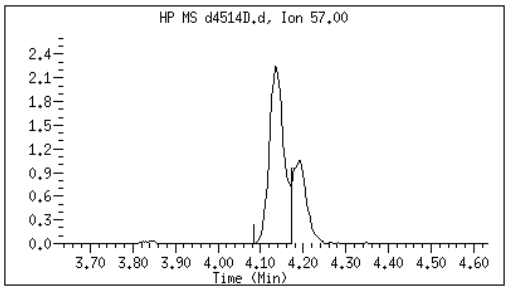
User: jck2
Date: 05/24/2017 13:03



M2 - Target system integrated incorrectly

GCAL, Inc.

Data file : /var/chem/msv13.i/2170524.s.b/d4515D.d
Lab Smp Id: 1207 Client Smp ID: V13STD050
Inj Date : 24-MAY-2017 12:57
Operator : JCK Inst ID: msv13.i
Smp Info : 1207*V13STD050
Misc Info : MSV~38389~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Meth Date : 24-May-2017 17:30 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 12:57 Cal File: d4515D.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	102216	50.0000	47.4	
2	Chloromethane ++	50	1.866	1.866	(0.285)	110688	50.0000	46.3	
3	Vinyl Chloride +	62	1.953	1.953	(0.298)	129151	50.0000	48.5	
6	Bromomethane	94	2.279	2.279	(0.348)	92403	50.0000	45.7	
7	Chloroethane	64	2.414	2.414	(0.368)	114744	50.0000	49.7	
8	Trichlorofluoromethane	101	2.560	2.560	(0.391)	188748	50.0000	49.4	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	120096	50.0000	51.6	
11	Carbon Disulfide	76	3.156	3.156	(0.482)	393020	50.0000	52.5	
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	115183	50.0000	51.4	
13	Methyl Iodide	142	3.295	3.295	(0.503)	82402	50.0000	45.6	
14	Acrolein	56	3.553	3.553	(0.542)	80790	250.000	269	
16	Methylene Chloride	49	3.853	3.853	(0.588)	154244	50.0000	45.7	
17	Acetone	43	3.928	3.928	(0.600)	68217	50.0000	47.5	
18	trans-1,2-Dichloroethene	61	4.044	4.044	(0.617)	145887	50.0000	46.9	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	112391	50.0000	49.7	9490
	20 Hexane	57	4.138	4.138	(0.632)	145739	50.0000	48.4	9607
	21 MTBE	73	4.190	4.190	(0.640)	312181	50.0000	48.9	9340
	26 1,1-Dichloroethane ++	63	4.753	4.753	(0.725)	202441	50.0000	48.3	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	260059	250.000	261	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	104288	50.0000	49.3	
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	158569	50.0000	51.5	
M	75 Total 1,2-Dichloroethene	61				304456	100.000	98.4	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	142134	50.0000	51.4	
	32 Cyclohexane	56	5.518	5.518	(0.842)	193243	50.0000	52.0	9519
	34 Bromochloromethane	128	5.525	5.525	(0.843)	56352	50.0000	49.7	
	35 Chloroform +	83	5.607	5.607	(0.856)	199218	50.0000	49.9	
	36 Carbon Tetrachloride	117	5.731	5.731	(0.875)	128988	50.0000	49.4	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	115744	50.0000	49.9	8318
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	158586	50.0000	50.1	
	44 2-Butanone	43	5.919	5.919	(0.903)	84320	50.0000	51.3	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	154571	50.0000	52.7	
	46 Benzene	78	6.159	6.159	(0.940)	510824	50.0000	51.2	
$	50 1,2-Dichloroethane-d4	67	6.293	6.293	(0.961)	75052	50.0000	50.2	
	51 1,2-Dichloroethane	62	6.353	6.353	(0.970)	165184	50.0000	49.4	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	507734	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	190499	50.0000	51.2	9380
	56 Trichloroethene	130	6.706	6.706	(1.023)	121571	50.0000	49.4	
	57 Dibromomethane	93	7.096	7.096	(1.083)	77383	50.0000	51.4	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	129828	50.0000	51.1	
	60 Bromodichloromethane	83	7.246	7.246	(1.106)	163061	50.0000	51.3	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	186988	50.0000	51.6	9781
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	62097	50.0000	48.8	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	198458	50.0000	48.9	
$	68 Toluene-d8	98	7.932	7.932	(0.876)	495959	50.0000	49.9	
	69 Toluene +	91	7.969	7.969	(0.880)	548306	50.0000	50.1	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	96410	50.0000	49.7	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	162055	50.0000	56.1	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	174550	50.0000	47.6	
M	82 1-3 Dichloropropene total	100				373008	100.000	96.5	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	122466	50.0000	51.2	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	123895	50.0000	52.5	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	215121	50.0000	51.4	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	119766	50.0000	54.2	
	83 2-Hexanone	43	8.854	8.854	(0.978)	116891	50.0000	54.4	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	148585	50.0000	52.7	8092
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	211590	50.0000		
	85 Chlorobenzene ++	112	9.067	9.067	(1.002)	354194	50.0000	50.6	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	189628	50.0000	51.9	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	116335	50.0000	51.9	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	466657	100.000	106	
	90 o-Xylene	106	9.454	9.454	(1.044)	227509	50.0000	54.8	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				694166	150.000	161	
91 Styrene	104	9.487	9.487	(1.048)	386656	50.0000	57.1	
92 Bromoform ++	173	9.514	9.514	(1.051)	100107	50.0000	53.3	
93 Isopropylbenzene	105	9.649	9.649	(1.066)	582987	50.0000	54.7	
$ 95 Bromofluorobenzene	174	9.836	9.836	(1.087)	155758	50.0000	51.8	
96 Bromobenzene	77	9.903	9.903	(0.942)	273537	50.0000	47.3	
97 n-Propylbenzene	91	9.903	9.903	(0.942)	702363	50.0000	48.7	
98 1,1,2,2-Tetrachloroethane++	83	9.948	9.948	(0.947)	194281	50.0000	46.3	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	478085	50.0000	48.2	
102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	484820	50.0000	51.2	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	218316	50.0000	48.6	
101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	46132	50.0000	49.6	
104 4-Chlorotoluene	91	10.110	10.110	(0.962)	424646	50.0000	49.3	
105 tert-butylbenzene	91	10.215	10.215	(0.972)	262335	50.0000	48.9	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	487262	50.0000	52.1	
108 sec-Butylbenzene	105	10.320	10.320	(0.982)	605107	50.0000	50.0	
110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	495142	50.0000	52.6	
113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	291787	50.0000	49.9	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	204214	50.0000		
115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	295151	50.0000	49.6	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	454433	50.0000	51.4	
118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	284383	50.0000	49.1	
119 1,2-Dibromo-3-Chloropropane	157	11.290	11.290	(1.074)	39800	50.0000	49.0	
120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	72885	50.0000	49.4	
122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	163486	50.0000	47.1	
124 Naphthalene	128	12.055	12.055	(1.147)	476915	50.0000	46.5	
125 1,2,3-Trichlorobenzene	180	12.216	12.216	(1.162)	164355	50.0000	46.8	

Data File: /var/chem/msv13.i/2170524.s.b/d4515D.d

Date : 24-MAY-2017 12:57

Client ID: V13STD050

Instrument: msv13.i

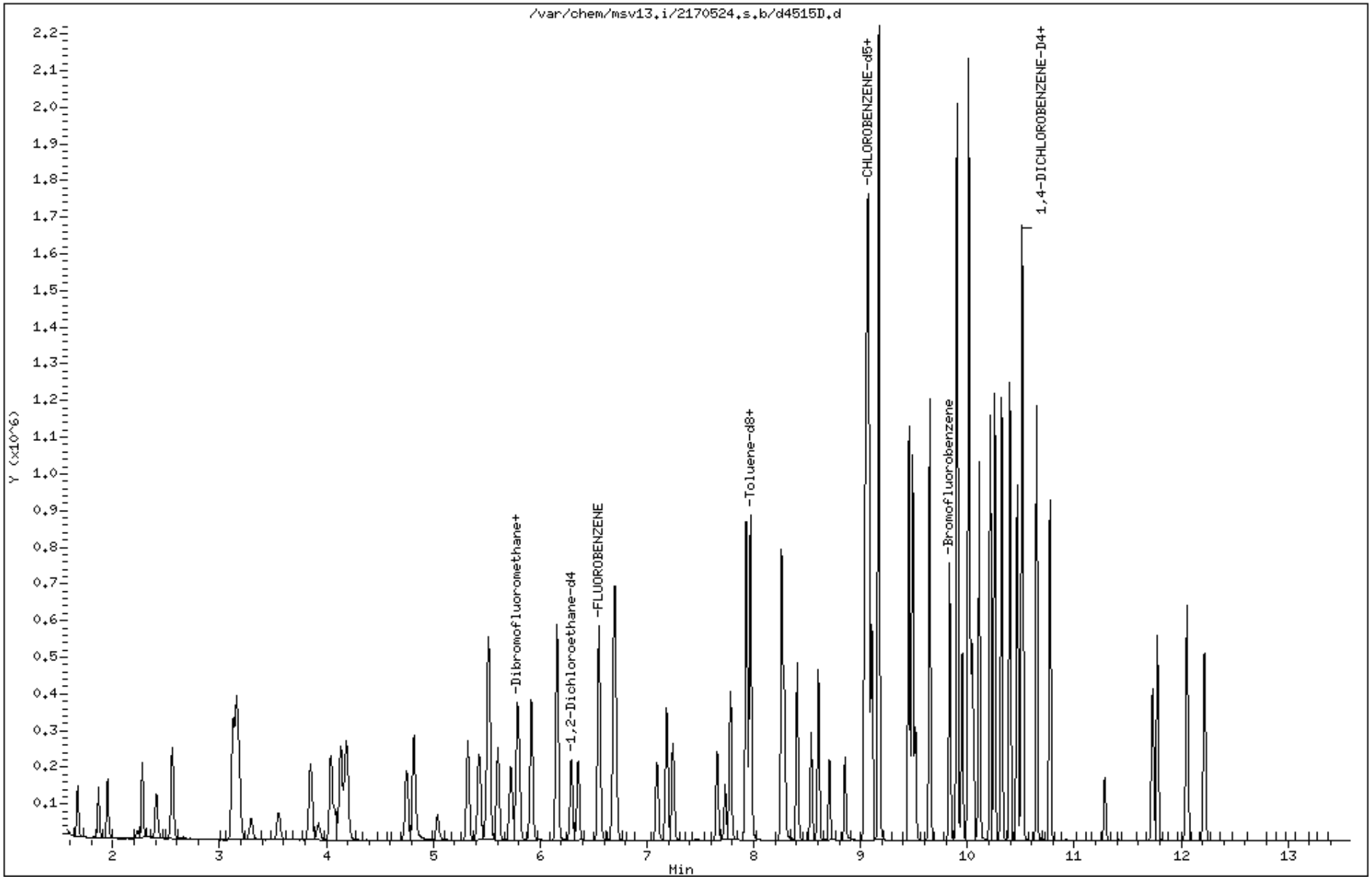
Sample Info: 1207*V13STD050

Purge Volume: 5.0

Operator: JCK

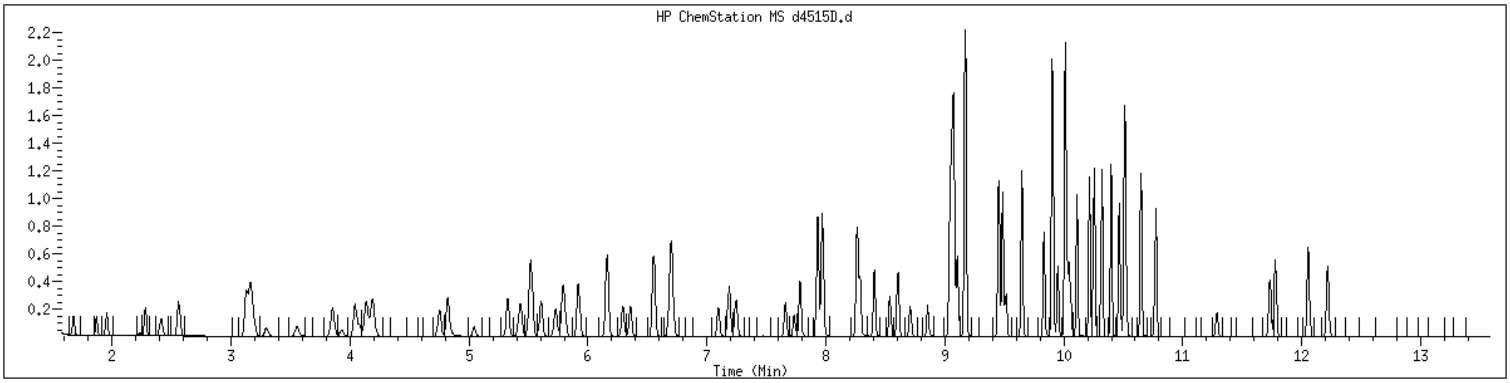
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1207 SampleType : CALIB_7
Injection Date: 05/24/2017 12:57 Instrument : msv13.i
Operator : JCK
Sample Info : 1207*V13STD050
Misc Info : MSV~38389~*1*JCK
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

GCAL, Inc.

Data file : /var/chem/msv13.i/2170524.s.b/d4516D.d
Lab Smp Id: 1208 Client Smp ID: V13STD100
Inj Date : 24-MAY-2017 13:20
Operator : JCK Inst ID: msv13.i
Smp Info : 1208*V13STD100
Misc Info : MSV~38389~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Meth Date : 24-May-2017 17:30 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:20 Cal File: d4516D.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.671	1.671	(0.255)	212086	100.000	92.4	
2 Chloromethane ++	50	1.866	1.866	(0.285)	233745	100.000	91.9	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	271086	100.000	95.8	
6 Bromomethane	94	2.279	2.279	(0.348)	190761	100.000	88.8	
7 Chloroethane	64	2.402	2.402	(0.367)	215665	100.000	87.8	
8 Trichlorofluoromethane	101	2.556	2.556	(0.390)	372043	100.000	91.6	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	244504	100.000	98.7	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	806794	100.000	101	
12 1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	235378	100.000	98.8	
13 Methyl Iodide	142	3.295	3.295	(0.503)	212977	100.000	104	
14 Acrolein	56	3.550	3.550	(0.542)	164780	500.000	516	
16 Methylene Chloride	49	3.853	3.853	(0.588)	356099	100.000	99.2	
17 Acetone	43	3.928	3.928	(0.600)	144068	100.000	94.2	
18 trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	307287	100.000	93.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	230849	100.000	95.9	9684
	20 Hexane	57	4.138	4.138	(0.632)	315774	100.000	98.5	9536
	21 MTBE	73	4.187	4.187	(0.639)	674669	100.000	99.4	9284
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	430017	100.000	96.5	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	547145	500.000	516	
	28 Vinyl Acetate	43	5.041	5.041	(0.769)	225126	100.000	99.3	
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	339237	100.000	103	
M	75 Total 1,2-Dichloroethene	61				646524	200.000	196	
	30 2,2-Dichloropropane	77	5.431	5.431	(0.829)	312938	100.000	106	
	32 Cyclohexane	56	5.514	5.514	(0.842)	418606	100.000	106	9384
	34 Bromochloromethane	128	5.525	5.525	(0.843)	116984	100.000	96.9	
	35 Chloroform +	83	5.604	5.604	(0.855)	423357	100.000	99.7	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	284534	100.000	102	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	123285	50.0000	49.9	6519
	41 1,1,1-Trichloroethane	97	5.799	5.799	(0.885)	344497	100.000	102	
	44 2-Butanone	43	5.915	5.915	(0.903)	186631	100.000	107	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	332524	100.000	107	
	46 Benzene	78	6.159	6.159	(0.940)	1076334	100.000	101	
$	50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	80559	50.0000	50.7	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	348536	100.000	97.9	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	540110	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	411755	100.000	104	9432
	56 Trichloroethene	130	6.706	6.706	(1.023)	260946	100.000	99.7	
	57 Dibromomethane	93	7.092	7.092	(1.082)	165665	100.000	103	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	276190	100.000	102	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	343997	100.000	102	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	399433	100.000	104	9694
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	134690	100.000	98.4	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	441032	100.000	101	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	523440	50.0000	49.0	
	69 Toluene +	91	7.969	7.969	(0.880)	1154103	100.000	98.1	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	205510	100.000	98.6	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	355276	100.000	114	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	392638	100.000	99.7	
M	82 1-3 Dichloropropene total	100				833670	200.000	201	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	258402	100.000	101	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	269348	100.000	106	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	458040	100.000	102	
	80 1,2-Dibromoethane(EDB)	107	8.711	8.711	(0.962)	259563	100.000	109	
	83 2-Hexanone	43	8.854	8.854	(0.978)	262589	100.000	114	
	86 1-Chlorohexane	91	9.037	9.037	(0.998)	330964	100.000	109	7381
*	84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	227497	50.0000		
	85 Chlorobenzene ++	112	9.068	9.068	(1.002)	753816	100.000	100	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	405518	100.000	103	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	249092	100.000	103	
	89 p,m-Xylene	106	9.172	9.172	(1.013)	998529	200.000	211	
	90 o-Xylene	106	9.454	9.454	(1.044)	484325	100.000	109	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M 121 TOTAL XYLENE	106				1482854	300.000	320	
91 Styrene	104	9.487	9.487	(1.048)	823941	100.000	113	
92 Bromoform ++	173	9.514	9.514	(1.051)	226355	100.000	112	
93 Isopropylbenzene	105	9.649	9.649	(1.066)	1253453	100.000	109	
$ 95 Bromofluorobenzene	174	9.832	9.832	(1.086)	172984	50.0000	53.5	
96 Bromobenzene	77	9.903	9.903	(0.942)	581669	100.000	94.9	
97 n-Propylbenzene	91	9.903	9.903	(0.942)	1498234	100.000	98.0	
98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	399521	100.000	89.9	
99 2-Chlorotoluene	91	10.012	10.012	(0.953)	1015900	100.000	96.6	
102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	1033642	100.000	103	
100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	471076	100.000	98.9	
101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	103223	100.000	105	
104 4-Chlorotoluene	91	10.110	10.110	(0.962)	904001	100.000	99.2	
105 tert-butylbenzene	91	10.215	10.215	(0.972)	563666	100.000	99.2	
107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	1035596	100.000	105	
108 sec-Butylbenzene	105	10.320	10.320	(0.982)	1287312	100.000	100	
110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	1081492	100.000	108	
113 1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	615853	100.000	99.5	
* 114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	216275	50.0000		
115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	611961	100.000	97.2	
117 n-Butylbenzene	91	10.649	10.649	(1.013)	972166	100.000	104	
118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	601581	100.000	98.2	
119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	93418	100.000	109	
120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	165201	100.000	106	
122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	375944	100.000	101	
124 Naphthalene	128	12.055	12.055	(1.147)	1119070	100.000	101	
125 1,2,3-Trichlorobenzene	180	12.216	12.216	(1.162)	383233	100.000	102	

Data File: /var/chem/msv13.i/2170524.s.b/d4516D.d

Page 1

Date : 24-MAY-2017 13:20

Client ID: V13STD100

Instrument: msv13.i

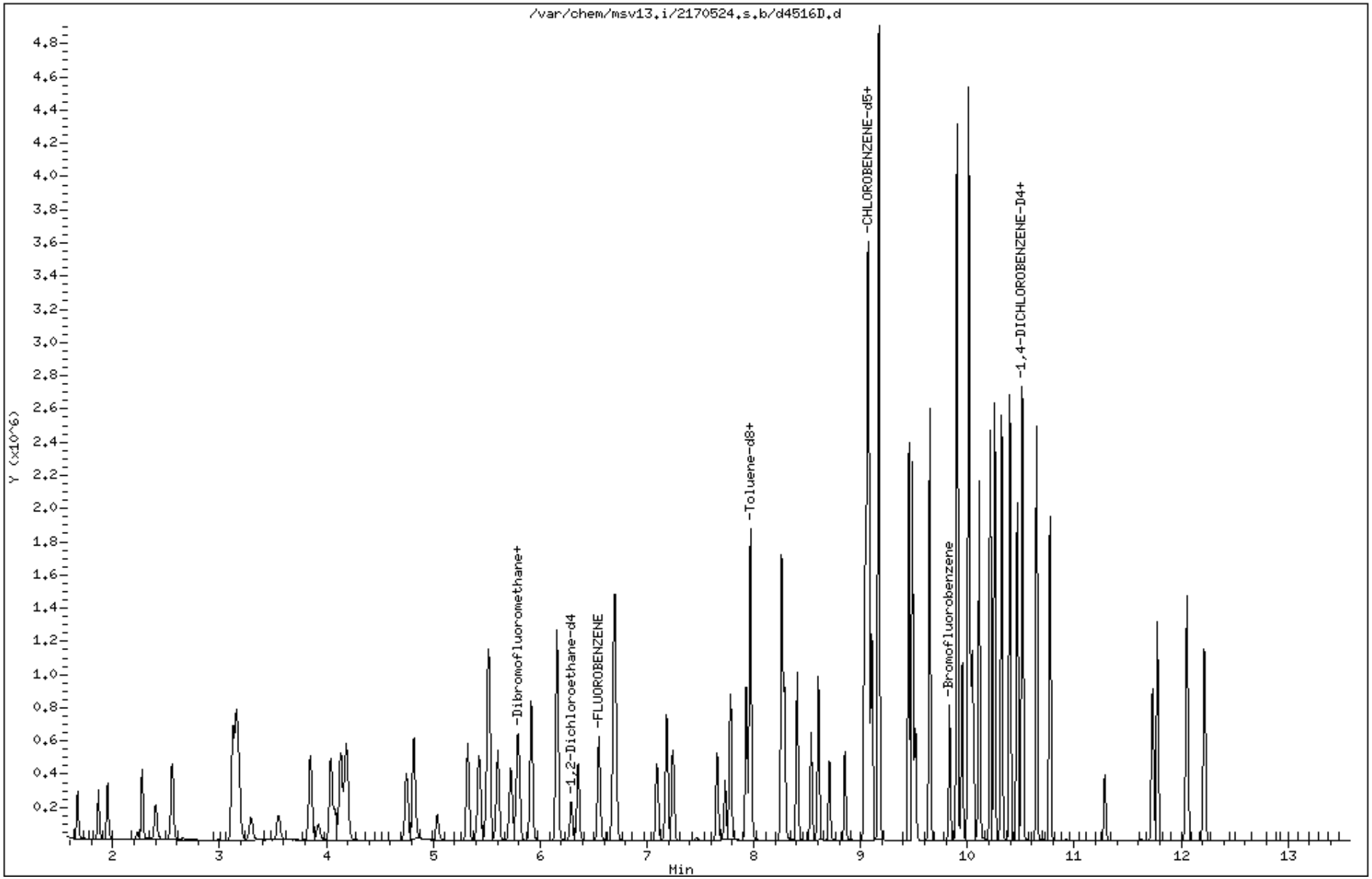
Sample Info: 1208*V13STD100

Purge Volume: 5.0

Operator: JCK

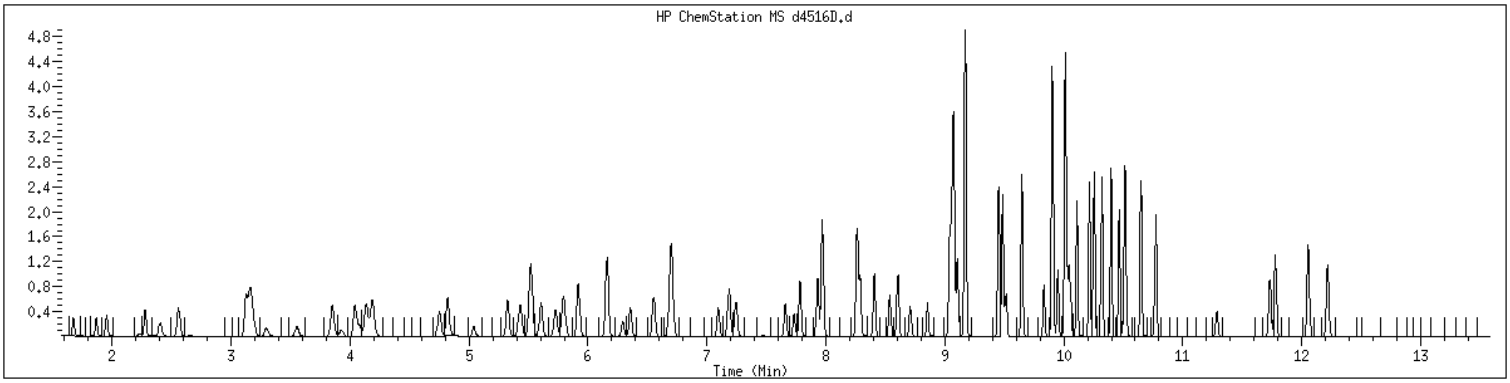
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1208 SampleType : CALIB_8
Injection Date: 05/24/2017 13:20 Instrument : msv13.i
Operator : JCK
Sample Info : 1208*V13STD100
Misc Info : MSV~38389~*1*JCK
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

GCAL, Inc.

Data file : /var/chem/msv13.i/2170524.s.b/d4517D.d
Lab Smp Id: 1209 Client Smp ID: V13STD200
Inj Date : 24-MAY-2017 13:42
Operator : JCK Inst ID: msv13.i
Smp Info : 1209*V13STD200
Misc Info : MSV~38389~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Meth Date : 24-May-2017 17:30 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.671	1.671	(0.255)	456660	200.000	190	
2 Chloromethane ++	50	1.866	1.866	(0.285)	491690	200.000	184	
3 Vinyl Chloride +	62	1.952	1.952	(0.298)	552669	200.000	186	
6 Bromomethane	94	2.275	2.275	(0.347)	401614	200.000	178	
7 Chloroethane	64	2.391	2.391	(0.365)	418646	200.000	162	
8 Trichlorofluoromethane	101	2.552	2.552	(0.390)	708253	200.000	166	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	485867	200.000	187	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	1635471	200.000	196	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.175	(0.484)	461298	200.000	184	
13 Methyl Iodide	142	3.295	3.295	(0.503)	440045	200.000	199	
14 Acrolein	56	3.553	3.553	(0.542)	335699	1000.00	1000	(A)
16 Methylene Chloride	49	3.849	3.849	(0.587)	648499	200.000	172	
17 Acetone	43	3.924	3.924	(0.599)	298784	200.000	186	
18 trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	654626	200.000	189	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.078	4.078	(0.622)	495071	200.000	196	9729
	20 Hexane	57	4.134	4.134	(0.631)	667548	200.000	198	9527
	21 MTBE	73	4.187	4.187	(0.639)	1459586	200.000	205	9179(A)
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	896301	200.000	192	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	1229105	1000.00	1110	(A)
	28 Vinyl Acetate	43	5.038	5.038	(0.769)	486334	200.000	204	(A)
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	722275	200.000	210	(A)
M	75 Total 1,2-Dichloroethene	61				1376901	400.000	399	
	30 2,2-Dichloropropane	77	5.427	5.427	(0.828)	674940	200.000	219	(A)
	32 Cyclohexane	56	5.514	5.514	(0.842)	888448	200.000	214	9285(A)
	34 Bromochloromethane	128	5.525	5.525	(0.843)	240355	200.000	190	
	35 Chloroform +	83	5.604	5.604	(0.855)	880803	200.000	198	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	610400	200.000	209	(A)
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	132816	50.0000	51.2	5022
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	720627	200.000	204	(A)
	44 2-Butanone	43	5.915	5.915	(0.903)	405530	200.000	221	(A)
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	698590	200.000	213	(A)
	46 Benzene	78	6.158	6.158	(0.940)	2224983	200.000	200	
$	50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	83765	50.0000	50.2	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	716919	200.000	192	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	566909	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	853219	200.000	206	9385(A)
	56 Trichloroethene	130	6.706	6.706	(1.023)	549044	200.000	200	
	57 Dibromomethane	93	7.096	7.096	(1.083)	344883	200.000	205	(A)
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	572922	200.000	202	(A)
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	715596	200.000	202	(A)
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	835530	200.000	206	9683(A)
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	299843	200.000	207	(A)
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	927392	200.000	203	(A)
$	68 Toluene-d8	98	7.932	7.932	(0.876)	548733	50.0000	47.5	
	69 Toluene +	91	7.969	7.969	(0.880)	2359090	200.000	185	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	444576	200.000	197	
	73 4-methyl-2-pentanone	43	8.261	8.261	(0.913)	765812	200.000	228	(A)
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	855669	200.000	206	(A)
M	82 1-3 Dichloropropene total	100				1783061	400.000	409	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	532997	200.000	192	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	578406	200.000	211	(A)
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	946784	200.000	194	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	547072	200.000	213	(A)
	83 2-Hexanone	43	8.854	8.854	(0.978)	575275	200.000	230	(A)
	86 1-Chlorohexane	91	9.041	9.041	(0.999)	694718	200.000	212	7391(A)
*	84 CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	245934	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	1546482	200.000	190	
	87 Ethylbenzene +	106	9.079	9.079	(1.003)	833422	200.000	196	
	88 1,1,1,2-Tetrachloroethane	133	9.109	9.109	(1.006)	521597	200.000	200	(A)
	89 p,m-Xylene	106	9.172	9.172	(1.013)	2055485	400.000	403	(A)
	90 o-Xylene	106	9.454	9.454	(1.044)	997553	200.000	207	(A)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
M	121 TOTAL XYLENE	106				3053038	600.000	609	
	91 Styrene	104	9.487	9.487	(1.048)	1705756	200.000	217	(A)
	92 Bromoform ++	173	9.517	9.517	(1.051)	487660	200.000	223	(A)
	93 Isopropylbenzene	105	9.648	9.648	(1.066)	2570605	200.000	207	(A)
$	95 Bromofluorobenzene	174	9.836	9.836	(1.087)	185659	50.0000	53.1	
	96 Bromobenzene	77	9.903	9.903	(0.942)	1211598	200.000	187	
	97 n-Propylbenzene	91	9.903	9.903	(0.942)	3118977	200.000	193	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	811978	200.000	173	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	2124574	200.000	191	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	2146087	200.000	202	(A)
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	1014217	200.000	201	(A)
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	226144	200.000	217	(A)
	104 4-Chlorotoluene	91	10.113	10.113	(0.962)	1836929	200.000	190	
	105 tert-butylbenzene	91	10.214	10.214	(0.972)	1147846	200.000	191	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	2149471	200.000	205	(A)
	108 sec-Butylbenzene	105	10.319	10.319	(0.982)	2624790	200.000	194	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	2222897	200.000	211	(A)
	113 1,3-Dichlorobenzene	146	10.469	10.469	(0.996)	1258990	200.000	192	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	228829	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	1257213	200.000	189	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	2003668	200.000	202	(A)
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	1227993	200.000	189	
	119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	204138	200.000	224	(A)
	120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	346765	200.000	210	(A)
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	806946	200.000	204	(A)
	124 Naphthalene	128	12.055	12.055	(1.147)	2429271	200.000	206	(A)
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	813418	200.000	204	(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: /var/chem/msv13.i/2170524.s.b/d4517D.d

Page 1

Date : 24-MAY-2017 13:42

Client ID: V13STD200

Instrument: msv13.i

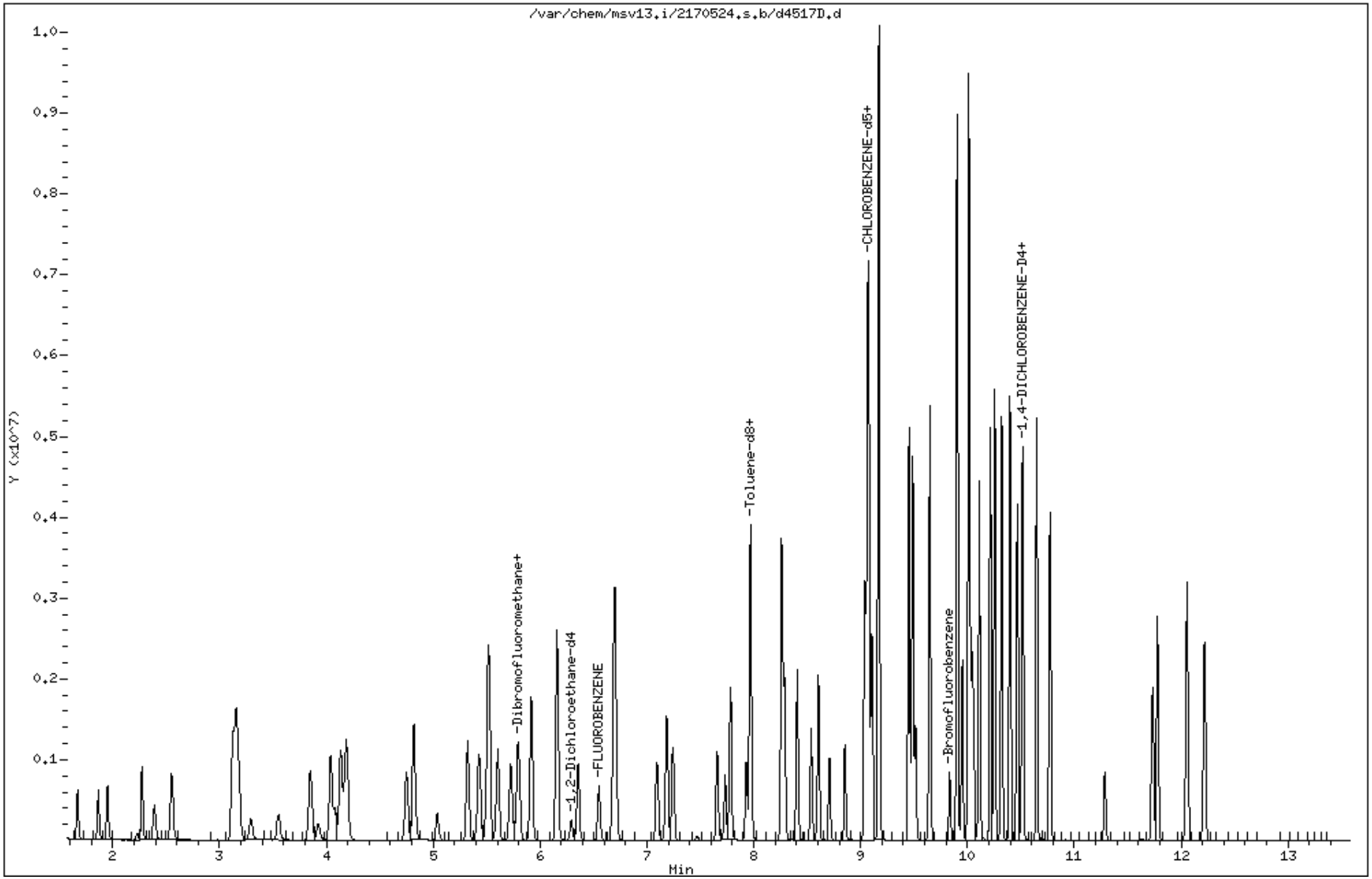
Sample Info: 1209*V13STD200

Purge Volume: 5.0

Operator: JCK

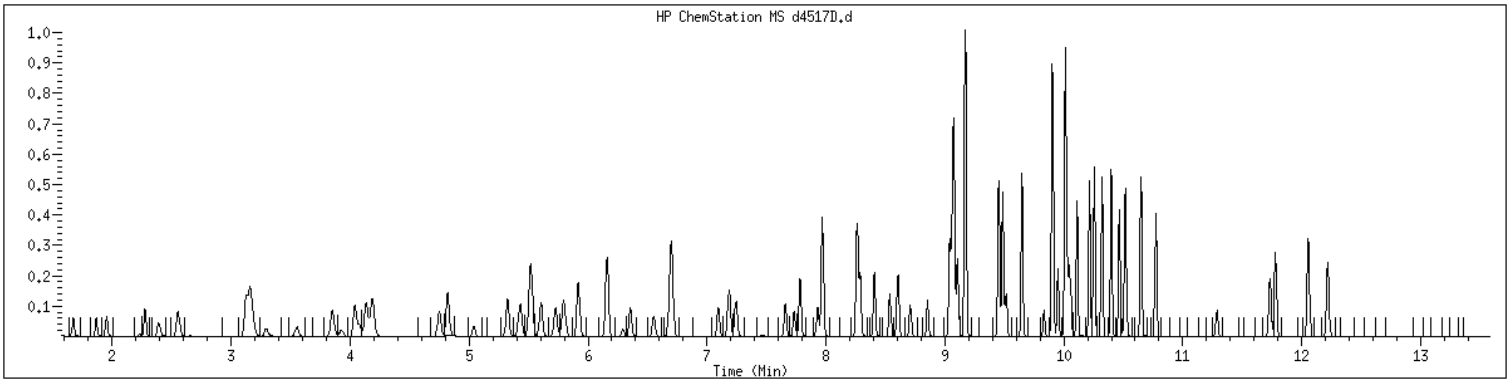
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1209 SampleType : CALIB_9
Injection Date: 05/24/2017 13:42 Instrument : msv13.i
Operator : JCK
Sample Info : 1209*V13STD200
Misc Info : MSV~38389~*1*JCK
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

Form 6I

ICAL Verifications

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217052202	Instrument ID:	MSV13
Analysis Date:	05/24/17 1511	Lab File ID:	2170524/d4521D
Analysis Method:	EPA 8260B	Analytical Batch:	611054

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
1,1,1-Trichloroethane	ug/L	50.0	50.0	100	80	120	
1,1,2,2-Tetrachloroethane	ug/L	50.0	46.0	92	80	120	
1,1,2-Trichloroethane	ug/L	50.0	50.3	101	80	120	
1,1-Dichloroethane	ug/L	50.0	48.2	96	80	120	
1,1-Dichloroethene	ug/L	50.0	50.2	100	80	120	
1,2,3-Trichlorobenzene	ug/L	50.0	48.1	96	80	120	
1,2,4-Trichlorobenzene	ug/L	50.0	49.5	99	80	120	
1,2-Dibromo-3-chloropropane	ug/L	50.0	51.4	103	80	120	
1,2-Dibromoethane	ug/L	50.0	53.5	107	80	120	
1,2-Dichlorobenzene	ug/L	50.0	49.4	99	80	120	
1,2-Dichloroethane	ug/L	50.0	48.0	96	80	120	
1,2-Dichloropropane	ug/L	50.0	50.3	101	80	120	
1,3-Dichlorobenzene	ug/L	50.0	50.0	100	80	120	
1,4-Dichlorobenzene	ug/L	50.0	49.0	98	80	120	
2-Butanone	ug/L	50.0	51.7	103	80	120	
2-Hexanone	ug/L	50.0	54.1	108	80	120	
4-Methyl-2-pentanone	ug/L	50.0	54.6	109	80	120	
Acetone	ug/L	50.0	47.3	95	80	120	
Benzene	ug/L	50.0	49.9	100	80	120	
Bromochloromethane	ug/L	50.0	48.3	97	80	120	
Bromodichloromethane	ug/L	50.0	49.3	99	80	120	
Bromoform	ug/L	50.0	53.2	106	80	120	
Bromomethane	ug/L	50.0	47.9	96	80	120	
Carbon disulfide	ug/L	50.0	51.4	103	80	120	
Carbon tetrachloride	ug/L	50.0	49.7	99	80	120	
Chlorobenzene	ug/L	50.0	50.2	100	80	120	
Chloroethane	ug/L	50.0	47.9	96	80	120	
Chloroform	ug/L	50.0	49.2	98	80	120	
Chloromethane	ug/L	50.0	50.4	101	80	120	
cis-1,2-Dichloroethene	ug/L	50.0	51.0	102	80	120	
cis-1,3-Dichloropropene	ug/L	50.0	48.3	97	80	120	
Cyclohexane	ug/L	50.0	51.7	103	80	120	
Dibromochloromethane	ug/L	50.0	51.7	103	80	120	
Dichlorodifluoromethane	ug/L	50.0	48.7	97	80	120	

FORM 6I - ORG

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	217052202	Instrument ID:	MSV13
Analysis Date:	05/24/17 1511	Lab File ID:	2170524/d4521D
Analysis Method:	EPA 8260B	Analytical Batch:	611054

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
Ethylbenzene	ug/L	50.0	52.1	104	80	120	
Isopropylbenzene (Cumene)	ug/L	50.0	53.9	108	80	120	
Methyl Acetate	ug/L	50.0	49.9	100	80	120	
Methylcyclohexane	ug/L	50.0	50.6	101	80	120	
Methylene chloride	ug/L	50.0	44.2	88	80	120	
Styrene	ug/L	50.0	56.4	113	80	120	
tert-Butyl methyl ether (MTBE)	ug/L	50.0	48.8	98	80	120	
Tetrachloroethene	ug/L	50.0	49.6	99	80	120	
Toluene	ug/L	50.0	49.4	99	80	120	
trans-1,2-Dichloroethene	ug/L	50.0	47.3	95	80	120	
trans-1,3-Dichloropropene	ug/L	50.0	47.4	95	80	120	
Trichloroethene	ug/L	50.0	48.7	97	80	120	
Trichlorofluoromethane	ug/L	50.0	47.6	95	80	120	
Trichlorotrifluoroethane	ug/L	50.0	50.5	101	80	120	
Xylene (total)	ug/L	150	160	107	80	120	

GCAL, Inc.

Data file : /var/chem/msv13.i/2170524.s.b/d4521D.d
Lab Smp Id: 1600 Client Smp ID: ICV050
Inj Date : 24-MAY-2017 15:11
Operator : JCK Inst ID: msv13.i
Smp Info : 1600*ICV050
Misc Info : MSV~38389~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Meth Date : 24-May-2017 17:30 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
1 Dichlorodifluoromethane	85	1.671	1.671	(0.255)	111004	48.6682	48.7	
2 Chloromethane ++	50	1.866	1.866	(0.285)	127307	50.3944	50.4	
3 Vinyl Chloride +	62	1.953	1.952	(0.298)	141769	50.4013	50.4	
6 Bromomethane	94	2.279	2.275	(0.348)	102190	47.8664	47.9	
7 Chloroethane	64	2.410	2.391	(0.368)	116877	47.8755	47.9	
8 Trichlorofluoromethane	101	2.560	2.552	(0.391)	192054	47.6050	47.6	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	123626	50.2324	50.2	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	406335	51.3541	51.4	
12 1,1,2Trichlotrifluoroethane	101	3.175	3.175	(0.485)	119507	50.4810	50.5	
13 Methyl Iodide	142	3.295	3.295	(0.503)	76805	40.8321	40.8	
14 Acrolein	56	3.557	3.553	(0.543)	81428	256.818	257	
16 Methylene Chloride	49	3.849	3.849	(0.587)	157638	44.2135	44.2	
17 Acetone	43	3.924	3.924	(0.599)	71791	47.2609	47.3	
18 trans-1,2-Dichloroethene	61	4.044	4.040	(0.617)	155243	47.2647	47.3	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	FINAL (ug/L)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.078	(0.623)	119294	49.8801	49.9	9776
	20 Hexane	57	4.134	4.134	(0.631)	158025	49.6321	49.6	9538
	21 MTBE	73	4.191	4.187	(0.640)	329252	48.8024	48.8	9287
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	213305	48.1895	48.2	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	278671	264.734	265	
	28 Vinyl Acetate	43	5.041	5.038	(0.769)	118686	53.0301	53.0	
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	166146	51.0192	51.0	
M	75 Total 1,2-Dichloroethene	61				321389	98.2839	98.3	
	30 2,2-Dichloropropane	77	5.431	5.427	(0.829)	153777	52.6248	52.6	
	32 Cyclohexane	56	5.518	5.514	(0.842)	203163	51.7480	51.7	9527
	34 Bromochloromethane	128	5.529	5.525	(0.844)	57854	48.2556	48.3	
	35 Chloroform +	83	5.604	5.604	(0.855)	207592	49.1921	49.2	
	36 Carbon Tetrachloride	117	5.727	5.727	(0.874)	137323	49.7337	49.7	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	121066	49.3507	49.4	8099
	41 1,1,1-Trichloroethane	97	5.799	5.795	(0.885)	167298	50.0256	50.0	
	44 2-Butanone	43	5.919	5.915	(0.903)	89813	51.7402	51.7	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	162363	52.3619	52.4	
	46 Benzene	78	6.159	6.158	(0.940)	526510	49.9454	49.9	
$	50 1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	79549	50.3796	50.4	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	169864	48.0367	48.0	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	536624	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	198752	50.5896	50.6	9453
	56 Trichloroethene	130	6.706	6.706	(1.023)	126637	48.7095	48.7	
	57 Dibromomethane	93	7.096	7.096	(1.083)	80456	50.5765	50.6	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	134805	50.2503	50.3	
	60 Bromodichloromethane	83	7.246	7.242	(1.106)	165649	49.3288	49.3	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	193093	50.3991	50.4	9679
	64 2-Chloroethyl vinyl ether	63	7.733	7.733	(1.180)	65962	49.0651	49.1	
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	207477	48.3340	48.3	
$	68 Toluene-d8	98	7.928	7.932	(0.876)	519925	49.9881	50.0	
	69 Toluene +	91	7.969	7.969	(0.880)	565371	49.3784	49.4	
	71 Tetrachloroethene	164	8.265	8.265	(0.913)	100600	49.5989	49.6	
	73 4-methyl-2-pentanone	43	8.262	8.261	(0.913)	165066	54.6378	54.6	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	183690	47.4256	47.4	
M	82 1-3 Dichloropropene total	100				391167	95.7596	95.8	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	125697	50.2654	50.3	
	78 Dibromochloromethane	129	8.539	8.539	(0.943)	127739	51.7485	51.7	
	79 1,3-Dichloropropane	76	8.606	8.606	(0.951)	220492	50.3055	50.3	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	123583	53.4784	53.5	
	83 2-Hexanone	43	8.854	8.854	(0.978)	121794	54.1325	54.1	
	86 1-Chlorohexane	91	9.037	9.041	(0.998)	160615	54.4455	54.4	8126
*	84 CHLOROBENZENE-d5	82	9.053	9.052	(1.000)	221411	50.0000		
	85 Chlorobenzene ++	112	9.067	9.064	(1.002)	367568	50.1909	50.2	
	87 Ethylbenzene +	106	9.075	9.079	(1.002)	199325	52.0914	52.1	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.109	(1.006)	119623	51.0313	51.0	
	89 p,m-Xylene	106	9.169	9.172	(1.013)	485891	105.728	106	
	90 o-Xylene	106	9.454	9.454	(1.044)	234310	53.9603	54.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb)	CONCENTRATIONS FINAL (ug/L)	SIMILARITY
M	121 TOTAL XYLENE	106				720201	159.688	160	
	91 Styrene	104	9.487	9.487	(1.048)	400024	56.4265	56.4	
	92 Bromoform ++	173	9.514	9.517	(1.051)	104500	53.1506	53.2	
	93 Isopropylbenzene	105	9.649	9.648	(1.066)	601573	53.9288	53.9	
$	95 Bromofluorobenzene	174	9.836	9.836	(1.087)	167506	53.2331	53.2	
	96 Bromobenzene	77	9.903	9.903	(0.942)	279346	46.9440	46.9	
	97 n-Propylbenzene	91	9.903	9.903	(0.942)	729263	49.1540	49.2	
	98 1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	198451	46.0017	46.0	
	99 2-Chlorotoluene	91	10.012	10.012	(0.953)	488806	47.8854	47.9	
	102 1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	498385	51.1874	51.2	
	100 1,2,3-Trichloropropane	75	10.042	10.042	(0.955)	220131	47.6194	47.6	
	101 trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	47114	49.2920	49.3	
	104 4-Chlorotoluene	91	10.110	10.113	(0.962)	439884	49.7039	49.7	
	105 tert-butylbenzene	91	10.215	10.214	(0.972)	271591	49.2440	49.2	
	107 1,2,4-Trimethylbenzene	105	10.256	10.256	(0.976)	501915	52.2071	52.2	
	108 sec-Butylbenzene	105	10.320	10.319	(0.982)	623095	50.0748	50.1	
	110 p-Isopropyltoluene	119	10.398	10.398	(0.989)	522351	53.9226	53.9	
	113 1,3-Dichlorobenzene	146	10.466	10.469	(0.996)	300702	50.0449	50.0	
*	114 1,4-DICHLOROBENZENE-D4	152	10.511	10.511	(1.000)	209966	50.0000		
	115 1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	299501	48.9944	49.0	
	117 n-Butylbenzene	91	10.649	10.649	(1.013)	472393	52.0117	52.0	
	118 1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	293752	49.3783	49.4	
	119 1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	42932	51.4032	51.4	
	120 Hexachlorobutadiene	225	11.733	11.733	(1.116)	80932	53.3780	53.4	
	122 1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	176548	49.4583	49.5	
	124 Naphthalene	128	12.055	12.055	(1.147)	500271	47.4152	47.4	
	125 1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	173699	48.0729	48.1	

Data File: /var/chem/msv13.i/2170524.s.b/d4521D.d

Date : 24-MAY-2017 15:11

Client ID: ICV050

Instrument: msv13.i

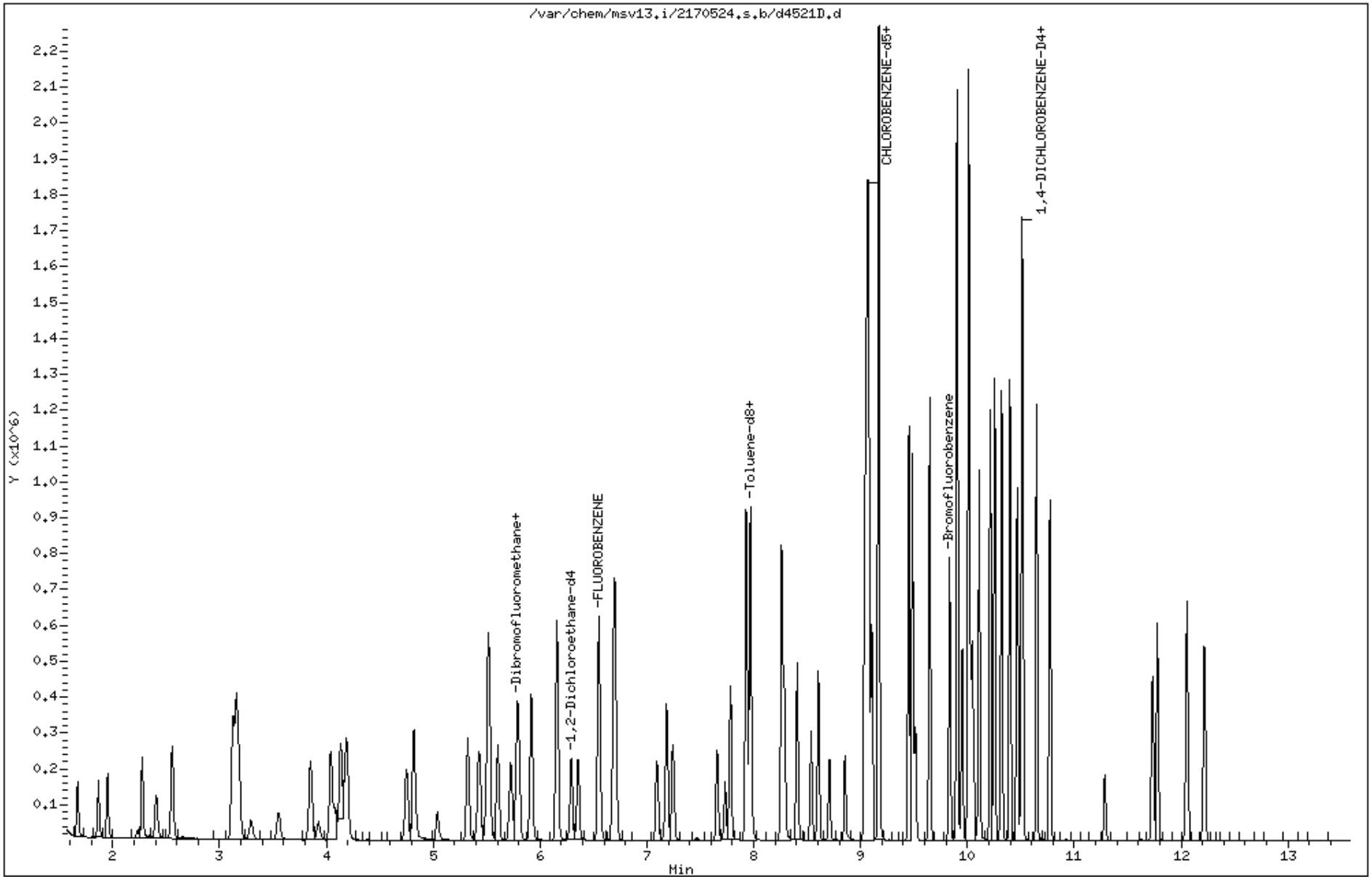
Sample Info: 1600*ICV050

Purge Volume: 5.0

Operator: JCK

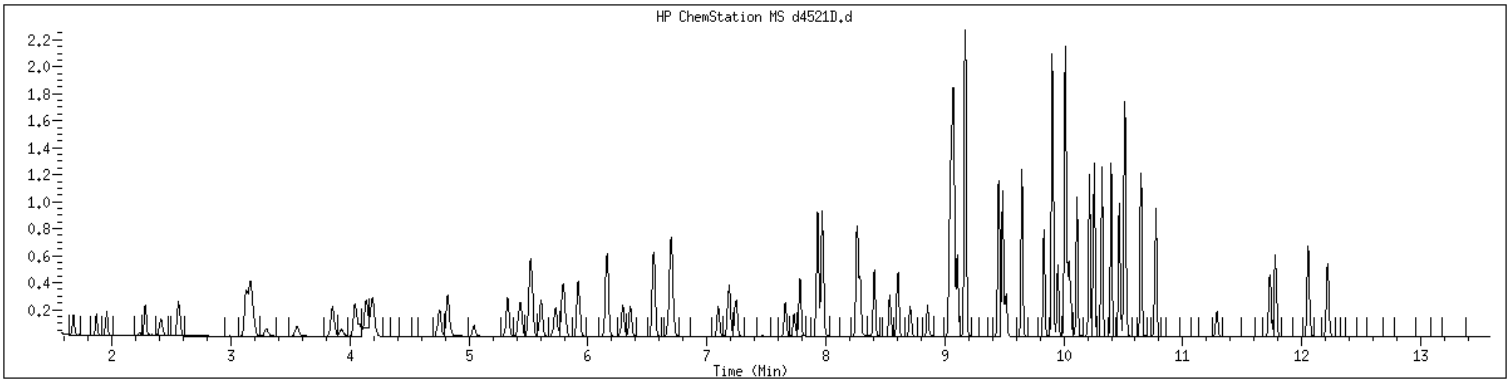
Column phase: RTX-VMS-30M

Column diameter: 0.25



MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1600 SampleType : LCS
Injection Date: 05/24/2017 15:11 Instrument : msv13.i
Operator : JCK
Sample Info : 1600*ICV050
Misc Info : MSV~38389~*1*JCK
Method : /var/chem/msv13.i/2170524.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



NO MANUAL INTEGRATIONS

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217052202	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170525/d4541
Init. Calib. Date 1:	05/24/17 Time 1: 1128	Analyst:	JCK
Init. Calib. Date 2:	05/24/17 Time 2: 1342	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 0815	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.529	0.515	.01	-2.69	20	A	
1,1,1-Trichloroethane	0.312	0.298	.01	-4.52	20	A	
1,1,2,2-Tetrachloroethane	1.027	0.908	.3	-11.5	20	A	
1,1,2-Trichloroethane	0.565	0.530	.01	-6.22	20	A	
1,1-Dichloroethane	0.412	0.406	.1	-1.58	20	A	
1,1-Dichloroethene	0.229	0.196	.01	-14.3	20	A	
1,1-Dichloropropene	0.289	0.289	.01	.16	20	A	
1,2,3-Trichlorobenzene	0.877	0.767	.01	-10.6	20	W	
1,2,3-Trichloropropane	1.101	1.078	.01	-2.05	20	A	
1,2,4-Trichlorobenzene	0.867	0.772	.01	-9	20	W	
1,2,4-Trimethylbenzene	2.289	2.326	.01	1.6	20	A	
1,2-Dibromo-3-chloropropane	0.199	0.173	.01	-13.2	20	A	
1,2-Dibromoethane	0.522	0.510	.01	-2.24	20	A	
1,2-Dichlorobenzene	1.417	1.359	.01	-4.04	20	A	
1,2-Dichloroethane	0.329	0.311	.01	-5.75	20	A	
1,2-Dichloroethane-d4	0.147	0.150	.01	1.9	20	A	
1,2-Dichloroethene (total)	0.305	0.291	.01	-4.54	20	A	
1,2-Dichloropropane	0.250	0.246	.01	-1.49	20	A	
1,3,5-Trimethylbenzene	2.319	2.350	.01	1.34	20	A	
1,3-Dichlorobenzene	1.431	1.398	.01	-2.29	20	A	
1,3-Dichloropropane	0.990	0.973	.01	-1.65	20	A	
1,3-Dichloropropylene	0.386	0.340	.01	-10.6	20	W	
1,4-Dichlorobenzene	1.456	1.404	.01	-3.58	20	A	
1-Bromo-2-Chloroethane	0.357	0.356	.01	-.2	20	A	
1-Chlorohexane	0.666	0.691	.01	3.74	20	A	
2,2-Dichloropropane	0.272	0.274	.01	.74	20	A	
2-Butanone	0.162	0.147	.01	-8.9	20	A	
2-Chlorotoluene	2.431	2.339	.01	-3.77	20	A	
2-Hexanone	0.508	0.472	.01	-7.05	20	A	
4-Bromofluorobenzene	0.711	0.719	.01	1.25	20	A	
4-Chlorotoluene	2.108	2.086	.01	-1.03	20	A	
4-Isopropyltoluene	2.307	2.451	.01	6.24	20	A	
4-Methyl-2-pentanone	0.682	0.653	.01	-4.26	20	A	
Acetone	0.142	0.120	.01	-15.5	20	A	
Acrolein	0.030	0.024	.01	-19.9	20	A	
Acrylonitrile	0.098	0.098	.01	-.26	20	A	
Benzene	0.982	0.965	.01	-1.76	20	A	
Bromobenzene	1.417	1.327	.01	-6.33	20	A	
Bromochloromethane	0.112	0.106	.01	-5.47	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217052202	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170525/d4541
Init. Calib. Date 1:	05/24/17 Time 1: 1128	Analyst:	JCK
Init. Calib. Date 2:	05/24/17 Time 2: 1342	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 0815	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromodichloromethane	0.313	0.309	.01	-1.12	20	A	
Bromoform	0.444	0.430	.1	-3.14	20	A	
Bromomethane	0.199	0.183	.01	-8.21	20	A	
Carbon disulfide	0.737	0.663	.01	-10.0	20	A	
Carbon tetrachloride	0.257	0.244	.01	-4.99	20	A	
Chlorobenzene	1.654	1.574	.3	-4.8	20	A	
Chloroethane	0.227	0.215	.01	-5.68	20	A	
Chloroform	0.393	0.377	.01	-4.14	20	A	
Chloromethane	0.235	0.215	.1	-8.85	20	A	
Cyclohexane	0.366	0.374	.01	2.13	20	A	
Dibromochloromethane	0.557	0.532	.01	-4.63	20	A	
Dibromofluoromethane	0.229	0.223	.01	-2.65	20	A	
Dibromomethane	0.148	0.144	.01	-2.53	20	A	
Dichlorodifluoromethane	0.213	0.202	.01	-4.81	20	A	
Ethylbenzene	0.864	0.859	.01	-.6	20	A	
Hexachlorobutadiene	0.361	0.362	.01	.36	20	A	
Isopropylbenzene (Cumene)	2.519	2.619	.01	3.97	20	A	
Methyl Acetate	0.223	0.180	.01	-19.0	20	A	
Methyl iodide	0.200	0.118	.01	-30.6	20	L	*
Methylcyclohexane	0.366	0.372	.01	1.56	20	A	
Methylene chloride	0.332	0.292	.01	-11.9	20	A	
Naphthalene	2.592	2.104	.01	-16	20	W	
Styrene	1.601	1.717	.01	7.26	20	A	
Tetrachloroethene	0.458	0.418	.01	-8.69	20	A	
Toluene	2.586	2.441	.01	-5.58	20	A	
Toluene-d8	2.349	2.242	.01	-4.56	20	A	
Trichloroethene	0.242	0.228	.01	-5.98	20	A	
Trichlorofluoromethane	0.376	0.363	.01	-3.44	20	A	
Trichlorotrifluoroethane	0.221	0.193	.01	-12.5	20	A	
Vinyl acetate	0.211	0.190	.01	-9	20	W	
Vinyl chloride	0.262	0.243	.01	-7.16	20	A	
Xylene (total)	1.019	1.040	.01	2.09	20	A	
cis-1,2-Dichloroethene	0.303	0.301	.01	-.78	20	A	
cis-1,3-Dichloropropene	0.405	0.361	.01	-9.8	20	W	
m,p-Xylene	1.038	1.056	.01	1.72	20	A	
n-Butylbenzene	2.163	2.294	.01	6.05	20	A	
n-Hexane	0.297	0.278	.01	-6.43	20	A	
n-Propylbenzene	3.533	3.511	.01	-.61	20	A	
o-Xylene	0.981	1.009	.01	2.87	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	217052202	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170525/d4541
Init. Calib. Date 1:	05/24/17 Time 1: 1128	Analyst:	JCK
Init. Calib. Date 2:	05/24/17 Time 2: 1342	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 0815	Analytical Method:	EPA 8260B

ANALYTE	$\overline{RRF}$	RRF CCV	Min RRF	%D/%Drift	Max %D/ %Drift	TYPE	Q
sec-Butylbenzene	2.963	2.990	.01	.91	20	A	
tert-Butyl methyl ether (MTBE)	0.629	0.571	.01	-9.1	20	A	
tert-Butylbenzene	1.313	1.291	.01	-1.7	20	A	
trans-1,2-Dichloroethene	0.306	0.281	.01	-8.26	20	A	
trans-1,3-Dichloropropene	0.368	0.319	.01	-11.6	20	W	
trans-1,4-Dichloro-2-butene	0.228	0.225	.01	-1.12	20	A	

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4541.d
Lab Smp Id: 1400 Client Smp ID: V13STD050
Inj Date : 25-MAY-2017 08:15
Operator : JCK Inst ID: msv13.i
Smp Info : 1400*V13STD050
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Meth Date : 25-May-2017 12:29 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b+AppIX1.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	AMOUNTS ON-COL (ppb)	SIMILARITY
1	Dichlorodifluoromethane	85	1.675	1.675	(0.256)	102475	50.0000	47.6	
2	Chloromethane ++	50	1.866	1.866	(0.285)	108686	50.0000	45.6	
3	Vinyl Chloride +	62	1.952	1.952	(0.298)	123258	50.0000	46.4	
6	Bromomethane	94	2.279	2.279	(0.348)	92488	50.0000	45.9	
7	Chloroethane	64	2.413	2.413	(0.368)	108677	50.0000	47.2	(M1)
8	Trichlorofluoromethane	101	2.556	2.556	(0.390)	183868	50.0000	48.3	
10	1,1-Dichloroethene +	96	3.126	3.126	(0.477)	99532	50.0000	42.8	
11	Carbon Disulfide	76	3.156	3.156	(0.482)	335850	50.0000	45.0	
12	1,1,2Trichlotrifluoroethane	101	3.178	3.178	(0.485)	97768	50.0000	43.7	
13	Methyl Iodide	142	3.294	3.294	(0.503)	59997	50.0000	34.7	
14	Acrolein	56	3.549	3.549	(0.542)	59886	250.000	200	
16	Methylene Chloride	49	3.849	3.849	(0.587)	148131	50.0000	44.0	
17	Acetone	43	3.928	3.928	(0.600)	60563	50.0000	42.2	
18	trans-1,2-Dichloroethene	61	4.040	4.040	(0.617)	142219	50.0000	45.9	

			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ppb)	(ppb)	SIMILARITY
	19	Methyl Acetate	43	4.078	4.078	(0.622)	91380	50.0000	40.5	9378
	20	Hexane	57	4.134	4.134	(0.631)	140608	50.0000	46.8	9732
	21	MTBE	73	4.187	4.187	(0.639)	289455	50.0000	45.4	9821
	26	1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	205609	50.0000	49.2	
	27	Acrylonitrile	53	4.816	4.816	(0.735)	247767	250.000	249	
	28	Vinyl Acetate	43	5.038	5.038	(0.769)	96008	50.0000	45.5	
	29	cis-1,2-Dichloroethene	61	5.322	5.322	(0.812)	152499	50.0000	49.6	
M	75	Total 1,2-Dichloroethene	61				294718	100.000	95.5	
	30	2,2-Dichloropropane	77	5.427	5.427	(0.828)	138939	50.0000	50.4	
	32	Cyclohexane	56	5.514	5.514	(0.842)	189254	50.0000	51.1	9832
	34	Bromochloromethane	128	5.525	5.525	(0.843)	53492	50.0000	47.3	
	35	Chloroform +	83	5.604	5.604	(0.855)	190929	50.0000	47.9	
	36	Carbon Tetrachloride	117	5.724	5.724	(0.874)	123818	50.0000	47.5	
$	40	Dibromofluoromethane	111	5.784	5.784	(0.883)	112716	50.0000	48.7	9562
	41	1,1,1-Trichloroethane	97	5.798	5.798	(0.885)	150709	50.0000	47.7	
	44	2-Butanone	43	5.915	5.915	(0.903)	74641	50.0000	45.6	
	43	1,1-Dichloropropene	75	5.918	5.918	(0.903)	146582	50.0000	50.1	
	46	Benzene	78	6.158	6.158	(0.940)	488796	50.0000	49.1	
$	50	1,2-Dichloroethane-d4	67	6.290	6.290	(0.960)	75945	50.0000	51.0	
	51	1,2-Dichloroethane	62	6.353	6.353	(0.970)	157305	50.0000	47.1	
*	53	FLUOROBENZENE	96	6.552	6.552	(1.000)	506561	50.0000		
	55	Methyl Cyclohexane	83	6.691	6.691	(1.021)	188316	50.0000	50.8	9759
	56	Trichloroethene	130	6.706	6.706	(1.023)	115372	50.0000	47.0	
	57	Dibromomethane	93	7.096	7.096	(1.083)	73180	50.0000	48.7	
	59	1,2-Dichloropropane +	63	7.185	7.185	(1.097)	124736	50.0000	49.3	
	60	Bromodichloromethane	83	7.242	7.242	(1.105)	156728	50.0000	49.4	
	65	1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	180467	50.0000	49.9	9891
	67	cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	182759	50.0000	45.1	
$	68	Toluene-d8	98	7.928	7.928	(0.876)	483068	50.0000	47.7	
	69	Toluene +	91	7.969	7.969	(0.880)	526089	50.0000	47.2	
	71	Tetrachloroethene	164	8.261	8.261	(0.913)	90123	50.0000	45.7	
	73	4-methyl-2-pentanone	43	8.261	8.261	(0.913)	140747	50.0000	47.9	
	74	trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	161430	50.0000	44.2	
M	82	1-3 Dichloropropene total	100				344189	100.000	89.4	0
	76	1,1,2-Trichloroethane	97	8.404	8.404	(0.928)	114125	50.0000	46.9	
	78	Dibromochloromethane	129	8.535	8.535	(0.943)	114567	50.0000	47.7	
	79	1,3-Dichloropropane	76	8.606	8.606	(0.951)	209767	50.0000	49.2	
	80	1,2-Dibromoethane(EDB)	107	8.707	8.707	(0.962)	109934	50.0000	48.9	
	83	2-Hexanone	43	8.854	8.854	(0.978)	101764	50.0000	46.5	
	86	1-Chlorohexane	91	9.037	9.037	(0.998)	148922	50.0000	51.9	9729
*	84	CHLOROBENZENE-d5	82	9.052	9.052	(1.000)	215491	50.0000		
	85	Chlorobenzene ++	112	9.064	9.064	(1.001)	339276	50.0000	47.6	
	87	Ethylbenzene +	106	9.075	9.075	(1.002)	185081	50.0000	49.7	
	88	1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	111000	50.0000	48.7	
	89	p,m-Xylene	106	9.169	9.169	(1.013)	454989	100.000	102	
	90	o-Xylene	106	9.453	9.453	(1.044)	217382	50.0000	51.4	
M	121	TOTAL XYLENE	106				672371	150.000	153	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.487	9.487	(1.048)	370031	50.0000	53.6	
92	Bromoform ++	173	9.513	9.513	(1.051)	92669	50.0000	48.4	
93	Isopropylbenzene	105	9.648	9.648	(1.066)	564364	50.0000	52.0	
$ 95	Bromofluorobenzene	174	9.832	9.832	(1.086)	155044	50.0000	50.6	
96	Bromobenzene	77	9.903	9.903	(0.943)	266707	50.0000	46.8	
97	n-Propylbenzene	91	9.903	9.903	(0.943)	705597	50.0000	49.7	
98	1,1,2,2-Tetrachloroethane++	83	9.952	9.952	(0.947)	182527	50.0000	44.2	
99	2-Chlorotoluene	91	10.008	10.008	(0.953)	470023	50.0000	48.1	
102	1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	472130	50.0000	50.7	
100	1,2,3-Trichloropropane	75	10.038	10.038	(0.955)	216665	50.0000	49.0	
101	trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	45224	50.0000	49.4	
104	4-Chlorotoluene	91	10.109	10.109	(0.962)	419130	50.0000	49.5	
105	tert-butylbenzene	91	10.214	10.214	(0.972)	259424	50.0000	49.2	
107	1,2,4-Trimethylbenzene	105	10.252	10.252	(0.976)	467383	50.0000	50.8	
108	sec-Butylbenzene	105	10.319	10.319	(0.982)	600863	50.0000	50.5	
110	p-Isopropyltoluene	119	10.398	10.398	(0.990)	492447	50.0000	53.1	
113	1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	280933	50.0000	48.9	
* 114	1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	200940	50.0000		
115	1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	282023	50.0000	48.2	
117	n-Butylbenzene	91	10.649	10.649	(1.014)	460893	50.0000	53.0	
118	1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	273164	50.0000	48.0	
119	1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	34669	50.0000	43.4	
120	Hexachlorobutadiene	225	11.733	11.733	(1.117)	72811	50.0000	50.2	
122	1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	155102	50.0000	45.5	
124	Naphthalene	128	12.055	12.055	(1.147)	422857	50.0000	42.0	
125	1,2,3-Trichlorobenzene	180	12.220	12.220	(1.163)	154199	50.0000	44.7	
22	tert-Butyl Alcohol	59	4.337	4.337	(0.662)	9218	50.0000	31.9	9346
24	Isopropyl Ether	45	4.629	4.629	(0.706)	355239	50.0000	49.8	9794
25	Chloroprene	53	4.723	4.723	(0.721)	143980	50.0000	48.4	9748
52	Isobutyl Alcohol	43	6.391	6.391	(0.975)	26431	250.000	195	9319
62	1,4- Dioxane	58	7.422	7.422	(1.133)	23599	1250.00	996	9618
170	3,4-dichloro-1-butene	75	8.576	8.576	(0.947)	139083	50.0000	53.1	9746
169	cis-1,4-dichloro-2-butene	53	9.870	9.870	(0.939)	55240	50.0000	51.8	9818

QC Flag Legend

M1- Compound response manually integrated because
Target system did not integrate.

Data File: /var/chem/msv13.i/2170525.s.b/d4541.d

Date : 25-MAY-2017 08:15

Client ID: V13STD050

Instrument: msv13.i

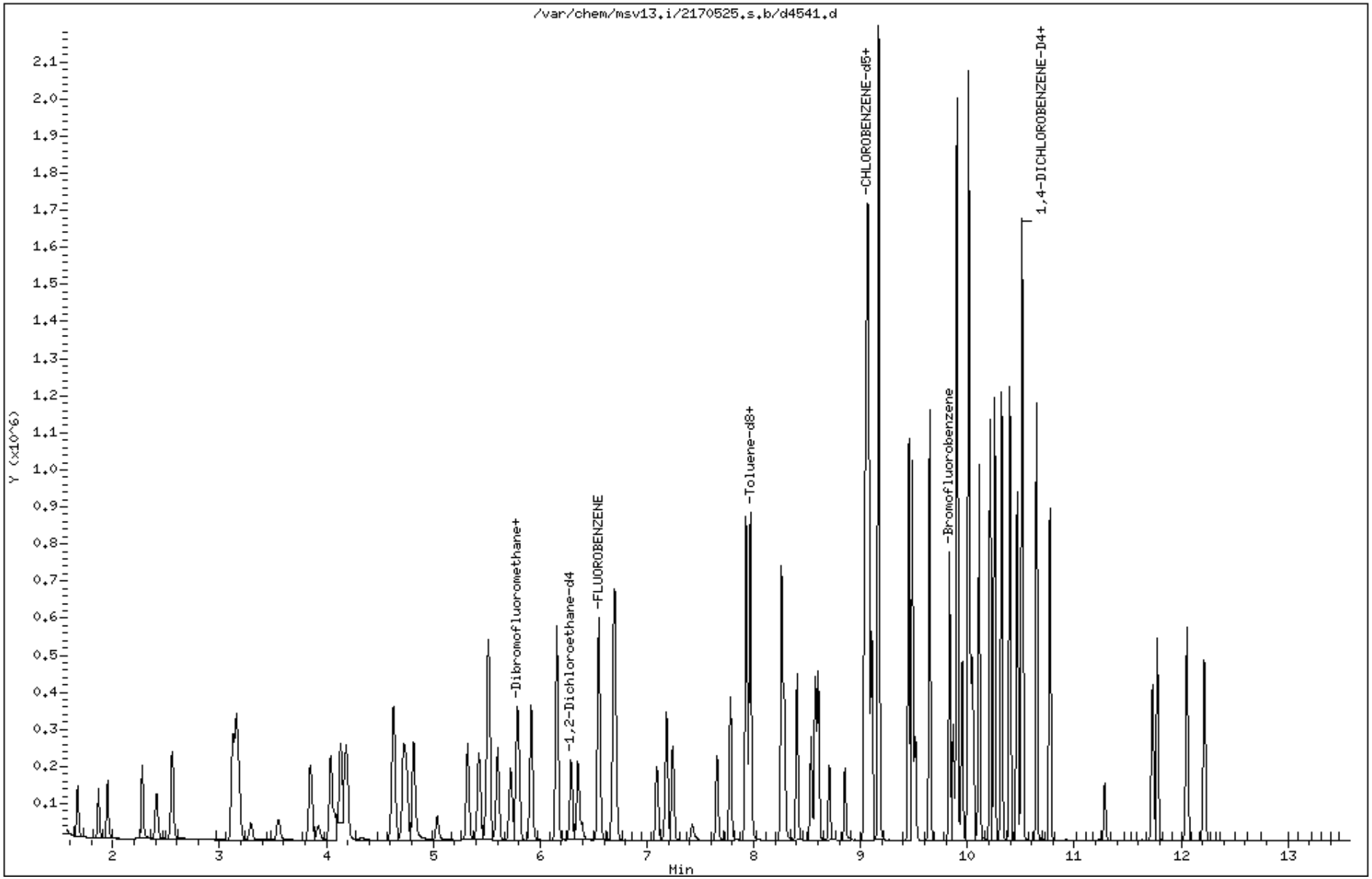
Sample Info: 1400*V13STD050

Purge Volume: 5.0

Operator: JCK

Column phase: RTX-VMS-30M

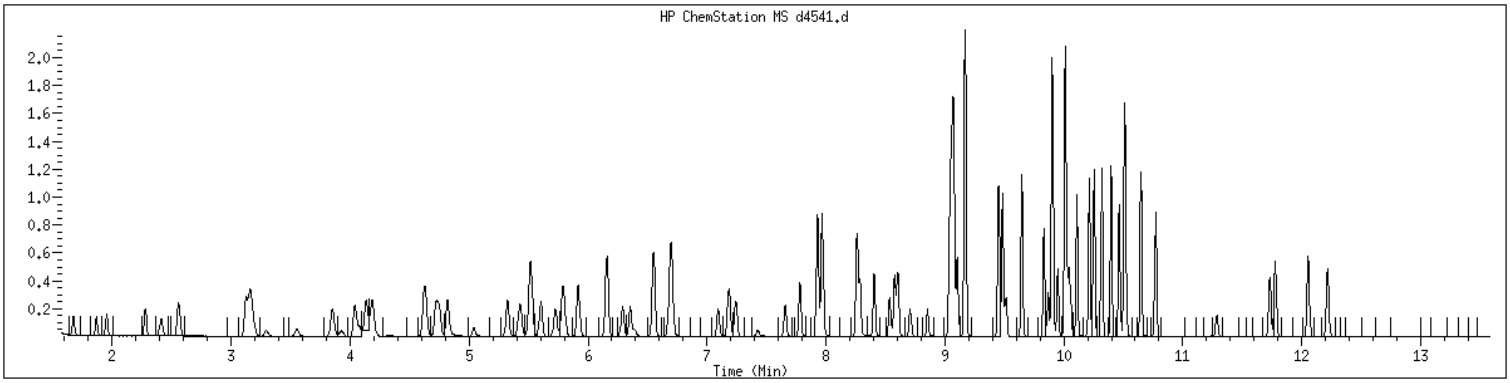
Column diameter: 0.25



Report Date: 05/25/2017 12:29

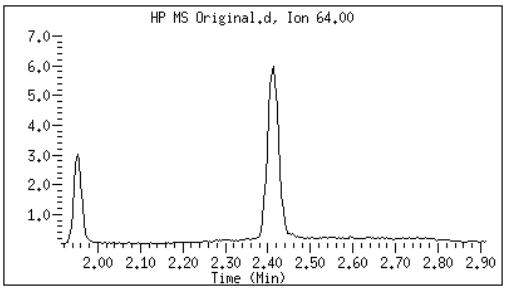
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1400 SampleType : CCALIB_7
Injection Date: 05/25/2017 08:15 Instrument : msv13.i
Operator : JCK
Sample Info : 1400*V13STD050
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdodw13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b+AppIX1



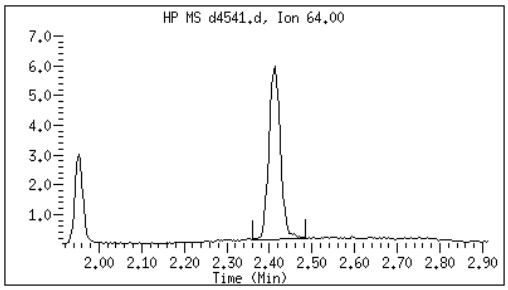
Original Final

7 Chloroethane CAS#: 75-00-3 Reason: M1



Electronic Signature Applied

User: jck2
Date: 05/25/2017 08:33



M1 - Target system did not integrate

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217052202	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170525/d4564
Init. Calib. Date 1:	05/24/17 Time 1: 1128	Analyst:	JCK
Init. Calib. Date 2:	05/24/17 Time 2: 1342	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1648	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.529	0.525	.01	-.81	50	A	
1,1,1-Trichloroethane	0.312	0.302	.01	-3.19	50	A	
1,1,2,2-Tetrachloroethane	1.027	0.935	.3	-9.03	50	A	
1,1,2-Trichloroethane	0.565	0.546	.01	-3.36	50	A	
1,1-Dichloroethane	0.412	0.397	.1	-3.75	50	A	
1,1-Dichloroethene	0.229	0.242	.01	5.7	50	A	
1,1-Dichloropropene	0.289	0.297	.01	2.78	50	A	
1,2,3-Trichlorobenzene	0.877	0.789	.01	-8.2	50	W	
1,2,3-Trichloropropane	1.101	1.066	.01	-3.14	50	A	
1,2,4-Trichlorobenzene	0.867	0.779	.01	-8.2	50	W	
1,2,4-Trimethylbenzene	2.289	2.290	.01	.02	50	A	
1,2-Dibromo-3-chloropropane	0.199	0.188	.01	-5.69	50	A	
1,2-Dibromoethane	0.522	0.524	.01	.45	50	A	
1,2-Dichlorobenzene	1.417	1.376	.01	-2.87	50	A	
1,2-Dichloroethane	0.329	0.319	.01	-3.09	50	A	
1,2-Dichloroethane-d4	0.147	0.151	.01	2.46	50	A	
1,2-Dichloroethene (total)	0.305	0.293	.01	-3.94	50	A	
1,2-Dichloropropane	0.250	0.258	.01	3.11	50	A	
1,3,5-Trimethylbenzene	2.319	2.330	.01	.5	50	A	
1,3-Dichlorobenzene	1.431	1.407	.01	-1.65	50	A	
1,3-Dichloropropane	0.990	0.968	.01	-2.17	50	A	
1,3-Dichloropropylene	0.386	0.347	.01	-8.7	50	W	
1,4-Dichlorobenzene	1.456	1.392	.01	-4.39	50	A	
1-Bromo-2-Chloroethane	0.357	0.373	.01	4.57	50	A	
1-Chlorohexane	0.666	0.679	.01	1.94	50	A	
2,2-Dichloropropane	0.272	0.266	.01	-2.24	50	A	
2-Butanone	0.162	0.167	.01	3.16	50	A	
2-Chloroethylvinyl ether	0.128	0.000	.01	-100	50	W	*
2-Chlorotoluene	2.431	2.357	.01	-3.03	50	A	
2-Hexanone	0.508	0.508	.01	-.05	50	A	
4-Bromofluorobenzene	0.711	0.712	.01	.14	50	A	
4-Chlorotoluene	2.108	2.069	.01	-1.81	50	A	
4-Isopropyltoluene	2.307	2.403	.01	4.15	50	A	
4-Methyl-2-pentanone	0.682	0.708	.01	3.78	50	A	
Acetone	0.142	0.129	.01	-9.16	50	A	
Acrolein	0.030	0.034	.01	16.4	50	A	
Acrylonitrile	0.098	0.103	.01	4.72	50	A	
Benzene	0.982	0.994	.01	1.19	50	A	
Bromobenzene	1.417	1.332	.01	-6	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217052202	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170525/d4564
Init. Calib. Date 1:	05/24/17 Time 1: 1128	Analyst:	JCK
Init. Calib. Date 2:	05/24/17 Time 2: 1342	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1648	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.112	0.108	.01	-2.95	50	A	
Bromodichloromethane	0.313	0.317	.01	1.42	50	A	
Bromoform	0.444	0.436	.1	-1.77	50	A	
Bromomethane	0.199	0.192	.01	-3.55	50	A	
Carbon disulfide	0.737	0.796	.01	7.99	50	A	
Carbon tetrachloride	0.257	0.243	.01	-5.73	50	A	
Chlorobenzene	1.654	1.608	.3	-2.75	50	A	
Chloroethane	0.227	0.231	.01	1.35	50	A	
Chloroform	0.393	0.382	.01	-2.86	50	A	
Chloromethane	0.235	0.217	.1	-7.87	50	A	
Cyclohexane	0.366	0.376	.01	2.77	50	A	
Dibromochloromethane	0.557	0.537	.01	-3.7	50	A	
Dibromofluoromethane	0.229	0.223	.01	-2.37	50	A	
Dibromomethane	0.148	0.150	.01	1.25	50	A	
Dichlorodifluoromethane	0.213	0.201	.01	-5.21	50	A	
Ethylbenzene	0.864	0.871	.01	.82	50	A	
Hexachlorobutadiene	0.361	0.348	.01	-3.76	50	A	
Isopropylbenzene (Cumene)	2.519	2.645	.01	5	50	A	
Methyl Acetate	0.223	0.194	.01	-12.7	50	A	
Methyl iodide	0.200	0.138	.01	-21	50	L	
Methylcyclohexane	0.366	0.370	.01	1.07	50	A	
Methylene chloride	0.332	0.304	.01	-8.51	50	A	
Naphthalene	2.592	2.248	.01	-10.4	50	W	
Styrene	1.601	1.723	.01	7.61	50	A	
Tetrachloroethene	0.458	0.416	.01	-9.22	50	A	
Toluene	2.586	2.461	.01	-4.84	50	A	
Toluene-d8	2.349	2.230	.01	-5.08	50	A	
Trichloroethene	0.242	0.235	.01	-3.08	50	A	
Trichlorofluoromethane	0.376	0.382	.01	1.65	50	A	
Trichlorotrifluoroethane	0.221	0.232	.01	5.26	50	A	
Vinyl acetate	0.211	0.163	.01	-21.6	50	W	
Vinyl chloride	0.262	0.257	.01	-1.89	50	A	
Xylene (total)	1.019	1.053	.01	3.32	50	A	
cis-1,2-Dichloroethene	0.303	0.304	.01	.14	50	A	
cis-1,3-Dichloropropene	0.405	0.368	.01	-8	50	W	
m,p-Xylene	1.038	1.064	.01	2.47	50	A	
n-Butylbenzene	2.163	2.225	.01	2.88	50	A	
n-Hexane	0.297	0.300	.01	1.09	50	A	
n-Propylbenzene	3.533	3.434	.01	-2.8	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	217052202	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170525/d4564
Init. Calib. Date 1:	05/24/17 Time 1: 1128	Analyst:	JCK
Init. Calib. Date 2:	05/24/17 Time 2: 1342	Analytical Batch:	611089
Analysis Date:	05/25/17 Time: 1648	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	0.981	1.031	.01	5.11	50	A	
sec-Butylbenzene	2.963	2.962	.01	-.04	50	A	
tert-Butyl methyl ether (MTBE)	0.629	0.585	.01	-6.91	50	A	
tert-Butylbenzene	1.313	1.277	.01	-2.75	50	A	
trans-1,2-Dichloroethene	0.306	0.282	.01	-7.99	50	A	
trans-1,3-Dichloropropene	0.368	0.327	.01	-9.4	50	W	
trans-1,4-Dichloro-2-butene	0.228	0.213	.01	-6.35	50	A	

GCAL, Inc.

Data file : /var/chem/msv13.i/2170525.s.b/d4564.d
Lab Smp Id: 1440 Client Smp ID: V13STD050
Inj Date : 25-MAY-2017 16:48
Operator : JCK Inst ID: msv13.i
Smp Info : 1440*V13STD050
Misc Info : MSV~38392~*1*JCK
Comment :
Method : /var/chem/msv13.i/2170525.s.b/8260bdod5w13.m
Meth Date : 26-May-2017 08:27 jck2 Quant Type: ISTD
Cal Date : 24-MAY-2017 13:42 Cal File: d4517D.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260b.sub
Target Version: 3.50
Processing Host: org.gcal.com

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	5.00000	ng unit correction factor
Vo	5.00000	Sample Volume purged (mL)
DF	1.00000	

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
1 Dichlorodifluoromethane	85	1.672	1.672	(0.255)	95147	50.0000	47.4	
2 Chloromethane ++	50	1.870	1.870	(0.285)	102428	50.0000	46.1	
3 Vinyl Chloride +	62	1.953	1.953	(0.298)	121449	50.0000	49.1	
6 Bromomethane	94	2.279	2.279	(0.348)	90627	50.0000	48.2	
7 Chloroethane	64	2.414	2.414	(0.368)	108897	50.0000	50.7	
8 Trichlorofluoromethane	101	2.560	2.560	(0.391)	180491	50.0000	50.8	
10 1,1-Dichloroethene +	96	3.126	3.126	(0.477)	114485	50.0000	52.8	
11 Carbon Disulfide	76	3.156	3.156	(0.482)	376052	50.0000	54.0	
12 1,1,2Trichlotrifluoroethane	101	3.179	3.179	(0.485)	109667	50.0000	52.6	
13 Methyl Iodide	142	3.295	3.295	(0.503)	65007	50.0000	39.5	
14 Acrolein	56	3.553	3.553	(0.542)	81214	250.000	291	
16 Methylene Chloride	49	3.850	3.850	(0.588)	143560	50.0000	45.7	
17 Acetone	43	3.928	3.928	(0.600)	60728	50.0000	45.4	
18 trans-1,2-Dichloroethene	61	4.041	4.041	(0.617)	133012	50.0000	46.0	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
	19 Methyl Acetate	43	4.082	4.082	(0.623)	91798	50.0000	43.6	9573
	20 Hexane	57	4.134	4.134	(0.631)	141661	50.0000	50.5	9804
	21 MTBE	73	4.191	4.191	(0.640)	276412	50.0000	46.5	9775
	26 1,1-Dichloroethane ++	63	4.749	4.749	(0.725)	187508	50.0000	48.1	
	27 Acrylonitrile	53	4.820	4.820	(0.736)	242580	250.000	262	
	28 Vinyl Acetate	43	5.042	5.042	(0.769)	76777	50.0000	39.2	
	29 cis-1,2-Dichloroethene	61	5.323	5.323	(0.812)	143517	50.0000	50.1	
M	75 Total 1,2-Dichloroethene	61				276529	100.000	96.1	
	30 2,2-Dichloropropane	77	5.428	5.428	(0.828)	125719	50.0000	48.9	
	32 Cyclohexane	56	5.514	5.514	(0.842)	177577	50.0000	51.4	9699
	34 Bromochloromethane	128	5.521	5.521	(0.843)	51211	50.0000	48.5	
	35 Chloroform +	83	5.608	5.608	(0.856)	180419	50.0000	48.6	
	36 Carbon Tetrachloride	117	5.728	5.728	(0.874)	114555	50.0000	47.1	
$	40 Dibromofluoromethane	111	5.784	5.784	(0.883)	105411	50.0000	48.8	9457
	41 1,1,1-Trichloroethane	97	5.795	5.795	(0.884)	142490	50.0000	48.4	
	44 2-Butanone	43	5.919	5.919	(0.903)	78807	50.0000	51.6	
	43 1,1-Dichloropropene	75	5.919	5.919	(0.903)	140263	50.0000	51.4	
	46 Benzene	78	6.159	6.159	(0.940)	469488	50.0000	50.6	
$	50 1,2-Dichloroethane-d4	67	6.294	6.294	(0.961)	71202	50.0000	51.2	
	51 1,2-Dichloroethane	62	6.357	6.357	(0.970)	150817	50.0000	48.5	
*	53 FLUOROBENZENE	96	6.552	6.552	(1.000)	472347	50.0000		
	55 Methyl Cyclohexane	83	6.691	6.691	(1.021)	174759	50.0000	50.5	9727
	56 Trichloroethene	130	6.706	6.706	(1.023)	110893	50.0000	48.5	
	57 Dibromomethane	93	7.096	7.096	(1.083)	70887	50.0000	50.6	
	59 1,2-Dichloropropane +	63	7.186	7.186	(1.097)	121740	50.0000	51.6	
	60 Bromodichloromethane	83	7.242	7.242	(1.105)	149890	50.0000	50.7	
	65 1-Bromo-2-chloroethane	63	7.658	7.658	(1.169)	176324	50.0000	52.3	9900
	67 cis-1,3-Dichloropropene	75	7.782	7.782	(1.188)	173603	50.0000	46.0	
$	68 Toluene-d8	98	7.928	7.928	(0.876)	460929	50.0000	47.5	
	69 Toluene +	91	7.969	7.969	(0.880)	508700	50.0000	47.6	
	71 Tetrachloroethene	164	8.262	8.262	(0.913)	85959	50.0000	45.4	
	73 4-methyl-2-pentanone	43	8.262	8.262	(0.913)	146382	50.0000	51.9	
	74 trans-1,3-Dichloropropene	75	8.288	8.288	(1.265)	154236	50.0000	45.3	
M	82 1-3 Dichloropropene total	100				327839	100.000	91.3	0
	76 1,1,2-Trichloroethane	97	8.408	8.408	(0.929)	112829	50.0000	48.3	
	78 Dibromochloromethane	129	8.535	8.535	(0.943)	110976	50.0000	48.1	
	79 1,3-Dichloropropane	76	8.607	8.607	(0.951)	200199	50.0000	48.9	
	80 1,2-Dibromoethane(EDB)	107	8.708	8.708	(0.962)	108378	50.0000	50.2	
	83 2-Hexanone	43	8.854	8.854	(0.978)	104993	50.0000	50.0	
	86 1-Chlorohexane	91	9.038	9.038	(0.998)	140399	50.0000	51.0	3260(M2)
*	84 CHLOROBENZENE-d5	82	9.053	9.053	(1.000)	206740	50.0000		
	85 Chlorobenzene ++	112	9.064	9.064	(1.001)	332499	50.0000	48.6	
	87 Ethylbenzene +	106	9.075	9.075	(1.002)	180104	50.0000	50.4	
	88 1,1,1,2-Tetrachloroethane	133	9.105	9.105	(1.006)	108550	50.0000	49.6	
	89 p,m-Xylene	106	9.173	9.173	(1.013)	439736	100.000	102	
	90 o-Xylene	106	9.454	9.454	(1.044)	213080	50.0000	52.6	
M	121 TOTAL XYLENE	106				652816	150.000	155	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ppb)	ON-COL (ppb)	SIMILARITY
91	Styrene	104	9.484	9.484	(1.048)	356159	50.0000	53.8	
92	Bromoform ++	173	9.514	9.514	(1.051)	90171	50.0000	49.1	
93	Isopropylbenzene	105	9.649	9.649	(1.066)	546855	50.0000	52.5	
$ 95	Bromofluorobenzene	174	9.832	9.832	(1.086)	147114	50.0000	50.1	
96	Bromobenzene	77	9.904	9.904	(0.943)	257683	50.0000	47.0	
97	n-Propylbenzene	91	9.904	9.904	(0.943)	664335	50.0000	48.6	
98	1,1,2,2-Tetrachloroethane++	83	9.949	9.949	(0.947)	180794	50.0000	45.5	
99	2-Chlorotoluene	91	10.012	10.012	(0.953)	455995	50.0000	48.5	
102	1,3,5-Trimethylbenzene	105	10.016	10.016	(0.953)	450786	50.0000	50.3	
100	1,2,3-Trichloropropane	75	10.039	10.039	(0.955)	206267	50.0000	48.4	
101	trans-1,4-Dichloro-2-Butene	53	10.057	10.057	(0.957)	41235	50.0000	46.8	
104	4-Chlorotoluene	91	10.110	10.110	(0.962)	400301	50.0000	49.1	
105	tert-butylbenzene	91	10.215	10.215	(0.972)	247087	50.0000	48.6	(M2)
107	1,2,4-Trimethylbenzene	105	10.252	10.252	(0.976)	442983	50.0000	50.0	
108	sec-Butylbenzene	105	10.320	10.320	(0.982)	572996	50.0000	50.0	
110	p-Isopropyltoluene	119	10.398	10.398	(0.990)	464781	50.0000	52.1	
113	1,3-Dichlorobenzene	146	10.466	10.466	(0.996)	272231	50.0000	49.2	
* 114	1,4-DICHLOROBENZENE-D4	152	10.507	10.507	(1.000)	193449	50.0000		
115	1,4-Dichlorobenzene	146	10.518	10.518	(1.001)	269229	50.0000	47.8	
117	n-Butylbenzene	91	10.650	10.650	(1.014)	430467	50.0000	51.4	
118	1,2-Dichlorobenzene	146	10.773	10.773	(1.025)	266197	50.0000	48.6	
119	1,2-Dibromo-3-Chloropropane	157	11.287	11.287	(1.074)	36285	50.0000	47.2	
120	Hexachlorobutadiene	225	11.733	11.733	(1.117)	67223	50.0000	48.1	
122	1,2,4-Trichlorobenzene	180	11.778	11.778	(1.121)	150648	50.0000	45.9	
124	Naphthalene	128	12.055	12.055	(1.147)	434845	50.0000	44.8	
125	1,2,3-Trichlorobenzene	180	12.216	12.216	(1.163)	152594	50.0000	45.9	

QC Flag Legend

M2- Compound response manually integrated because
Target system integrated incorrectly.

Data File: /var/chem/msv13.i/2170525.s.b/d4564.d

Date : 25-MAY-2017 16:48

Client ID: V13STD050

Instrument: msv13.i

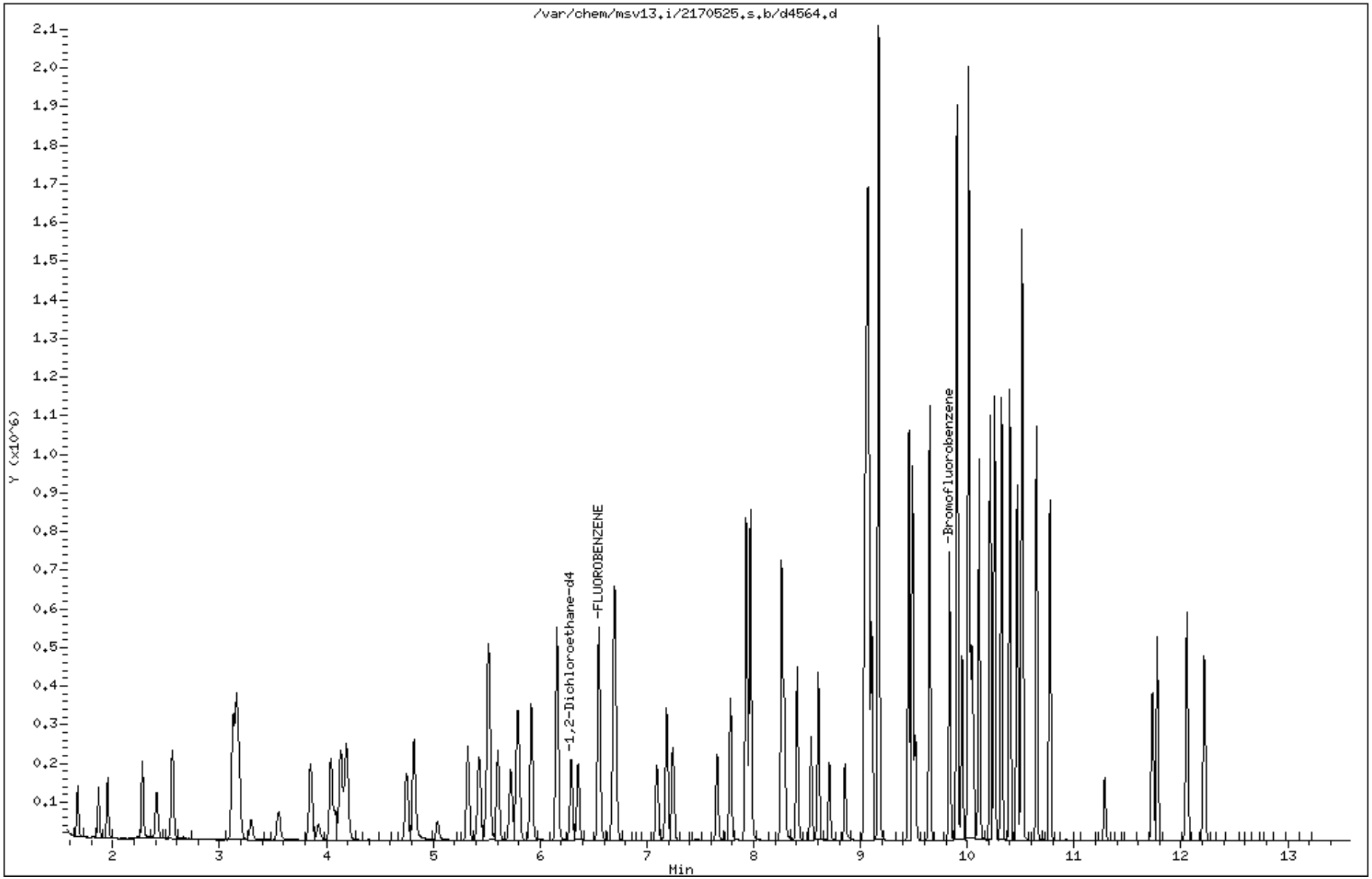
Sample Info: 1440*V13STD050

Purge Volume: 5.0

Operator: JCK

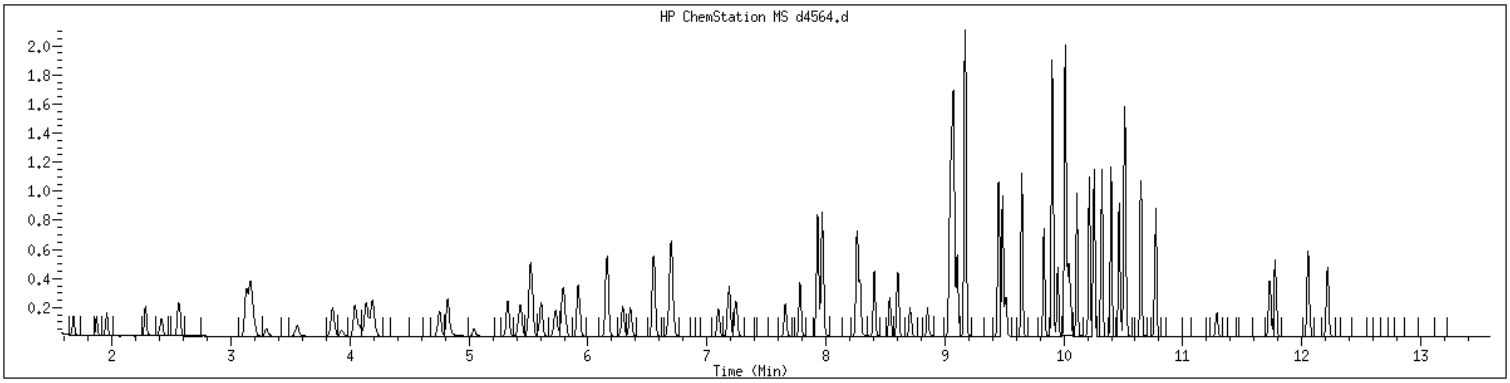
Column phase: RTX-VMS-30M

Column diameter: 0.25



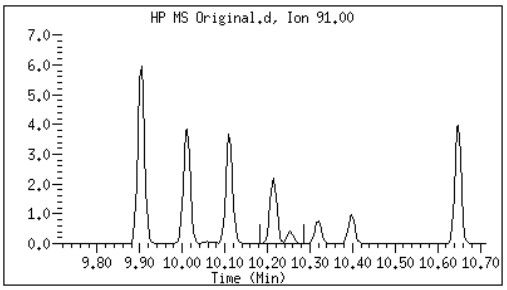
MANUAL INTEGRATION GRAPHIC REPORT

Lab ID : 1440 SampleType : CCALIB_7
Injection Date: 05/25/2017 16:48 Instrument : msv13.i
Operator : JCK
Sample Info : 1440*V13STD050
Misc Info : MSV~38392~*1*JCK
Method : /var/chem/msv13.i/2170525.s.b/8260bdod5w13.m
Dilution : 1.00
Matrix : WATER
Integrator : HP RTE Compound Sublist: 8260b



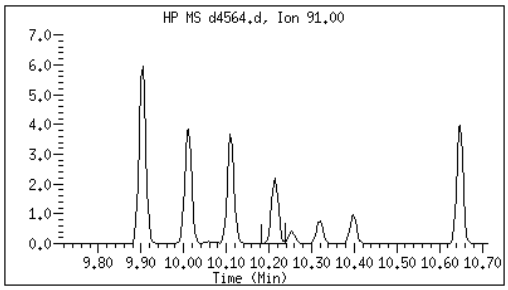
Original Final

105 tert-butylbenzene CAS#: 98-06-6 Reason: M2

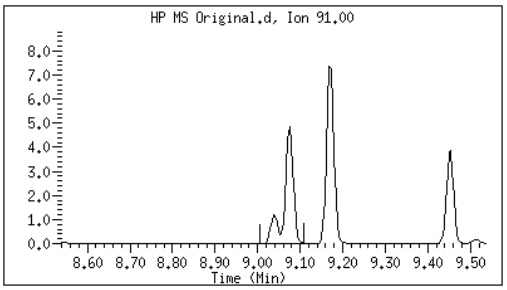


Electronic Signature Applied

User: jck2
Date: 05/26/2017 08:25

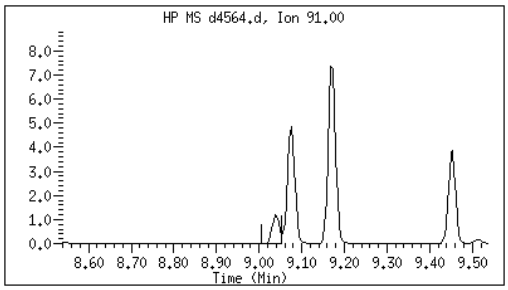


86 1-Chlorohexane CAS#: 544-10-5 Reason: M2



Electronic Signature Applied

User: jck2
Date: 05/26/2017 08:25



M2 - Target system integrated incorrectly

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	217052202	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2170524/d4515D
Analyst:	JCK	Analytical Batch:	611054
Analysis Date:	05/24/17 Time: 1257	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	211590	9.05	204214	10.51	507734	6.55

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#		#	
LCS1687621	1687621	215491		9.05		200940		10.51		506561		6.55	
OMS-28-GW12-12-s	21705220208	172475		9.05		130918		10.51		439808		6.55	
OMS-28-GW58-31-s	21705220203	226032		9.05		181709		10.51		593431		6.55	
LCSD1687622	1687622	222598		9.05		206294		10.51		532213		6.55	
MB1687620	1687620	226336		9.05		181705		10.51		596462		6.55	
OMS-28-GW11-11-s	21705220201	173776		9.05		135691		10.51		445706		6.55	
OMS-28-GW11-11-c	21705220202	174268		9.05		131175		10.51		449080		6.55	
OMS-28-GW49-12-s	21705220204	174038		9.05		129537		10.51		443531		6.55	
OMS-28-GW62-19-s	21705220205	176743		9.05		135915		10.51		448435		6.55	
OMS-28-GW34-31-s	21705220206	171875		9.05		131771		10.51		441094		6.55	
OMS-28-GW06-11-s	21705220207	225821		9.05		180563		10.51		598474		6.55	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 24-MAY-2017
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1202-1209 (ICAL)	8260	250	126-75-7	06/06/17
	Ac/Ac/VA	MC	126-75-8	07/31/17
	2-CVE	250	126-74-7	11/05/17
1600 (ICV)	8260	250	126-75-10	10/31/17
	Ac/Ac/VA	MC	126-75-9	07/31/17
	2-CVE	250	126-74-8	11/05/17
1410 (AP9)	APP9-1	250	126-72-4	10/01/17
	APP9-2	250	126-74-1	11/02/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000	RR	d4507.d	0.00 ml	24-MAY-2017 09:27	1.0	JCK	2
1000	RR	d4508.d	0.00 ml	24-MAY-2017 09:51	1.0	JCK	2
1000		d4509bfb.d	0.00 ml	24-MAY-2017 10:18	1.0	JCK	2
1000		d4509bfbD.d	0.00 ml	24-MAY-2017 10:18	1.0	JCK	2
1202		d4510.d	5.00 ml	24-MAY-2017 11:06	1.0	JCK	1
1203		d4511.d	5.00 ml	24-MAY-2017 11:28	1.0	JCK	1
1203		d4511D.d	5.00 ml	24-MAY-2017 11:28	1.0	JCK	1
1204		d4512.d	5.00 ml	24-MAY-2017 11:51	1.0	JCK	1
1204		d4512D.d	5.00 ml	24-MAY-2017 11:51	1.0	JCK	1
1205		d4513.d	5.00 ml	24-MAY-2017 12:13	1.0	JCK	1
1205		d4513D.d	5.00 ml	24-MAY-2017 12:13	1.0	JCK	1
1206		d4514.d	5.00 ml	24-MAY-2017 12:35	1.0	JCK	1
1206		d4514D.d	5.00 ml	24-MAY-2017 12:35	1.0	JCK	1
1207		d4515.d	5.00 ml	24-MAY-2017 12:57	1.0	JCK	1
1207		d4515D.d	5.00 ml	24-MAY-2017 12:57	1.0	JCK	1
1208		d4516.d	5.00 ml	24-MAY-2017 13:20	1.0	JCK	1
1208		d4516D.d	5.00 ml	24-MAY-2017 13:20	1.0	JCK	1
1209		d4517.d	5.00 ml	24-MAY-2017 13:42	1.0	JCK	1
1209		d4517D.d	5.00 ml	24-MAY-2017 13:42	1.0	JCK	1
BLANK		d4518.d	5.00 ml	24-MAY-2017 14:04	1.0	JCK	1
1600	RR	d4519.d	5.00 ml	24-MAY-2017 14:27	1.0	JCK	1
1600	RR	d4520.d	5.00 ml	24-MAY-2017 14:49	1.0	JCK	1
1600		d4521.d	5.00 ml	24-MAY-2017 15:11	1.0	JCK	1
1600		d4521D.d	5.00 ml	24-MAY-2017 15:11	1.0	JCK	1
1687514		d4522.d	5.00 ml	24-MAY-2017 15:33	1.0	JCK	1
1687515		d4523.d	5.00 ml	24-MAY-2017 15:56	1.0	JCK	1
1410	APP9	d4524.d	5.00 ml	24-MAY-2017 16:18	1.0	JCK	1
1687583		d4524L.d	5.00 ml	24-MAY-2017 16:18	1.0	JCK	1
1687584		d4525.d	5.00 ml	24-MAY-2017 16:40	1.0	JCK	1
1687513 pH		d4526.d	5.00 ml	24-MAY-2017 17:02	1.0	JCK	1
21705161209 1		d4527.d	5.00 ml	24-MAY-2017 17:27	1.0	JCK	1
21705161210 1		d4528.d	5.00 ml	24-MAY-2017 17:49	1.0	JCK	1
21705161211 1		d4529.d	5.00 ml	24-MAY-2017 18:12	1.0	JCK	1
21705182103 1		d4530.d	5.00 ml	24-MAY-2017 18:34	1.0	JCK	1
21705182110 1		d4531ms.d	5.00 ml	24-MAY-2017 18:56	1.0	JCK	1
21705182111 1		d4532msd.d	5.00 ml	24-MAY-2017 19:19	1.0	JCK	1

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 24-MAY-2017
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1440		d4533.d	5.00 ml	24-MAY-2017 19:41	1.0	JCK	1
BLANK		d4534.d	5.00 ml	24-MAY-2017 20:03	1.0	JCK	1
BLANK		d4535.d	5.00 ml	24-MAY-2017 20:25	1.0	JCK	1
21705162702 1		d4536.d	5.00 ml	24-MAY-2017 20:48	1.0	JCK	1
21705162701 1		d4537.d	5.00 ml	24-MAY-2017 21:10	1.0	JCK	1
BLANK		d4538.d	5.00 ml	24-MAY-2017 21:32	1.0	JCK	1
BLANK		d4539.d	5.00 ml	24-MAY-2017 21:54	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 22:18

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 25-MAY-2017
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-71-3	09/15/17
1000 (BFB)	BFB IS/SS	50	126-71-3	09/15/17
1400 (CCV)	8260	250	126-75-7	06/06/17
	Ac/Ac/VA	MC	126-75-8	07/31/17
	2-CVE	250	126-74-7	11/05/17

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		d4540.d	0.00 ml	25-MAY-2017 07:38	1.0	JCK	2
1400		d4541.d	5.00 ml	25-MAY-2017 08:15	1.0	JCK	1
1687621		d4541L.d	5.00 ml	25-MAY-2017 08:15	1.0	JCK	1
1687622		d4542.d	5.00 ml	25-MAY-2017 08:38	1.0	JCK	1
MB		d4543.d	5.00 ml	25-MAY-2017 09:00	1.0	JCK	1
MB		d4544.d	5.00 ml	25-MAY-2017 09:22	1.0	JCK	1
1687620 pH		d4545.d	5.00 ml	25-MAY-2017 09:45	1.0	JCK	1
21705234209 1		d4546.d	5.00 ml	25-MAY-2017 10:07	1.0	JCK	1
21705220201 1		d4547.d	5.00 ml	25-MAY-2017 10:29	1.0	JCK	1
21705220202 1		d4548.d	5.00 ml	25-MAY-2017 10:51	1.0	JCK	1
21705220203 1	RR, SS HIGH	d4549.d	5.00 ml	25-MAY-2017 11:14	1.0	JCK	1
21705220204 1		d4550.d	5.00 ml	25-MAY-2017 11:36	1.0	JCK	1
21705220205 1		d4551.d	5.00 ml	25-MAY-2017 11:58	1.0	JCK	1
21705220206 1		d4552.d	5.00 ml	25-MAY-2017 12:20	1.0	JCK	1
21705220207 1		d4553.d	5.00 ml	25-MAY-2017 12:43	1.0	JCK	1
21705220208 1		d4554.d	5.00 ml	25-MAY-2017 13:05	1.0	JCK	1
21705234201 1		d4555.d	5.00 ml	25-MAY-2017 13:27	1.0	JCK	1
21705234202 1		d4556.d	5.00 ml	25-MAY-2017 13:49	1.0	JCK	1
21705234203 1		d4557.d	5.00 ml	25-MAY-2017 14:12	1.0	JCK	1
21705234204 1		d4558.d	5.00 ml	25-MAY-2017 14:34	1.0	JCK	1
21705220203 1		d4559.d	5.00 ml	25-MAY-2017 14:56	1.0	JCK	1
21705234205 1		d4560.d	5.00 ml	25-MAY-2017 15:19	1.0	JCK	1
21705234206 1		d4561.d	5.00 ml	25-MAY-2017 15:41	1.0	JCK	1
21705234207 1		d4562.d	5.00 ml	25-MAY-2017 16:03	1.0	JCK	1
21705234208 1		d4563.d	5.00 ml	25-MAY-2017 16:25	1.0	JCK	1
1440		d4564.d	5.00 ml	25-MAY-2017 16:48	1.0	JCK	1
1440		d4565.d	5.00 ml	25-MAY-2017 17:10	1.0	JCK	1
BLANK		d4566.d	5.00 ml	25-MAY-2017 17:32	1.0	JCK	1
BLANK		d4567.d	5.00 ml	25-MAY-2017 17:54	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 19:38

Client ID: 4838 - AECOM
SDG: 217052202
PM: AMK

AECOM

Chain of Custody and Analytical Reque

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Mayo

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	TCL VOCs (8260B)									Comments	Cooler ID
OMS-28-GW11-11-S	5-13-17	1150	7.11	Split	WG	3	X										1
OMS-28-GW11-11-C	5-13-17		-	TB	WQ	3	X										2
OMS-28-GW58-31-S	5-15-17	0850	27.31	Split	WG	3	X										3
OMS-28-GW49-12-S	5-15-17	1445	8.12	Split	WG	3	X										4
OMS-28-GW62-19-S	5-16-17	1430	15.19	Split	WG	3	X										5
OMS-28-GW34-31-S	5/17/17	1100	28.32	Split	WG	3	X										6
OMS-28-GW06-11-S	5/17/17	1600	7.11	Split	WG	3	X										7
~~OMS-28-GW71-19-S~~	~~5-19-17~~		~~15.19~~	~~Split~~	~~WG~~	~~3~~	~~X~~	~~RM~~									
OMS-28-GW12-12-S	5/19/17	0825	8.12	Split	WG	3	X										8
			-														
			-														
			-														
			-														

Sample Analysis Requested

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Mayo	5/19/17	1430	1.		
2. FedEx 5-20-17 0930			2. [signature]	5-20-17	0930
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped:
Airbill #: ~~8024 7813 4747~~
Location: Baton Rouge LA
Date: Time:

(1) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, ER = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

(2) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

AECOM Project Number: 60439687 / 2.3

Purchase Order Number: 70775

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

8024 7813 4747
2.7E29 41CRM

SAMPLE RECEIVING CHECKLIST

217052202

SAMPLE DELIVERY GROUP 217052202	
Client PM AMK 4838 - AECOM	Transport Method FED EX
Profile Number 254814	Received By Savage, Tiffany R
Line Item(s) 1 - W - VOCs	Receive Date(s) 05/20/17

CHECKLIST	YES	NO	NA
Samples received with proper thermal and chemical preservation?	☑	☐	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐	☐
When used, were custody seals intact?	☑	☐	☐
COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	☑	☐	☐
Short holds or RUSH samples received?	☐	☑	☐
All containers received in good condition and within hold time?	☑	☐	☐
All sample labels and containers received match the chain of custody?	☑	☐	☐
Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	☐	☐	☑
Preservative added to any containers?	☐	☐	☑
VOC water containers received with headspace < 6mm?	☑	☐	☐
Received filtered sample volume for dissolved analysis?	☐	☐	☑
Trip blank present in all coolers containing VOC waters?	☑	☐	☐
Samples collected in containers provided by GCAL?	☑	☐	☐

COOLERS		
Airbill	Thermometer ID: E29	Temp(°C)
802478134747		2.7

DISCREPANCIES
None

LAB PRESERVATIONS
None

NOTES	

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Appendix B8
GCAL Report 217051044 dated June 1, 2017

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 06/01/2017

GCAL Report 217051044

Project ARNG OMS 28/ 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 217051044

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 217051044

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

See subcontract laboratory report case narrative.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21705104401	OMS-28-GW32-12-S	Water	05/02/2017 14:30	05/05/2017 09:30
21705104402	OMS-28-GW02-19-S	Water	05/03/2017 10:00	05/05/2017 09:30
21705104403	OMS-28-GW03-34-S	Water	05/04/2017 10:30	05/05/2017 09:30
21705104404	OMS-28-GW20-12-S	Water	05/04/2017 16:15	05/05/2017 09:30
21705104405	TRIP BLANK	Water	05/02/2017 00:01	05/05/2017 09:30

K1704504

Laboratory: ALS Kelso

AECOM Chain of Custody and Analytical Request

ect Name / Site Name: ARNG OMS 28 Mobile AL

t Name: GCAL

ected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	VC (8260SIM)	Comments	Cooler ID
MS-28-GW32-12-S	5/2/17	1430	-		WG	3	X		1
MS-28-GW02-19-S	5/3/17	1000	-		WG	3	X		1
MS-28-GW03-34-S	5/4/17	1030	-		WG	3	X		2
MS-28-GW20-12-S	5/4/17	1615	-		WG	3	X		2
Trip Blank	5/2/17		-		WQ	2	X		
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Client ID: 4838 - AECOM
SDG: 217051044
PM: AMK

aments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	5-4-17	1800	Cody Cocanie	5/5/17	0930
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: FedEx
Analytical Lab: ALS Environmental
Lab Receipient:

Shipped: XXX
Airbill #: 8020 4544 6875
Location: KELSO WA
Date: Time:

ample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

atrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

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Project Number ARNG OMS28/8260SIM DOD

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Anna Kinchen

Analytical Data To: Anna Kinchen

SAMPLE RECEIVING CHECKLIST

* 2 1 7 0 5 1 0 4 4 *

SAMPLE DELIVERY GROUP 217051044	
Client PM AMK 4838 - AECOM	**Transport Method** OTHER
Profile Number 264814	**Received By** Reese, Sean M.
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 05/05/17

CHECKLIST	YES	NO	NA
Samples received with proper thermal and chemical preservation?	☐	☐	☑
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☐	☐	☑
When used, were custody seals intact?	☐	☐	☑
COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	☐	☐	☑
Short holds or RUSH samples received?	☐	☐	☑
All containers received in good condition and within hold time?	☐	☐	☑
All sample labels and containers received match the chain of custody?	☐	☐	☑
Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	☐	☐	☑
Preservative added to any containers?	☐	☐	☑
VOC water containers received with headspace < 6mm?	☐	☐	☑
Received filtered sample volume for dissolved analysis?	☐	☐	☑
Trip blank present in all coolers containing VOC waters?	☐	☐	☑
Samples collected in containers provided by GCAL?	☐	☐	☑

COOLERS	
Airbill **Thermometer ID:** NA	**Temp(°C)**
	NA

DISCREPANCIES	LAB PRESERVATIONS
None	None

NOTES	SUBOUTS ONLY

Revision 1.6

Page 1 of 1

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

May 31, 2017

Analytical Report for Service Request No: K1704509

Anna Kinchen
Gulf Coast Analytical Labs
7979 Innovation Park Dr.
Baton Rouge, LA 70820

RE: ARNG OMS 28 Mobile AL

Dear Anna,

Enclosed are the results of the sample(s) submitted to our laboratory May 05, 2017
For your reference, these analyses have been assigned our service request number **K1704509.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	Gulf Coast Analytical Labs GCAL	**Service Request No.:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Received:**	05/05/17
Sample Matrix:	Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Five water samples were received for analysis at ALS Environmental on 05/05/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260-SIM

Surrogate Exceptions:
The upper control criterion was exceeded for Toluene-d8 in sample OMS-28-GW32-12-S. The target analyte was not associated with the surrogate in question. The quality of the sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by_____

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

K1404509

AECOM

Chain of Custody and Analytical Request

Laboratory: ALS Kelso

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	Sample Analysis Requested: VC (8260SIM)	Comments	Cooler ID
OMS-28-GW32-12-S	5/2/17	1430	-		WG	3	X		
OMS-28-GW02-19-S	5/3/17	1000	-		WG	3	X		
OMS-28-GW03-34-S	5/4/17	1030	-		WG	3	X		
OMS-28-GW20-12-S	5/4/17	1615	-		WG	3	X		
Trip Blank	5/2/17		-		WQ	2	X		
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
Randy Morgan	5-4-17	1800	1. Cody Loomis	5/5/17	0930
			2.		
			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:		Shipped:	XXX
Method of Shipment:	Fed EX	Airbill #:	8020 4547 6875
Analytical Lab:	ALS Environmental	Location:	Kelso WA
Lab Receipient:		Date:	Time:

) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

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Project Number ARNG OMS28/8260SIM DOD

Purchase Order Number

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

PC 412

Cooler Receipt and Preservation Form

Client Aecom/GCAL Service Request K17 04509

Received: 5/5/17 Opened: 5/5/17 By: CG Unloaded: 5/6/17 By: CG

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number NA	Filed
-0.7	-0.6	—	—	+0.1	362		8020 4594 6875	

4. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704509
Project: ARNG OMS 28 Mobile AL

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
OMS-28-GW32-12-S	K1704509-001	05/02/2017	05/05/2017
OMS-28-GW02-19-S	K1704509-002	05/03/2017	05/05/2017
OMS-28-GW03-34-S	K1704509-003	05/04/2017	05/05/2017
OMS-28-GW20-12-S	K1704509-004	05/04/2017	05/05/2017
Trip Blank	K1704509-005	05/02/2017	05/05/2017

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/02/2017
Sample Matrix:	Water	**Date Received:**	05/05/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW32-12-S	**Units:**	ng/L
Lab Code:	K1704509-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	**22**		20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	77-123	05/16/17	Acceptable
Toluene-d8	117	74-112	05/16/17	Outside Control Limits
4-Bromofluorobenzene	76	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/03/2017
Sample Matrix:	Water	**Date Received:**	05/05/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW02-19-S	**Units:**	ng/L
Lab Code:	K1704509-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	**11**	J	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	96	77-123	05/16/17	Acceptable
Toluene-d8	103	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	79	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/04/2017
Sample Matrix:	Water	**Date Received:**	05/05/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW03-34-S	**Units:**	ng/L
Lab Code:	K1704509-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	102	77-123	05/16/17	Acceptable
Toluene-d8	102	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	79	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/04/2017
Sample Matrix:	Water	**Date Received:**	05/05/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW20-12-S	**Units:**	ng/L
Lab Code:	K1704509-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	**24**		20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	103	77-123	05/16/17	Acceptable
Toluene-d8	106	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	76	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/02/2017
Sample Matrix:	Water	**Date Received:**	05/05/2017

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ng/L
Lab Code:	K1704509-005	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	97	77-123	05/16/17	Acceptable
Toluene-d8	100	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	75	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KWG1704141-3	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	93	77-123	05/16/17	Acceptable
Toluene-d8	99	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	75	46-118	05/16/17	Acceptable

Comments:

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704509
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B **Units:** Percent
Analysis Method: 8260C SIM **Level:** Low

Sample Name	Lab Code	Sur1	Sur2		Sur3
OMS-28-GW32-12-S	K1704509-001	94	117	*	76
OMS-28-GW02-19-S	K1704509-002	96	103		79
OMS-28-GW03-34-S	K1704509-003	102	102		79
OMS-28-GW20-12-S	K1704509-004	103	106		76
Trip Blank	K1704509-005	97	100		75
Method Blank	KWG1704141-3	93	99		75
Lab Control Sample	KWG1704141-1	91	101		83
Duplicate Lab Control Sample	KWG1704141-2	90	101		86

Surrogate Recovery Control Limits (%)

Sur1	=	Dibromofluoromethane	77-123
Sur2	=	Toluene-d8	74-112
Sur3	=	4-Bromofluorobenzene	46-118

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704509
Date Analyzed: 05/16/2017
Time Analyzed: 14:07

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS30\DATA\051617_SIM\0516F009.D
Instrument ID: MS30
Analysis Method: 8260C SIM

Lab Code: KWG1703959-2
Analysis Lot: KWG1703959

		Fluorobenzene		Chlorobenzene-d5	
		Area	**RT**	**Area**	**RT**
	ICAL Result ==>	56,584	6.35	38,599	9.54
	Upper Limit ==>	113,168	6.52	77,198	9.71
	Lower Limit ==>	28,292	6.18	19,300	9.37
Associated Analyses					
Continuing Calibration VerificationCCV	KWG1703959-2	58,376	6.35	40,304	9.54
Lab Control Sample	KWG1704141-1	58,644	6.35	39,127	9.54
Duplicate Lab Control Sample	KWG1704141-2	59,220	6.35	40,747	9.54
Method Blank	KWG1704141-3	56,405	6.35	37,159	9.54
Trip Blank	K1704509-005	55,777	6.35	38,064	9.54
OMS-28-GW32-12-S	K1704509-001	55,169	6.35	39,578	9.54
OMS-28-GW02-19-S	K1704509-002	54,936	6.35	36,949	9.54
OMS-28-GW03-34-S	K1704509-003	52,590	6.35	36,602	9.54
OMS-28-GW20-12-S	K1704509-004	53,564	6.35	39,090	9.54

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	EPA 5030B	**Units:**	ng/L
Analysis Method:	8260C SIM	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1704141

	Lab Control Sample KWG1704141-1 Lab Control Spike			Duplicate Lab Control Sample KWG1704141-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	2020	2000	101	2030	2000	102	70-136	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017
		Time Analyzed:	16:08

Method Blank Summary
Volatile Organic Compounds

Sample Name:	Method Blank	**Instrument ID:**	MS30
Lab Code:	KWG1704141-3	**File ID:**	J:\MS30\DATA\051617_SIM\0516F013.D
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704141

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1704141-1	J:\MS30\DATA\051617_SIM\0516F010.D	05/16/17	14:43
Duplicate Lab Control Sample	KWG1704141-2	J:\MS30\DATA\051617_SIM\0516F011.D	05/16/17	15:13
Trip Blank	K1704509-005	J:\MS30\DATA\051617_SIM\0516F014.D	05/16/17	16:36
OMS-28-GW32-12-S	K1704509-001	J:\MS30\DATA\051617_SIM\0516F015.D	05/16/17	17:03
OMS-28-GW02-19-S	K1704509-002	J:\MS30\DATA\051617_SIM\0516F016.D	05/16/17	17:31
OMS-28-GW03-34-S	K1704509-003	J:\MS30\DATA\051617_SIM\0516F017.D	05/16/17	17:58
OMS-28-GW20-12-S	K1704509-004	J:\MS30\DATA\051617_SIM\0516F018.D	05/16/17	18:26

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704509
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017
		Time Analyzed:	14:43

Lab Control Sample Summary
Volatile Organic Compounds

Sample Name:	Lab Control Sample	**Instrument ID:**	MS30
Lab Code:	KWG1704141-1	**File ID:**	J:\MS30\DATA\051617_SIM\0516F010.D
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704141

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1704141-3	J:\MS30\DATA\051617_SIM\0516F013.D	05/16/17	16:08
Trip Blank	K1704509-005	J:\MS30\DATA\051617_SIM\0516F014.D	05/16/17	16:36
OMS-28-GW32-12-S	K1704509-001	J:\MS30\DATA\051617_SIM\0516F015.D	05/16/17	17:03
OMS-28-GW02-19-S	K1704509-002	J:\MS30\DATA\051617_SIM\0516F016.D	05/16/17	17:31
OMS-28-GW03-34-S	K1704509-003	J:\MS30\DATA\051617_SIM\0516F017.D	05/16/17	17:58
OMS-28-GW20-12-S	K1704509-004	J:\MS30\DATA\051617_SIM\0516F018.D	05/16/17	18:26

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704509
Date Analyzed: 05/16/2017
Time Analyzed: 13:23

Tune Summary
Volatile Organic Compounds

File ID: J:\MS30\DATA\051617_SIM\0516F008.D
Instrument ID: MS30
Column:

Analysis Method: 8260C SIM
Analysis Lot: KWG1703959

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	18.9	3789	PASS
75	95	30	60	48.0	9597	PASS
95	95	100	100	100.0	20008	PASS
96	95	5	9	6.6	1323	PASS
173	174	0	2	0.0	0	PASS
174	95	50	120	84.4	16896	PASS
175	174	5	9	7.3	1228	PASS
176	174	95	101	97.2	16416	PASS
177	176	5	9	7.6	1245	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1703959-2	J:\MS30\DATA\051617_SIM\0516F009.D	05/16/2017	14:07	
Lab Control Sample	KWG1704141-1	J:\MS30\DATA\051617_SIM\0516F010.D	05/16/2017	14:43	
Duplicate Lab Control Sample	KWG1704141-2	J:\MS30\DATA\051617_SIM\0516F011.D	05/16/2017	15:13	
Method Blank	KWG1704141-3	J:\MS30\DATA\051617_SIM\0516F013.D	05/16/2017	16:08	
Trip Blank	K1704509-005	J:\MS30\DATA\051617_SIM\0516F014.D	05/16/2017	16:36	
OMS-28-GW32-12-S	K1704509-001	J:\MS30\DATA\051617_SIM\0516F015.D	05/16/2017	17:03	
OMS-28-GW02-19-S	K1704509-002	J:\MS30\DATA\051617_SIM\0516F016.D	05/16/2017	17:31	
OMS-28-GW03-34-S	K1704509-003	J:\MS30\DATA\051617_SIM\0516F017.D	05/16/2017	17:58	
OMS-28-GW20-12-S	K1704509-004	J:\MS30\DATA\051617_SIM\0516F018.D	05/16/2017	18:26	
Continuing Calibration Verification	KWG1703959-3	J:\MS30\DATA\051617_SIM\0516F028.D	05/16/2017	23:01	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704509
Project: ARNG OMS 28 Mobile AL **Calibration Date:** 05/15/2017

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL15375 **Column:** MS
Instrument ID: MS30

Level ID	File ID	Level ID	File ID
A	J:\MS30\DATA\051517_SIM\0515F006.D	G	J:\MS30\DATA\051517_SIM\0515F012.D
B	J:\MS30\DATA\051517_SIM\0515F007.D	H	J:\MS30\DATA\051517_SIM\0515F013.D
C	J:\MS30\DATA\051517_SIM\0515F008.D	I	J:\MS30\DATA\051517_SIM\0515F014.D
D	J:\MS30\DATA\051517_SIM\0515F009.D	J	J:\MS30\DATA\051517_SIM\0515F015.D
E	J:\MS30\DATA\051517_SIM\0515F010.D	K	J:\MS30\DATA\051517_SIM\0515F016.D
F	J:\MS30\DATA\051517_SIM\0515F011.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Vinyl Chloride				B	10	0.665	C	20	0.610	D	50	0.621	E	100	0.604
	F	500	0.478	G	1000	0.531	H	2000	0.535	I	5000	0.554	J	7000	0.505
	K	10000	0.460												
Dibromofluoromethane										D	200	0.464	E	400	0.393
	F	600	0.358	G	800	0.358	H	1000	0.360	I	2000	0.378	J	2400	0.325
	K	4000	0.321												
Toluene-d8										D	200	0.911	E	400	0.765
	F	600	0.673	G	800	0.707	H	1000	0.776	I	2000	0.906	J	2400	0.776
	K	4000	0.867												
4-Bromofluorobenzene										D	200	0.472	E	400	0.392
	F	600	0.368	G	800	0.375	H	1000	0.411	I	2000	0.527	J	2400	0.498
	K	4000	0.516												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704509
Project: ARNG OMS 28 Mobile AL **Calibration Date:** 05/15/2017

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL15375 **Column:** MS
Instrument ID: MS30

		Calibration Evaluation					RRF Evaluation		
Analyte Name	**Compound Type**	**Fit Type**	**Eval.**	**Eval. Result**	**Q**	**Control Criteria**	**Average RRF**	**Q**	**Minimum RRF**
Vinyl Chloride	MS	AverageRF	% RSD	12.0		≤ 15	0.556		0.1
Dibromofluoromethane	SURR	AverageRF	% RSD	12.2		≤ 15	0.370		0.01
Toluene-d8	SURR	AverageRF	% RSD	11.1		≤ 15	0.798		0.01
4-Bromofluorobenzene	SURR	AverageRF	% RSD	14.8		≤ 15	0.445		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704509
Calibration Date: 05/15/2017
Date Analyzed: 05/16/2017

Second Source Calibration Verification
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration ID: CAL15375
Units: ng/L

File ID: J:\MS30\DATA\051517_SIM\0515F020.D
J:\MS30\DATA\051617_SIM\0516F003.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	2000	0.556	0.558	0	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704509
Date Analyzed: 05/16/2017

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration Date: 05/15/2017
Calibration ID: CAL15375
Analysis Lot: KWG1703959
Units: ng/L

File ID: J:\MS30\DATA\051617_SIM\0516F009.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	1800	0.1	0.556	0.495	-11	NA	± 20	AverageRF
Dibromofluoromethane	1000	900	0.01	0.370	0.334	-10	NA	± 20	AverageRF
Toluene-d8	1000	1000	0.01	0.798	0.797	0	NA	± 20	AverageRF
4-Bromofluorobenzene	1000	820	0.01	0.445	0.363	-18	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704509
Date Analyzed: 05/16/2017

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration Date: 05/15/2017
Calibration ID: CAL15375
Analysis Lot: KWG1703959
Units: ng/L

File ID: I:\MS30\DATA\051617_SIM\0516F028.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	2100	0.1	0.556	0.577	4	NA	± 50 %	AverageRF
Dibromofluoromethane	1000	980	0.01	0.370	0.362	-2	NA	± 50 %	AverageRF
Toluene-d8	1000	1000	0.01	0.798	0.802	1	NA	± 50 %	AverageRF
4-Bromofluorobenzene	1000	890	0.01	0.445	0.396	-11	NA	± 50 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704509
Project: ARNG OMS 28 Mobile AL

Analysis Run Log
Volatile Organic Compounds

Analysis Method: 8260C SIM **Analysis Lot:** KWG1703959
Instrument ID: MS30

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0516F008.D	GC/MS Tuning - Bromofluorobenzene	KWG1703959-1	5/16/2017	13:23		5/16/2017	13:40
0516F009.D	Continuing Calibration Verification	KWG1703959-2	5/16/2017	14:07		5/16/2017	14:25
0516F010.D	Lab Control Sample	KWG1704141-1	5/16/2017	14:43		5/16/2017	15:00
0516F011.D	Duplicate Lab Control Sample	KWG1704141-2	5/16/2017	15:13		5/16/2017	15:30
0516F013.D	Method Blank	KWG1704141-3	5/16/2017	16:08		5/16/2017	16:25
0516F014.D	Trip Blank	K1704509-005	5/16/2017	16:36		5/16/2017	16:53
0516F015.D	OMS-28-GW32-12-S	K1704509-001	5/16/2017	17:03		5/16/2017	17:20
0516F016.D	OMS-28-GW02-19-S	K1704509-002	5/16/2017	17:31		5/16/2017	17:48
0516F017.D	OMS-28-GW03-34-S	K1704509-003	5/16/2017	17:58		5/16/2017	18:15
0516F018.D	OMS-28-GW20-12-S	K1704509-004	5/16/2017	18:26		5/16/2017	18:43
0516F019.D	ZZZZZZ	ZZZZZZ	5/16/2017	18:53		5/16/2017	19:10
0516F020.D	ZZZZZZ	ZZZZZZ	5/16/2017	19:21		5/16/2017	19:38
0516F021.D	ZZZZZZ	ZZZZZZ	5/16/2017	19:48		5/16/2017	20:05
0516F022.D	ZZZZZZ	ZZZZZZ	5/16/2017	20:16		5/16/2017	20:34
0516F023.D	ZZZZZZ	ZZZZZZ	5/16/2017	20:43		5/16/2017	21:00
0516F024.D	ZZZZZZ	ZZZZZZ	5/16/2017	21:11		5/16/2017	21:29
0516F025.D	ZZZZZZ	ZZZZZZ	5/16/2017	21:38		5/16/2017	21:56
0516F026.D	ZZZZZZ	ZZZZZZ	5/16/2017	22:06		5/16/2017	22:24
0516F027.D	ZZZZZZ	ZZZZZZ	5/16/2017	22:33		5/16/2017	22:51
0516F028.D	Continuing Calibration Verification	KWG1703959-3	5/16/2017	23:01		5/16/2017	23:18

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Service Request: K1704509
Date Extracted: 05/16/2017

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C SIM

Extraction Lot: KWG1704141
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
OMS-28-GW32-12-S	K1704509-001	05/02/17	05/05/17	10ml	10ml	NA	
OMS-28-GW02-19-S	K1704509-002	05/03/17	05/05/17	10ml	10ml	NA	
OMS-28-GW03-34-S	K1704509-003	05/04/17	05/05/17	10ml	10ml	NA	
OMS-28-GW20-12-S	K1704509-004	05/04/17	05/05/17	10ml	10ml	NA	
Trip Blank	K1704509-005	05/02/17	05/05/17	10ml	10ml	NA	
Method Blank	KWG1704141-3	NA	NA	10ml	10ml	NA	
Lab Control Sample	KWG1704141-1	NA	NA	10ml	10ml	NA	
Duplicate Lab Control Sample	KWG1704141-2	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Service Request: K1704509

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C SIM

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2		Sur3
OMS-28-GW32-12-S	K1704509-001	94	117	*	76
OMS-28-GW02-19-S	K1704509-002	96	103		79
OMS-28-GW03-34-S	K1704509-003	102	102		79
OMS-28-GW20-12-S	K1704509-004	103	106		76
Trip Blank	K1704509-005	97	100		75
Method Blank	KWG1704141-3	93	99		75
Lab Control Sample	KWG1704141-1	91	101		83
Duplicate Lab Control Sample	KWG1704141-2	90	101		86

Surrogate Recovery Control Limits (%)

Sur1	= Dibromofluoromethane	77-123
Sur2	= Toluene-d8	74-112
Sur3	= 4-Bromofluorobenzene	46-118

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F015.D
Lab ID: K1704509-001
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 17:03
Date Quantitated: 05/22/2017 11:54
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18835

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	20	NA	14		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	Toluene-d8	117	74	112	Not assoc. w/ V.C.

Primary Review: KWG

Secondary Review: NJ

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F015.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 17:03	**Quant Date:**	05/22/2017 11:54	**Vial:**	13
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704509-001			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/02/2017	**Receive Date:**	05/05/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704509
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604854	**Prep Date:**	05/22/2017		

LC
MS 25-17

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	55169	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	39578	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19233	942.54	94	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	51474	1,170	117	74-112	*	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	13376	759.69	76	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	684	22.29	22		

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F015.D Vial: 13
Acq On : 16 May 2017 05:03 pm Operator: GH
Sample : K4509-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:53:15 2017 Quant Results File: 051517MS30_8260SIM.RES

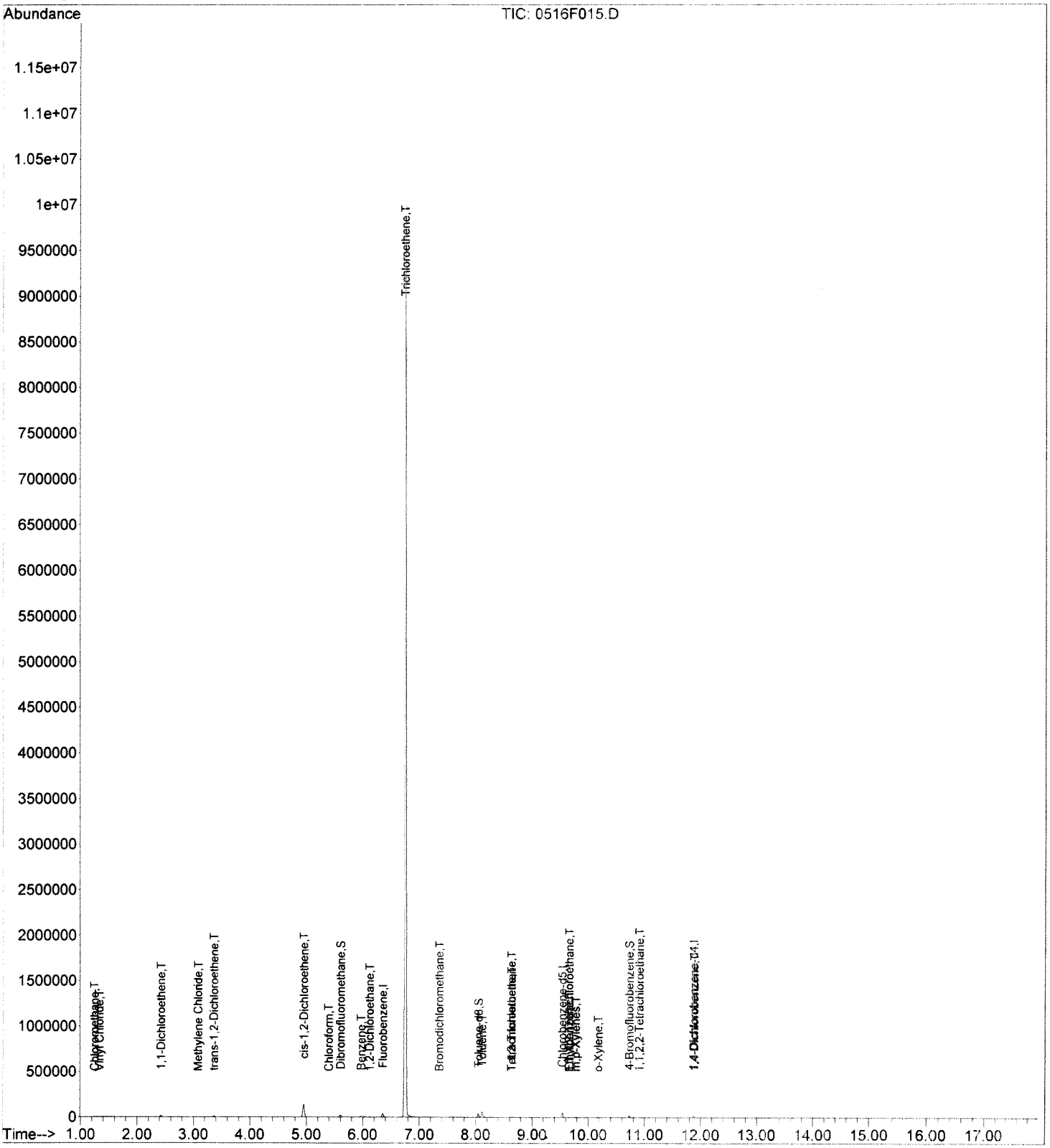
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

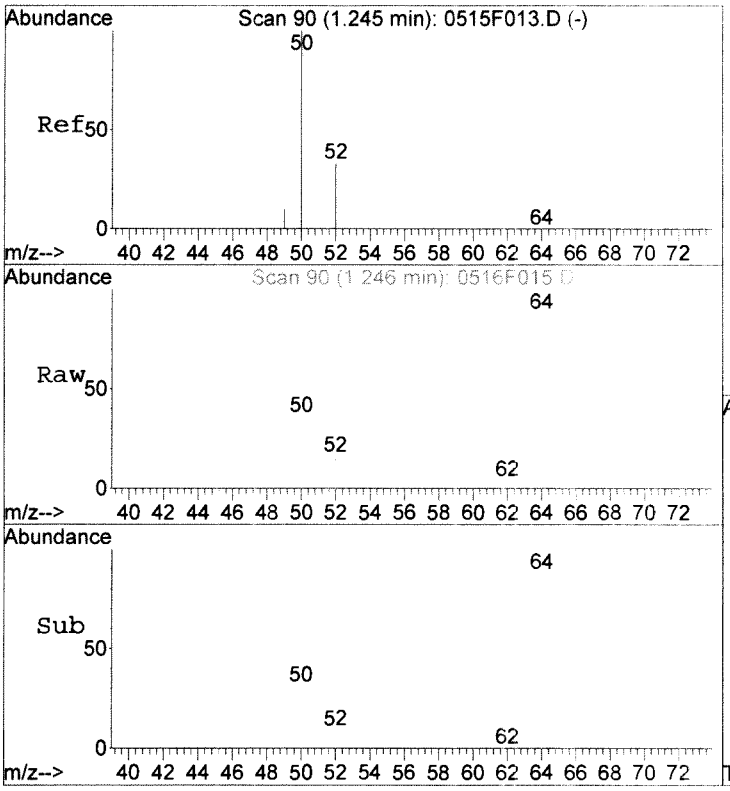
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55169	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	39578	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	15112	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19233	942.54	ng/L	0.00
Spiked Amount 1000.000			Recovery = 94.25%			
15) Toluene-d8	8.05	98	51474	1169.76	ng/L	0.00
Spiked Amount 1000.000			Recovery = 116.98%			
25) 4-Bromofluorobenzene	10.73	95	13376	759.69	ng/L	0.00
Spiked Amount 1000.000			Recovery = 75.97%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	701	22.20	ng/L	96
3) Vinyl Chloride	1.33	62	684	22.29	ng/L	78
4) 1,1-Dichloroethene	2.43	96	7624	446.77	ng/L	99
5) Methylene Chloride	3.07	84	515	21.56	ng/L	91
6) trans-1,2-Dichloroethene	3.36	96	5585	288.59	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	85973	4659.23	ng/L	98
8) Chloroform	5.39	83	223	5.62	ng/L	99
11) Benzene	5.97	78	15047	199.54	ng/L	99
12) 1,2-Dichloroethane	6.12	62	1660	59.01	ng/L	98
13) Trichloroethene	6.75	95	5512265	297223.95	ng/L	99
14) Bromodichloromethane	7.34	83	19	0.72	ng/L	81
16) 1,1,2-Trichloroethane	8.63	83	140	9.41	ng/L	81
20) Toluene	8.11	92	33321	959.28	ng/L	96
21) Ethylbenzene	9.65	106	466	27.81	ng/L #	80
22) 1,1,1,2-Tetrachloroethane	9.65	131	7	0.34	ng/L	91
23) m,p-Xylenes	9.78	106	1487	77.53	ng/L	97
24) o-Xylene	10.18	106	718	36.71	ng/L	86
26) 1,1,2,2-Tetrachloroethane	10.92	83	123	6.60	ng/L #	30
28) Tetrachloroethene	8.63	164	1191	73.14	ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	190	6.97	ng/L	85

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F015.D Vial: 13
Acq On : 16 May 2017 05:03 pm Operator: GH
Sample : K4509-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:54 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

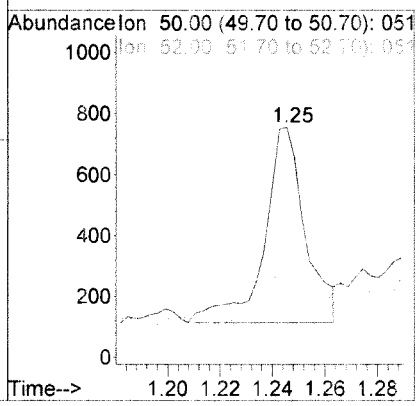


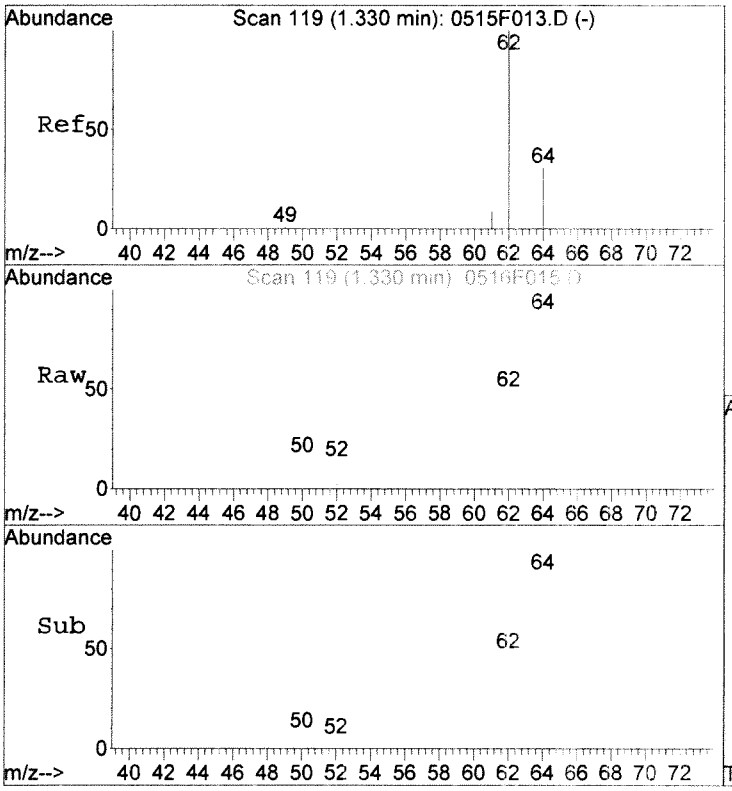


#2
Chloromethane
Concen: 22.20 ng/L
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 50 Resp: 701

Ion	Ratio	Lower	Upper
50	100		
52	30.5	2.5	62.5
49	12.8	0.0	40.3

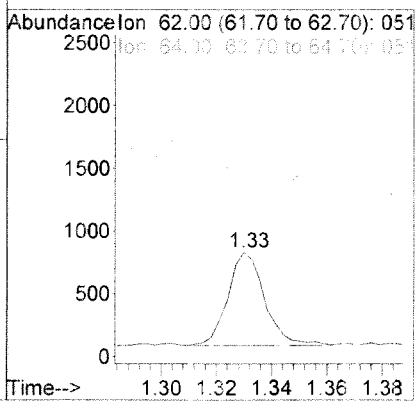


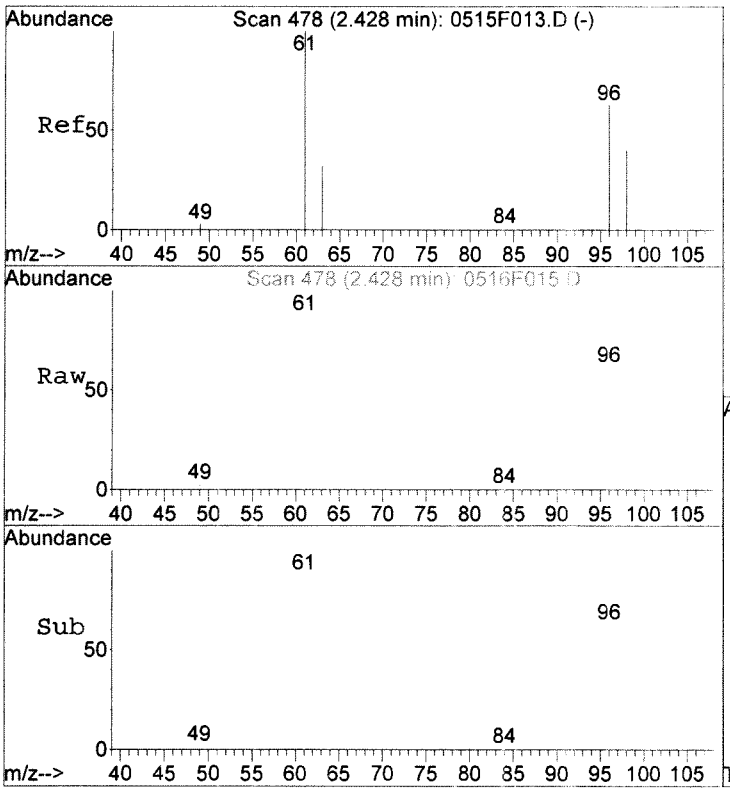


#3
Vinyl Chloride
Concen: 22.29 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 62 Resp: 684

Ion	Ratio	Lower	Upper
62	100		
64	46.6	1.5	61.5
61	9.3	0.0	38.6

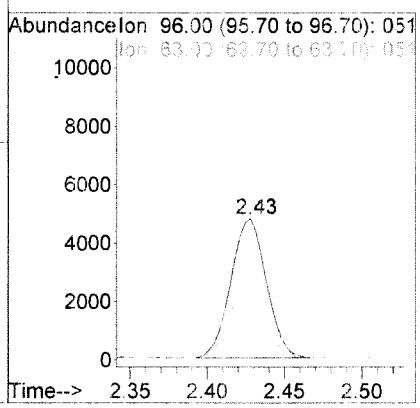


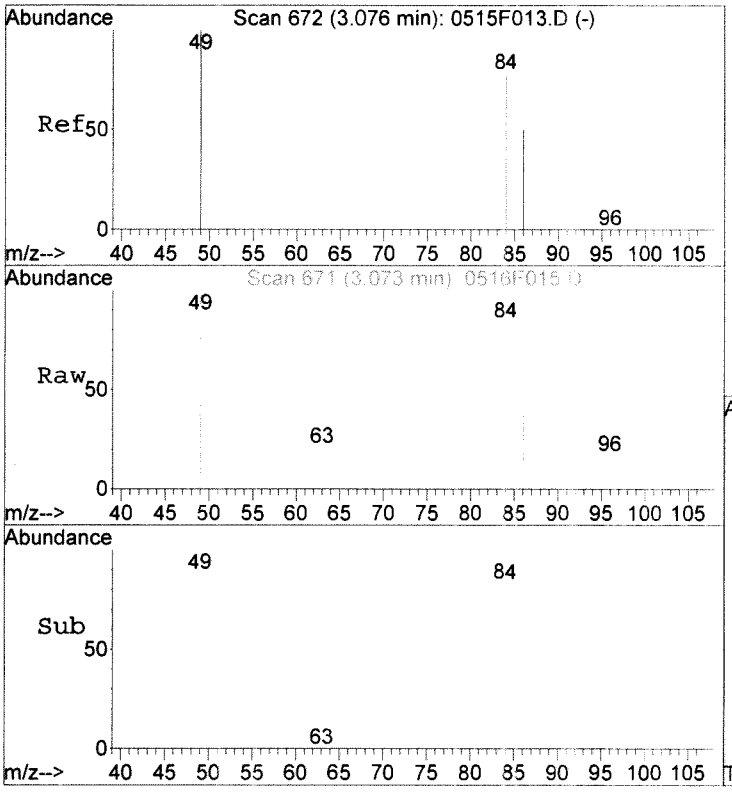


#4
1,1-Dichloroethene
Concen: 446.77 ng/L
RT: 2.43 min Scan# 478
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 96 Resp: 7624

Ion	Ratio	Lower	Upper
96	100		
63	52.3	21.4	81.4
61	161.2	129.1	189.1

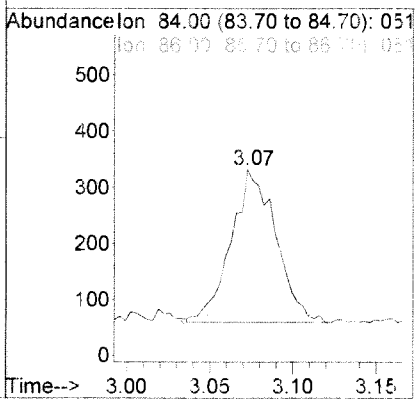


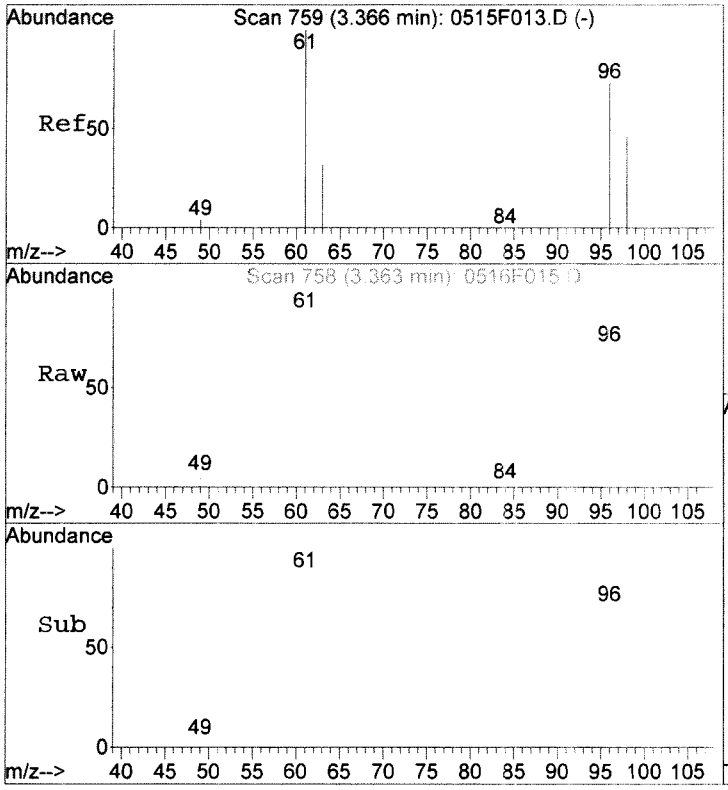


#5
Methylene Chloride
Concen: 21.56 ng/L
RT: 3.07 min Scan# 671
Delta R.T. -0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 84 Resp: 515

Ion	Ratio	Lower	Upper
84	100		
86	55.5	34.0	94.0
49	119.5	98.8	158.8

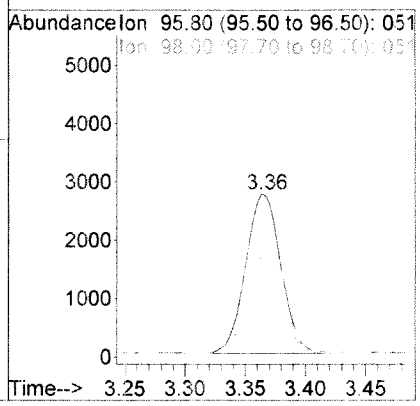


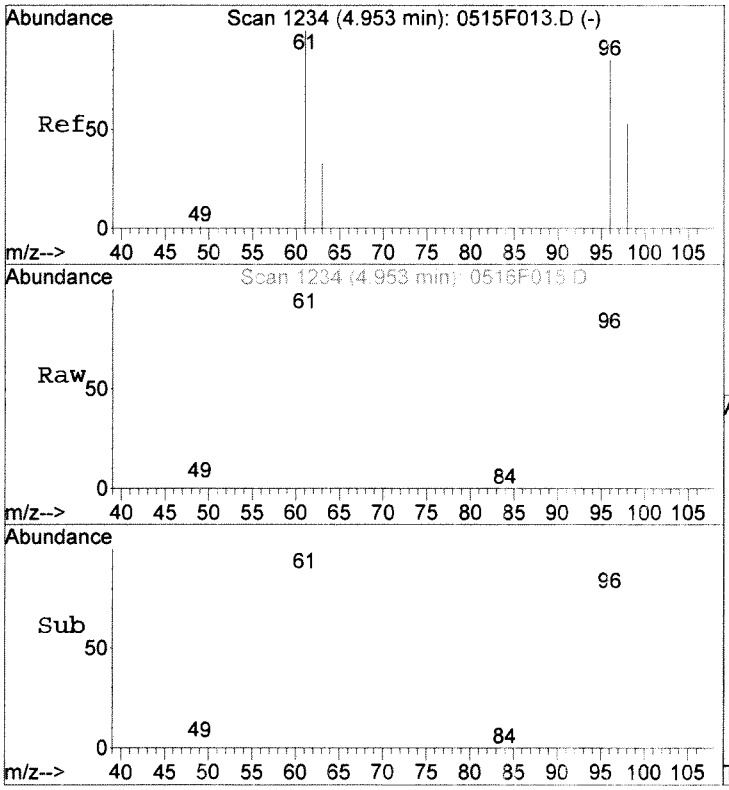


#6
trans-1,2-Dichloroethene
Concen: 288.59 ng/L
RT: 3.36 min Scan# 758
Delta R.T. -0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 96 Resp: 5585

Ion	Ratio	Lower	Upper
96	100		
98	60.4	32.9	92.9
61	141.7	107.3	167.3

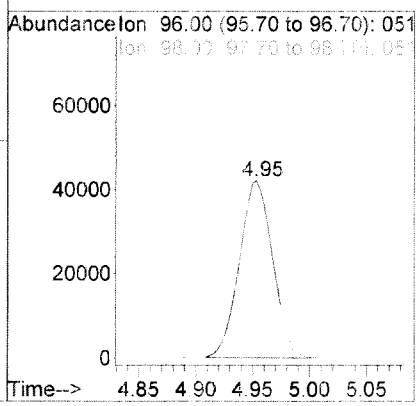


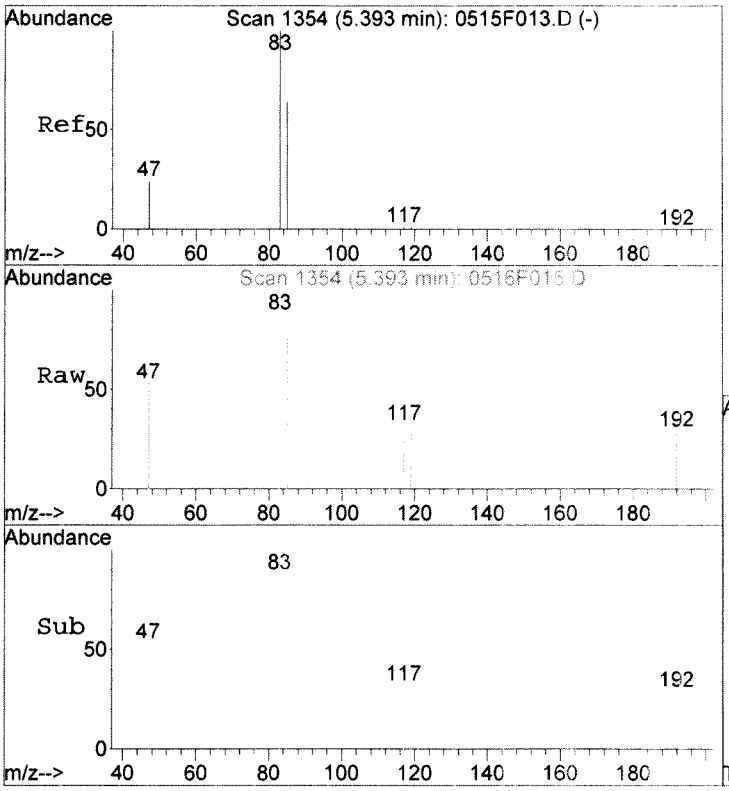


#7
cis-1,2-Dichloroethene
Concen: 4659.23 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 96 Resp: 85973

Ion	Ratio	Lower	Upper
96	100		
98	63.8	32.7	92.7
61	127.8	95.4	155.4

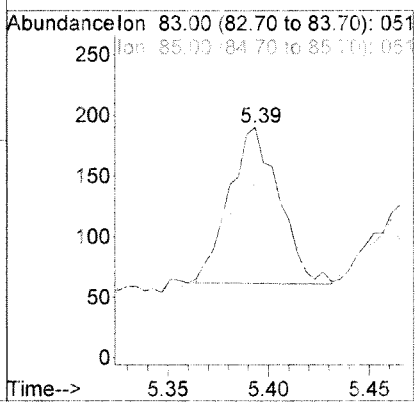


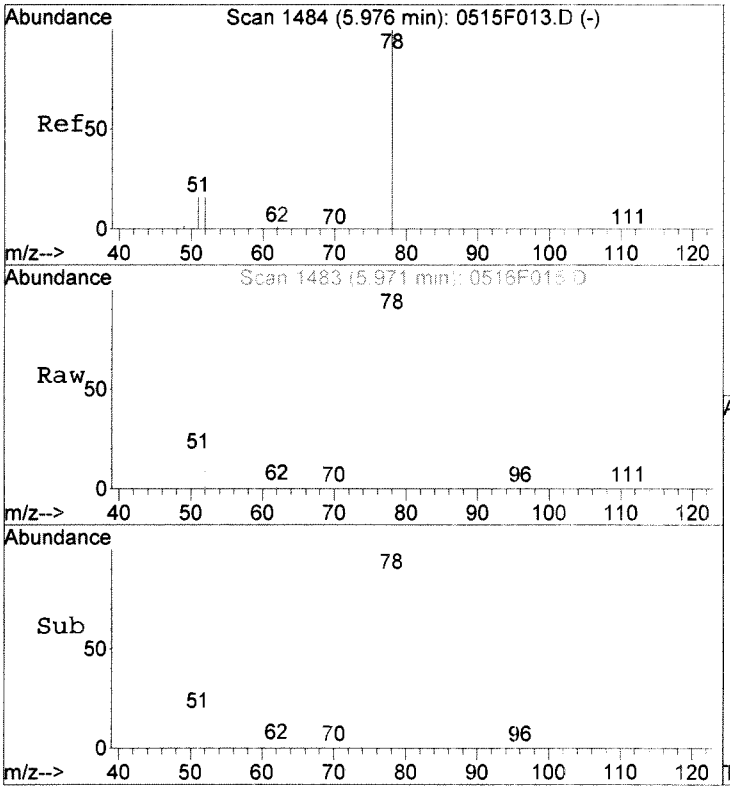


#8
Chloroform
Concen: 5.62 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 83 Resp: 223

Ion	Ratio	Lower	Upper
83	100		
85	64.8	34.0	94.0
47	24.2	0.0	53.5

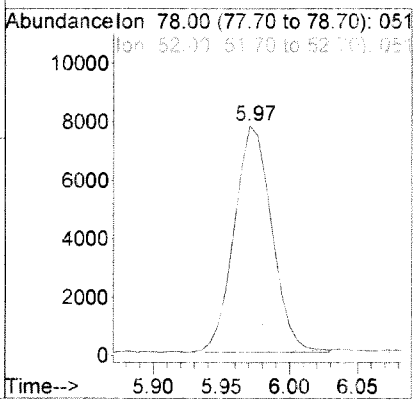


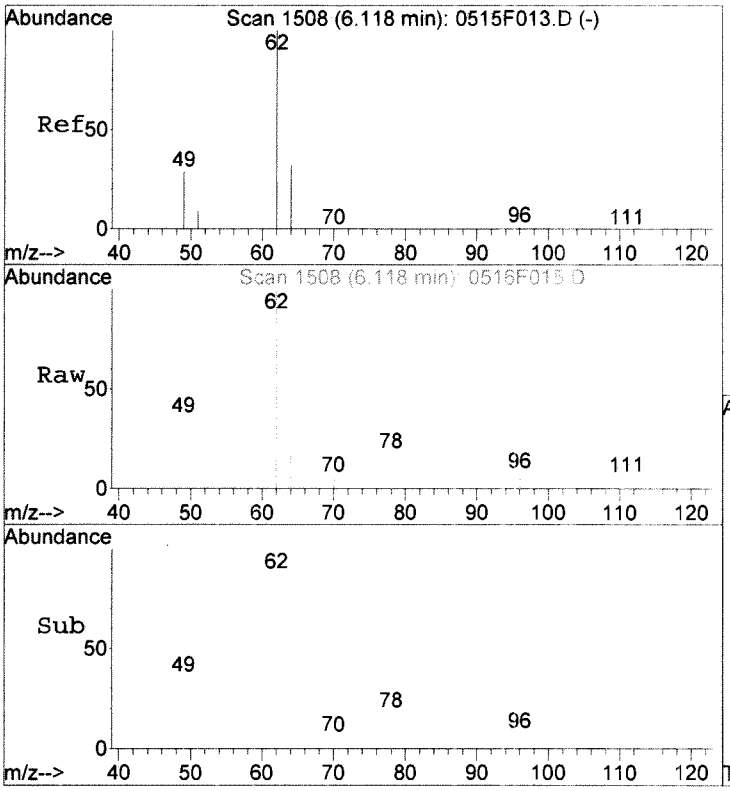


#11
Benzene
Concen: 199.54 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 78 Resp: 15047

Ion	Ratio	Lower	Upper
78	100		
52	15.8	0.0	45.8
51	17.3	0.0	46.5

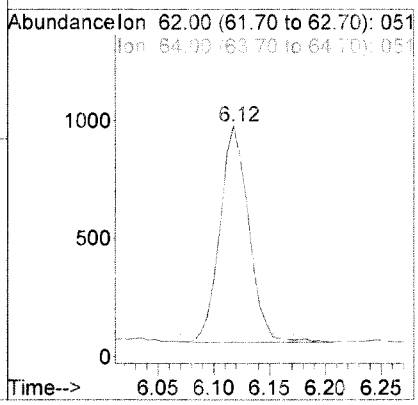


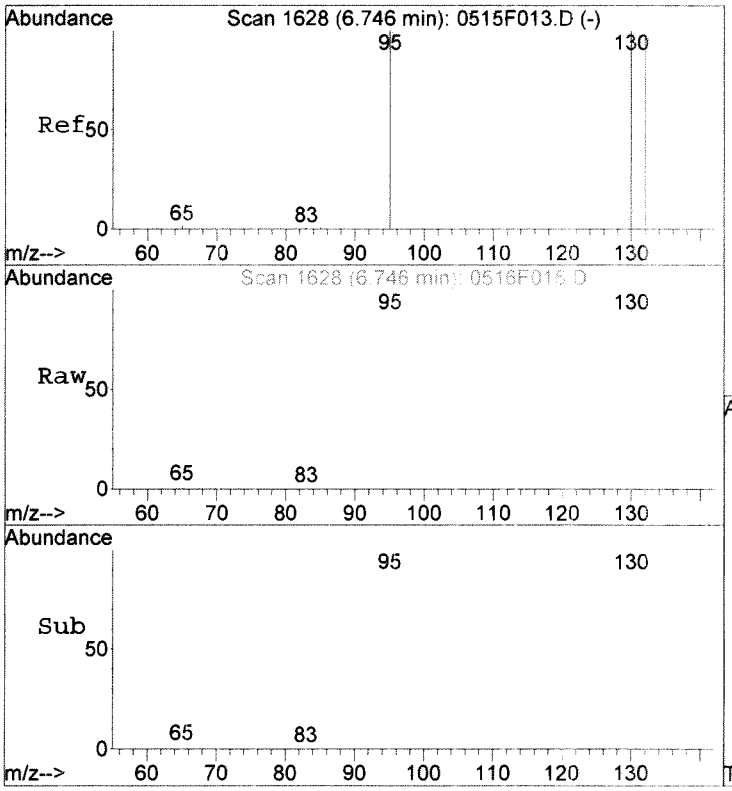


#12
1,2-Dichloroethane
Concen: 59.01 ng/L
RT: 6.12 min Scan# 1508
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 62 Resp: 1660

Ion	Ratio	Lower	Upper
62	100		
64	32.0	2.1	62.1
49	30.9	0.0	58.7

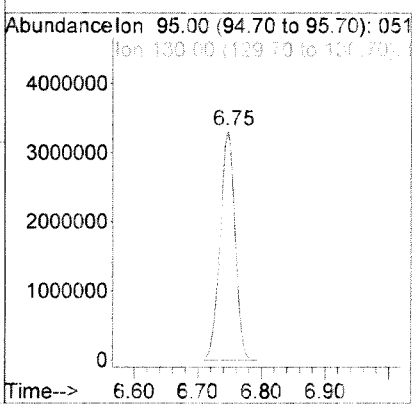


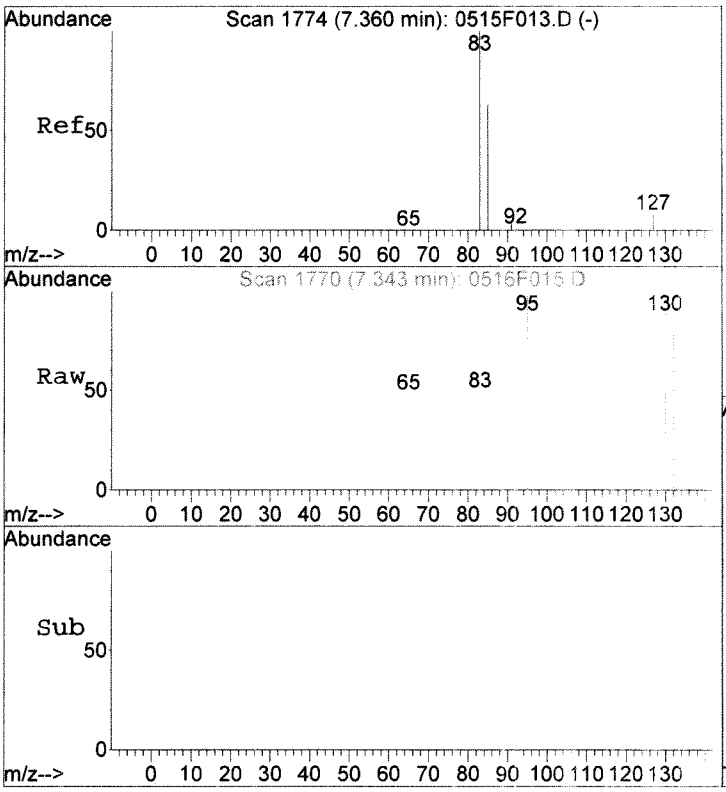


#13
Trichloroethene
Concen: 297223.95 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 95 Resp: 5512265

Ion	Ratio	Lower	Upper
95	100		
130	100.1	69.5	129.5
132	96.5	67.2	127.2

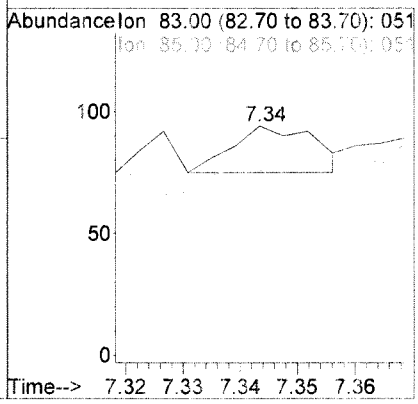


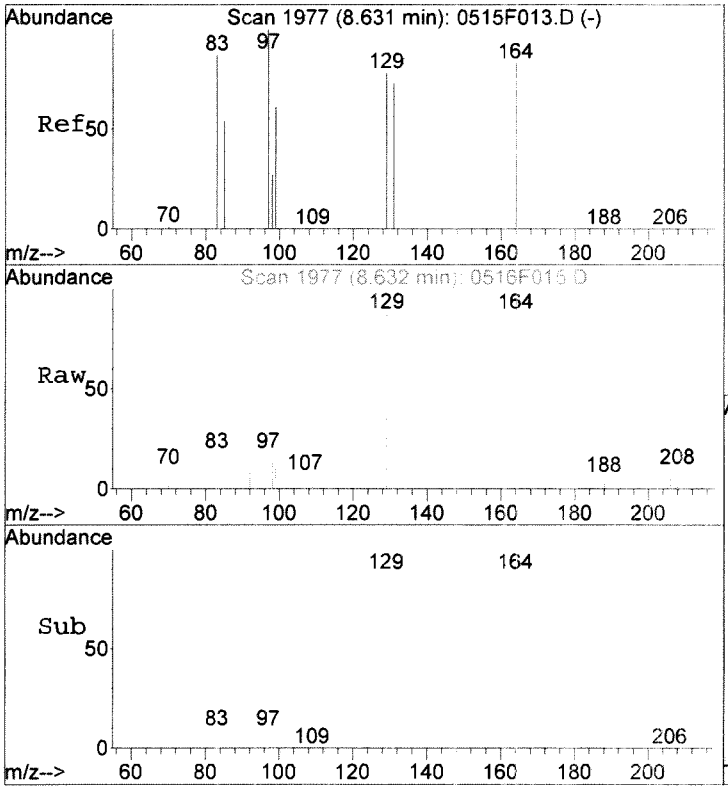


#14
Bromodichloromethane
Concen: 0.72 ng/L
RT: 7.34 min Scan# 1770
Delta R.T. -0.02 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 83 Resp: 19

Ion	Ratio	Lower	Upper
83	100		
85	47.4	33.1	93.1
127	5.3	0.0	38.1

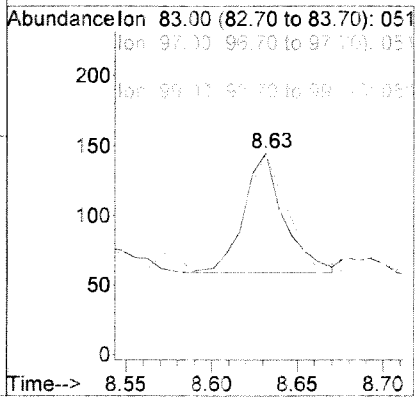


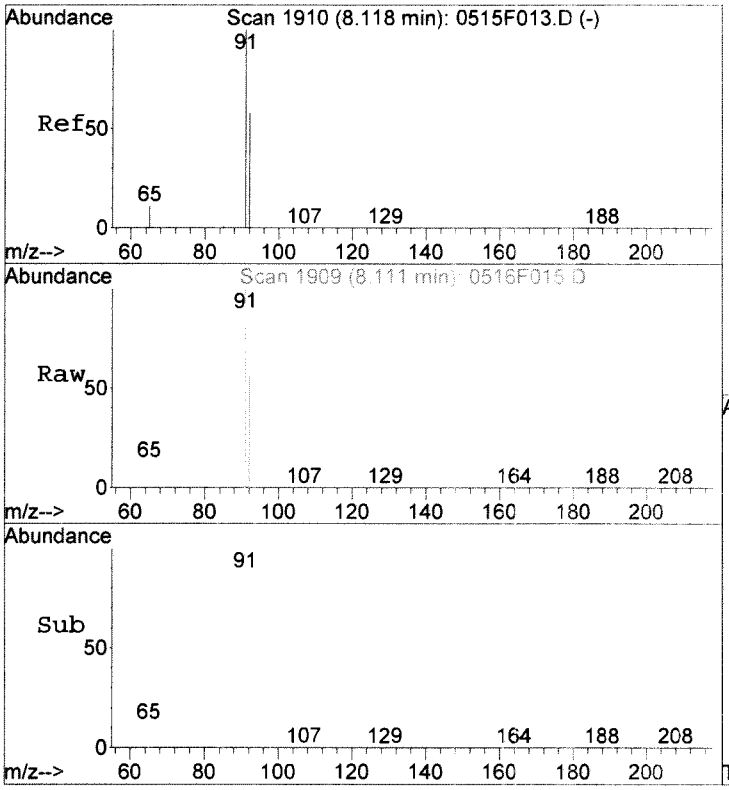


#16
1,1,2-Trichloroethane
Concen: 9.41 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 83 Resp: 140

Ion	Ratio	Lower	Upper
83	100		
97	94.2	84.4	144.4
85	47.7	32.3	92.3
99	54.7	39.4	99.4

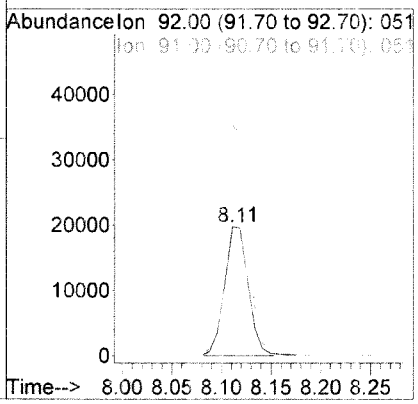


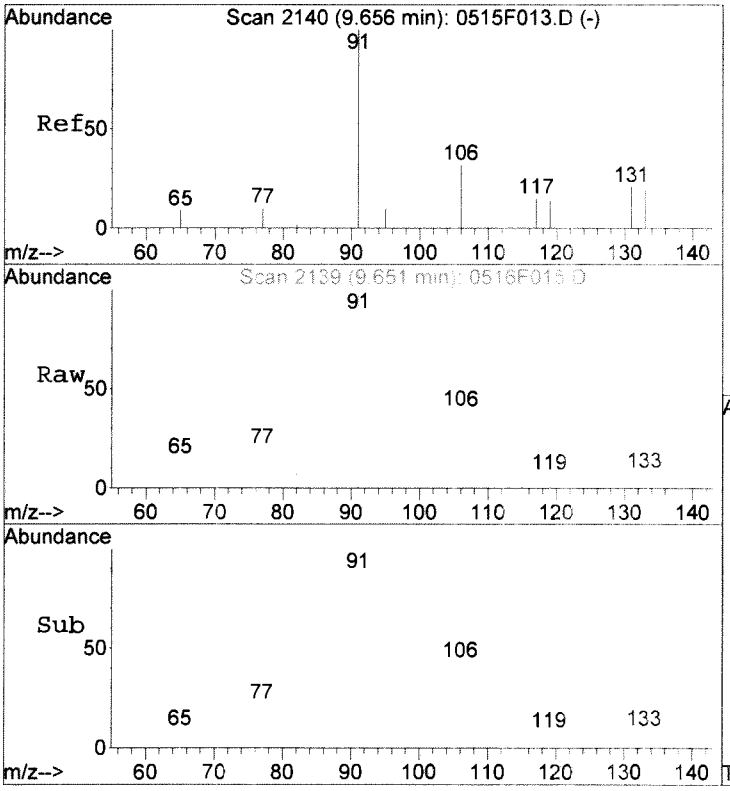


#20
Toluene
Concen: 959.28 ng/L
RT: 8.11 min Scan# 1909
Delta R.T. -0.01 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 92 Resp: 33321

Ion	Ratio	Lower	Upper
92	100		
91	178.5	143.6	203.6
65	22.3	0.0	49.9

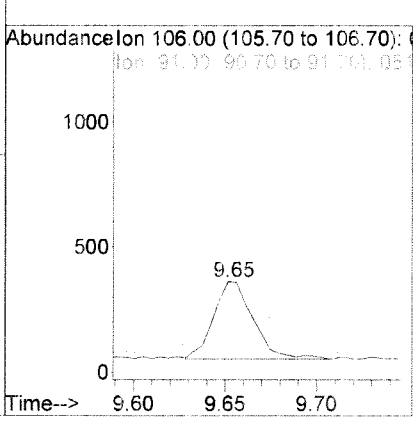


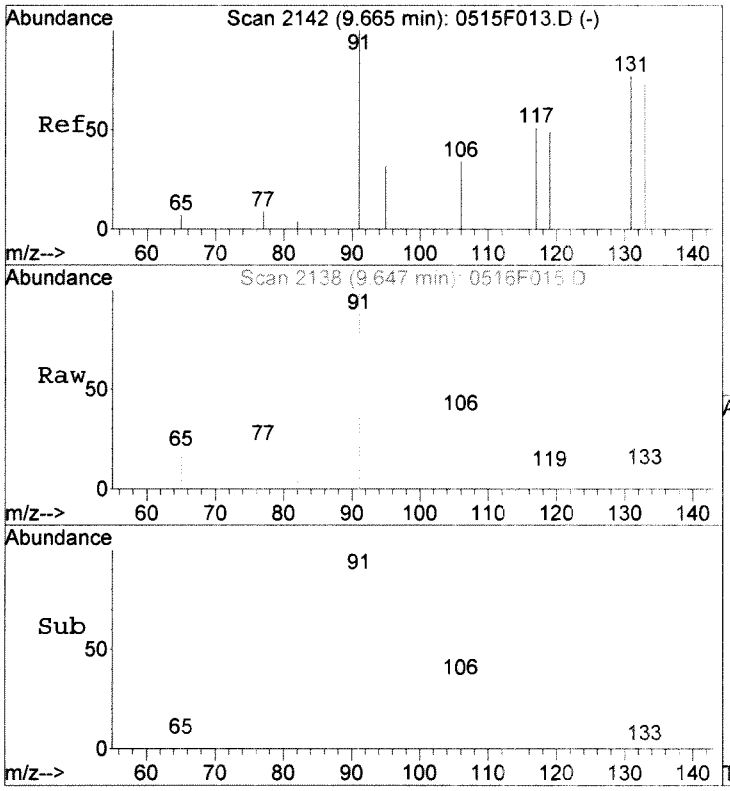


#21
Ethylbenzene
Concen: 27.81 ng/L
RT: 9.65 min Scan# 2139
Delta R.T. -0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion:106 Resp: 466

Ion	Ratio	Lower	Upper
106	100		
91	272.3	285.7	345.7#
77	25.1	1.3	61.3

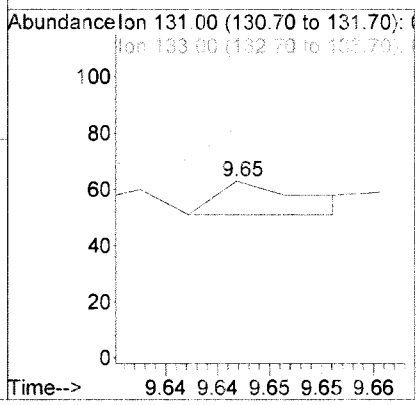


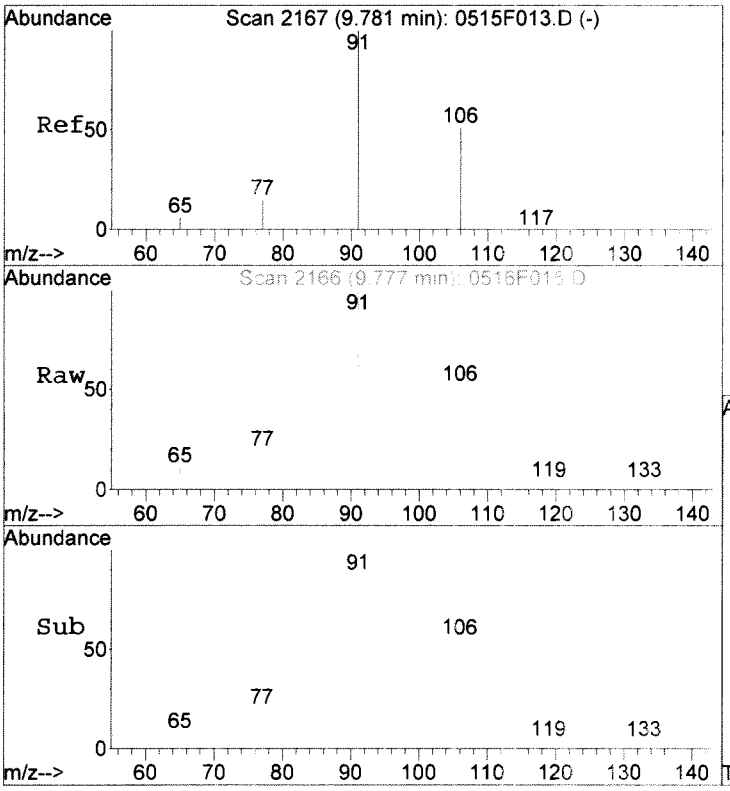


#22
1,1,1,2-Tetrachloroethane
Concen: 0.34 ng/L
RT: 9.65 min Scan# 2138
Delta R.T. -0.02 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion:131 Resp: 7

Ion	Ratio	Lower	Upper
131	100		
133	91.7	74.4	114.4
119	50.0	43.9	83.9

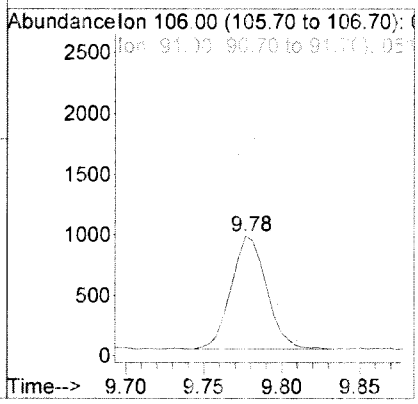


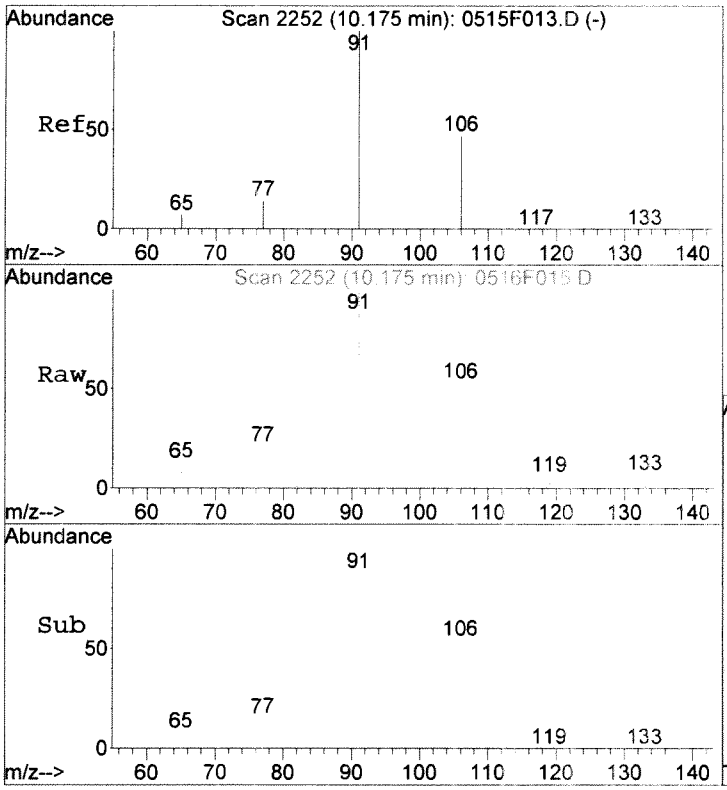


#23
m,p-Xylenes
Concen: 77.53 ng/L
RT: 9.78 min Scan# 2166
Delta R.T. -0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion:106 Resp: 1487

Ion	Ratio	Lower	Upper
106	100		
91	192.3	166.8	226.8
77	27.9	0.0	58.7

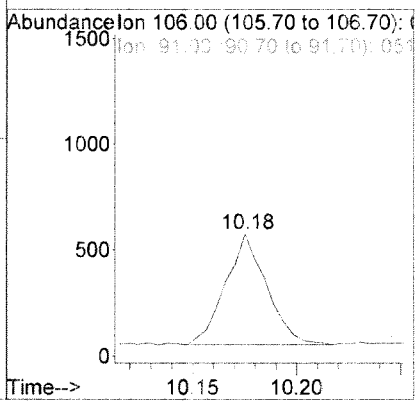


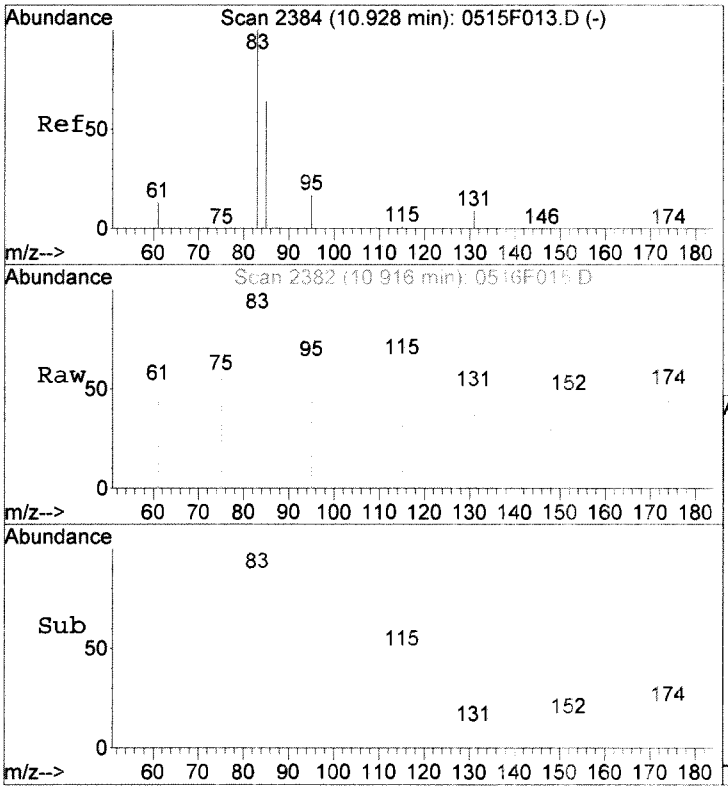


#24
o-Xylene
Concen: 36.71 ng/L
RT: 10.18 min Scan# 2252
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion:106 Resp: 718

Ion	Ratio	Lower	Upper
106	100		
91	190.2	184.3	244.3
65	13.3	0.0	44.6

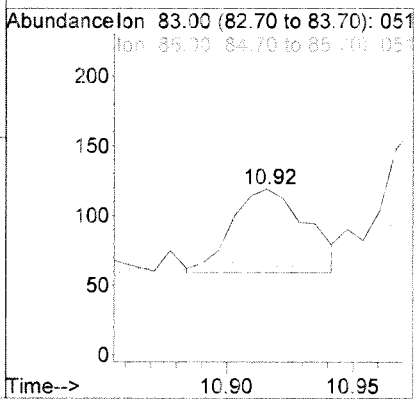


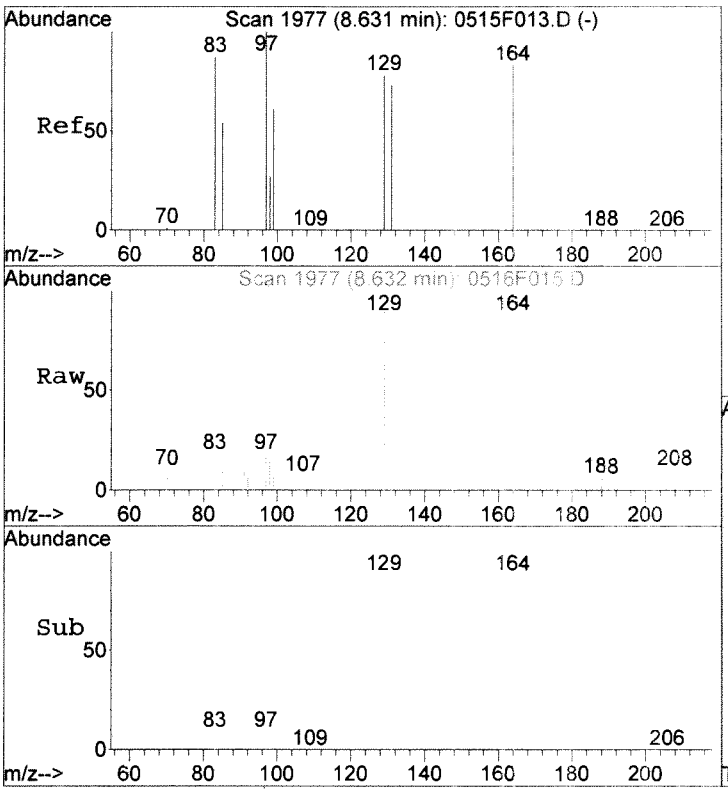


#26
1,1,2,2-Tetrachloroethane
Concen: 6.60 ng/L
RT: 10.92 min Scan# 2382
Delta R.T. -0.01 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion: 83 Resp: 123

Ion	Ratio	Lower	Upper
83	100		
85	1.8	34.1	94.1#
131	8.8	0.0	28.8

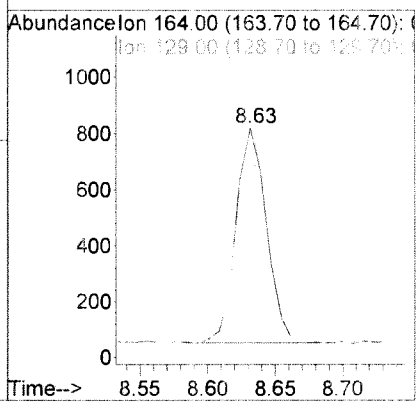


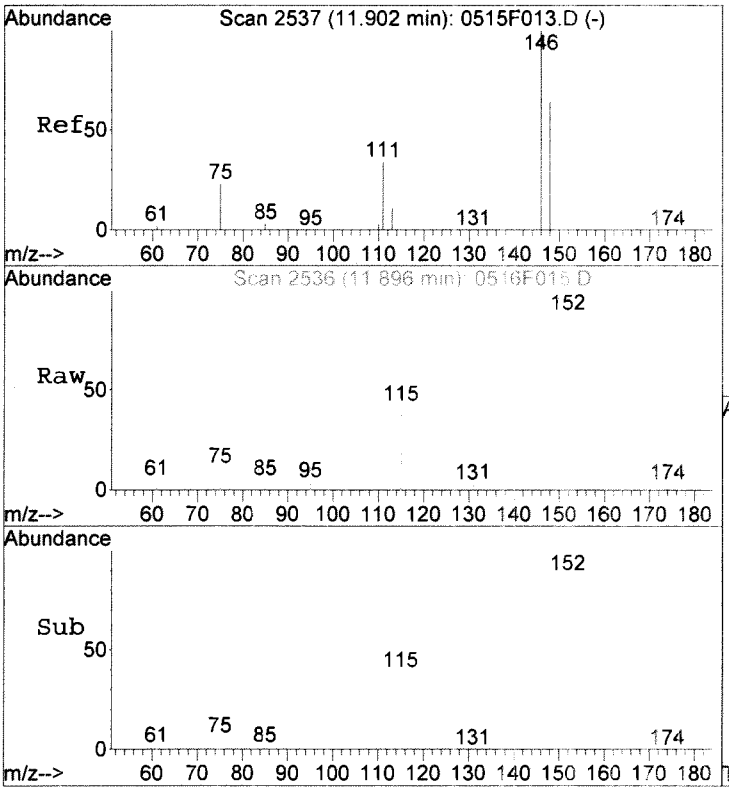


#28
Tetrachloroethene
Concen: 73.14 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion:164 Resp: 1191

Ion	Ratio	Lower	Upper
164	100		
129	93.1	63.1	123.1
131	83.3	57.4	117.4

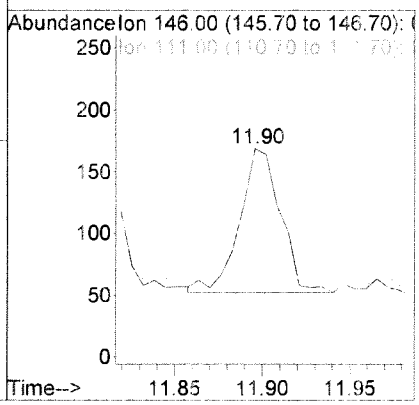




#30
1,4-Dichlorobenzene
Concen: 6.97 ng/L
RT: 11.90 min Scan# 2536
Delta R.T. -0.01 min
Lab File: 0516F015.D
Acq: 16 May 2017 05:03 pm

Tgt Ion:146 Resp: 190

Ion	Ratio	Lower	Upper
146	100		
111	50.4	4.0	64.0
148	70.9	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F016.D
Lab ID: K1704509-002
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 17:31
Date Quantitated: 05/22/2017 11:59
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	19	NA	14		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KS 5/22/17

Secondary Review: N

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F016.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 17:31	**Quant Date:**	05/22/2017 11:59	**Vial:**	14
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704509-002			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/03/2017	**Receive Date:**	05/05/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704509
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604855	**Prep Date:**	05/22/2017 IV		

MJ1547

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	54936	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	36949	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19586	963.91	96	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	45063	1,028	103	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12924	786.25	79	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	333	10.90	11	J	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F016.D Vial: 14
Acq On : 16 May 2017 05:31 pm Operator: GH
Sample : K4509-002 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:57:12 2017 Quant Results File: 051517MS30_8260SIM.RES

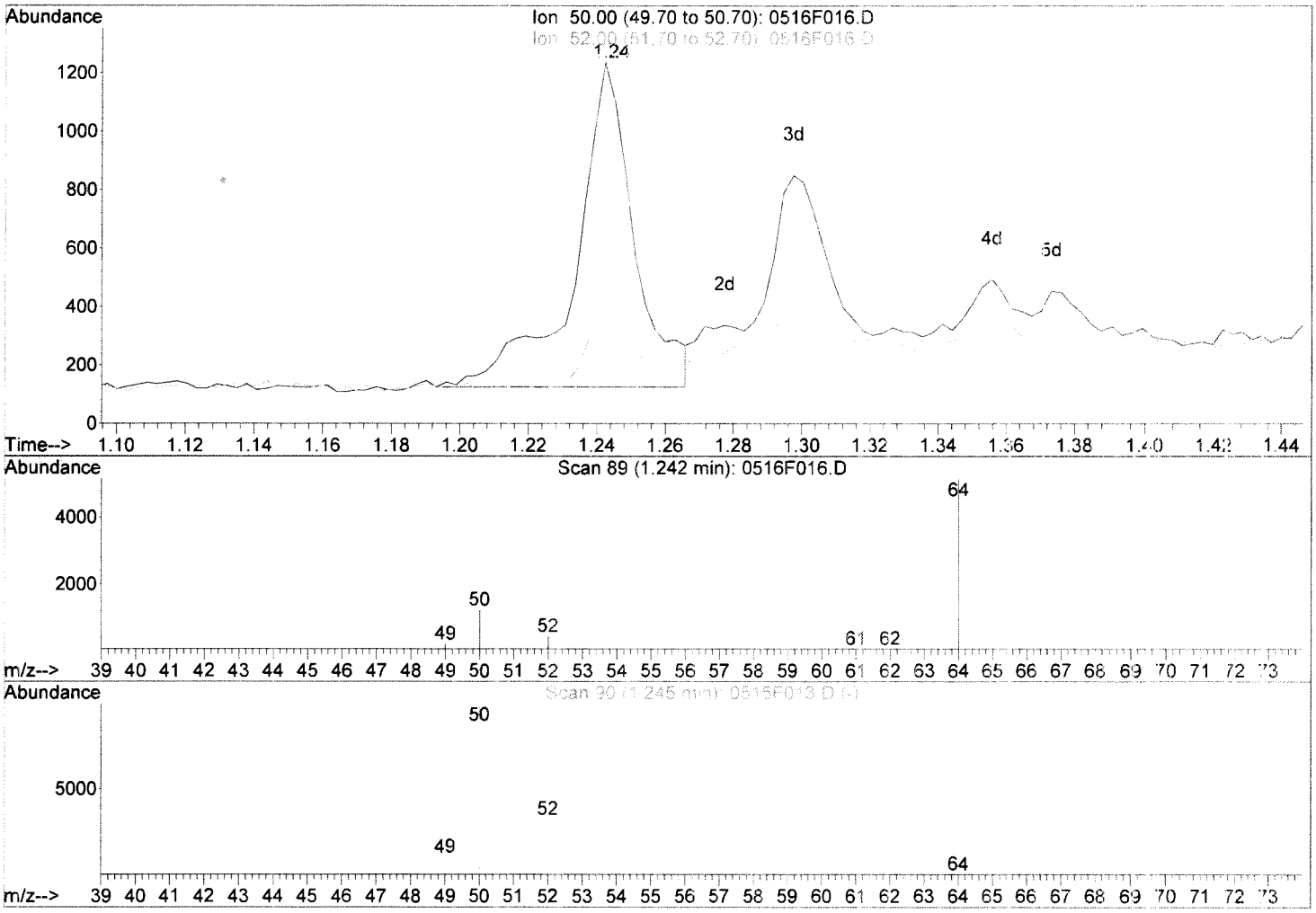
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	54936	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36949	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14052	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	19586	963.91 ng/L	0.00
Spiked Amount 1000.000			Recovery =	96.39%	
15) Toluene-d8	8.05	98	45063	1028.41 ng/L	0.00
Spiked Amount 1000.000			Recovery =	102.84%	
25) 4-Bromofluorobenzene	10.73	95	12924	786.25 ng/L	0.00
Spiked Amount 1000.000			Recovery =	78.63%	
Target Compounds					Qvalue
2) Chloromethane	1.24	50	782m	24.87 ng/L	
3) Vinyl Chloride	1.33	62	333	10.90 ng/L #	1
5) Methylene Chloride	3.08	84	763	32.07 ng/L	94
7) cis-1,2-Dichloroethene	4.95	96	645	35.10 ng/L	99
8) Chloroform	5.39	83	2466	62.42 ng/L	98
11) Benzene	5.97	78	5662	75.40 ng/L	97
12) 1,2-Dichloroethane	6.12	62	68	2.43 ng/L	79
13) Trichloroethene	6.75	95	6374	345.15 ng/L	99
20) Toluene	8.12	92	16804	518.19 ng/L	98
21) Ethylbenzene	9.65	106	484	30.94 ng/L #	83
22) 1,1,1,2-Tetrachloroethane	9.66	131	31	1.59 ng/L #	64
23) m,p-Xylenes	9.78	106	1811	101.15 ng/L	98
24) o-Xylene	10.18	106	920	50.38 ng/L	96
28) Tetrachloroethene	8.64	164	80	5.26 ng/L	83
30) 1,4-Dichlorobenzene	11.90	146	176	6.94 ng/L	89

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F016.D Vial: 14
Acq On : 16 May 2017 05:31 pm Operator: GH
Sample : K4509-002 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:57 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F016.D

(2) Chloromethane (T)

1.24min 41.92ng/L

response 1318

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	28.53
49.00	10.30	12.06
0.00	0.00	0.00

Manual Integration:

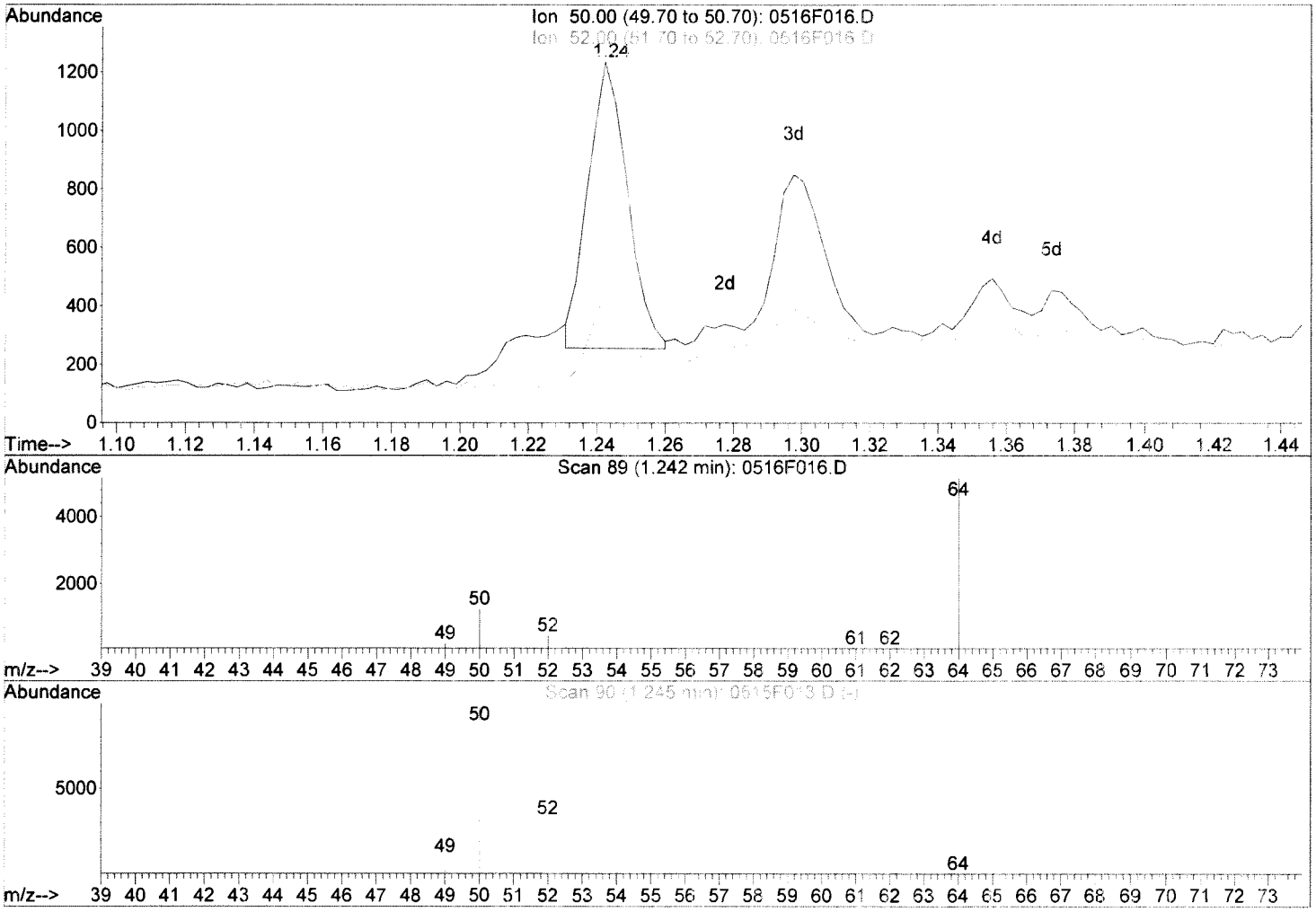
Before

05/22/17

Quantitation Report (Qedit)

Data File : I:\MS30\DATA\051617_SIM\0516F016.D Vial: 14
Acq On : 16 May 2017 05:31 pm Operator: GH
Sample : K4509-002 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:58 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F016.D

(2) Chloromethane (T)

1.24min 24.87ng/L m

response 782

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	35.92
49.00	10.30	16.91
0.00	0.00	0.00

Manual Integration:

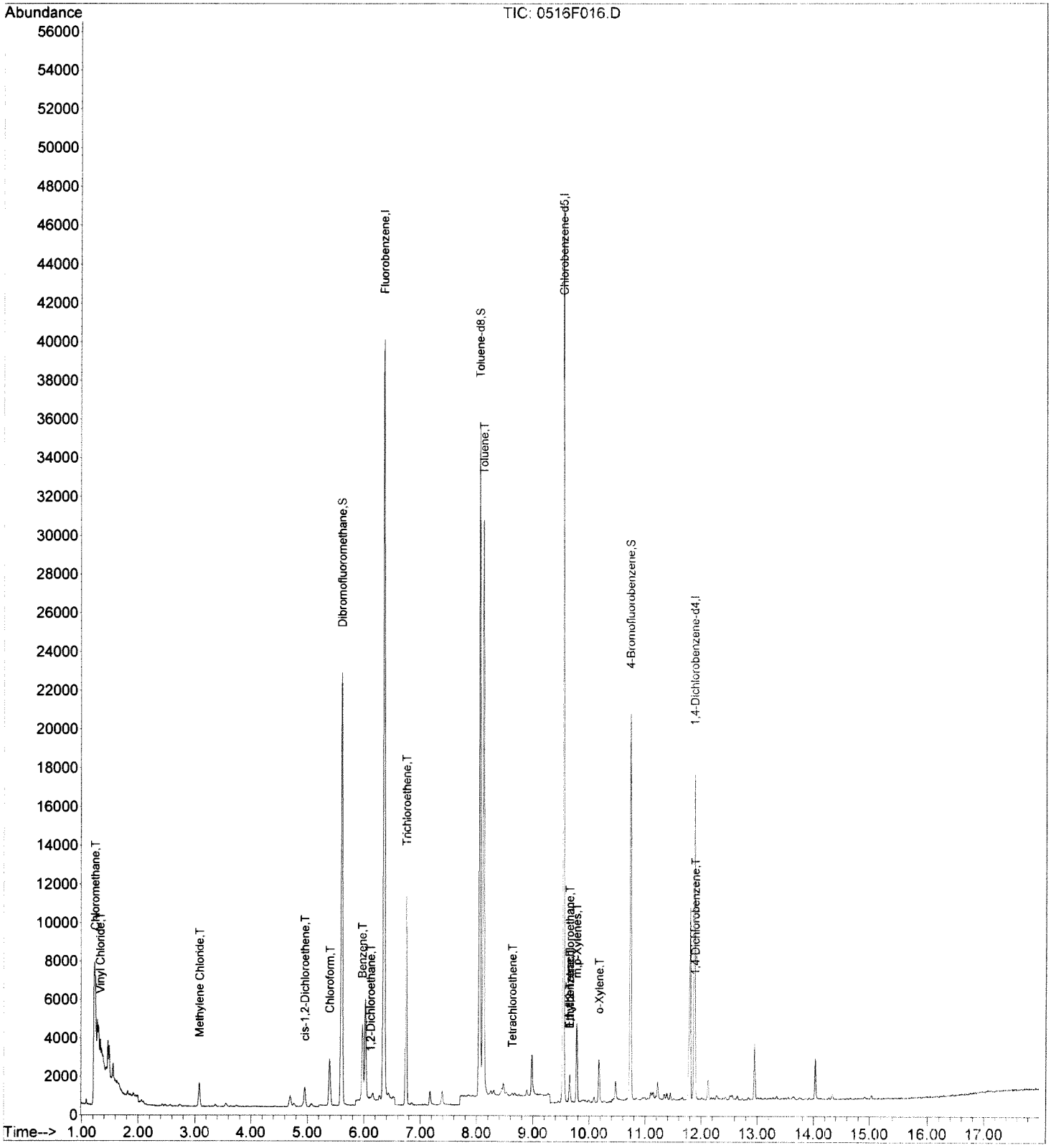
After

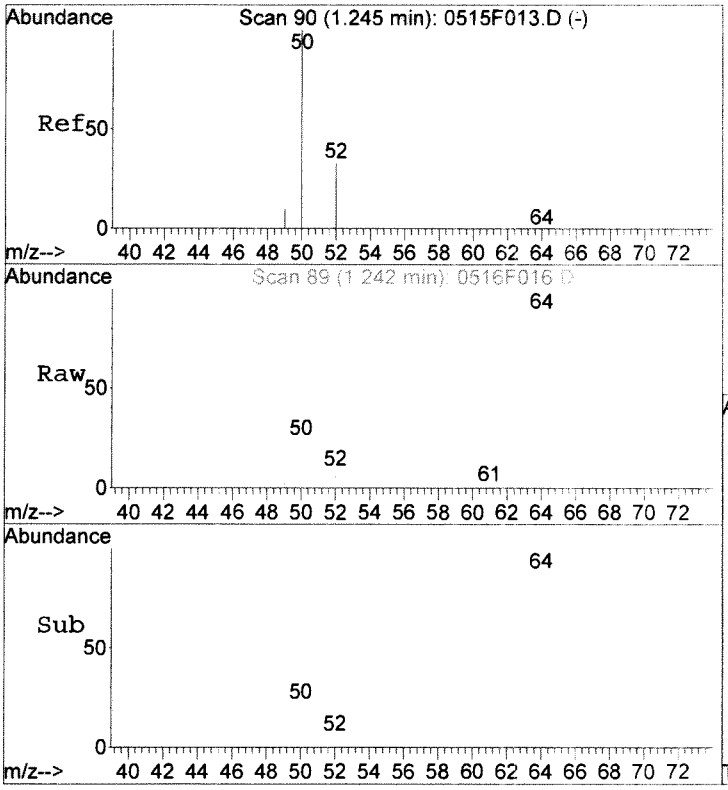
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F016.D Vial: 14
Acq On : 16 May 2017 05:31 pm Operator: GH
Sample : K4509-002 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:59 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

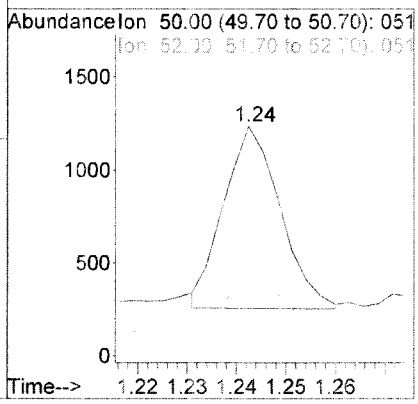


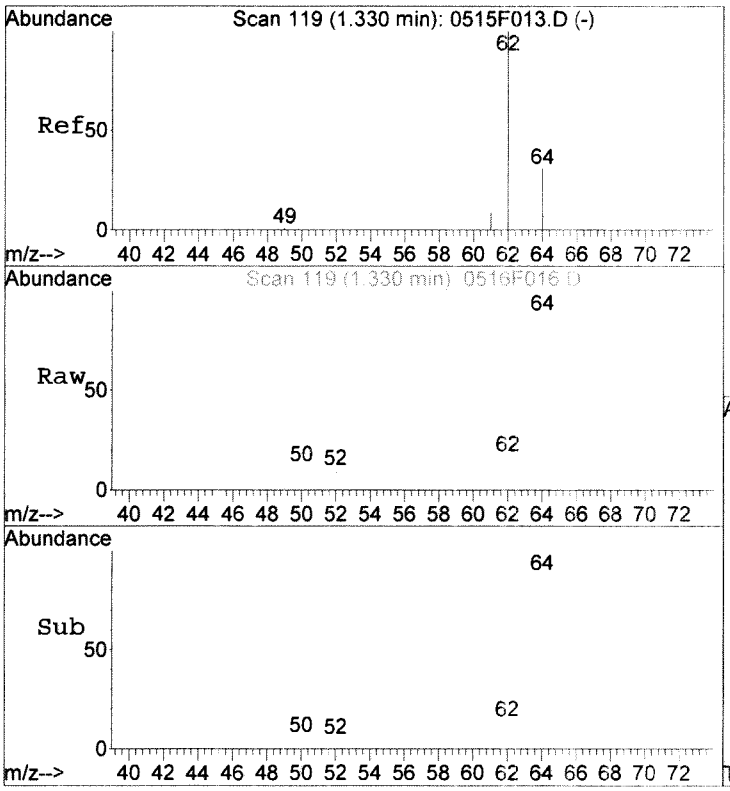


#2
Chloromethane
Concen: 24.87 ng/L m
RT: 1.24 min Scan# 89
Delta R.T. -0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 50 Resp: 782

Ion	Ratio	Lower	Upper
50	100		
52	35.9	2.5	62.5
49	16.9	0.0	40.3

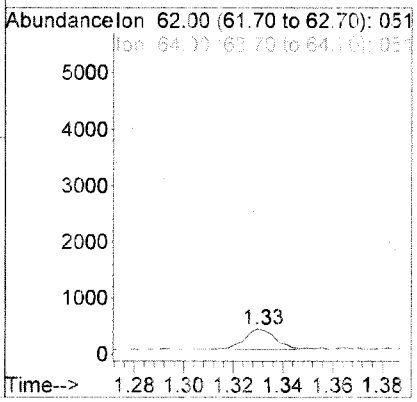


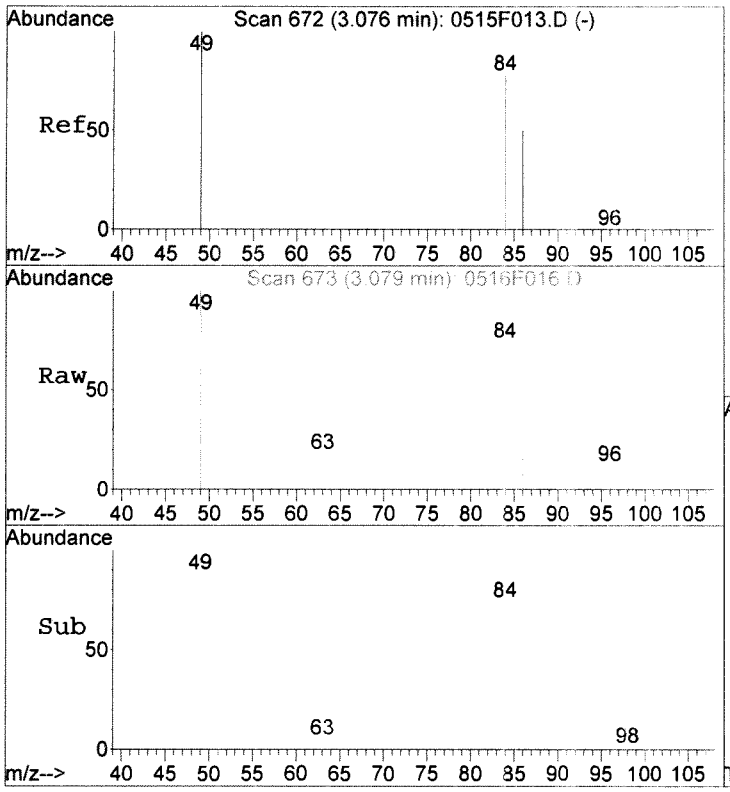


#3
Vinyl Chloride
Concen: 10.90 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 62 Resp: 333

Ion	Ratio	Lower	Upper
62	100		
64	127.6	1.5	61.5#
61	10.4	0.0	38.6

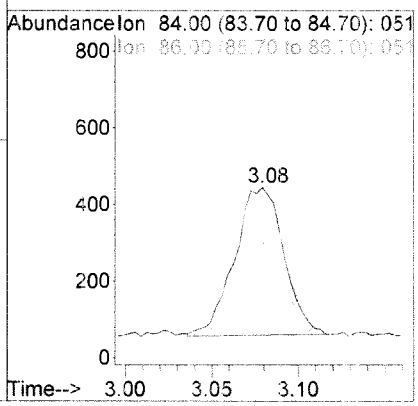


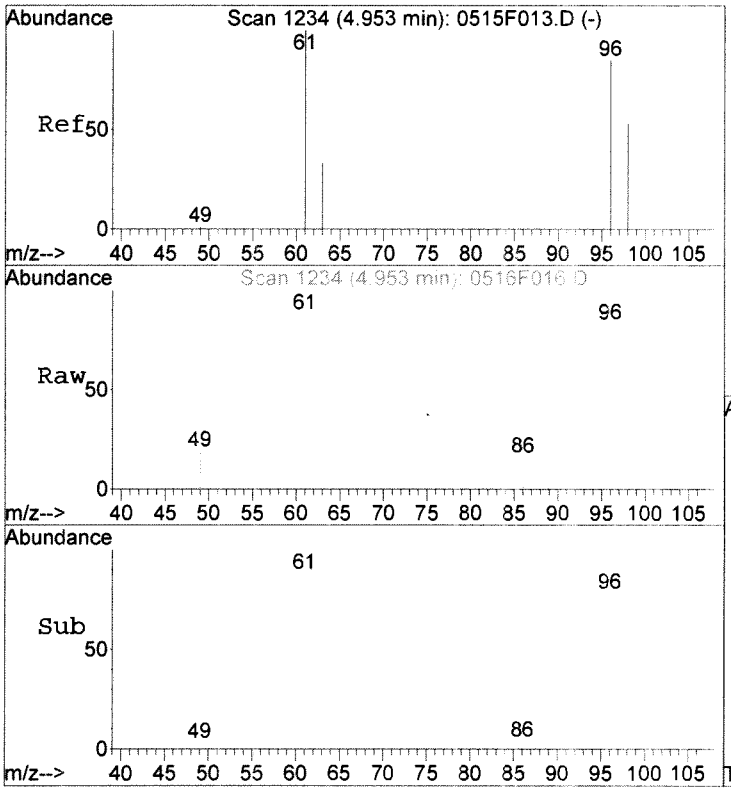


#5
Methylene Chloride
Concen: 32.07 ng/L
RT: 3.08 min Scan# 673
Delta R.T. 0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 84 Resp: 763

Ion	Ratio	Lower	Upper
84	100		
86	63.9	34.0	94.0
49	138.7	98.8	158.8

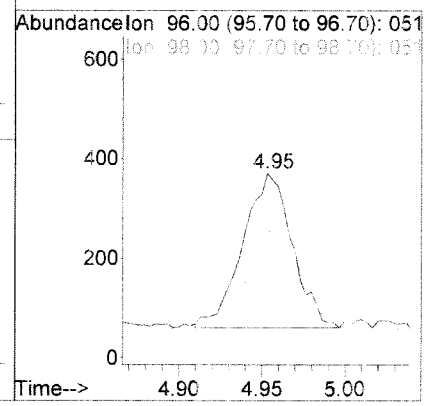


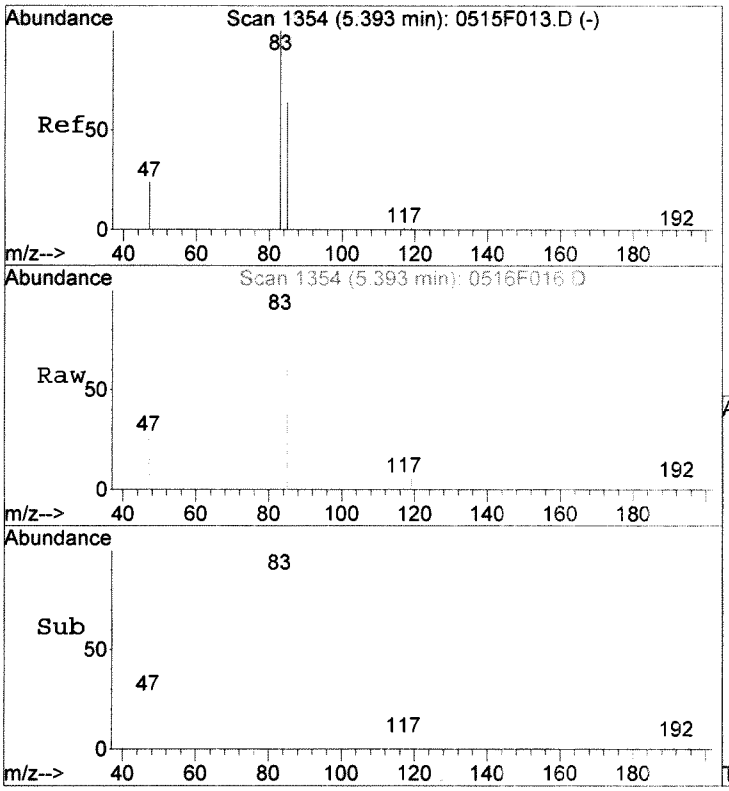


#7
cis-1,2-Dichloroethene
Concen: 35.10 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 96 Resp: 645

Ion	Ratio	Lower	Upper
96	100		
98	61.6	32.7	92.7
61	123.9	95.4	155.4

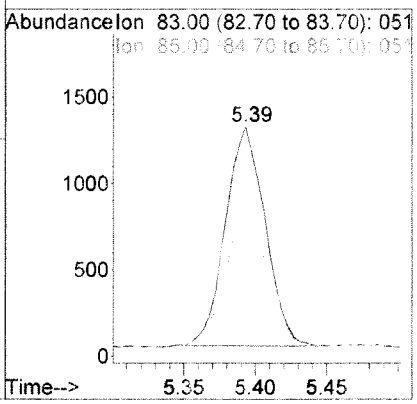


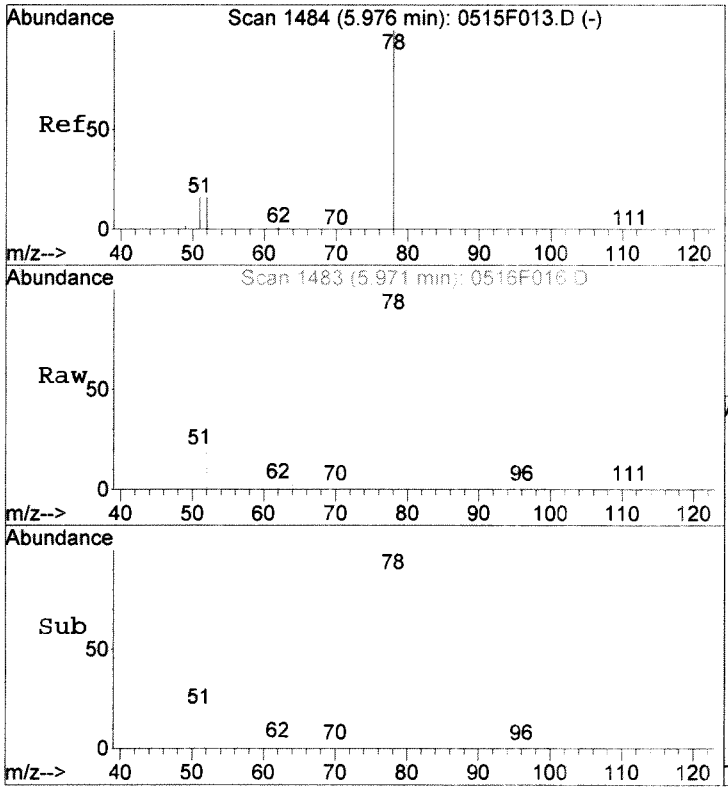


#8
Chloroform
Concen: 62.42 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. 0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 83 Resp: 2466

Ion	Ratio	Lower	Upper
83	100		
85	63.0	34.0	94.0
47	22.4	0.0	53.5

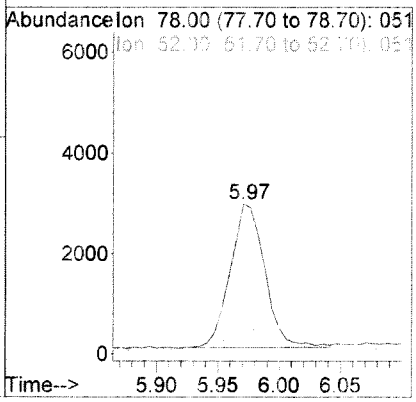


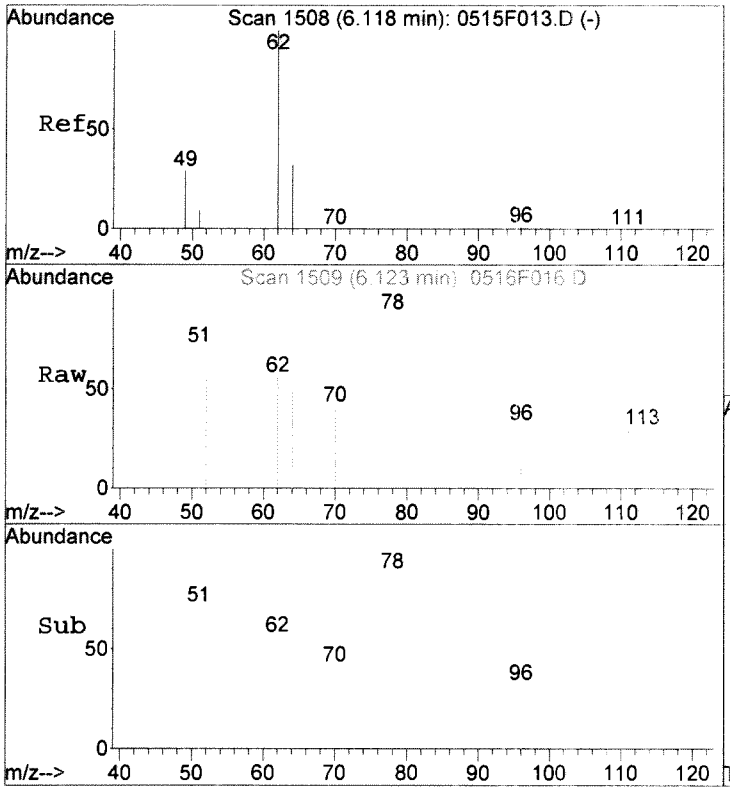


#11
Benzene
Concen: 75.40 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 78 Resp: 5662

Ion	Ratio	Lower	Upper
78	100		
52	17.8	0.0	45.8
51	17.2	0.0	46.5

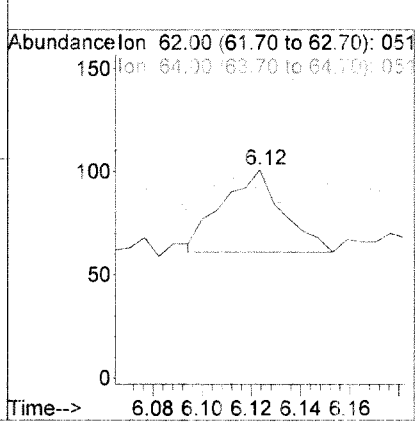


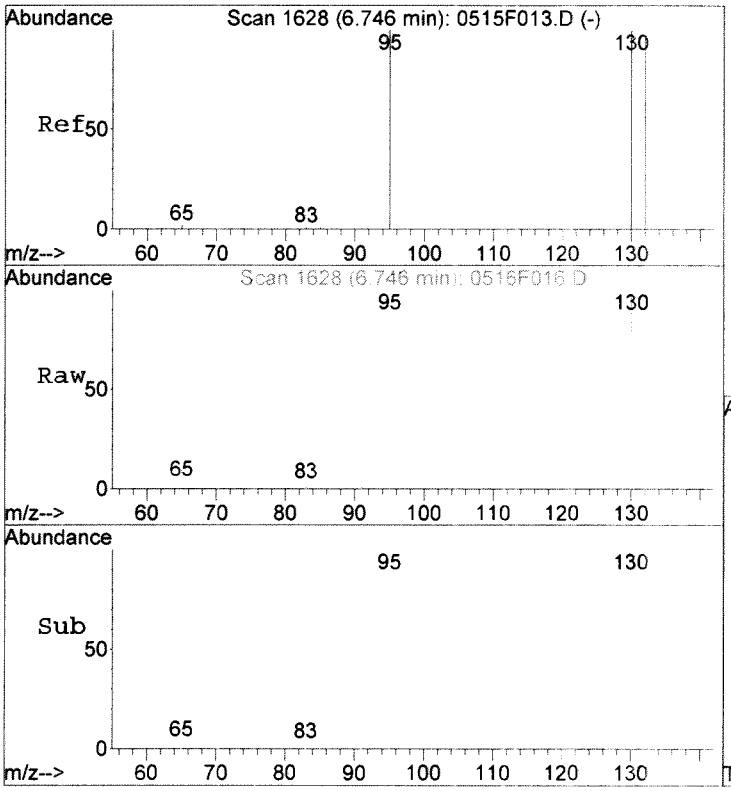


#12
1,2-Dichloroethane
Concen: 2.43 ng/L
RT: 6.12 min Scan# 1509
Delta R.T. 0.01 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 62 Resp: 68

Ion	Ratio	Lower	Upper
62	100		
64	20.0	2.1	62.1
49	17.5	0.0	58.7

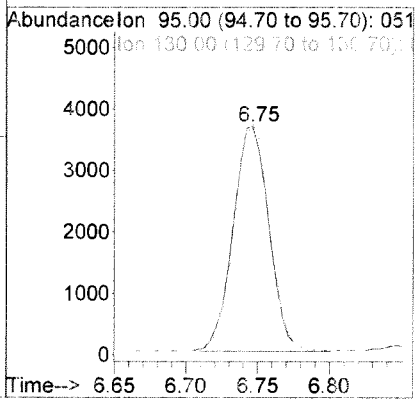


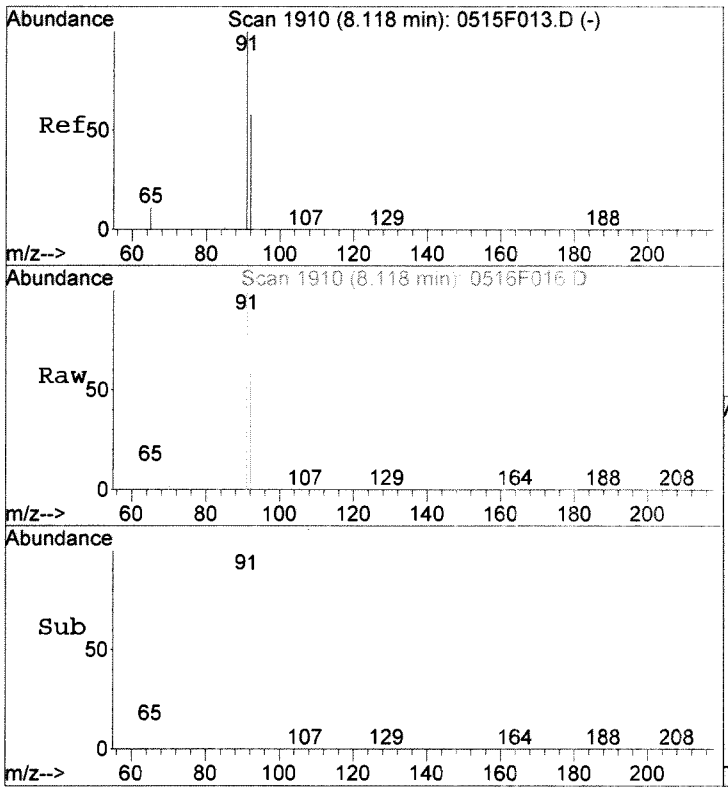


#13
Trichloroethene
Concen: 345.15 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 95 Resp: 6374

Ion	Ratio	Lower	Upper
95	100		
130	101.0	69.5	129.5
132	97.6	67.2	127.2

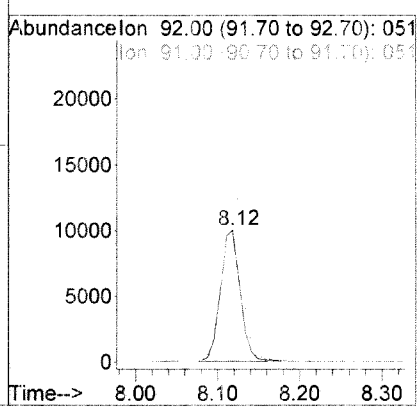


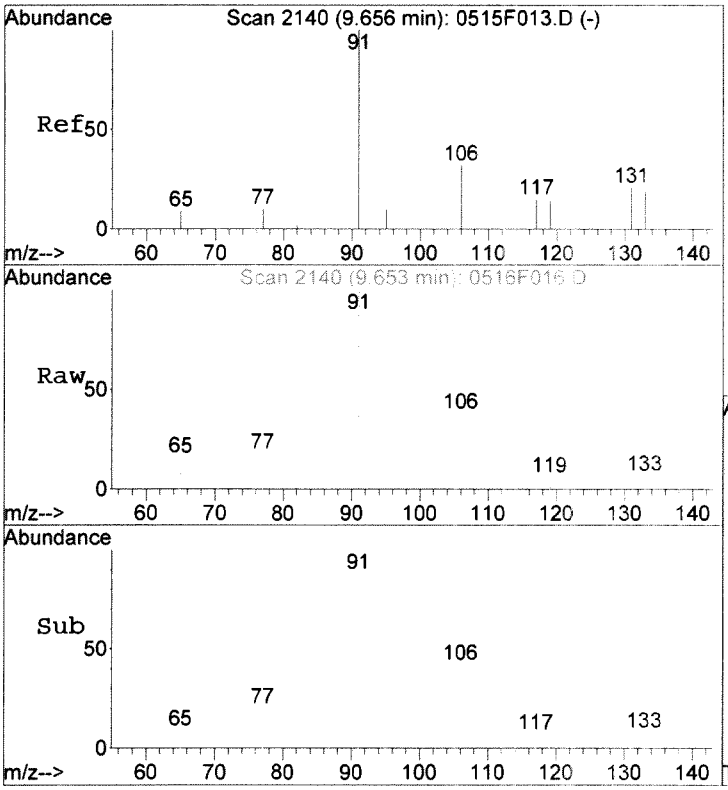


#20
Toluene
Concen: 518.19 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion: 92 Resp: 16804

Ion	Ratio	Lower	Upper
92	100		
91	171.1	143.6	203.6
65	19.7	0.0	49.9

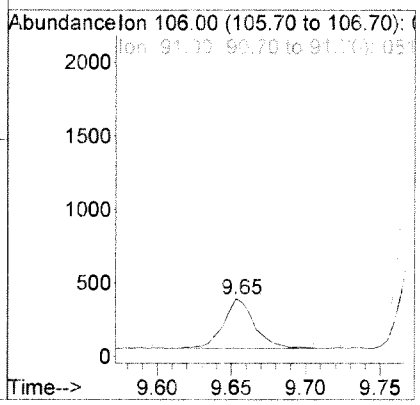


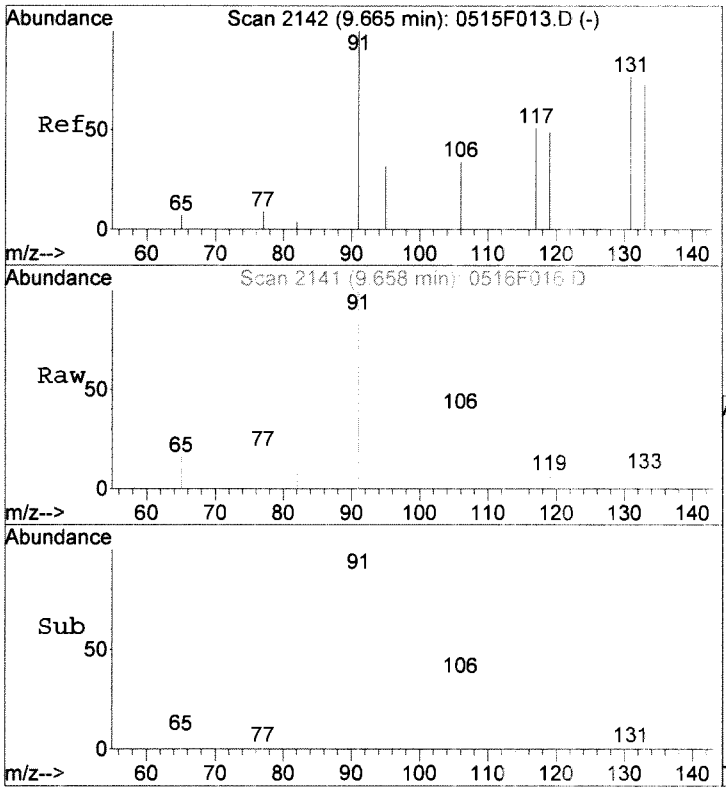


#21
Ethylbenzene
Concen: 30.94 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion:106 Resp: 484

Ion	Ratio	Lower	Upper
106	100		
91	280.1	285.7	345.7#
77	27.4	1.3	61.3

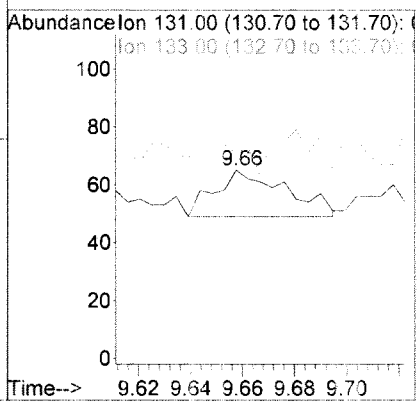


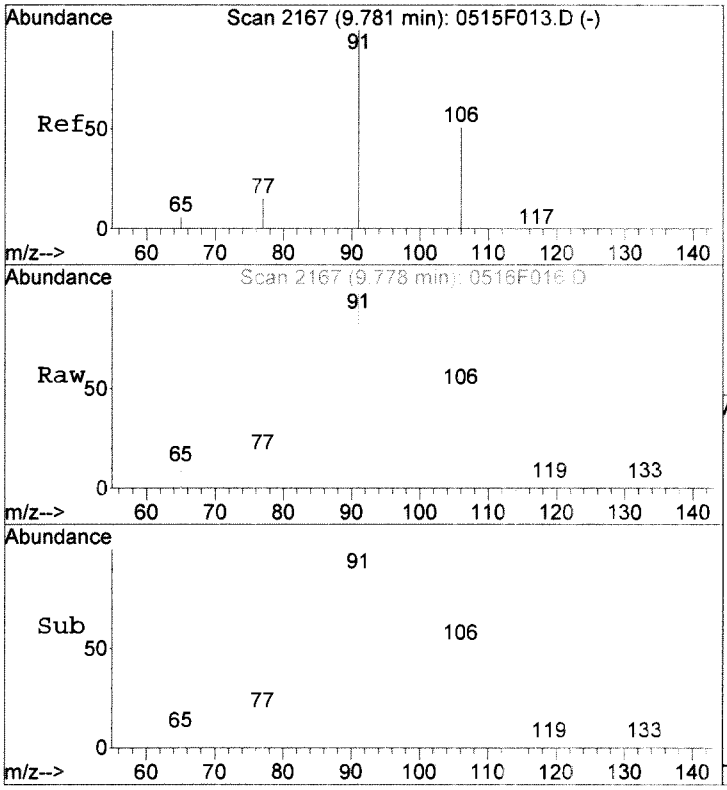


#22
1,1,1,2-Tetrachloroethane
Concen: 1.59 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. -0.01 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion:131 Resp: 31

Ion	Ratio	Lower	Upper
131	100		
133	37.5	74.4	114.4#
119	62.5	43.9	83.9

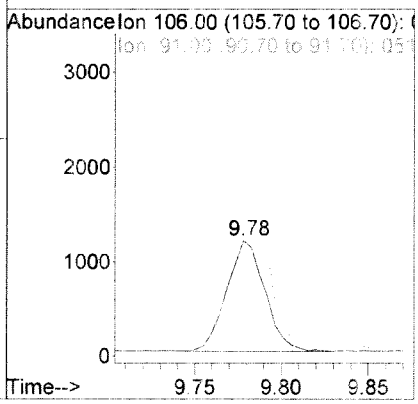


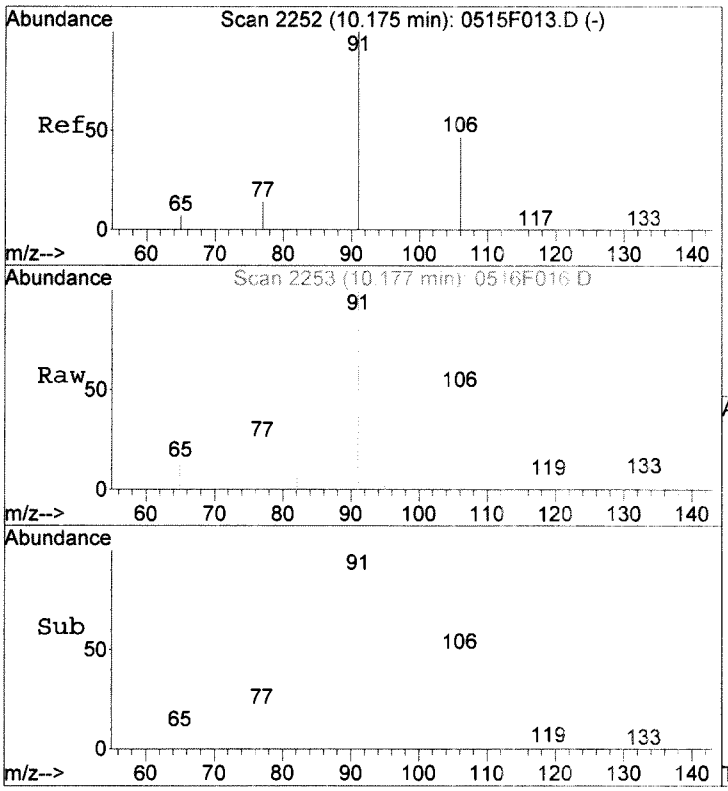


#23
m,p-Xylenes
Concen: 101.15 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion:106 Resp: 1811

Ion	Ratio	Lower	Upper
106	100		
91	200.5	166.8	226.8
77	28.3	0.0	58.7

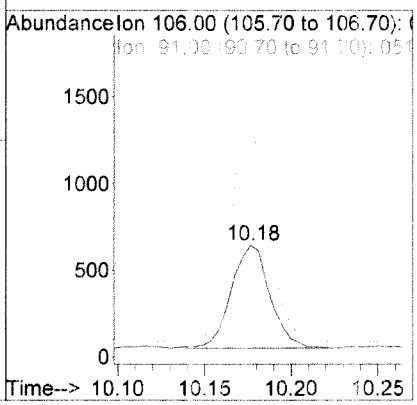


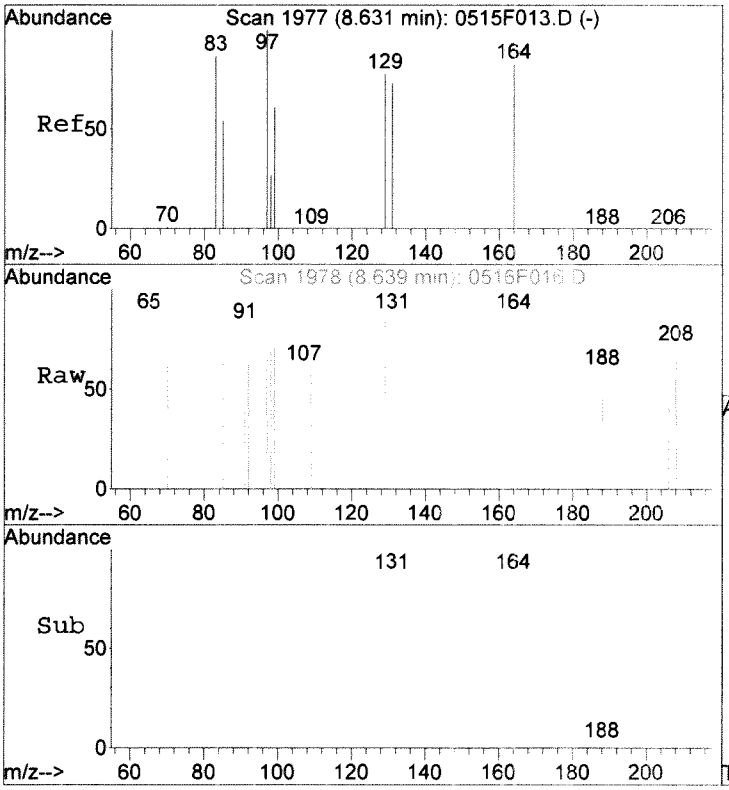


#24
o-Xylene
Concen: 50.38 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion:106 Resp: 920

Ion	Ratio	Lower	Upper
106	100		
91	209.4	184.3	244.3
65	19.7	0.0	44.6

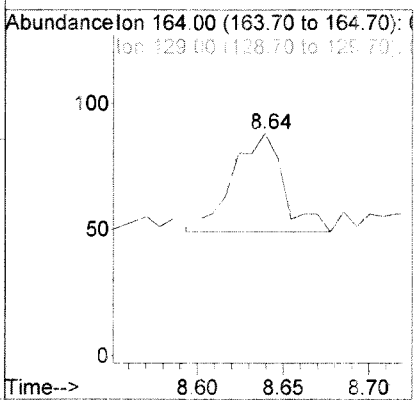


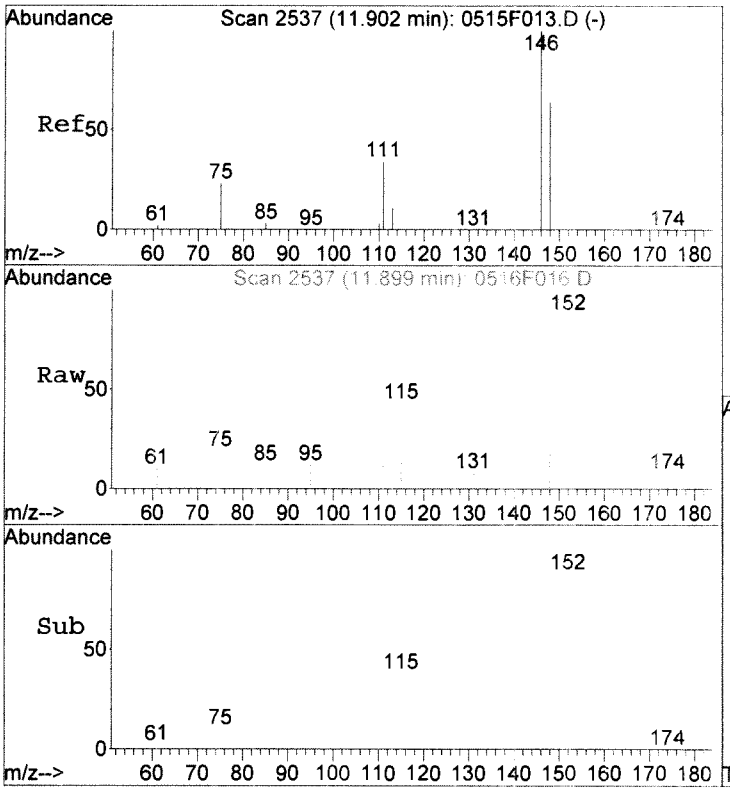


#28
Tetrachloroethene
Concen: 5.26 ng/L
RT: 8.64 min Scan# 1978
Delta R.T. 0.01 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion:164 Resp: 80

Ion	Ratio	Lower	Upper
164	100		
129	66.7	63.1	123.1
131	92.3	57.4	117.4

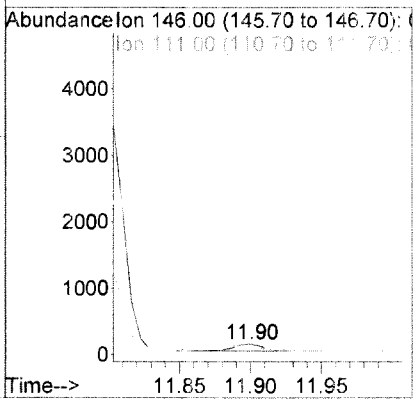




#30
1,4-Dichlorobenzene
Concen: 6.94 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F016.D
Acq: 16 May 2017 05:31 pm

Tgt Ion:146 Resp: 176

Ion	Ratio	Lower	Upper
146	100		
111	45.5	4.0	64.0
148	69.1	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F017.D
Lab ID: K1704509-003
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 17:58
Date Quantitated: 05/22/2017 12:00
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	18	NA	14		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KA 5/22/17

Secondary Review: MW

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F017.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 17:58	**Quant Date:**	05/22/2017 12:00	**Vial:**	15
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704509-003			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/04/2017	**Receive Date:**	05/05/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704509
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604856	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	52590	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	36602	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19927	1,024	102	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	42619	1,016	102	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12925	793.76	79	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.31	-0.02	0.00	62	27	0.9200	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F017.D Vial: 15
Acq On : 16 May 2017 05:58 pm Operator: GH
Sample : K4509-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:57:24 2017 Quant Results File: 051517MS30_8260SIM.RES

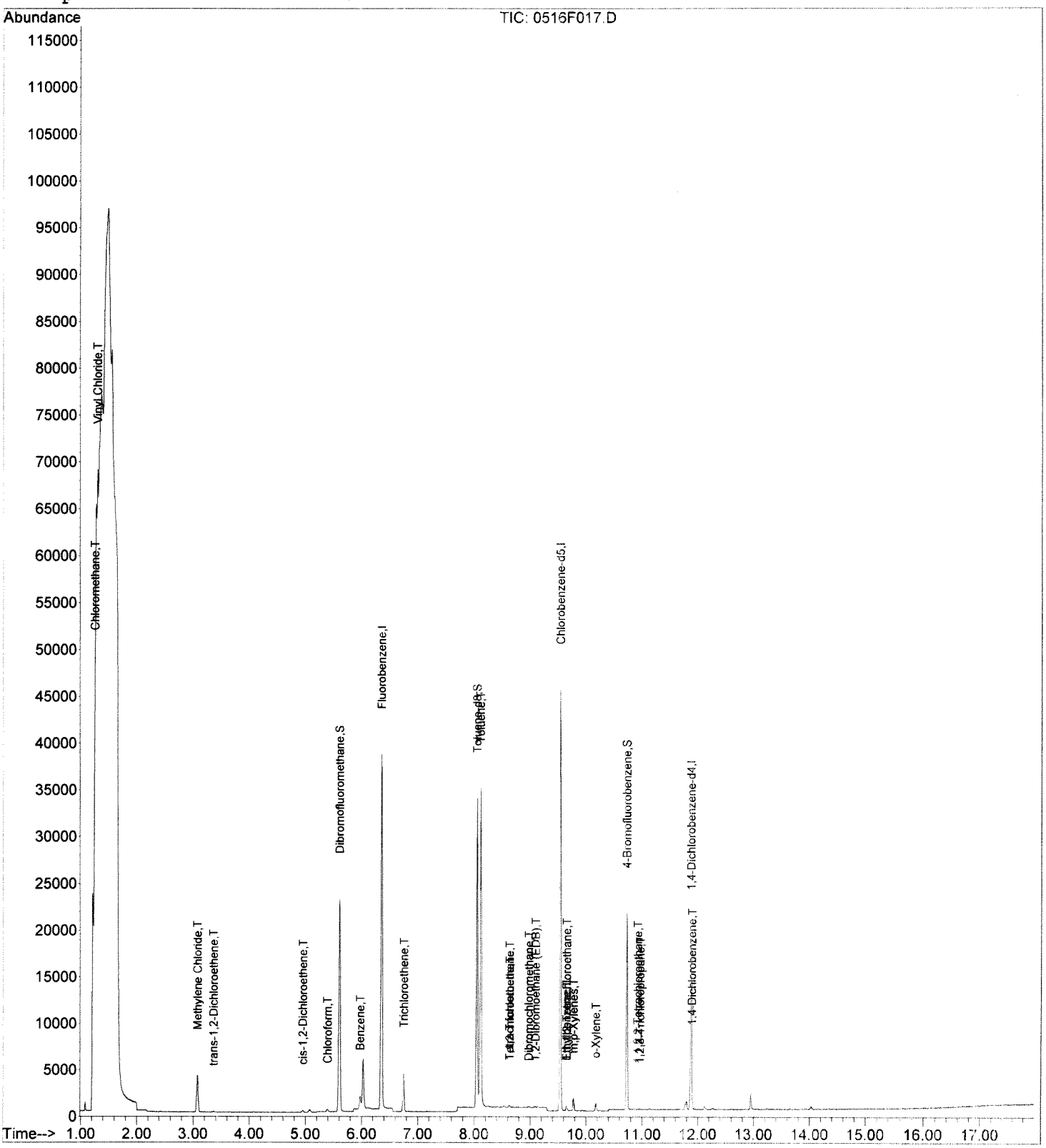
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

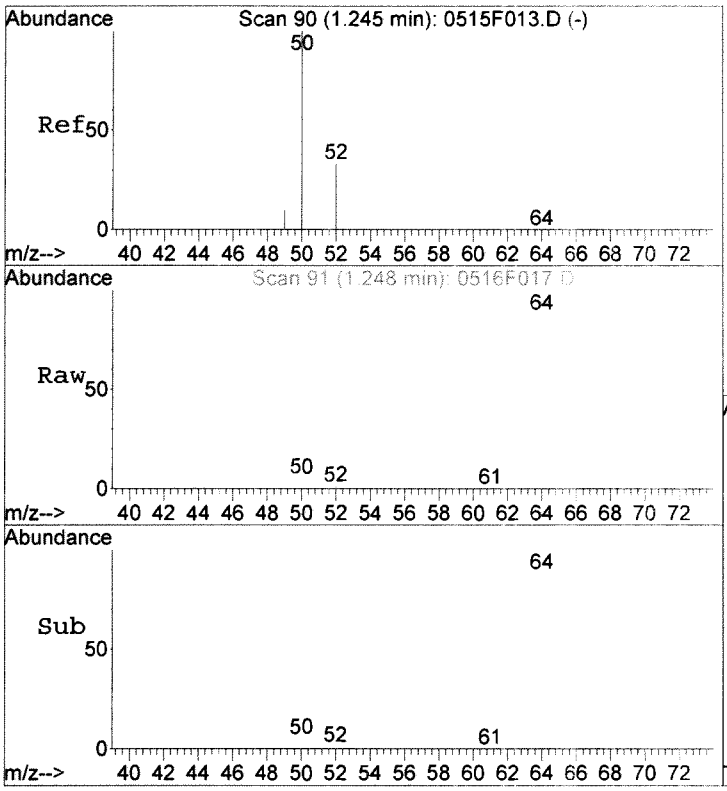
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	52590	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	36602	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	15392	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19927	1024.43	ng/L		0.00
Spiked Amount 1000.000			Recovery = 102.44%				
15) Toluene-d8	8.05	98	42619	1016.03	ng/L		0.00
Spiked Amount 1000.000			Recovery = 101.60%				
25) 4-Bromofluorobenzene	10.73	95	12925	793.76	ng/L		0.00
Spiked Amount 1000.000			Recovery = 79.38%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	1561	51.86	ng/L		86
3) Vinyl Chloride	1.31	62	27	0.92	ng/L	#	50
5) Methylene Chloride	3.08	84	2589	113.68	ng/L		97
6) trans-1,2-Dichloroethene	3.36	96	64	3.47	ng/L	#	68
7) cis-1,2-Dichloroethene	4.95	96	145	8.24	ng/L		83
8) Chloroform	5.39	83	289	7.64	ng/L		87
11) Benzene	5.97	78	2073	28.84	ng/L		98
13) Trichloroethene	6.74	95	2320	131.23	ng/L		99
16) 1,1,2-Trichloroethane	8.62	83	82	5.78	ng/L	#	60
17) Dibromochloromethane	8.98	129	39	2.22	ng/L		96
18) 1,2-Dibromoethane (EDB)	9.09	107	52	3.75	ng/L		92
20) Toluene	8.11	92	19072	593.71	ng/L		96
21) Ethylbenzene	9.66	106	157	10.13	ng/L	#	84
22) 1,1,1,2-Tetrachloroethane	9.67	131	33	1.71	ng/L	#	51
23) m,p-Xylenes	9.78	106	549	30.95	ng/L		98
24) o-Xylene	10.17	106	330	18.24	ng/L		90
26) 1,1,2,2-Tetrachloroethane	10.93	83	44	2.55	ng/L		75
27) 1,2,3-Trichloropropane	10.96	110	9	1.67	ng/L	#	1
28) Tetrachloroethene	8.64	164	61	4.05	ng/L		97
30) 1,4-Dichlorobenzene	11.90	146	148	5.33	ng/L		96

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F017.D Vial: 15
Acq On : 16 May 2017 05:58 pm Operator: GH
Sample : K4509-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:00 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

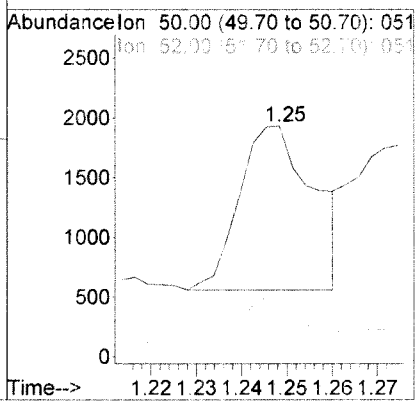


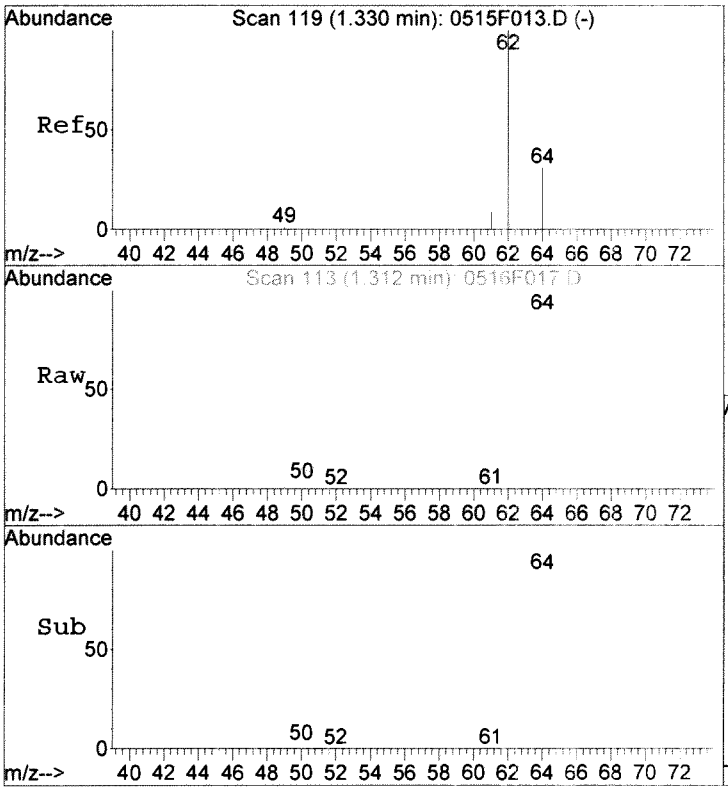


#2
Chloromethane
Concen: 51.86 ng/L
RT: 1.25 min Scan# 91
Delta R.T. 0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 50 Resp: 1561

Ion	Ratio	Lower	Upper
50	100		
52	23.7	2.5	62.5
49	12.9	0.0	40.3

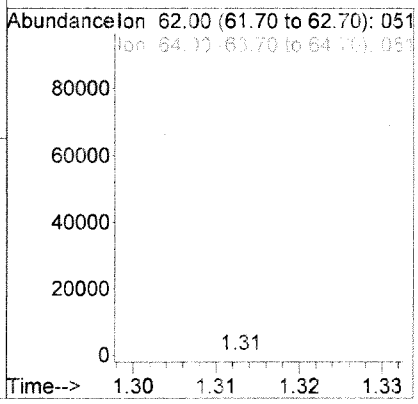


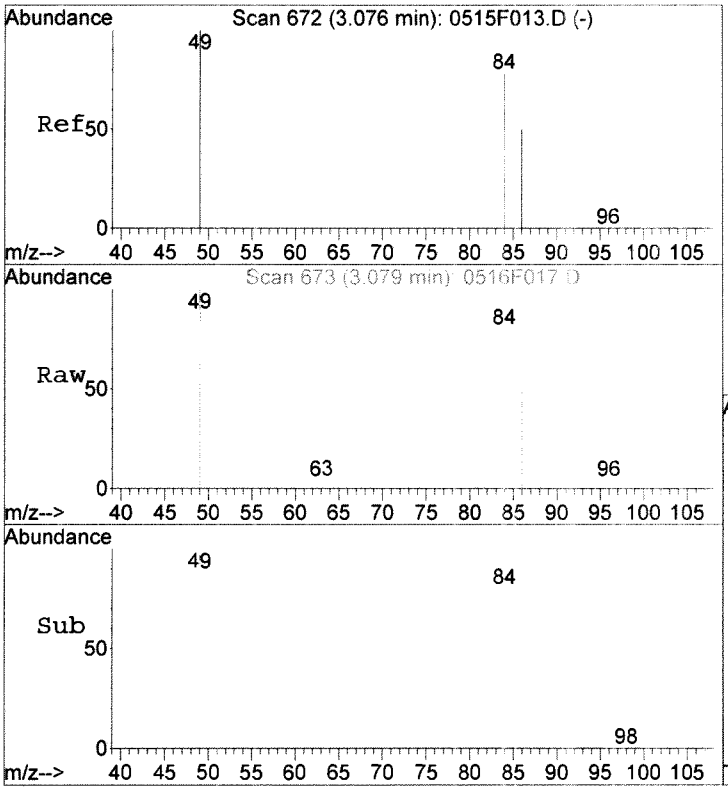


#3
Vinyl Chloride
Concen: 0.92 ng/L
RT: 1.31 min Scan# 113
Delta R.T. -0.02 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 62 Resp: 27

Ion	Ratio	Lower	Upper
62	100		
64	0.0	1.5	61.5#
61	0.0	0.0	38.6

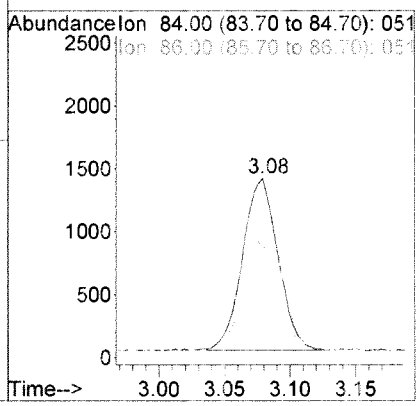


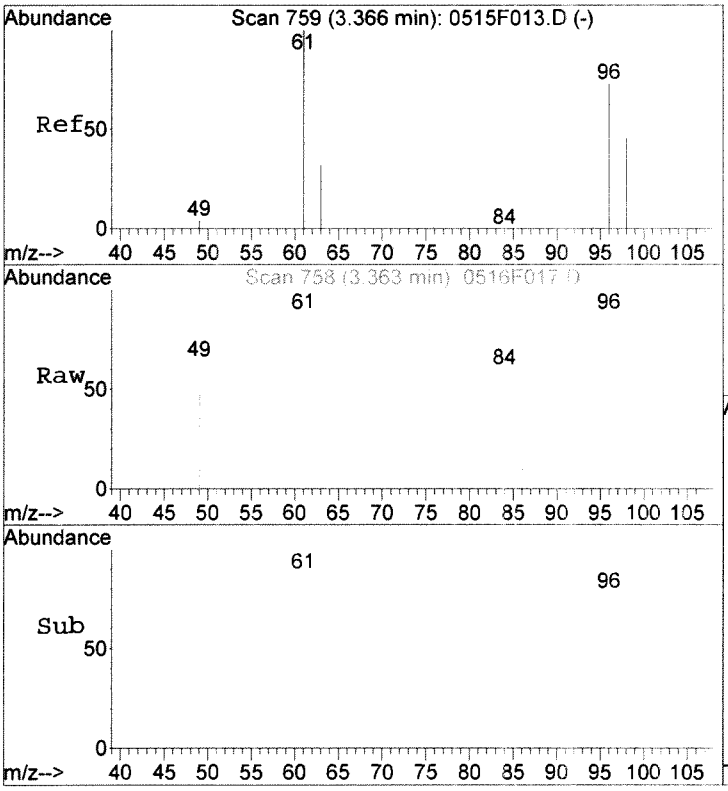


#5
Methylene Chloride
Concen: 113.68 ng/L
RT: 3.08 min Scan# 673
Delta R.T. 0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 84 Resp: 2589

Ion	Ratio	Lower	Upper
84	100		
86	60.7	34.0	94.0
49	125.7	98.8	158.8

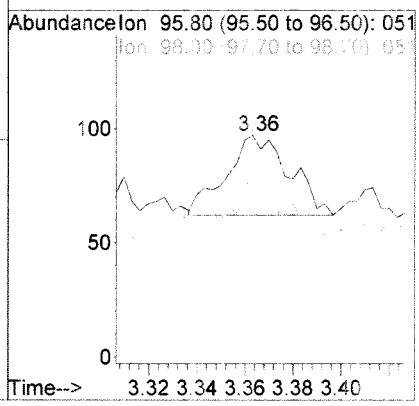


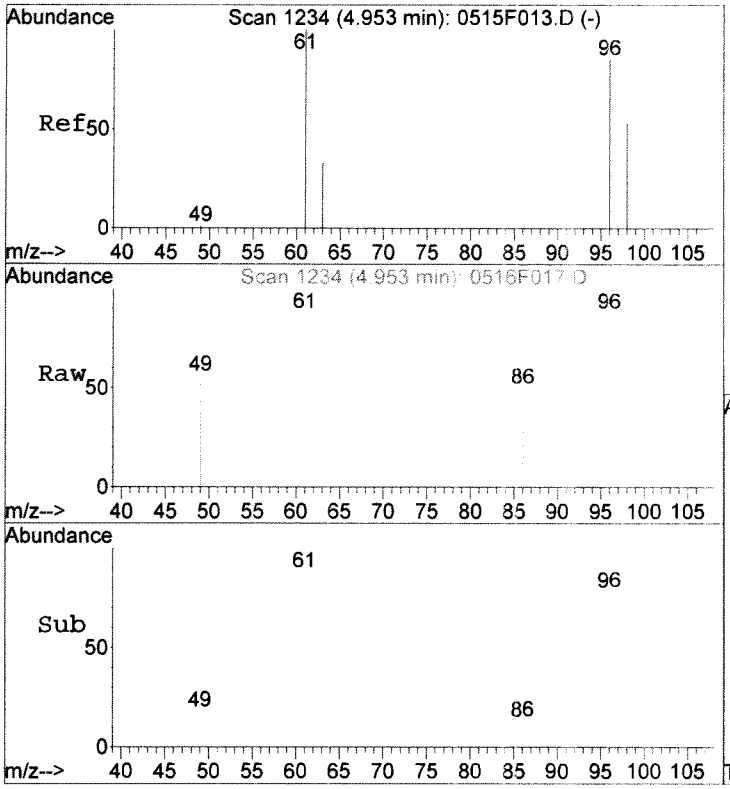


#6
trans-1,2-Dichloroethene
Concen: 3.47 ng/L
RT: 3.36 min Scan# 758
Delta R.T. -0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 96 Resp: 64

Ion	Ratio	Lower	Upper
96	100		
98	37.1	32.9	92.9
61	100.0	107.3	167.3#

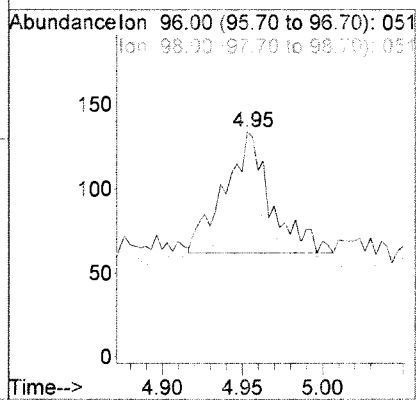


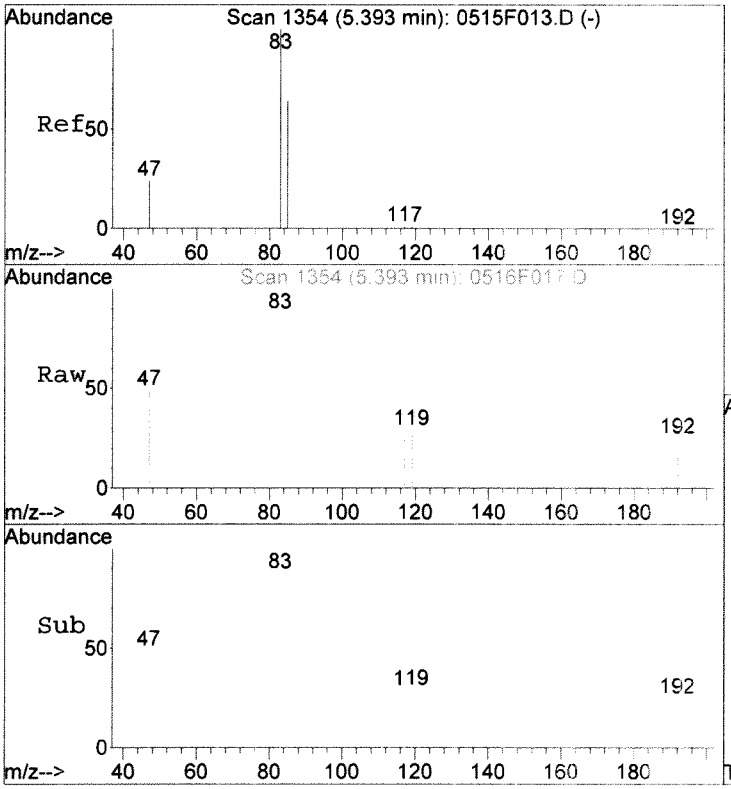


#7
cis-1,2-Dichloroethene
Concen: 8.24 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 96 Resp: 145

Ion	Ratio	Lower	Upper
96	100		
98	66.7	32.7	92.7
61	100.0	95.4	155.4

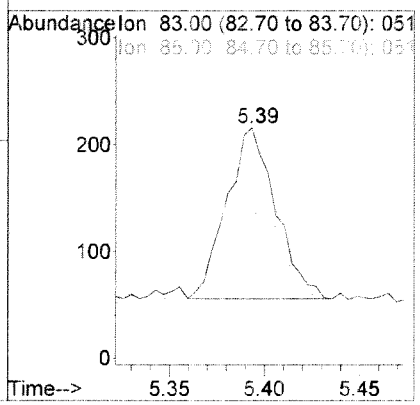


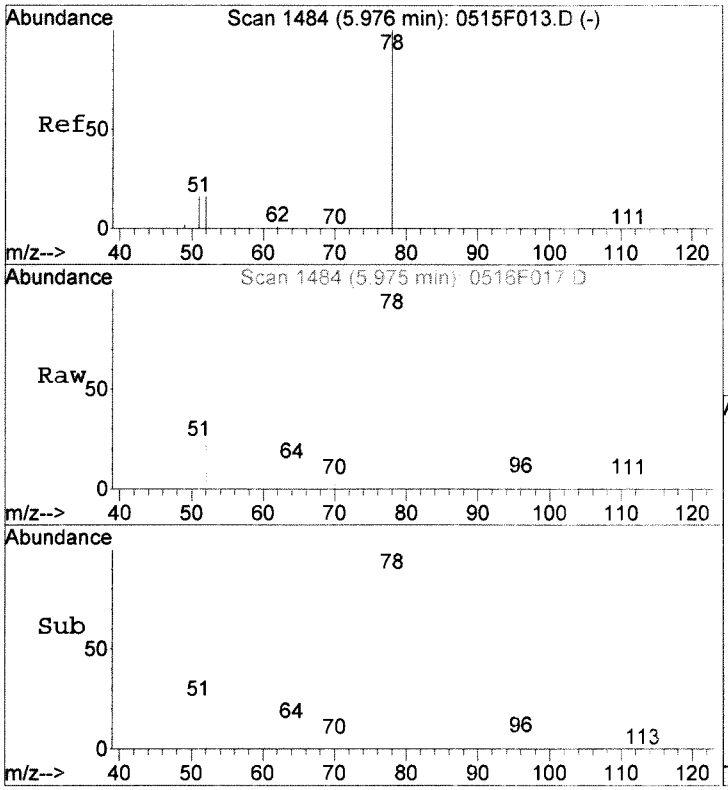


#8
Chloroform
Concen: 7.64 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. 0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 83 Resp: 289

Ion	Ratio	Lower	Upper
83	100		
85	51.2	34.0	94.0
47	25.0	0.0	53.5

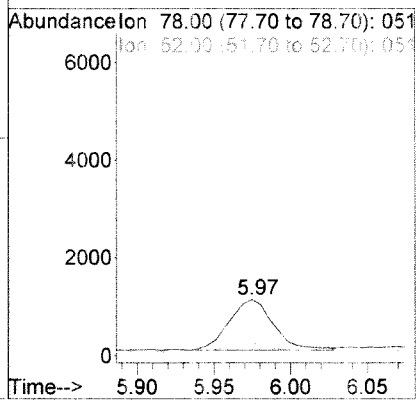


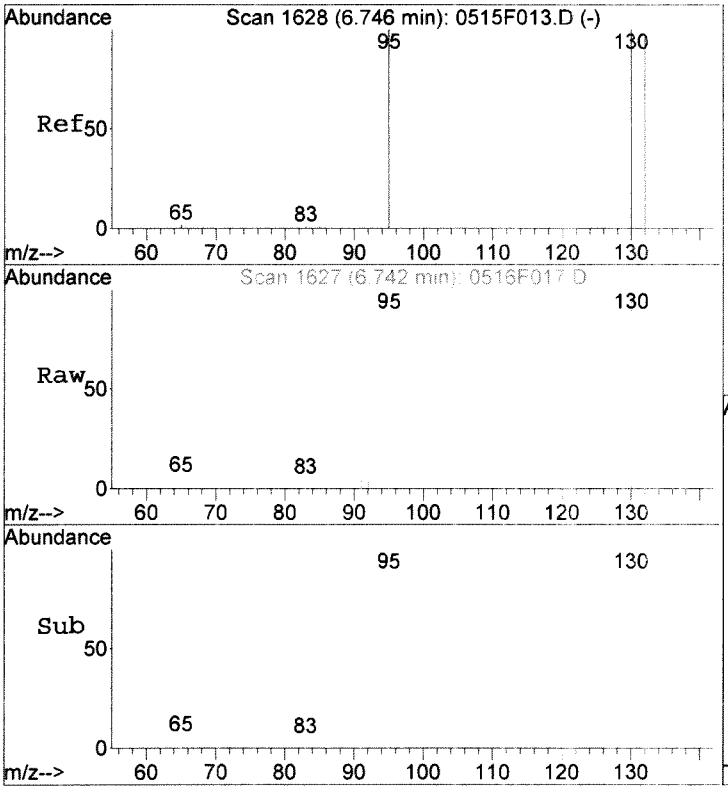


#11
Benzene
Concen: 28.84 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 78 Resp: 2073

Ion	Ratio	Lower	Upper
78	100		
52	15.5	0.0	45.8
51	18.1	0.0	46.5

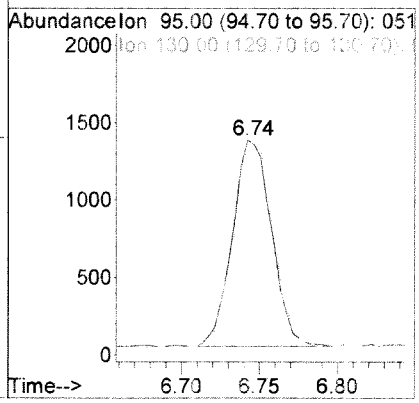


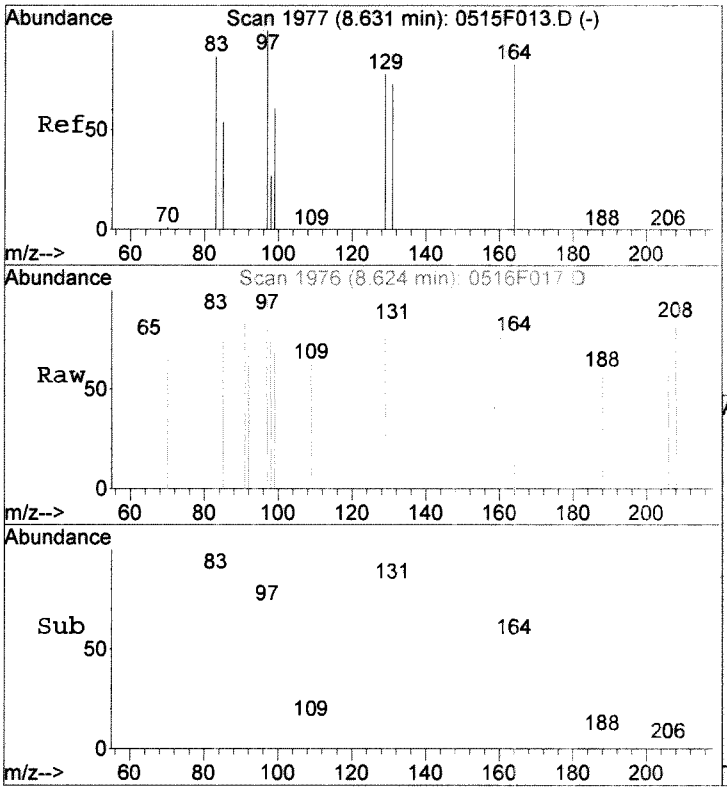


#13
Trichloroethene
Concen: 131.23 ng/L
RT: 6.74 min Scan# 1627
Delta R.T. -0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 95 Resp: 2320

Ion	Ratio	Lower	Upper
95	100		
130	97.5	69.5	129.5
132	96.8	67.2	127.2

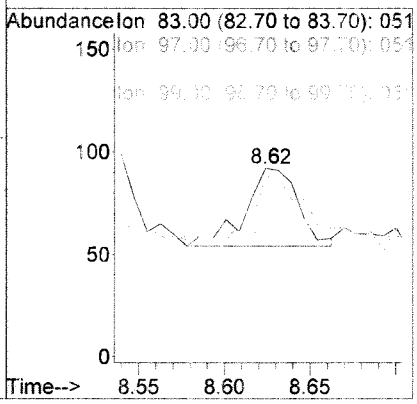


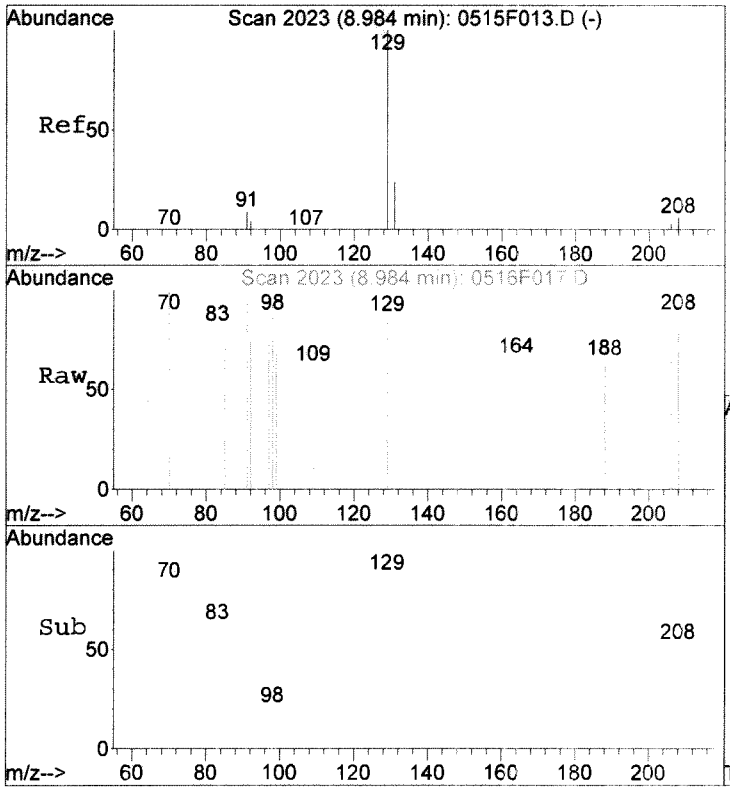


#16
1,1,2-Trichloroethane
Concen: 5.78 ng/L
RT: 8.62 min Scan# 1976
Delta R.T. -0.01 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 83 Resp: 82

Ion	Ratio	Lower	Upper
83	100		
97	76.3	84.4	144.4#
85	44.7	32.3	92.3
99	18.4	39.4	99.4#

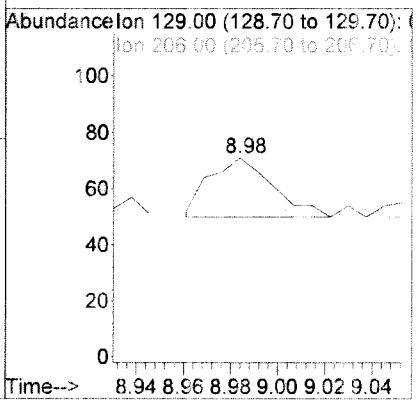


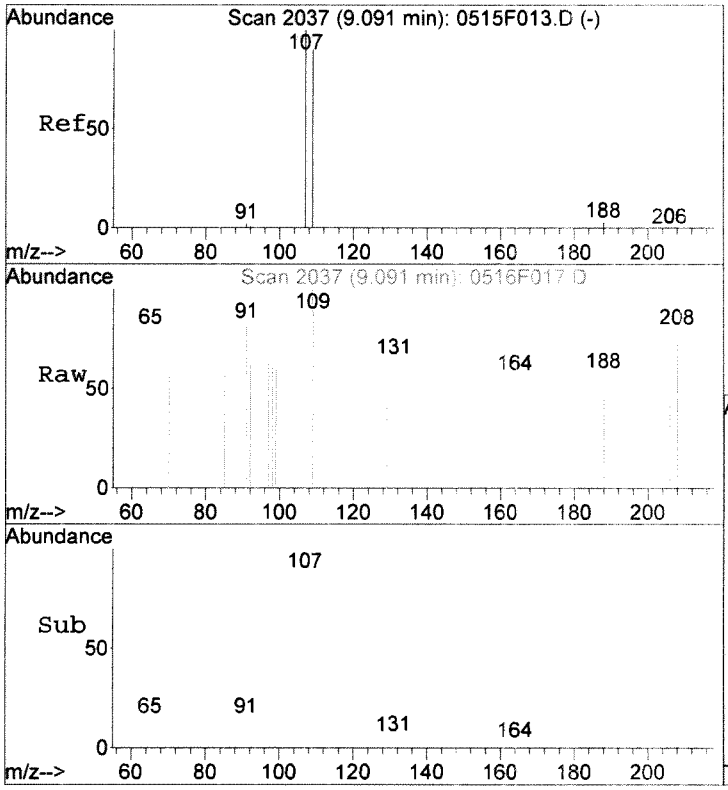


#17
Dibromochloromethane
Concen: 2.22 ng/L
RT: 8.98 min Scan# 2023
Delta R.T. 0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:129 Resp: 39

Ion	Ratio	Lower	Upper
129	100		
206	4.8	0.0	32.8
208	4.8	0.0	35.9

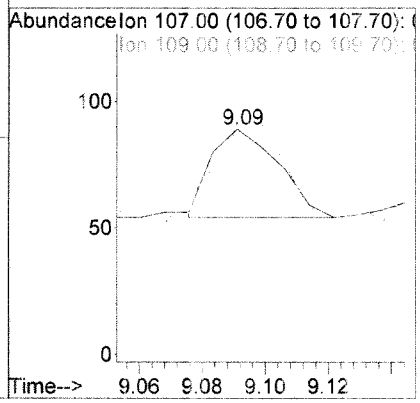


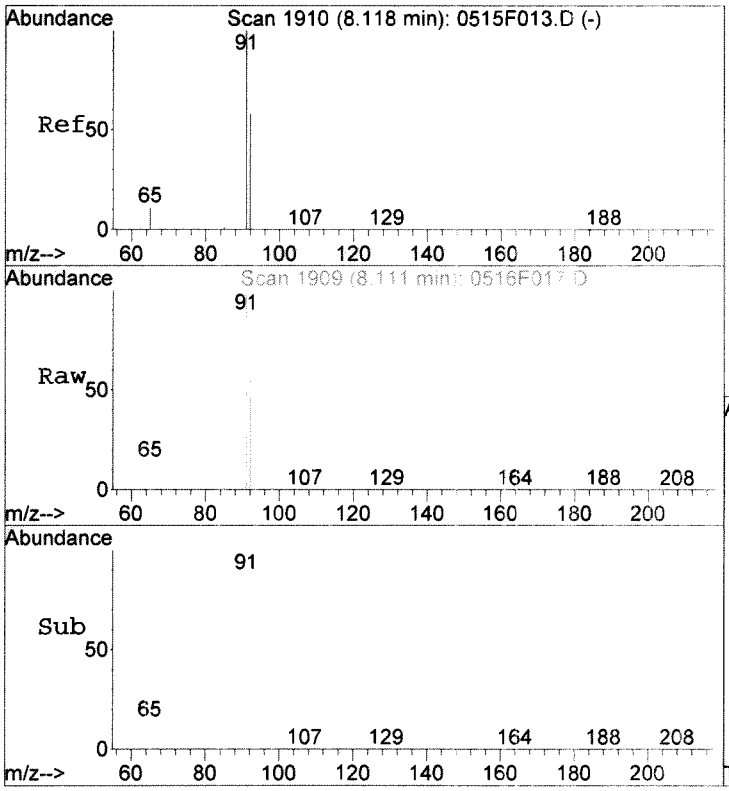


#18
1,2-Dibromoethane (EDB)
Concen: 3.75 ng/L
RT: 9.09 min Scan# 2037
Delta R.T. 0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:107 Resp: 52

Ion	Ratio	Lower	Upper
107	100		
109	82.9	60.3	120.3
188	0.0	0.0	33.5

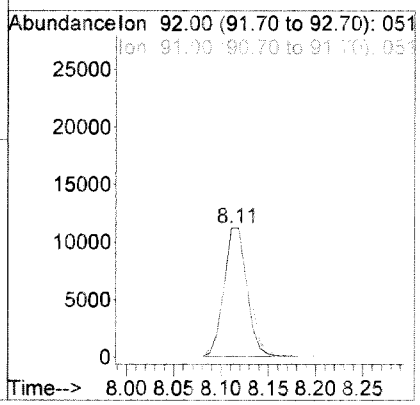


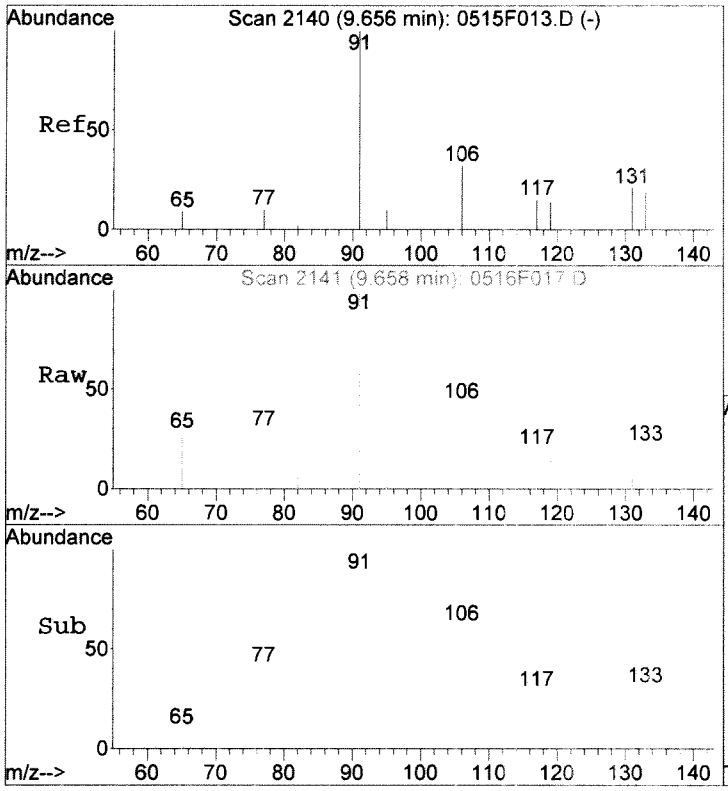


#20
Toluene
Concen: 593.71 ng/L
RT: 8.11 min Scan# 1909
Delta R.T. -0.01 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 92 Resp: 19072

Ion	Ratio	Lower	Upper
92	100		
91	178.4	143.6	203.6
65	24.2	0.0	49.9

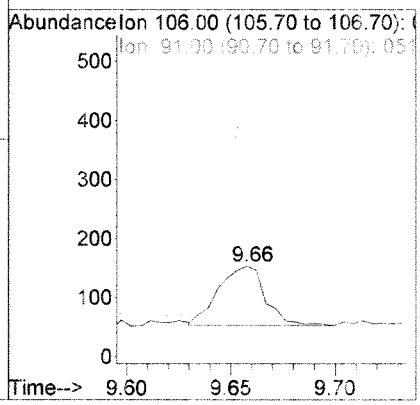


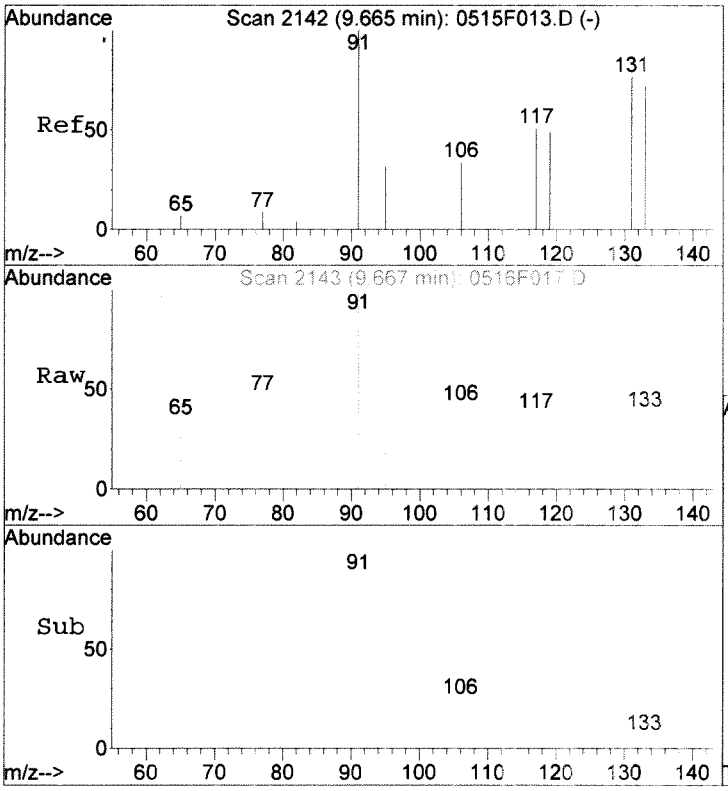


#21
Ethylbenzene
Concen: 10.13 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:106 Resp: 157

Ion	Ratio	Lower	Upper
106	100		
91	284.0	285.7	345.7#
77	19.0	1.3	61.3

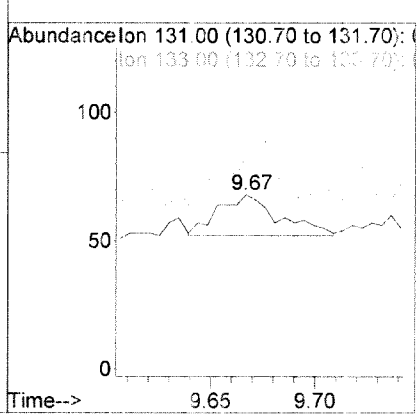


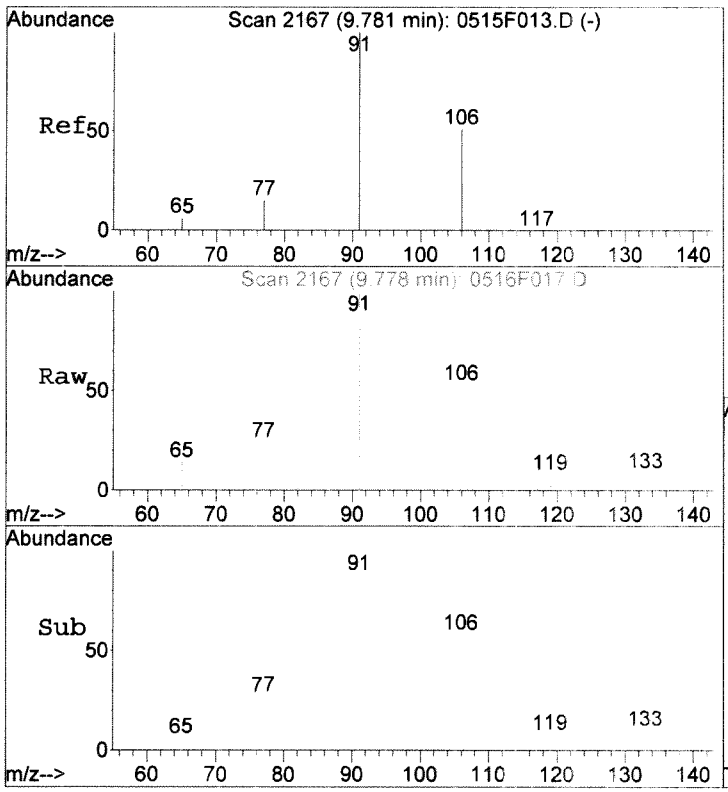


#22
1,1,1,2-Tetrachloroethane
Concen: 1.71 ng/L
RT: 9.67 min Scan# 2143
Delta R.T. 0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:131 Resp: 33

Ion	Ratio	Lower	Upper
131	100		
133	126.7	74.4	114.4#
119	6.7	43.9	83.9#

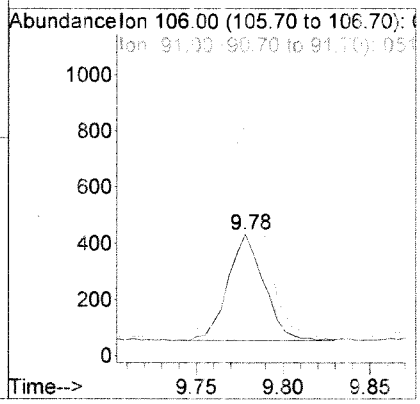


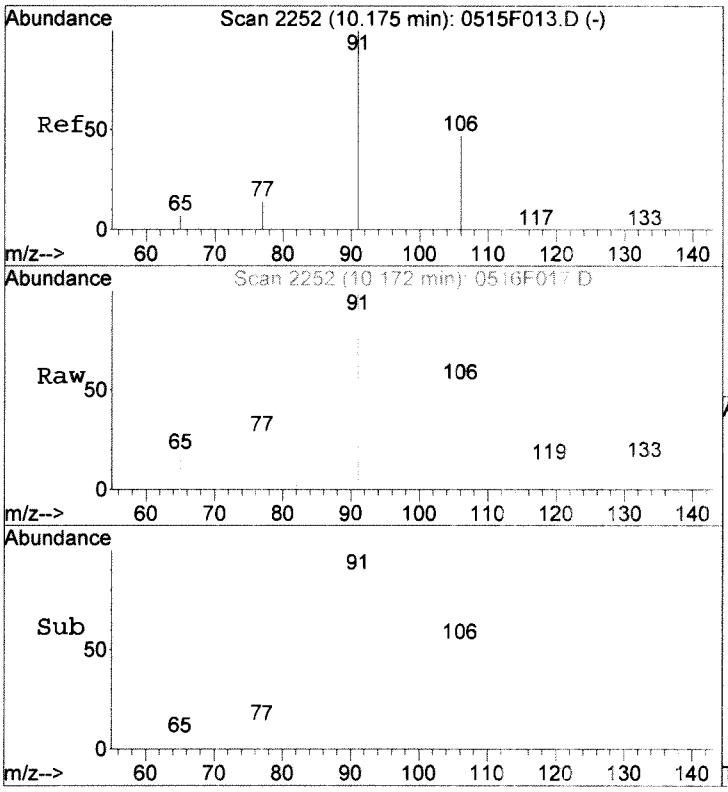


#23
m,p-Xylenes
Concen: 30.95 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:106 Resp: 549

Ion	Ratio	Lower	Upper
106	100		
91	198.4	166.8	226.8
77	32.8	0.0	58.7

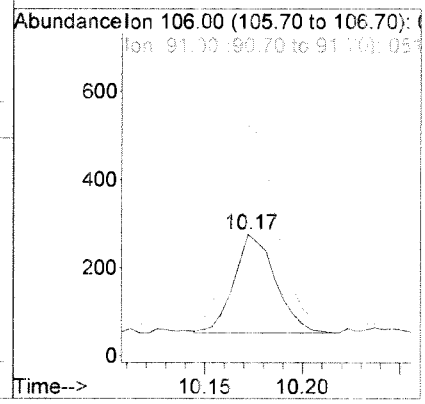


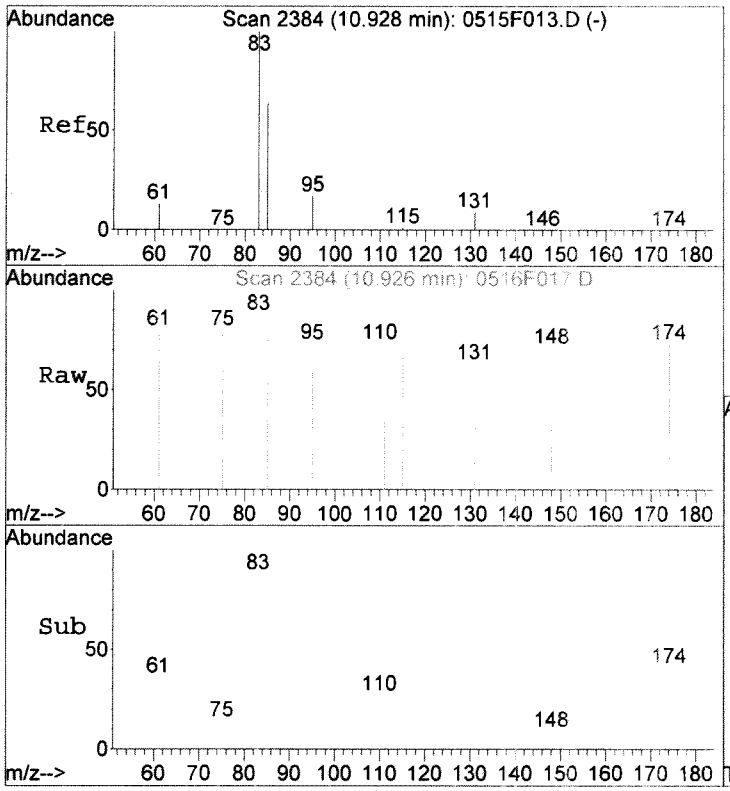


#24
o-Xylene
Concen: 18.24 ng/L
RT: 10.17 min Scan# 2252
Delta R.T. -0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:106 Resp: 330

Ion	Ratio	Lower	Upper
106	100		
91	198.2	184.3	244.3
65	14.7	0.0	44.6

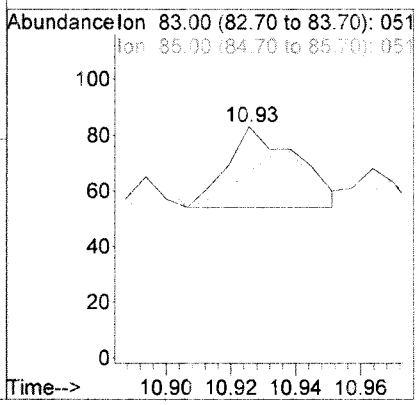


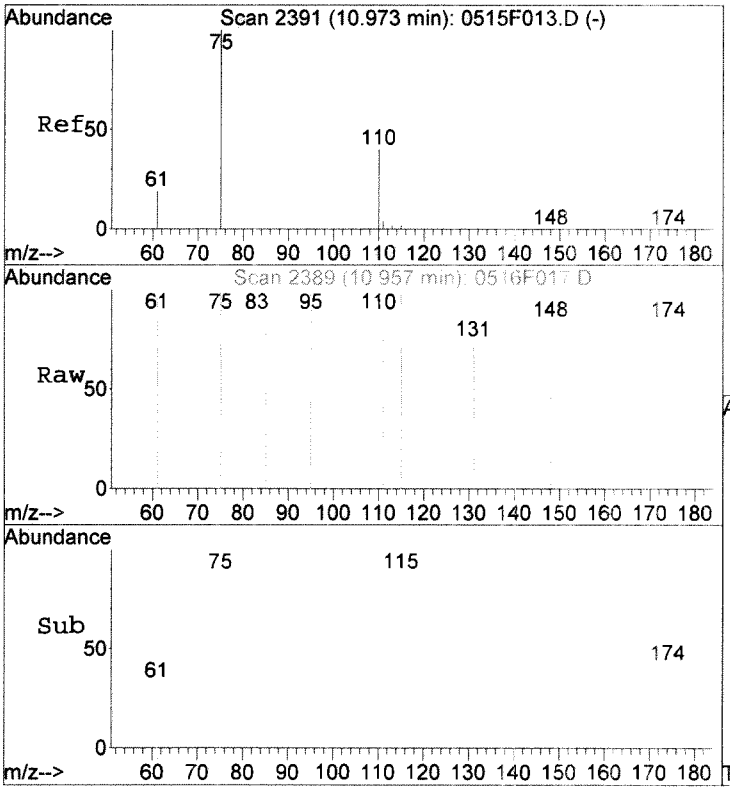


#26
1,1,2,2-Tetrachloroethane
Concen: 2.55 ng/L
RT: 10.93 min Scan# 2384
Delta R.T. -0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion: 83 Resp: 44

Ion	Ratio	Lower	Upper
83	100		
85	44.8	34.1	94.1
131	0.0	0.0	28.8

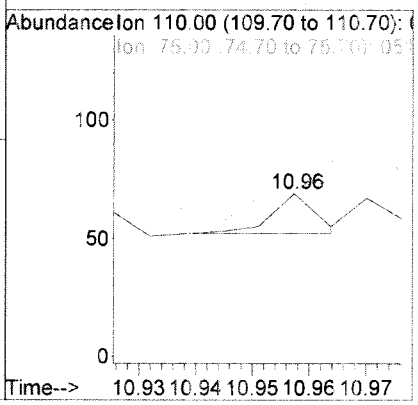


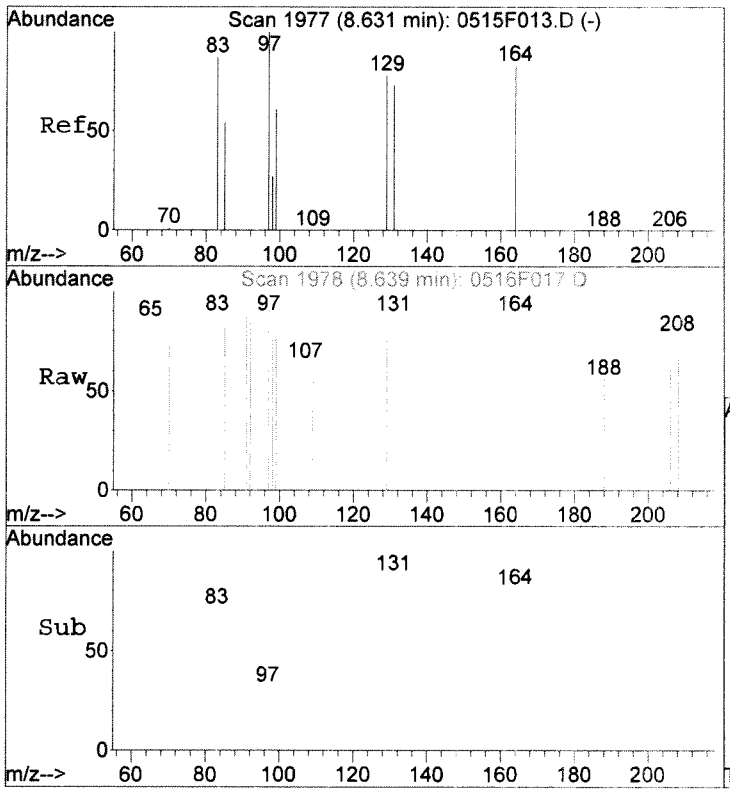


#27
1,2,3-Trichloropropane
Concen: 1.67 ng/L
RT: 10.96 min Scan# 2389
Delta R.T. -0.02 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:110 Resp: 9

Ion	Ratio	Lower	Upper
110	100		
75	41.2	230.6	270.6#
61	17.6	40.1	80.1#

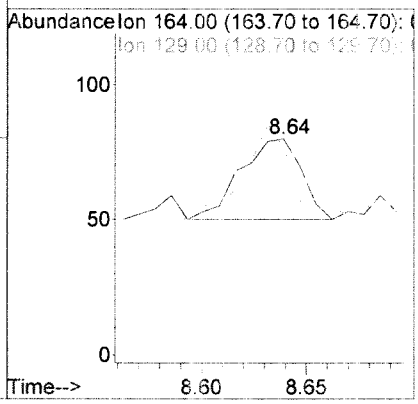


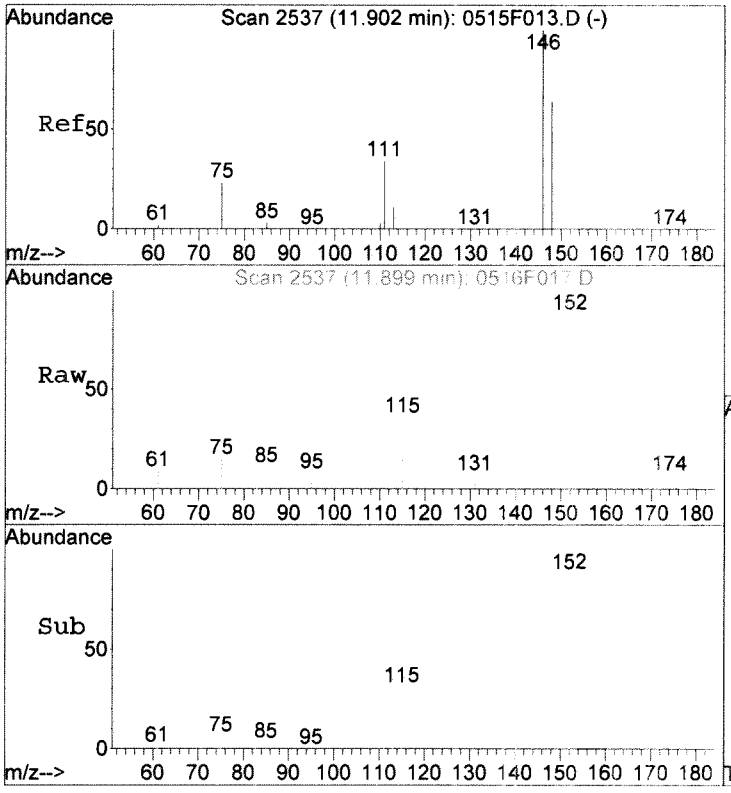


#28
Tetrachloroethene
Concen: 4.05 ng/L
RT: 8.64 min Scan# 1978
Delta R.T. 0.01 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:164 Resp: 61

Ion	Ratio	Lower	Upper
164	100		
129	90.0	63.1	123.1
131	90.0	57.4	117.4

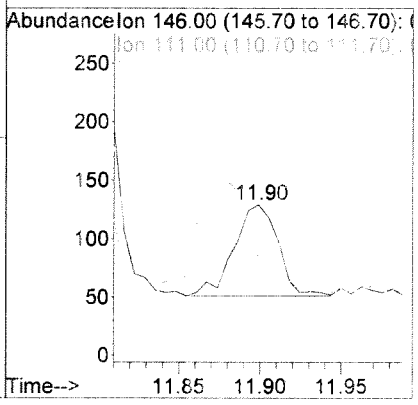




#30
1,4-Dichlorobenzene
Concen: 5.33 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F017.D
Acq: 16 May 2017 05:58 pm

Tgt Ion:146 Resp: 148

Ion	Ratio	Lower	Upper
146	100		
111	38.5	4.0	64.0
148	65.4	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F018.D
Lab ID: K1704509-004
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 18:26
Date Quantitated: 05/22/2017 12:02
Batch ID: KWG 703959
Analysis Method: 8260C SIM
ListJoinID: LJ18835

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	18	NA	14		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KWG

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F018.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 18:26	**Quant Date:**	05/22/2017 12:02	**Vial:**	16
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704509-004			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/04/2017	**Receive Date:**	05/05/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704509
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604857	**Prep Date:**	05/22/2017		

16
MM 5/25/17

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	53564	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	39090	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	20312	1,025	103	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	45440	1,064	106	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	13201	759.11	76	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	719	24.13	24		

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F018.D Vial: 16
Acq On : 16 May 2017 06:26 pm Operator: GH
Sample : K4509-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:57:36 2017 Quant Results File: 051517MS30_8260SIM.RES

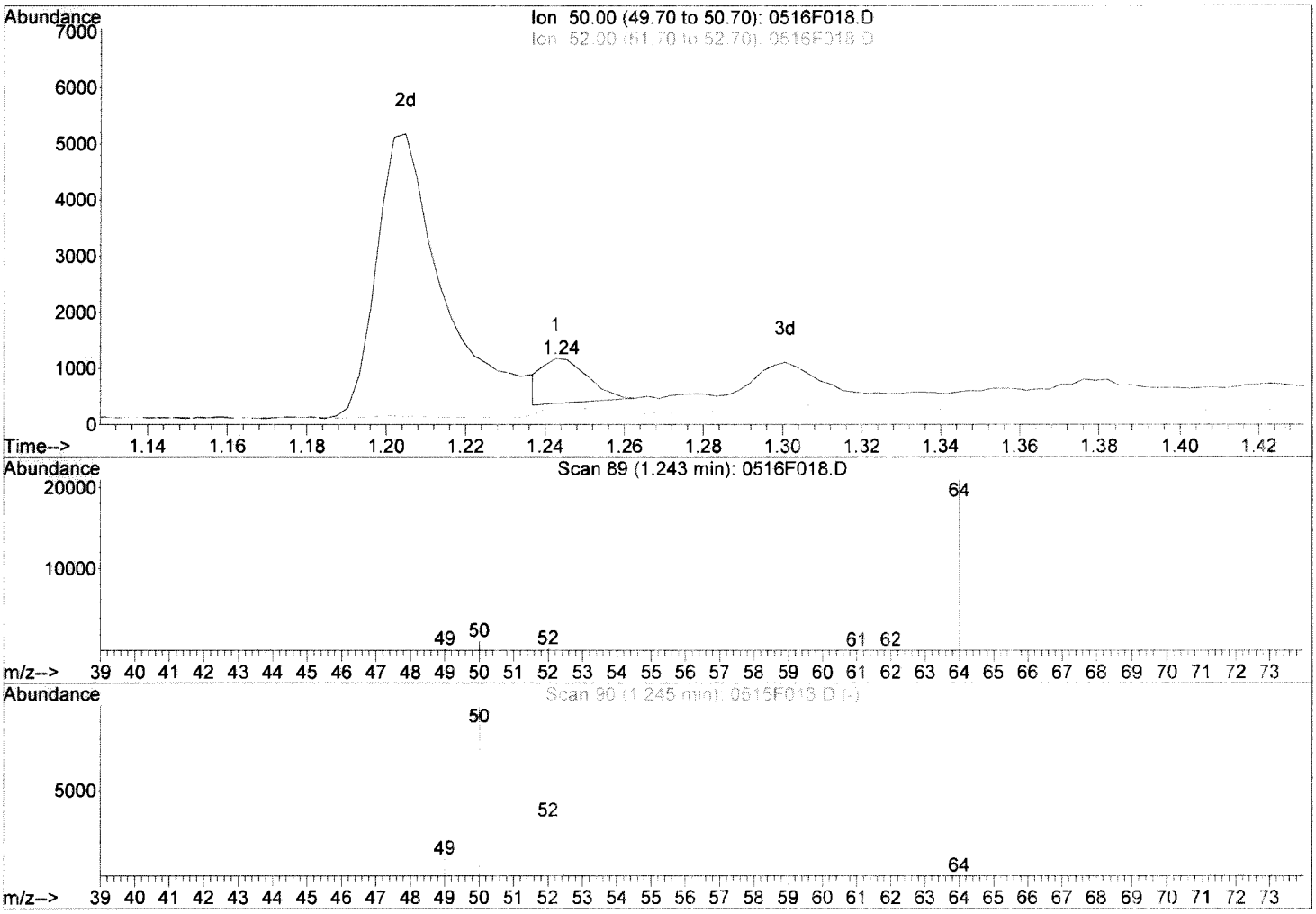
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	53564	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	39090	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	15196	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	20312	1025.24 ng/L	0.00
Spiked Amount 1000.000			Recovery = 102.52%		
15) Toluene-d8	8.05	98	45440	1063.58 ng/L	0.00
Spiked Amount 1000.000			Recovery = 106.36%		
25) 4-Bromofluorobenzene	10.73	95	13201	759.11 ng/L	0.00
Spiked Amount 1000.000			Recovery = 75.91%		
Target Compounds					Qvalue
2) Chloromethane	1.24	50	551m	17.97 ng/L	
3) Vinyl Chloride	1.33	62	719	24.13 ng/L #	1
4) 1,1-Dichloroethene	2.42	96	3529	213.00 ng/L	94
5) Methylene Chloride	3.08	84	396	17.07 ng/L	95
6) trans-1,2-Dichloroethene	3.37	96	1051	55.94 ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	21633	1207.51 ng/L	97
8) Chloroform	5.40	83	238	6.18 ng/L	83
11) Benzene	5.97	78	3038	41.50 ng/L	97
12) 1,2-Dichloroethane	6.11	62	246	9.01 ng/L	83
13) Trichloroethene	6.75	95	677349	37617.36 ng/L	99
14) Bromodichloromethane	7.36	83	28	1.09 ng/L	93
16) 1,1,2-Trichloroethane	8.63	83	10536	729.74 ng/L #	30
20) Toluene	8.12	92	18895	550.76 ng/L	99
21) Ethylbenzene	9.66	106	256	15.47 ng/L	96
23) m,p-Xylenes	9.78	106	945	49.89 ng/L	94
24) o-Xylene	10.18	106	479	24.79 ng/L	90
26) 1,1,2,2-Tetrachloroethane	10.94	83	24	1.30 ng/L #	79
27) 1,2,3-Trichloropropane	10.97	110	6	1.04 ng/L #	1
28) Tetrachloroethene	8.63	164	445514	27699.62 ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	151	5.51 ng/L	78

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F018.D Vial: 16
Acq On : 16 May 2017 06:26 pm Operator: GH
Sample : K4509-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:57 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F018.D

(2) Chloromethane (T)

1.24min 20.84ng/L

response 639

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	17.00
49.00	10.30	14.02
0.00	0.00	0.00

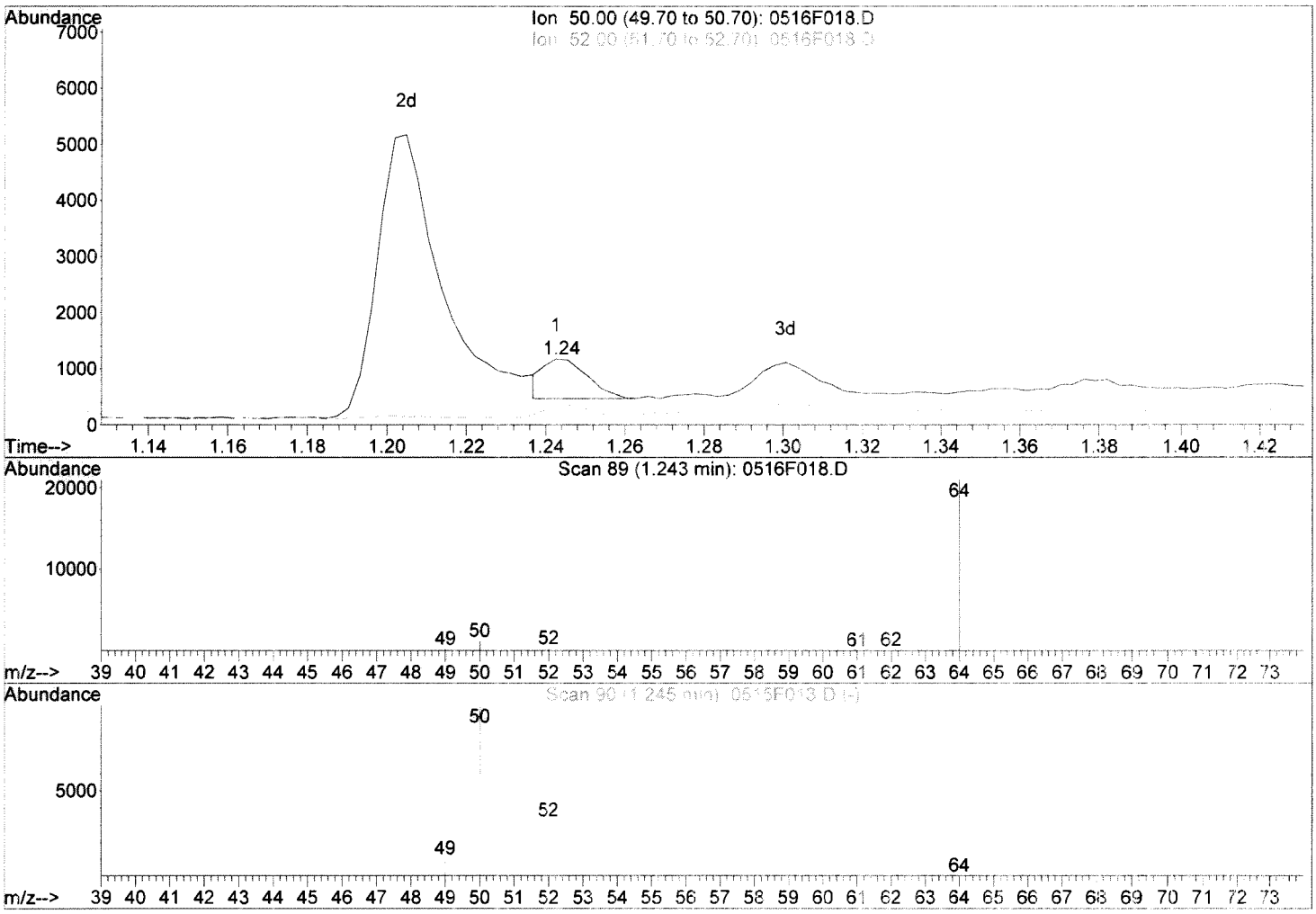
Manual Integration:

Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F018.D Vial: 16
Acq On : 16 May 2017 06:26 pm Operator: GH
Sample : K4509-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:01 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F018.D

(2) Chloromethane (T)

1.24min 17.97ng/L m

response 551

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	24.47
49.00	10.30	19.12
0.00	0.00	0.00

Manual Integration:

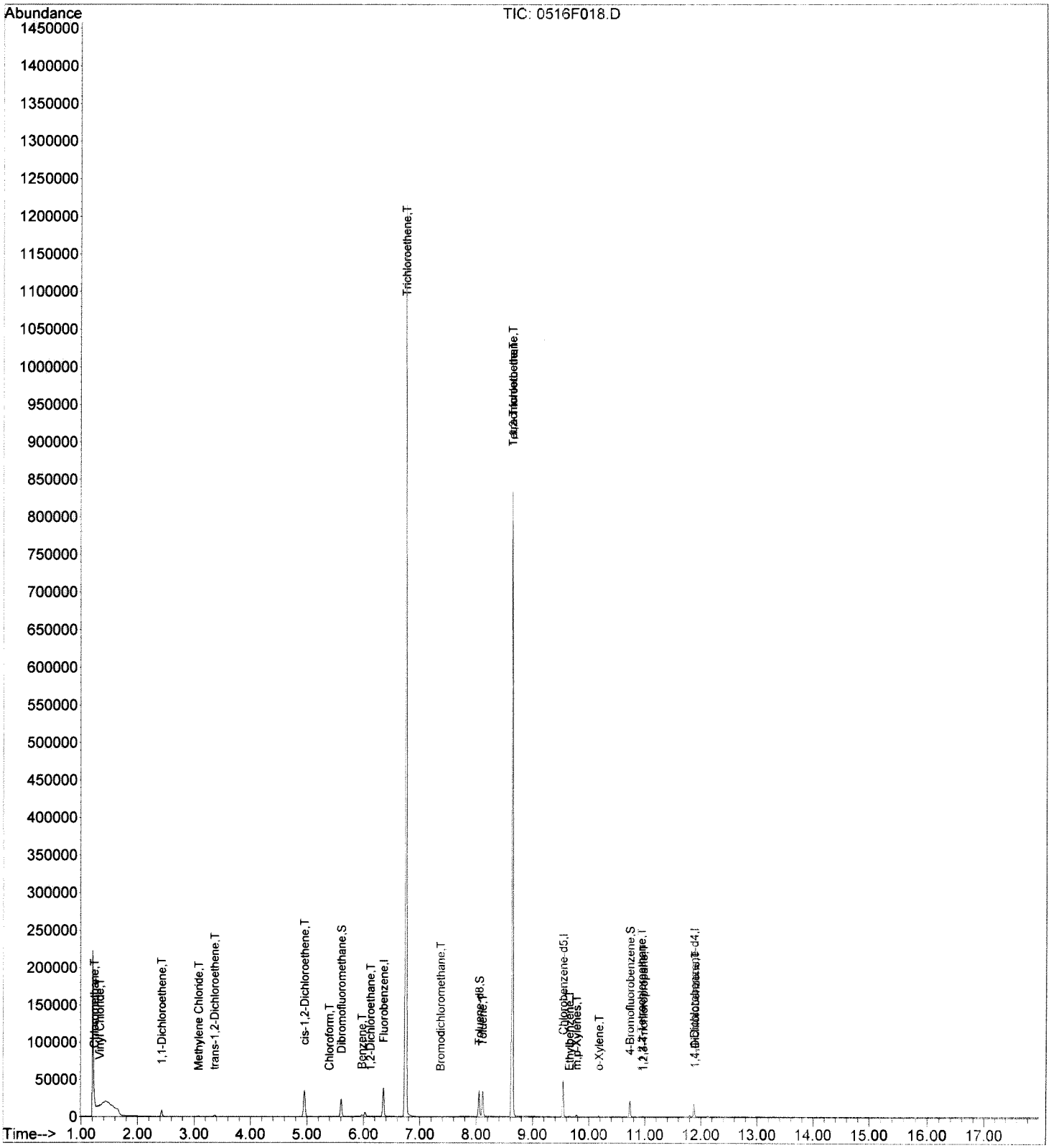
After

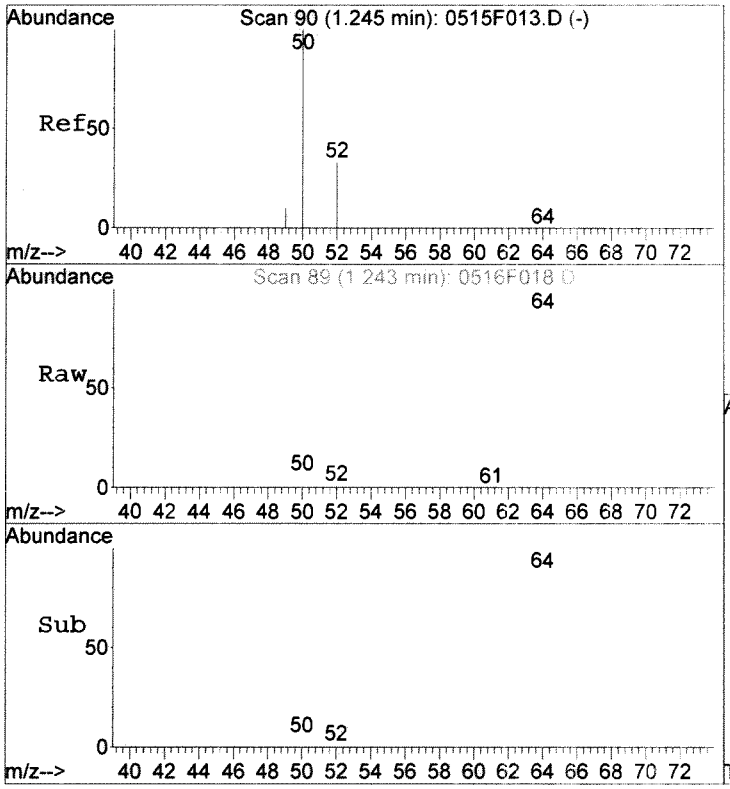
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F018.D Vial: 16
Acq On : 16 May 2017 06:26 pm Operator: GH
Sample : K4509-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:02 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

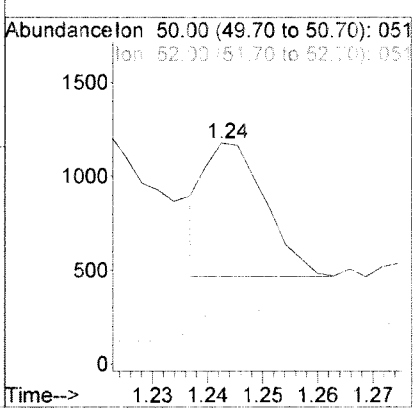


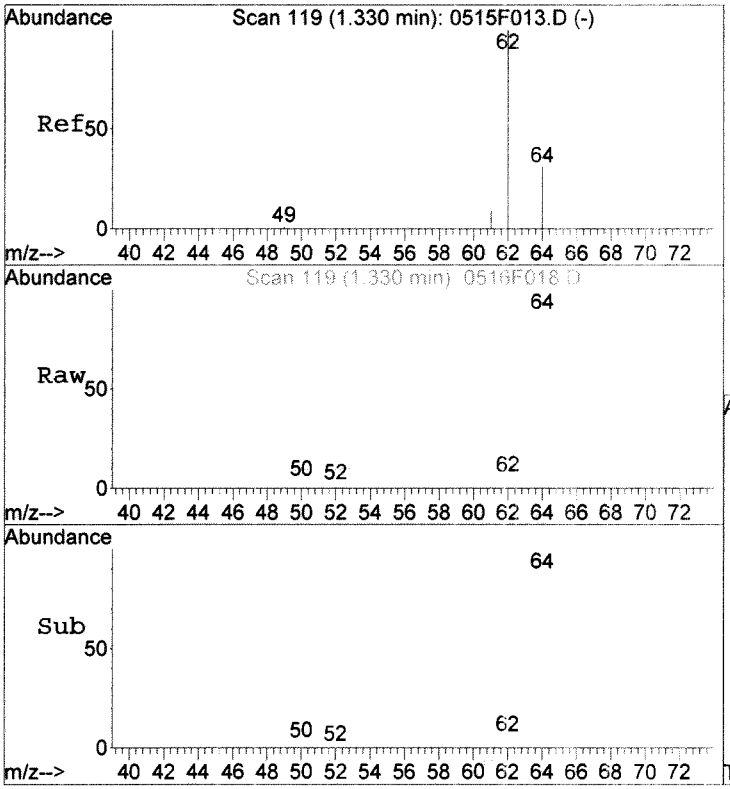


#2
Chloromethane
Concen: 17.97 ng/L m
RT: 1.24 min Scan# 89
Delta R.T. -0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 50 Resp: 551

Ion	Ratio	Lower	Upper
50	100		
52	24.5	2.5	62.5
49	19.1	0.0	40.3

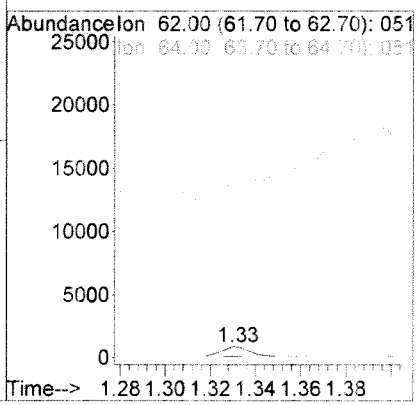


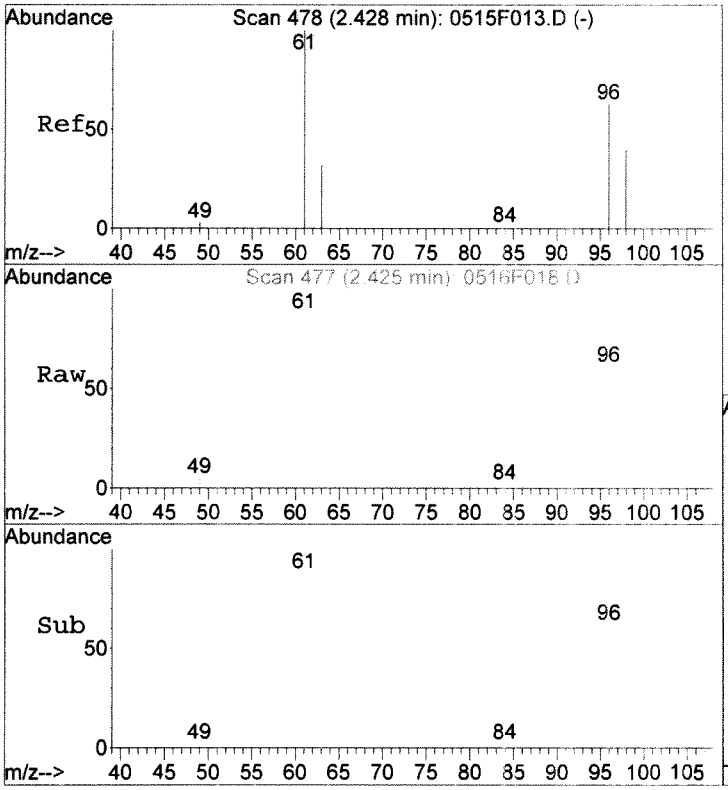


#3
Vinyl Chloride
Concen: 24.13 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 62 Resp: 719

Ion	Ratio	Lower	Upper
62	100		
64	123.1	1.5	61.5#
61	9.0	0.0	38.6

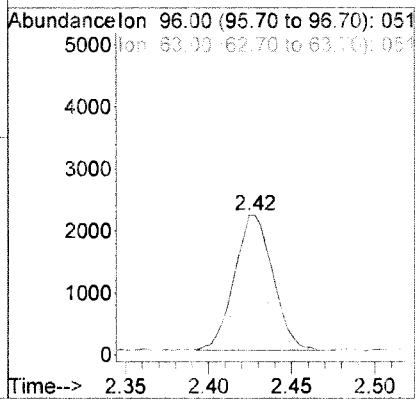


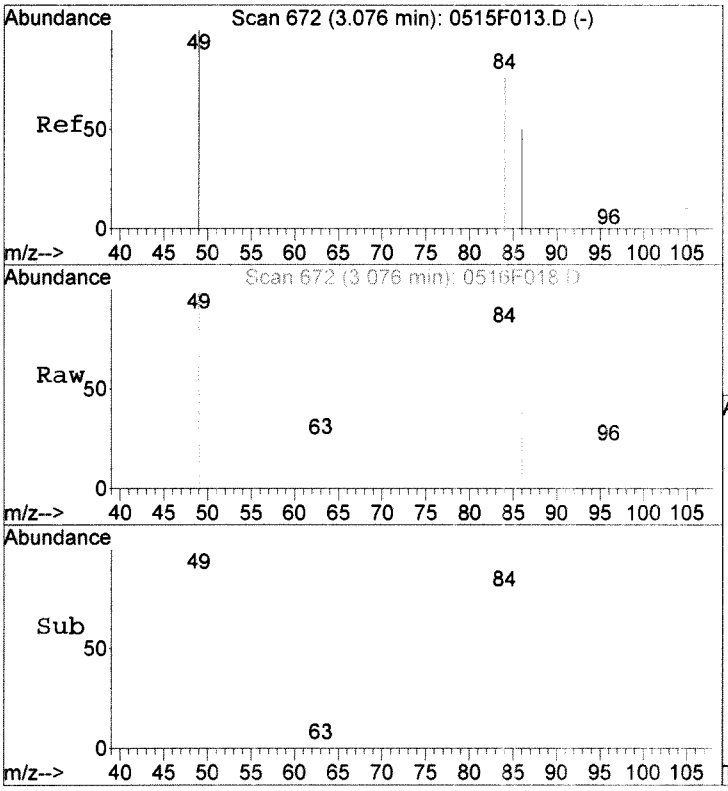


#4
1,1-Dichloroethene
Concen: 213.00 ng/L
RT: 2.42 min Scan# 477
Delta R.T. -0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 96 Resp: 3529

Ion	Ratio	Lower	Upper
96	100		
63	54.9	21.4	81.4
61	166.9	129.1	189.1

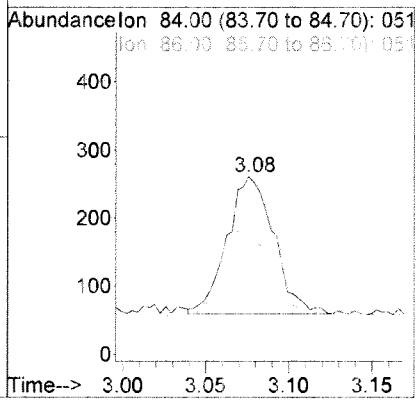


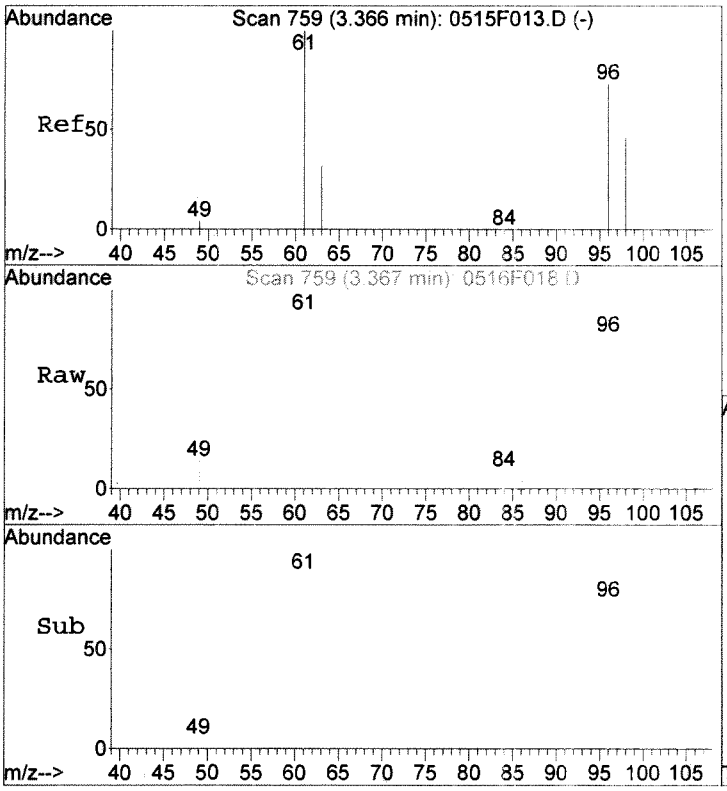


#5
Methylene Chloride
Concen: 17.07 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 84 Resp: 396

Ion	Ratio	Lower	Upper
84	100		
86	68.8	34.0	94.0
49	124.3	98.8	158.8

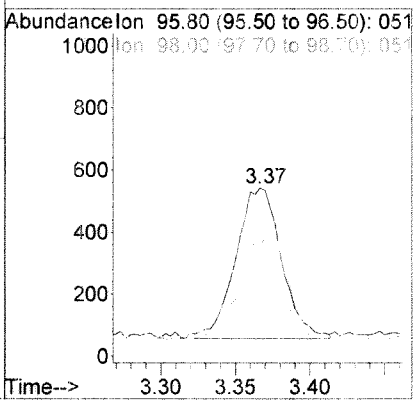


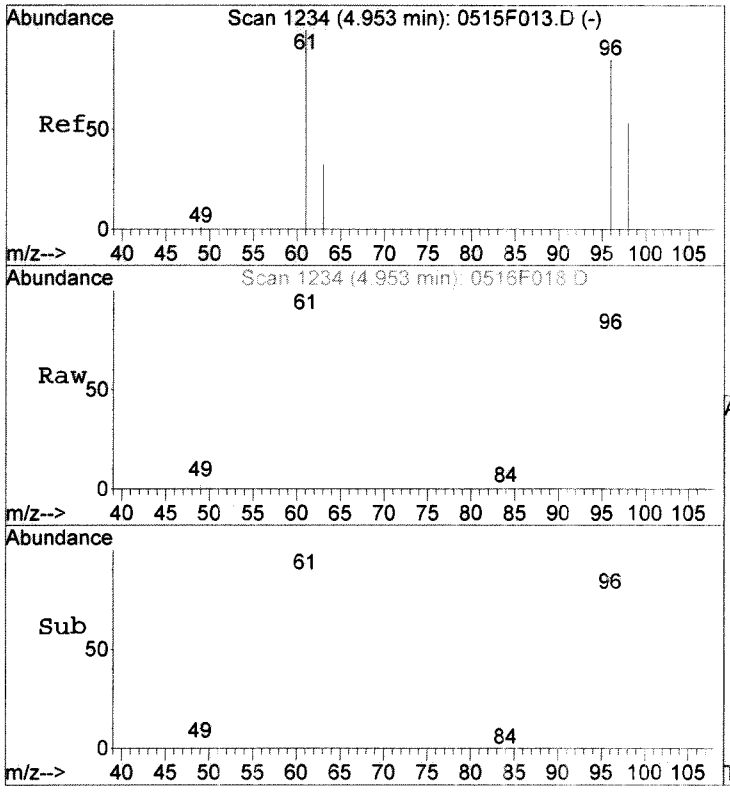


#6
trans-1,2-Dichloroethene
Concen: 55.94 ng/L
RT: 3.37 min Scan# 759
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 96 Resp: 1051

Ion	Ratio	Lower	Upper
96	100		
98	62.8	32.9	92.9
61	132.1	107.3	167.3

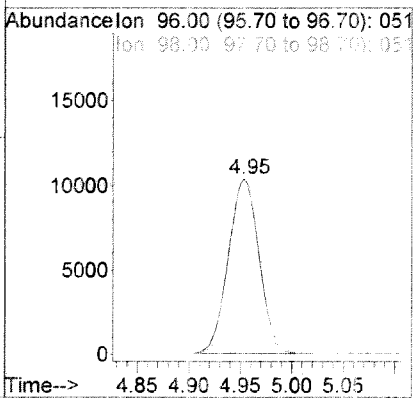


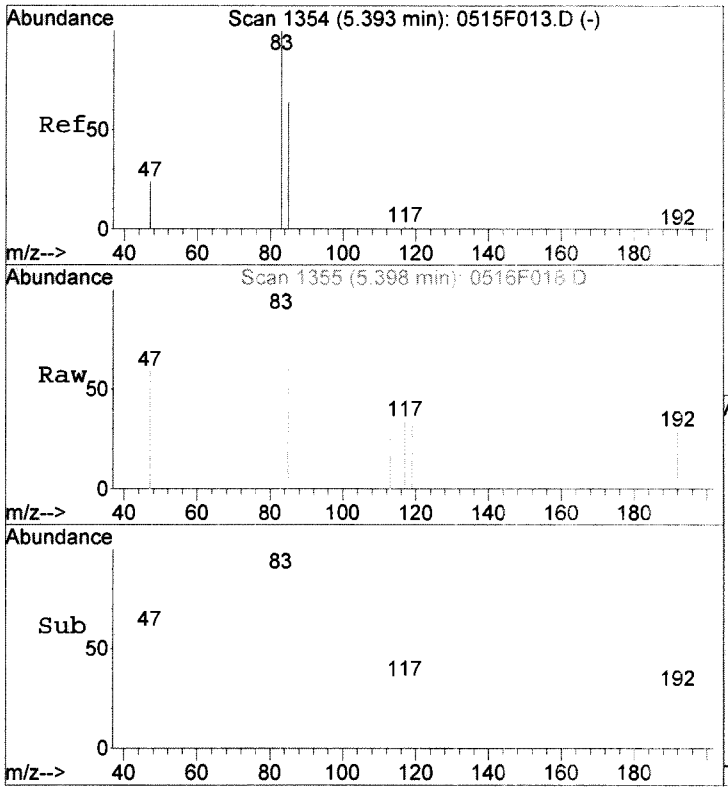


#7
cis-1,2-Dichloroethene
Concen: 1207.51 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 96 Resp: 21633

Ion	Ratio	Lower	Upper
96	100		
98	65.2	32.7	92.7
61	128.1	95.4	155.4

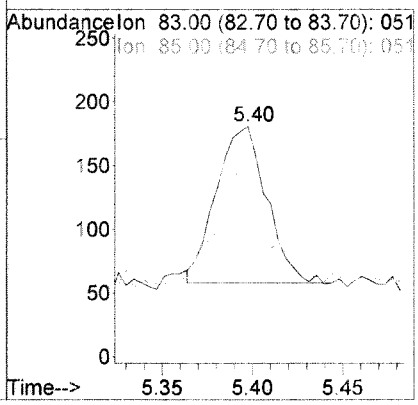


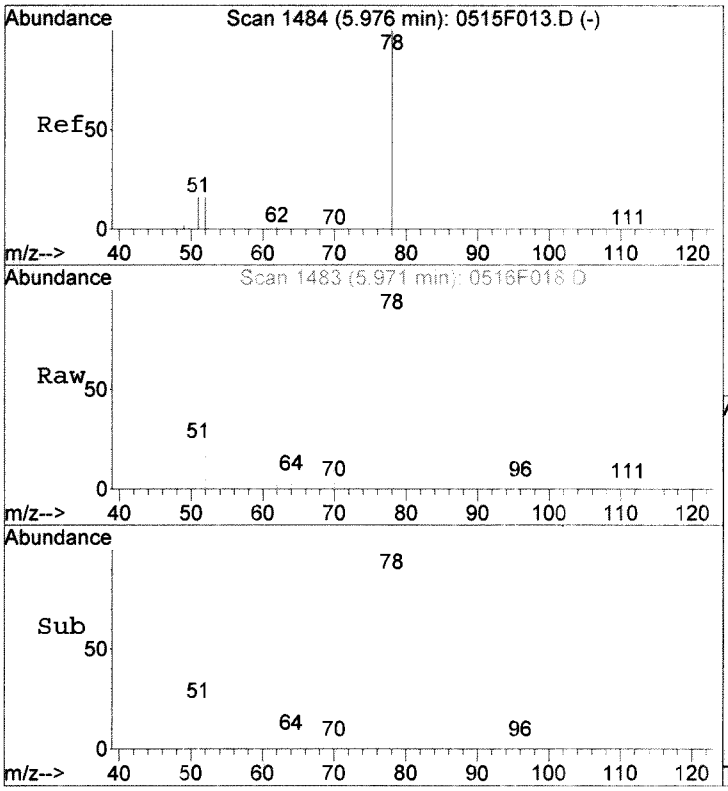


#8
Chloroform
Concen: 6.18 ng/L
RT: 5.40 min Scan# 1355
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 83 Resp: 238

Ion	Ratio	Lower	Upper
83	100		
85	53.7	34.0	94.0
47	36.6	0.0	53.5

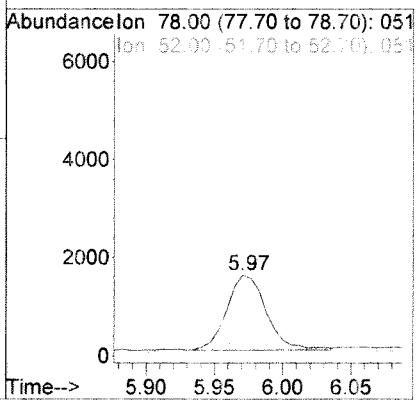


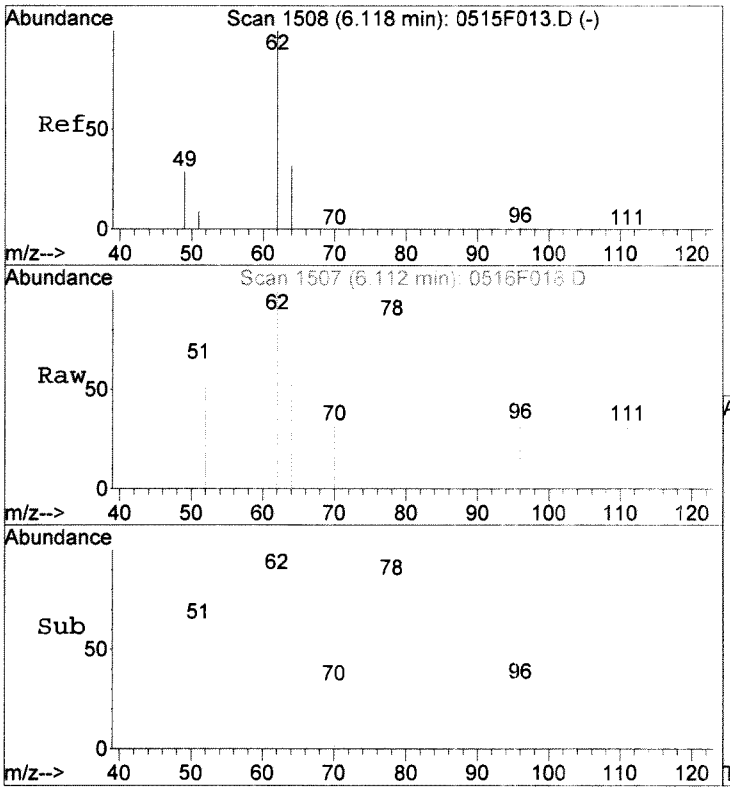


#11
Benzene
Concen: 41.50 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 78 Resp: 3038

Ion	Ratio	Lower	Upper
78	100		
52	15.6	0.0	45.8
51	18.7	0.0	46.5

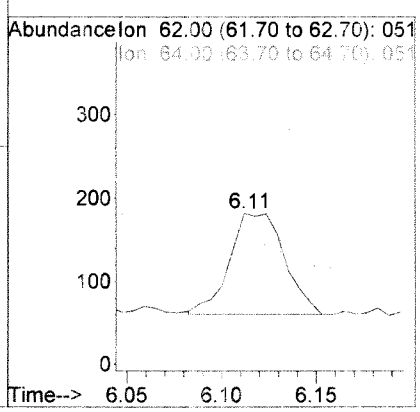


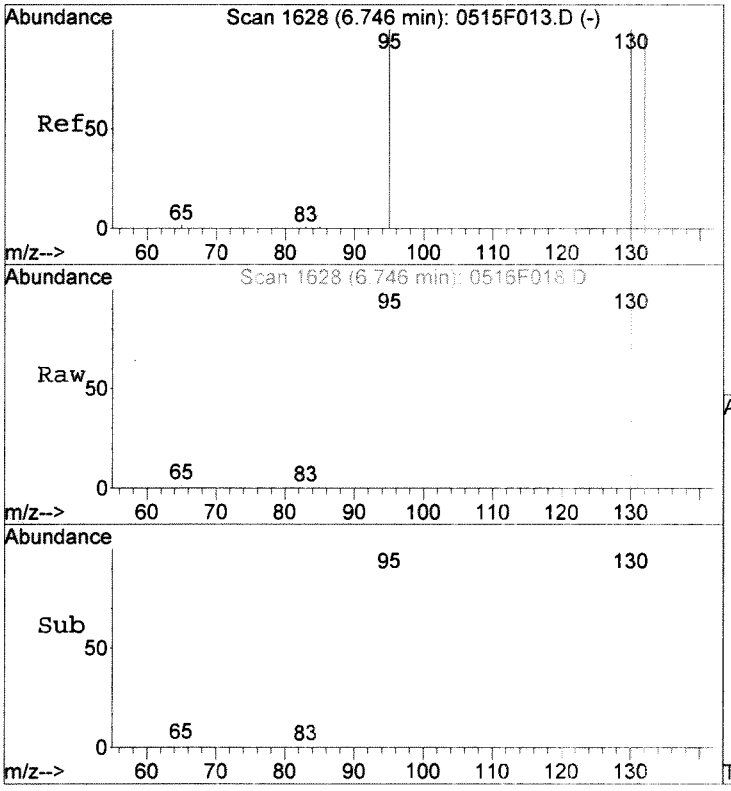


#12
1,2-Dichloroethane
Concen: 9.01 ng/L
RT: 6.11 min Scan# 1507
Delta R.T. -0.01 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 62 Resp: 246

Ion	Ratio	Lower	Upper
62	100		
64	14.8	2.1	62.1
49	27.9	0.0	58.7

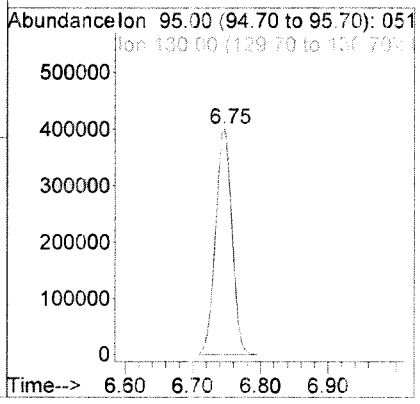


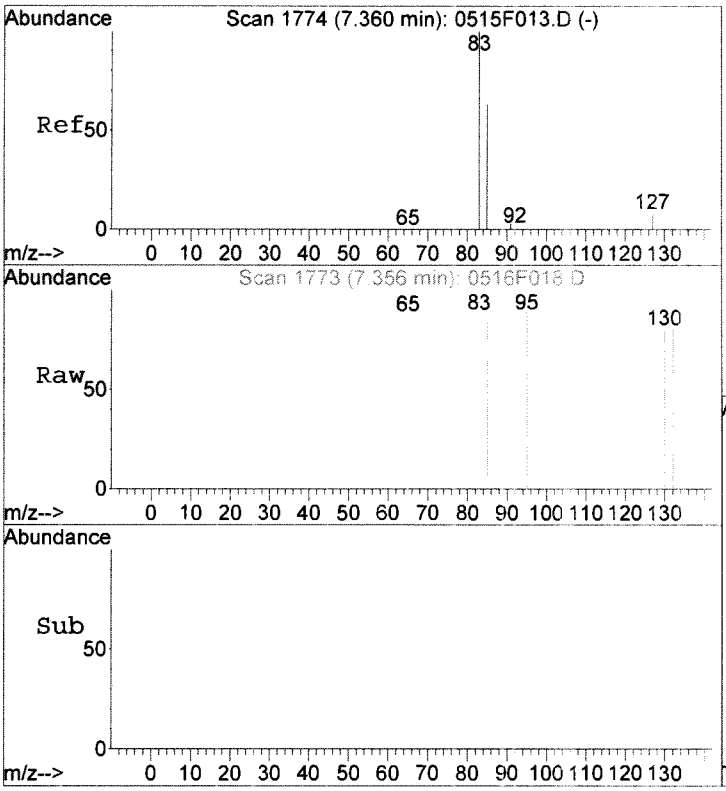


#13
Trichloroethene
Concen: 37617.36 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 95 Resp: 677349

Ion	Ratio	Lower	Upper
95	100		
130	101.5	69.5	129.5
132	97.5	67.2	127.2

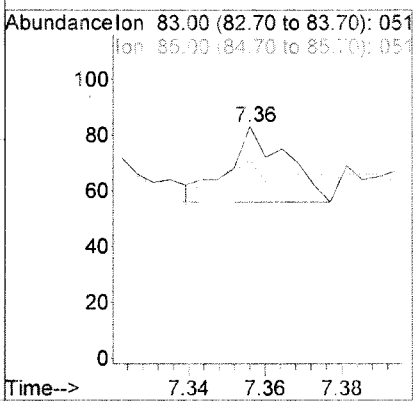


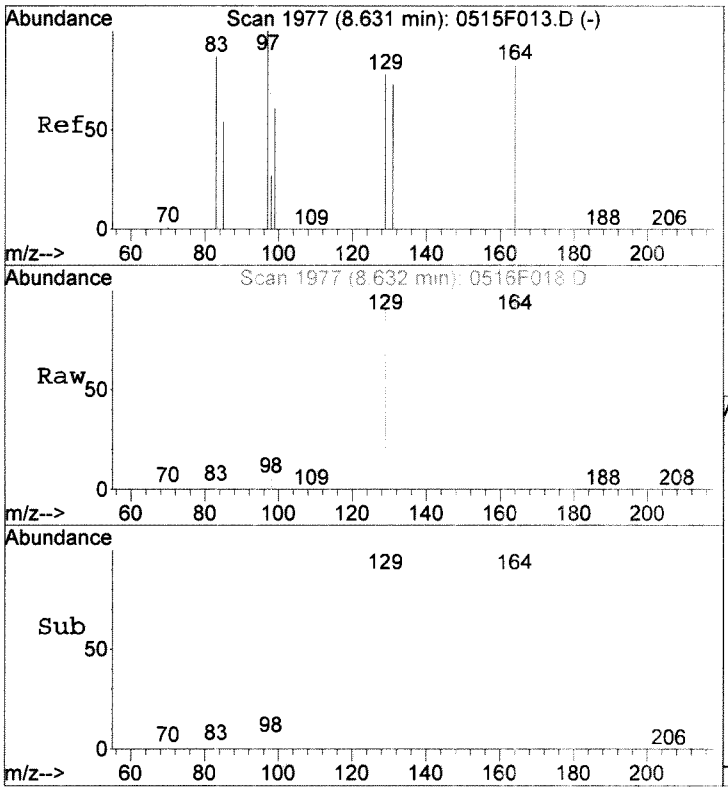


#14
Bromodichloromethane
Concen: 1.09 ng/L
RT: 7.36 min Scan# 1773
Delta R.T. -0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 83 Resp: 28

Ion	Ratio	Lower	Upper
83	100		
85	59.3	33.1	93.1
127	0.0	0.0	38.1

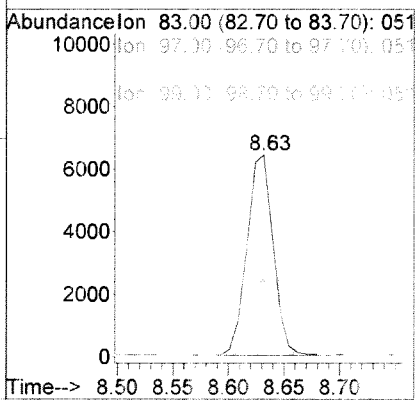


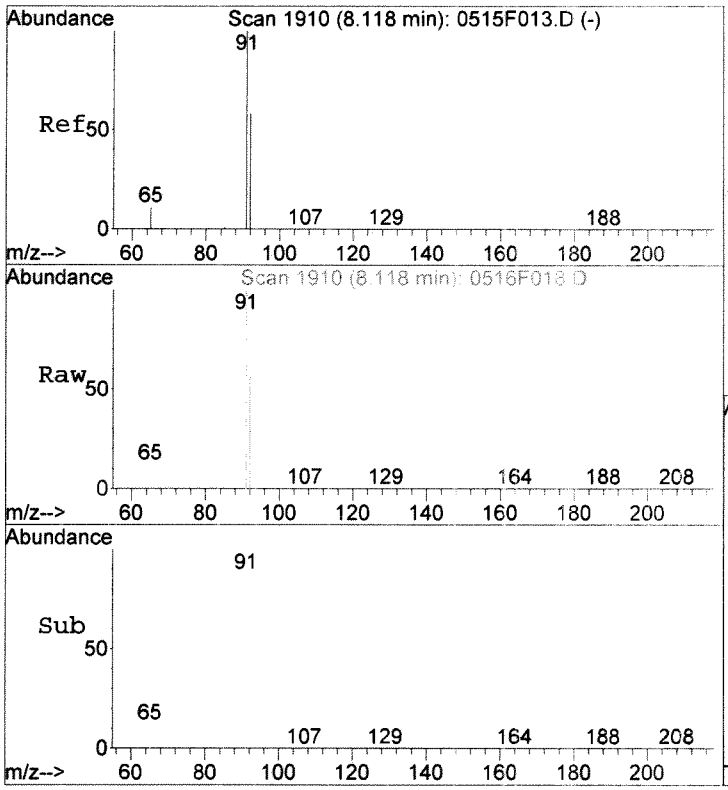


#16
1,1,2-Trichloroethane
Concen: 729.74 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 83 Resp: 10536

Ion	Ratio	Lower	Upper
83	100		
97	37.9	84.4	144.4#
85	15.4	32.3	92.3#
99	5.9	39.4	99.4#

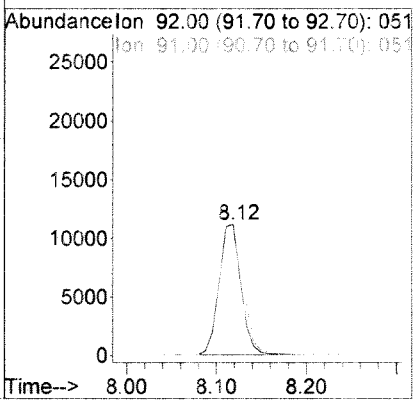


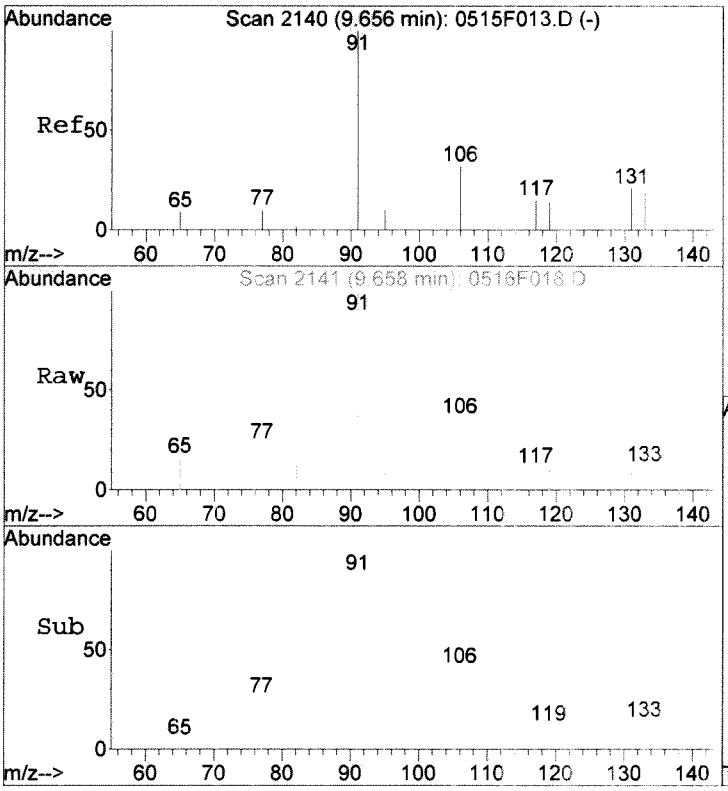


#20
Toluene
Concen: 550.76 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 92 Resp: 18895

Ion	Ratio	Lower	Upper
92	100		
91	175.2	143.6	203.6
65	20.6	0.0	49.9

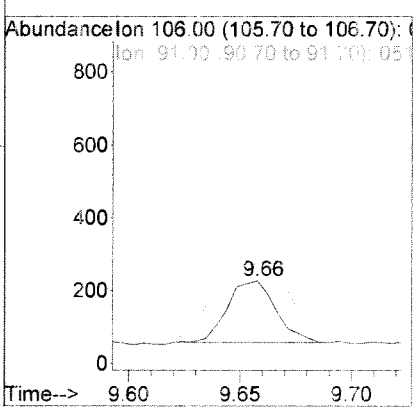


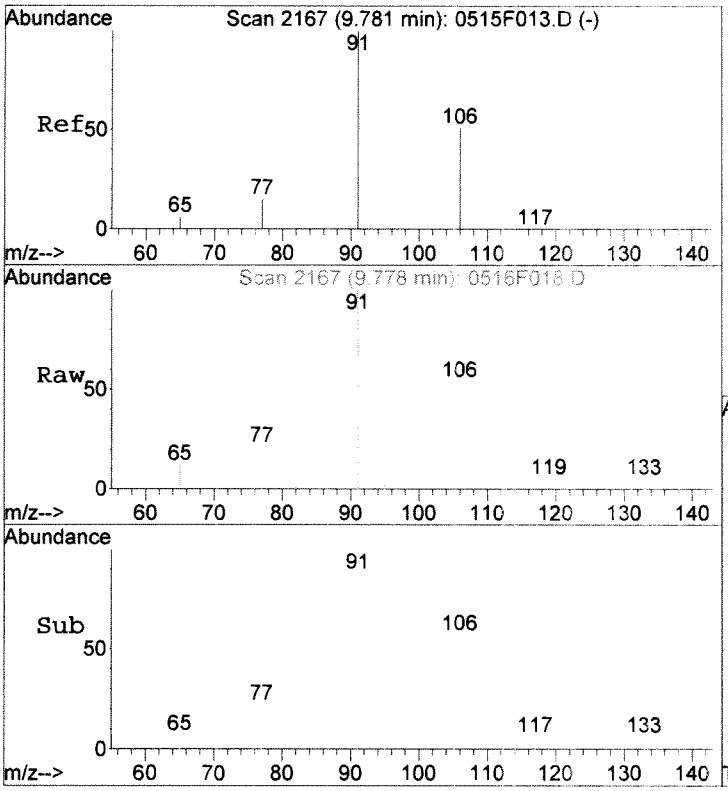


#21
Ethylbenzene
Concen: 15.47 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion:106 Resp: 256

Ion	Ratio	Lower	Upper
106	100		
91	322.4	285.7	345.7
77	37.1	1.3	61.3

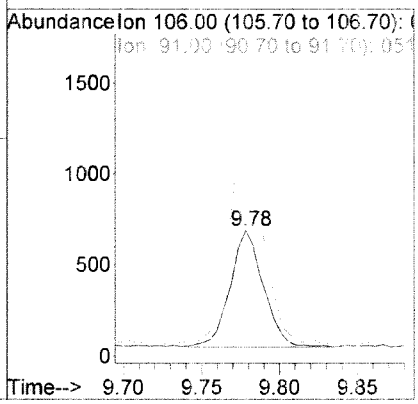


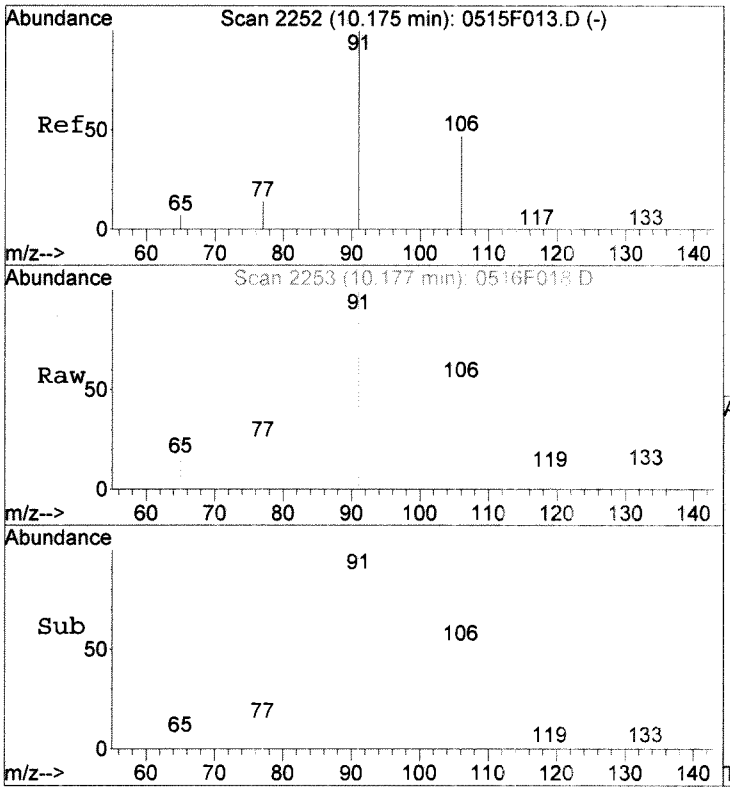


#23
m,p-Xylenes
Concen: 49.89 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion:106 Resp: 945

Ion	Ratio	Lower	Upper
106	100		
91	187.3	166.8	226.8
77	27.7	0.0	58.7

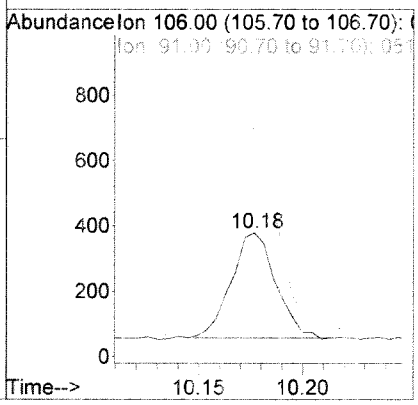


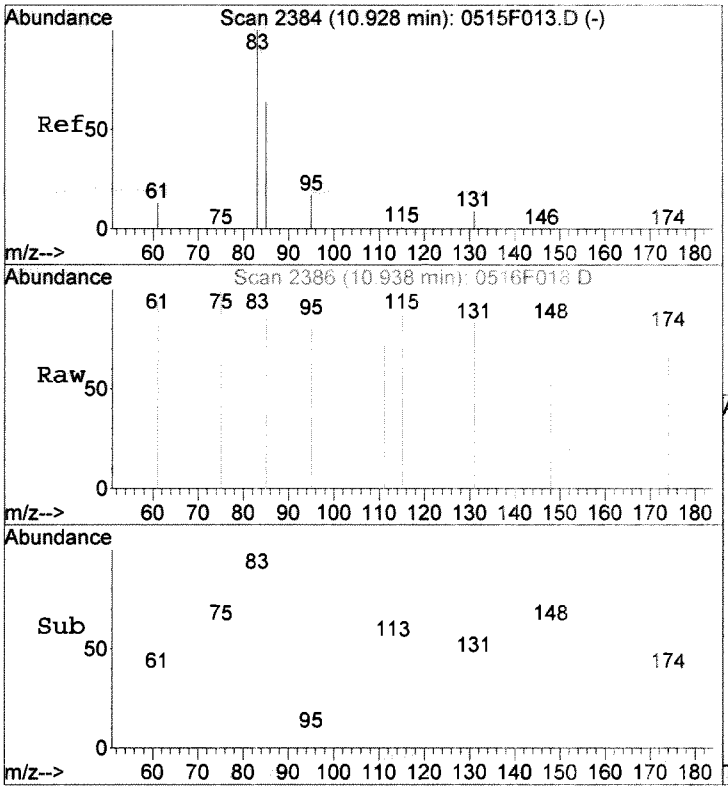


#24
o-Xylene
Concen: 24.79 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion:106 Resp: 479

Ion	Ratio	Lower	Upper
106	100		
91	198.8	184.3	244.3
65	12.5	0.0	44.6

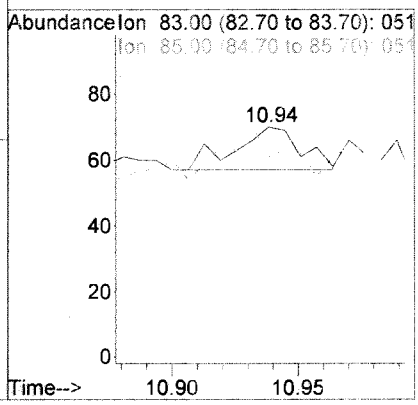


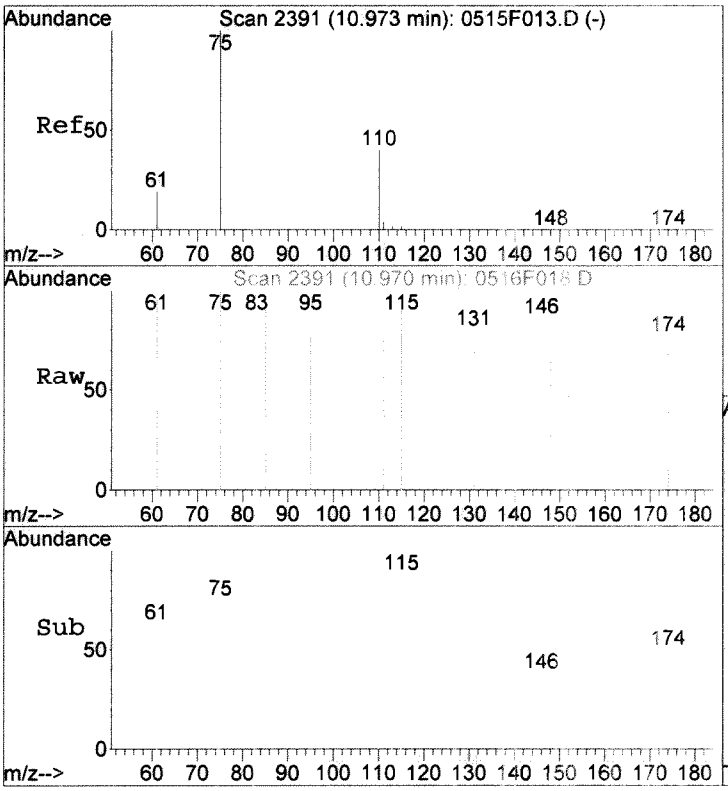


#26
1,1,2,2-Tetrachloroethane
Concen: 1.30 ng/L
RT: 10.94 min Scan# 2386
Delta R.T. 0.01 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion: 83 Resp: 24

Ion	Ratio	Lower	Upper
83	100		
85	53.8	34.1	94.1
131	38.5	0.0	28.8#

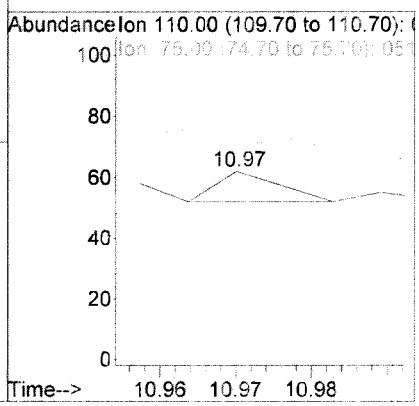


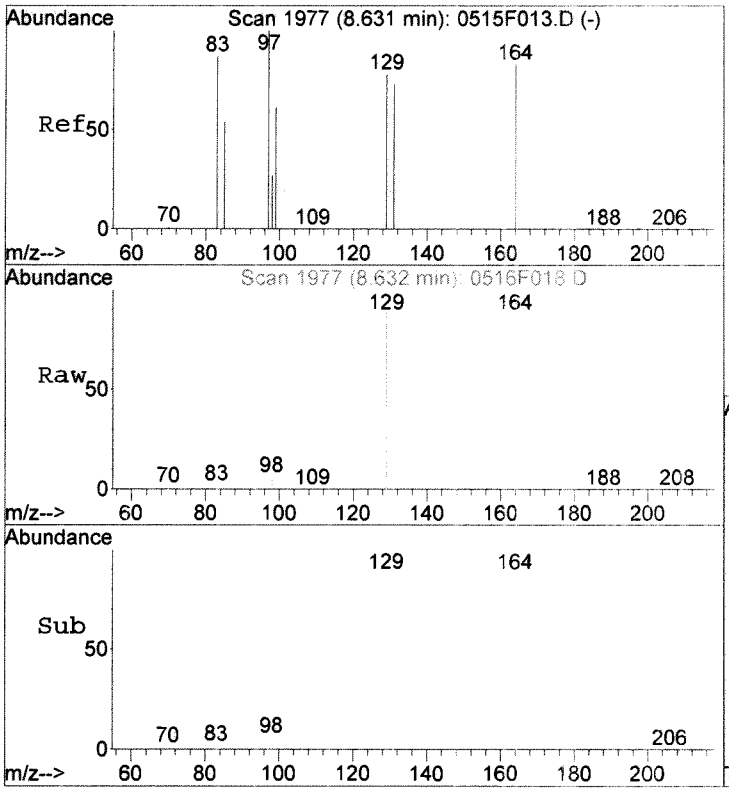


#27
1,2,3-Trichloropropane
Concen: 1.04 ng/L
RT: 10.97 min Scan# 2391
Delta R.T. -0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion:110 Resp: 6

Ion	Ratio	Lower	Upper
110	100		
75	10.0	230.6	270.6#
61	10.0	40.1	80.1#

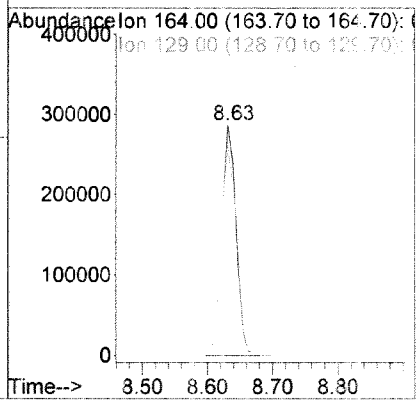


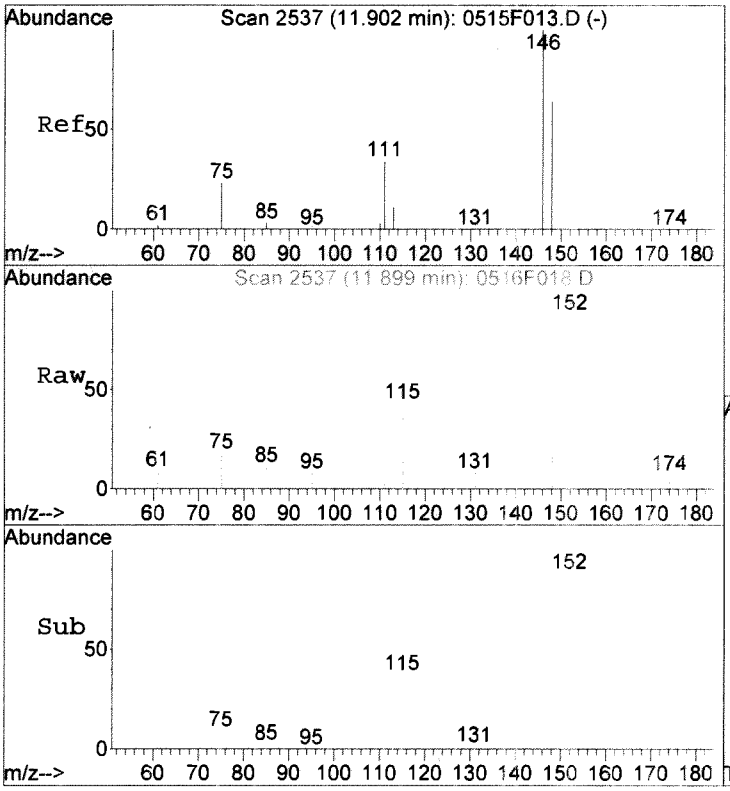


#28
Tetrachloroethene
Concen: 27699.62 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion:164 Resp: 445514

Ion	Ratio	Lower	Upper
164	100		
129	91.9	63.1	123.1
131	87.9	57.4	117.4

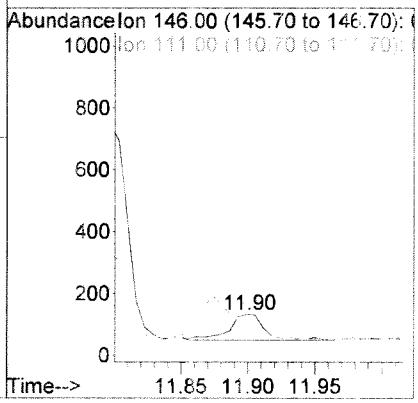




#30
1,4-Dichlorobenzene
Concen: 5.51 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F018.D
Acq: 16 May 2017 06:26 pm

Tgt Ion:146 Resp: 151

Ion	Ratio	Lower	Upper
146	100		
111	42.7	4.0	64.0
148	84.1	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F014.D
Lab ID: K1704509-005
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 16:36
Date Quantitated: 05/22/2017 11:52
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	20	NA	14		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 5/22/17

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F014.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 16:36	**Quant Date:**	05/22/2017 11:52	**Vial:**	12
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704509-005			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/02/2017	**Receive Date:**	05/05/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704509
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604858	**Prep Date:**	05/22/2017		

MJ 5.25.17

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	55777	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	38064	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19959	967.45	97	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	44658	1,004	100	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12707	750.40	75	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	41	1.32	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F014.D Vial: 12
Acq On : 16 May 2017 04:36 pm Operator: GH
Sample : K4509-005TB 041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 16:55:39 2017 Quant Results File: 051517MS30_8260SIM.RES

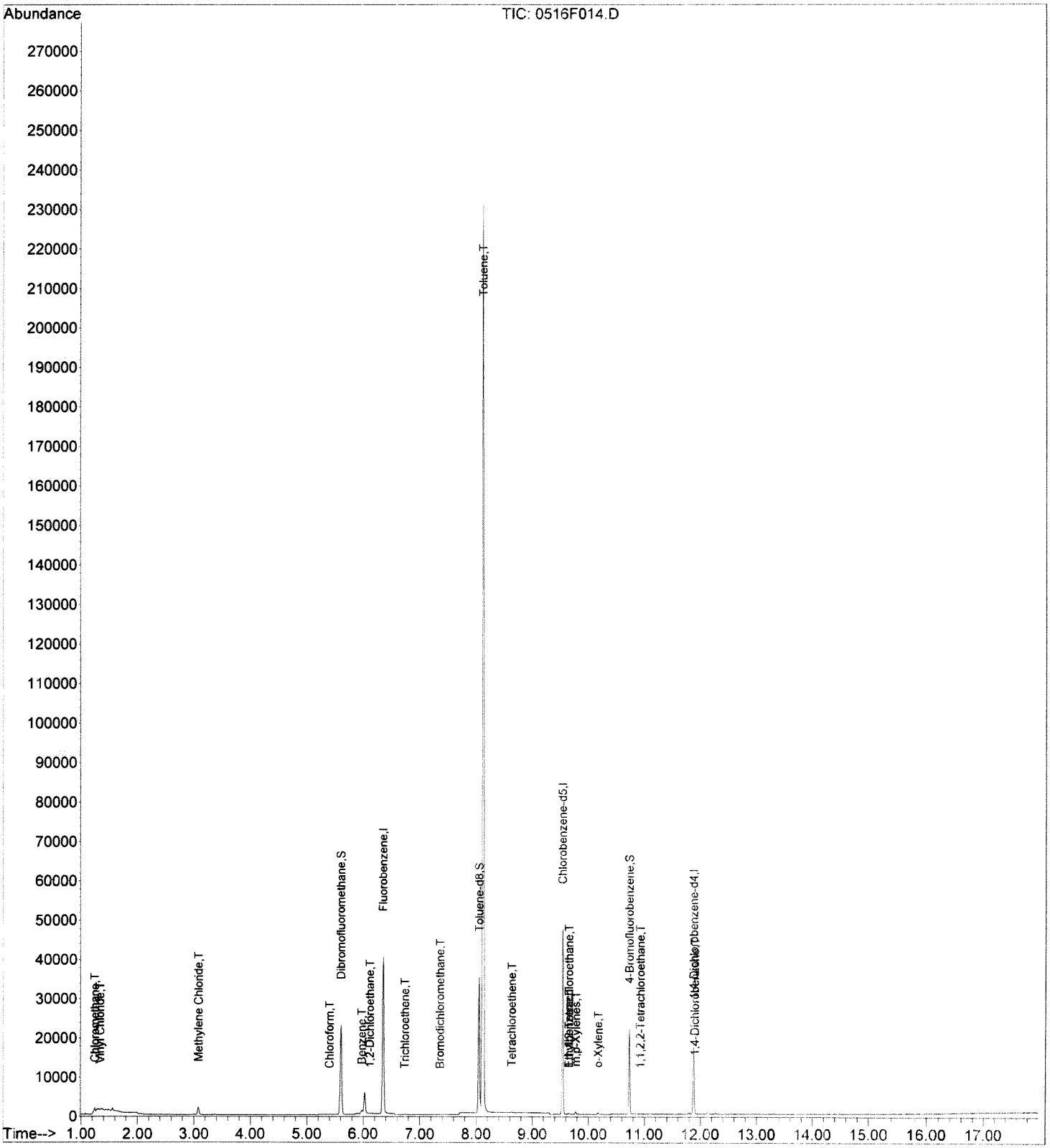
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

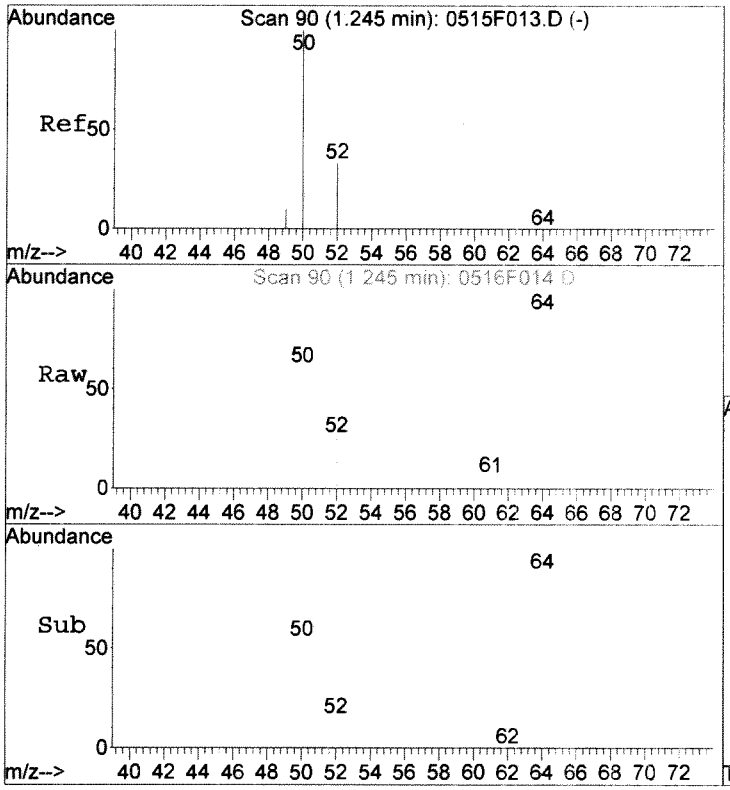
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55777	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	38064	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14522	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19959	967.45	ng/L	0.00
Spiked Amount 1000.000			Recovery = 96.75%			
15) Toluene-d8	8.05	98	44658	1003.80	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.38%			
25) 4-Bromofluorobenzene	10.73	95	12707	750.40	ng/L	0.00
Spiked Amount 1000.000			Recovery = 75.04%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	458	14.35	ng/L	93
3) Vinyl Chloride	1.33	62	41	1.32	ng/L #	1
5) Methylene Chloride	3.08	84	1291	53.45	ng/L	92
8) Chloroform	5.40	83	133	3.32	ng/L	84
11) Benzene	5.97	78	1372	18.00	ng/L	97
12) 1,2-Dichloroethane	6.11	62	50	1.76	ng/L	81
13) Trichloroethene	6.74	95	56	2.99	ng/L	78
14) Bromodichloromethane	7.36	83	34	1.27	ng/L #	38
20) Toluene	8.12	92	125025	3742.50	ng/L	99
21) Ethylbenzene	9.65	106	79	4.90	ng/L	91
22) 1,1,1,2-Tetrachloroethane	9.66	131	21	1.05	ng/L #	40
23) m,p-Xylenes	9.78	106	313	16.97	ng/L	93
24) o-Xylene	10.17	106	175	9.30	ng/L	94
26) 1,1,2,2-Tetrachloroethane	10.93	83	25	1.39	ng/L	69
28) Tetrachloroethene	8.63	164	84	5.36	ng/L #	76
30) 1,4-Dichlorobenzene	11.90	146	197	7.52	ng/L	94

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F014.D Vial: 12
Acq On : 16 May 2017 04:36 pm Operator: GH
Sample : K4509-005TB 041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:52 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

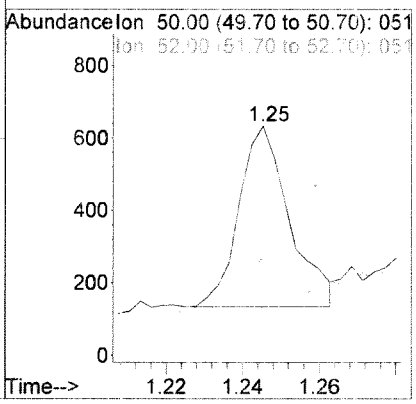


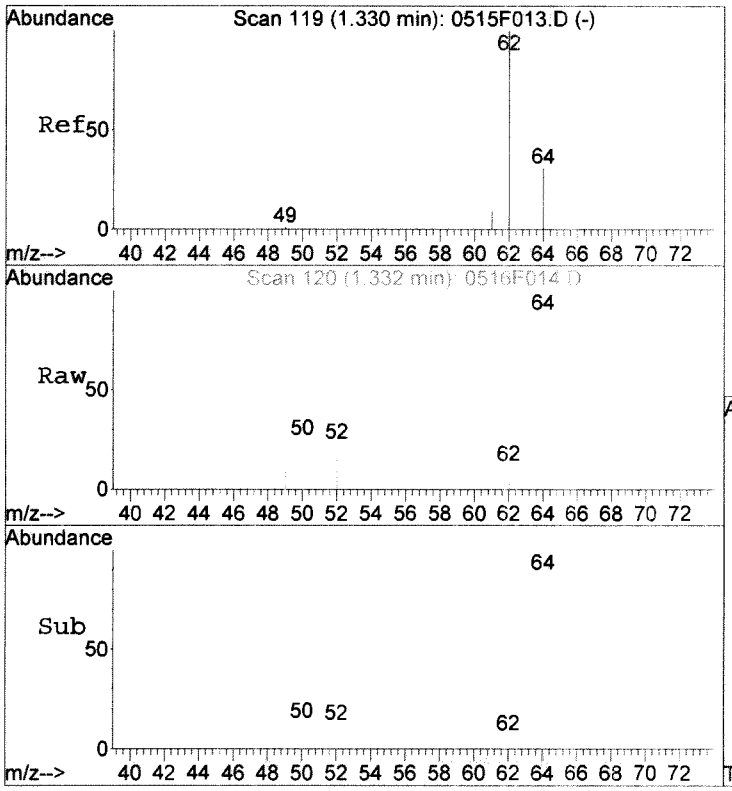


#2
Chloromethane
Concen: 14.35 ng/L
RT: 1.25 min Scan# 90
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 50 Resp: 458

Ion	Ratio	Lower	Upper
50	100		
52	29.7	2.5	62.5
49	14.6	0.0	40.3

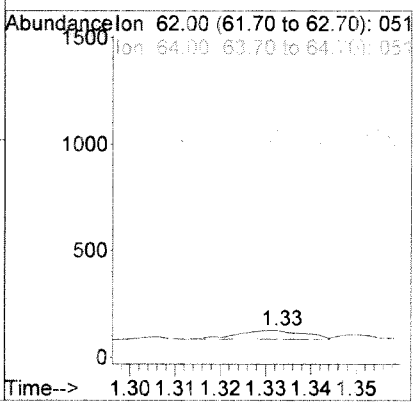


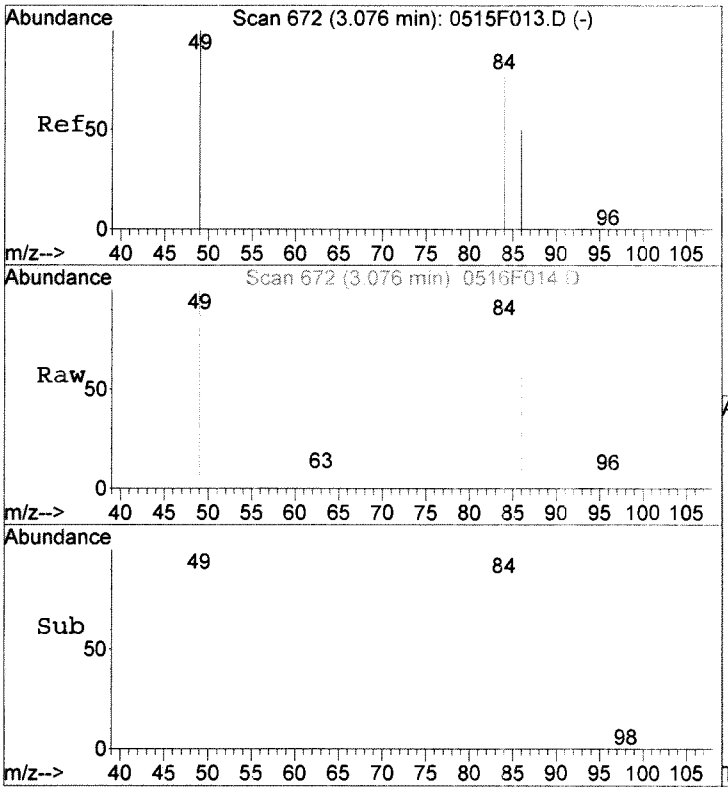


#3
Vinyl Chloride
Concen: 1.32 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 62 Resp: 41

Ion	Ratio	Lower	Upper
62	100		
64	146.3	1.5	61.5#
61	19.5	0.0	38.6

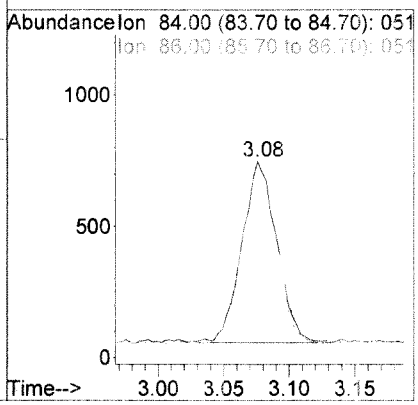


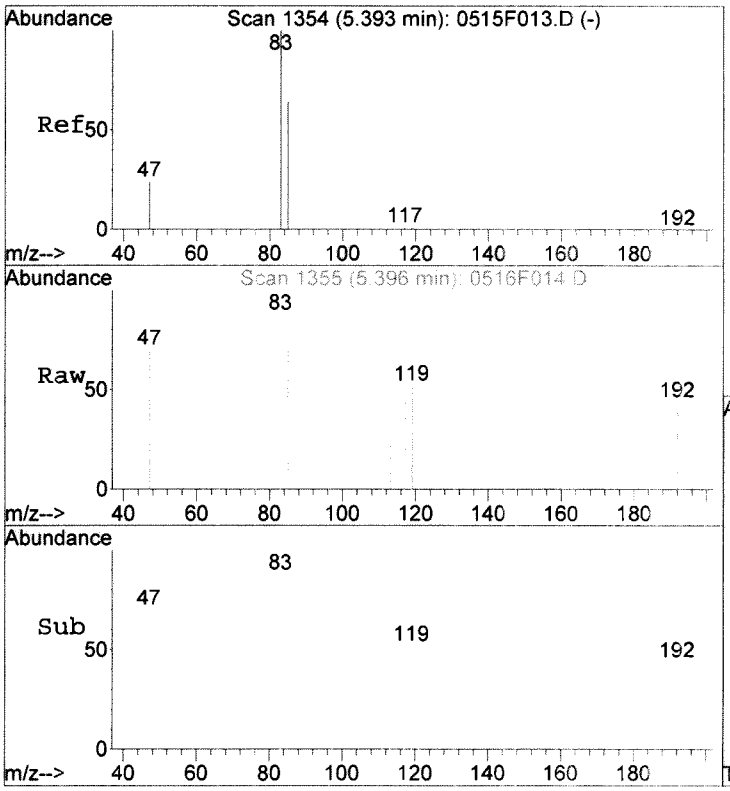


#5
Methylene Chloride
Concen: 53.45 ng/L
RT: 3.08 min Scan# 672
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 84 Resp: 1291

Ion	Ratio	Lower	Upper
84	100		
86	63.1	34.0	94.0
49	116.2	98.8	158.8

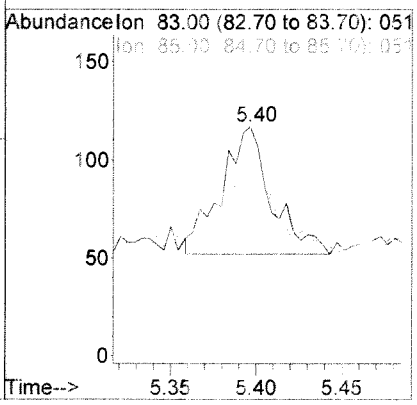


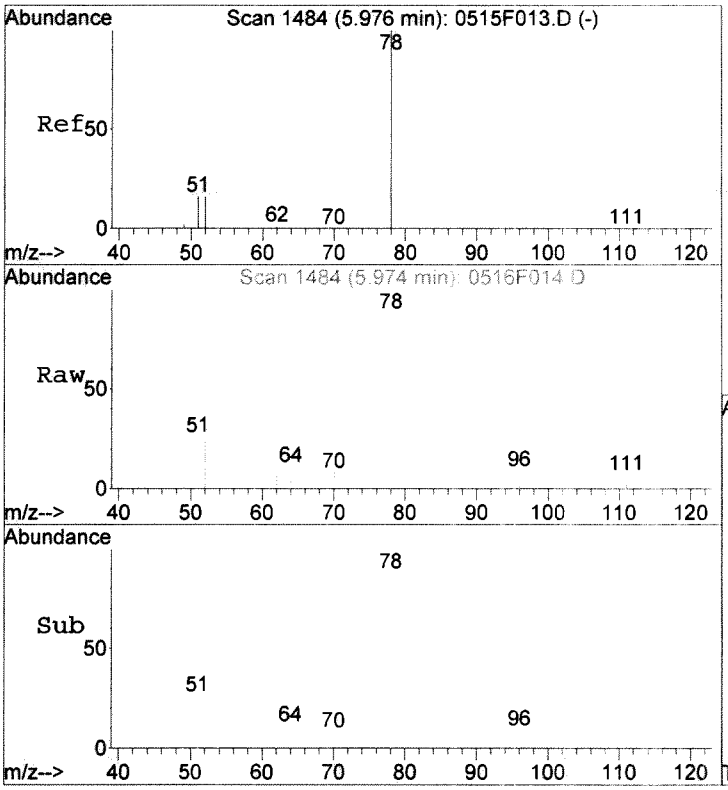


#8
Chloroform
Concen: 3.32 ng/L
RT: 5.40 min Scan# 1355
Delta R.T. 0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 83 Resp: 133

Ion	Ratio	Lower	Upper
83	100		
85	47.7	34.0	94.0
47	21.5	0.0	53.5

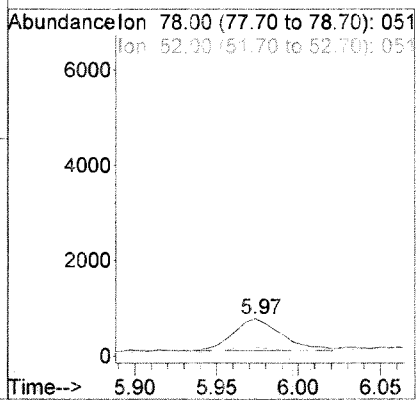


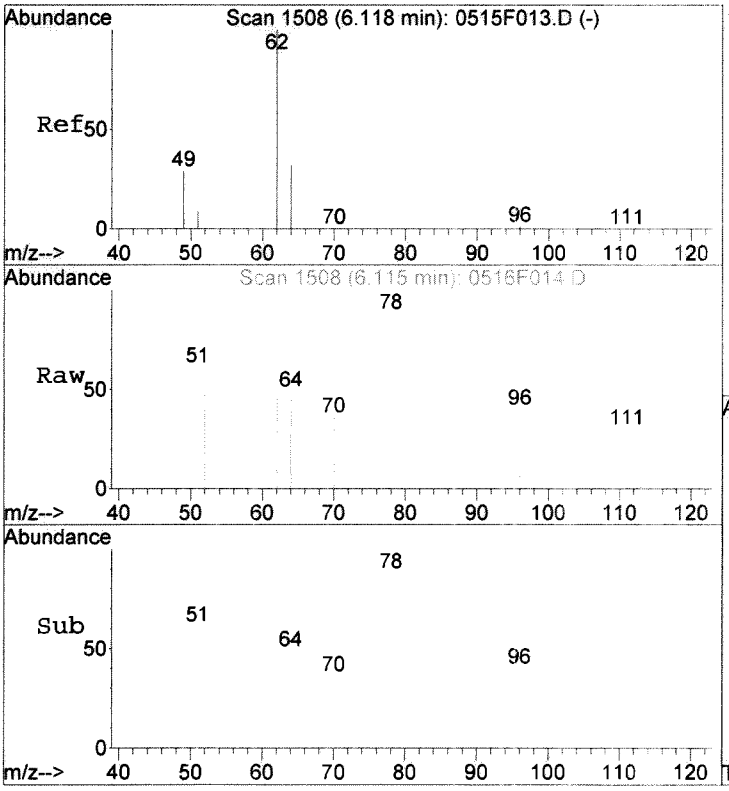


#11
Benzene
Concen: 18.00 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 78 Resp: 1372

Ion	Ratio	Lower	Upper
78	100		
52	15.0	0.0	45.8
51	18.6	0.0	46.5

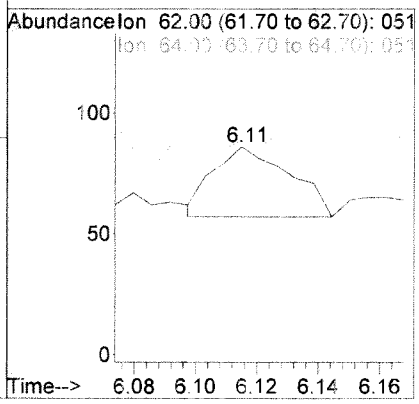


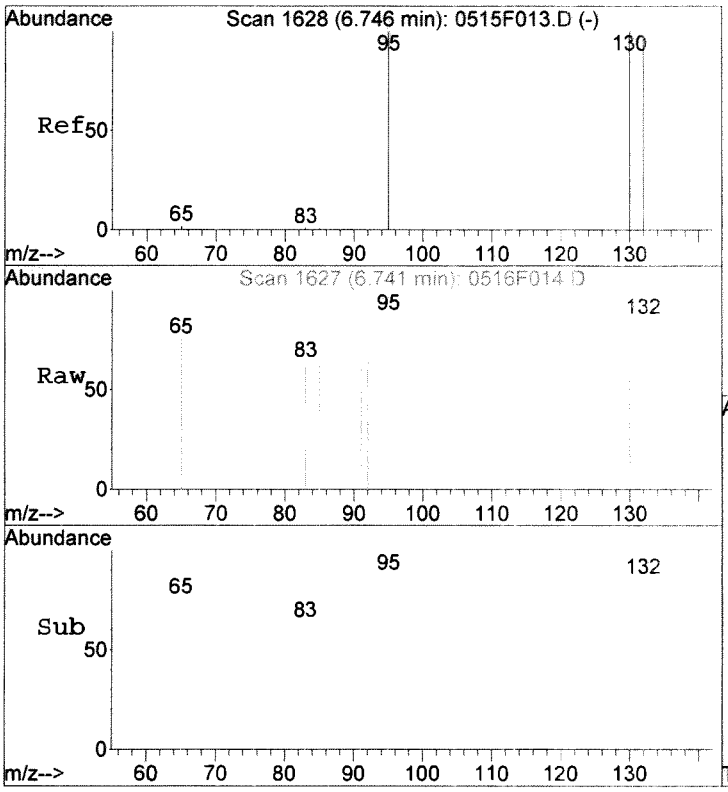


#12
1,2-Dichloroethane
Concen: 1.76 ng/L
RT: 6.11 min Scan# 1508
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 62 Resp: 50

Ion	Ratio	Lower	Upper
62	100		
64	27.6	2.1	62.1
49	44.8	0.0	58.7

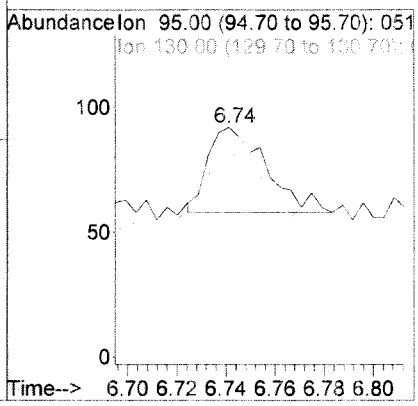


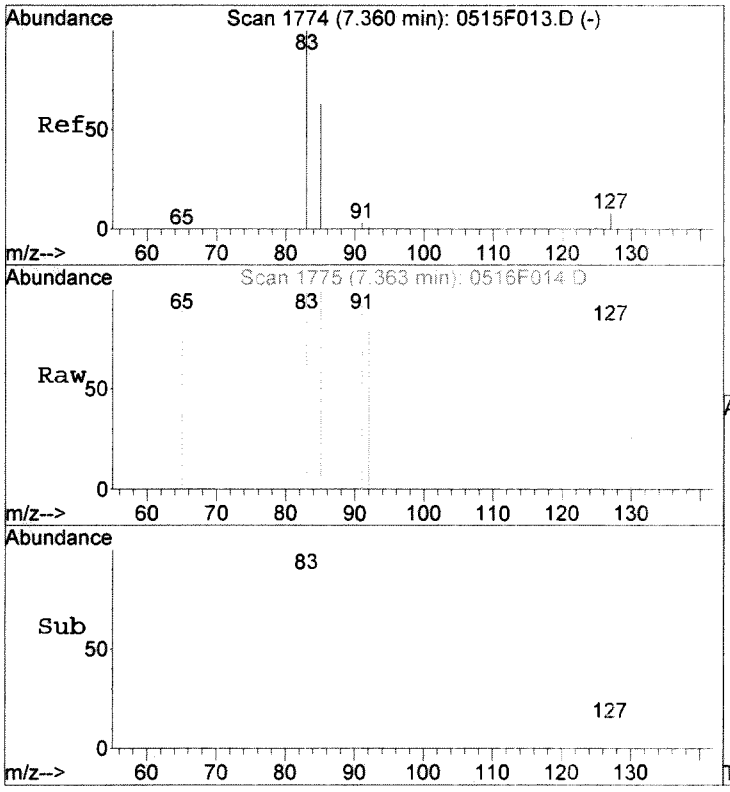


#13
Trichloroethene
Concen: 2.99 ng/L
RT: 6.74 min Scan# 1627
Delta R.T. -0.01 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 95 Resp: 56

Ion	Ratio	Lower	Upper
95	100		
130	73.5	69.5	129.5
132	79.4	67.2	127.2

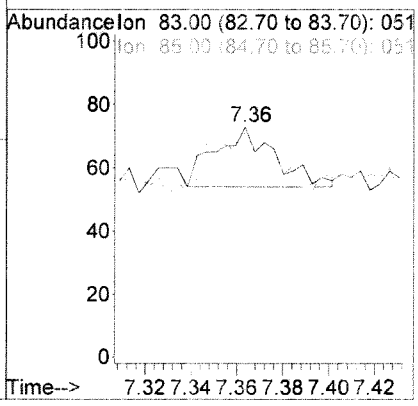


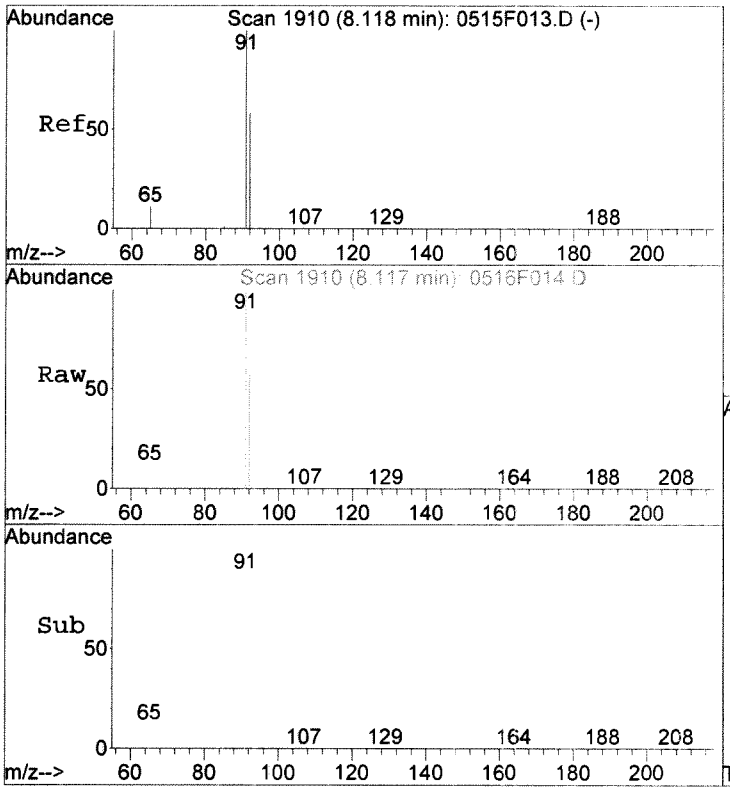


#14
Bromodichloromethane
Concen: 1.27 ng/L
RT: 7.36 min Scan# 1775
Delta R.T. 0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 83 Resp: 34

Ion	Ratio	Lower	Upper
83	100		
85	105.3	33.1	93.1#
127	52.6	0.0	38.1#

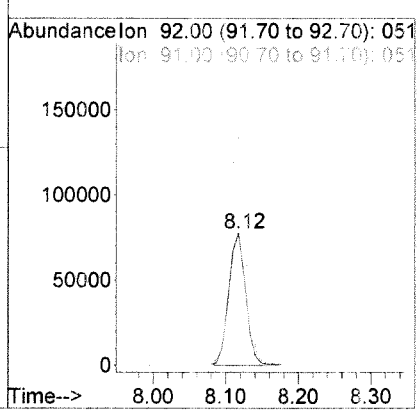


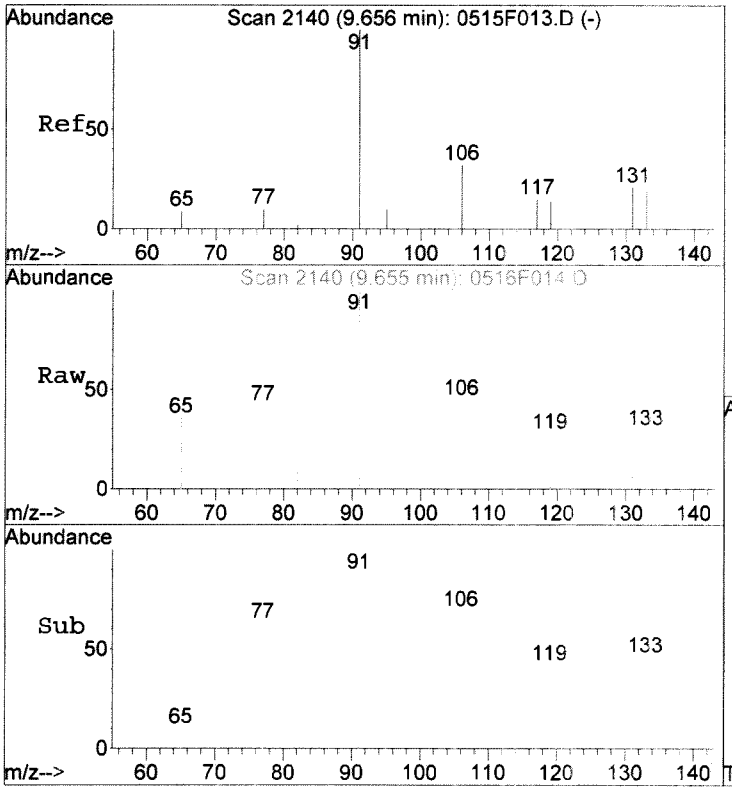


#20
Toluene
Concen: 3742.50 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 92 Resp: 125025

Ion	Ratio	Lower	Upper
92	100		
91	174.5	143.6	203.6
65	21.1	0.0	49.9

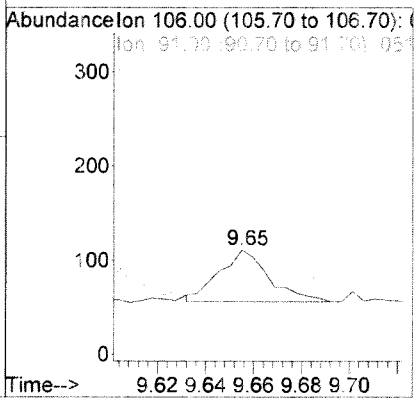


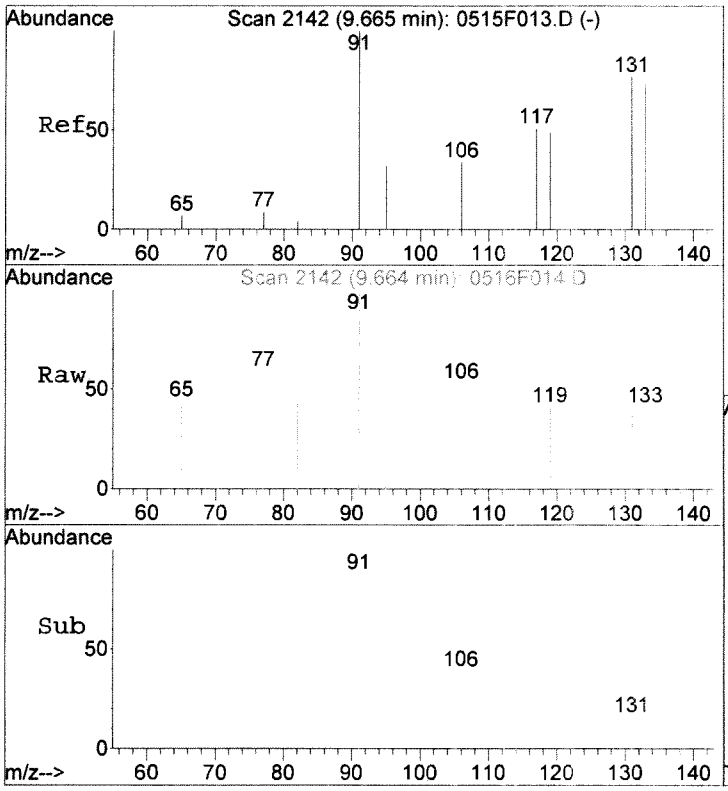


#21
Ethylbenzene
Concen: 4.90 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion:106 Resp: 79

Ion	Ratio	Lower	Upper
106	100		
91	300.0	285.7	345.7
77	41.8	1.3	61.3

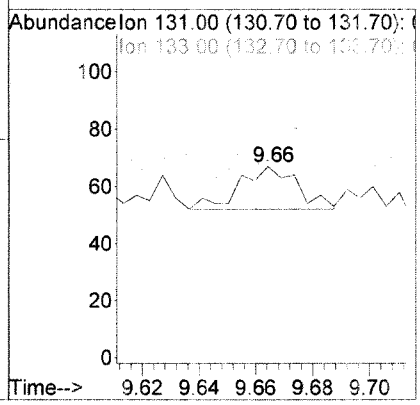


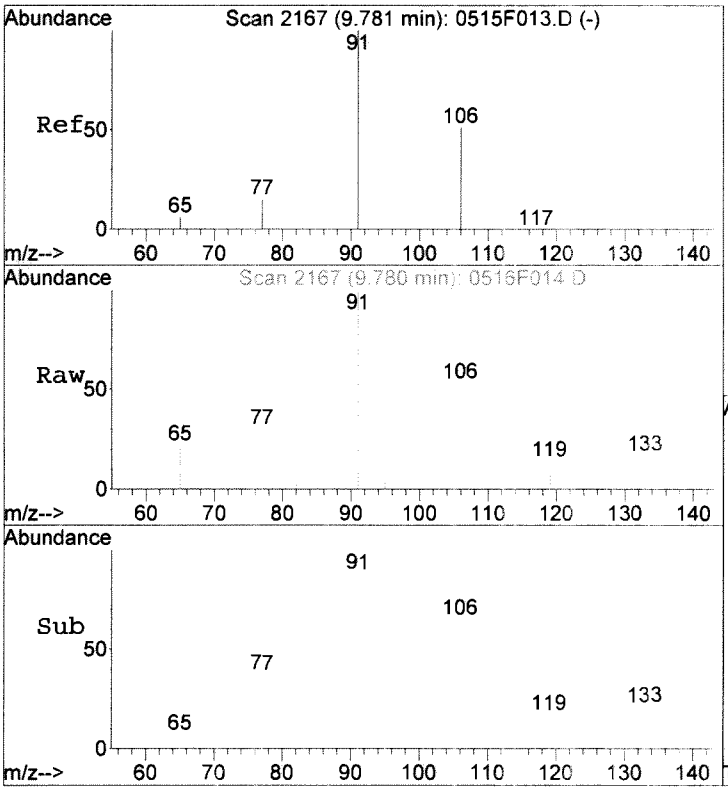


#22
1,1,1,2-Tetrachloroethane
Concen: 1.05 ng/L
RT: 9.66 min Scan# 2142
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion:131 Resp: 21

Ion	Ratio	Lower	Upper
131	100		
133	0.0	74.4	114.4#
119	60.0	43.9	83.9

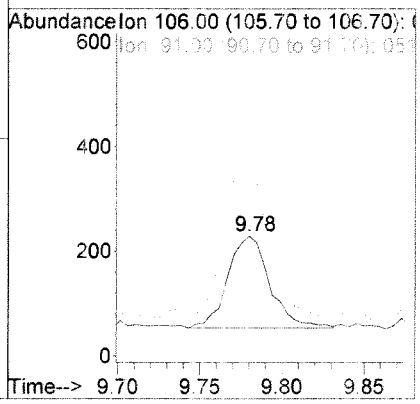


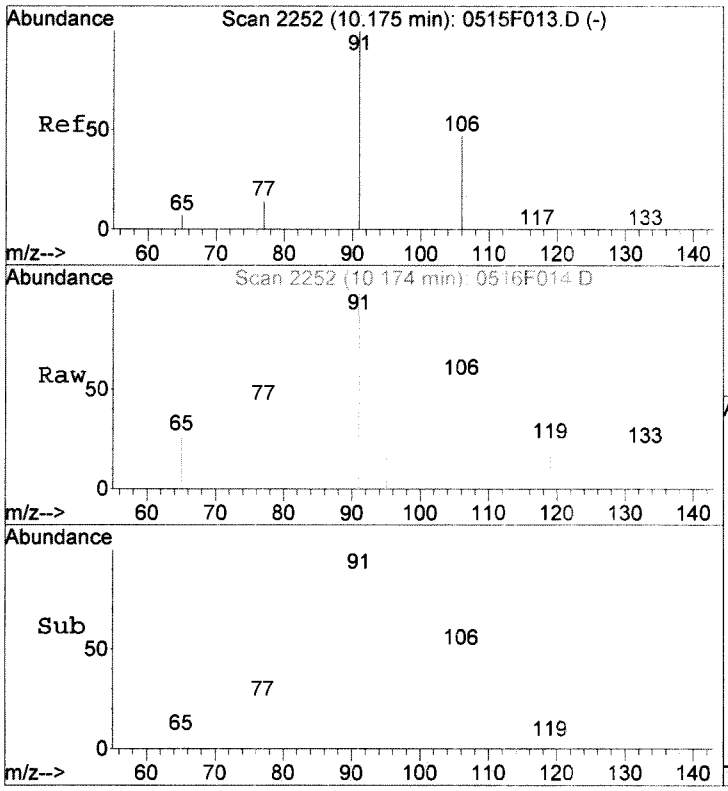


#23
m,p-Xylenes
Concen: 16.97 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion:106 Resp: 313

Ion	Ratio	Lower	Upper
106	100		
91	207.4	166.8	226.8
77	26.1	0.0	58.7

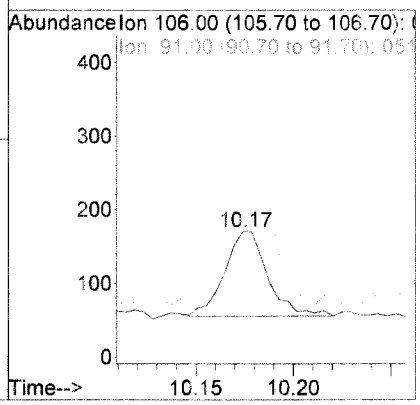


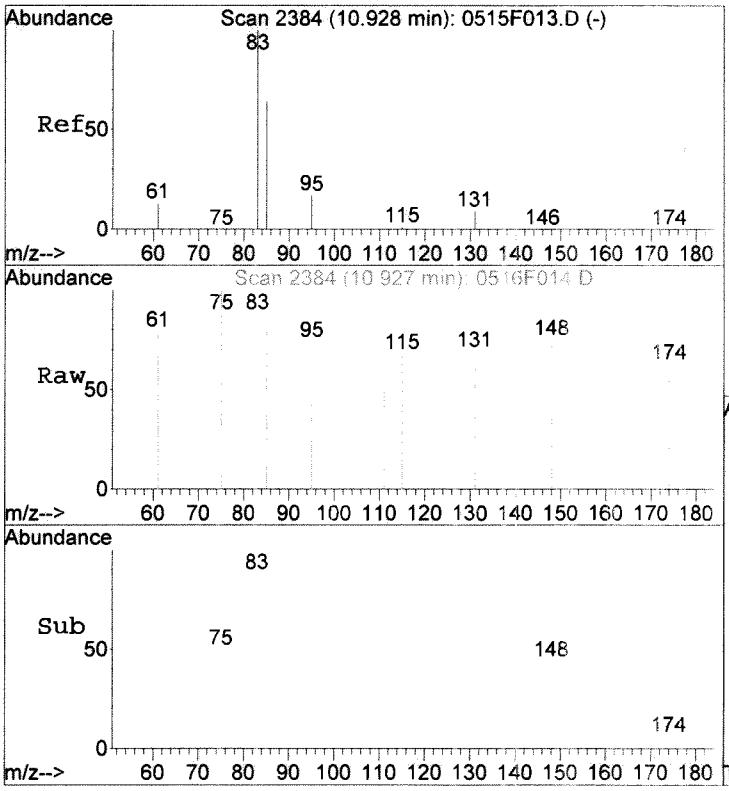


#24
o-Xylene
Concen: 9.30 ng/L
RT: 10.17 min Scan# 2252
Delta R.T. 0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion:106 Resp: 175

Ion	Ratio	Lower	Upper
106	100		
91	204.4	184.3	244.3
65	13.2	0.0	44.6

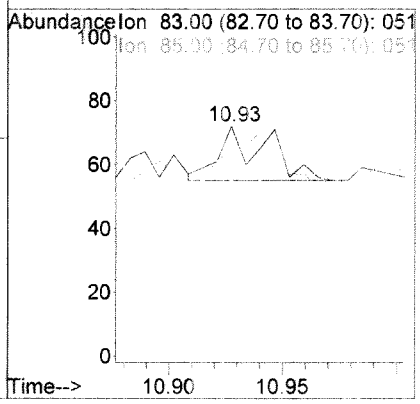


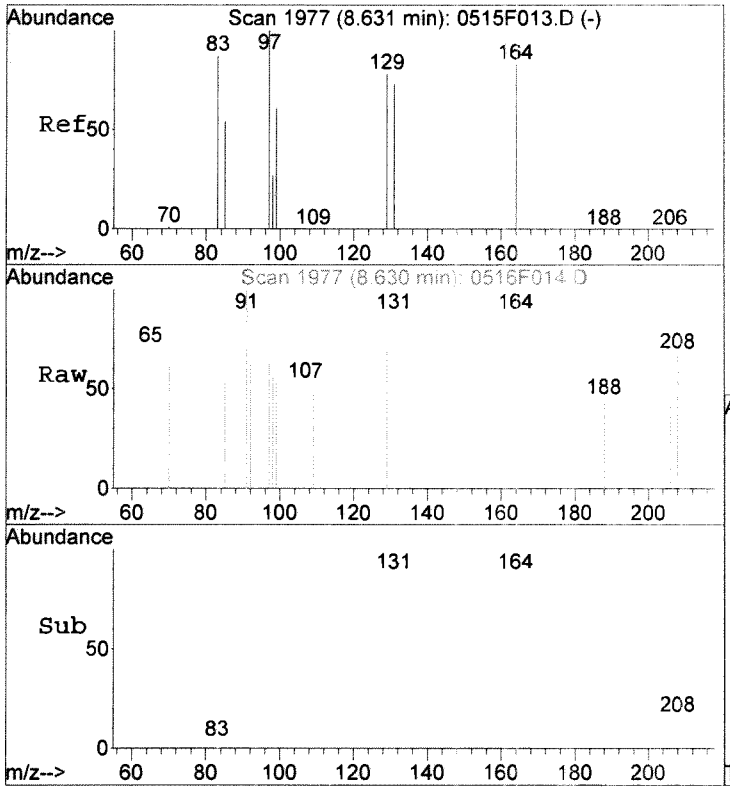


#26
1,1,2,2-Tetrachloroethane
Concen: 1.39 ng/L
RT: 10.93 min Scan# 2384
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion: 83 Resp: 25

Ion	Ratio	Lower	Upper
83	100		
85	41.2	34.1	94.1
131	23.5	0.0	28.8

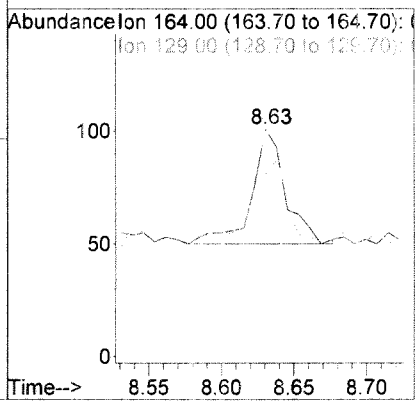


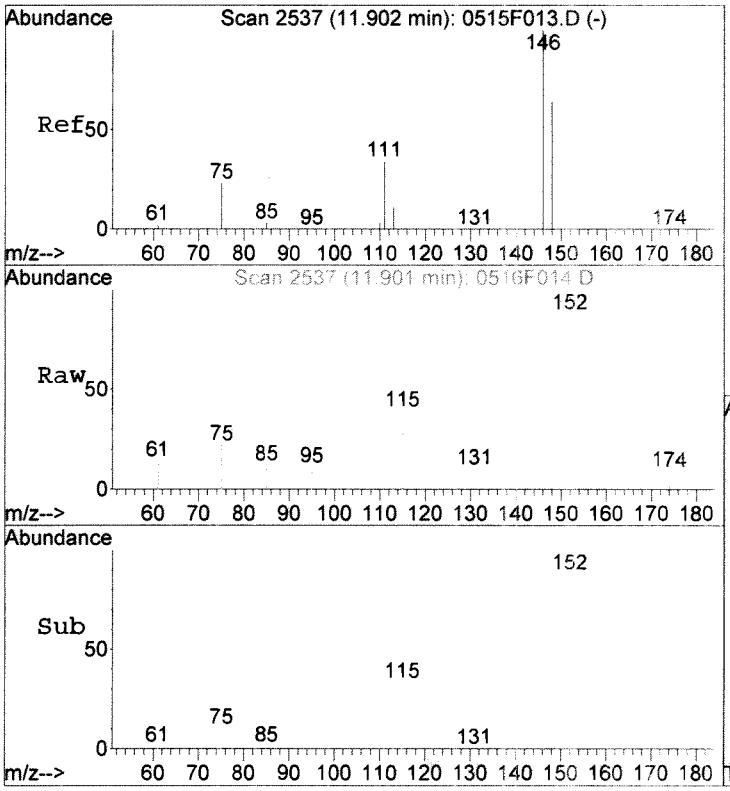


#28
Tetrachloroethene
Concen: 5.36 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion:164 Resp: 84

Ion	Ratio	Lower	Upper
164	100		
129	56.9	63.1	123.1#
131	96.1	57.4	117.4

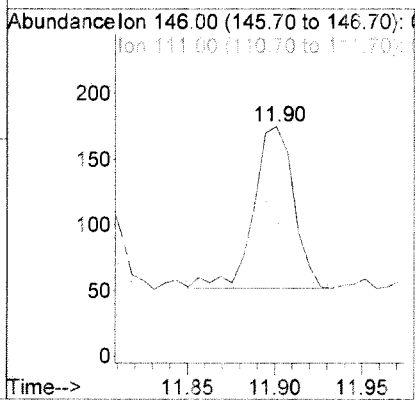




#30
1,4-Dichlorobenzene
Concen: 7.52 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F014.D
Acq: 16 May 2017 04:36 pm

Tgt Ion:146 Resp: 197

Ion	Ratio	Lower	Upper
146	100		
111	43.1	4.0	64.0
148	63.4	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F013.D
Lab ID: KWG1704141-3
RunType: MB
Matrix: WATER

Date Acquired: 05/16/2017 16:08
Date Quantitated: 05/22/2017 11:50
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NT
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: KS 5/22/17

Secondary Review: NJ

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F013.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 16:08	**Quant Date:**	05/22/2017 11:50	**Vial:**	11
Run Type:	MB	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-3			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604864	**Prep Date:**	05/22/2017		

14
MM 5-25-17

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:				**Quant based on**	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	56405	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37159	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	14478	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19441	931.85	93	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	44603	991.40	99	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12387	749.32	75	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	267	8.27	8.27	J	
1	Vinyl Chloride	1.33		0.00	62	59	1.88	4.6	U	
1	1,1-Dichloroethene	2.42		0.00	96	17	0.9700	5.9	U	
1	Methylene Chloride	3.08	0.01	0.00	84	2259	92.48	92.5	J	
1	trans-1,2-Dichloroethene	3.36		0.00	96	42	2.12	3.5	U	
1	cis-1,2-Dichloroethene				96	0		6.5	U	
1	Chloroform	5.39		0.00	83	4804	118.44	118		
1	Carbon Tetrachloride	5.38	-0.28	-0.04	117	26	0.9700	7.2	U	
1	Benzene	5.97		0.00	78	1513	19.62	19.6	J	
1	1,2-Dichloroethane	6.35	0.23	0.04	62	914	31.78	31.8		
1	Trichloroethene (TCE)	6.74		0.00	95	71	3.74	3.9	U	
1	Bromodichloromethane	7.36		0.00	83	31	1.14	3.4	U	
1	1,1,2-Trichloroethane	8.63		0.00	83	23	1.51	9.0	U	
1	Dibromochloromethane	8.63	-0.35	-0.06	129	74	3.93	8.8	U	
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	34	2.29	4.5	U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F013.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 16:08	**Quant Date:**	05/22/2017 11:53	**Vial:**	13
Run Type:	MB	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-3			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12	0.01	0.00	92	366	11.22	11.2	J	
2	Ethylbenzene	9.66	0.01	0.00	106	50	3.18	5.6	U	
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	20	1.02	3.9	U	
2	m,p-Xylenes	9.78		0.00	106	162	9.00	9.5	U	
2	o-Xylene	10.18		0.00	106	132	7.19	7.19	J	
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	38	2.17	8.7	U	
2	1,2,3-Trichloropropane	10.97		0.00	110	19	3.46	11	U	
2	Tetrachloroethene (PCE)	8.62	-0.01	0.00	164	85	5.56	5.9	U	
3	1,4-Dichlorobenzene	11.90		0.00	146	180	6.89	7.1	U	

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
a: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F013.D Vial: 11
Acq On : 16 May 2017 04:08 pm Operator: GH
Sample : MB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:50:39 2017 Quant Results File: 051517MS30_8260SIM.RES

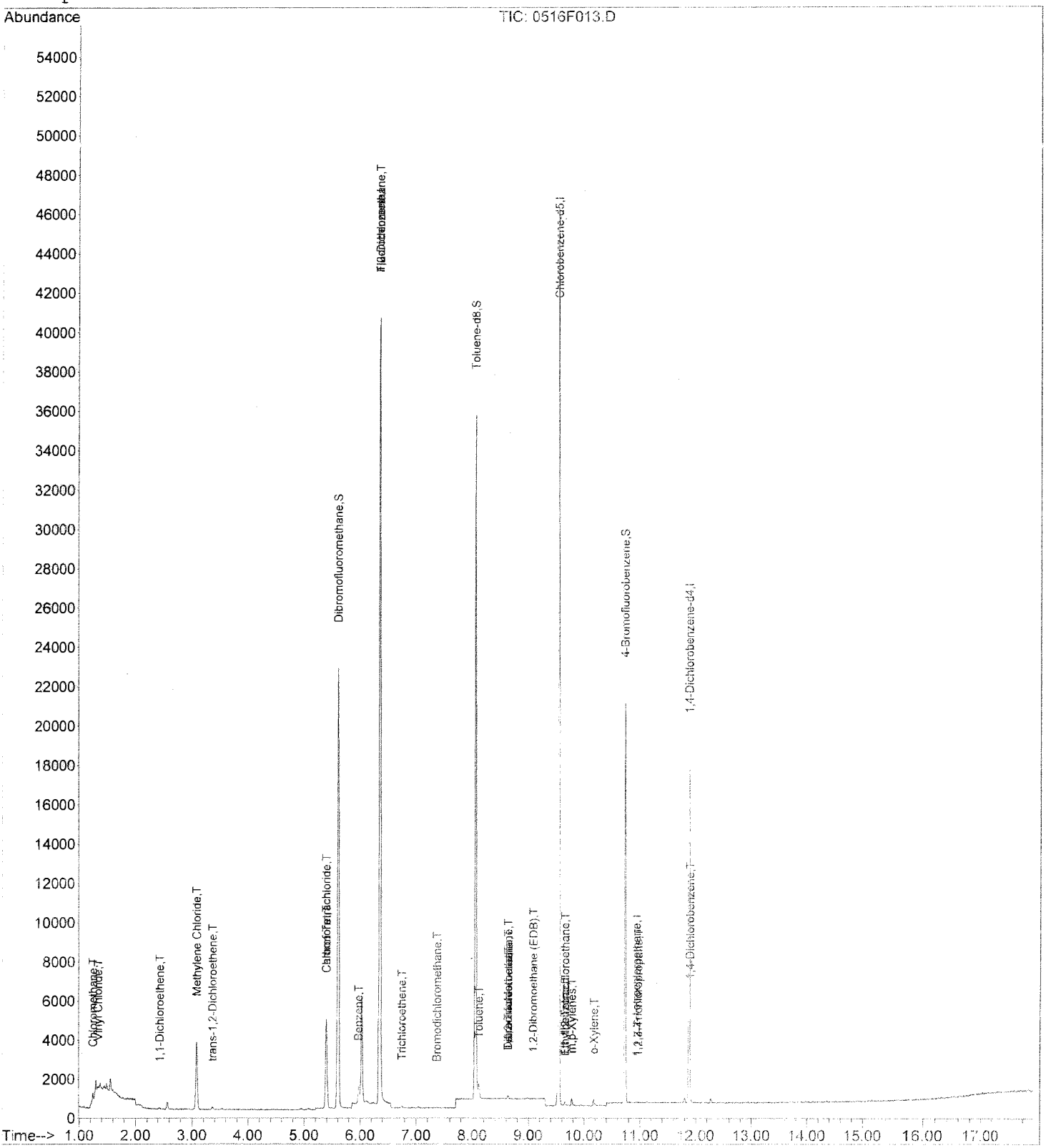
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	56405	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	37159	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14478	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19441	931.85	ng/L		0.00
Spiked Amount 1000.000			Recovery = 93.19%				
15) Toluene-d8	8.05	98	44603	991.40	ng/L		0.00
Spiked Amount 1000.000			Recovery = 99.14%				
25) 4-Bromofluorobenzene	10.73	95	12387	749.32	ng/L		0.00
Spiked Amount 1000.000			Recovery = 74.93%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	267	8.27	ng/L		91
3) Vinyl Chloride	1.33	62	59	1.88	ng/L	#	42
4) 1,1-Dichloroethene	2.42	96	17	0.97	ng/L	#	14
5) Methylene Chloride	3.08	84	2259	92.48	ng/L		95
6) trans-1,2-Dichloroethene	3.36	96	42	2.12	ng/L	#	56
8) Chloroform	5.39	83	4804	118.44	ng/L		98
10) Carbon Tetrachloride	5.38	117	26	0.97	ng/L	#	37
11) Benzene	5.97	78	1513	19.62	ng/L		94
12) 1,2-Dichloroethane	6.35	62	914	31.78	ng/L	#	8
13) Trichloroethene	6.74	95	71	3.74	ng/L	#	65
14) Bromodichloromethane	7.36	83	31	1.14	ng/L		74
16) 1,1,2-Trichloroethane	8.63	83	23	1.51	ng/L	#	78
17) Dibromochloromethane	8.63	129	74	3.93	ng/L		92
18) 1,2-Dibromoethane (EDB)	9.09	107	34	2.29	ng/L	#	27
20) Toluene	8.12	92	366	11.22	ng/L		92
21) Ethylbenzene	9.66	106	50	3.18	ng/L	#	74
22) 1,1,1,2-Tetrachloroethane	9.67	131	20	1.02	ng/L	#	29
23) m,p-Xylenes	9.78	106	162	9.00	ng/L		90
24) o-Xylene	10.18	106	132	7.19	ng/L	#	74
26) 1,1,2,2-Tetrachloroethane	10.93	83	38	2.17	ng/L	#	66
27) 1,2,3-Trichloropropane	10.97	110	19	3.46	ng/L	#	27
28) Tetrachloroethene	8.62	164	85	5.56	ng/L	#	68
30) 1,4-Dichlorobenzene	11.90	146	180	6.89	ng/L		81

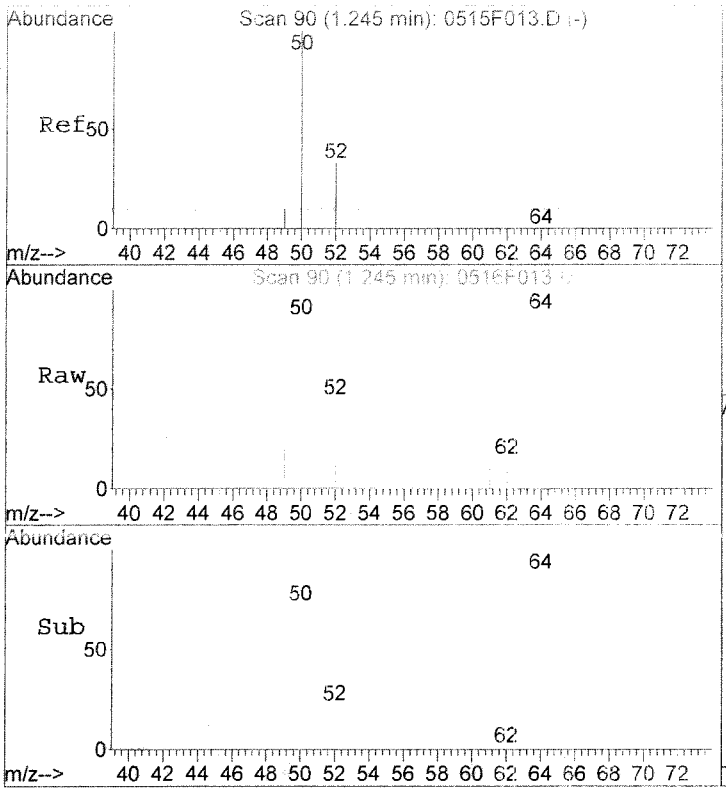
(#) = qualifier out of range (m) = manual integration
0516F013.D 051517MS30_8260SIM.M Mon May 22 11:50:40 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F013.D Vial: 11
Acq On : 16 May 2017 04:08 pm Operator: GH
Sample : MB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:50 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



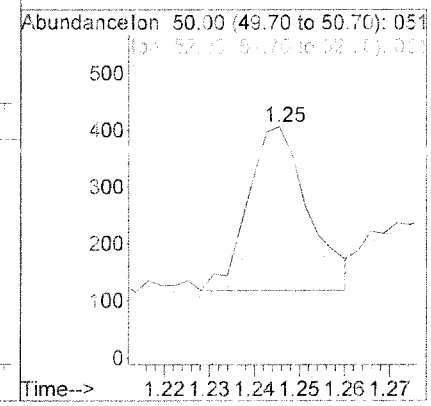
0516F013.D 051517MS30_8260SIM.M Mon May 22 11:50:41 2017 Page 2

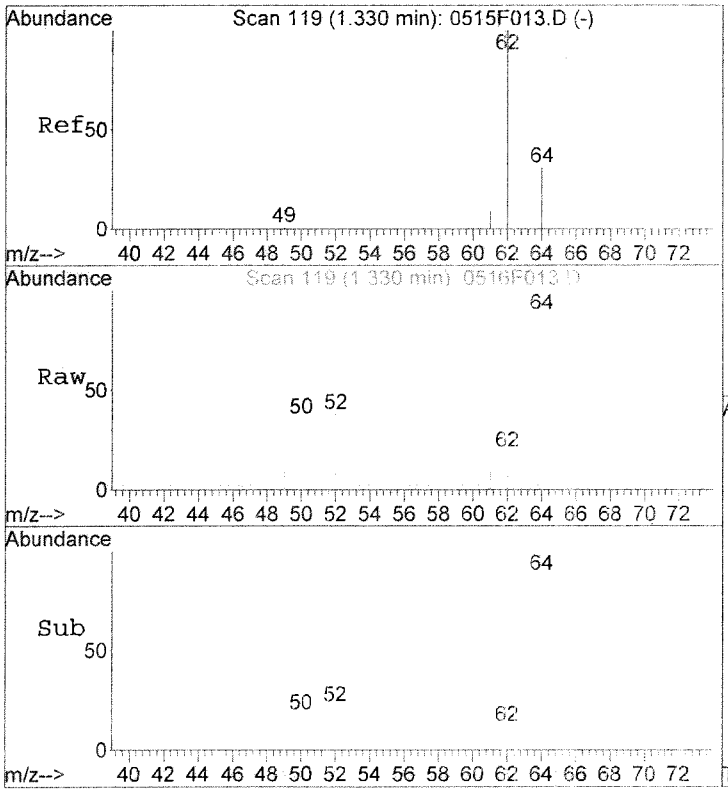


#2
Chloromethane
Concen: 8.27 ng/L
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 50 Resp: 267

Ion	Ratio	Lower	Upper
50	100		
52	38.9	2.5	62.5
49	10.8	0.0	40.3

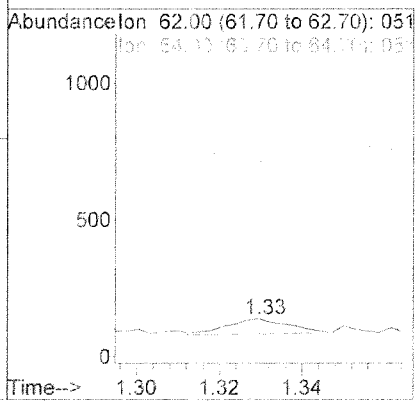


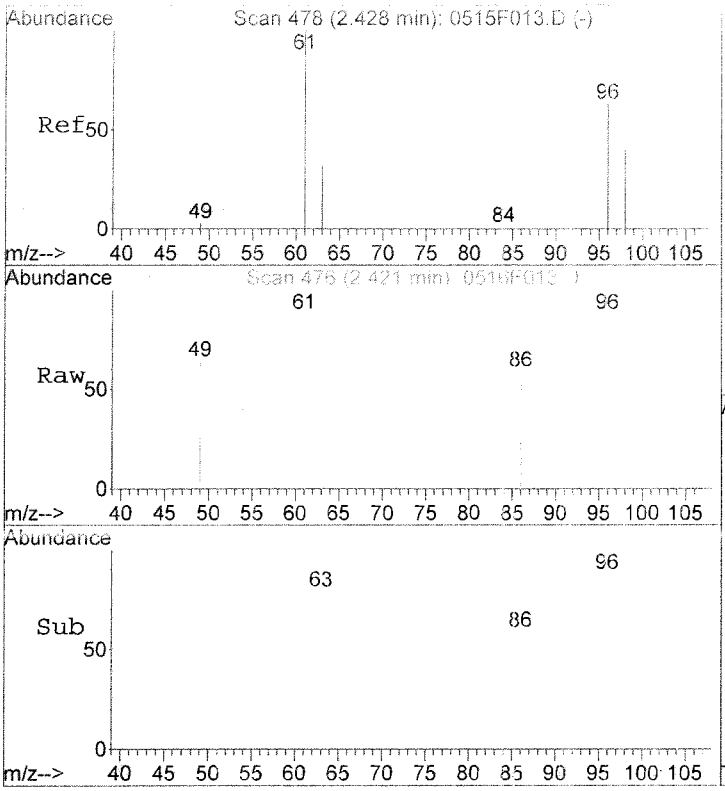


#3
Vinyl Chloride
Concen: 1.88 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 62 Resp: 59

Ion	Ratio	Lower	Upper
62	100		
64	0.0	1.5	61.5#
61	30.8	0.0	38.6

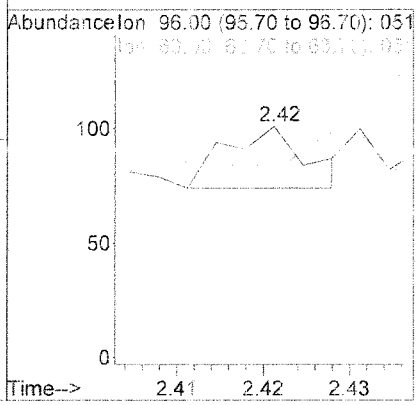


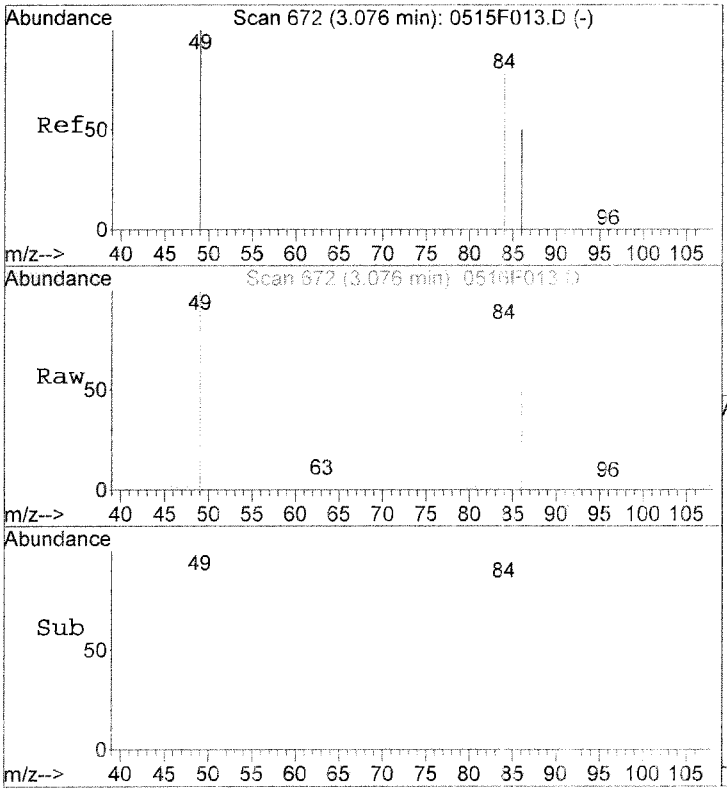


#4
1,1-Dichloroethene
Concen: 0.97 ng/L
RT: 2.42 min Scan# 476
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 96 Resp: 17

Ion	Ratio	Lower	Upper
96	100		
63	0.0	21.4	81.4#
61	40.7	129.1	189.1#

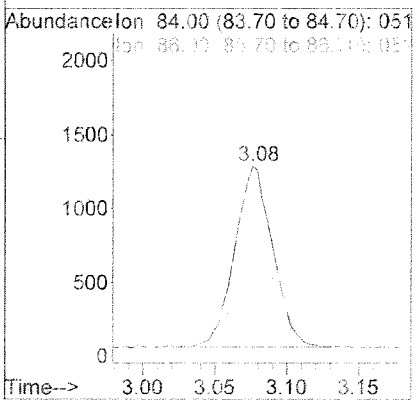


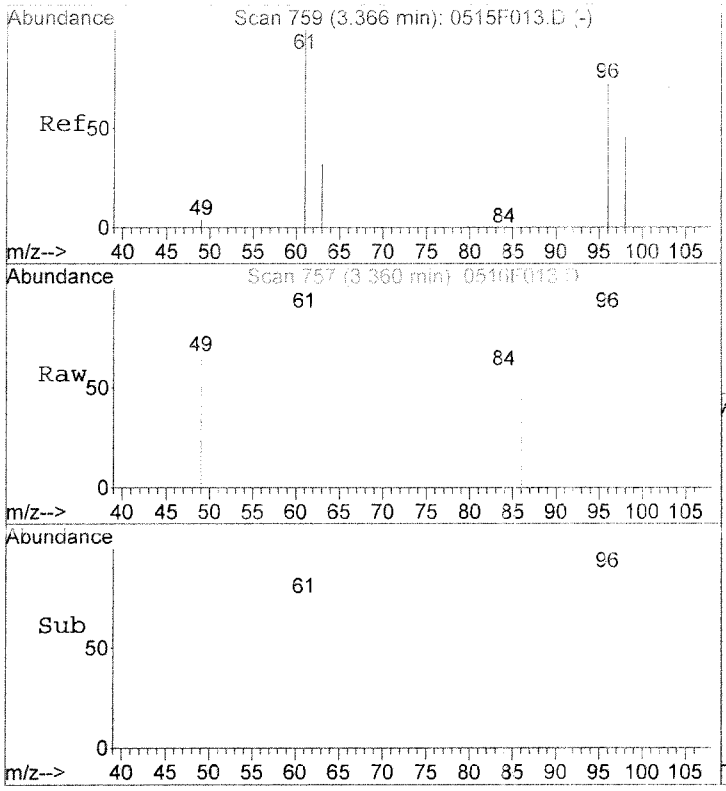


#5
Methylene Chloride
Concen: 92.48 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 84 Resp: 2259

Ion	Ratio	Lower	Upper
84	100		
86	61.6	34.0	94.0
49	121.1	98.8	158.8

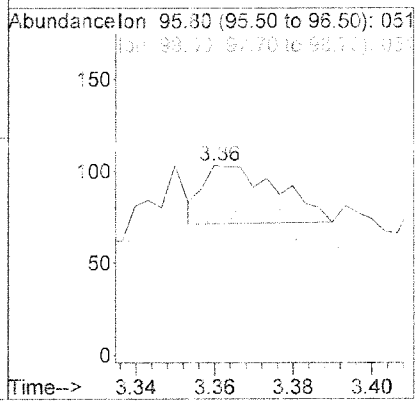


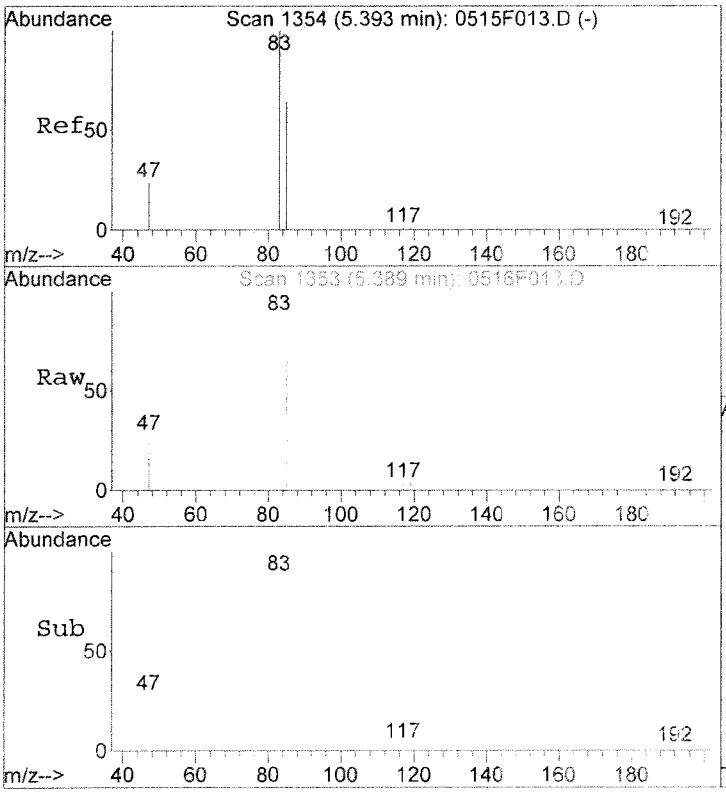


#6
trans-1,2-Dichloroethene
Concen: 2.12 ng/L
RT: 3.36 min Scan# 757
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 96 Resp: 42

Ion	Ratio	Lower	Upper
96	100		
98	38.7	32.9	92.9
61	77.4	107.3	167.3#

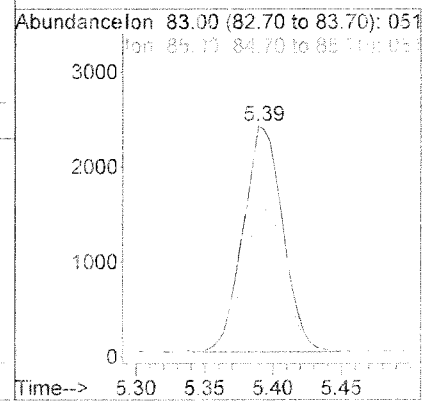


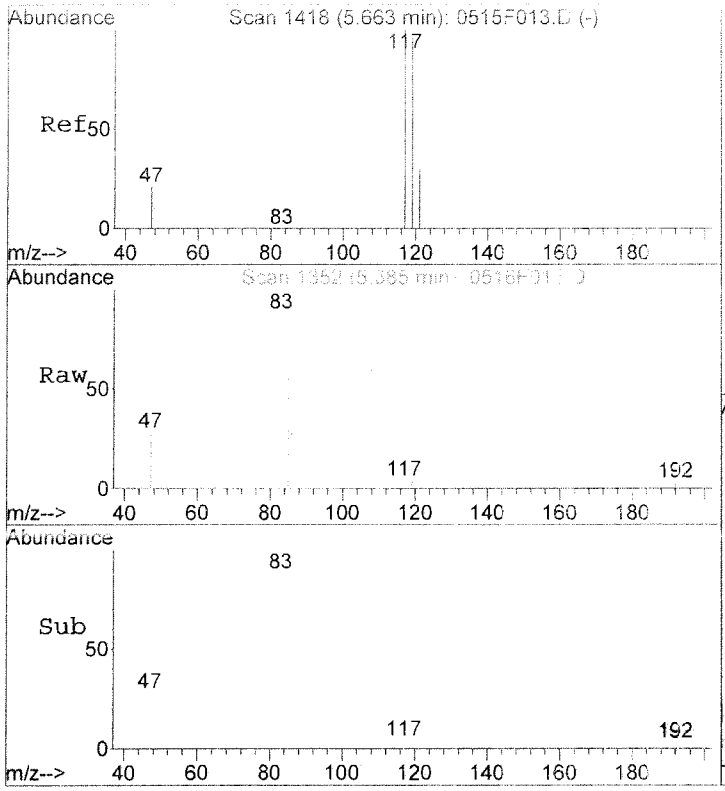


#8
Chloroform
Concen: 118.44 ng/L
RT: 5.39 min Scan# 1353
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 4804

Ion	Ratio	Lower	Upper
83	100		
85	63.3	34.0	94.0
47	25.6	0.0	53.5

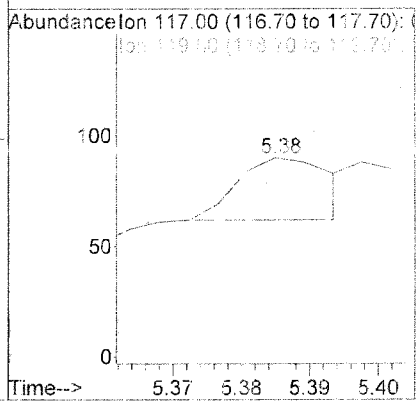


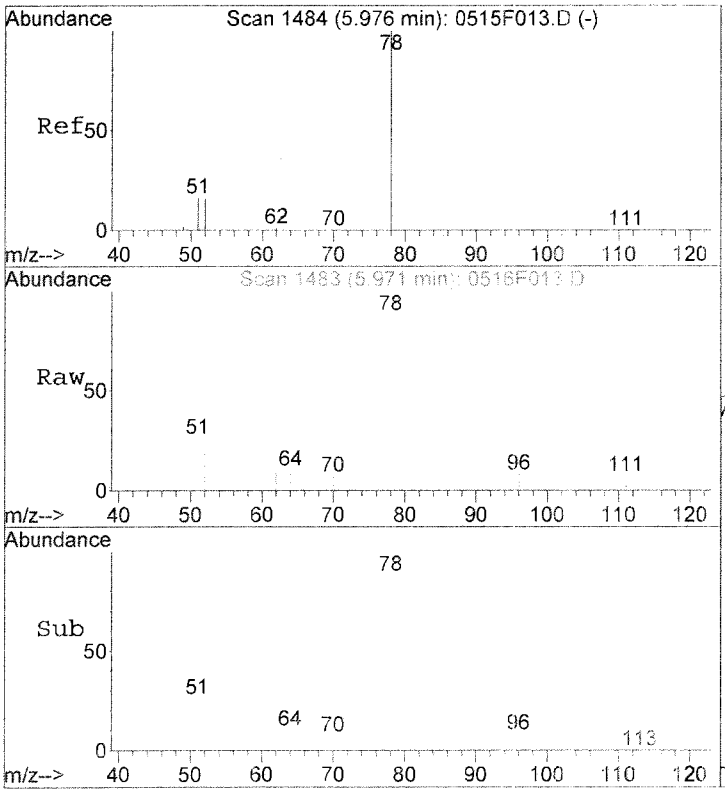


#10
Carbon Tetrachloride
Concen: 0.97 ng/L
RT: 5.38 min Scan# 1352
Delta R.T. -0.28 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:117 Resp: 26

Ion	Ratio	Lower	Upper
117	100		
119	32.1	65.9	125.9#
121	0.0	0.3	60.3#

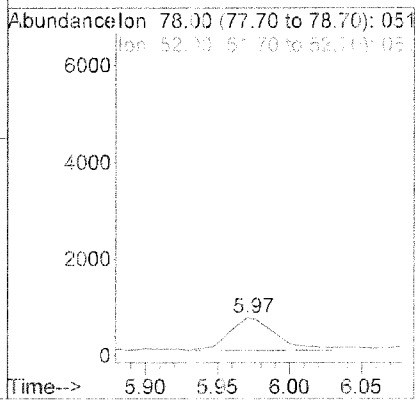


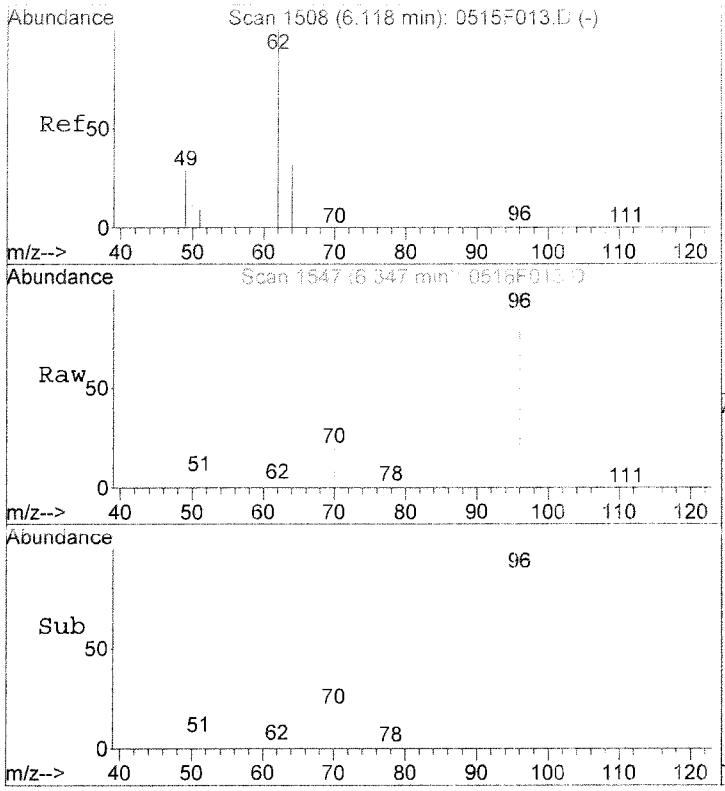


#11
Benzene
Concen: 19.62 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 78 Resp: 1513

Ion	Ratio	Lower	Upper
78	100		
52	11.6	0.0	45.8
51	17.1	0.0	46.5

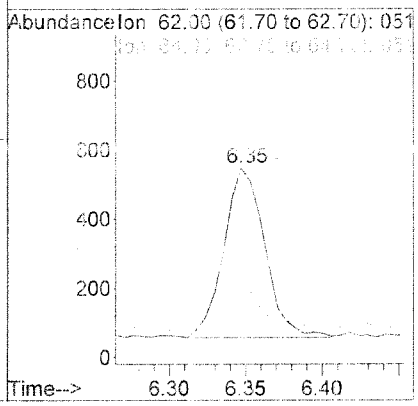


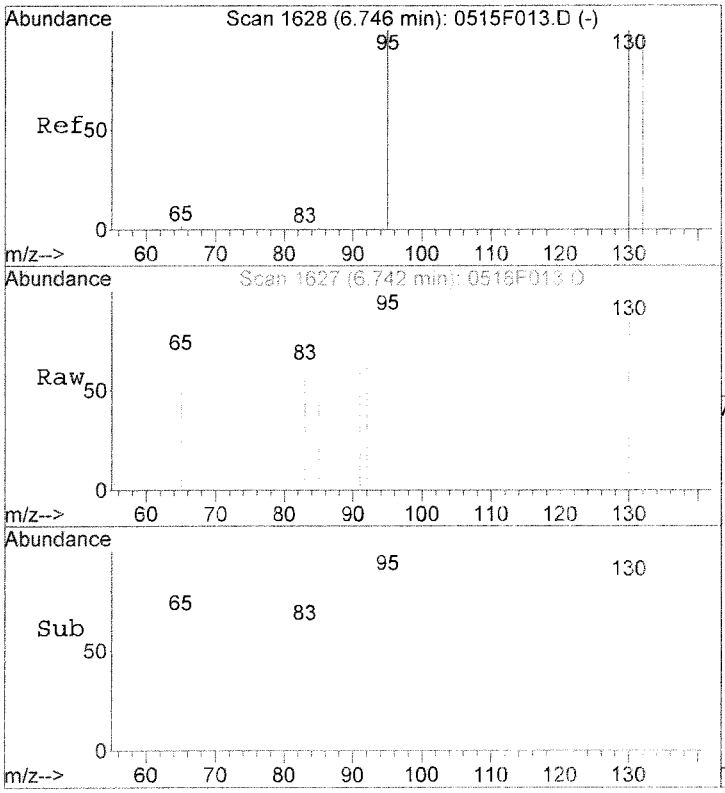


#14
1,2-Dichloroethane
Concen: 31.78 ng/L
RT: 6.35 min Scan# 1547
Delta R.T. 0.23 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 62 Resp: 914

Ion	Ratio	Lower	Upper
62	100		
64	22.2	2.1	62.1
49	121.8	0.0	58.7#

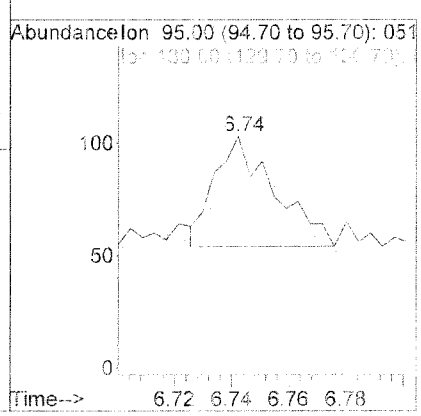


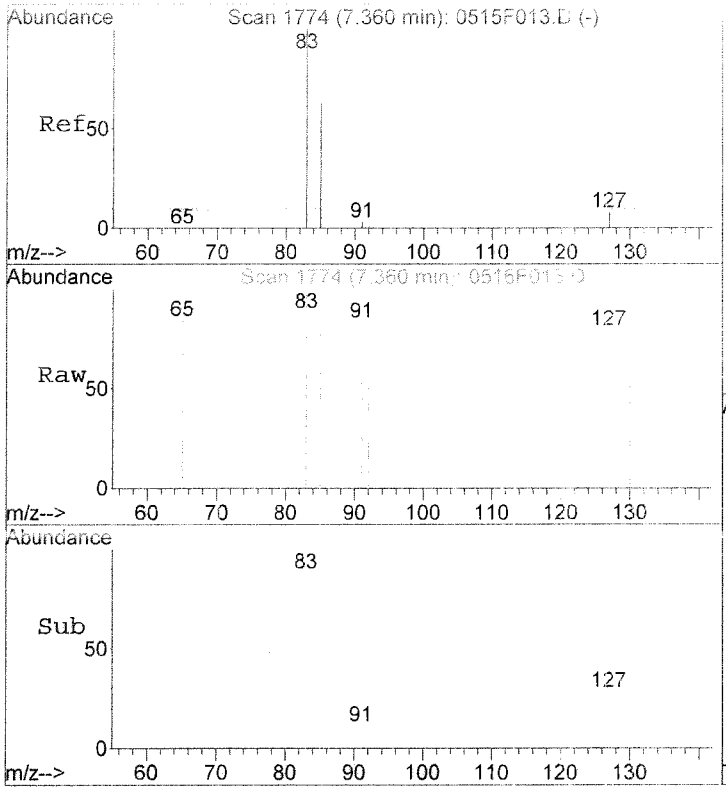


#13
Trichloroethene
Concen: 3.74 ng/L
RT: 6.74 min Scan# 1627
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 95 Resp: 71

Ion	Ratio	Lower	Upper
95	100		
130	75.5	69.5	129.5
132	51.0	67.2	127.2#

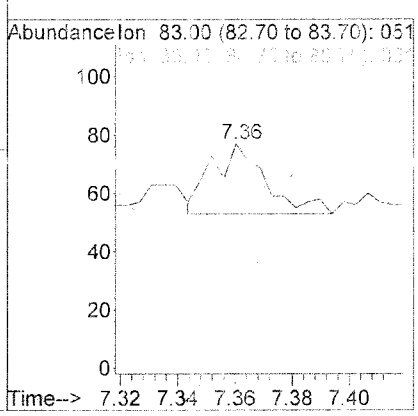


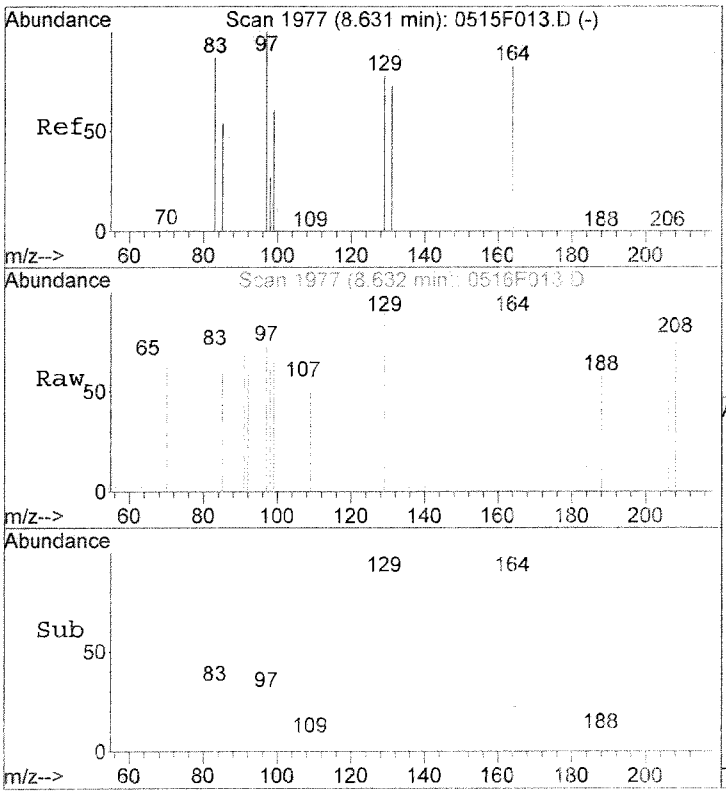


#14
Bromodichloromethane
Concen: 1.14 ng/L
RT: 7.36 min Scan# 1774
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 31

Ion	Ratio	Lower	Upper
83	100		
85	45.8	33.1	93.1
127	29.2	0.0	38.1

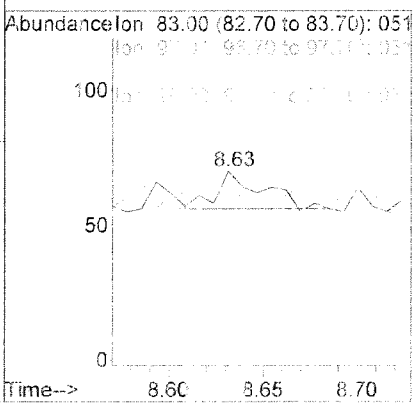


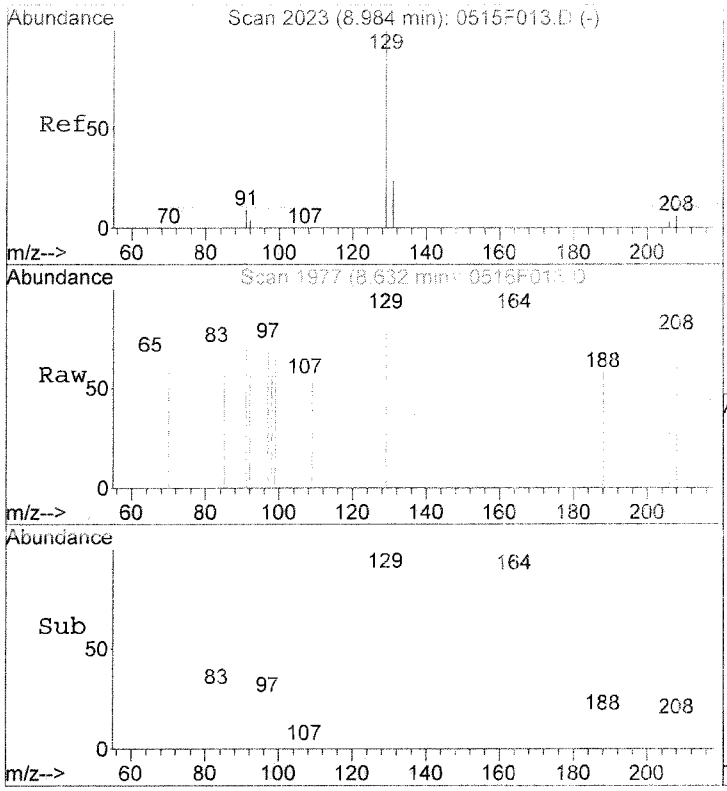


#16
1,1,2-Trichloroethane
Concen: 1.51 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 23

Ion	Ratio	Lower	Upper
83	100		
97	135.7	84.4	144.4
85	28.6	32.3	92.3#
99	64.3	39.4	99.4

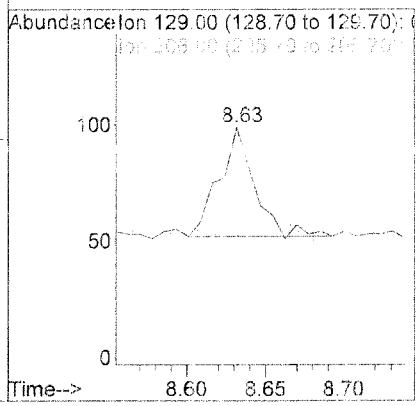


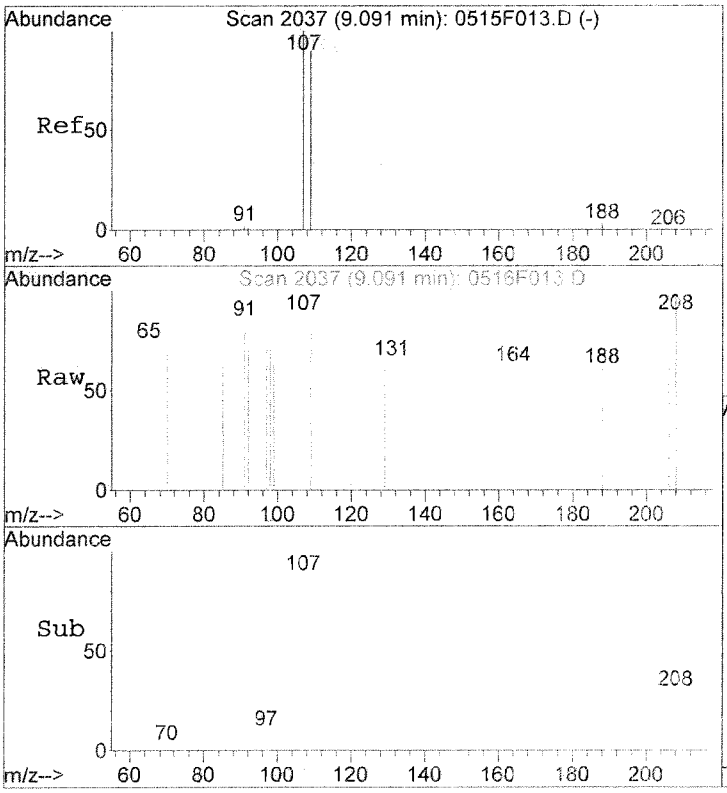


#17
Dibromochloromethane
Concen: 3.93 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.35 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:129 Resp: 74

Ion	Ratio	Lower	Upper
129	100		
206	0.0	0.0	32.8
208	8.5	0.0	35.9

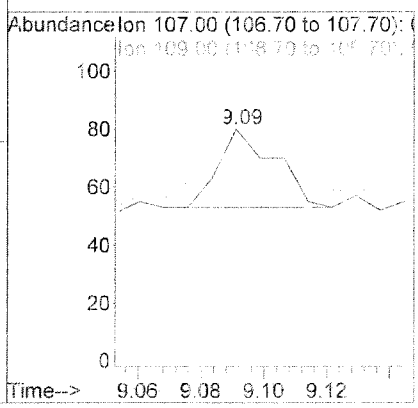


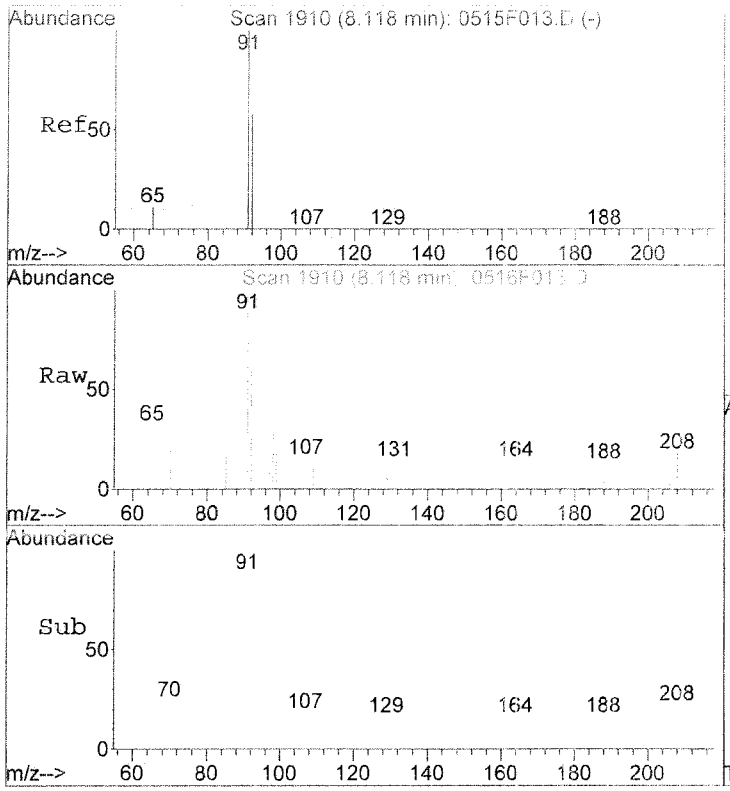


#18
1,2-Dibromoethane (EDB)
Concen: 2.29 ng/L
RT: 9.09 min Scan# 2037
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:107 Resp: 34

Ion	Ratio	Lower	Upper
107	100		
109	18.5	60.3	120.3#
188	3.7	0.0	33.5

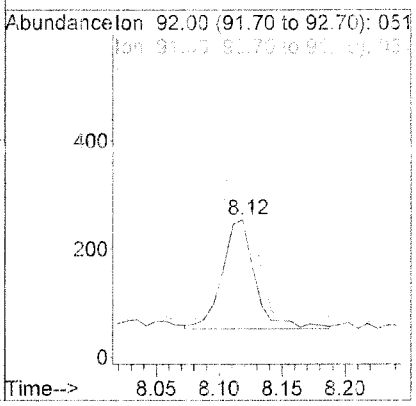


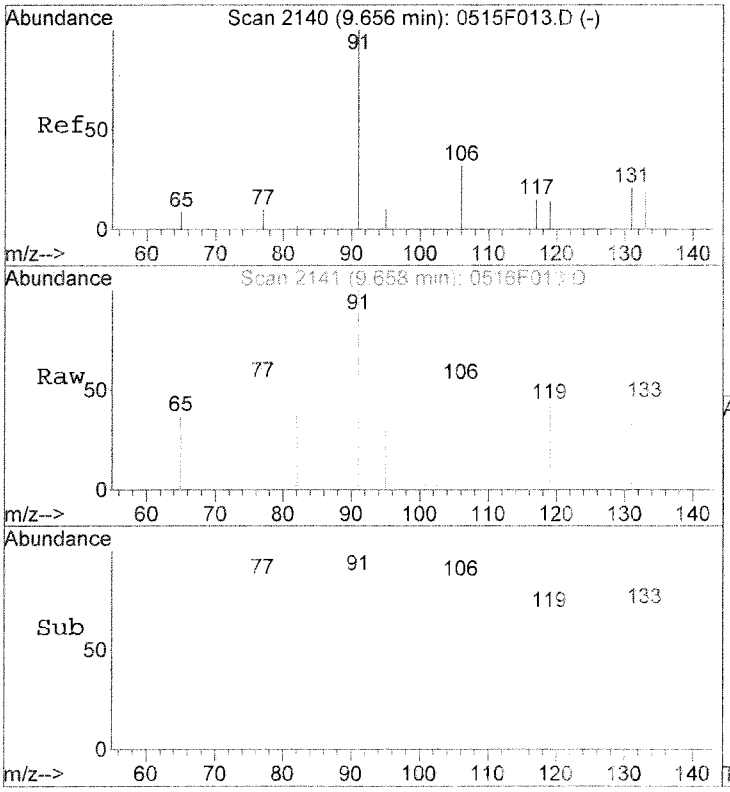


#20
Toluene
Concen: 11.22 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 92 Resp: 366

Ion	Ratio	Lower	Upper
92	100		
91	163.6	143.6	203.6
65	28.3	0.0	49.9

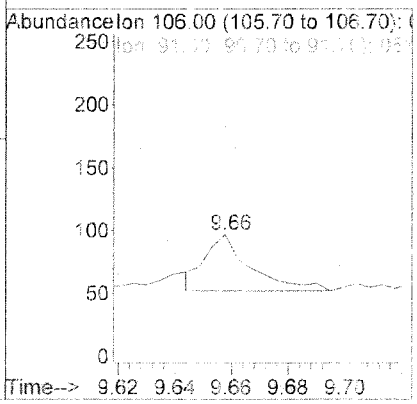


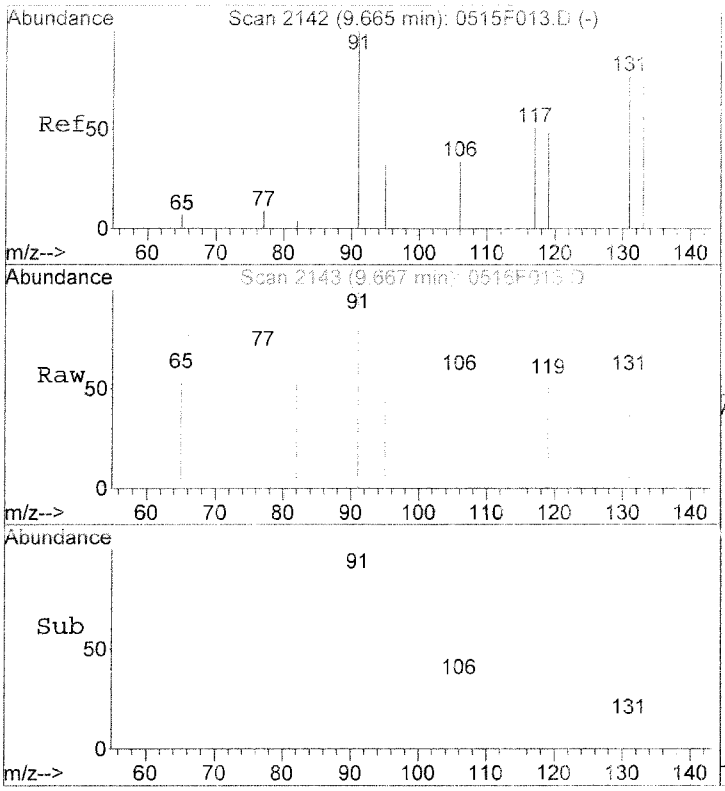


#21
Ethylbenzene
Concen: 3.18 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 50

Ion	Ratio	Lower	Upper
106	100		
91	264.4	285.7	345.7#
77	46.7	1.3	61.3

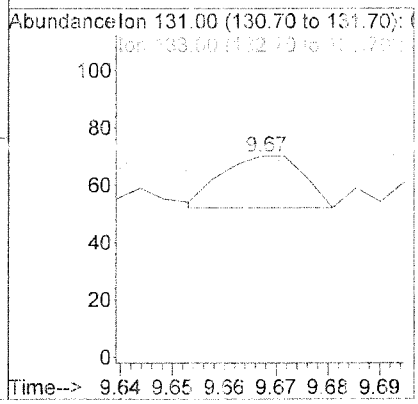


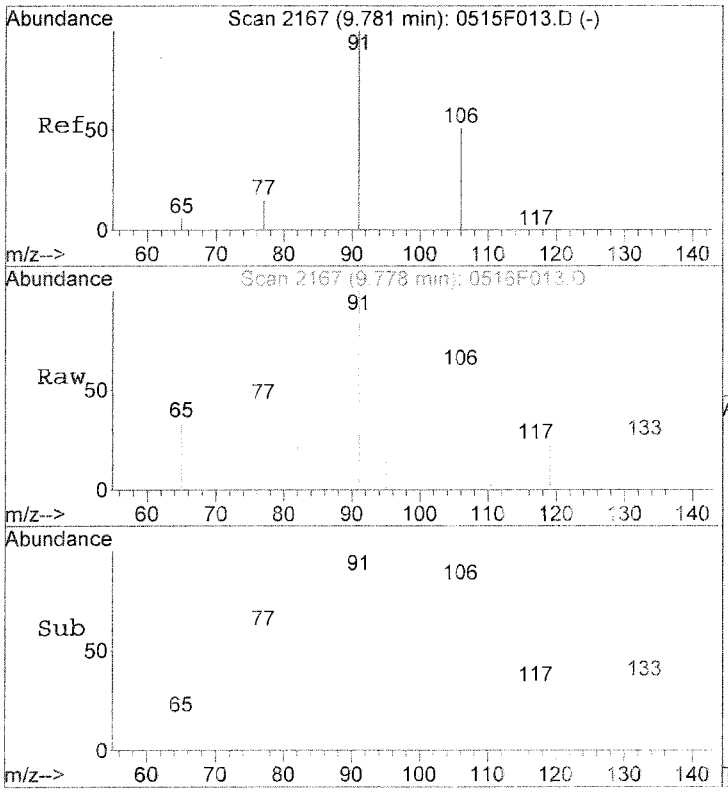


#22
1,1,1,2-Tetrachloroethane
Concen: 1.02 ng/L
RT: 9.67 min Scan# 2143
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:131 Resp: 20

Ion	Ratio	Lower	Upper
131	100		
133	33.3	74.4	114.4#
119	0.0	43.9	83.9#

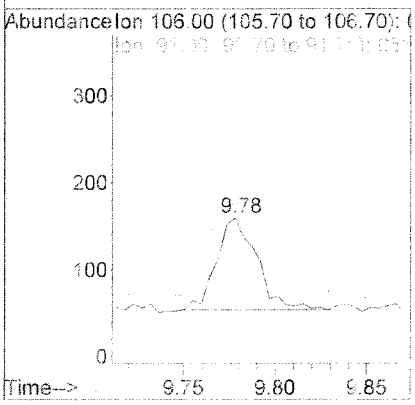


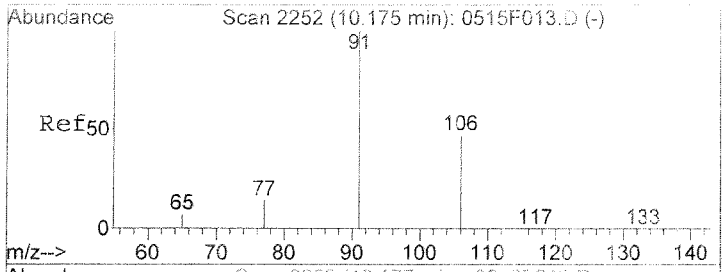


#23
m,p-Xylenes
Concen: 9.00 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 162

Ion	Ratio	Lower	Upper
106	100		
91	184.0	166.8	226.8
77	38.7	0.0	58.7

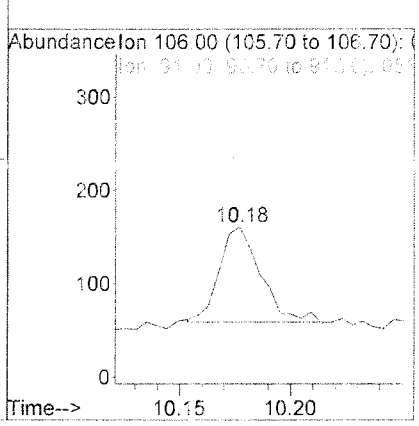


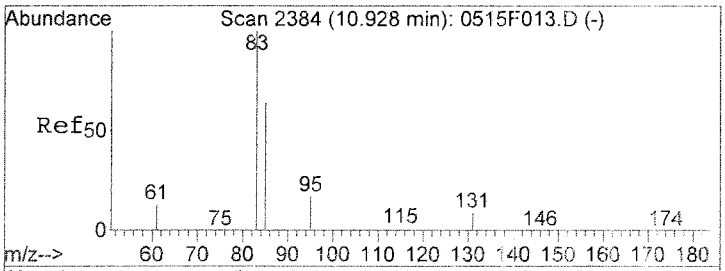


#24
o-Xylene
Concen: 7.19 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 132

Ion	Ratio	Lower	Upper
106	100		
91	171.6	184.3	244.3#
65	11.8	0.0	44.6

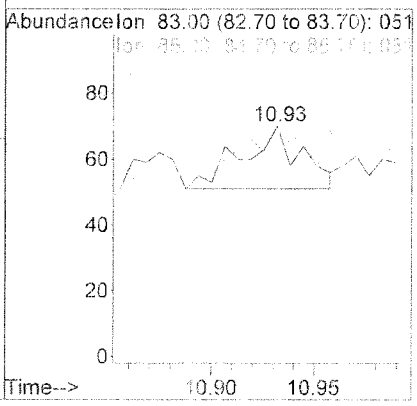


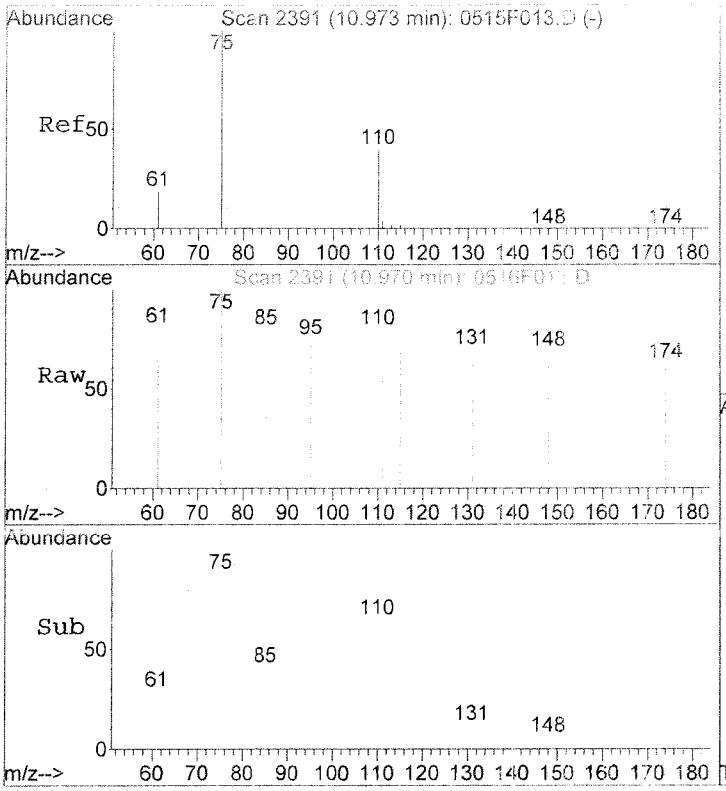


#26
1,1,2,2-Tetrachloroethane
Concen: 2.17 ng/L
RT: 10.93 min Scan# 2385
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 38

Ion	Ratio	Lower	Upper
83	100		
85	42.1	34.1	94.1
131	36.8	0.0	28.8#

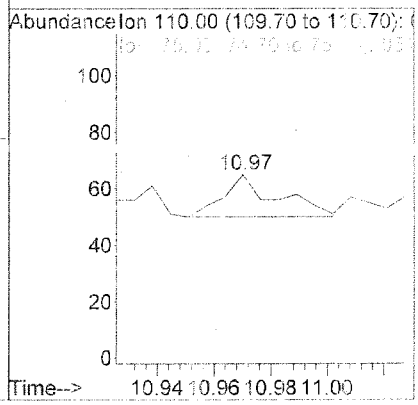


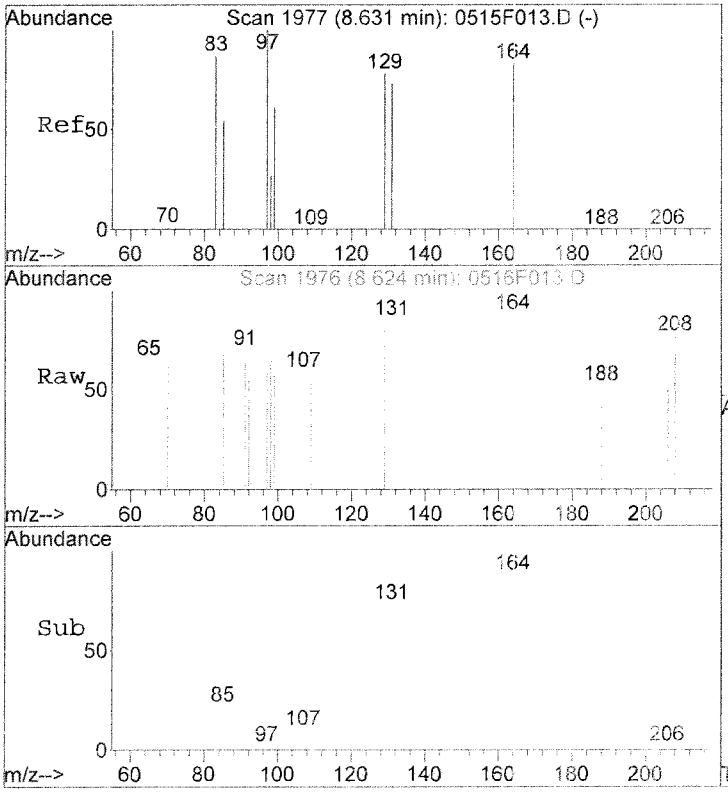


#27
1,2,3-Trichloropropane
Concen: 3.46 ng/L
RT: 10.97 min Scan# 2391
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:110 Resp: 19

Ion	Ratio	Lower	Upper
110	100		
75	126.7	230.6	270.6#
61	0.0	40.1	80.1#

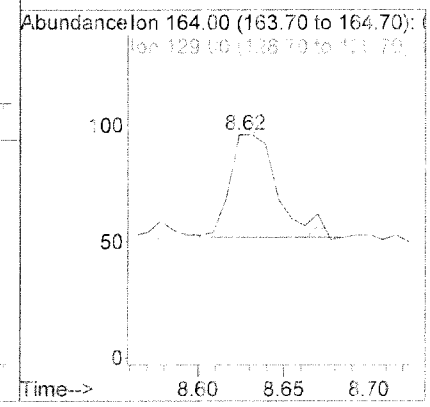


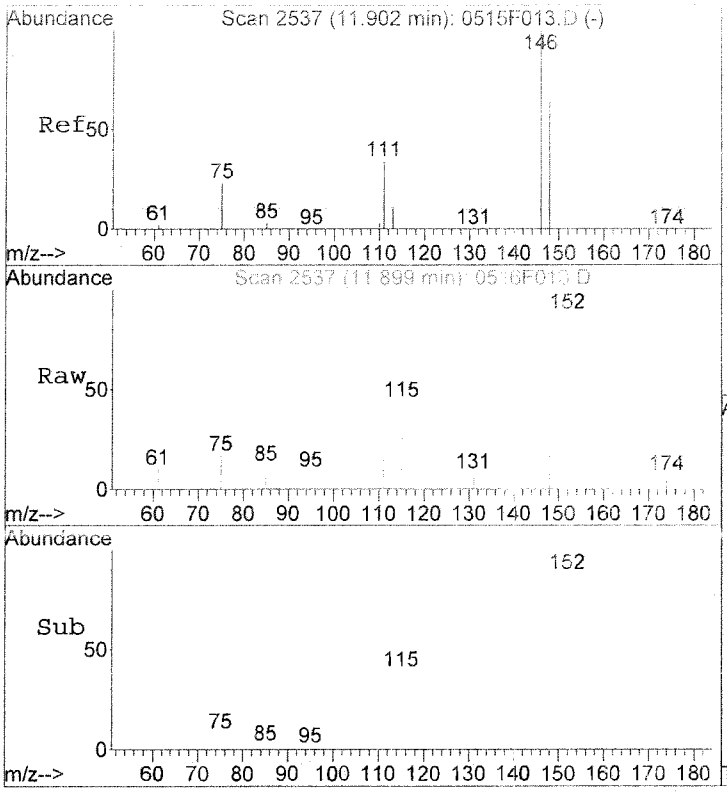


#28
Tetrachloroethene
Concen: 5.56 ng/L
RT: 8.62 min Scan# 1976
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:164 Resp: 85

Ion	Ratio	Lower	Upper
164	100		
129	56.8	63.1	123.1#
131	63.6	57.4	117.4

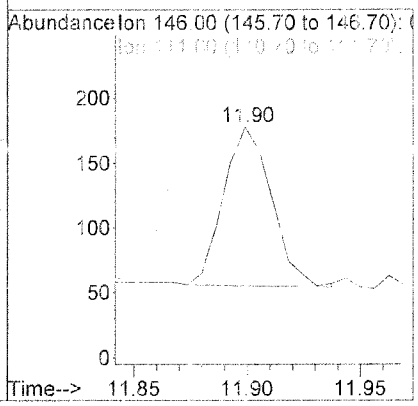




#30
1,4-Dichlorobenzene
Concen: 6.89 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:146 Resp: 180

Ion	Ratio	Lower	Upper
146	100		
111	36.1	4.0	64.0
148	86.1	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F010.D
Lab ID: KWG1704141-1
RunType: LCS
Matrix: WATER

Date Acquired: 05/16/2017 14:43
Date Quantitated: 05/16/2017 15:13
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NR
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: K. Shelton

Secondary Review:

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F010.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:43	**Quant Date:**	05/16/2017 15:10	**Vial:**	8
Run Type:	LCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-1			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604862	**Prep Date:**	05/22/2017		

M 5/25/17

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D			**Quant based on**	**Method**

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	58644	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	39127	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	18416	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19719	909.09	91	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	47162	1,008	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	14476	831.64	83	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	66304	1.975	1980		
1	Vinyl Chloride	1.33		0.00	62	65973	2.022	2020		
1	1,1-Dichloroethene	2.43	0.01	0.00	96	36052	1.987	1990		
1	Methylene Chloride	3.08	0.01	0.00	84	51307	2.020	2020		
1	trans-1,2-Dichloroethene	3.36		0.00	96	40499	1.969	1970		
1	cis-1,2-Dichloroethene	4.95		0.00	96	38412	1.958	1960		
1	Chloroform	5.39		0.00	83	85949	2.038	2040		
1	Carbon Tetrachloride	5.66		0.00	117	56845	2.043	2040		
1	Benzene	5.97		0.00	78	151781	1.894	1890		
1	1,2-Dichloroethane	6.12		0.00	62	55698	1.863	1860		
1	Trichloroethene (TCE)	6.74		0.00	95	40211	2.040	2040		
1	Bromodichloromethane	7.36		0.00	83	52915	1.874	1870		
1	1,1,2-Trichloroethane	8.63		0.00	83	29227	1.849	1850		
1	Dibromochloromethane	8.98		0.00	129	35099	1.792	1790		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	29187	1.889	1890		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F010.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:43	**Quant Date:**	05/16/2017 15:10	**Vial:**	8
Run Type:	LCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-1			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11		0.00	92	67393	1.963	1960		
2	Ethylbenzene	9.65		0.00	106	32989	1.992	1990		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	39185	1.899	1900		
2	m,p-Xylenes	9.78		0.00	106	78163	4.123	4120		
2	o-Xylene	10.18		0.00	106	39126	2.023	2020		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	32750	1.777	1780		
2	1.2.3-Trichloropropane	10.97		0.00	110	10584	1.832	1830		
2	Tetrachloroethene (PCE)	8.63		0.00	164	32099	1.994	1990		
3	1,4-Dichlorobenzene	11.90		0.00	146	70690	2.127	2130		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Lab Control Spike Summary Report

Lab Control Spike Information — ListJoinID : LI18885

Data File:	I:\MS30\DATA\051617_SIM\0516F010.D	**Instrument:**	MS30
Lab ID:	KWG1704141-1	**Dilution:**	1
Client ID:	Lab Control Sample	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/16/2017 14:43
Matrix:	WATER	**Quant Date:**	05/16/2017 15:10

Duplicate Lab Control Spike Information

Data File:	I:\MS30\DATA\051617_SIM\0516F011.D	**Instrument:**	MS30
Lab ID:	KWG1704141-2	**Dilution:**	1
Client ID:	Duplicate Lab Control Sample	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/16/2017 15:13
Matrix:	WATER	**Quant Date:**	05/16/2017 16:09

	LCS			DLCS					
Parameter Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	2020	2000	101	2030	2000	102	70-136	1	20

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Data File : I:\MS30\DATA\051617_SIM\0516F010.D Vial: 8
Acq On : 16 May 2017 02:43 pm Operator: GH
Sample : SIM LCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 15:10:15 2017 Quant Results File: 051517MS30_8260SIM.RES

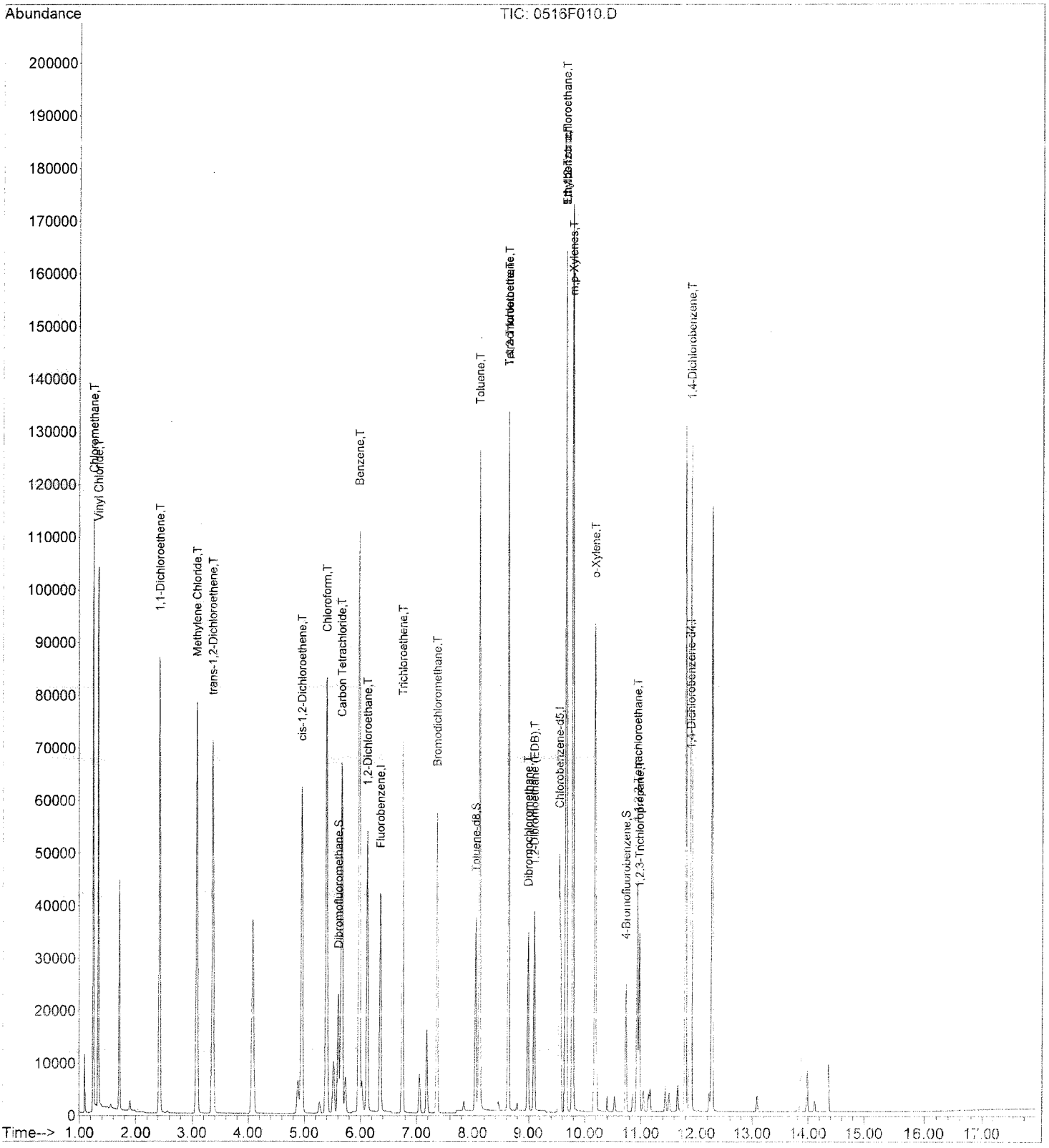
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	58644	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	39127	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	18416	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19719	909.09	ng/L	0.00
Spiked Amount 1000.000			Recovery = 90.91%			
15) Toluene-d8	8.05	98	47162	1008.26	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.83%			
25) 4-Bromofluorobenzene	10.73	95	14476	831.64	ng/L	0.00
Spiked Amount 1000.000			Recovery = 83.16%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	66304	1975.30	ng/L	99
3) Vinyl Chloride	1.33	62	65973	2022.47	ng/L	99
4) 1,1-Dichloroethene	2.43	96	36052	1987.48	ng/L	100
5) Methylene Chloride	3.08	84	51307	2020.19	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	40499	1968.69	ng/L	98
7) cis-1,2-Dichloroethene	4.95	96	38412	1958.35	ng/L	97
8) Chloroform	5.39	83	85949	2038.05	ng/L	99
10) Carbon Tetrachloride	5.66	117	56845	2042.52	ng/L	100
11) Benzene	5.97	78	151781	1893.55	ng/L	99
12) 1,2-Dichloroethane	6.12	62	55698	1862.70	ng/L	99
13) Trichloroethene	6.74	95	40211	2039.72	ng/L	99
14) Bromodichloromethane	7.36	83	52915	1873.60	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	29227	1848.95	ng/L	98
17) Dibromochloromethane	8.98	129	35099	1791.89	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	29187	1888.99	ng/L	98
20) Toluene	8.11	92	67393	1962.54	ng/L	98
21) Ethylbenzene	9.65	106	32989	1991.69	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	39185	1898.78	ng/L	99
23) m,p-Xylenes	9.78	106	78163	4122.52	ng/L	96
24) o-Xylene	10.18	106	39126	2023.29	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	32750	1777.26	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	10584	1831.89	ng/L	91
28) Tetrachloroethene	8.63	164	32099	1993.85	ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	70690	2127.20	ng/L	97

(#) = qualifier out of range (m) = manual integration
0516F010.D 051517MS30_8260SIM.M Mon May 22 11:48:16 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F010.D Vial: 8
Acq On : 16 May 2017 02:43 pm Operator: GH
Sample : SIM LCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 15:10 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F011.D
Lab ID: KWG1704141-2
RunType: DLCS
Matrix: WATER

Date Acquired: 05/16/2017 15:13
Date Quantitated: 05/16/2017 16:09
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: KWG

Secondary Review: AW

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F011.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 15:13	**Quant Date:**	05/16/2017 16:09	**Vial:**	9
Run Type:	DLCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-2			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604863	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D			**Quant based on**	**Method**

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	59220	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	40747	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	21076	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19751	901.71	90	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	47658	1,009	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	15527	856.56	86	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	68318	2.016	2020		
1	Vinyl Chloride	1.33		0.00	62	67020	2.035	2030		
1	1,1-Dichloroethene	2.43	0.01	0.00	96	36658	2.001	2000		
1	Methylene Chloride	3.08	0.01	0.00	84	55174	2.151	2150		
1	trans-1,2-Dichloroethene	3.36		0.00	96	41995	2.022	2020		
1	cis-1,2-Dichloroethene	4.95		0.00	96	40427	2.041	2040		
1	Chloroform	5.39		0.00	83	90174	2.117	2120		
1	Carbon Tetrachloride	5.66		0.00	117	57417	2.043	2040		
1	Benzene	5.97		0.00	78	159999	1.977	1980		
1	1,2-Dichloroethane	6.12		0.00	62	57995	1.921	1920		
1	Trichloroethene (TCE)	6.75	0.01	0.00	95	40926	2.056	2060		
1	Bromodichloromethane	7.36		0.00	83	56116	1.968	1970		
1	1,1,2-Trichloroethane	8.63		0.00	83	30187	1.891	1890		
1	Dibromochloromethane	8.98		0.00	129	37213	1.881	1880		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	30199	1.935	1940		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\05 6F011.D			Instrument:	MS30
Acqu Date:	05/16/2017 15:13	**Quant Date:**	05/16/2017 16:09	Vial:	9
Run Type:	DLCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-2			Soln Conc. Units:	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11		0.00	92	71530	2.000	2000		
2	Ethylbenzene	9.66	0.01	0.00	106	35239	2.043	2040		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	41745	1.942	1940		
2	m,p-Xylenes	9.78		0.00	106	83552	4.232	4230		
2	o-Xylene	10.18		0.00	106	42330	2.102	2100		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	34256	1.785	1790		
2	1,2,3-Trichloropropane	10.97		0.00	110	10726	1.783	1780		
2	Tetrachloroethene (PCE)	8.63		0.00	164	33932	2.024	2020		
3	1,4-Dichlorobenzene	11.90		0.00	146	77228	2.031	2030		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F011.D Vial: 9
Acq On : 16 May 2017 03:13 pm Operator: GH
Sample : SIM DLCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 16:09:44 2017 Quant Results File: 051517MS30_8260SIM.RES

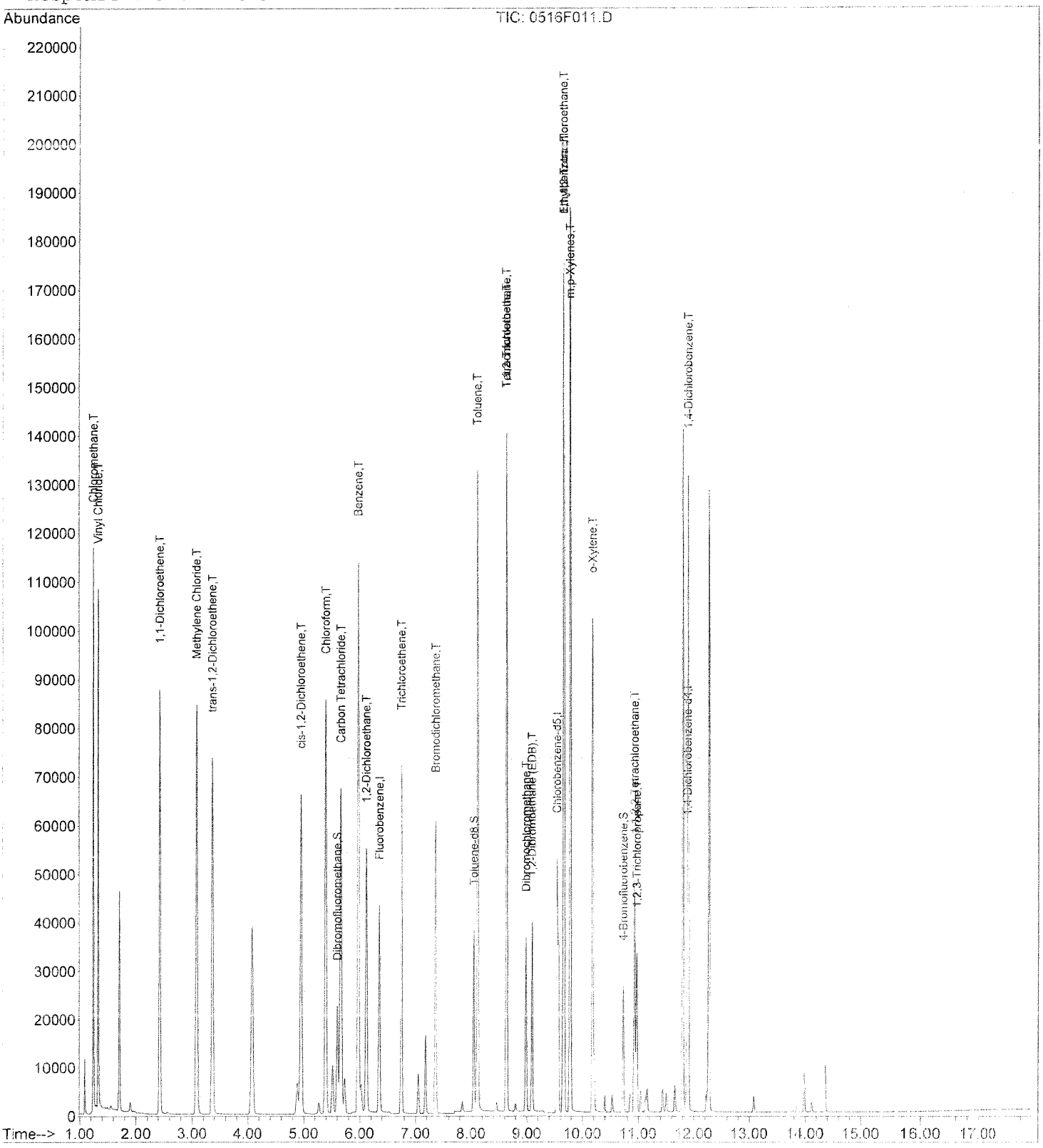
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	59220	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	40747	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	21076	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19751	901.71	ng/L	0.00
Spiked Amount 1000.000			Recovery = 90.17%			
15) Toluene-d8	8.05	98	47658	1008.96	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.90%			
25) 4-Bromofluorobenzene	10.73	95	15527	856.56	ng/L	0.00
Spiked Amount 1000.000			Recovery = 85.66%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	68318	2015.50	ng/L	99
3) Vinyl Chloride	1.33	62	67020	2034.58	ng/L	99
4) 1,1-Dichloroethene	2.43	96	36658	2001.24	ng/L	99
5) Methylene Chloride	3.08	84	55174	2151.32	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	41995	2021.56	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	40427	2041.03	ng/L	97
8) Chloroform	5.39	83	90174	2117.44	ng/L	99
10) Carbon Tetrachloride	5.66	117	57417	2043.01	ng/L	100
11) Benzene	5.97	78	159999	1976.66	ng/L	100
12) 1,2-Dichloroethane	6.12	62	57995	1920.65	ng/L	99
13) Trichloroethene	6.75	95	40926	2055.79	ng/L	98
14) Bromodichloromethane	7.36	83	56116	1967.61	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	30187	1891.10	ng/L	99
17) Dibromochloromethane	8.98	129	37213	1881.34	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	30199	1935.47	ng/L	99
20) Toluene	8.11	92	71530	2000.19	ng/L	97
21) Ethylbenzene	9.66	106	35239	2042.95	ng/L	99
22) 1,1,1,2-Tetrachloroethane	9.67	131	41745	1942.41	ng/L	98
23) m,p-Xylenes	9.78	106	83552	4231.55	ng/L	100
24) o-Xylene	10.18	106	42330	2101.95	ng/L	99
26) 1,1,2,2-Tetrachloroethane	10.93	83	34256	1785.08	ng/L	100
27) 1,2,3-Trichloropropane	10.97	110	10726	1782.65	ng/L	98
28) Tetrachloroethene	8.63	164	33932	2023.91	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	77228	2030.64	ng/L	100

(#) = qualifier out of range (m) = manual integration
0516F011.D 051517MS30_8260SIM.M Mon May 22 11:48:50 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F011.D Vial: 9
Acq On : 16 May 2017 03:13 pm Operator: GH
Sample : SIM DLCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 16:09 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



545355

Date: 5/16/17

ALS Environmental
Injection Log
MS30 - Agilent 5977B

Tune File: 35B ccheck.u

By: YH

New Tune: No

IS/SS Std. ID: 86VOA·336 6/11/17

CCV Std ID: 86VOA·36D 5/22/17

ICAL Date: 5/15/17 Cal 15375

MS/DMS/LCS/ICV Std ID: I

Second RV: YH

BFB Std. ID: 86VOA·33D 6/11/17

LIMS ID: KWG1703159(A) / 4141

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	051606.D	SIMTUNE.M	4 µL→40 mL		
2	SIM CCV	9	B260SIM.M	2 µL→50 mL		
3	LCS	10				
4	DLCS	11				
5	LB	12				
6	MB	13				
7	4569-5TB	14				041117
8	1	15				
9	2	16				
10	3	17				transferred due to soil
11	4	18				
12	4732-2TB	19				033017
13	4857-2TB	20				041117
14	4732-1	21				
15	3	22				transferred due to soil
16	4	23				
17	4857-1	24				
18	3	25				transferred due to soil
19	4	26				
20	5	27				
21	SIM CCV	28		2 µL→50 mL		
22						
23						
24						
25						
26						
27						

Exception Report

Data File: J:\MS30\DATA\051617_SIM\0516F008.D
Lab ID: KWG1703959-1
RunType: TUNE
Matrix: WATER

Date Acquired: 05/16/2017 15:23
Date Quantitated:
Batch ID: KWG1703959
Analysis Method: BFB
ListJoinID: LJ774

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review: K Stucki

Secondary Review:

Data File:	J:\MS30\DATA\051617_SIM\0516F008.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 13:23	**Quant Date:**		**Vial:**	6
Run Type:	TUNE	**ListJoinID:**	LJ774	**Dilution:**	1.0
Lab ID:	KWG1703959-1			**Soln Conc. Units:**	

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	BFB	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:	GC/MS Tuning Evaluation			**Report List ID:**	LJ774
Tune Ref:				**Method ID:**	MJ159
MB Ref:				**Quant based on**	**Report List**

Tune Results

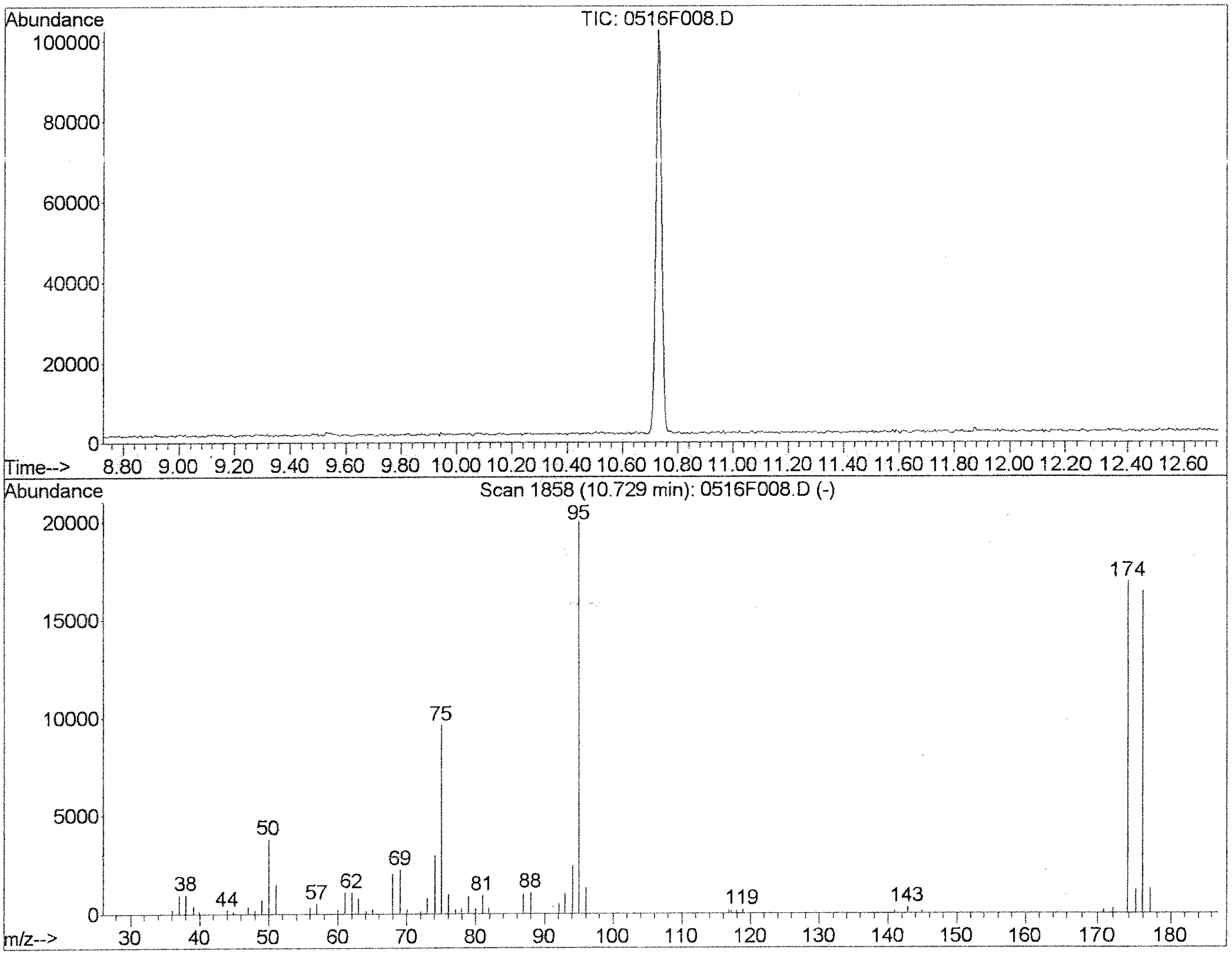
Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	18.9	3789	Pass
75	95	30	60	48.0	9597	Pass
95	95	100	100	100.0	20008	Pass
96	95	5	9	6.6	1323	Pass
173	174	0	2	0.0	0	Pass
174	95	50	120	84.4	16896	Pass
175	174	5	9	7.3	1228	Pass
176	174	95	101	97.2	16416	Pass
177	176	5	9	7.6	1245	Pass

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\051617_SIM\0516F008.D Vial: 6
Acq On : 16 May 2017 01:23 pm Operator: GH
Sample : 50NG BFB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM



Spectrum Information: Scan 1858 Apex - 1849 5/16/17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	3789	PASS
75	95	30	60	48.0	9597	PASS
95	95	100	100	100.0	20008	PASS
96	95	5	9	6.6	1323	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	84.4	16896	PASS
175	174	5	9	7.3	1228	PASS
176	174	95	101	97.2	16416	PASS
177	176	5	9	7.6	1245	PASS

Exception Report

Data File: J:\MS30\DATA\051617_SIM\0516F009.D
Lab ID: KWG1703959-2
RunType: CCV
Matrix: WATER

Date Acquired: 05/16/2017 14:07
Date Quantitated: 05/16/2017 14:53
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NC

Primary Review: KA Smith 5/22/17

Secondary Review: M

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F009.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:07	**Quant Date:**	05/16/2017 14:33	**Vial:**	7
Run Type:	CCV	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-2			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15373
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:				**Quant based on**	**Method**

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	58376	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	40304	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	20058	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	19504	903.31		77-123	NA	
1	Toluene-d8	8.05			98	46545	999.64		74-112	NA	
2	4-Bromofluorobenzene	10.73			95	14647	816.89		46-118	NA	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.24			50	58402	1.748			
1	Vinyl Chloride	1.33			62	57794	1.780			
1	1,1-Dichloroethene	2.42			96	31225	1.729			
1	Methylene Chloride	3.07			84	46679	1.846			
1	trans-1,2-Dichloroethene	3.36			96	35404	1.729			
1	cis-1,2-Dichloroethene	4.95			96	33819	1.732			
1	Chloroform	5.39			83	77039	1.835			
1	Carbon Tetrachloride	5.66			117	49874	1.800			
1	Benzene	5.97			78	133379	1.672			
1	1,2-Dichloroethane	6.12			62	47849	1.608			
1	Trichloroethene (TCE)	6.74			95	34090	1.737			
1	Bromodichloromethane	7.36			83	46946	1.670			
1	1,1,2-Trichloroethane	8.63			83	24603	1.564			
1	Dibromochloromethane	8.98			129	30833	1.581			
1	1,2-Dibromoethane (EDB)	9.09			107	24287	1.579			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F009.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:07	**Quant Date:**	05/16/2017 14:33	**Vial:**	7
Run Type:	CCV	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-2			**Soln Conc. Units:**	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11			92	58545	1.655			
2	Ethylbenzene	9.65			106	29072	1.704			
2	1,1,1,2-Tetrachloroethane	9.67			131	34951	1.644			
2	m,p-Xylenes	9.78			106	68053	3.484			
2	o-Xylene	10.18			106	34152	1.715			
2	1,1,2,2-Tetrachloroethane	10.93			83	27775	1.463			
2	1,2,3-Trichloropropane	10.97			110	8449	1.420			
2	Tetrachloroethene (PCE)	8.63			164	28619	1.726			
3	1,4-Dichlorobenzene	11.90			146	61924	1.711			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration ID: CAL15375
Method ID: MJ1547

DataFile: J:\MS30\DATA\051617_SIM\0516F009.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff		Sol'n Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	20	0.1	0.572	0.500	-13				
Vinyl Chloride		MS	AverageRF	20	0.1	0.556	0.495	-11				
1,1-Dichloroethene		MS	AverageRF	20	0.1	0.309	0.267	-14				
Methylene Chloride		MS	AverageRF	20	0.1	0.433	0.400	-8				
trans-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.351	0.303	-14				
cis-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.334	0.290	-13				
Chloroform		MS	AverageRF	20	0.2	0.719	0.660	-8				
Dibromofluoromethane		SURR	AverageRF	20	0.01	0.370	0.334	-10				
Carbon Tetrachloride		MS	AverageRF	20	0.1	0.475	0.427	-10				
Benzene		MS	AverageRF	20	0.5	1.367	1.142	-16				
1,2-Dichloroethane		MS	AverageRF	20	0.1	0.510	0.410	-20				
Trichloroethene (TCE)		MS	AverageRF	20	0.2	0.336	0.292	-13				
Bromodichloromethane		MS	AverageRF	20	0.2	0.482	0.402	-17				
Toluene-d8		SURR	AverageRF	20	0.01	0.798	0.797	0				
Toluene		MS	AverageRF	20	0.4	0.878	0.726	-17				
1,1,2-Trichloroethane		MS	AverageRF	20	0.1	0.270	0.211	-22	*			
Tetrachloroethene (PCE)		MS	AverageRF	20	0.2	0.411	0.355	-14				
Dibromochloromethane		MS	AverageRF	20	0.1	0.334	0.264	-21	*			
1,2-Dibromoethane (EDB)		MS	AverageRF	20	0.1	0.263	0.208	-21	*			
Ethylbenzene		MS	AverageRF	20	0.1	0.423	0.361	-15				
1,1,1,2-Tetrachloroethane		MS	AverageRF	20	0.01	0.527	0.434	-18				
m,p-Xylenes		MS	AverageRF	20	0.1	0.485	0.422	-13				
o-Xylene		MS	AverageRF	20	0.3	0.494	0.424	-14				
4-Bromofluorobenzene		SURR	AverageRF	20	0.01	0.445	0.363	-18				
1,1,2,2-Tetrachloroethane		MS	AverageRF	20	0.3	0.471	0.345	-27	*			
1,2,3-Trichloropropane		MS	AverageRF	20	0.1	0.148	0.105	-29	*			
1,4-Dichlorobenzene		MS	AverageRF	20	0.5	1.804	1.544	-14				

5 Compounds Failed CCV Criteria (18.52 Percent)

Data File : J:\MS30\DATA\051617_SIM\0516F009.D Vial: 7
Acq On : 16 May 2017 02:07 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 14:33:40 2017 Quant Results File: 051517MS30_8260SIM.RES

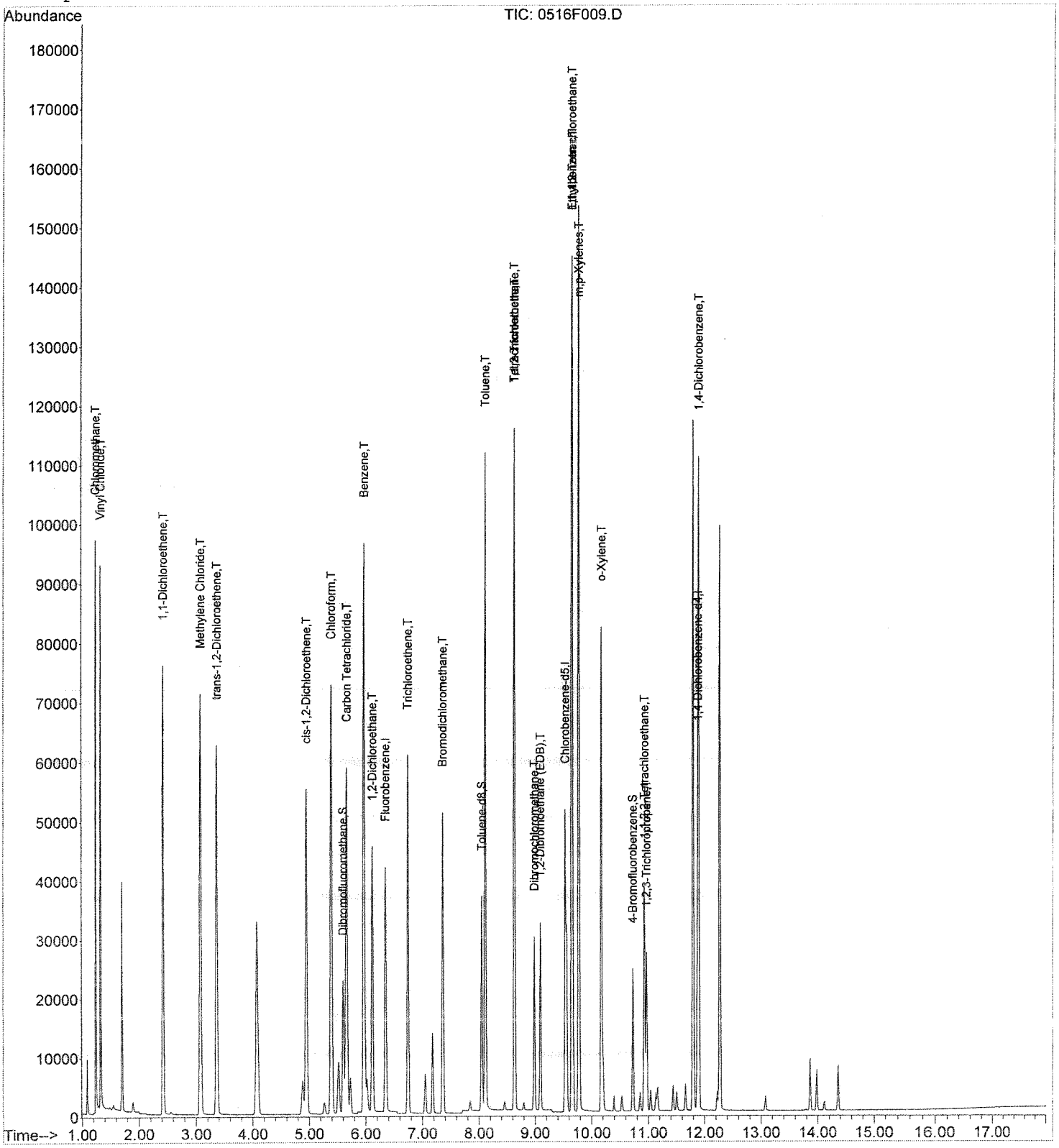
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	58376	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	40304	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	20058	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19504	903.31	ng/L	0.00
Spiked Amount 1000.000			Recovery =	90.33%		
15) Toluene-d8	8.05	98	46545	999.64	ng/L	0.00
Spiked Amount 1000.000			Recovery =	99.96%		
25) 4-Bromofluorobenzene	10.73	95	14647	816.89	ng/L	0.00
Spiked Amount 1000.000			Recovery =	81.69%		
Target Compounds						Qvalue
2) Chloromethane	1.24	50	58402	1747.87	ng/L	99
3) Vinyl Chloride	1.33	62	57794	1779.87	ng/L	100
4) 1,1-Dichloroethene	2.42	96	31225	1729.28	ng/L	95
5) Methylene Chloride	3.07	84	46679	1846.40	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	35404	1728.92	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	33819	1732.10	ng/L	98
8) Chloroform	5.39	83	77039	1835.16	ng/L	99
10) Carbon Tetrachloride	5.66	117	49874	1800.27	ng/L	99
11) Benzene	5.97	78	133379	1671.61	ng/L	98
12) 1,2-Dichloroethane	6.12	62	47849	1607.55	ng/L	99
13) Trichloroethene	6.74	95	34090	1737.17	ng/L	99
14) Bromodichloromethane	7.36	83	46946	1669.88	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	24603	1563.57	ng/L	97
17) Dibromochloromethane	8.98	129	30833	1581.33	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	24287	1579.08	ng/L	97
20) Toluene	8.11	92	58545	1655.09	ng/L	98
21) Ethylbenzene	9.65	106	29072	1703.95	ng/L	98
22) 1,1,1,2-Tetrachloroethane	9.67	131	34951	1644.15	ng/L	99
23) m,p-Xylenes	9.78	106	68053	3484.47	ng/L	98
24) o-Xylene	10.18	106	34152	1714.50	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	27775	1463.27	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	8449	1419.65	ng/L	92
28) Tetrachloroethene	8.63	164	28619	1725.78	ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	61924	1710.87	ng/L	98

(#) = qualifier out of range (m) = manual integration
0516F009.D 051517MS30_8260SIM.M Tue May 16 14:35:12 2017 Page 1

Data File : J:\MS30\DATA\051617_SIM\0516F009.D Vial: 7
Acq On : 16 May 2017 02:07 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 14:33 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F028.D
Lab ID: KWG1703959-3
RunType: CCVA
Matrix: WATER

Date Acquired: 05/16/2017 23:01
Date Quantitated: 05/17/2017 07:59
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NT

Primary Review: KA 5/19/17

Secondary Review: MJ

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F028.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 23:01	**Quant Date:**	05/17/2017 07:59	**Vial:**	26
Run Type:	CCVA	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-3			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:				**Quant based on**	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	53531	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37155	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	19884	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	19399	979.76		77-123	NA	
1	Toluene-d8	8.05			98	42955	1.006		74-112	NA	
2	4-Bromofluorobenzene	10.73			95	14703	889.51		46-118	NA	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25			50	64215	2.096			
1	Vinyl Chloride	1.33			62	61816	2.076			
1	1,1-Dichloroethene	2.43			96	34327	2.073			
1	Methylene Chloride	3.08			84	53073	2.289			
1	trans-1,2-Dichloroethene	3.37			96	38041	2.026			
1	cis-1,2-Dichloroethene	4.95			96	36025	2.012			
1	Chloroform	5.39			83	86050	2.235			
1	Carbon Tetrachloride	5.66			117	54071	2.128			
1	Benzene	5.98			78	140684	1.923			
1	1,2-Dichloroethane	6.12			62	56307	2.063			
1	Trichloroethene (TCE)	6.75			95	36798	2.045			
1	Bromodichloromethane	7.36			83	53481	2.075			
1	1,1,2-Trichloroethane	8.63			83	29700	2.058			
1	Dibromochloromethane	8.98			129	36460	2.039			
1	1,2-Dibromoethane (EDB)	9.09			107	29255	2.074			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for correlation

Data File:	J:\MS30\DATA\051617_SIM\0516F028.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 23:01	**Quant Date:**	05/17/2017 07:59	**Vial:**	26
Run Type:	CCVA	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-3			**Soln Conc. Units:**	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12			92	60822	1.865			
2	Ethylbenzene	9.65			106	30067	1.912			
2	1,1,1,2-Tetrachloroethane	9.67			131	39515	2.016			
2	m,p-Xylenes	9.78			106	71108	3.949			
2	o-Xylene	10.18			106	36115	1.967			
2	1,1,2,2-Tetrachloroethane	10.93			83	35930	2.053			
2	1,2,3-Trichloropropane	10.97			110	10951	1.996			
2	Tetrachloroethene (PCE)	8.63			164	29961	1.960			
3	1,4-Dichlorobenzene	11.90			146	67634	1.885			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15375
Method ID: MJ1547
DataFile: I:\MS30\DATA\051617_SIM\0516F028.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff	Soln Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	50	0.1	0.572	0.600	5			
Vinyl Chloride		MS	AverageRF	50	0.1	0.556	0.577	4			
1,1-Dichloroethene		MS	AverageRF	50	0.1	0.309	0.321	4			
Methylene Chloride		MS	AverageRF	50	0.1	0.433	0.496	14			
trans-1,2-Dichloroethene		MS	AverageRF	50	0.1	0.351	0.355	1			
cis-1,2-Dichloroethene		MS	AverageRF	50	0.1	0.334	0.336	1			
Chloroform		MS	AverageRF	50	0.2	0.719	0.804	12			
Dibromofluoromethane		SURR	AverageRF	50	0.01	0.370	0.362	-2			
Carbon Tetrachloride		MS	AverageRF	50	0.1	0.475	0.505	6			
Benzene		MS	AverageRF	50	0.5	1.367	1.314	-4			
1,2-Dichloroethane		MS	AverageRF	50	0.1	0.510	0.526	3			
Trichloroethene (TCE)		MS	AverageRF	50	0.2	0.336	0.344	2			
Bromodichloromethane		MS	AverageRF	50	0.2	0.482	0.500	4			
Toluene-d8		SURR	AverageRF	50	0.01	0.798	0.802	1			
Toluene		MS	AverageRF	50	0.4	0.878	0.818	-7			
1,1,2-Trichloroethane		MS	AverageRF	50	0.1	0.270	0.277	3			
Tetrachloroethene (PCE)		MS	AverageRF	50	0.2	0.411	0.403	-2			
Dibromochloromethane		MS	AverageRF	50	0.1	0.334	0.341	2			
1,2-Dibromoethane (EDB)		MS	AverageRF	50	0.1	0.263	0.273	4			
Ethylbenzene		MS	AverageRF	50	0.1	0.423	0.405	-4			
1,1,1,2-Tetrachloroethane		MS	AverageRF	50	0.01	0.527	0.532	1			
m,p-Xylenes		MS	AverageRF	50	0.1	0.485	0.478	-1			
o-Xylene		MS	AverageRF	50	0.3	0.494	0.486	-2			
4-Bromofluorobenzene		SURR	AverageRF	50	0.01	0.445	0.396	-11			
1,1,2,2-Tetrachloroethane		MS	AverageRF	50	0.3	0.471	0.484	3			
1,2,3-Trichloropropane		MS	AverageRF	50	0.1	0.148	0.147	0			
1,4-Dichlorobenzene		MS	AverageRF	50	0.5	1.804	1.701	-6			

Data File : I:\MS30\DATA\051617_SIM\0516F028.D Vial: 26
Acq On : 16 May 2017 11:01 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:59:44 2017 Quant Results File: 051517MS30_8260SIM.RES

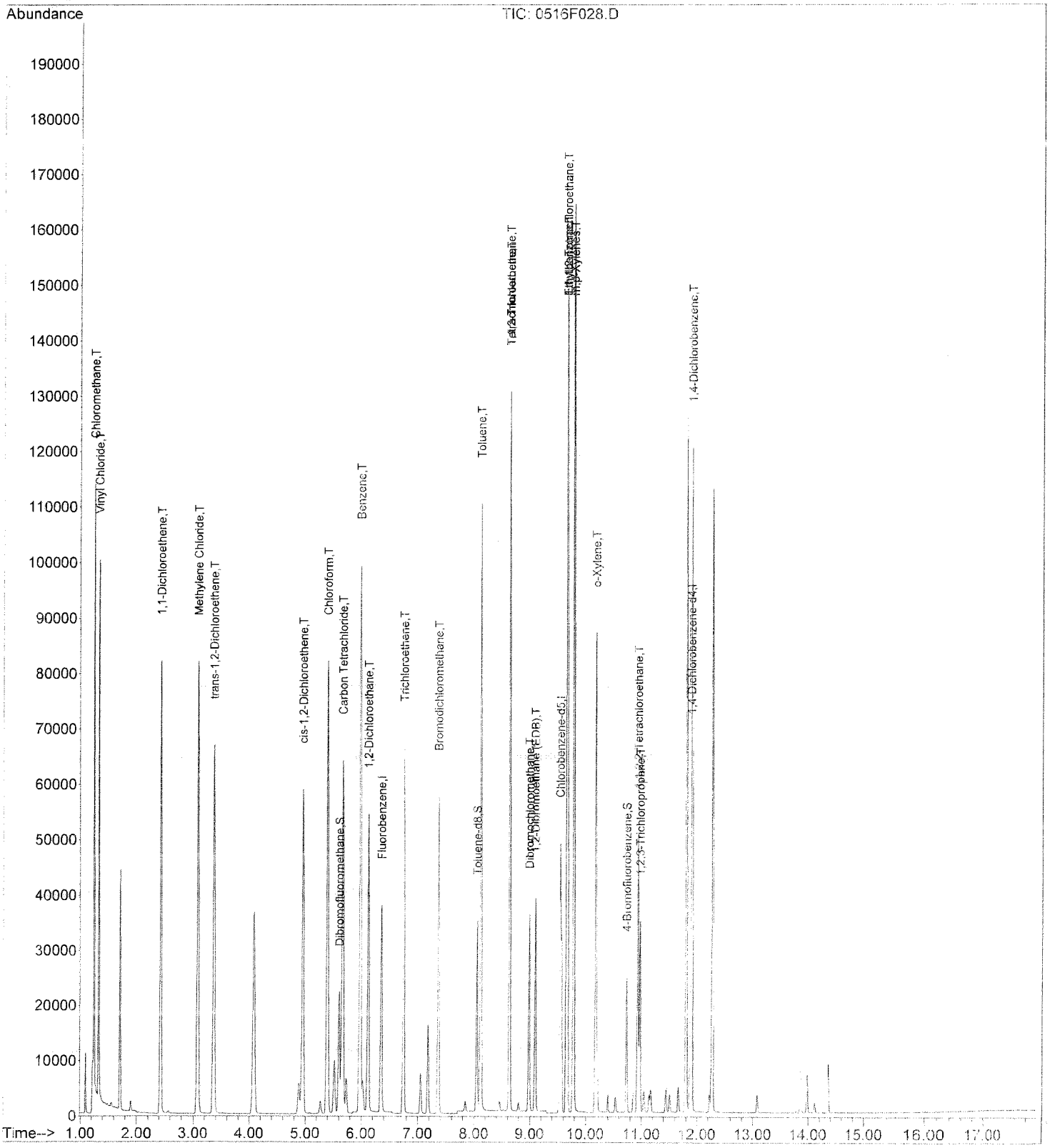
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	53531	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	37155	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	19884	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19399	979.76	ng/L		0.00
Spiked Amount 1000.000			Recovery = 97.98%				
15) Toluene-d8	8.05	98	42955	1006.03	ng/L		0.00
Spiked Amount 1000.000			Recovery = 100.60%				
25) 4-Bromofluorobenzene	10.73	95	14703	889.51	ng/L		0.00
Spiked Amount 1000.000			Recovery = 88.95%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	64215	2095.79	ng/L		100
3) Vinyl Chloride	1.33	62	61816	2076.04	ng/L		99
4) 1,1-Dichloroethene	2.43	96	34327	2073.14	ng/L		99
5) Methylene Chloride	3.08	84	53073	2289.32	ng/L		98
6) trans-1,2-Dichloroethene	3.37	96	38041	2025.83	ng/L		100
7) cis-1,2-Dichloroethene	4.95	96	36025	2012.08	ng/L		98
8) Chloroform	5.39	83	86050	2235.34	ng/L		100
10) Carbon Tetrachloride	5.66	117	54071	2128.42	ng/L		99
11) Benzene	5.98	78	140684	1922.75	ng/L		100
12) 1,2-Dichloroethane	6.12	62	56307	2062.93	ng/L		99
13) Trichloroethene	6.75	95	36798	2044.88	ng/L		97
14) Bromodichloromethane	7.36	83	53481	2074.51	ng/L		99
16) 1,1,2-Trichloroethane	8.63	83	29700	2058.33	ng/L		99
17) Dibromochloromethane	8.98	129	36460	2039.16	ng/L		100
18) 1,2-Dibromoethane (EDB)	9.09	107	29255	2074.24	ng/L		98
20) Toluene	8.12	92	60822	1865.19	ng/L		100
21) Ethylbenzene	9.65	106	30067	1911.62	ng/L		97
22) 1,1,1,2-Tetrachloroethane	9.67	131	39515	2016.40	ng/L		99
23) m,p-Xylenes	9.78	106	71108	3949.47	ng/L		96
24) o-Xylene	10.18	106	36115	1966.71	ng/L		97
26) 1,1,2,2-Tetrachloroethane	10.93	83	35930	2053.32	ng/L		99
27) 1,2,3-Trichloropropane	10.97	110	10951	1996.00	ng/L	#	87
28) Tetrachloroethene	8.63	164	29961	1959.82	ng/L		99
30) 1,4-Dichlorobenzene	11.90	146	67634	1884.98	ng/L		99

(#) = qualifier out of range (m) = manual integration
0516F028.D 051517MS30_8260SIM.M Mon May 22 12:18:27 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F028.D Vial: 26
Acq On : 16 May 2017 11:01 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:59 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



0516F028.D 051517MS30_8260SIM.M Mon May 22 12:18:28 2017 Page 2

Date: 5/15/17

ALS Environmental
Injection Log
MS30 - Agilent 5977B

Tune File: BFB.sttune.u

By: AM

New Tune: No

IS/SS Std. ID: 8260A.32E 6/10/17

CCV Std ID: —

ICAL Date: 5/15/17 Cal 15375

MS/DMS/LCS/ICV Std ID: see ICAL prep

Second RV: KL 5/17/17

BFB Std. ID: 8260A.33D 6/11/17

LIMS ID:

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	0515F002	SIMTUNE.M ~~8260SIM.M~~	4.4µl→44ml		
2	IB	3	8260SIM.M			
3	IB	4				
4	IB	5				
5	SIM ICAL 5 PPT	6		see ICAL prep		
6	10	7				
7	20	8				
8	50	9				
9	100	10				
10	500	11				
11	1000	12				
12	2000	13				
13	5000	14				
14	7000	15				
15	10000	16				
16	IB	17				
17	IB	18				
18	IB	19				
19	ICV	20		see ICAL prep		
20	ICV	21		2		NR not needed
21	BFB	0516F002	SIMTUNE.M	4.4µl→44ml		
22	Mix 6 only ICV	2 3	8260SIM.M	2µl/2.5µl→5ml		8VOA 37B/36E 5/22/17
23						
24						
25						
26						
27						

INTIAL CALIBRATION CURVE

Date 5/15/17 Analysis 8260 SIM H2O

Prepared By [illegible] Instrument MS30

Stock Solution #1 86VOA.36E 5/22/17 Analytes Surrogate Init. Concentration 20ppm

Stock Solution #2 86VOA.36D 5/22/17 Analytes 8260 mix Init. Concentration 50 ppm

Stock Solution #3 86VOA.37A 5/22/17 Analytes 8260 low mix Init. Concentration 0.5 ppm

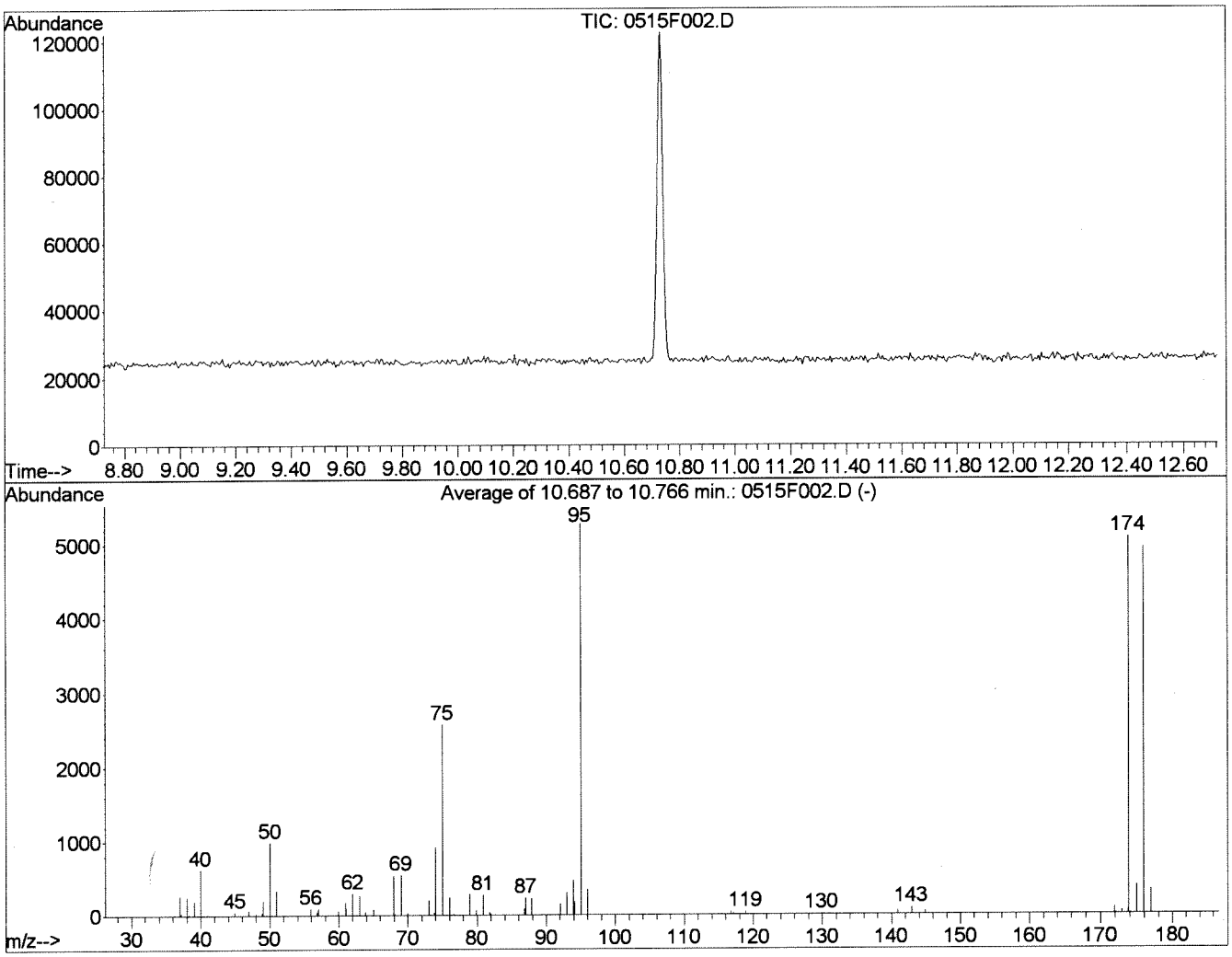
#	Aliquot of Stock Solution #1 (uL)	Final Conc. of #1 (ug/L)	Aliquot of Stock Solution #2 (uL)	Final Conc. of #2 (ug/L)	Aliquot of Stock Solution #3 (uL)	Final Conc. of #3 (ug/L)	Final Volume (mL)	Notes
1	-	-	-	-	0.5	0.005	50	
2	-	-	-	-	1.0	0.01	50	
3	-	-	-	-	2.0	0.02	50	
4	0.50	0.2	-	-	5.0	0.05	50	
5	1.0	0.4	-	-	10	0.1	50	
6	1.5	0.6	-	-	50	0.5	50	
7	2.0	0.8	1.0	1.0	-	-	50	
8 (CCV)	2.5	1.0	2.0	2.0	-	-	50	
9	5.0	2.0	5.0	5.0	-	-	50	
10	6.0	2.4	7.0	7.0	-	-	50	
11	10	4.0	10	10	-	-	50	

ICV : 2.5 µl of 20ppm Surr. (86VOA.36E 5/22/17) + 2µl of Crosscal ICV (86VOA.30A 5/16/17) to 50ml H_2O

R:\VOA\Recipes\SIM\SIM_W_ICAL

Data File : J:\MS30\DATA\051517_SIM\0515F002.D
Acq On : 15 May 2017 03:21 pm
Sample : 50NG BFB
Misc :
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM

Vial: 2
Operator: GH
Inst : MS30
Multiplr: 1.00



Spectrum Information: Average of 10.687 to 10.766 min. whole peak - 1848

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	985	PASS
75	95	30	60	48.6	2569	PASS
95	95	100	100	100.0	5285	PASS
96	95	5	9	6.6	351	PASS
173	174	0.00	2	0.9	44	PASS
174	95	50	120	96.2	5082	PASS
175	174	5	9	7.5	380	PASS
176	174	95	101	97.2	4941	PASS
177	176	5	9	6.7	331	PASS

5/15/17

KR 5/17/17

J:\MS30\DATA\051517_SIM\0515F002.D 051517MS30_8260SIM.M Mon May 15 15:4

Data File : J:\MS30\DATA\051517_SIM\0515F005.D Vial: 5
Acq On : 15 May 2017 05:09 pm Operator: GH
Sample : IB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 07:59:54 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Mon May 15 08:39:31 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	53793	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	36088	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14292	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	416	22.01	ng/L		0.00
Spiked Amount 1000.000			Recovery =	2.20%			
15) Toluene-d8	8.05	98	1258	32.38	ng/L		0.00
Spiked Amount 1000.000			Recovery =	3.24%			
25) 4-Bromofluorobenzene	10.73	95	386	26.83	ng/L		0.00
Spiked Amount 1000.000			Recovery =	2.68%			
Target Compounds							Qvalue
2) Chloromethane	1.24	50	352	11.60	ng/L		85
5) Methylene Chloride	3.08	84	584	23.13	ng/L		97
8) Chloroform	5.39	83	88	2.24	ng/L		65
11) Benzene	5.97	78	940	13.50	ng/L		92
13) Trichloroethene	6.74	95	52	2.94	ng/L	#	80
20) Toluene	8.12	92	132	4.48	ng/L		76
23) m,p-Xylenes	9.78	106	150	8.80	ng/L	#	57
24) o-Xylene	10.17	106	148	8.57	ng/L		90
28) Tetrachloroethene	8.62	164	42	2.89	ng/L	#	69
30) 1,4-Dichlorobenzene	11.90	146	150	5.80	ng/L		87

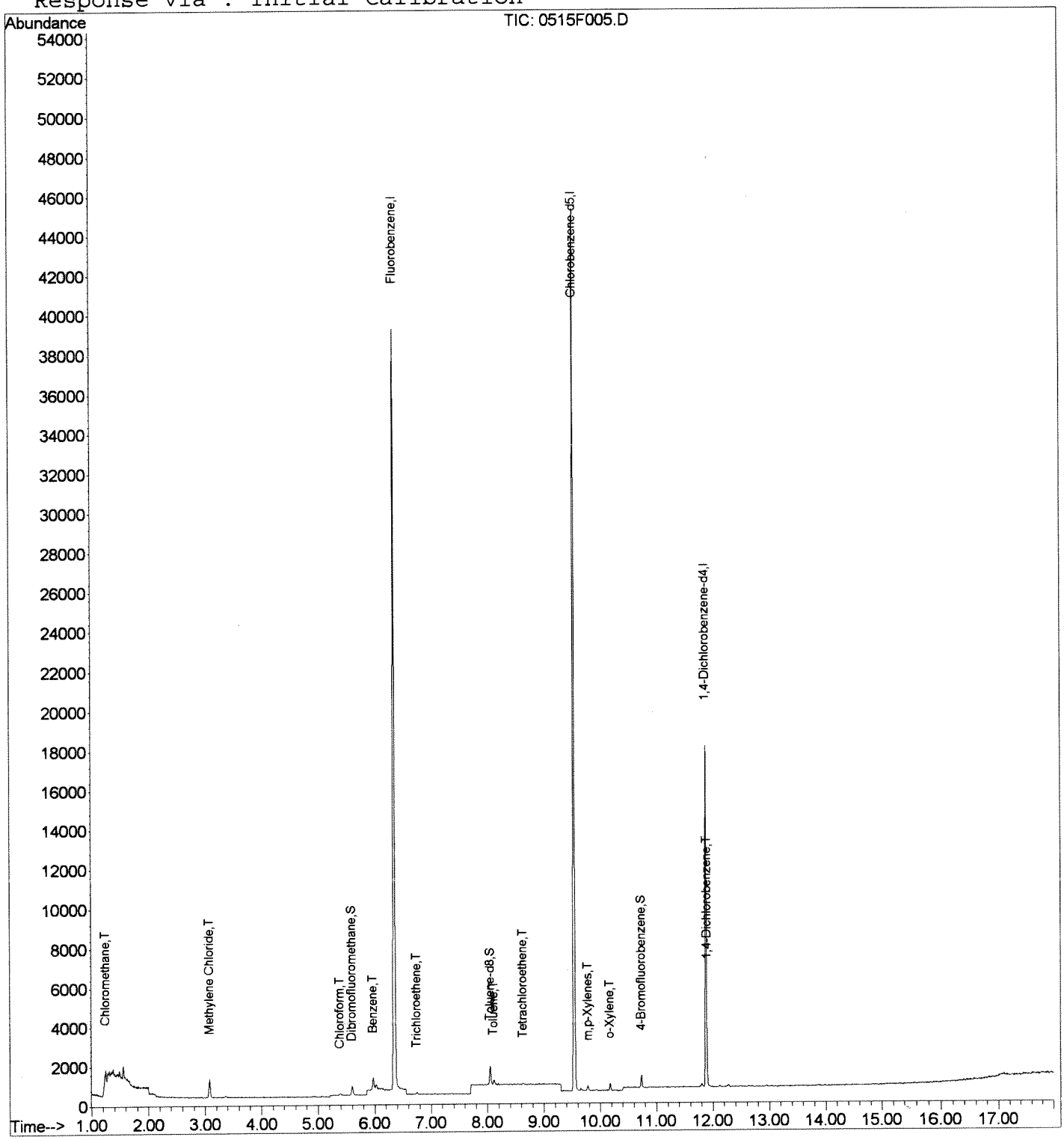
MM 5/17/17

KAB 5/17/17

(#) = qualifier out of range (m) = manual integration
0515F005.D 051517MS30_8260SIM.M Wed May 17 09:10:52 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F005.D Vial: 5
Acq On : 15 May 2017 05:09 pm Operator: GH
Sample : IB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 9:10 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:22 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

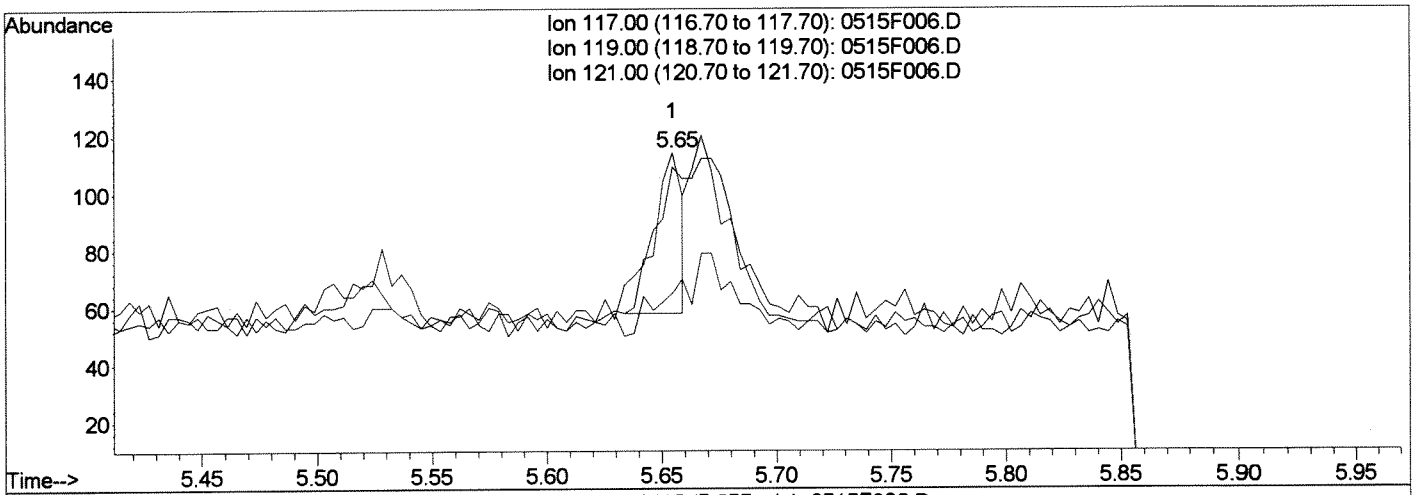
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54000	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	35910	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	14141	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	0.00	98	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	446	14.89	ng/L	98
3) Vinyl Chloride	1.33	62	186	6.44	ng/L	87
6) trans-1,2-Dichloroethene	3.36	96	161	8.91	ng/L #	71
7) cis-1,2-Dichloroethene	4.96	96	127	7.26	ng/L #	71
8) Chloroform	5.39	83	310	8.06	ng/L	96
10) Carbon Tetrachloride	5.67	117	120m	4.80	ng/L	
12) 1,2-Dichloroethane	6.12	62	162	5.99	ng/L #	58
13) Trichloroethene	6.74	95	155	8.99	ng/L	97
14) Bromodichloromethane	7.36	83	146	5.66	ng/L	92
16) 1,1,2-Trichloroethane	8.63	83	95	6.58	ng/L	91
17) Dibromochloromethane	8.98	129	109	6.10	ng/L	76
18) 1,2-Dibromoethane (EDB)	9.10	107	104	7.18	ng/L	95
20) Toluene	8.12	92	263	9.18	ng/L	94
21) Ethylbenzene	9.66	106	110	7.77	ng/L #	94
22) 1,1,1,2-Tetrachloroethane	9.67	131	117	6.29	ng/L #	74
23) m,p-Xylenes	9.77	106	277	16.61	ng/L #	81
24) o-Xylene	10.18	106	235	13.81	ng/L	90
26) 1,1,2,2-Tetrachloroethane	10.93	83	127	7.26	ng/L	95
28) Tetrachloroethene	8.63	164	130m	9.35	ng/L	
30) 1,4-Dichlorobenzene	11.90	146	273	10.90	ng/L	89

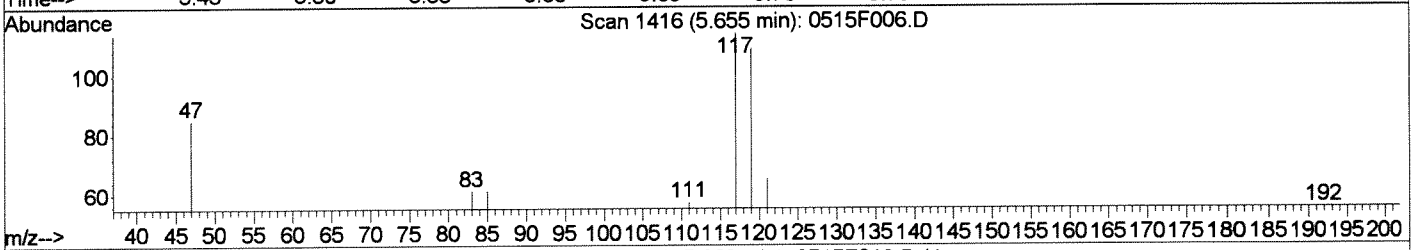
5/16/17

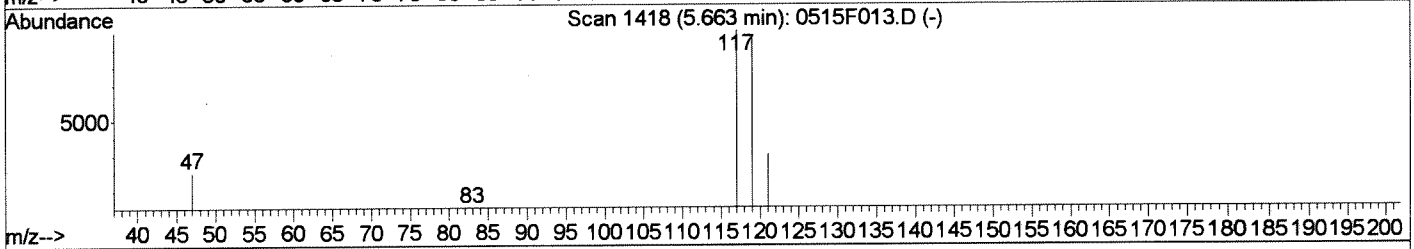
(#) = qualifier out of range (m) = manual integration
0515F006.D 051517MS30_8260SIM.M Tue May 16 11:28:37 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:25 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(10) Carbon Tetrachloride (T)

5.65min 1.88ng/L

response 47

Ion	Exp%	Act%
117.00	100	100
119.00	95.90	73.21
121.00	30.30	26.79
0.00	0.00	0.00

Manual Integration:

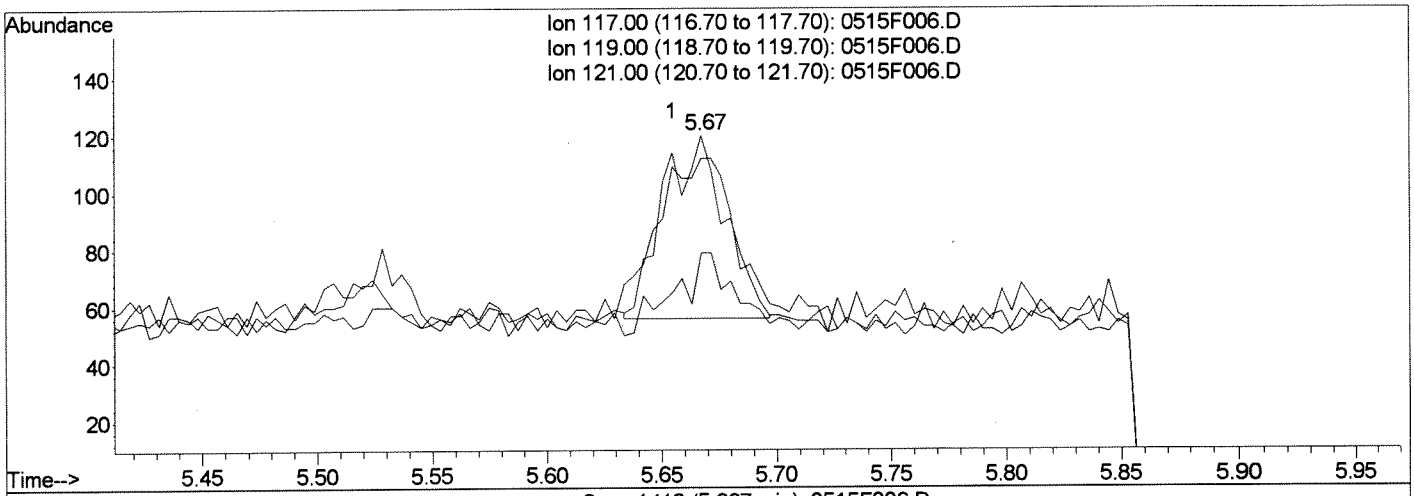
Before

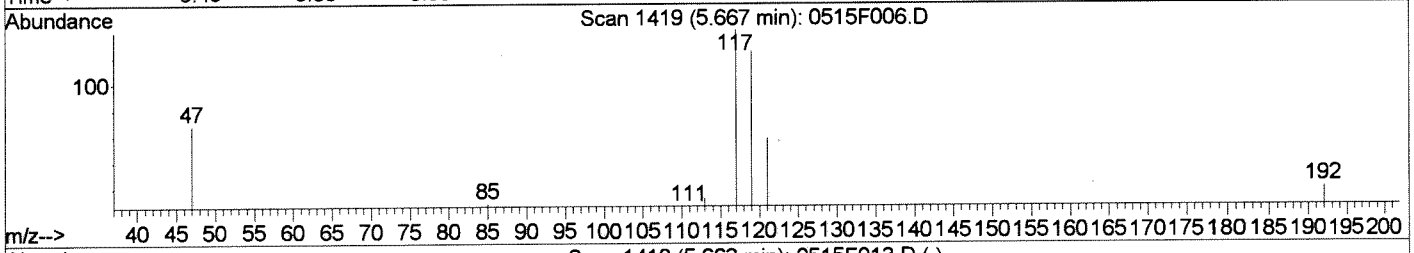
05/16/17

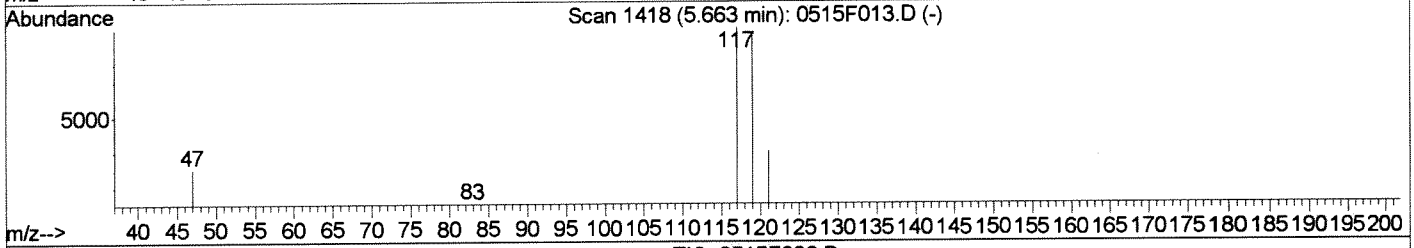
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:25:51 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:25 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(10) Carbon Tetrachloride (T)

5.67min 4.80ng/L m

response 120

Ion	Exp%	Act%
117.00	100	100
119.00	95.90	93.33
121.00	30.30	65.83#
0.00	0.00	0.00

Manual Integration:

After

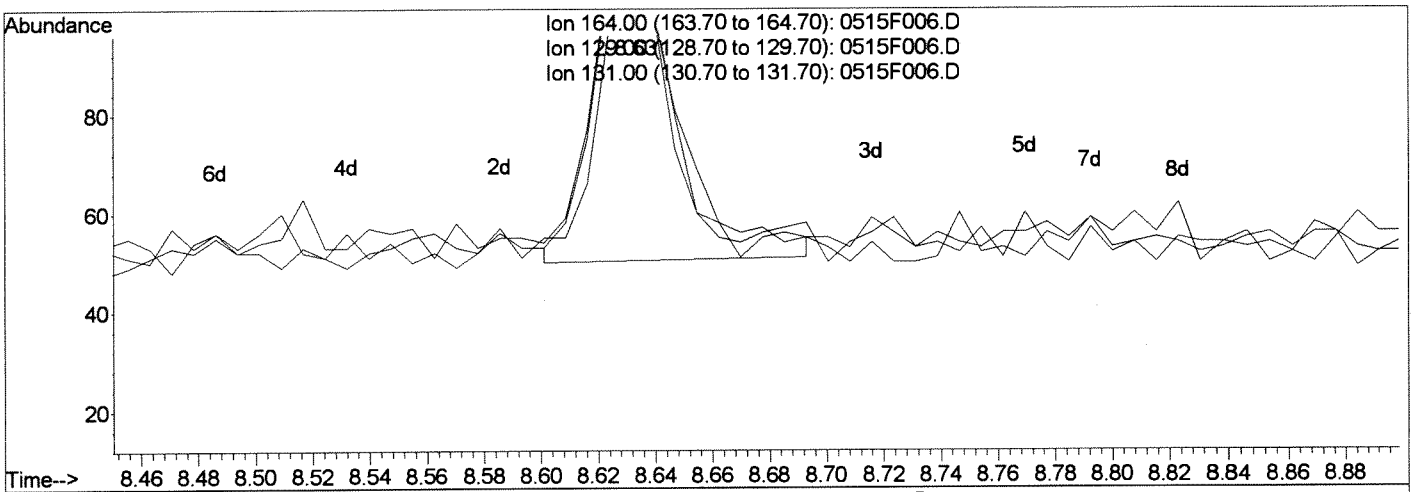
Split peak

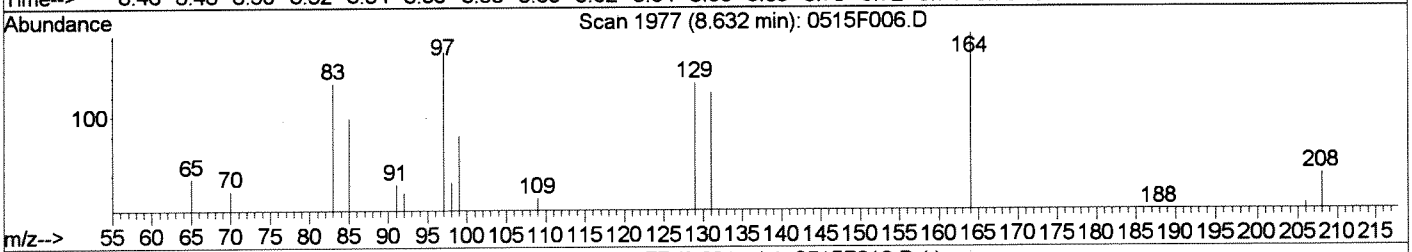
05/16/17

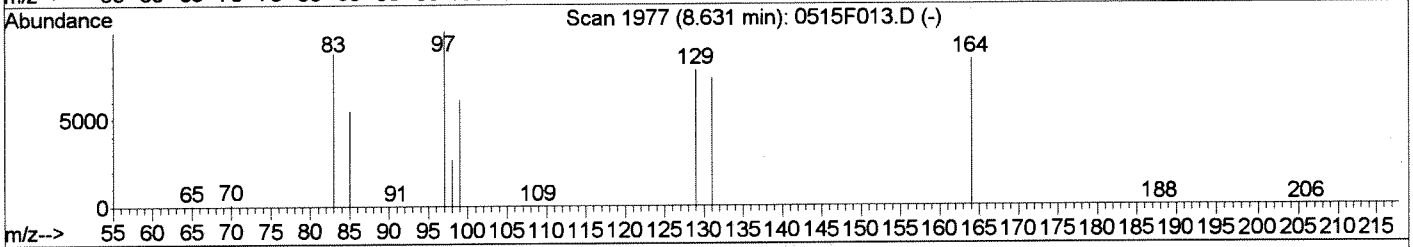
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:25:59 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:26 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(28) Tetrachloroethene (T)

8.63min 10.43ng/L

response 145

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	69.66
131.00	87.40	65.17
0.00	0.00	0.00

Manual Integration:

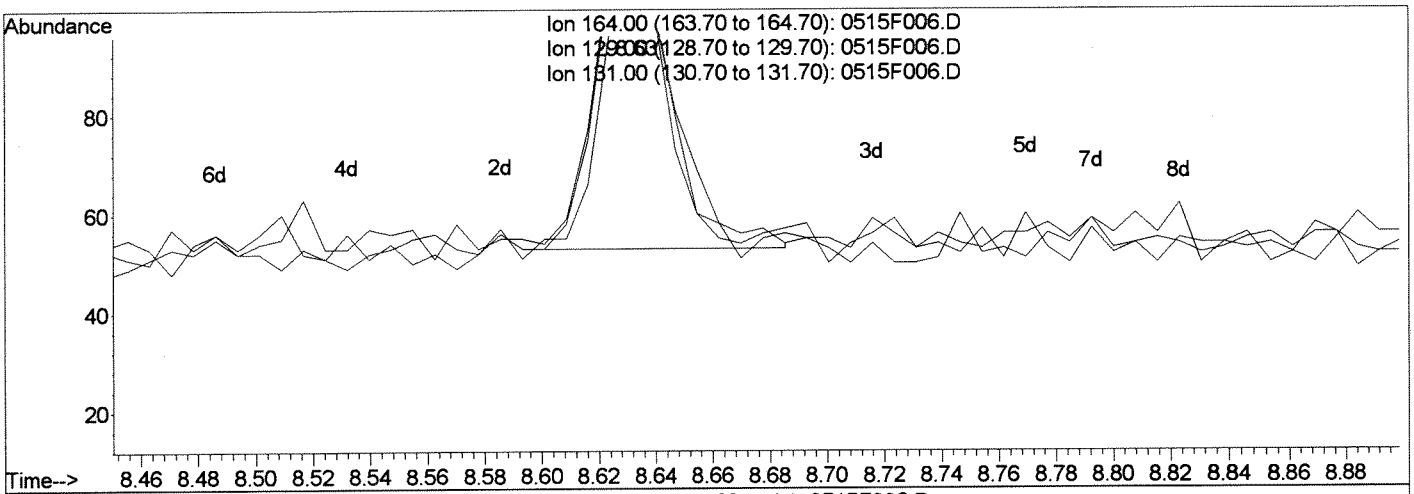
Before

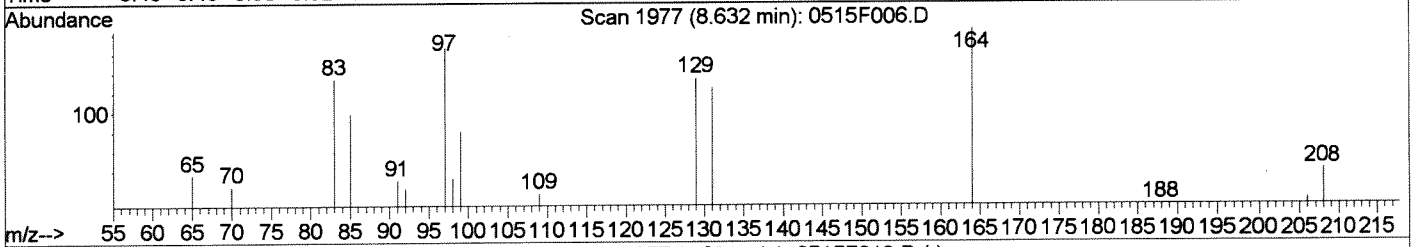
05/16/17

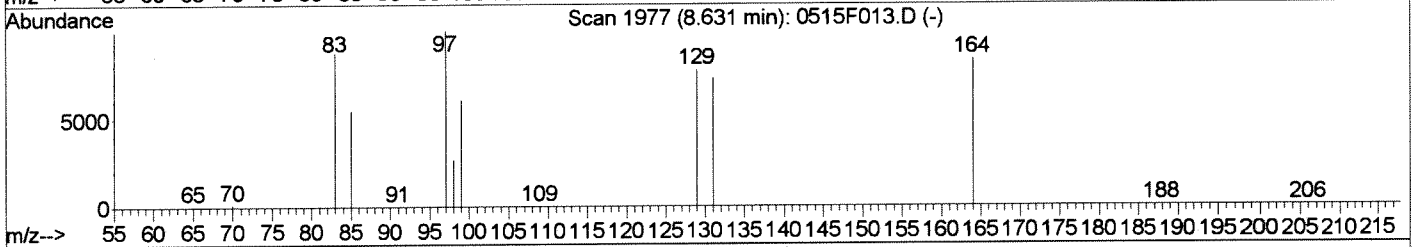
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:26:59 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:27 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(28) Tetrachloroethene (T)

8.63min 9.35ng/L m

response 130

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	82.39
131.00	87.40	78.87
0.00	0.00	0.00

Manual Integration:

After

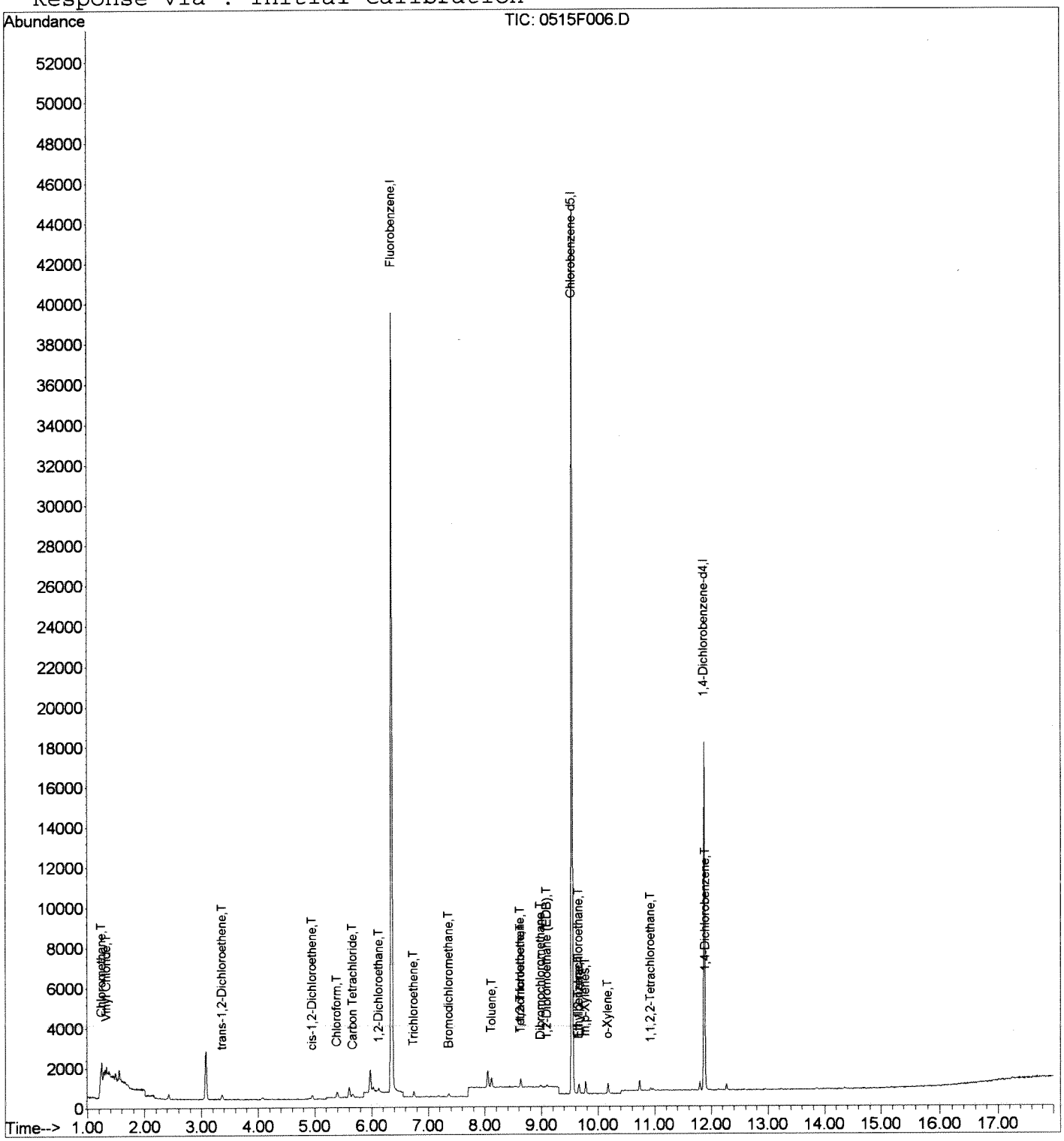
Baseline correction

05/16/17

0515F006.D 051517MS30_8260SIM.M Tue May 16 08:27:11 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:27 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F007.D Vial: 7
Acq On : 15 May 2017 06:04 pm Operator: GH
Sample : SIM ICAL 10 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:22 2017 Quant Results File: 051517MS30_8260

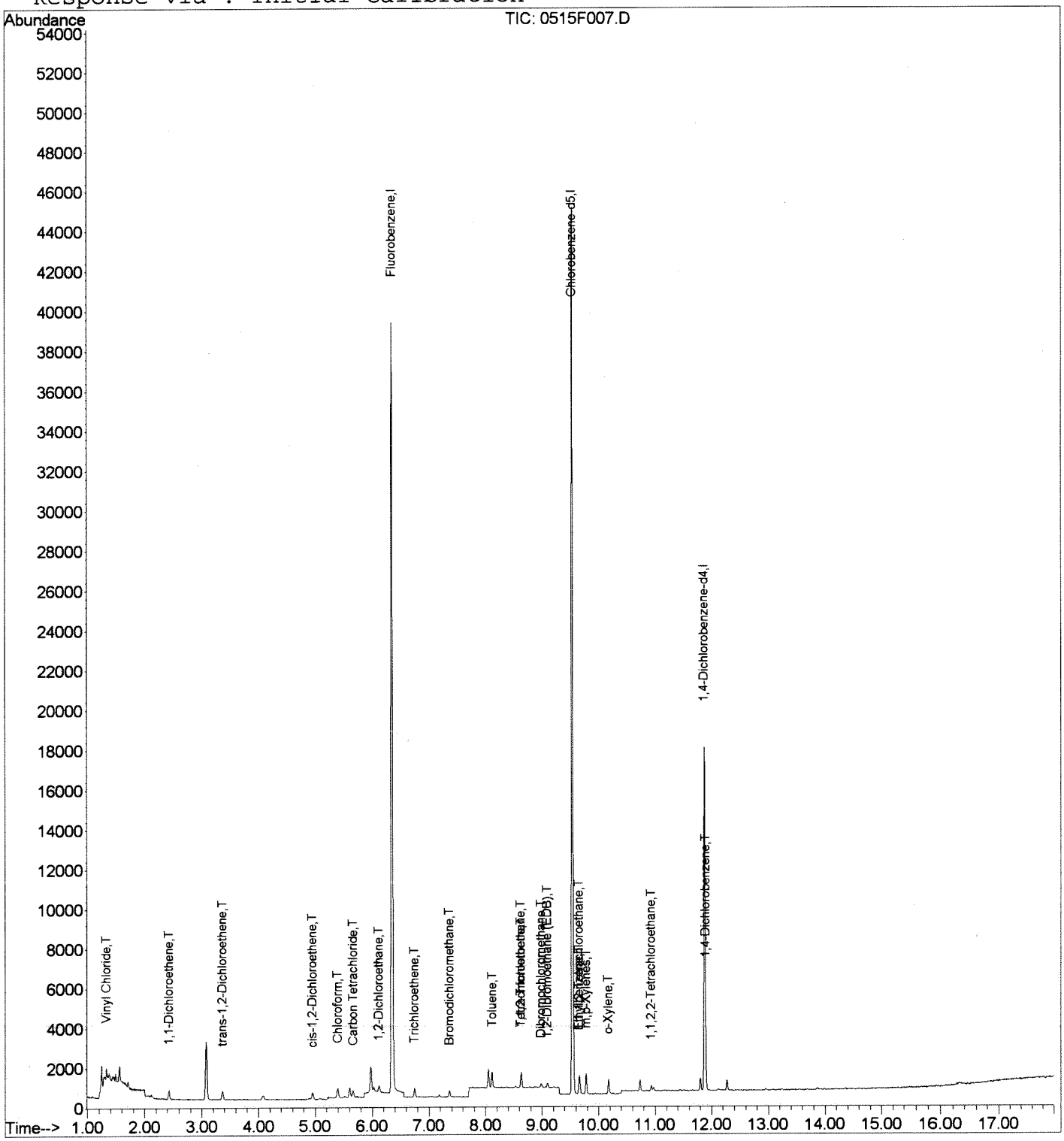
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53866	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36149	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14427	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	0.00	98	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
3) Vinyl Chloride	1.33	62	358	12.43	ng/L	89
4) 1,1-Dichloroethene	2.42	96	185	11.76	ng/L	96
6) trans-1,2-Dichloroethene	3.36	96	249	13.82	ng/L	92
7) cis-1,2-Dichloroethene	4.96	96	196	11.24	ng/L	93
8) Chloroform	5.40	83	527	13.74	ng/L	90
10) Carbon Tetrachloride	5.66	117	285	11.42	ng/L	90
12) 1,2-Dichloroethane	6.12	62	337	12.49	ng/L	95
13) Trichloroethene	6.74	95	239	13.90	ng/L	90
14) Bromodichloromethane	7.36	83	299	11.62	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	186	12.91	ng/L	92
17) Dibromochloromethane	8.98	129	209	11.73	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.10	107	183	12.67	ng/L	95
20) Toluene	8.11	92	446	15.47	ng/L	88
21) Ethylbenzene	9.65	106	175	12.27	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	239	12.77	ng/L	97
23) m,p-Xylenes	9.78	106	466	27.76	ng/L	98
24) o-Xylene	10.18	106	353	20.60	ng/L #	72
26) 1,1,2,2-Tetrachloroethane	10.93	83	198	11.25	ng/L	94
28) Tetrachloroethene	8.63	164	212	15.14	ng/L	94
30) 1,4-Dichlorobenzene	11.90	146	408	15.96	ng/L	99

(#) = qualifier out of range (m) = manual integration
0515F007.D 051517MS30_8260SIM.M Tue May 16 11:28:38 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F007.D Vial: 7
Acq On : 15 May 2017 06:04 pm Operator: GH
Sample : SIM ICAL 10 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:29 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F008.D Vial: 8
Acq On : 15 May 2017 06:32 pm Operator: GH
Sample : SIM ICAL 20 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:23 2017 Quant Results File: 051517MS30_8260

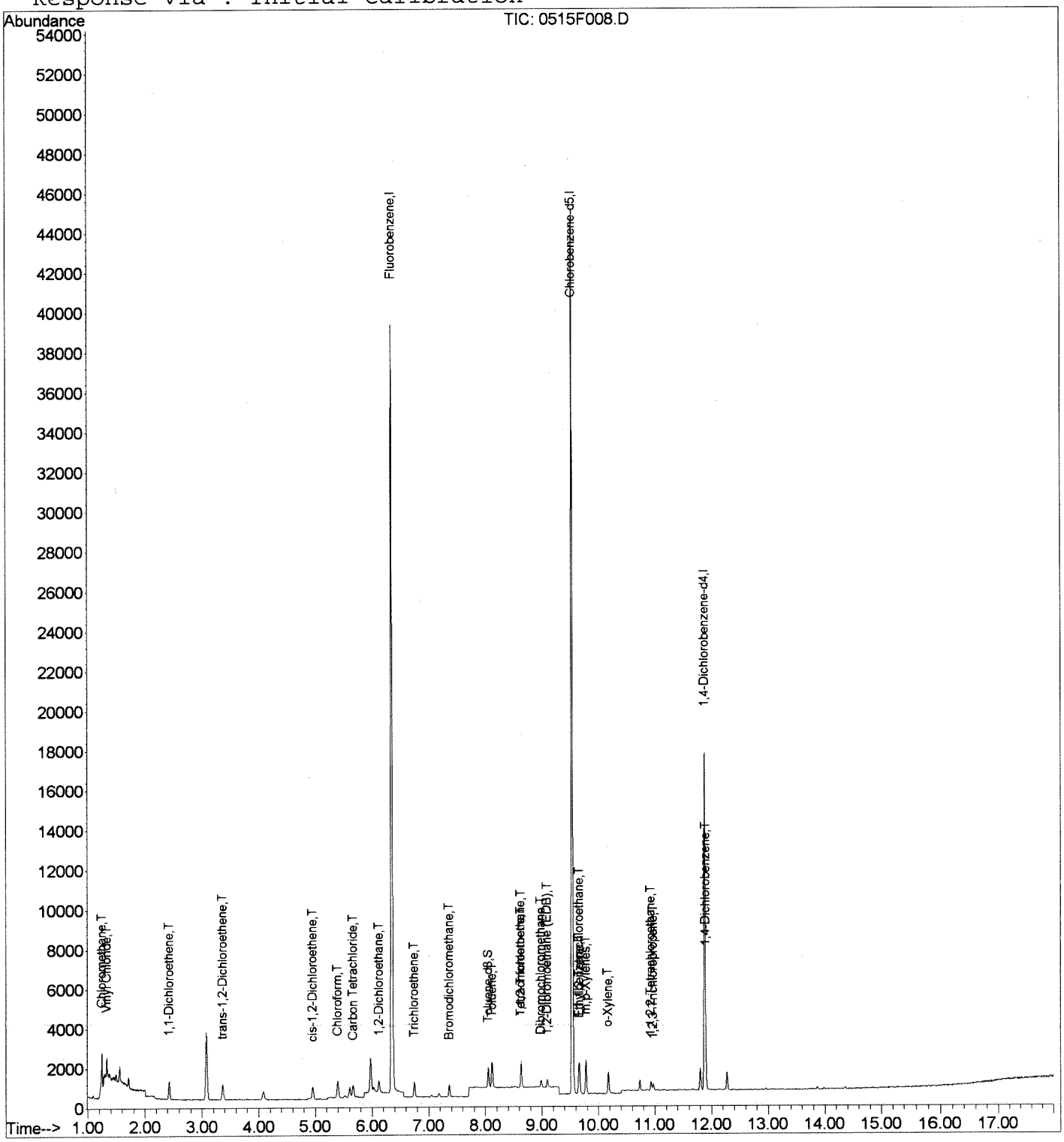
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53288	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36181	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14310	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	8.05	98	1174	28.38	ng/L	0.00
Spiked Amount 1000.000			Recovery =	2.84%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	977	33.05	ng/L	96
3) Vinyl Chloride	1.33	62	650	22.82	ng/L	98
4) 1,1-Dichloroethene	2.43	96	390	25.07	ng/L	93
6) trans-1,2-Dichloroethene	3.36	96	463	25.97	ng/L	88
7) cis-1,2-Dichloroethene	4.95	96	403	23.36	ng/L	91
8) Chloroform	5.40	83	886	23.34	ng/L	98
10) Carbon Tetrachloride	5.66	117	526	21.31	ng/L	98
12) 1,2-Dichloroethane	6.12	62	602	22.55	ng/L	93
13) Trichloroethene	6.74	95	436	25.63	ng/L	91
14) Bromodichloromethane	7.36	83	552	21.68	ng/L	97
16) 1,1,2-Trichloroethane	8.63	83	336	23.58	ng/L	98
17) Dibromochloromethane	8.98	129	400	22.70	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.09	107	303	21.20	ng/L	94
20) Toluene	8.12	92	767	26.58	ng/L	96
21) Ethylbenzene	9.66	106	301	21.09	ng/L #	82
22) 1,1,1,2-Tetrachloroethane	9.67	131	452	24.12	ng/L	96
23) m,p-Xylenes	9.78	106	761	45.29	ng/L	99
24) o-Xylene	10.18	106	462	26.94	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	335	19.01	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	140	26.54	ng/L #	82
28) Tetrachloroethene	8.63	164	350	24.98	ng/L	90
30) 1,4-Dichlorobenzene	11.90	146	605	23.87	ng/L	96

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\051517_SIM\0515F008.D Vial: 8
Acq On : 15 May 2017 06:32 pm Operator: GH
Sample : SIM ICAL 20 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:31 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F009.D Vial: 9
Acq On : 15 May 2017 06:59 pm Operator: GH
Sample : SIM ICAL 50 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:23 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

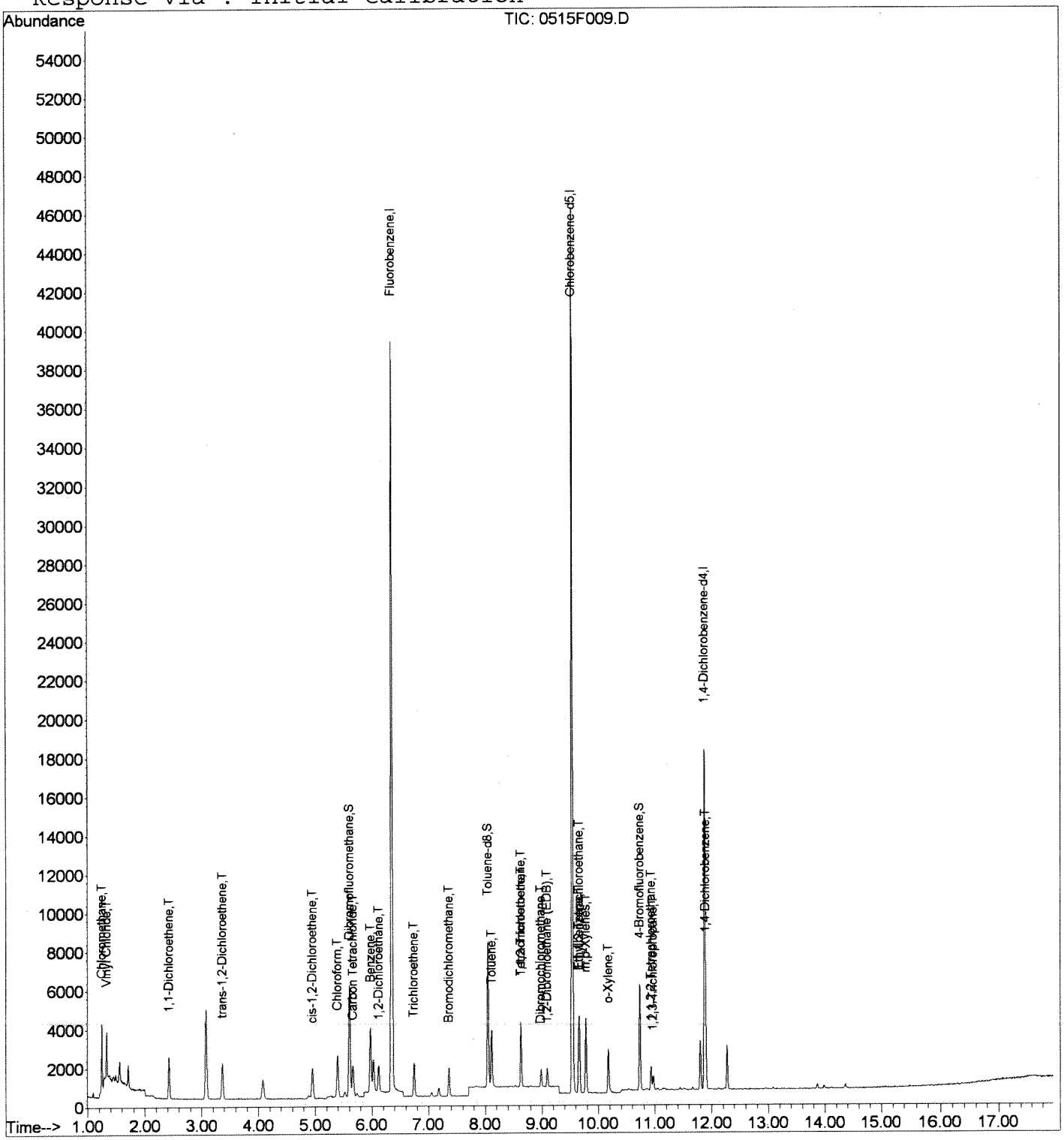
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53815	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36068	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14684	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	4998	257.68	ng/L	0.00
Spiked Amount 1000.000			Recovery =	25.77%		
15) Toluene-d8	8.05	98	9805	234.71	ng/L	0.00
Spiked Amount 1000.000			Recovery =	23.47%		
25) 4-Bromofluorobenzene	10.73	95	3404	229.62	ng/L	0.00
Spiked Amount 1000.000			Recovery =	22.96%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	2004	67.13	ng/L	94
3) Vinyl Chloride	1.33	62	1672	58.12	ng/L	90
4) 1,1-Dichloroethene	2.42	96	947	60.27	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	1083	60.16	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	966	55.45	ng/L	97
8) Chloroform	5.39	83	2192	57.19	ng/L	96
10) Carbon Tetrachloride	5.66	117	1354	54.31	ng/L	94
11) Benzene	5.97	78	4799	70.29	ng/L	97
12) 1,2-Dichloroethane	6.12	62	1452	53.86	ng/L	99
13) Trichloroethene	6.75	95	1007	58.62	ng/L	95
14) Bromodichloromethane	7.36	83	1369	53.24	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	776	53.92	ng/L	97
17) Dibromochloromethane	8.98	129	929	52.20	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.09	107	754	52.25	ng/L	94
20) Toluene	8.11	92	1648	57.29	ng/L	97
21) Ethylbenzene	9.65	106	753	52.92	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	1079	57.77	ng/L	97
23) m,p-Xylenes	9.78	106	1770	105.66	ng/L	94
24) o-Xylene	10.18	106	995	58.21	ng/L	97
26) 1,1,2,2-Tetrachloroethane	10.93	83	897	51.06	ng/L	93
27) 1,2,3-Trichloropropane	10.97	110	274	52.10	ng/L #	87
28) Tetrachloroethene	8.63	164	804	57.56	ng/L	95
30) 1,4-Dichlorobenzene	11.90	146	1400	53.82	ng/L	96

(#) = qualifier out of range (m) = manual integration
0515F009.D 051517MS30_8260SIM.M Tue May 16 11:28:40 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F009.D
Acq On : 15 May 2017 06:59 pm
Sample : SIM ICAL 50 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:31 2017

Vial: 9
Operator: GH
Inst : MS30
Multiplr: 1.00
Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F010.D Vial: 10
Acq On : 15 May 2017 07:27 pm Operator: GH
Sample : SIM ICAL 100 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53624m	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	34959	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13492	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	8434	436.38	ng/L	0.00
Spiked Amount 1000.000			Recovery =	43.64%		
15) Toluene-d8	8.05	98	16399	393.96	ng/L	0.00
Spiked Amount 1000.000			Recovery =	39.40%		
25) 4-Bromofluorobenzene	10.73	95	5475	381.03	ng/L	0.00
Spiked Amount 1000.000			Recovery =	38.10%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	3551	119.38	ng/L	98
3) Vinyl Chloride	1.33	62	3238	112.96	ng/L	98
4) 1,1-Dichloroethene	2.42	96	1813	115.80	ng/L	98
5) Methylene Chloride	3.08	84	4275	176.20	ng/L	97
6) trans-1,2-Dichloroethene	3.37	96	2044	113.95	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	1845	106.28	ng/L	98
8) Chloroform	5.39	83	4147	108.58	ng/L	100
10) Carbon Tetrachloride	5.67	117	2769	111.46	ng/L	99
11) Benzene	5.97	78	8321	122.30	ng/L	97
12) 1,2-Dichloroethane	6.12	62	2775	103.31	ng/L	97
13) Trichloroethene	6.75	95	1894	110.64	ng/L	96
14) Bromodichloromethane	7.36	83	2647	103.31	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	1538	107.25	ng/L	95
17) Dibromochloromethane	8.98	129	1771	99.87	ng/L	98
18) 1,2-Dibromoethane (EDB)	9.09	107	1410	98.05	ng/L	96
20) Toluene	8.12	92	3154	113.13	ng/L	98
21) Ethylbenzene	9.65	106	1486	107.75	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	1951	107.76	ng/L	94
23) m,p-Xylenes	9.78	106	3341	205.77	ng/L	99
24) o-Xylene	10.18	106	1737	104.84	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	1751	102.84	ng/L	98
27) 1,2,3-Trichloropropane	10.98	110	507	99.47	ng/L #	84
28) Tetrachloroethene	8.63	164	1642	121.27	ng/L	95
30) 1,4-Dichlorobenzene	11.90	146	2594	108.53	ng/L	97

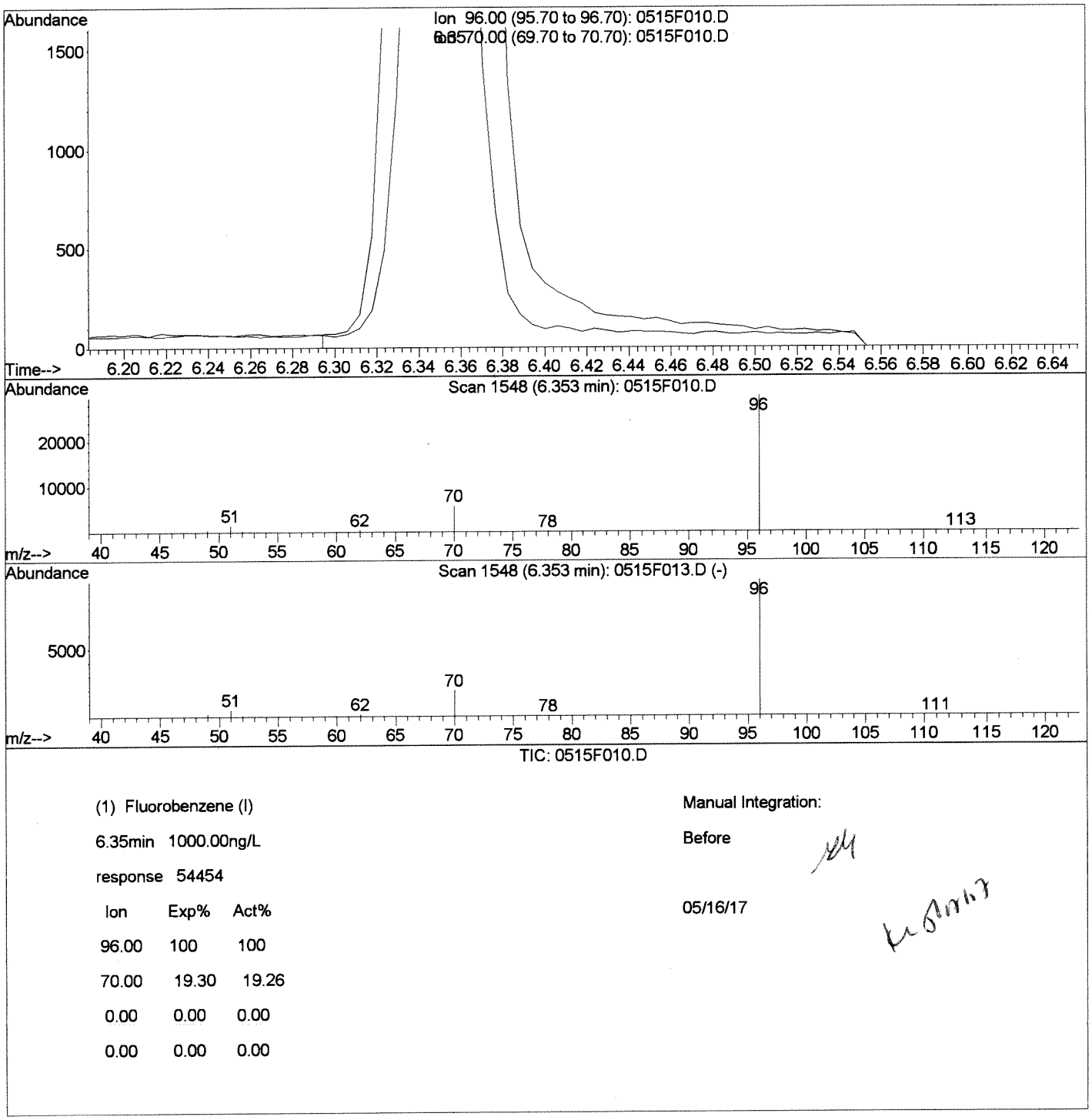
(#) = qualifier out of range (m) = manual integration
0515F010.D 051517MS30_8260SIM.M Tue May 16 11:28:40 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F010.D
Acq On : 15 May 2017 07:27 pm
Sample : SIM ICAL 100 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017

Vial: 10
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration



TIC: 0515F010.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L

response 54454

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.26
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

Before

05/16/17

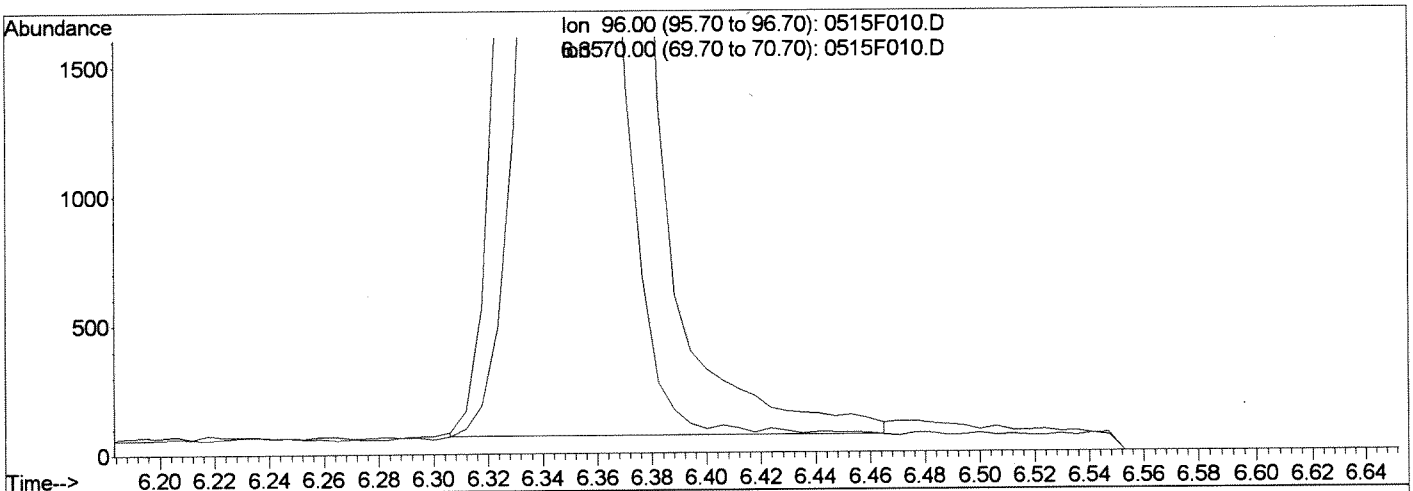
0515F010.D 051517MS30_8260SIM.M Tue May 16 08:32:32 2017

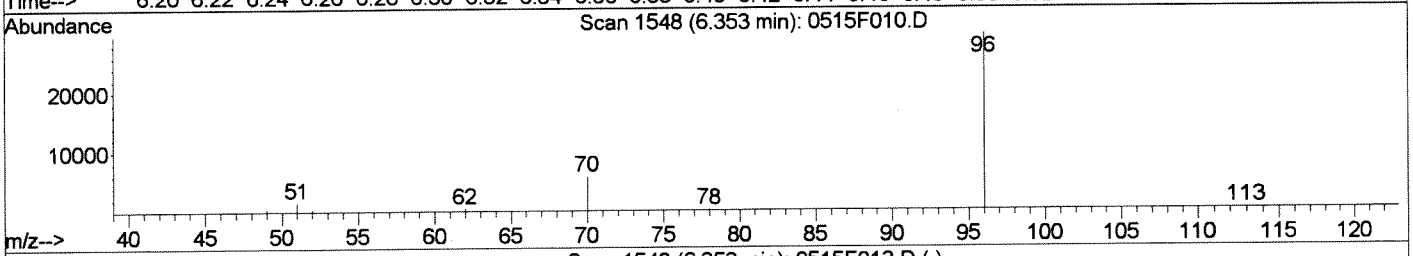
Data File : J:\MS30\DATA\051517_SIM\0515F010.D
Acq On : 15 May 2017 07:27 pm
Sample : SIM ICAL 100 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:32 2017

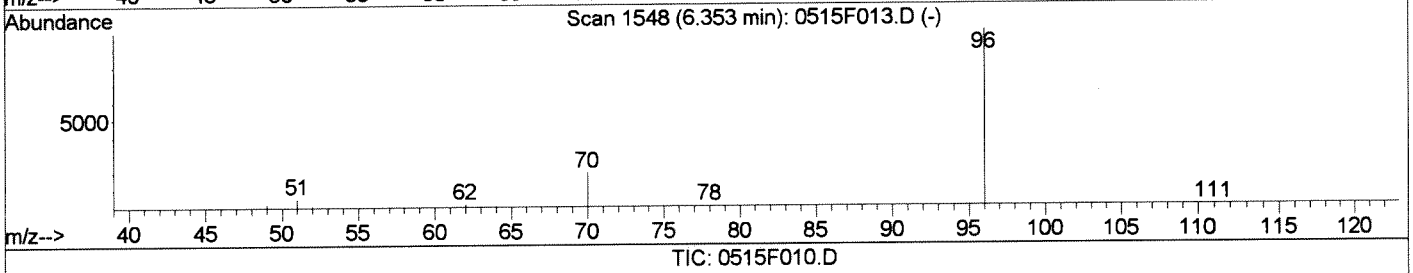
Vial: 10
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F010.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L m

response 53624

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.26
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

After

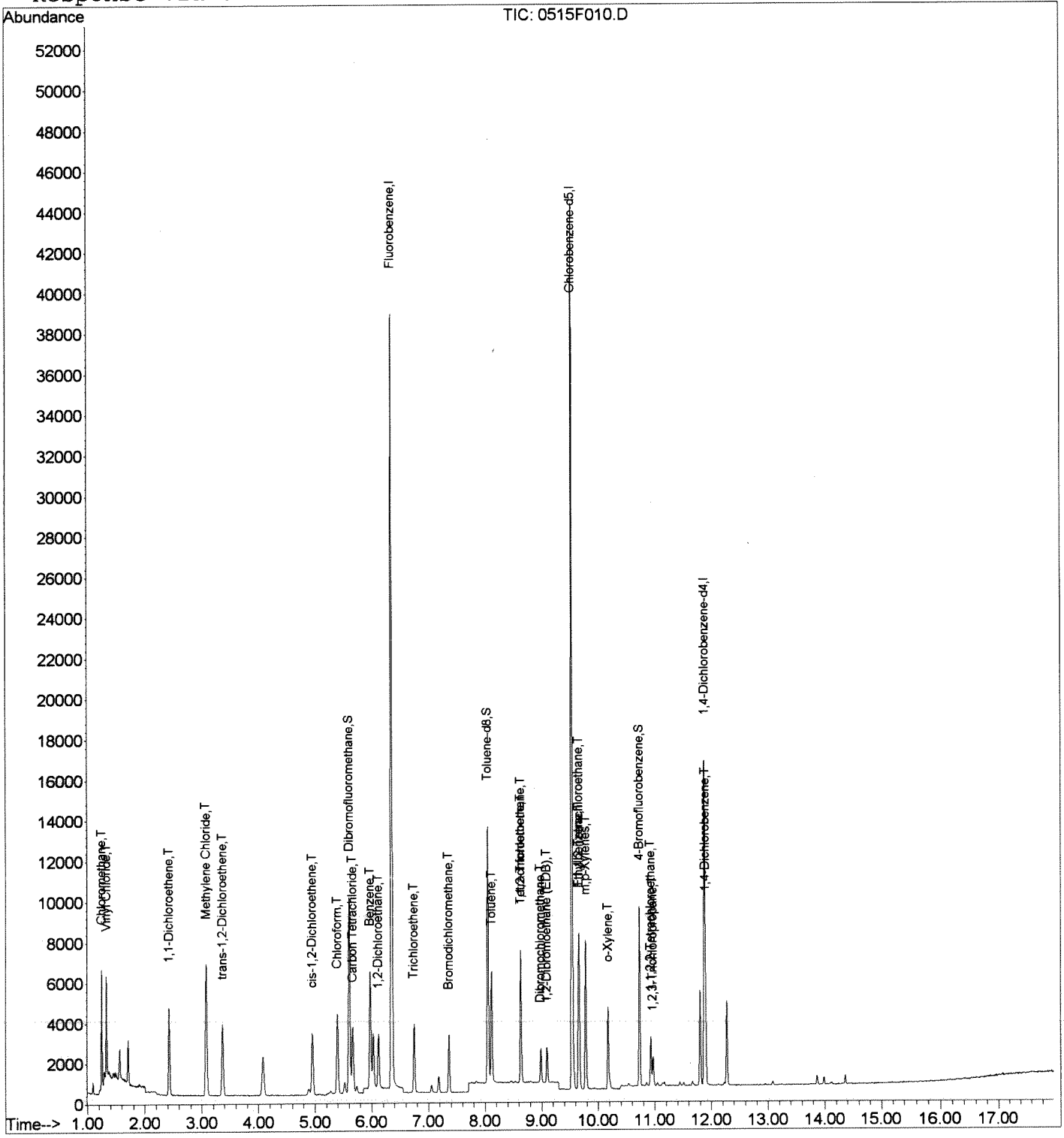
Baseline correction

05/16/17

0515F010.D 051517MS30_8260SIM.M Tue May 16 08:32:42 2017

Data File : J:\MS30\DATA\051517_SIM\0515F010.D Vial: 10
Acq On : 15 May 2017 07:27 pm Operator: GH
Sample : SIM ICAL 100 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:32 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F011.D Vial: 11
Acq On : 15 May 2017 07:54 pm Operator: GH
Sample : SIM ICAL 500 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

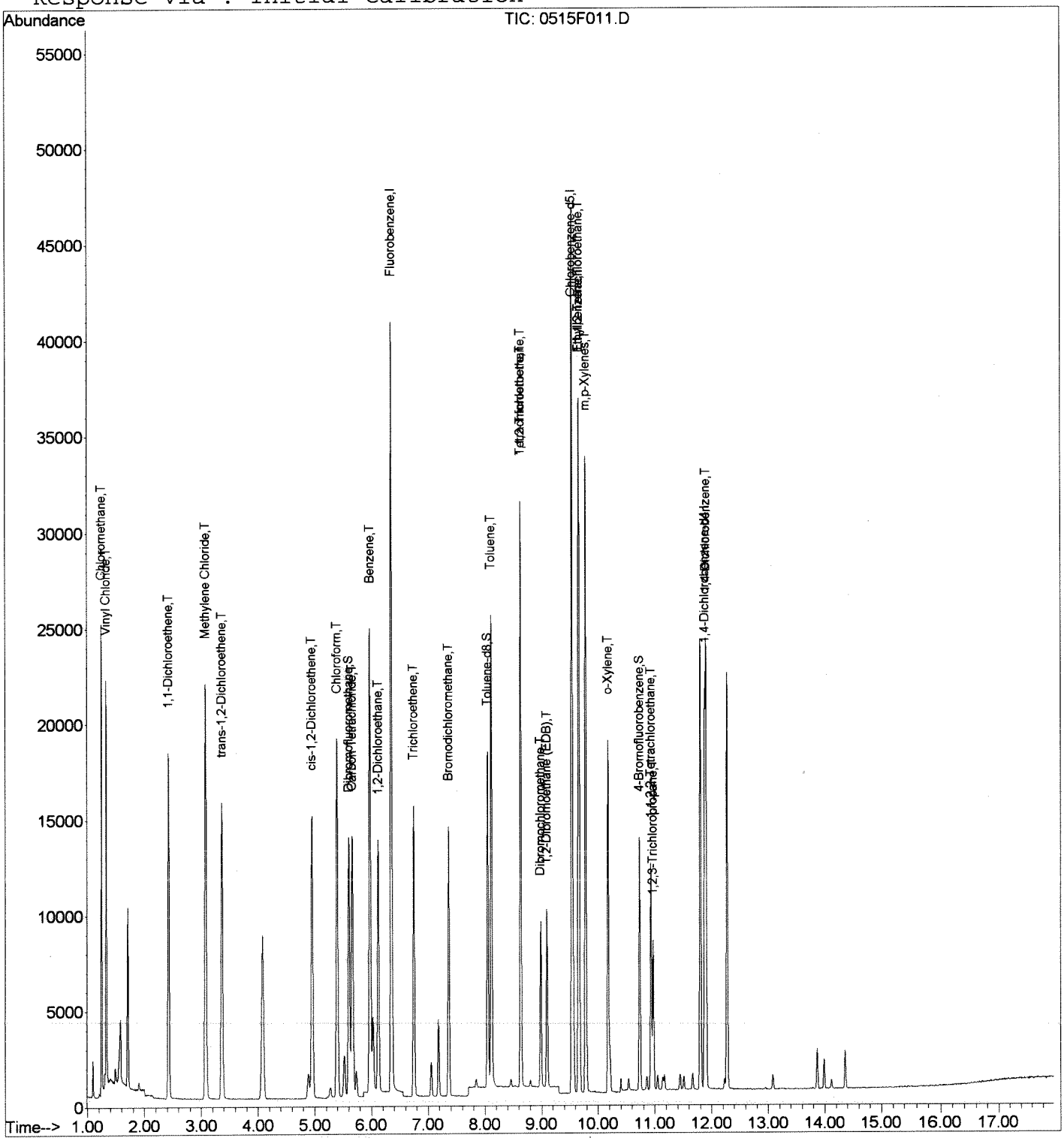
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55534	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37036	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	15685	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	11936	596.34	ng/L	0.00
Spiked Amount 1000.000			Recovery =	59.63%		
15) Toluene-d8	8.05	98	22426	520.22	ng/L	0.00
Spiked Amount 1000.000			Recovery =	52.02%		
25) 4-Bromofluorobenzene	10.73	95	8171	536.77	ng/L	0.00
Spiked Amount 1000.000			Recovery =	53.68%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	14515	471.20	ng/L	99
3) Vinyl Chloride	1.33	62	13266	446.89	ng/L	100
4) 1,1-Dichloroethene	2.42	96	7430	458.26	ng/L	98
5) Methylene Chloride	3.08	84	14375	572.10	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	8815	474.51	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	8819	490.54	ng/L	99
8) Chloroform	5.39	83	19444	491.59	ng/L	98
10) Carbon Tetrachloride	5.66	117	11582	450.16	ng/L	99
11) Benzene	5.97	78	34178	485.07	ng/L	99
12) 1,2-Dichloroethane	6.12	62	14038	504.63	ng/L	99
13) Trichloroethene	6.75	95	8395	473.54	ng/L	99
14) Bromodichloromethane	7.36	83	13224	498.39	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	7423	499.84	ng/L	97
17) Dibromochloromethane	8.98	129	9057	493.17	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	7132	478.92	ng/L	98
20) Toluene	8.12	92	13706	464.03	ng/L	99
21) Ethylbenzene	9.65	106	6617	452.91	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	9684	504.90	ng/L	97
23) m,p-Xylenes	9.78	106	15240	885.99	ng/L	97
24) o-Xylene	10.18	106	7801	444.44	ng/L	99
26) 1,1,2,2-Tetrachloroethane	10.93	83	8563	474.73	ng/L	100
27) 1,2,3-Trichloropropane	10.98	110	2468	457.03	ng/L	90
28) Tetrachloroethene	8.63	164	6654	463.88	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	13085	470.93	ng/L	97

KA 5/17/17

(#) = qualifier out of range (m) = manual integration
0515F011.D 051517MS30_8260SIM.M Tue May 16 11:28:41 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F011.D Vial: 11
Acq On : 15 May 2017 07:54 pm Operator: GH
Sample : SIM ICAL 500 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F012.D Vial: 12
Acq On : 15 May 2017 08:22 pm Operator: GH
Sample : SIM ICAL 1000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

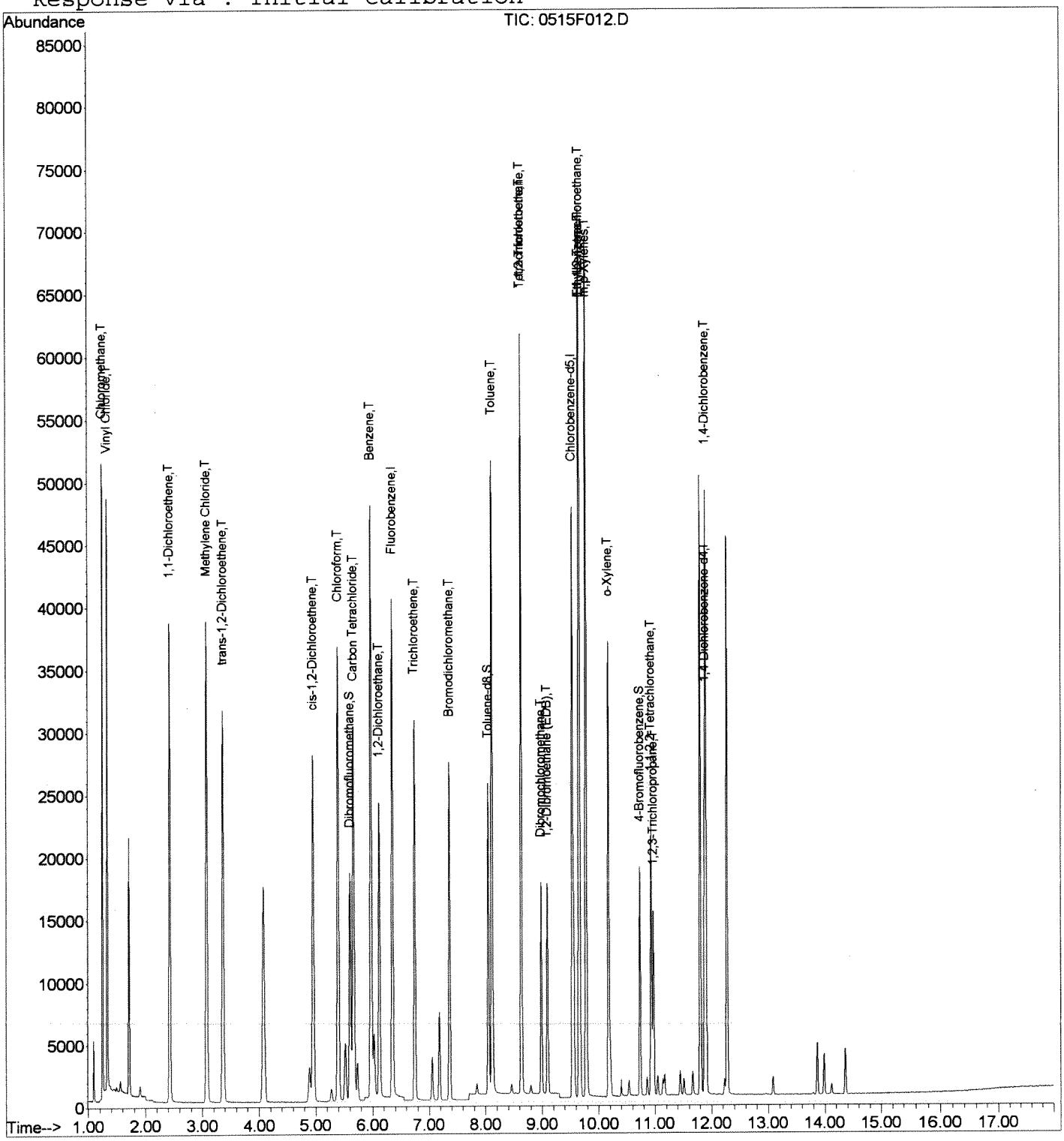
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55597	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37494	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	16911	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	15912	794.08	ng/L	0.00
Spiked Amount 1000.000			Recovery =	79.41%		
15) Toluene-d8	8.05	98	31433	728.33	ng/L	0.00
Spiked Amount 1000.000			Recovery =	72.83%		
25) 4-Bromofluorobenzene	10.73	95	11239	729.29	ng/L	0.00
Spiked Amount 1000.000			Recovery =	72.93%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	30227	980.15	ng/L	100
3) Vinyl Chloride	1.33	62	29539	993.95	ng/L	100
4) 1,1-Dichloroethene	2.43	96	16005	986.02	ng/L	96
5) Methylene Chloride	3.08	84	25180	1000.98	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	18045	970.25	ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	17026	945.97	ng/L	98
8) Chloroform	5.39	83	37861	956.12	ng/L	99
10) Carbon Tetrachloride	5.67	117	25728	998.85	ng/L	99
11) Benzene	5.97	78	66852	947.73	ng/L	99
12) 1,2-Dichloroethane	6.12	62	26005	933.75	ng/L	99
13) Trichloroethene	6.75	95	17240	971.35	ng/L	98
14) Bromodichloromethane	7.36	83	24928	938.43	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	13740	924.16	ng/L	98
17) Dibromochloromethane	8.98	129	16985	923.82	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	13316	893.16	ng/L	99
20) Toluene	8.12	92	28013	936.82	ng/L	99
21) Ethylbenzene	9.65	106	13641	922.27	ng/L	95
22) 1,1,1,2-Tetrachloroethane	9.67	131	18397	947.46	ng/L	100
23) m,p-Xylenes	9.78	106	31387	1802.42	ng/L	99
24) o-Xylene	10.18	106	15806	889.51	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	16171	885.56	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	4805	878.93	ng/L	90
28) Tetrachloroethene	8.63	164	14096	970.70	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	26890	897.61	ng/L	98

(#) = qualifier out of range (m) = manual integration
0515F012.D 051517MS30_8260SIM.M Tue May 16 11:28:42 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F012.D Vial: 12
Acq On : 15 May 2017 08:22 pm Operator: GH
Sample : SIM ICAL 1000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F013.D Vial: 13
Acq On : 15 May 2017 08:49 pm Operator: GH
Sample : SIM ICAL 2000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

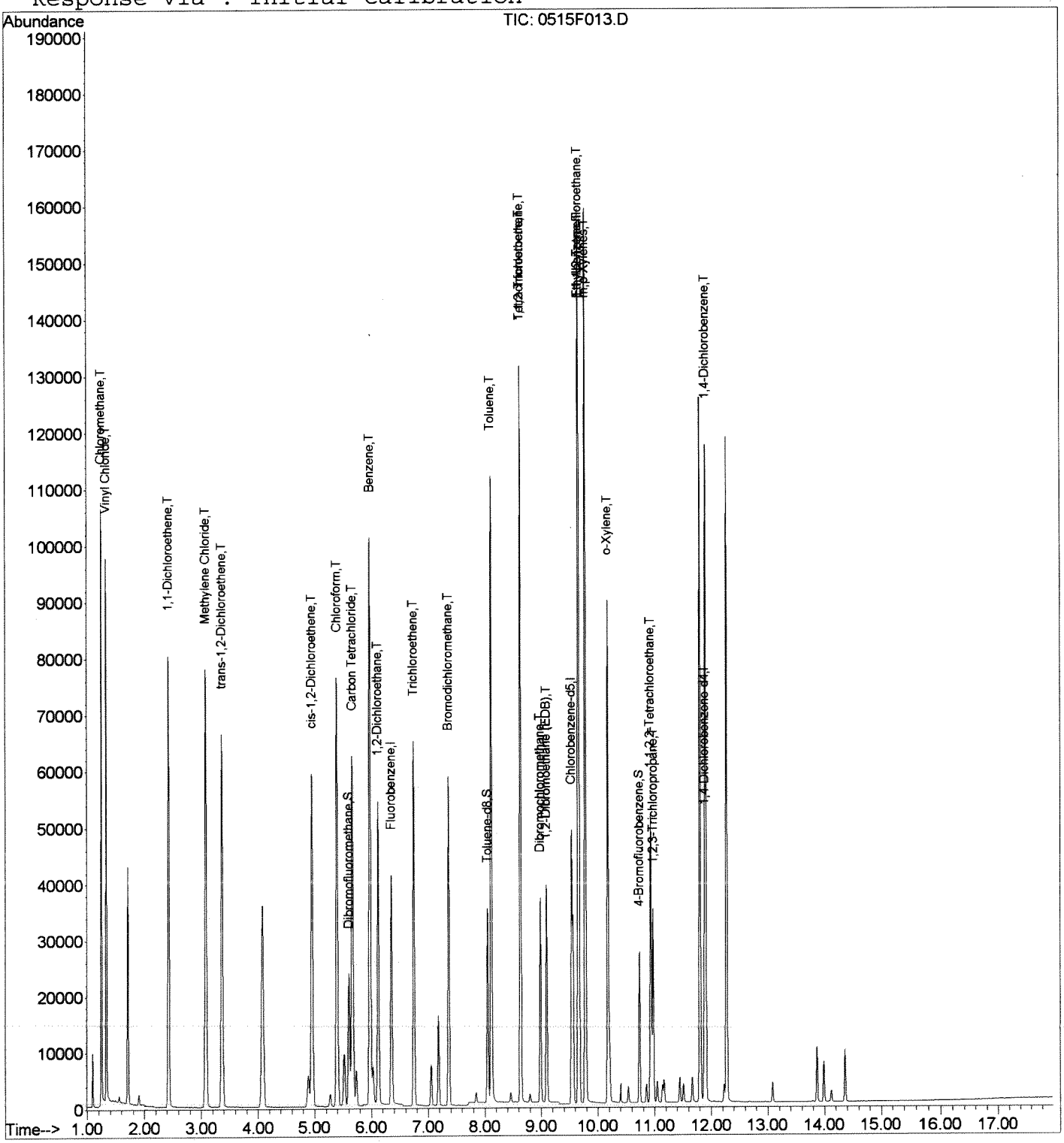
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	56584	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	38599	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	19339	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20394	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
15) Toluene-d8	8.05	98	43924	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
25) 4-Bromofluorobenzene	10.73	95	15865	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	62773	2000.00	ng/L	100
3) Vinyl Chloride	1.33	62	60493	2000.00	ng/L	100
4) 1,1-Dichloroethene	2.43	96	33040	2000.00	ng/L	100
5) Methylene Chloride	3.08	84	51204	2000.00	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	37857	2000.00	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	36636	2000.00	ng/L	100
8) Chloroform	5.39	83	80603	2000.00	ng/L	100
10) Carbon Tetrachloride	5.66	117	52430	2000.00	ng/L	100
11) Benzene	5.98	78	143583	2000.00	ng/L	100
12) 1,2-Dichloroethane	6.12	62	56689	2000.00	ng/L	100
13) Trichloroethene	6.75	95	36127	2000.00	ng/L	100
14) Bromodichloromethane	7.36	83	54070	2000.00	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	30263	2000.00	ng/L	100
17) Dibromochloromethane	8.98	129	37424	2000.00	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	30347	2000.00	ng/L	100
20) Toluene	8.12	92	61567	2000.00	ng/L	100
21) Ethylbenzene	9.66	106	30453	2000.00	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	39979	2000.00	ng/L	100
23) m,p-Xylenes	9.78	106	71708	4000.00	ng/L	100
24) o-Xylene	10.17	106	36586	2000.00	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	37598	2000.00	ng/L	100
27) 1,2,3-Trichloropropane	10.97	110	11256	2000.00	ng/L	100
28) Tetrachloroethene	8.63	164	29899	2000.00	ng/L	100
30) 1,4-Dichlorobenzene	11.90	146	68517	2000.00	ng/L	100

(#) = qualifier out of range (m) = manual integration
0515F013.D 051517MS30_8260SIM.M Tue May 16 11:28:42 2017 Page 1

Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F013.D Vial: 13
Acq On : 15 May 2017 08:49 pm Operator: GH
Sample : SIM ICAL 2000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F014.D Vial: 14
Acq On : 15 May 2017 09:16 pm Operator: GH
Sample : SIM ICAL 5000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

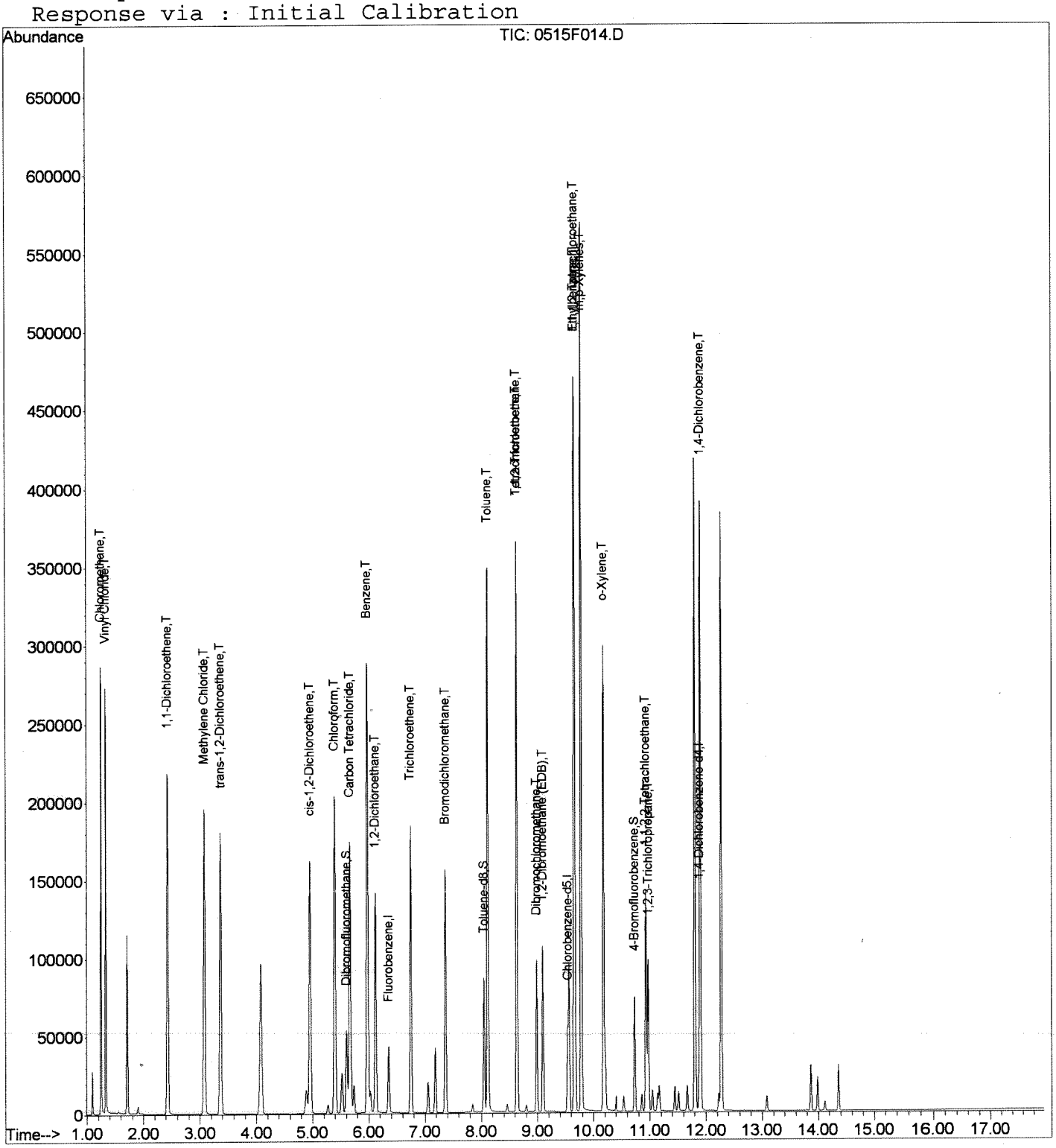
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	60512	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	41870	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	25034	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	45799	2099.93	ng/L	0.00
Spiked Amount 1000.000			Recovery = 209.99%			
15) Toluene-d8	8.05	98	109697	2335.31	ng/L	0.00
Spiked Amount 1000.000			Recovery = 233.53%			
25) 4-Bromofluorobenzene	10.73	95	44167	2566.44	ng/L	0.00
Spiked Amount 1000.000			Recovery = 256.64%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	170484	5079.17	ng/L	99
3) Vinyl Chloride	1.33	62	167624	5182.19	ng/L	100
4) 1,1-Dichloroethene	2.43	96	91872	5200.26	ng/L	99
5) Methylene Chloride	3.08	84	129131	4716.38	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	103750	5125.36	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	100373	5123.79	ng/L	98
8) Chloroform	5.39	83	213436	4952.20	ng/L	99
10) Carbon Tetrachloride	5.66	117	148990	5314.46	ng/L	100
11) Benzene	5.98	78	406583	5295.76	ng/L	100
12) 1,2-Dichloroethane	6.12	62	147871	4878.28	ng/L	100
13) Trichloroethene	6.75	95	102151	5288.02	ng/L	99
14) Bromodichloromethane	7.36	83	144084	4983.58	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	80353	4965.61	ng/L	100
17) Dibromochloromethane	8.98	129	99829	4988.71	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	81400	5016.38	ng/L	96
20) Toluene	8.12	92	190354	5700.55	ng/L	100
21) Ethylbenzene	9.66	106	97674	5913.60	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	108103	4985.50	ng/L	100
23) m,p-Xylenes	9.78	106	252528	12985.99	ng/L	99
24) o-Xylene	10.18	106	125617	6330.48	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	102034	5003.61	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	31464	5153.86	ng/L	98
28) Tetrachloroethene	8.63	164	88054	5429.95	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	230355	5194.37	ng/L	99

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F014.D 051517MS30_8260SIM.M Tue May 16 11:28:43 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F014.D Vial: 14
Acq On : 15 May 2017 09:16 pm Operator: GH
Sample : SIM ICAL 5000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F015.D Vial: 15
Acq On : 15 May 2017 09:44 pm Operator: GH
Sample : SIM ICAL 7000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

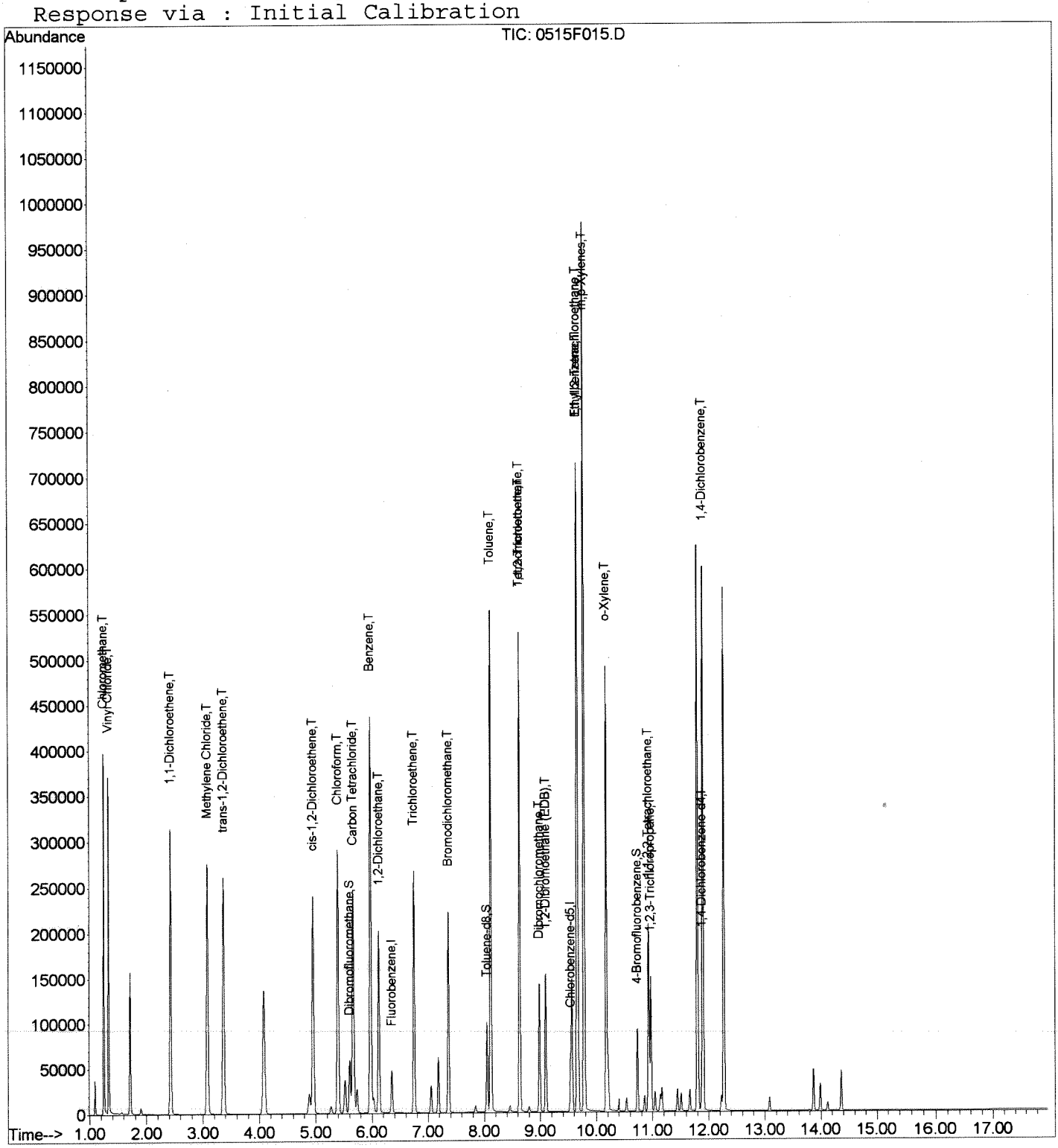
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	66029	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.53	117	45952	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	27571	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	51534	2165.46	ng/L	0.00
Spiked Amount 1000.000			Recovery = 216.55%			
15) Toluene-d8	8.05	98	122928	2398.32	ng/L	0.00
Spiked Amount 1000.000			Recovery = 239.83%			
25) 4-Bromofluorobenzene	10.73	95	54946	2909.16	ng/L	0.00
Spiked Amount 1000.000			Recovery = 290.92%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	240127	6556.27	ng/L	100
3) Vinyl Chloride	1.33	62	233426	6613.53	ng/L	100
4) 1,1-Dichloroethene	2.43	96	131429	6817.73	ng/L	99
5) Methylene Chloride	3.08	84	181435	6073.04	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	149069	6748.85	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	147769	6912.96	ng/L	98
8) Chloroform	5.39	83	302940	6441.61	ng/L	99
10) Carbon Tetrachloride	5.66	117	209920	6862.19	ng/L	100
11) Benzene	5.97	78	606848	7243.79	ng/L	99
12) 1,2-Dichloroethane	6.12	62	213596	6457.78	ng/L	99
13) Trichloroethene	6.75	95	147889	7016.05	ng/L	99
14) Bromodichloromethane	7.36	83	207061	6563.43	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	117283	6642.20	ng/L	99
17) Dibromochloromethane	8.98	129	145981	6685.52	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	121464	6859.95	ng/L	98
20) Toluene	8.12	92	294679	8040.87	ng/L	100
21) Ethylbenzene	9.66	106	155203	8561.93	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	154446	6490.02	ng/L	99
23) m,p-Xylenes	9.78	106	422544	19798.67	ng/L	99
24) o-Xylene	10.17	106	202681	9306.79	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	153008	6836.77	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	47406	7075.40	ng/L	98
28) Tetrachloroethene	8.63	164	127181	7146.07	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	346345	7091.24	ng/L	99

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F015.D 051517MS30_8260SIM.M Tue May 16 11:28:44 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F015.D Vial: 15
Acq On : 15 May 2017 09:44 pm Operator: GH
Sample : SIM ICAL 7000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F016.D Vial: 16
Acq On : 15 May 2017 10:12 pm Operator: GH
Sample : SIM ICAL 10000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:26 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	70658	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	49882	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	30847	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	90840	3567.03 ng/L	0.00
Spiked Amount 1000.000			Recovery = 356.70%		
15) Toluene-d8	8.05	98	245121	4469.01 ng/L	0.00
Spiked Amount 1000.000			Recovery = 446.90%		
25) 4-Bromofluorobenzene	10.73	95	103056	5026.50 ng/L	0.00
Spiked Amount 1000.000			Recovery = 502.65%		
Target Compounds					Qvalue
2) Chloromethane	1.25	50	330636	8436.06 ng/L	100
3) Vinyl Chloride	1.33	62	325025	8605.46 ng/L	100
4) 1,1-Dichloroethene	2.43	96	182523	8847.89 ng/L	99
5) Methylene Chloride	3.08	84	251569	7868.93 ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	209862	8878.71 ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	212375	9284.48 ng/L	98
8) Chloroform	5.39	83	422832	8401.93 ng/L	99
10) Carbon Tetrachloride	5.66	117	292333	8930.18 ng/L	100
11) Benzene	5.97	78	876596	9778.20 ng/L	99
12) 1,2-Dichloroethane	6.12	62	301120	8507.52 ng/L	99
13) Trichloroethene	6.75	95	211752	9387.67 ng/L	98
14) Bromodichloromethane	7.36	83	292438	8662.43 ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	165516	8759.72 ng/L	99
17) Dibromochloromethane	8.98	129	207103	8863.36 ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	174839	9227.52 ng/L	98
20) Toluene	8.12	92	455267	11444.07 ng/L	99
21) Ethylbenzene	9.65	106	242741	12336.03 ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	218417	8455.06 ng/L	100
23) m,p-Xylenes	9.78	106	678470	29285.67 ng/L	97
24) o-Xylene	10.18	106	312017	13198.53 ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	216291	8902.99 ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	66660	9165.23 ng/L	92
28) Tetrachloroethene	8.63	164	182229	9432.42 ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	503448	9213.13 ng/L	98

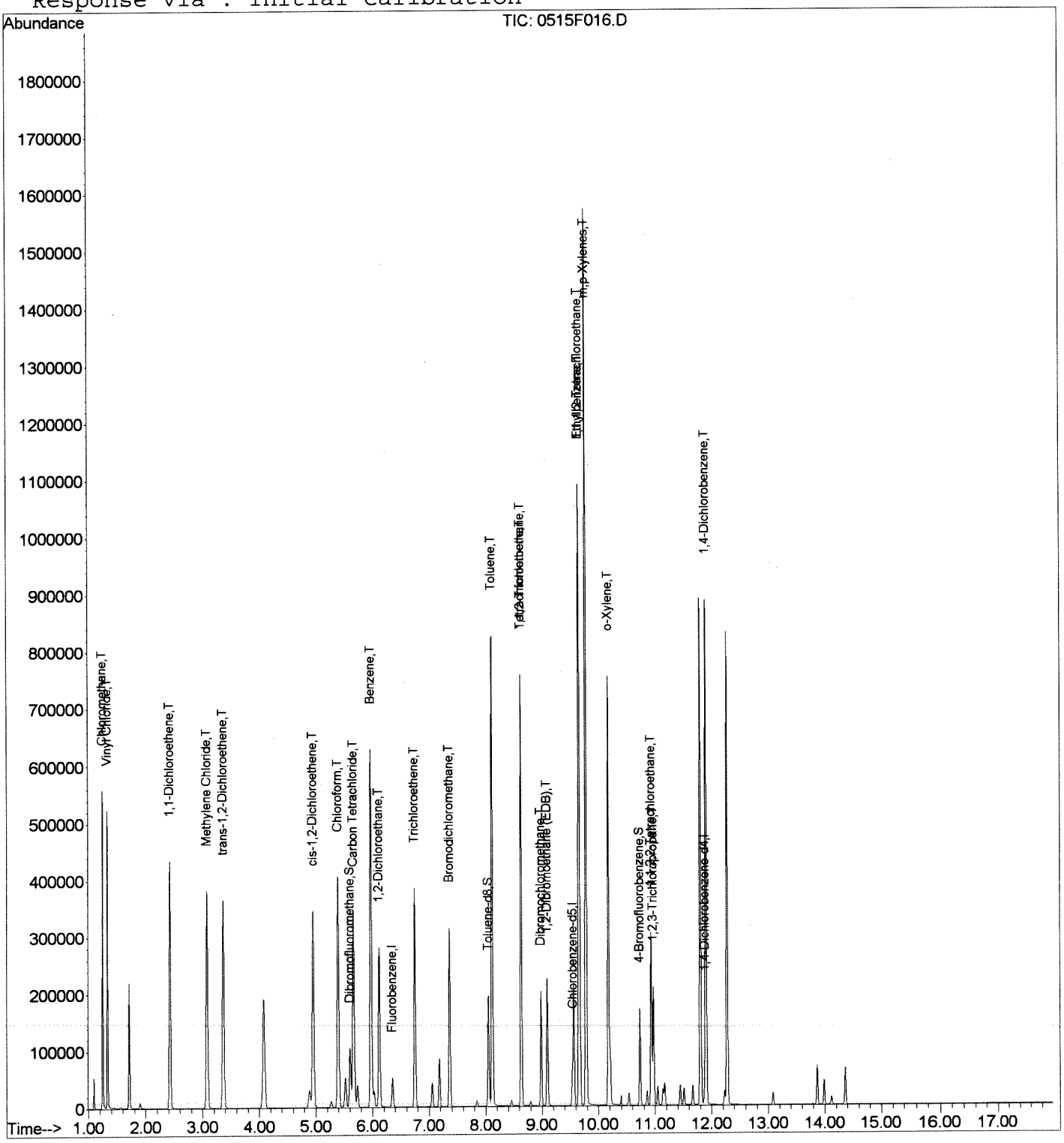
(#) = qualifier out of range (m) = manual integration
0515F016.D 051517MS30_8260SIM.M Tue May 16 11:28:44 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F016.D
Acq On : 15 May 2017 10:12 pm
Sample : SIM ICAL 10000 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017

Vial: 16
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:45:36 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

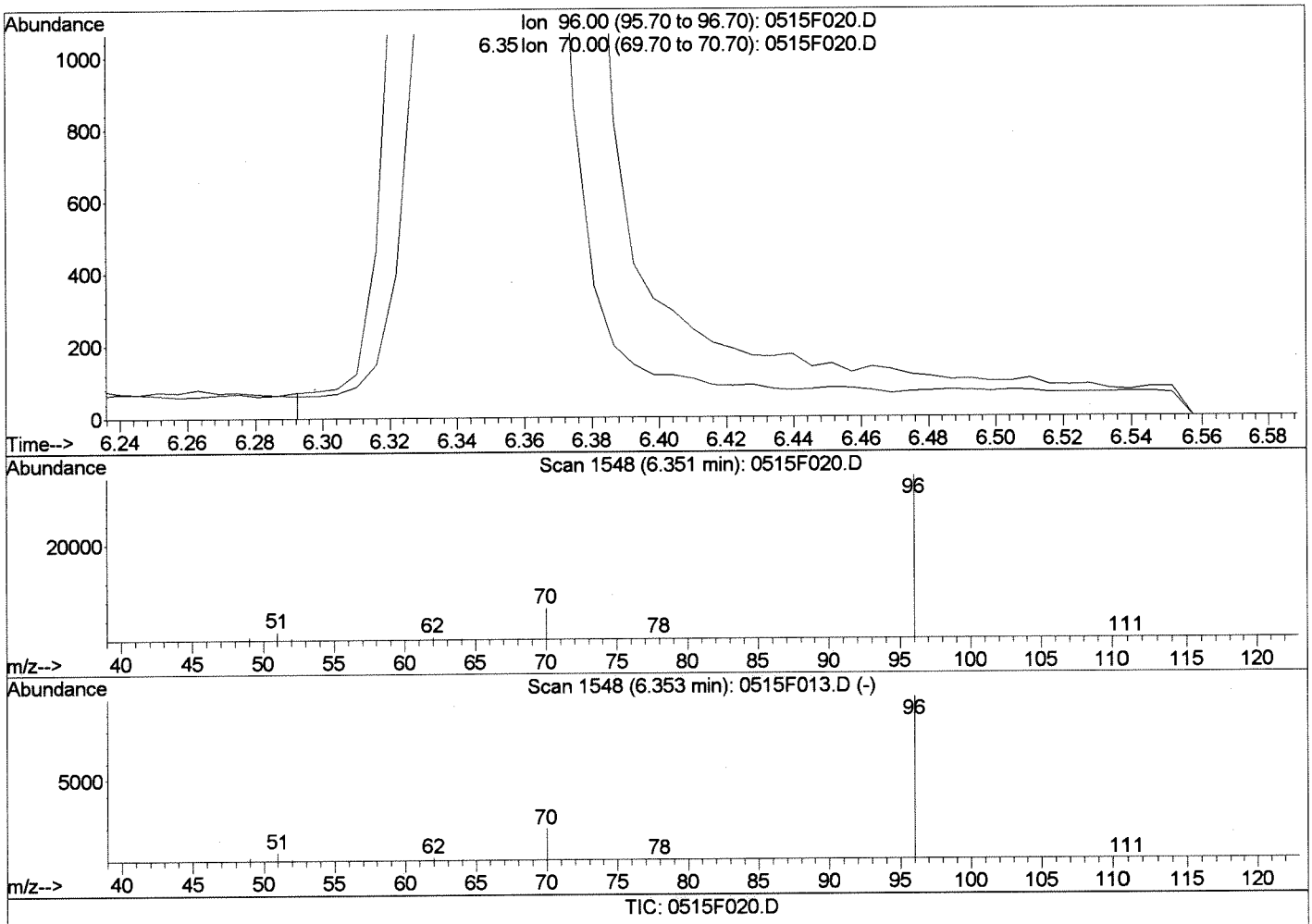
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	60011m	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	42478	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	20752	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20634	929.60	ng/L	0.00
Spiked Amount 1000.000			Recovery = 92.96%			
15) Toluene-d8	8.05	98	51260	1070.91	ng/L	0.00
Spiked Amount 1000.000			Recovery = 107.09%			
25) 4-Bromofluorobenzene	10.73	95	16790	888.49	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.85%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	53040	1544.15	ng/L	99
3) Vinyl Chloride	1.33	62	53703	1608.82	ng/L	99
4) 1,1-Dichloroethene	2.43	96	37588	2024.96	ng/L	98
5) Methylene Chloride	3.08	84	53605	2062.59	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	41221	1958.14	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	40390	2012.29	ng/L	98
8) Chloroform	5.39	83	87226	2021.22	ng/L	99
10) Carbon Tetrachloride	5.66	117	57968	2035.43	ng/L	99
11) Benzene	5.97	78	153889	1876.12	ng/L	100
12) 1,2-Dichloroethane	6.12	62	59693	1950.83	ng/L	99
13) Trichloroethene	6.75	95	40581	2011.60	ng/L	98
14) Bromodichloromethane	7.36	83	59078	2044.17	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	32272	1995.07	ng/L	98
17) Dibromochloromethane	8.98	129	38530	1922.24	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	31349	1982.70	ng/L	97
20) Toluene	8.12	92	72439	1943.07	ng/L	99
21) Ethylbenzene	9.65	106	36388	2023.60	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	41345	1845.40	ng/L	99
23) m,p-Xylenes	9.78	106	84779	4118.72	ng/L	97
24) o-Xylene	10.18	106	41872	1994.48	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	40199	2009.41	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	11537	1839.31	ng/L #	89
28) Tetrachloroethene	8.63	164	33789	1933.26	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	77205	2061.73	ng/L	97

(#) = qualifier out of range (m) = manual integration
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:31:11 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F020.D
Acq On : 16 May 2017 12:02 am
Sample : ICV
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:45 2017

Vial: 20
Operator: GH
Inst : MS30
Multiplr: 1.00
Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0515F020.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L

response 60778

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

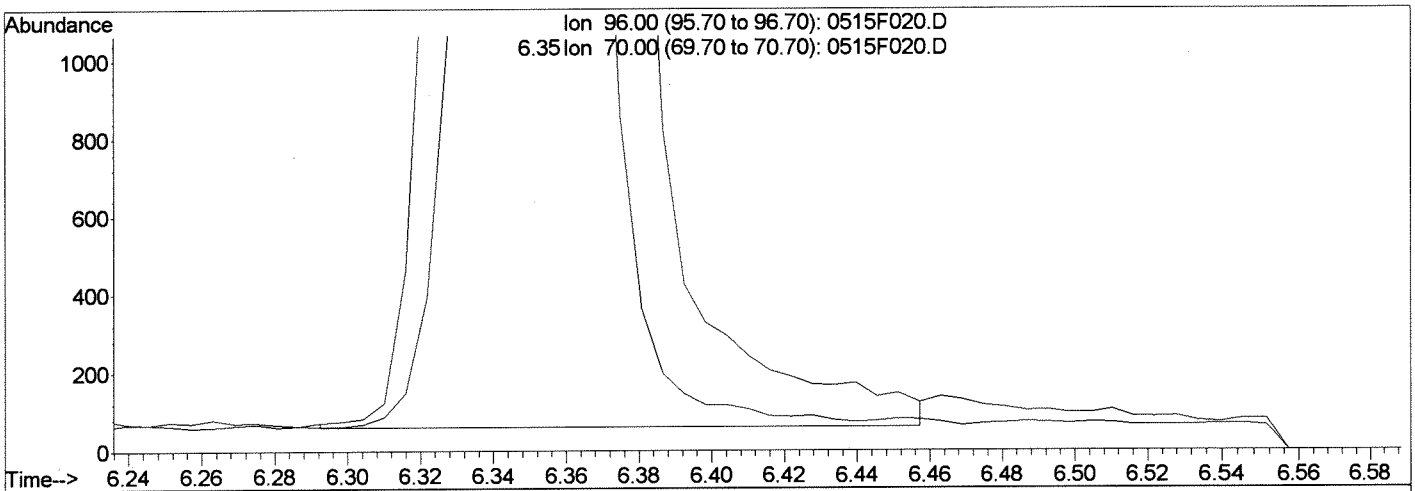
Before

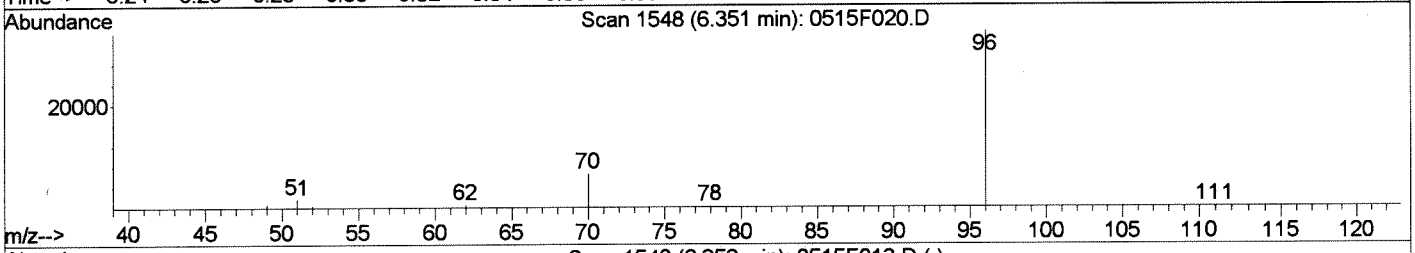
05/16/17

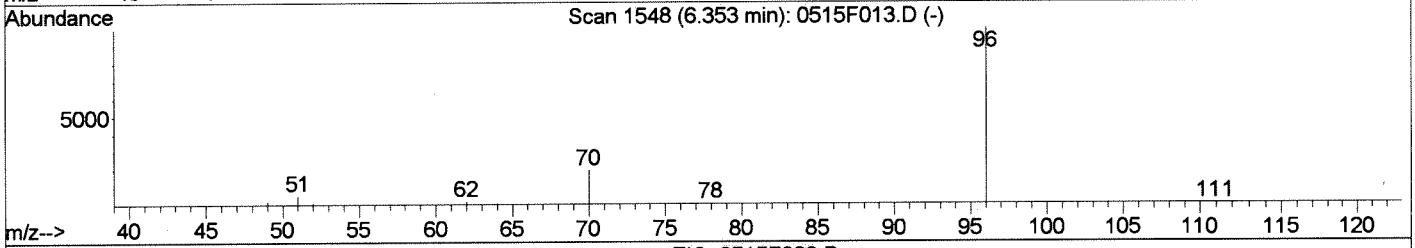
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:29:21 2017

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:29 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration







TIC: 0515F020.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L m

response 60011

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

After

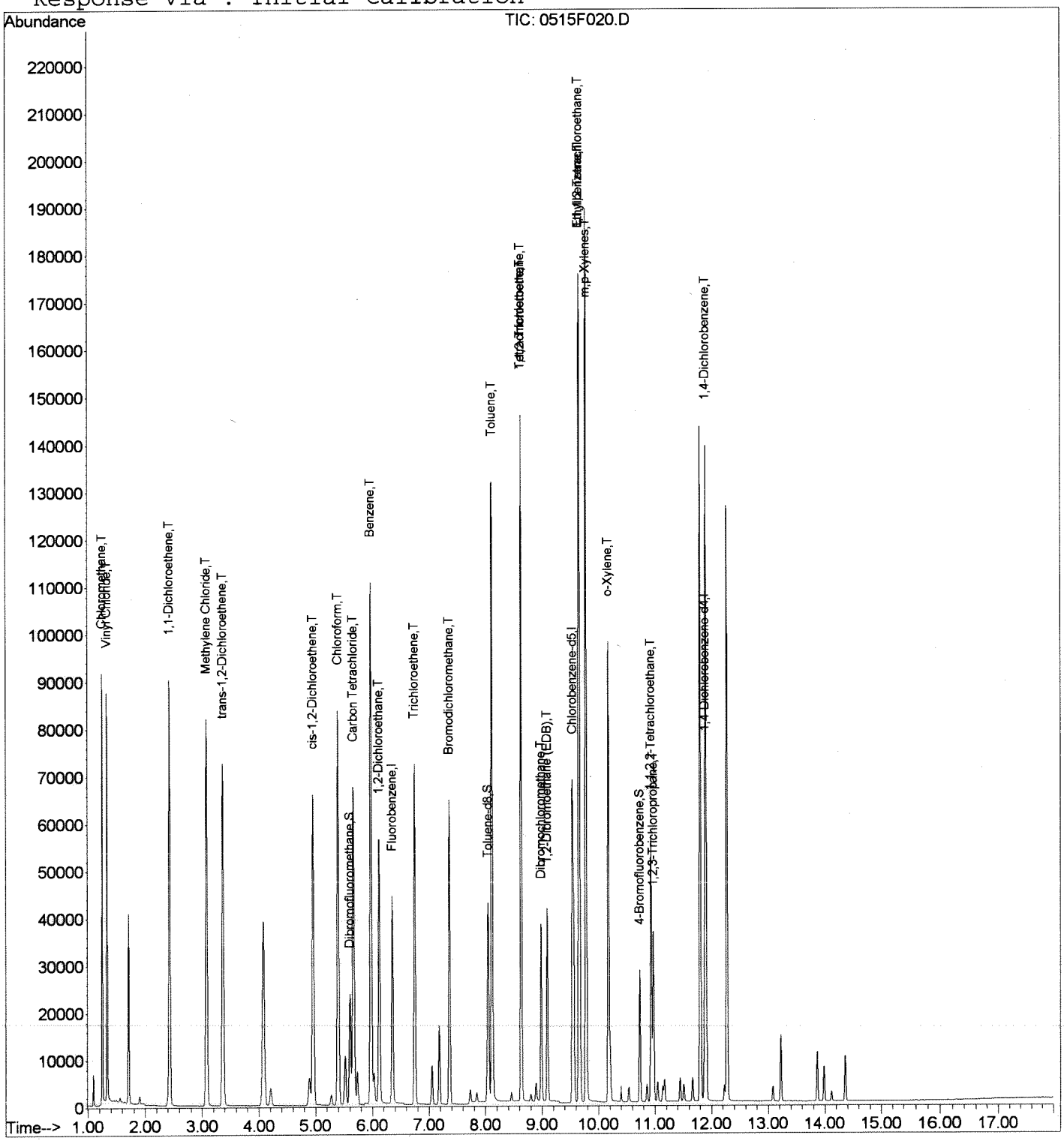
Baseline correction

05/16/17

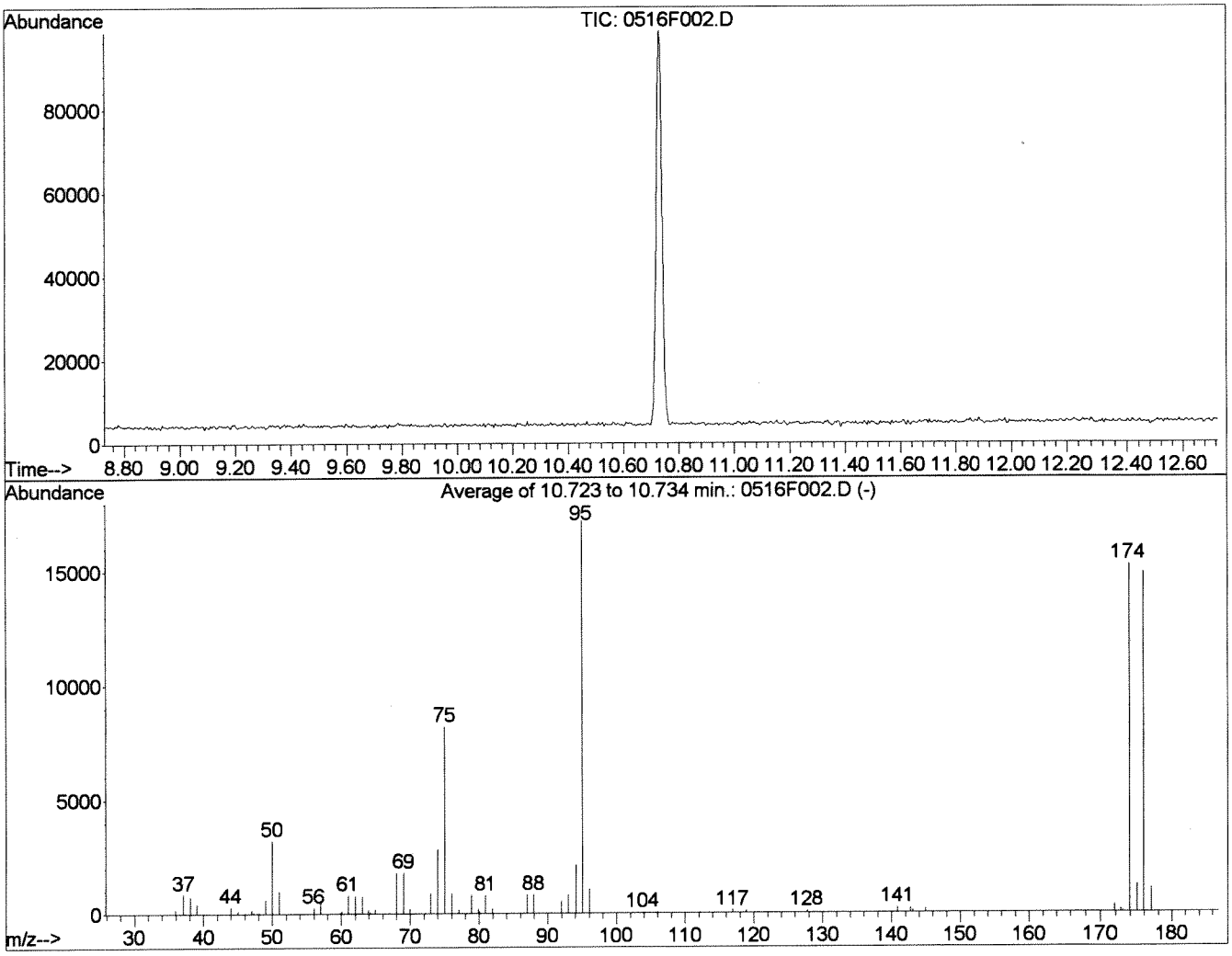
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:29:41 2017

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:29 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051617_SIM\0516F002.D Vial: 2
Acq On : 16 May 2017 09:55 am Operator: GH
Sample : 50NG BFB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM



AutoFind: Scans 1857, 1858, 1859; Background Corrected with Scan 1850

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.7	3221	PASS
75	95	30	60	47.6	8172	PASS
95	95	100	100	100.0	17186	PASS
96	95	5	9	6.2	1069	PASS
173	174	0.00	2	0.9	133	PASS
174	95	50	120	88.7	15241	PASS
175	174	5	9	8.0	1212	PASS
176	174	95	101	97.9	14914	PASS
177	176	5	9	7.1	1052	PASS

J:\MS30\DATA\051617_SIM\0516F002.D 051517MS30_8260SIM.M Tue May 16 11:2

Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051617_SIM\0516F003.D Vial: 3
Acq On : 16 May 2017 10:36 am Operator: GH
Sample : MIX 6 ONLY ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:57:48 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54623	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36181	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14352	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20829	1030.95	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.10%			
15) Toluene-d8	8.05	98	45229	1038.12	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.81%			
25) 4-Bromofluorobenzene	10.73	95	14176	880.72	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.07%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	64784	2072.09	ng/L	100
3) Vinyl Chloride	1.33	62	60947	2005.93	ng/L	99
30) 1,4-Dichlorobenzene	11.91	146	198	7.65	ng/L	95

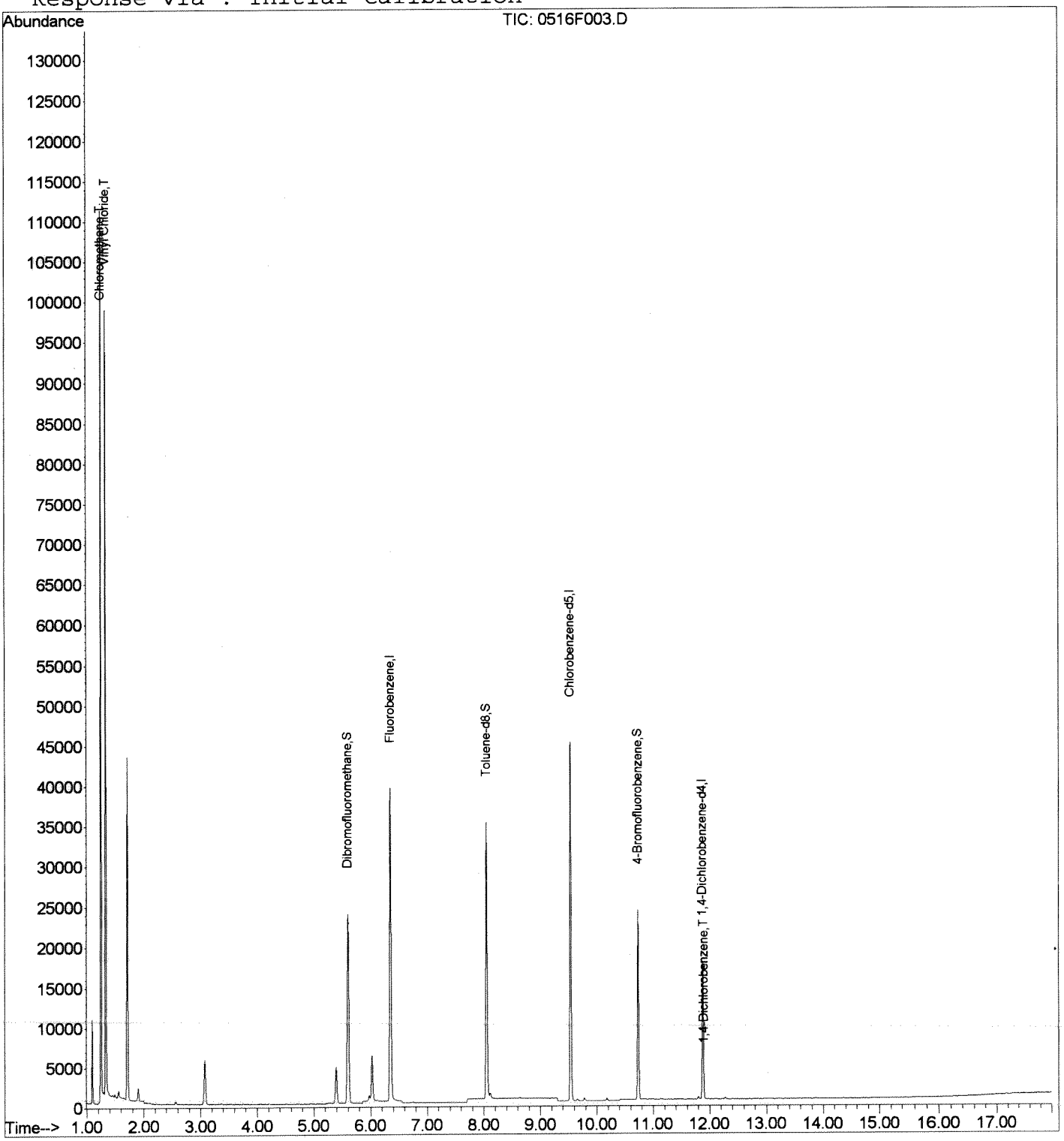
5/16/17

5/16/17

(#) = qualifier out of range (m) = manual integration
0516F003.D 051517MS30_8260SIM.M Tue May 16 11:28:45 2017 Page 1

Data File : J:\MS30\DATA\051617_SIM\0516F003.D Vial: 3
Acq On : 16 May 2017 10:36 am Operator: GH
Sample : MIX 6 ONLY ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:28 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Appendix B9
GCAL Report 217053112 dated June 2, 2017

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 06/02/2017

GCAL Report 217053112

Project ARNG OMS 28/ 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 217053112

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 217053112

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

See subcontract laboratory report case narrative.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21705311201	OMS-28-GW18-18-S	Water	05/05/2017 10:45	05/11/2017 09:30
21705311202	Trip Blank	Water	05/05/2017 00:01	05/11/2017 09:30
21705311203	OMS-28-GW13-32-S	Water	05/09/2017 10:45	05/11/2017 09:30
21705311204	OMS-28-GW28-12-S	Water	05/10/2017 12:05	05/11/2017 09:30

Client ID: 4838 - AECOM
SDG: 217053112
PM: AMK

AECOM

Chain of Custody and Analytical Requ

t Name / Site Name: ARNG OMS 28 Mobile AL

t Name: GCAL

cted by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code[2]	Sample Matrix[3]	Sample Analysis Requested: Number of containers	VC (8260SIM)	Comments	Cooler ID
MS-28-GW18-18-S	5/5/17	1045	14. 18	Split	WG	3	X		1
Trip Blank	5/5/17		-	TB	WQ	2	X		2
MS-28-GW1332-S	5/9/17	1045	28 32	Split	WG	3	X		3
MS-28-GW2812-S	5/10/17	1205	8.12	Split	WG	3	X		4
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

ments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
Randy Morgan	5/10/17	1745	1.	5/11/17	0930
			2.		
			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: ALS Kelso
Lab Receipient:

Shipped: XX
Airbill #: 8024 7813 7736
Location: Kelso WA
Date: Time:

mple Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

trix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

Project Number 60439687.2.3

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

SAMPLE RECEIVING CHECKLIST

217053112

SAMPLE DELIVERY GROUP 217053112	
Client PM AMK 4838 - AECOM	**Transport Method** OTHER
Profile Number 264814	**Received By** Reese, Sean M.
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 05/11/17

CHECKLIST	YES	NO	NA
Samples received with proper thermal and chemical preservation?	☐	☐	☑
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☐	☐	☑
When used, were custody seals intact?	☐	☐	☑
COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	☐	☐	☑
Short holds or RUSH samples received?	☐	☐	☑
All containers received in good condition and within hold time?	☐	☐	☑
All sample labels and containers received match the chain of custody?	☐	☐	☑
Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	☐	☐	☑
Preservative added to any containers?	☐	☐	☑
VOC water containers received with headspace < 6mm?	☐	☐	☑
Received filtered sample volume for dissolved analysis?	☐	☐	☑
Trip blank present in all coolers containing VOC waters?	☐	☐	☑
Samples collected in containers provided by GCAL?	☐	☐	☑

COOLERS

Airbill	Thermometer ID: NA	Temp(°C)
		NA

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES SUBOUTS ONLY

Revision 1.6

Page 1 of 1

ALS Environmental
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May 31, 2017

Analytical Report for Service Request No: K1704732

Anna Kinchen
Gulf Coast Analytical Laboratories
7979 GSRI Avenue
Baton Rouge, LA 70820

RE: ARNG OMS 28 Mobile AL / 60439687.2.3

Dear Anna,

Enclosed are the results of the sample(s) submitted to our laboratory May 11, 2017
For your reference, these analyses have been assigned our service request number **K1704732.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

ALS Environmental
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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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ALS ENVIRONMENTAL

Client:	Gulf Coast Analytical Labs GCAL	**Service Request No.:**	K1704732
Project:	ARNG OMS 28 Mobile AL/ 60439687.2.3	**Date Received:**	05/11/17
Sample Matrix:	Water		

Case Narrative

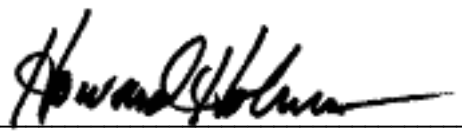
All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Four water samples were received for analysis at ALS Environmental on 05/11/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260-SIM

No anomalies associated with the analysis of these samples were observed.

Approved by 

Chain of Custody

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K1704732

AECOM

Chain of Custody and Analytical Request

Laboratory: ALS Kelso

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	Sample Analysis Requested: VC (8260SIM)	Comments	Cooler ID
OMS-28-GW18-18-S	5/5/17	1045	14. 18	Split	WG	3	X		
Trip Blank	5/5/17		-	TB	WQ	2	X		
OMS-28-GW1332-S	5/9/17	1045	28. 32	Split	WG	3	X		
OMS-28-GW2812-S	5/10/17	1205	8. 12	Split	WG	3	X		
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
Randy Morgan	5/10/17	1745	1.	5/11/17	0930
			2.		
			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:		Shipped:	XX
Method of Shipment:	Fed Ex	Airbill #:	8024 7813 4736
Analytical Lab:	ALS Kelso	Location:	Kelso WA
Lab Receipient:		Date:	Time:

) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

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Project Number 60439687.2.3

Purchase Order Number

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

PC H2

Cooler Receipt and Preservation Form

Client GCAL/ARCOM Service Request K17 04732

Received: 5/11/17 Opened: 5/11/17 By: [illegible] Unloaded: 5/11/17 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? one, front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
0.8	0.0	—	—	-0.2	352		802478134736	

4. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

7/25/16

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704732
Project: ARNG OMS 28 Mobile AL

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
OMS-28-GW18-18-S	K1704732-001	05/05/2017	05/11/2017
Trip Blank	K1704732-002	05/05/2017	05/11/2017
OMS-28-GW13-32-S	K1704732-003	05/09/2017	05/11/2017
OMS-28-GW28-12-S	K1704732-004	05/10/2017	05/11/2017

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704732
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/05/2017
Sample Matrix:	Water	**Date Received:**	05/11/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW18-18-S	**Units:**	ng/L
Lab Code:	K1704732-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	**180**		20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	101	77-123	05/16/17	Acceptable
Toluene-d8	100	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	76	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704732
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/05/2017
Sample Matrix:	Water	**Date Received:**	05/11/2017

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ng/L
Lab Code:	K1704732-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	101	77-123	05/16/17	Acceptable
Toluene-d8	99	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	74	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704732
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/09/2017
Sample Matrix:	Water	**Date Received:**	05/11/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW13-32-S	**Units:**	ng/L
Lab Code:	K1704732-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	104	77-123	05/16/17	Acceptable
Toluene-d8	102	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	79	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704732
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/10/2017
Sample Matrix:	Water	**Date Received:**	05/11/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW28-12-S	**Units:**	ng/L
Lab Code:	K1704732-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	104	77-123	05/16/17	Acceptable
Toluene-d8	100	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	76	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704732
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KWG1704141-3	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	93	77-123	05/16/17	Acceptable
Toluene-d8	99	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	75	46-118	05/16/17	Acceptable

Comments:

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704732
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B **Units:** Percent
Analysis Method: 8260C SIM **Level:** Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
OMS-28-GW18-18-S	K1704732-001	101	100	76
Trip Blank	K1704732-002	101	99	74
OMS-28-GW13-32-S	K1704732-003	104	102	79
OMS-28-GW28-12-S	K1704732-004	104	100	76
Method Blank	KWG1704141-3	93	99	75
Lab Control Sample	KWG1704141-1	91	101	83
Duplicate Lab Control Sample	KWG1704141-2	90	101	86

Surrogate Recovery Control Limits (%)

Sur1	=	Dibromofluoromethane	77-123
Sur2	=	Toluene-d8	74-112
Sur3	=	4-Bromofluorobenzene	46-118

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704732
Date Analyzed: 05/16/2017
Time Analyzed: 14:07

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS30\DATA\051617_SIM\0516F009.D
Instrument ID: MS30
Analysis Method: 8260C SIM

Lab Code: KWG1703959-2
Analysis Lot: KWG1703959

		Fluorobenzene		Chlorobenzene-d5	
		Area	**RT**	**Area**	**RT**
	ICAL Result ==>	56,584	6.35	38,599	9.54
	Upper Limit ==>	113,168	6.52	77,198	9.71
	Lower Limit ==>	28,292	6.18	19,300	9.37
Associated Analyses					
Continuing Calibration VerificationCCV	KWG1703959-2	58,376	6.35	40,304	9.54
Lab Control Sample	KWG1704141-1	58,644	6.35	39,127	9.54
Duplicate Lab Control Sample	KWG1704141-2	59,220	6.35	40,747	9.54
Method Blank	KWG1704141-3	56,405	6.35	37,159	9.54
Trip Blank	K1704732-002	53,230	6.35	35,272	9.54
OMS-28-GW18-18-S	K1704732-001	52,818	6.35	34,515	9.54
OMS-28-GW13-32-S	K1704732-003	51,801	6.35	35,929	9.54
OMS-28-GW28-12-S	K1704732-004	52,292	6.35	34,717	9.54

Results flagged with an asterisk (*) indicate values outside control criteria.

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704732
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	EPA 5030B	**Units:**	ng/L
Analysis Method:	8260C SIM	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1704141

	Lab Control Sample KWG1704141-1 Lab Control Spike			Duplicate Lab Control Sample KWG1704141-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	2020	2000	101	2030	2000	102	70-136	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704732
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017
		Time Analyzed:	16:08

Method Blank Summary
Volatile Organic Compounds

Sample Name:	Method Blank	**Instrument ID:**	MS30
Lab Code:	KWG1704141-3	**File ID:**	J:\MS30\DATA\051617_SIM\0516F013.D
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704141

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1704141-1	J:\MS30\DATA\051617_SIM\0516F010.D	05/16/17	14:43
Duplicate Lab Control Sample	KWG1704141-2	J:\MS30\DATA\051617_SIM\0516F011.D	05/16/17	15:13
Trip Blank	K1704732-002	J:\MS30\DATA\051617_SIM\0516F019.D	05/16/17	18:53
OMS-28-GW18-18-S	K1704732-001	J:\MS30\DATA\051617_SIM\0516F021.D	05/16/17	19:48
OMS-28-GW13-32-S	K1704732-003	J:\MS30\DATA\051617_SIM\0516F022.D	05/16/17	20:16
OMS-28-GW28-12-S	K1704732-004	J:\MS30\DATA\051617_SIM\0516F023.D	05/16/17	20:43

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704732
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017
		Time Analyzed:	14:43

Lab Control Sample Summary
Volatile Organic Compounds

Sample Name:	Lab Control Sample	**Instrument ID:**	MS30
Lab Code:	KWG1704141-1	**File ID:**	J:\MS30\DATA\051617_SIM\0516F010.D
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704141

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1704141-3	J:\MS30\DATA\051617_SIM\0516F013.D	05/16/17	16:08
Trip Blank	K1704732-002	J:\MS30\DATA\051617_SIM\0516F019.D	05/16/17	18:53
OMS-28-GW18-18-S	K1704732-001	J:\MS30\DATA\051617_SIM\0516F021.D	05/16/17	19:48
OMS-28-GW13-32-S	K1704732-003	J:\MS30\DATA\051617_SIM\0516F022.D	05/16/17	20:16
OMS-28-GW28-12-S	K1704732-004	J:\MS30\DATA\051617_SIM\0516F023.D	05/16/17	20:43

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704732
Date Analyzed: 05/16/2017
Time Analyzed: 13:23

Tune Summary
Volatile Organic Compounds

File ID: J:\MS30\DATA\051617_SIM\0516F008.D
Instrument ID: MS30
Column:

Analysis Method: 8260C SIM
Analysis Lot: KWG1703959

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	18.9	3789	PASS
75	95	30	60	48.0	9597	PASS
95	95	100	100	100.0	20008	PASS
96	95	5	9	6.6	1323	PASS
173	174	0	2	0.0	0	PASS
174	95	50	120	84.4	16896	PASS
175	174	5	9	7.3	1228	PASS
176	174	95	101	97.2	16416	PASS
177	176	5	9	7.6	1245	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1703959-2	J:\MS30\DATA\051617_SIM\0516F009.D	05/16/2017	14:07	
Lab Control Sample	KWG1704141-1	J:\MS30\DATA\051617_SIM\0516F010.D	05/16/2017	14:43	
Duplicate Lab Control Sample	KWG1704141-2	J:\MS30\DATA\051617_SIM\0516F011.D	05/16/2017	15:13	
Method Blank	KWG1704141-3	J:\MS30\DATA\051617_SIM\0516F013.D	05/16/2017	16:08	
Trip Blank	K1704732-002	J:\MS30\DATA\051617_SIM\0516F019.D	05/16/2017	18:53	
OMS-28-GW18-18-S	K1704732-001	J:\MS30\DATA\051617_SIM\0516F021.D	05/16/2017	19:48	
OMS-28-GW13-32-S	K1704732-003	J:\MS30\DATA\051617_SIM\0516F022.D	05/16/2017	20:16	
OMS-28-GW28-12-S	K1704732-004	J:\MS30\DATA\051617_SIM\0516F023.D	05/16/2017	20:43	
Continuing Calibration Verification	KWG1703959-3	J:\MS30\DATA\051617_SIM\0516F028.D	05/16/2017	23:01	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704732
Project: ARNG OMS 28 Mobile AL **Calibration Date:** 05/15/2017

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL15375 **Column:** MS
Instrument ID: MS30

Level ID	File ID	Level ID	File ID
A	J:\MS30\DATA\051517_SIM\0515F006.D	G	J:\MS30\DATA\051517_SIM\0515F012.D
B	J:\MS30\DATA\051517_SIM\0515F007.D	H	J:\MS30\DATA\051517_SIM\0515F013.D
C	J:\MS30\DATA\051517_SIM\0515F008.D	I	J:\MS30\DATA\051517_SIM\0515F014.D
D	J:\MS30\DATA\051517_SIM\0515F009.D	J	J:\MS30\DATA\051517_SIM\0515F015.D
E	J:\MS30\DATA\051517_SIM\0515F010.D	K	J:\MS30\DATA\051517_SIM\0515F016.D
F	J:\MS30\DATA\051517_SIM\0515F011.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Vinyl Chloride				B	10	0.665	C	20	0.610	D	50	0.621	E	100	0.604
	F	500	0.478	G	1000	0.531	H	2000	0.535	I	5000	0.554	J	7000	0.505
	K	10000	0.460												
Dibromofluoromethane										D	200	0.464	E	400	0.393
	F	600	0.358	G	800	0.358	H	1000	0.360	I	2000	0.378	J	2400	0.325
	K	4000	0.321												
Toluene-d8										D	200	0.911	E	400	0.765
	F	600	0.673	G	800	0.707	H	1000	0.776	I	2000	0.906	J	2400	0.776
	K	4000	0.867												
4-Bromofluorobenzene										D	200	0.472	E	400	0.392
	F	600	0.368	G	800	0.375	H	1000	0.411	I	2000	0.527	J	2400	0.498
	K	4000	0.516												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704732
Project: ARNG OMS 28 Mobile AL **Calibration Date:** 05/15/2017

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL15375 **Column:** MS
Instrument ID: MS30

		Calibration Evaluation					RRF Evaluation		
Analyte Name	**Compound Type**	**Fit Type**	**Eval.**	**Eval. Result**	**Q**	**Control Criteria**	**Average RRF**	**Q**	**Minimum RRF**
Vinyl Chloride	MS	AverageRF	% RSD	12.0		≤ 15	0.556		0.1
Dibromofluoromethane	SURR	AverageRF	% RSD	12.2		≤ 15	0.370		0.01
Toluene-d8	SURR	AverageRF	% RSD	11.1		≤ 15	0.798		0.01
4-Bromofluorobenzene	SURR	AverageRF	% RSD	14.8		≤ 15	0.445		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704732
Calibration Date: 05/15/2017
Date Analyzed: 05/16/2017

Second Source Calibration Verification
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration ID: CAL15375
Units: ng/L

File ID: J:\MS30\DATA\051517_SIM\0515F020.D
J:\MS30\DATA\051617_SIM\0516F003.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	2000	0.556	0.558	0	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704732
Date Analyzed: 05/16/2017

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration Date: 05/15/2017
Calibration ID: CAL15375
Analysis Lot: KWG1703959
Units: ng/L

File ID: J:\MS30\DATA\051617_SIM\0516F009.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	1800	0.1	0.556	0.495	-11	NA	± 20	AverageRF
Dibromofluoromethane	1000	900	0.01	0.370	0.334	-10	NA	± 20	AverageRF
Toluene-d8	1000	1000	0.01	0.798	0.797	0	NA	± 20	AverageRF
4-Bromofluorobenzene	1000	820	0.01	0.445	0.363	-18	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704732
Date Analyzed: 05/16/2017

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration Date: 05/15/2017
Calibration ID: CAL15375
Analysis Lot: KWG1703959
Units: ng/L

File ID: I:\MS30\DATA\051617_SIM\0516F028.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	2100	0.1	0.556	0.577	4	NA	± 50 %	AverageRF
Dibromofluoromethane	1000	980	0.01	0.370	0.362	-2	NA	± 50 %	AverageRF
Toluene-d8	1000	1000	0.01	0.798	0.802	1	NA	± 50 %	AverageRF
4-Bromofluorobenzene	1000	890	0.01	0.445	0.396	-11	NA	± 50 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704732
Project: ARNG OMS 28 Mobile AL

Analysis Run Log
Volatile Organic Compounds

Analysis Method: 8260C SIM **Analysis Lot:** KWG1703959
Instrument ID: MS30

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0516F008.D	GC/MS Tuning - Bromofluorobenzene	KWG1703959-1	5/16/2017	13:23		5/16/2017	13:40
0516F009.D	Continuing Calibration Verification	KWG1703959-2	5/16/2017	14:07		5/16/2017	14:25
0516F010.D	Lab Control Sample	KWG1704141-1	5/16/2017	14:43		5/16/2017	15:00
0516F011.D	Duplicate Lab Control Sample	KWG1704141-2	5/16/2017	15:13		5/16/2017	15:30
0516F013.D	Method Blank	KWG1704141-3	5/16/2017	16:08		5/16/2017	16:25
0516F014.D	ZZZZZZ	ZZZZZZ	5/16/2017	16:36		5/16/2017	16:53
0516F015.D	ZZZZZZ	ZZZZZZ	5/16/2017	17:03		5/16/2017	17:20
0516F016.D	ZZZZZZ	ZZZZZZ	5/16/2017	17:31		5/16/2017	17:48
0516F017.D	ZZZZZZ	ZZZZZZ	5/16/2017	17:58		5/16/2017	18:15
0516F018.D	ZZZZZZ	ZZZZZZ	5/16/2017	18:26		5/16/2017	18:43
0516F019.D	Trip Blank	K1704732-002	5/16/2017	18:53		5/16/2017	19:10
0516F020.D	ZZZZZZ	ZZZZZZ	5/16/2017	19:21		5/16/2017	19:38
0516F021.D	OMS-28-GW18-18-S	K1704732-001	5/16/2017	19:48		5/16/2017	20:05
0516F022.D	OMS-28-GW13-32-S	K1704732-003	5/16/2017	20:16		5/16/2017	20:34
0516F023.D	OMS-28-GW28-12-S	K1704732-004	5/16/2017	20:43		5/16/2017	21:00
0516F024.D	ZZZZZZ	ZZZZZZ	5/16/2017	21:11		5/16/2017	21:29
0516F025.D	ZZZZZZ	ZZZZZZ	5/16/2017	21:38		5/16/2017	21:56
0516F026.D	ZZZZZZ	ZZZZZZ	5/16/2017	22:06		5/16/2017	22:24
0516F027.D	ZZZZZZ	ZZZZZZ	5/16/2017	22:33		5/16/2017	22:51
0516F028.D	Continuing Calibration Verification	KWG1703959-3	5/16/2017	23:01		5/16/2017	23:18

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Service Request: K1704732
Date Extracted: 05/16/2017

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C SIM

Extraction Lot: KWG1704141
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
OMS-28-GW18-18-S	K1704732-001	05/05/17	05/11/17	10ml	10ml	NA	
Trip Blank	K1704732-002	05/05/17	05/11/17	10ml	10ml	NA	
OMS-28-GW13-32-S	K1704732-003	05/09/17	05/11/17	10ml	10ml	NA	
OMS-28-GW28-12-S	K1704732-004	05/10/17	05/11/17	10ml	10ml	NA	
Method Blank	KWG1704141-3	NA	NA	10ml	10ml	NA	
Lab Control Sample	KWG1704141-1	NA	NA	10ml	10ml	NA	
Duplicate Lab Control Sample	KWG1704141-2	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F021.D
Lab ID: K1704732-001
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 19:48
Date Quantitated: 05/22/2017 12:07
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	17	NA	14		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KS 5/22/17

Secondary Review: [signature]

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F021.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 19:48	**Quant Date:**	05/22/2017 12:07	**Vial:**	19
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704732-001			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/05/2017	**Receive Date:**	05/11/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704732
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604859	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	52818	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34515	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19785	1,013	101	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	41937	995.45	100	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11741	764.65	76	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	5181	176.35	180		

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F021.D Vial: 19
Acq On : 16 May 2017 07:48 pm Operator: GH
Sample : K4732-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:58:24 2017 Quant Results File: 051517MS30_8260SIM.RES

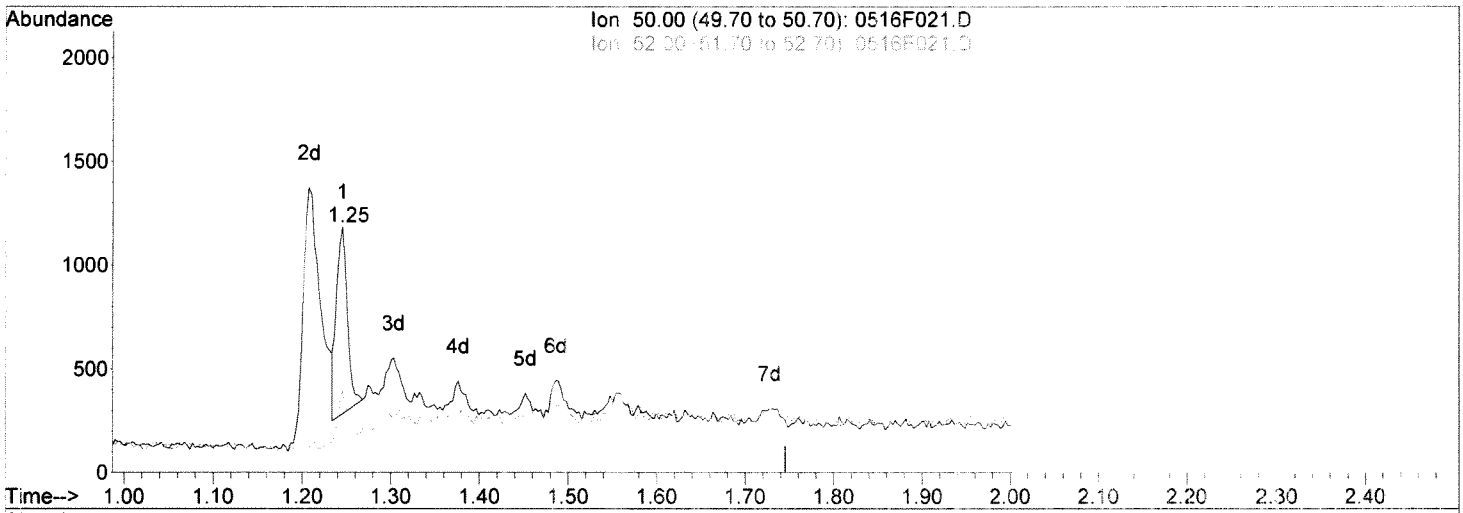
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

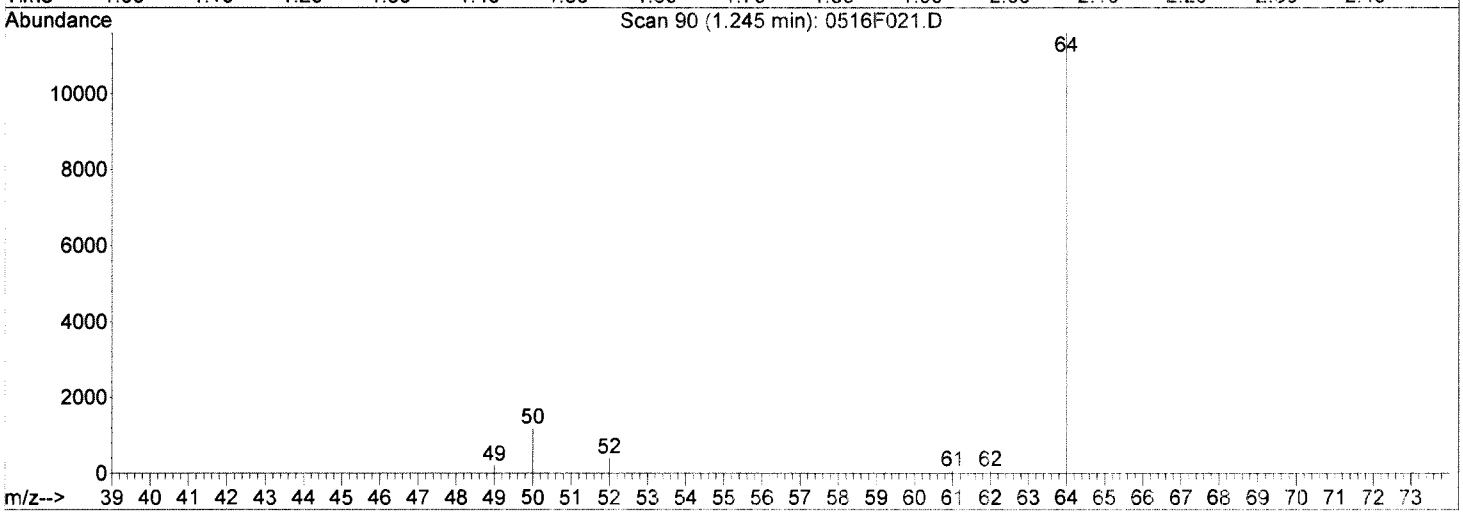
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	52818	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	34515	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13045	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19785	1012.74	ng/L		0.00
Spiked Amount 1000.000			Recovery = 101.27%				
15) Toluene-d8	8.05	98	41937	995.45	ng/L		0.00
Spiked Amount 1000.000			Recovery = 99.55%				
25) 4-Bromofluorobenzene	10.73	95	11741	764.65	ng/L		0.00
Spiked Amount 1000.000			Recovery = 76.46%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	608m	20.11	ng/L		
3) Vinyl Chloride	1.33	62	5181	176.35	ng/L		78
4) 1,1-Dichloroethene	2.43	96	1598	97.81	ng/L		96
5) Methylene Chloride	3.08	84	317	13.86	ng/L		88
6) trans-1,2-Dichloroethene	3.37	96	1086	58.61	ng/L		98
7) cis-1,2-Dichloroethene	4.95	96	48656	2754.24	ng/L		98
11) Benzene	5.98	78	6913	95.76	ng/L		99
12) 1,2-Dichloroethane	6.12	62	226	8.39	ng/L		89
13) Trichloroethene	6.75	95	77550	4367.66	ng/L		99
14) Bromodichloromethane	7.36	83	16	0.63	ng/L	#	7
16) 1,1,2-Trichloroethane	8.59	83	13	0.91	ng/L	#	22
17) Dibromochloromethane	8.63	129	177	10.03	ng/L		93
20) Toluene	8.12	92	15162	500.53	ng/L		99
21) Ethylbenzene	9.66	106	106	7.25	ng/L	#	62
22) 1,1,1,2-Tetrachloroethane	9.65	131	6	0.33	ng/L	#	14
23) m,p-Xylenes	9.78	106	418	24.99	ng/L		85
24) o-Xylene	10.18	106	272	15.95	ng/L		97
26) 1,1,2,2-Tetrachloroethane	10.93	83	35	2.15	ng/L	#	20
27) 1,2,3-Trichloropropane	10.98	110	4	0.78	ng/L	#	1
28) Tetrachloroethene	8.63	164	202	14.22	ng/L		96
30) 1,4-Dichlorobenzene	11.90	146	1266	53.78	ng/L		92

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F021.D Vial: 19
Acq On : 16 May 2017 07:48 pm Operator: GH
Sample : K4732-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:58 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F021.D

(2) Chloromethane (T)

1.25min 25.64ng/L

response 775

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	29.52
49.00	10.30	10.60
0.00	0.00	0.00

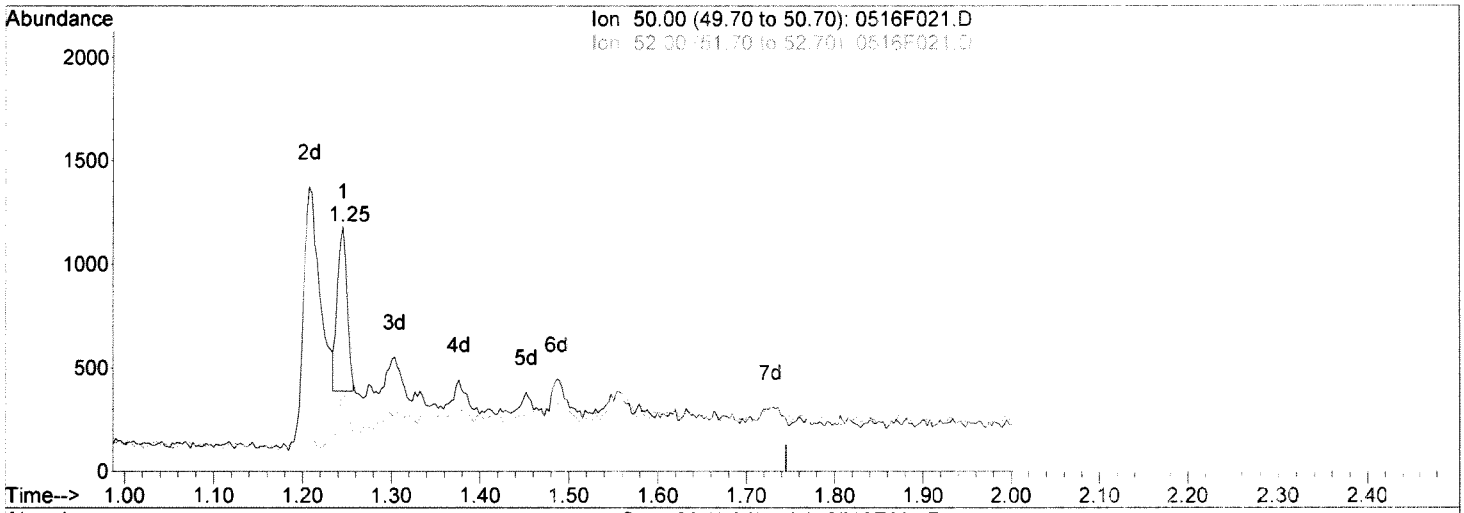
Manual Integration:

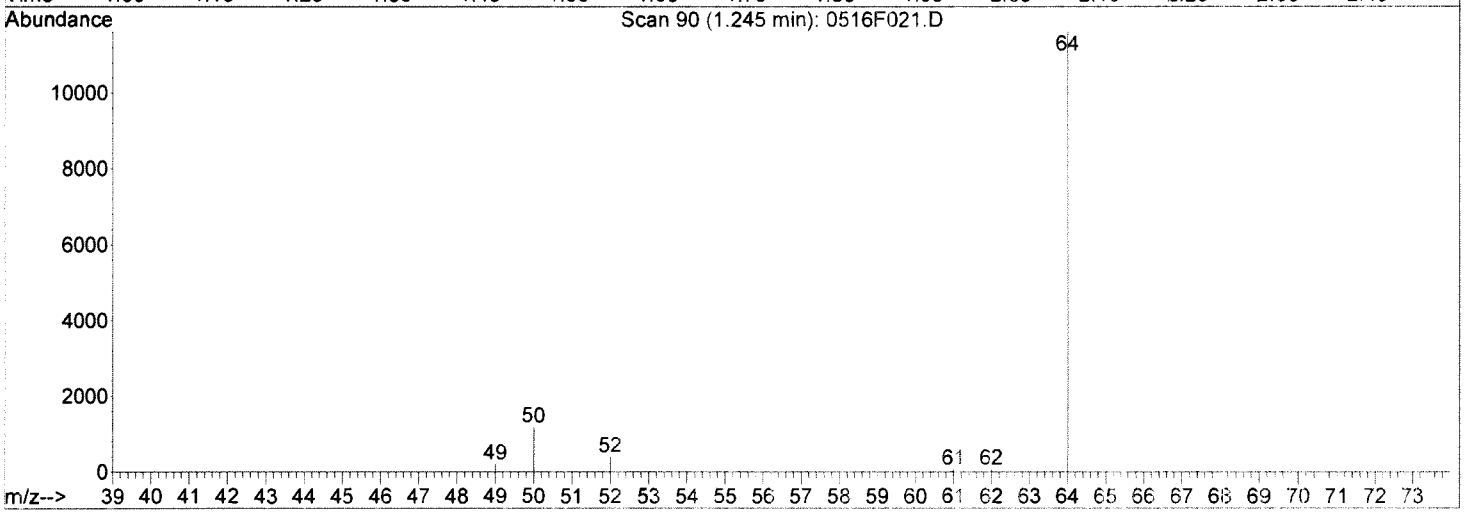
Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F021.D Vial: 19
Acq On : 16 May 2017 07:48 pm Operator: GH
Sample : K4732-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:07 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F021.D

(2) Chloromethane (T)

1.25min 20.11ng/L m

response 608

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	33.47
49.00	10.30	16.91
0.00	0.00	0.00

Manual Integration:

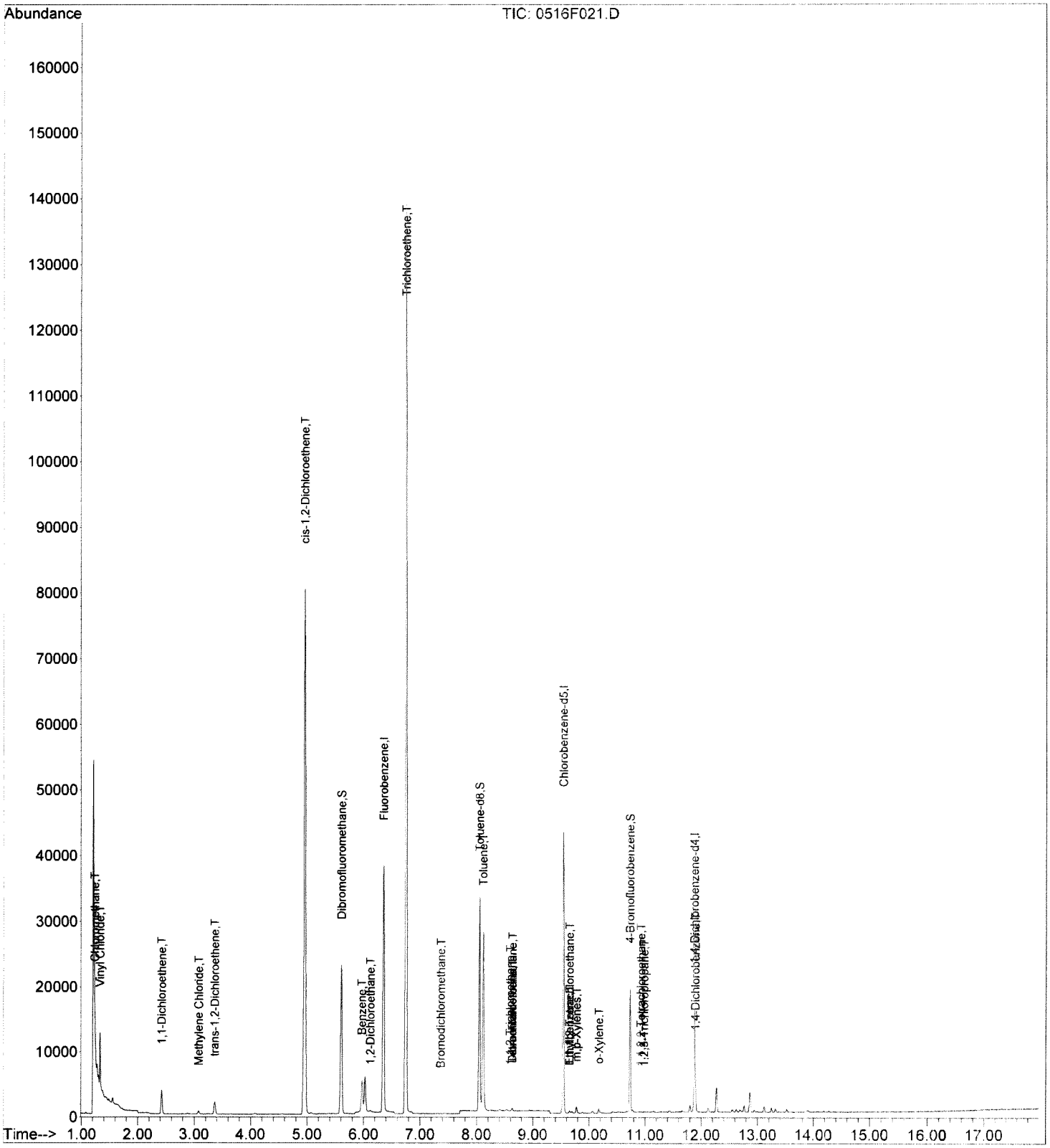
After

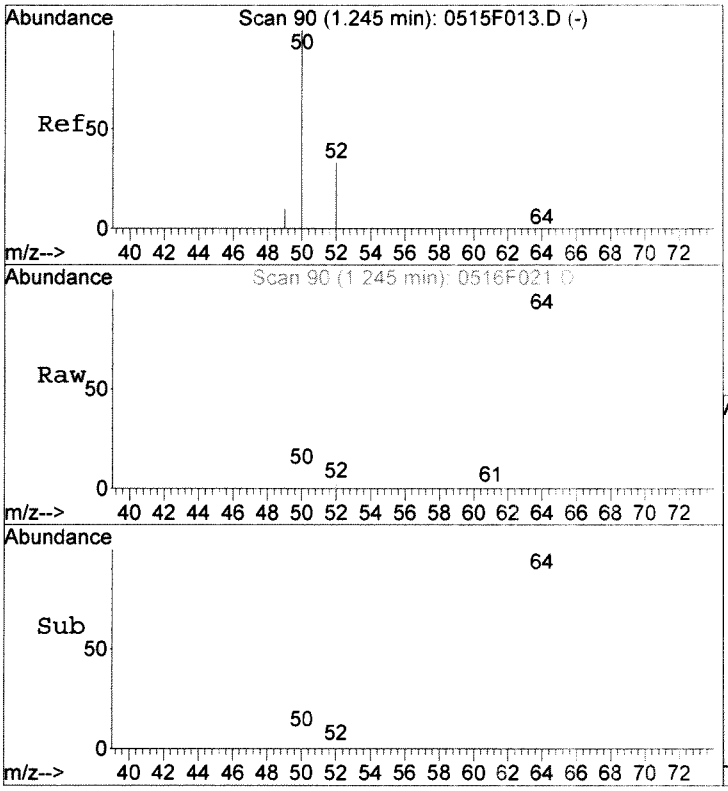
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F021.D Vial: 19
Acq On : 16 May 2017 07:48 pm Operator: GH
Sample : K4732-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:07 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

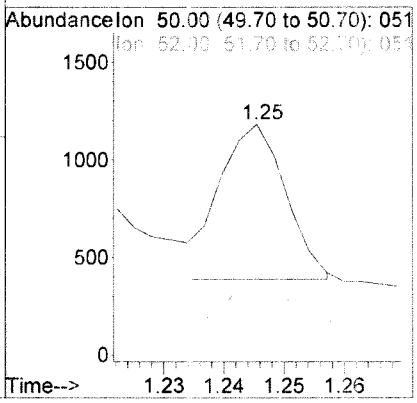


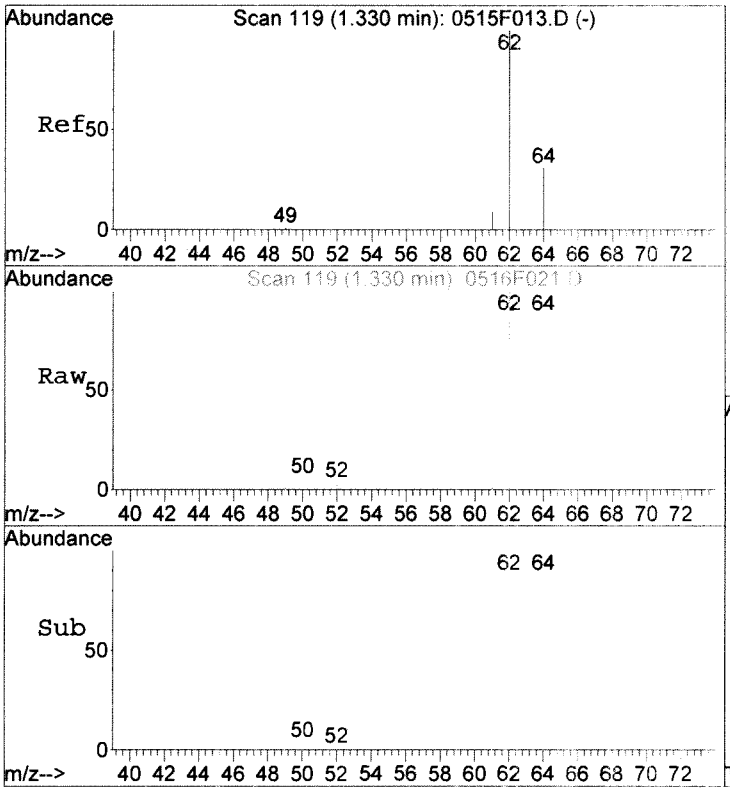


#2
Chloromethane
Concen: 20.11 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 50 Resp: 608

Ion	Ratio	Lower	Upper
50	100		
52	33.5	2.5	62.5
49	16.9	0.0	40.3

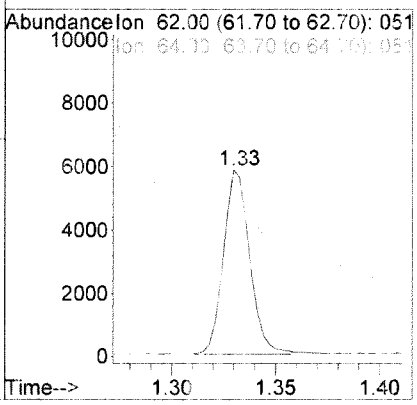


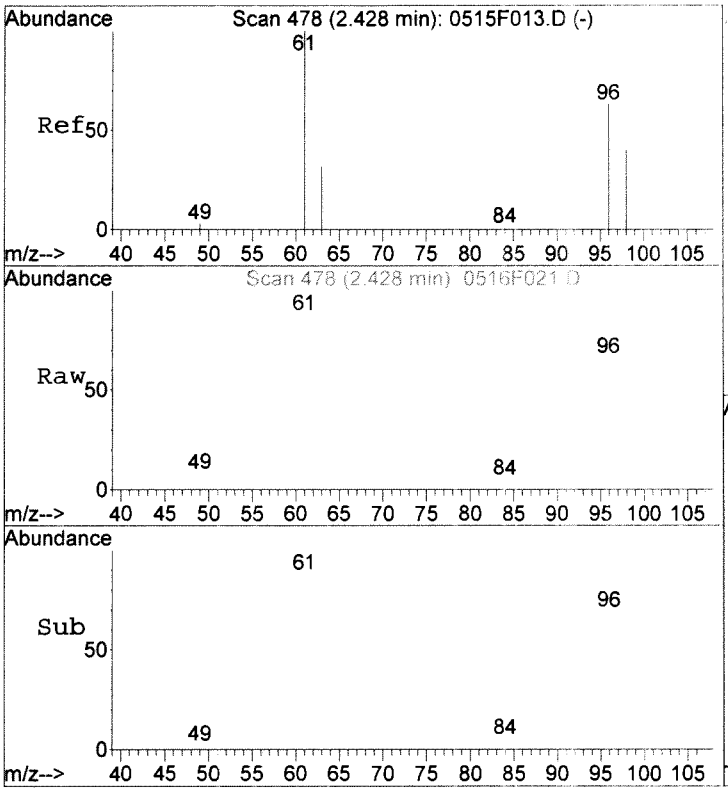


#3
Vinyl Chloride
Concen: 176.35 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 62 Resp: 5181

Ion	Ratio	Lower	Upper
62	100		
64	46.9	1.5	61.5
61	8.3	0.0	38.6

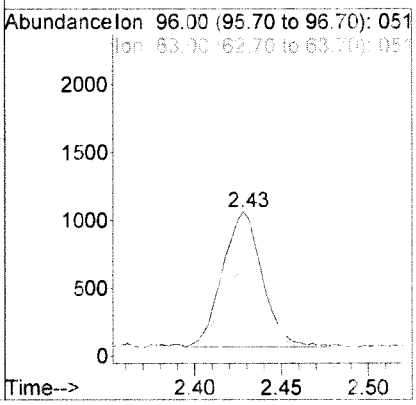


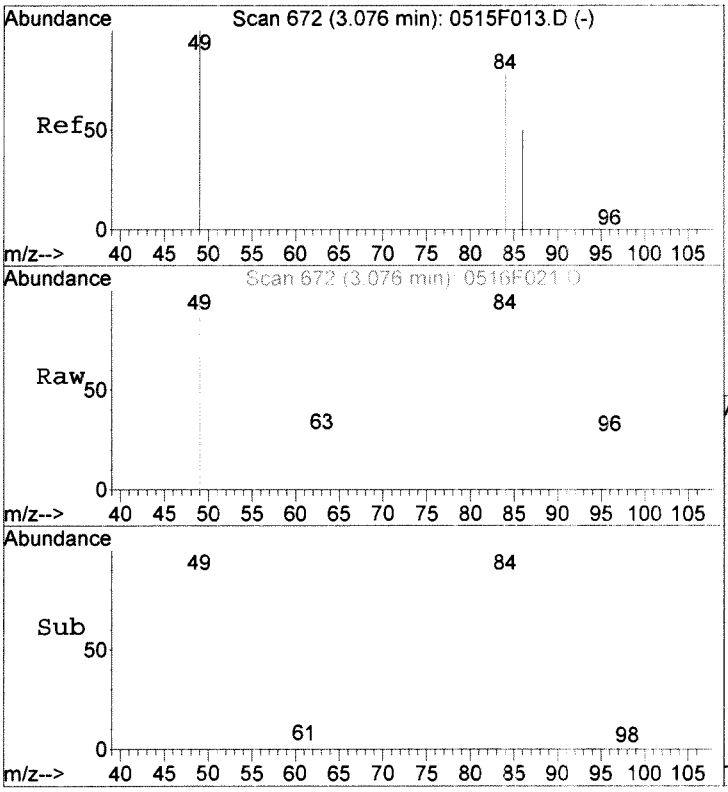


#4
1,1-Dichloroethene
Concen: 97.81 ng/L
RT: 2.43 min Scan# 478
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 96 Resp: 1598

Ion	Ratio	Lower	Upper
96	100		
63	46.5	21.4	81.4
61	154.9	129.1	189.1

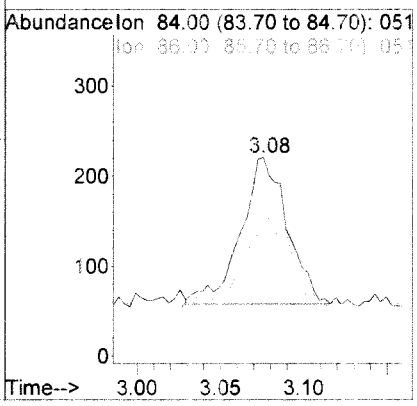


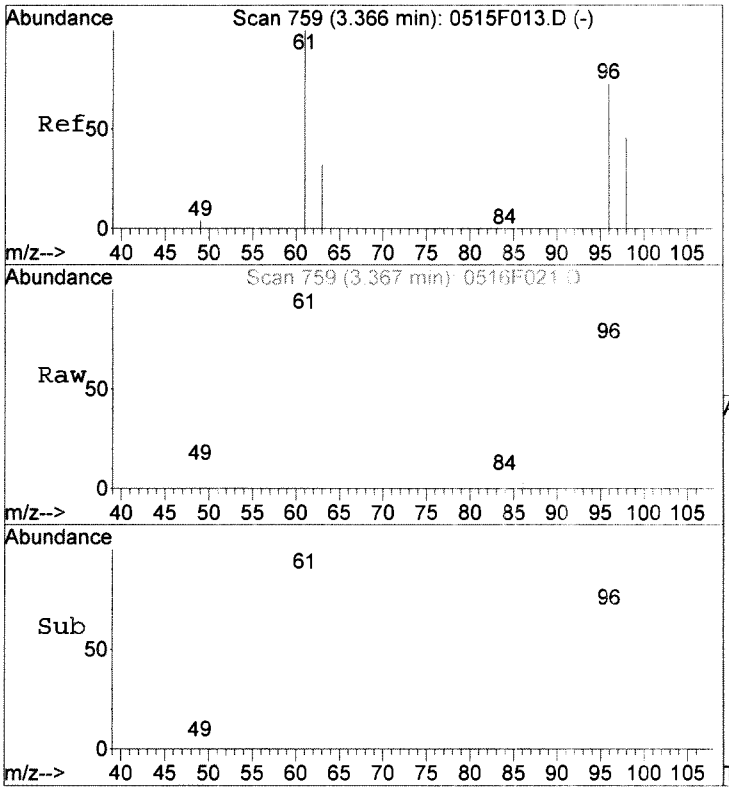


#5
Methylene Chloride
Concen: 13.86 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 84 Resp: 317

Ion	Ratio	Lower	Upper
84	100		
86	64.4	34.0	94.0
49	108.6	98.8	158.8

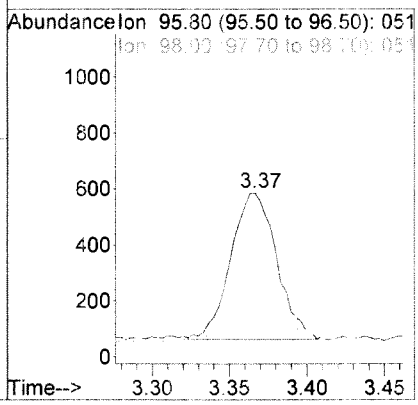


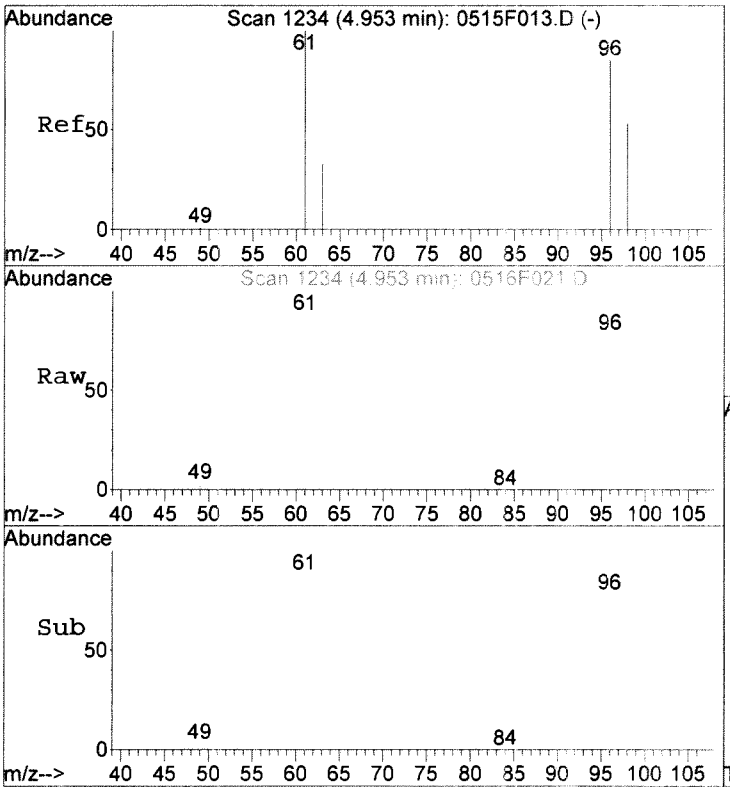


#6
trans-1,2-Dichloroethene
Concen: 58.61 ng/L
RT: 3.37 min Scan# 759
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 96 Resp: 1086

Ion	Ratio	Lower	Upper
96	100		
98	63.4	32.9	92.9
61	140.8	107.3	167.3

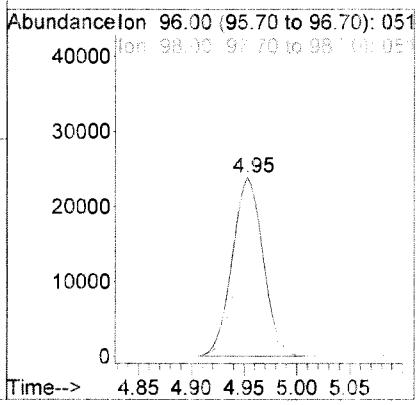


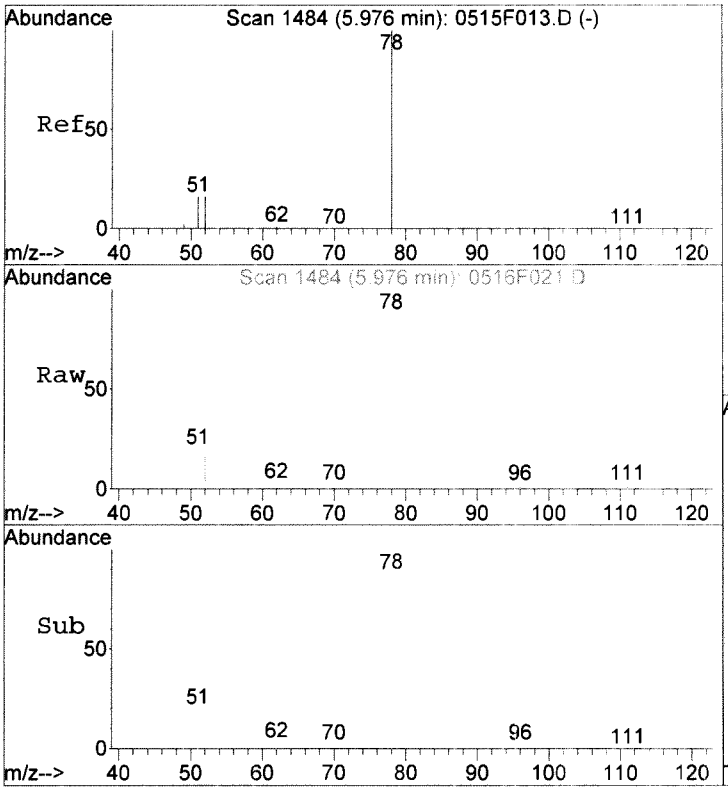


#7
cis-1,2-Dichloroethene
Concen: 2754.24 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 96 Resp: 48656

Ion	Ratio	Lower	Upper
96	100		
98	62.4	32.7	92.7
61	128.4	95.4	155.4

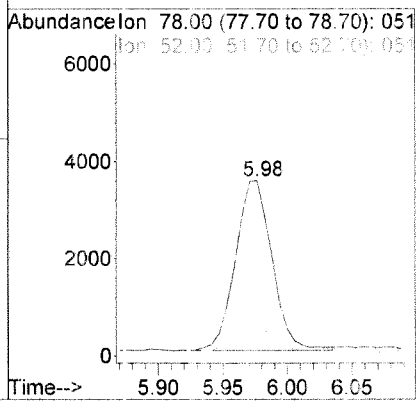


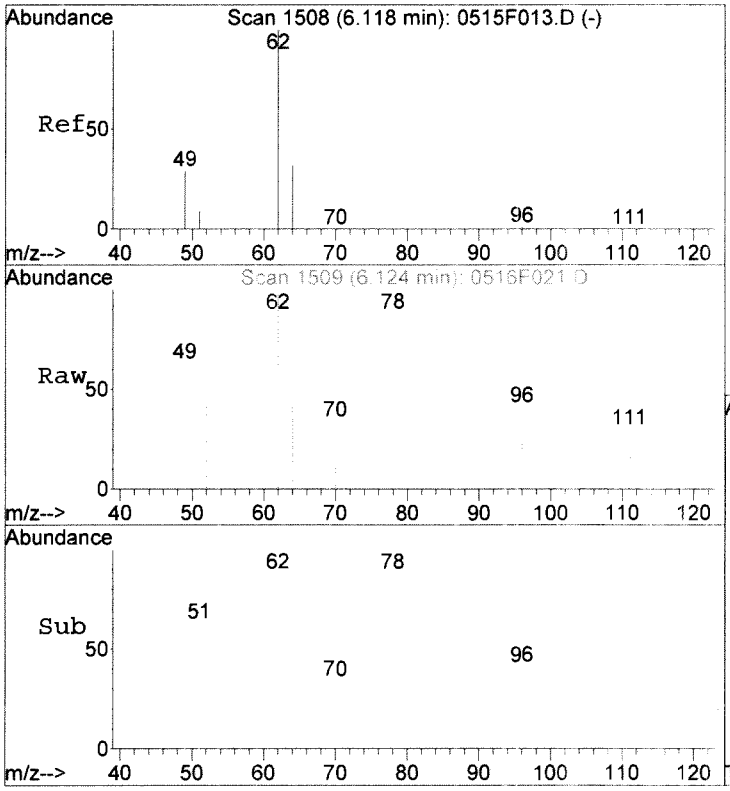


#11
Benzene
Concen: 95.76 ng/L
RT: 5.98 min Scan# 1484
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 78 Resp: 6913

Ion	Ratio	Lower	Upper
78	100		
52	16.0	0.0	45.8
51	17.1	0.0	46.5

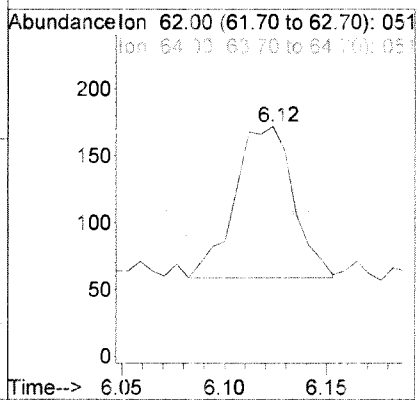


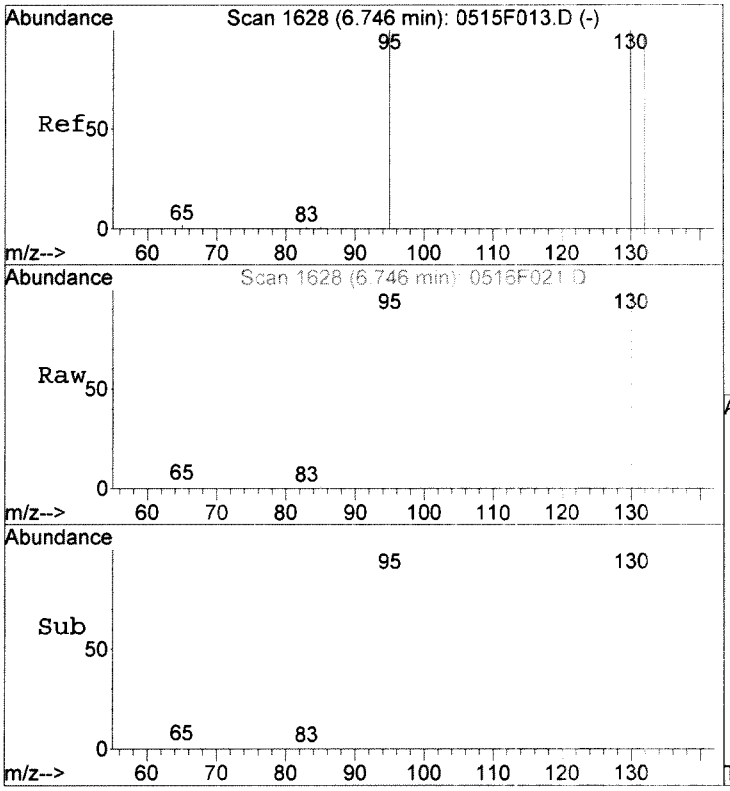


#12
1,2-Dichloroethane
Concen: 8.39 ng/L
RT: 6.12 min Scan# 1509
Delta R.T. 0.01 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 62 Resp: 226

Ion	Ratio	Lower	Upper
62	100		
64	37.2	2.1	62.1
49	35.4	0.0	58.7

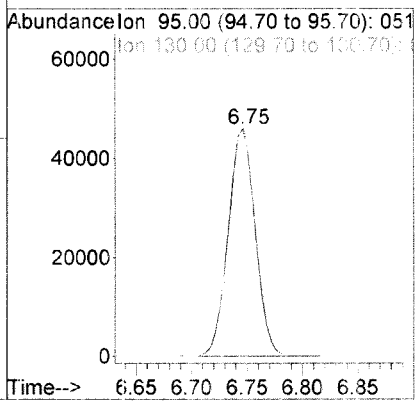


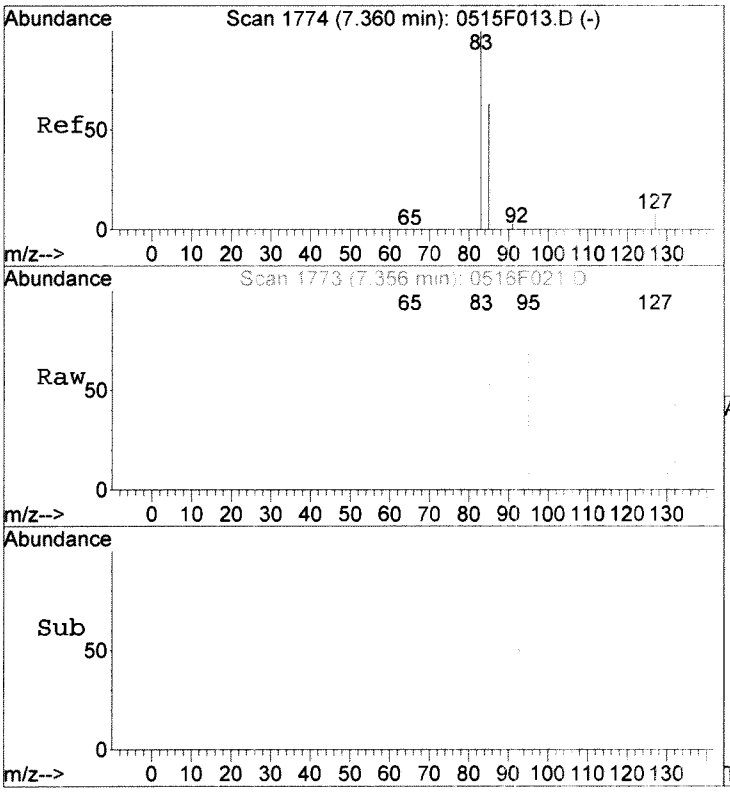


#13
Trichloroethene
Concen: 4367.66 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 95 Resp: 77550

Ion	Ratio	Lower	Upper
95	100		
130	101.5	69.5	129.5
132	97.2	67.2	127.2

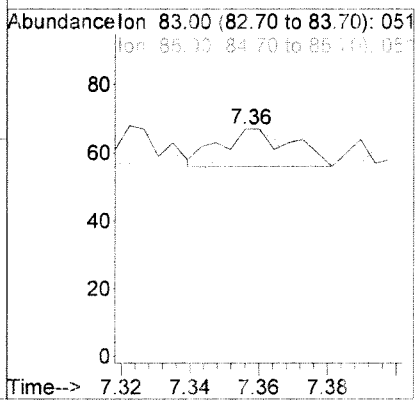


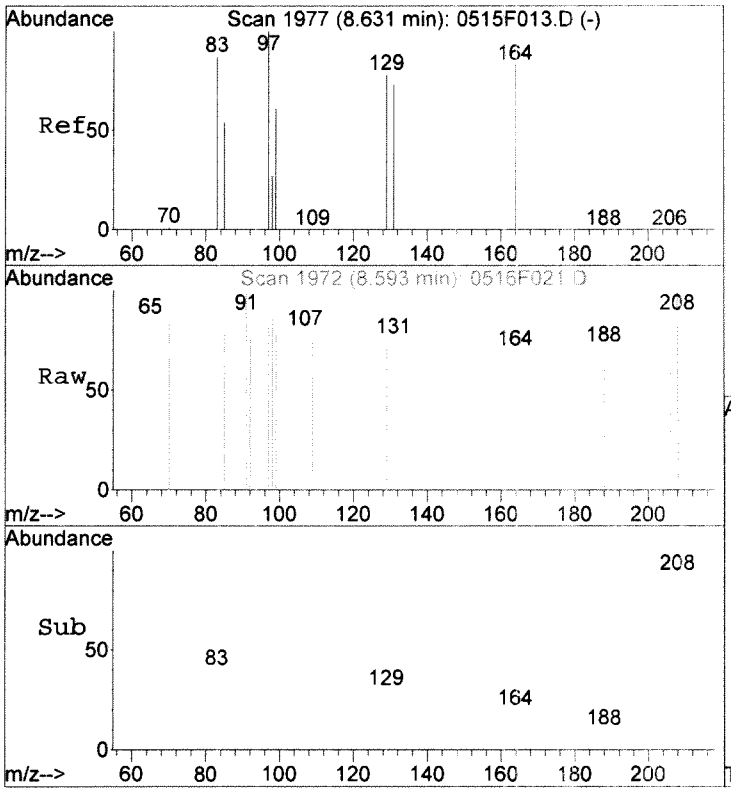


#14
Bromodichloromethane
Concen: 0.63 ng/L
RT: 7.36 min Scan# 1773
Delta R.T. -0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 83 Resp: 16

Ion	Ratio	Lower	Upper
83	100		
85	0.0	33.1	93.1#
127	72.7	0.0	38.1#

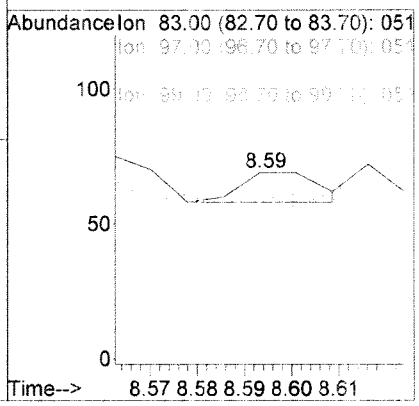


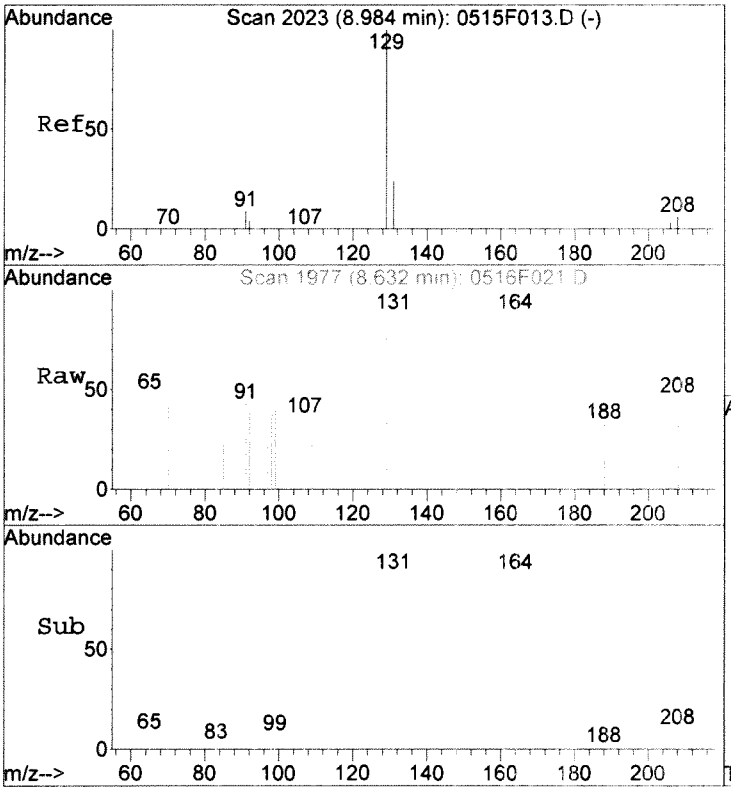


#16
1,1,2-Trichloroethane
Concen: 0.91 ng/L
RT: 8.59 min Scan# 1972
Delta R.T. -0.04 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 83 Resp: 13

Ion	Ratio	Lower	Upper
83	100		
97	9.1	84.4	144.4#
85	36.4	32.3	92.3
99	0.0	39.4	99.4#

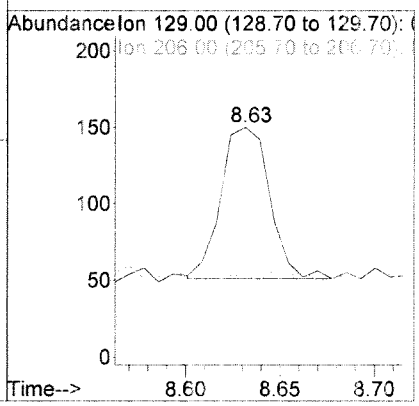


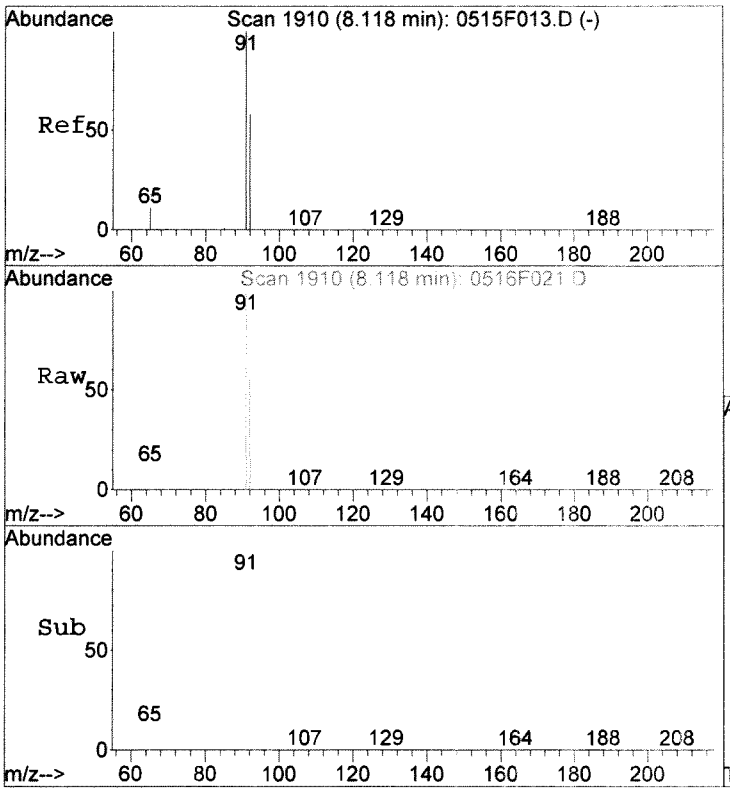


#17
Dibromochloromethane
Concen: 10.03 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.35 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion:129 Resp: 177

Ion	Ratio	Lower	Upper
129	100		
206	2.0	0.0	32.8
208	3.0	0.0	35.9

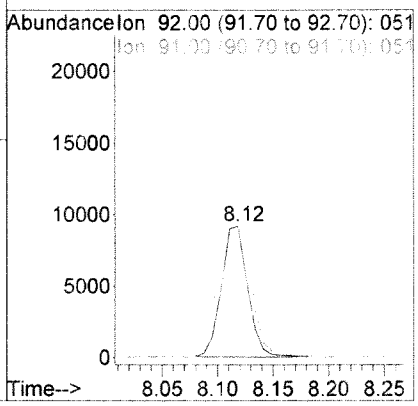


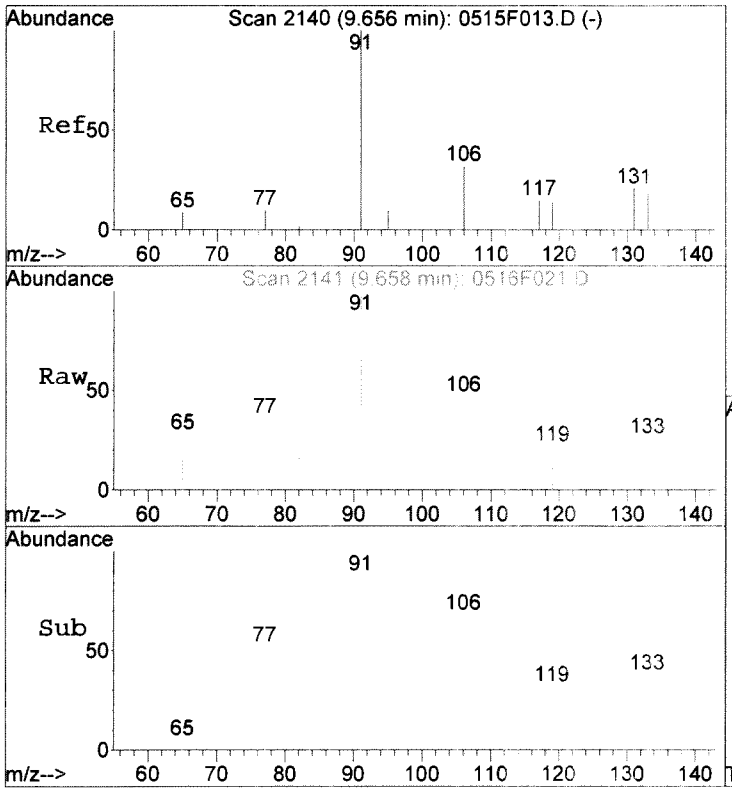


#20
Toluene
Concen: 500.53 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 92 Resp: 15162

Ion	Ratio	Lower	Upper
92	100		
91	171.4	143.6	203.6
65	19.7	0.0	49.9

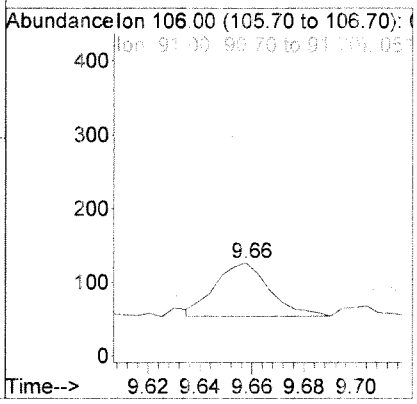


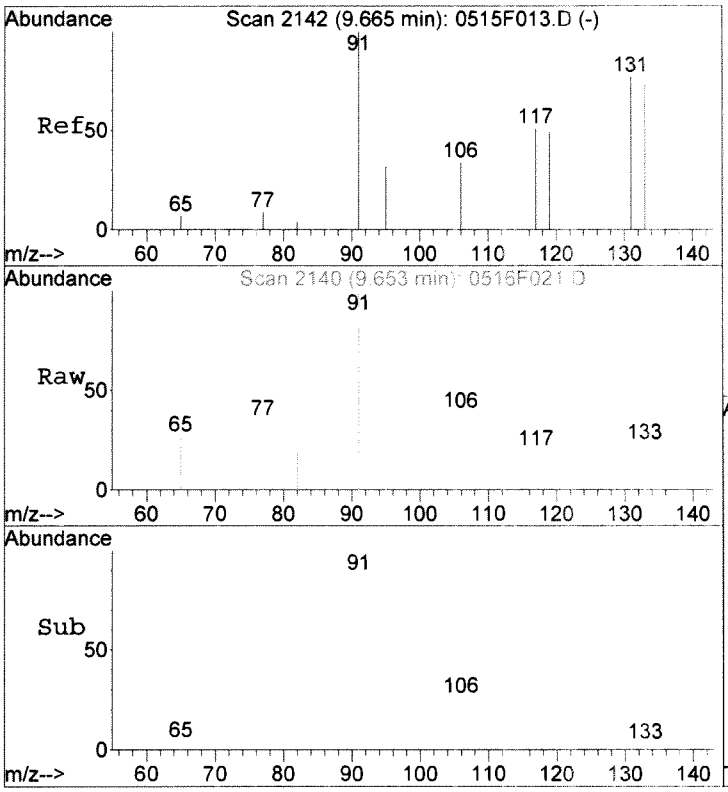


#21
Ethylbenzene
Concen: 7.25 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion:106 Resp: 106

Ion	Ratio	Lower	Upper
106	100		
91	237.0	285.7	345.7#
77	12.3	1.3	61.3

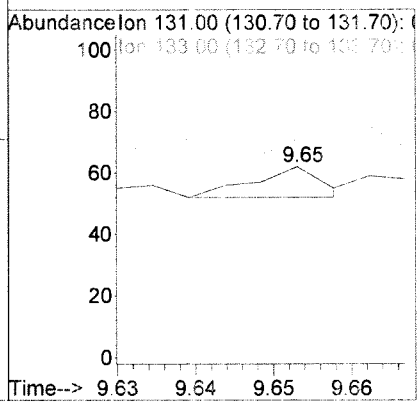


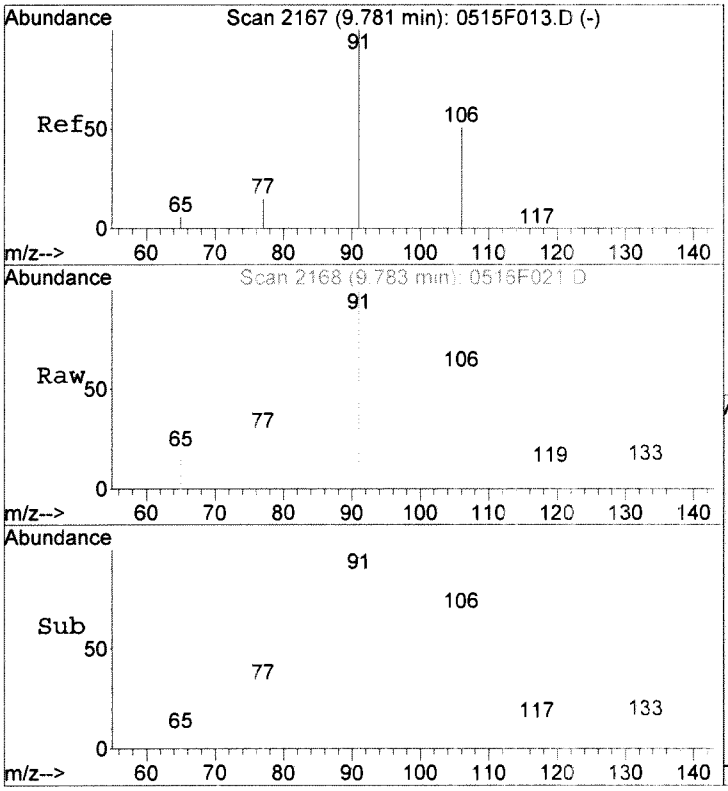


#22
1,1,1,2-Tetrachloroethane
Concen: 0.33 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.01 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion:131 Resp: 6

Ion	Ratio	Lower	Upper
131	100		
133	0.0	74.4	114.4#
119	10.0	43.9	83.9#

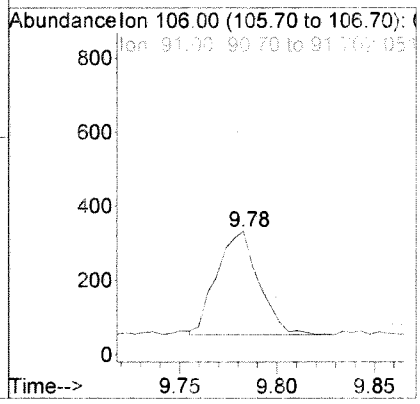


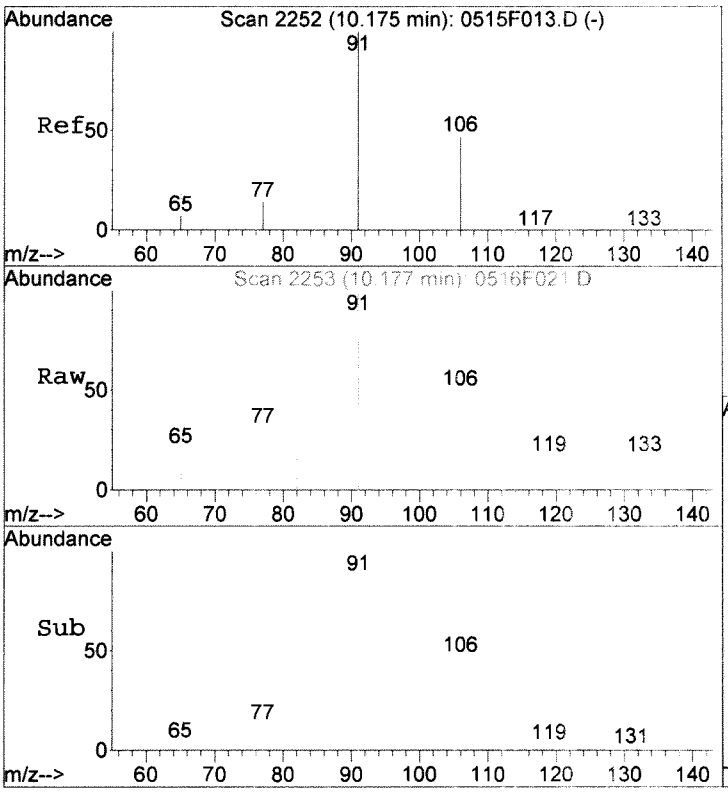


#23
m,p-Xylenes
Concen: 24.99 ng/L
RT: 9.78 min Scan# 2168
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion:106 Resp: 418

Ion	Ratio	Lower	Upper
106	100		
91	173.4	166.8	226.8
77	24.5	0.0	58.7

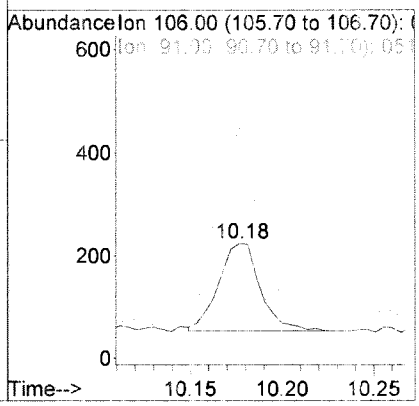


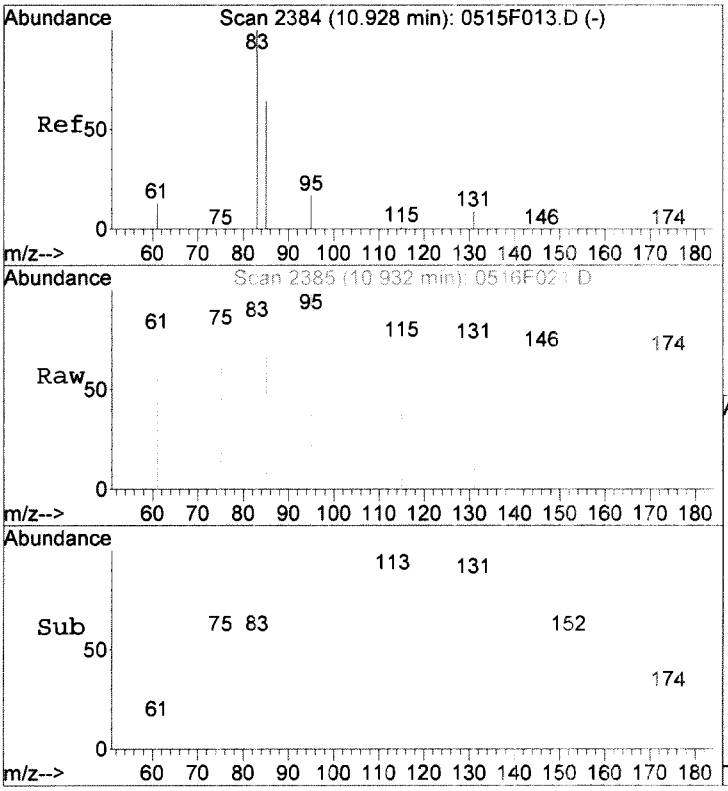


#24
o-Xylene
Concen: 15.95 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion:106 Resp: 272

Ion	Ratio	Lower	Upper
106	100		
91	218.1	184.3	244.3
65	17.5	0.0	44.6

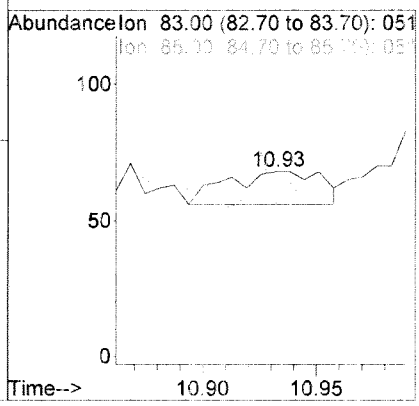


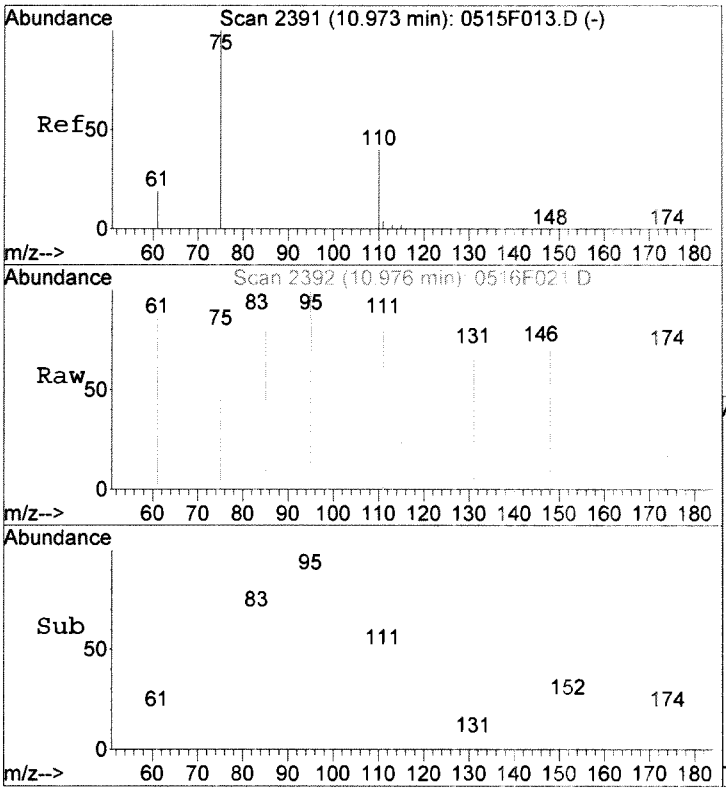


#26
1,1,2,2-Tetrachloroethane
Concen: 2.15 ng/L
RT: 10.93 min Scan# 2385
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion: 83 Resp: 35

Ion	Ratio	Lower	Upper
83	100		
85	0.0	34.1	94.1#
131	33.3	0.0	28.8#

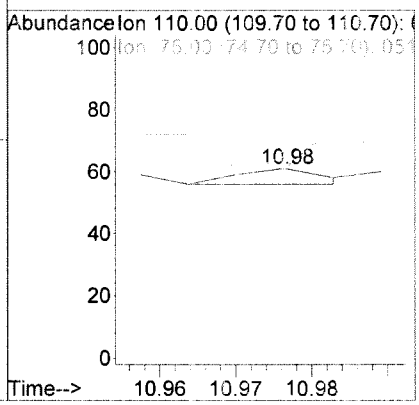


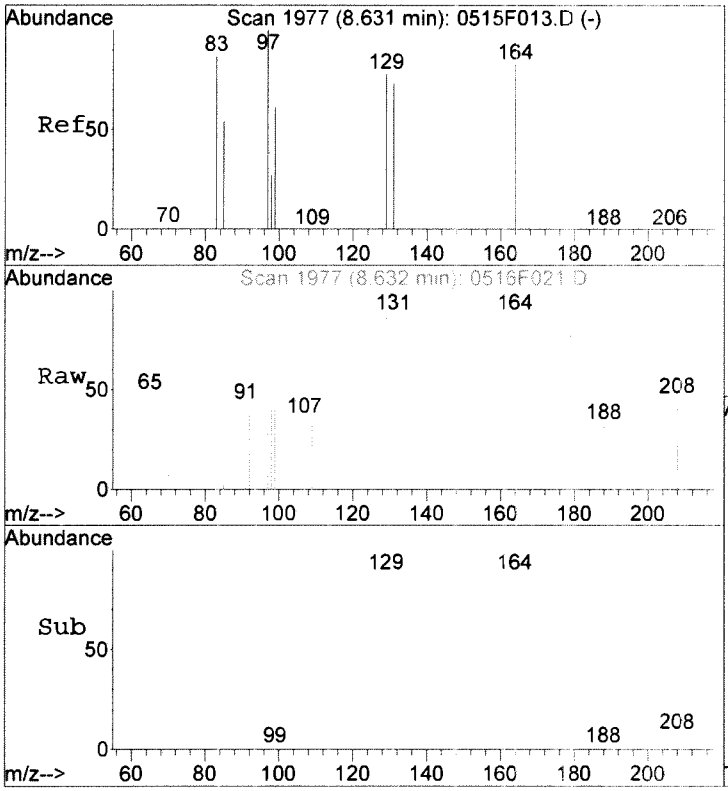


#27
1,2,3-Trichloropropane
Concen: 0.78 ng/L
RT: 10.98 min Scan# 2392
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion:110 Resp: 4

Ion	Ratio	Lower	Upper
110	100		
75	0.0	230.6	270.6#
61	140.0	40.1	80.1#

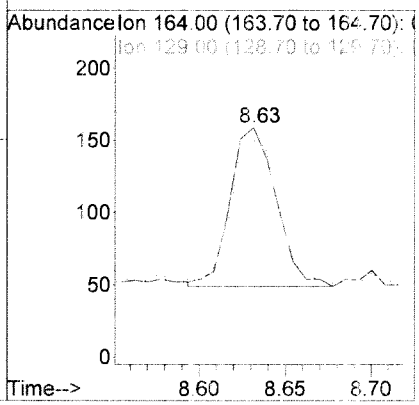


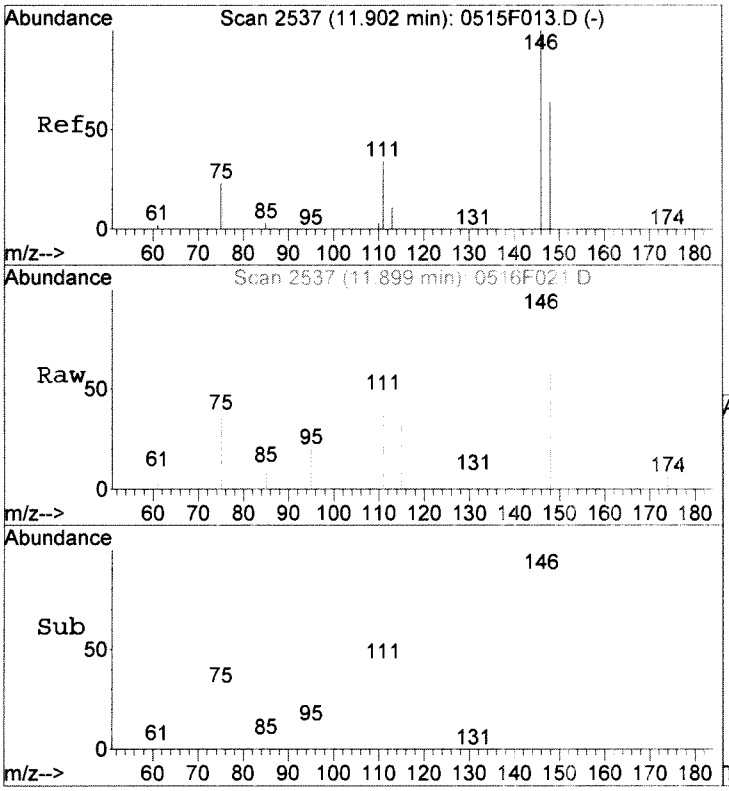


#28
Tetrachloroethene
Concen: 14.22 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion:164 Resp: 202

Ion	Ratio	Lower	Upper
164	100		
129	90.0	63.1	123.1
131	91.8	57.4	117.4

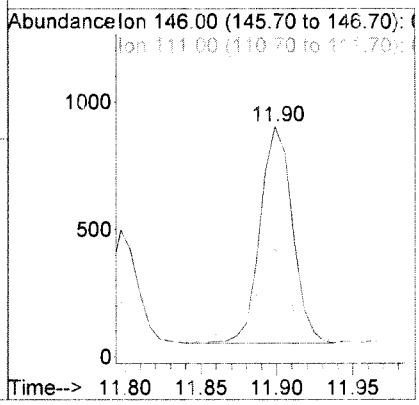




#30
1,4-Dichlorobenzene
Concen: 53.78 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F021.D
Acq: 16 May 2017 07:48 pm

Tgt Ion:146 Resp: 1266

Ion	Ratio	Lower	Upper
146	100		
111	43.4	4.0	64.0
148	66.7	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F019.D
Lab ID: K1704732-002
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 18:53
Date Quantitated: 05/22/2017 12:04
Batch ID: KWG 703959
Analysis Method: 8260C SIM
ListJoinID: LJ18835

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	17	NA	14		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KA 5/22/17

Secondary Review: N

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F019.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 18:53	**Quant Date:**	05/22/2017 12:04	**Vial:**	17
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704732-002			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/05/2017	**Receive Date:**	05/11/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704732
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604860	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	53230	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	35272	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19953	1,013	101	77-123 OK	
1	Toluene-d8	8.05	0.00	0.00	98	42180	993.47	99	74-112 OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11669	743.65	74	46-118 OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.34	0.01	0.00	62	36	1.22	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Quantitation Report (QT Reviewed)

Data File : I:\MS30\DATA\051617_SIM\0516F019.D Vial: 17
Acq On : 16 May 2017 06:53 pm Operator: GH
Sample : K4732-002TB 033017 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:03:16 2017 Quant Results File: 051517MS30_8260SIM.RES

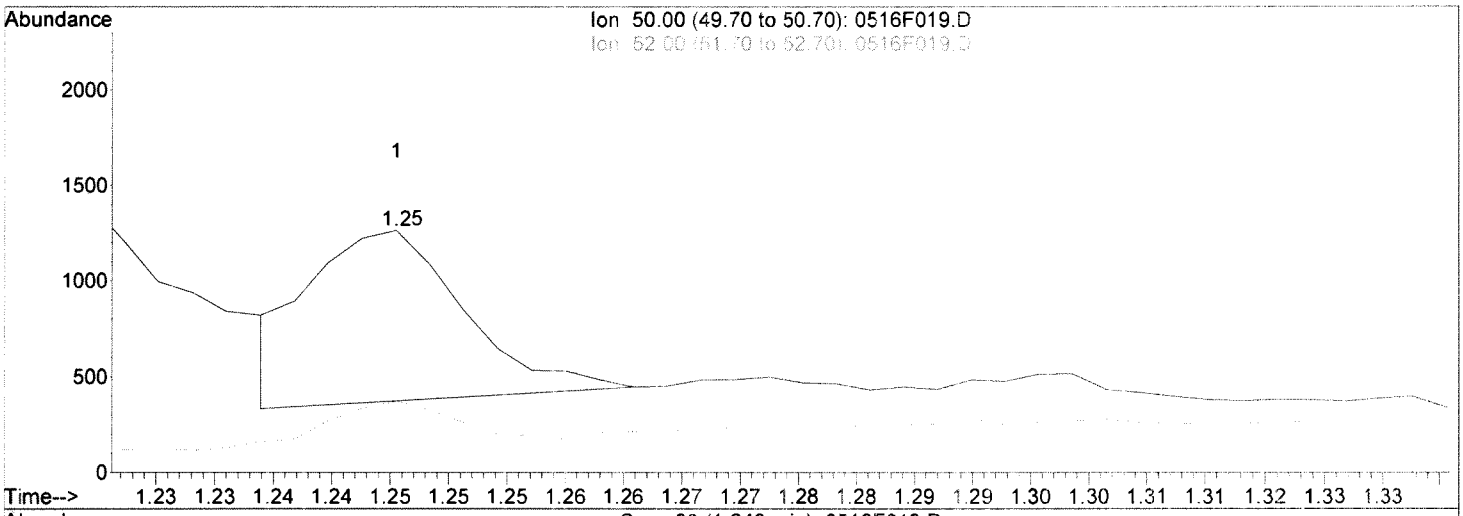
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

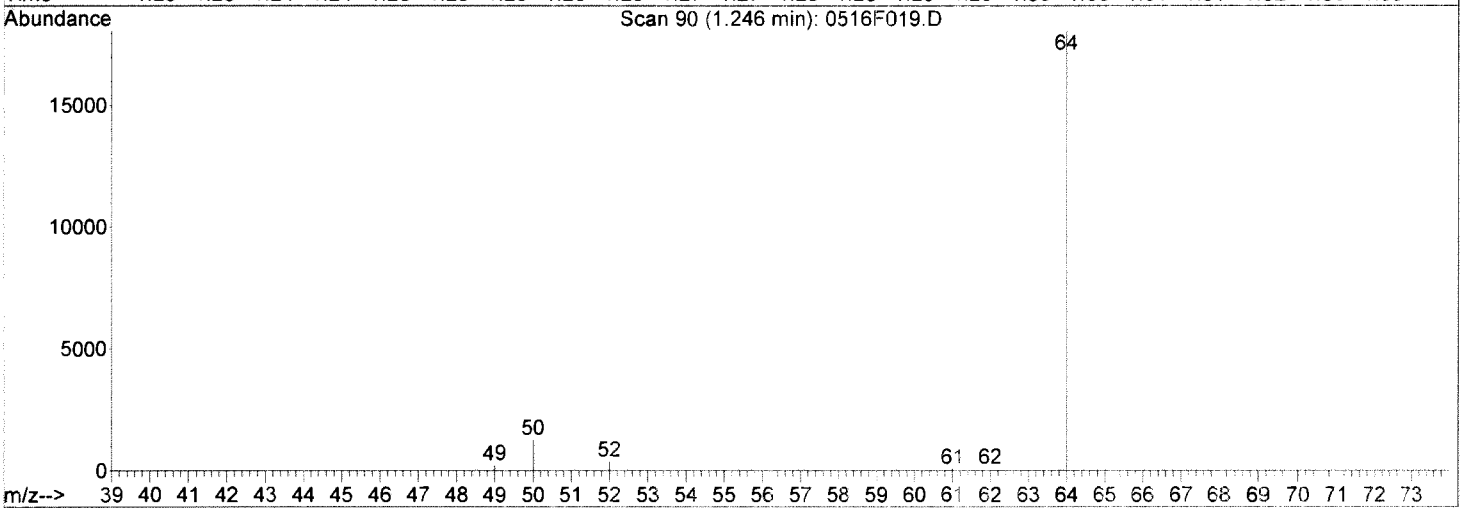
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53230	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	35272	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	12845	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19953	1013.44	ng/L	0.00
Spiked Amount 1000.000			Recovery =	101.34%		
15) Toluene-d8	8.05	98	42180	993.47	ng/L	0.00
Spiked Amount 1000.000			Recovery =	99.35%		
25) 4-Bromofluorobenzene	10.73	95	11669	743.65	ng/L	0.00
Spiked Amount 1000.000			Recovery =	74.36%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	667m	21.89	ng/L	
3) Vinyl Chloride	1.34	62	36	1.22	ng/L #	1
5) Methylene Chloride	3.08	84	1098	47.63	ng/L	97
6) trans-1,2-Dichloroethene	3.37	96	35	1.87	ng/L #	76
8) Chloroform	5.39	83	1833	47.89	ng/L	98
11) Benzene	5.98	78	1422	19.54	ng/L	97
12) 1,2-Dichloroethane	6.12	62	47	1.73	ng/L #	47
13) Trichloroethene	6.75	95	1603	89.58	ng/L	99
14) Bromodichloromethane	7.35	83	23	0.90	ng/L #	15
16) 1,1,2-Trichloroethane	8.63	83	49	3.42	ng/L #	28
20) Toluene	8.12	92	102397	3307.78	ng/L	99
21) Ethylbenzene	9.65	106	53	3.55	ng/L #	85
22) 1,1,1,2-Tetrachloroethane	9.66	131	5	0.27	ng/L #	10
23) m,p-Xylenes	9.78	106	247	14.45	ng/L	89
24) o-Xylene	10.18	106	167	9.58	ng/L	89
26) 1,1,2,2-Tetrachloroethane	10.93	83	15	0.90	ng/L #	55
27) 1,2,3-Trichloropropane	10.97	110	20	3.84	ng/L #	15
28) Tetrachloroethene	8.63	164	879	60.57	ng/L	91
30) 1,4-Dichlorobenzene	11.91	146	123	5.31	ng/L	98

(#) = qualifier out of range (m) = manual integration
0516F019.D 051517MS30_8260SIM.M Mon May 22 12:04:51 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F019.D Vial: 17
Acq On : 16 May 2017 06:53 pm Operator: GH
Sample : K4732-002TB 033017 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:03 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F019.D

(2) Chloromethane (T)

1.25min 27.18ng/L

response 828

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	25.83
49.00	10.30	13.10
0.00	0.00	0.00

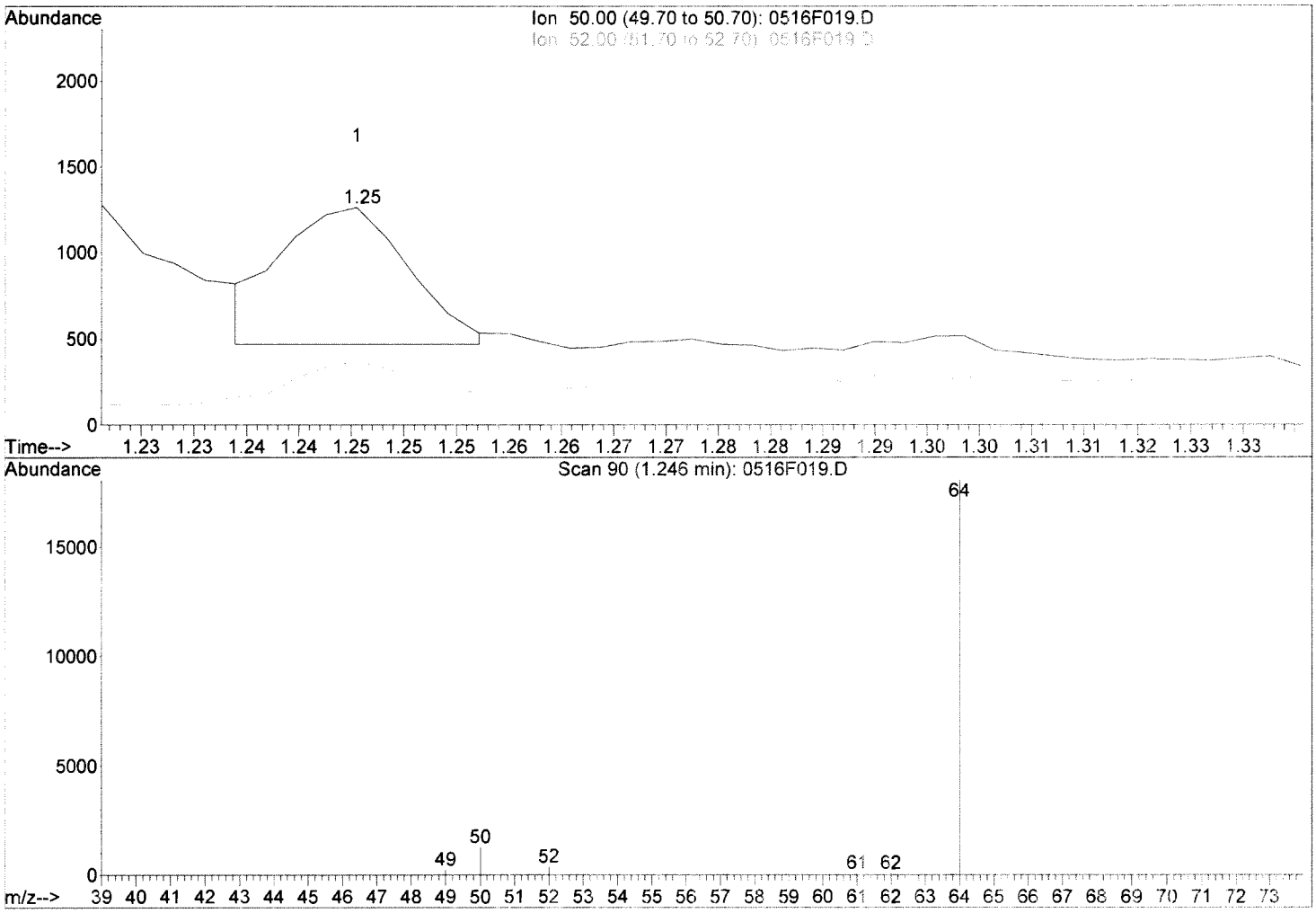
Manual Integration:

Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F019.D Vial: 17
Acq On : 16 May 2017 06:53 pm Operator: GH
Sample : K4732-002TB 033017 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:03 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F019.D

(2) Chloromethane (T)

1.25min 21.89ng/L m

response 667

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	29.45
49.00	10.30	17.81
0.00	0.00	0.00

Manual Integration:

After

Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F019.D Vial: 17
Acq On : 16 May 2017 06:53 pm Operator: GH
Sample : K4732-002TB 033017 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:03:16 2017 Quant Results File: 051517MS30_8260SIM.RES

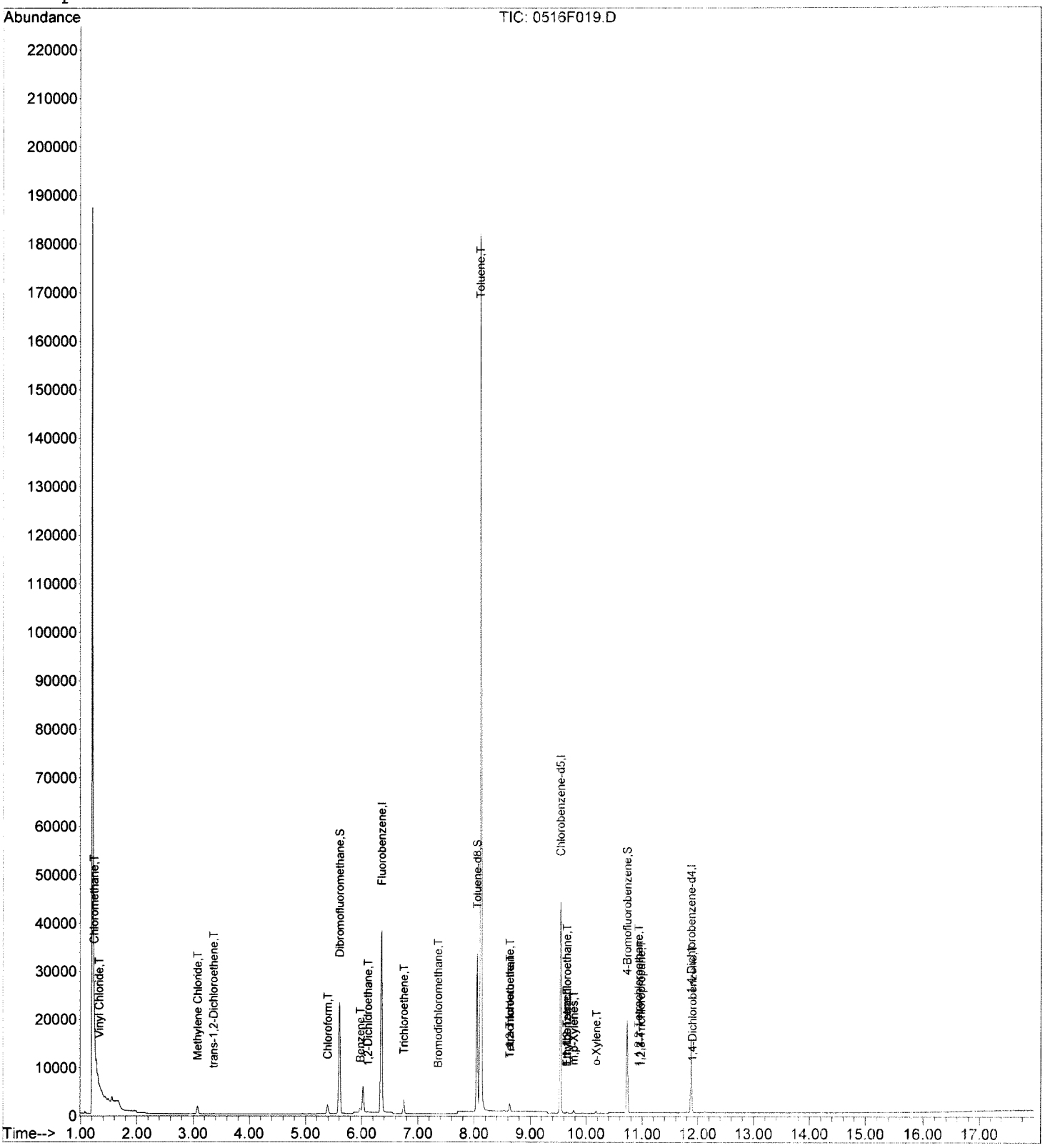
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

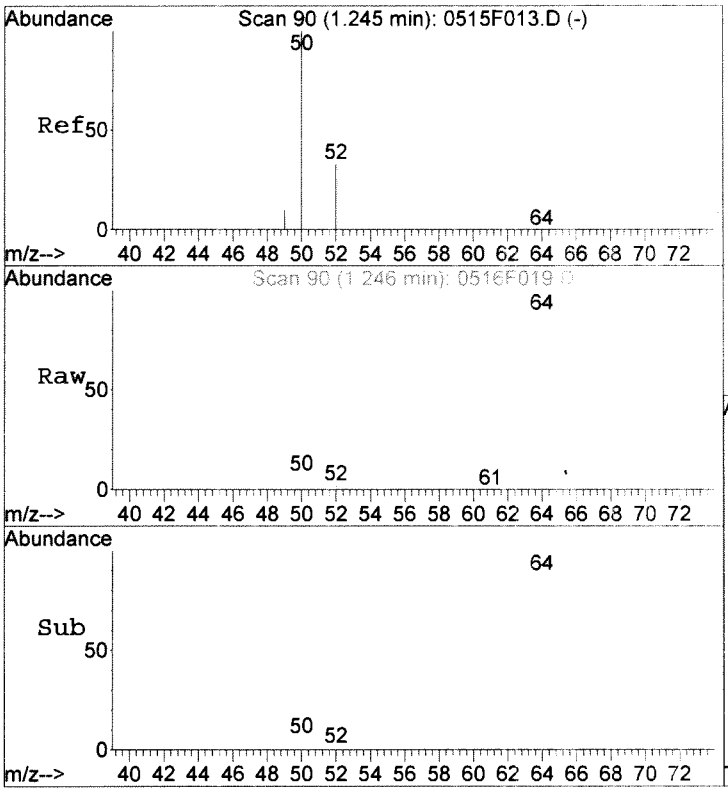
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53230	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	35272	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	12845	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19953	1013.44	ng/L	0.00
Spiked Amount 1000.000			Recovery = 101.34%			
15) Toluene-d8	8.05	98	42180	993.47	ng/L	0.00
Spiked Amount 1000.000			Recovery = 99.35%			
25) 4-Bromofluorobenzene	10.73	95	11669	743.65	ng/L	0.00
Spiked Amount 1000.000			Recovery = 74.36%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	667m	21.89	ng/L	
3) Vinyl Chloride	1.34	62	36	1.22	ng/L #	1
5) Methylene Chloride	3.08	84	1098	47.63	ng/L	97
6) trans-1,2-Dichloroethene	3.37	96	35	1.87	ng/L #	76
8) Chloroform	5.39	83	1833	47.89	ng/L	98
11) Benzene	5.98	78	1422	19.54	ng/L	97
12) 1,2-Dichloroethane	6.12	62	47	1.73	ng/L #	47
13) Trichloroethene	6.75	95	1603	89.58	ng/L	99
14) Bromodichloromethane	7.35	83	23	0.90	ng/L #	15
16) 1,1,2-Trichloroethane	8.63	83	49	3.42	ng/L #	28
20) Toluene	8.12	92	102397	3307.78	ng/L	99
21) Ethylbenzene	9.65	106	53	3.55	ng/L #	85
22) 1,1,1,2-Tetrachloroethane	9.66	131	5	0.27	ng/L #	10
23) m,p-Xylenes	9.78	106	247	14.45	ng/L	89
24) o-Xylene	10.18	106	167	9.58	ng/L	89
26) 1,1,2,2-Tetrachloroethane	10.93	83	15	0.90	ng/L #	55
27) 1,2,3-Trichloropropane	10.97	110	20	3.84	ng/L #	15
28) Tetrachloroethene	8.63	164	879	60.57	ng/L	91
30) 1,4-Dichlorobenzene	11.91	146	123	5.31	ng/L	98

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F019.D Vial: 17
Acq On : 16 May 2017 06:53 pm Operator: GH
Sample : K4732-002TB 033017 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:04 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

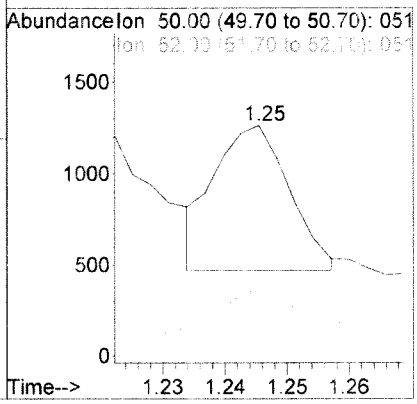


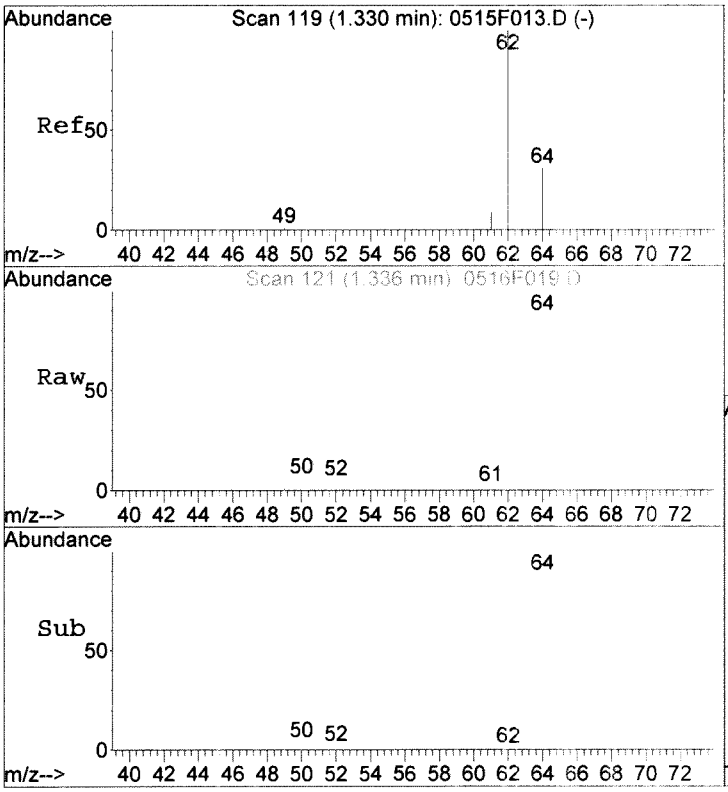


#2
Chloromethane
Concen: 21.89 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 50 Resp: 667

Ion	Ratio	Lower	Upper
50	100		
52	29.5	2.5	62.5
49	17.8	0.0	40.3

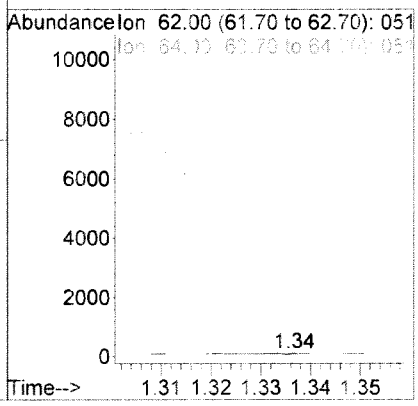


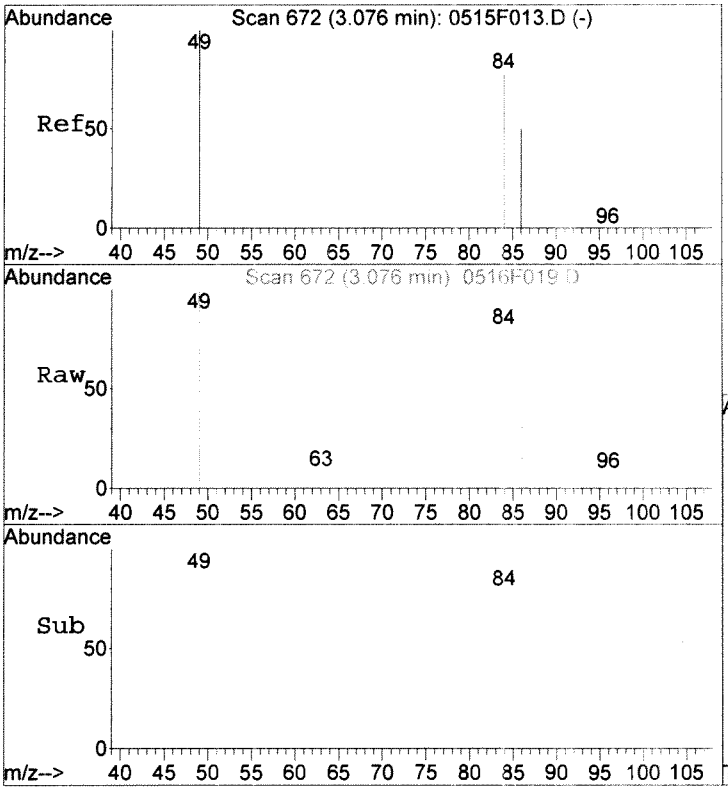


#3
Vinyl Chloride
Concen: 1.22 ng/L
RT: 1.34 min Scan# 121
Delta R.T. 0.01 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 62 Resp: 36

Ion	Ratio	Lower	Upper
62	100		
64	1338.7	1.5	61.5#
61	61.3	0.0	38.6#

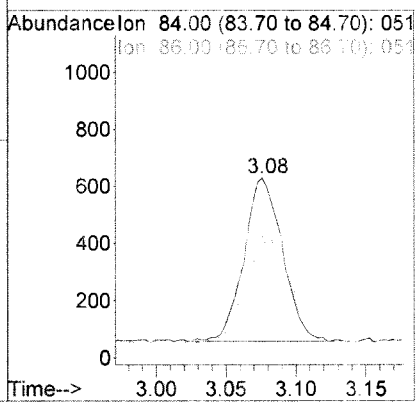


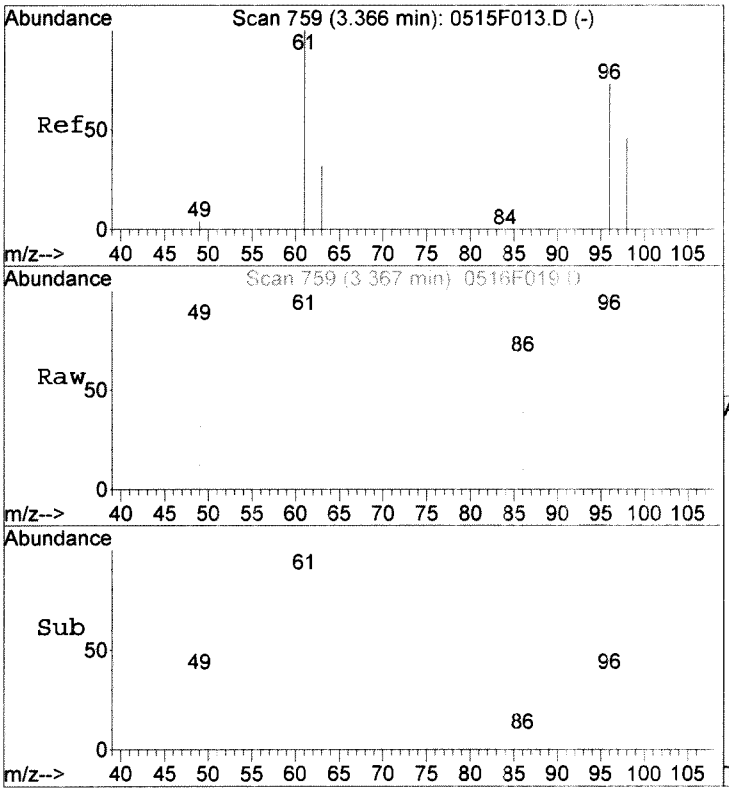


#5
Methylene Chloride
Concen: 47.63 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 84 Resp: 1098

Ion	Ratio	Lower	Upper
84	100		
86	65.5	34.0	94.0
49	125.0	98.8	158.8

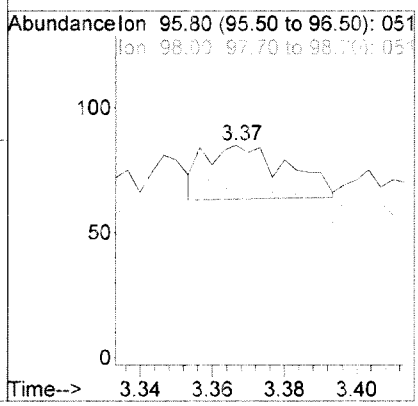


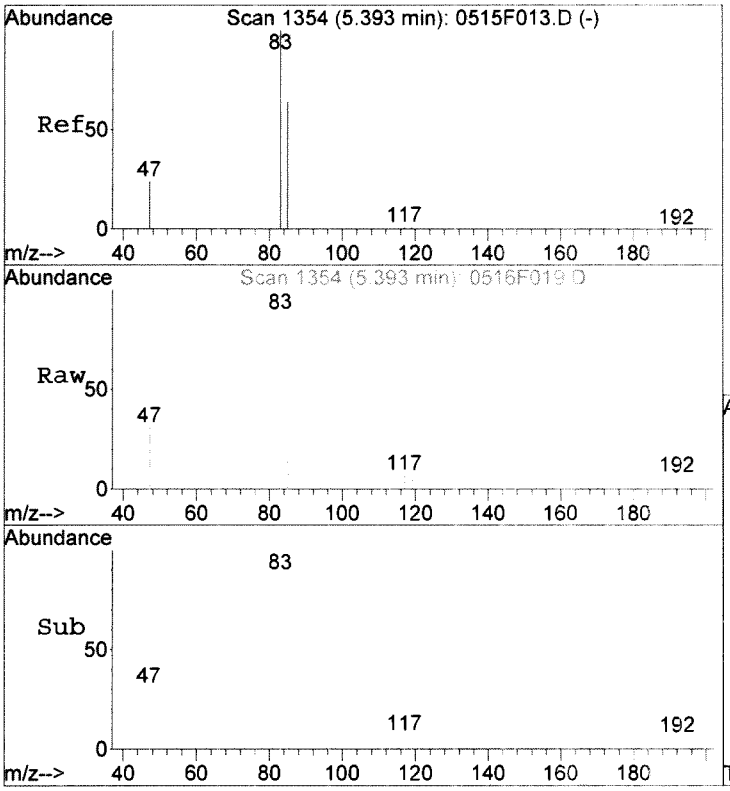


#6
trans-1,2-Dichloroethene
Concen: 1.87 ng/L
RT: 3.37 min Scan# 759
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 96 Resp: 35

Ion	Ratio	Lower	Upper
96	100		
98	63.2	32.9	92.9
61	94.7	107.3	167.3#

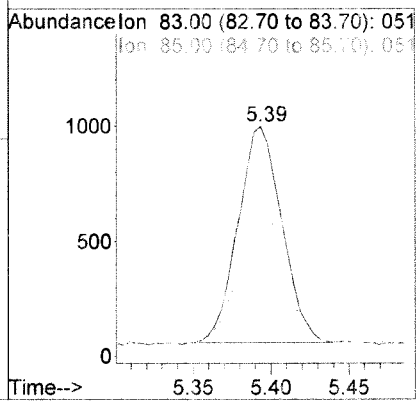


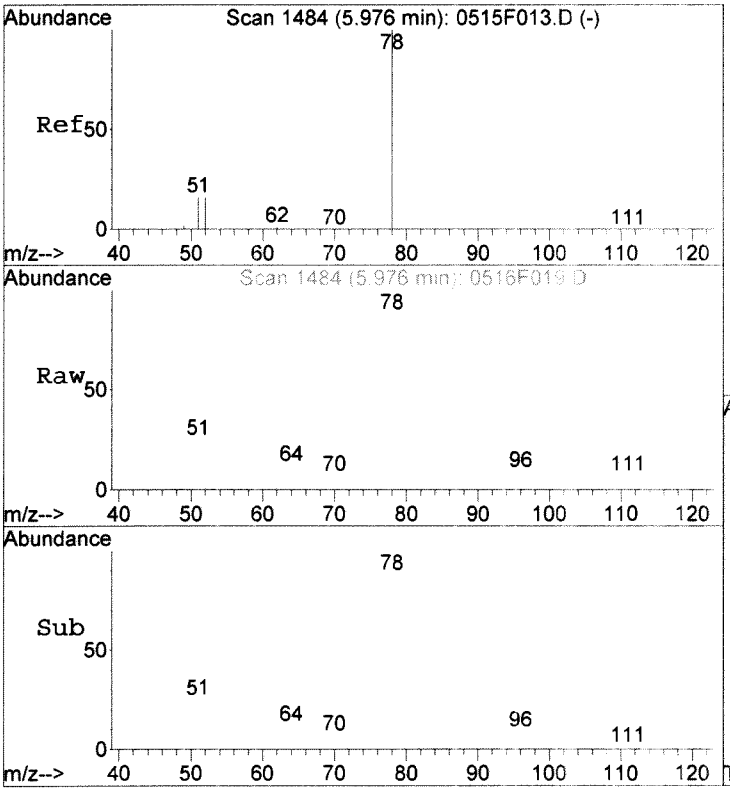


#8
Chloroform
Concen: 47.89 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 83 Resp: 1833

Ion	Ratio	Lower	Upper
83	100		
85	63.4	34.0	94.0
47	25.9	0.0	53.5

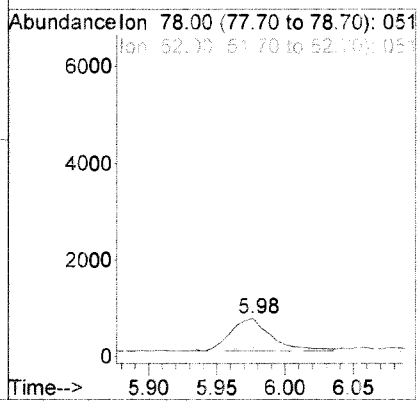


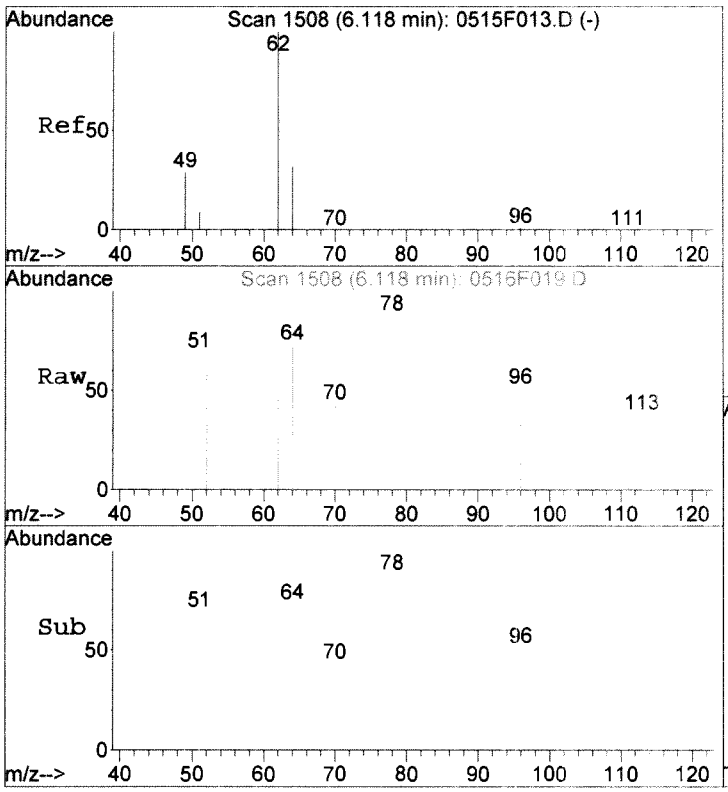


#11
Benzene
Concen: 19.54 ng/L
RT: 5.98 min Scan# 1484
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 78 Resp: 1422

Ion	Ratio	Lower	Upper
78	100		
52	14.0	0.0	45.8
51	15.9	0.0	46.5

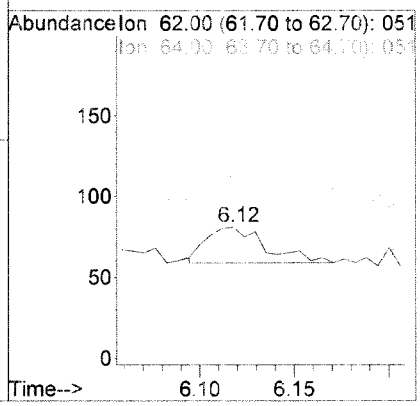


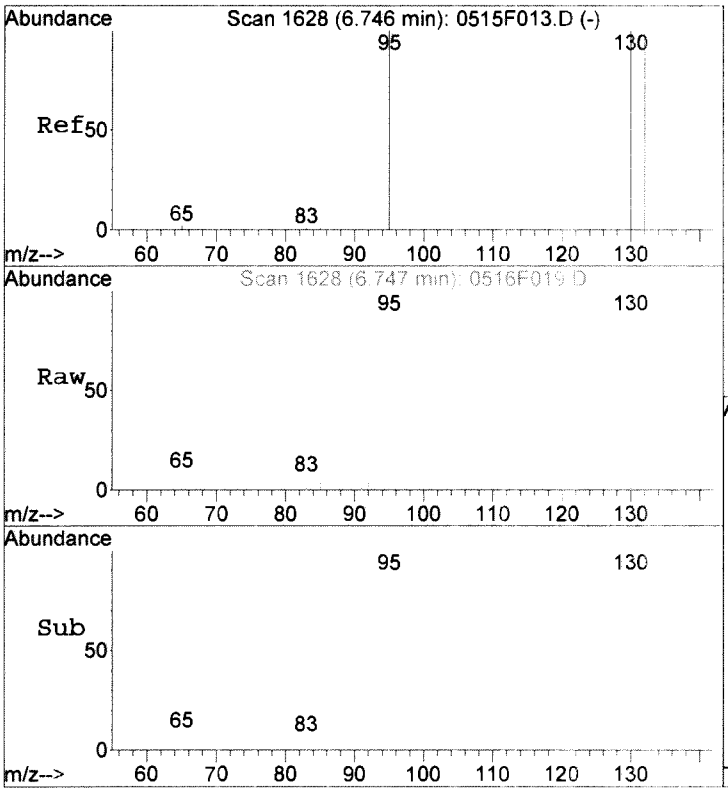


#12
1,2-Dichloroethane
Concen: 1.73 ng/L
RT: 6.12 min Scan# 1508
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 62 Resp: 47

Ion	Ratio	Lower	Upper
62	100		
64	63.6	2.1	62.1#
49	54.5	0.0	58.7

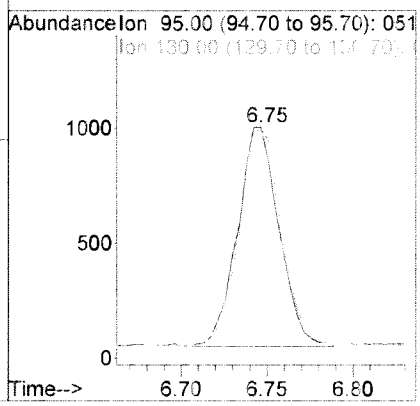


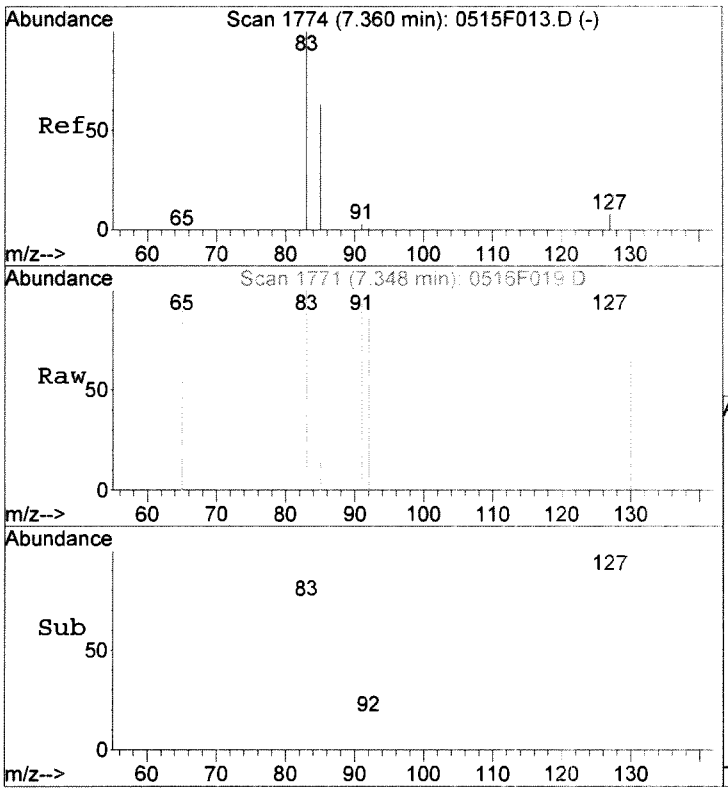


#13
Trichloroethene
Concen: 89.58 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 95 Resp: 1603

Ion	Ratio	Lower	Upper
95	100		
130	99.0	69.5	129.5
132	98.1	67.2	127.2

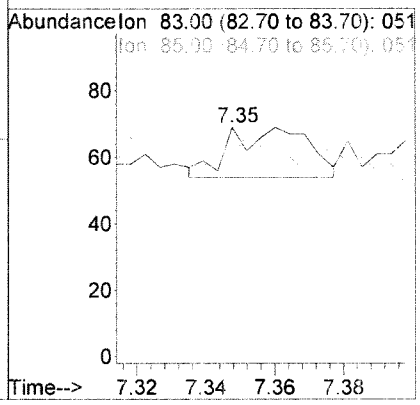


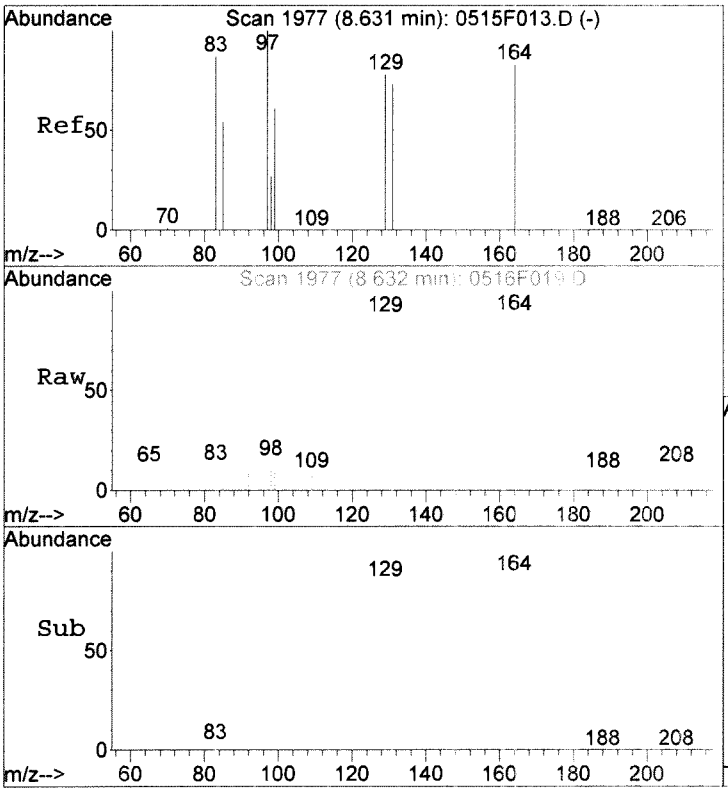


#14
Bromodichloromethane
Concen: 0.90 ng/L
RT: 7.35 min Scan# 1771
Delta R.T. -0.01 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 83 Resp: 23

Ion	Ratio	Lower	Upper
83	100		
85	16.7	33.1	93.1#
127	108.3	0.0	38.1#

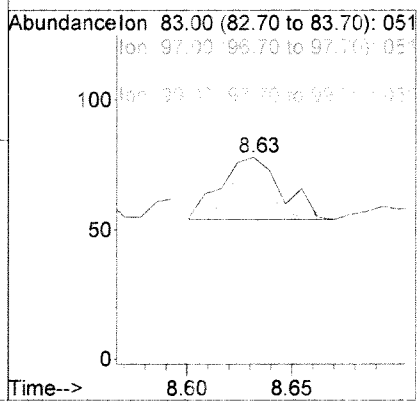


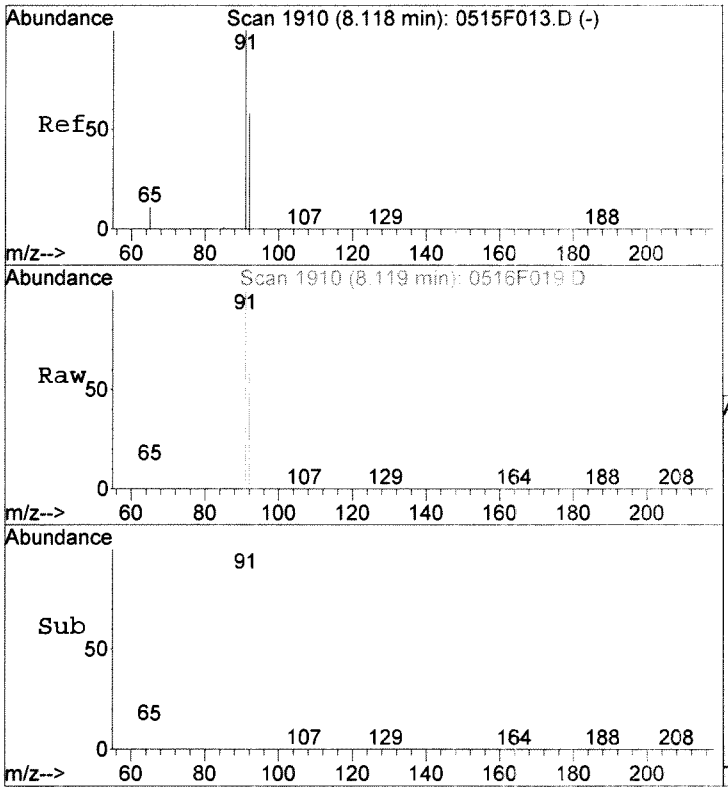


#16
1,1,2-Trichloroethane
Concen: 3.42 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 83 Resp: 49

Ion	Ratio	Lower	Upper
83	100		
97	4.2	84.4	144.4#
85	33.3	32.3	92.3
99	25.0	39.4	99.4#

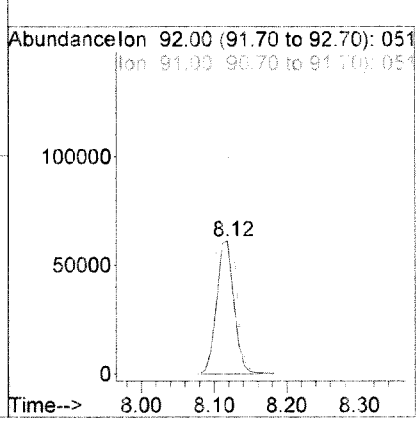


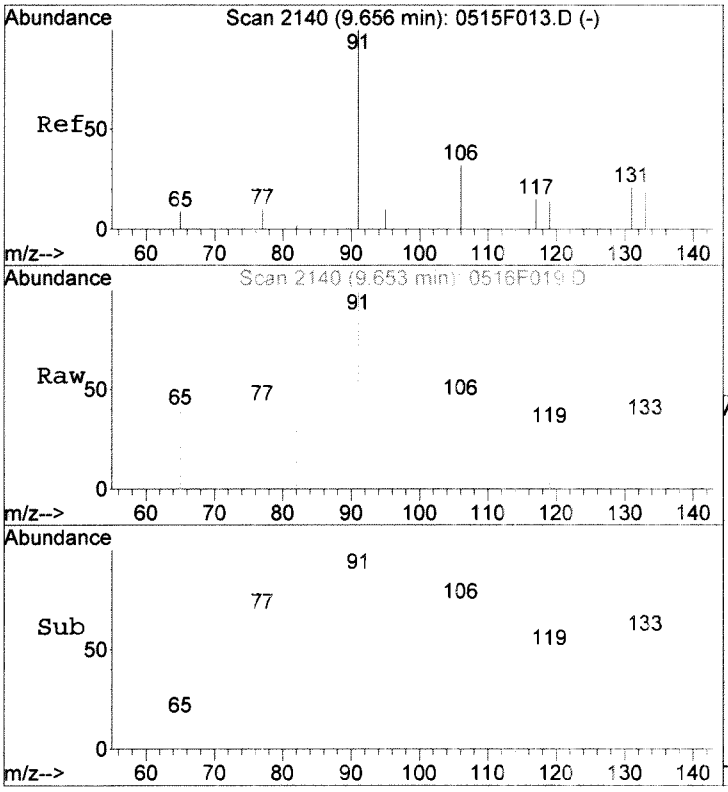


#20
Toluene
Concen: 3307.78 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 92 Resp: 102397

Ion	Ratio	Lower	Upper
92	100		
91	172.8	143.6	203.6
65	20.2	0.0	49.9

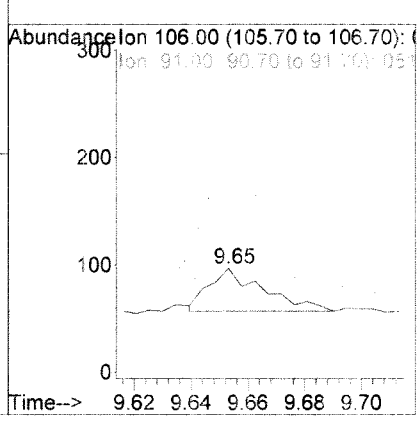


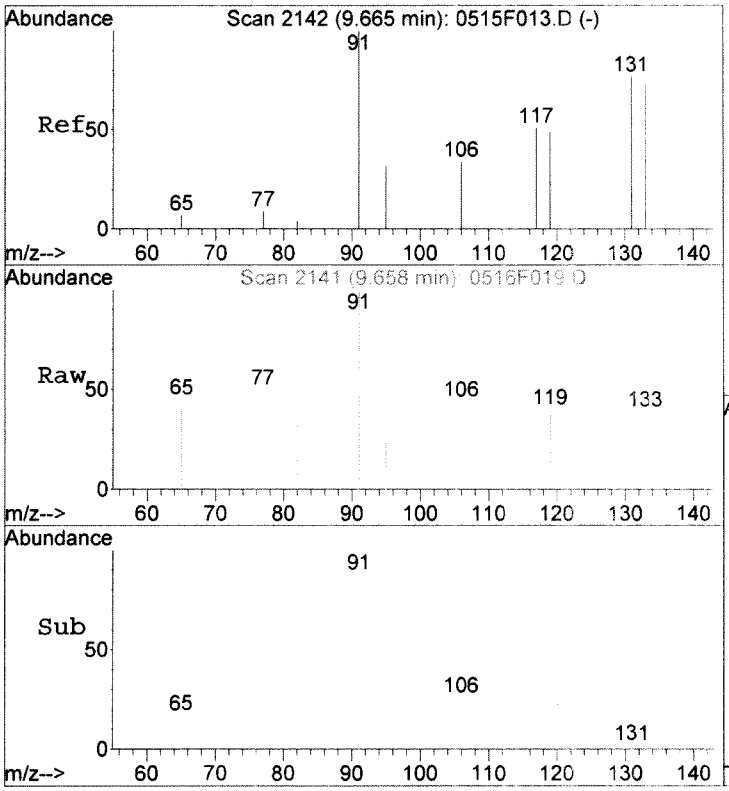


#21
Ethylbenzene
Concen: 3.55 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion:106 Resp: 53

Ion	Ratio	Lower	Upper
106	100		
91	347.5	285.7	345.7#
77	25.0	1.3	61.3

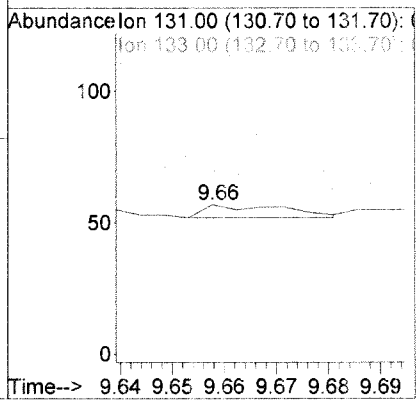


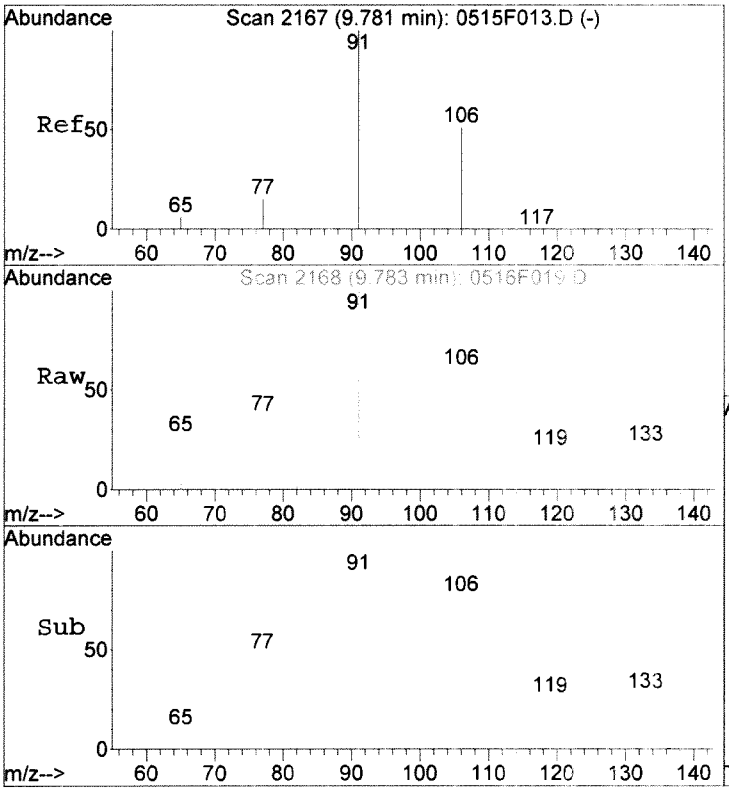


#22
1,1,1,2-Tetrachloroethane
Concen: 0.27 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. -0.01 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion:131 Resp: 5

Ion	Ratio	Lower	Upper
131	100		
133	160.0	74.4	114.4#
119	160.0	43.9	83.9#

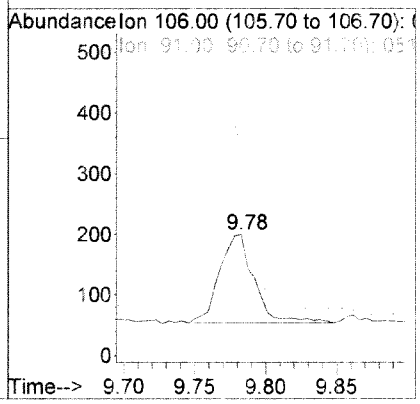


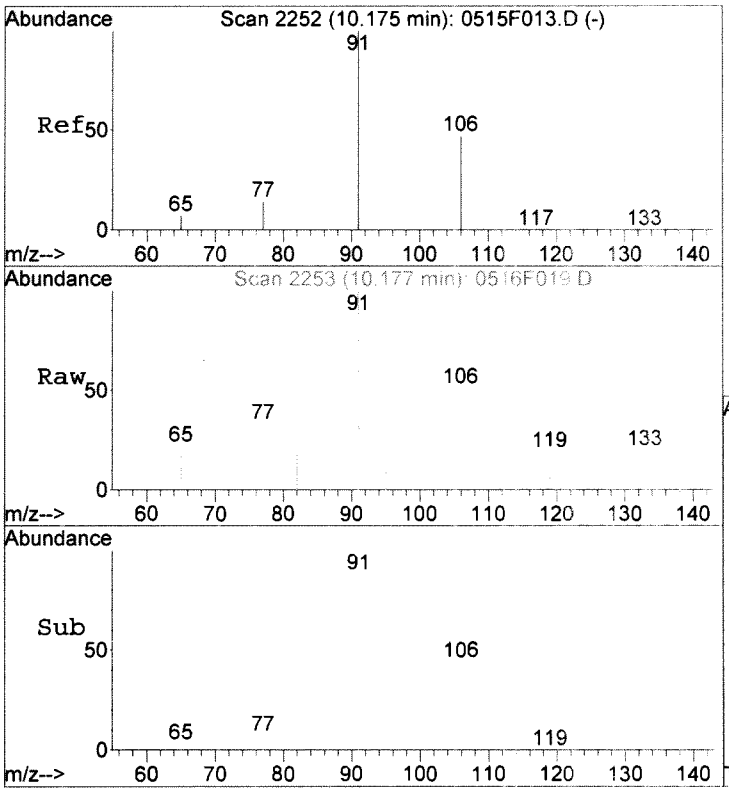


#23
m,p-Xylenes
Concen: 14.45 ng/L
RT: 9.78 min Scan# 2168
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion:106 Resp: 247

Ion	Ratio	Lower	Upper
106	100		
91	178.8	166.8	226.8
77	26.7	0.0	58.7

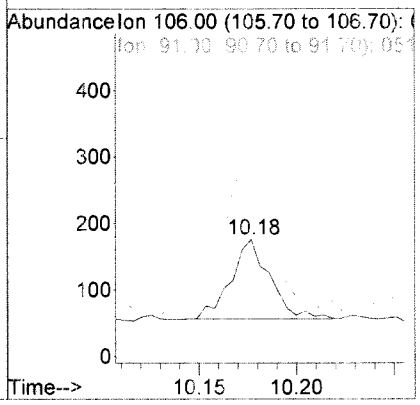


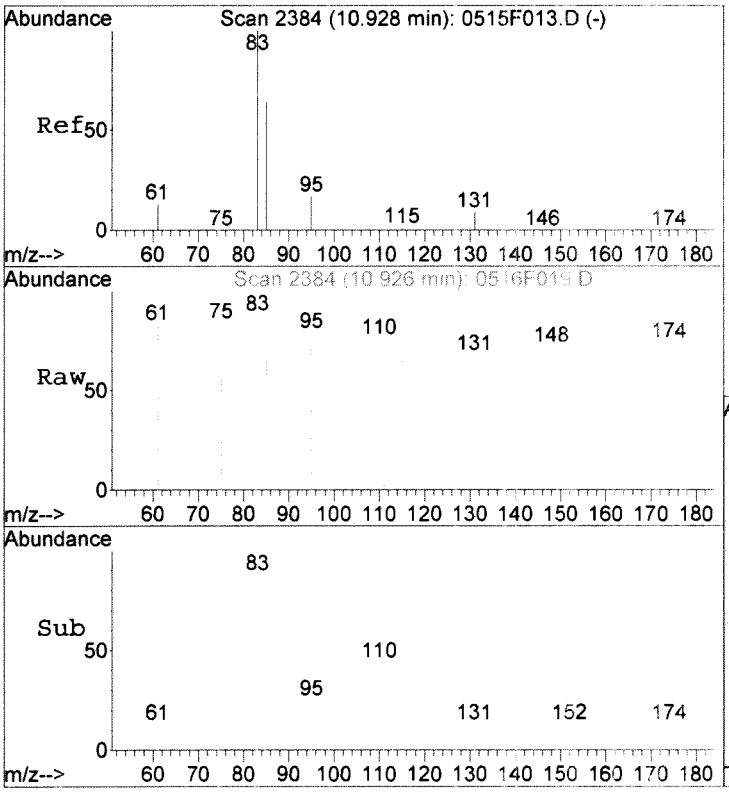


#24
o-Xylene
Concen: 9.58 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion:106 Resp: 167

Ion	Ratio	Lower	Upper
106	100		
91	232.5	184.3	244.3
65	12.5	0.0	44.6

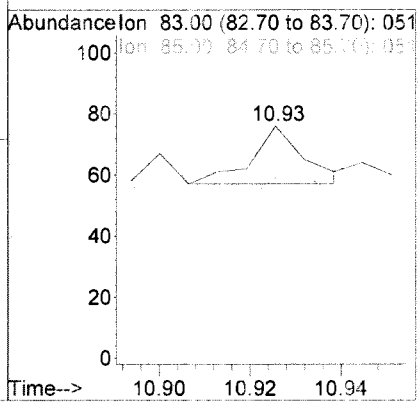


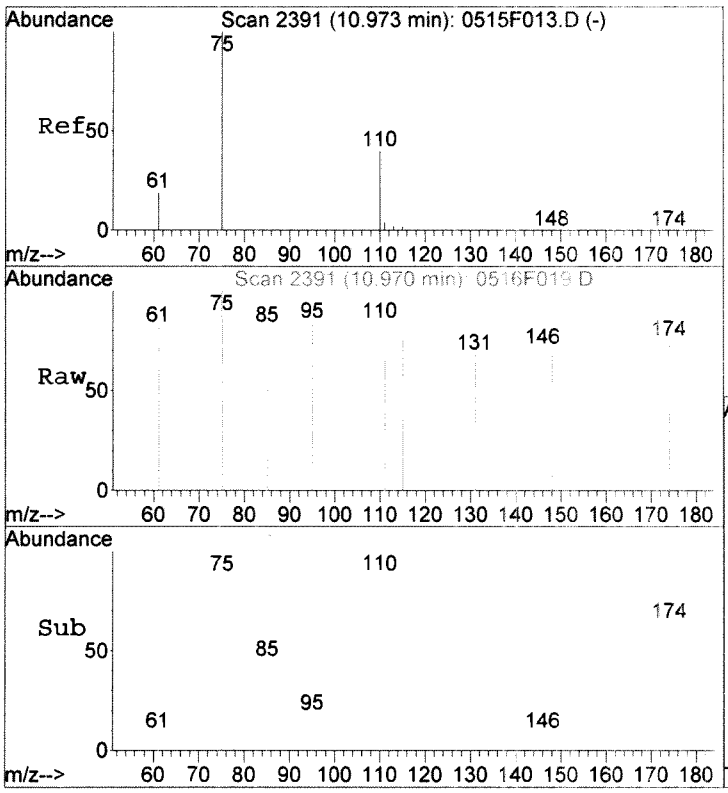


#26
1,1,2,2-Tetrachloroethane
Concen: 0.90 ng/L
RT: 10.93 min Scan# 2384
Delta R.T. -0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion: 83 Resp: 15

Ion	Ratio	Lower	Upper
83	100		
85	26.3	34.1	94.1#
131	15.8	0.0	28.8

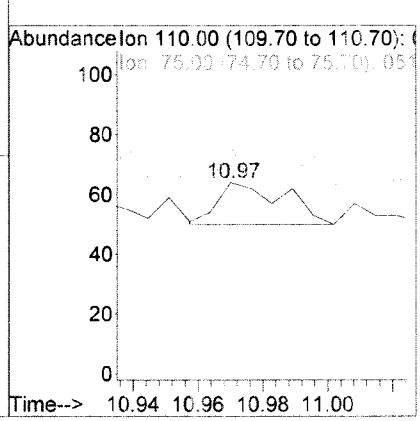


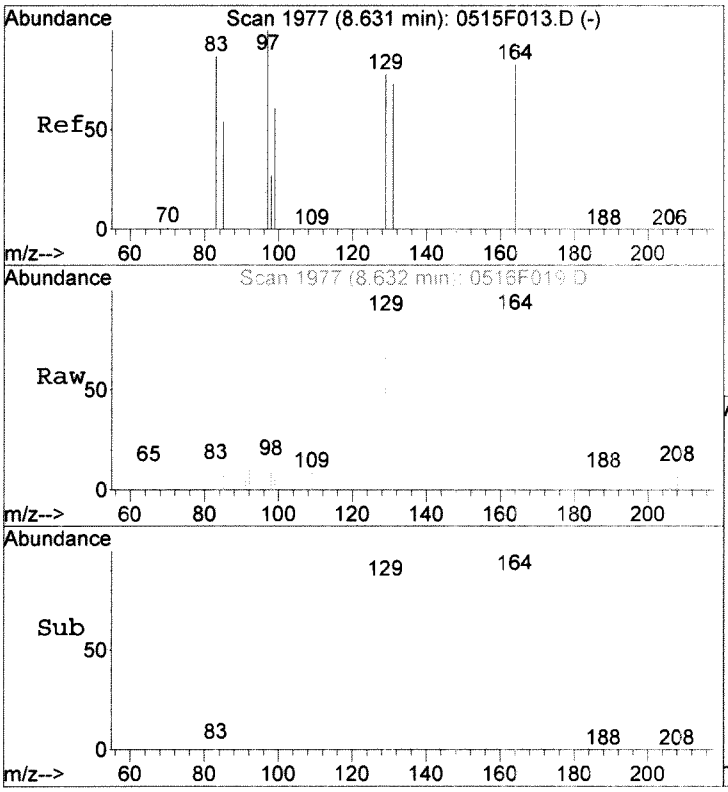


#27
1,2,3-Trichloropropane
Concen: 3.84 ng/L
RT: 10.97 min Scan# 2391
Delta R.T. -0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion:110 Resp: 20

Ion	Ratio	Lower	Upper
110	100		
75	100.0	230.6	270.6#
61	0.0	40.1	80.1#

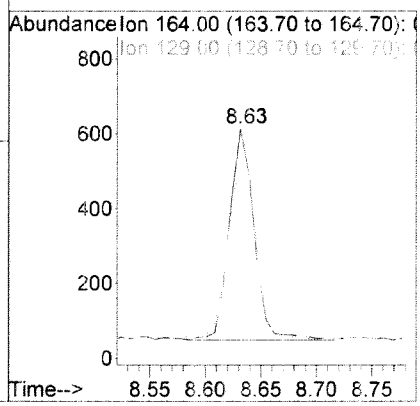




#28
Tetrachloroethene
Concen: 60.57 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion:164 Resp: 879

Ion	Ratio	Lower	Upper
164	100		
129	85.3	63.1	123.1
131	78.8	57.4	117.4



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F022.D
Lab ID: K1704732-003
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 20:16
Date Quantitated: 05/22/2017 12:09
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KWG

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F022.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 20:16	**Quant Date:**	05/22/2017 12:09	**Vial:**	20
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704732-003			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/09/2017	**Receive Date:**	05/11/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704732
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604861	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	51801	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	35929	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	20022	1,045	104	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	42181	1,021	102	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12602	788.42	79	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	65	2.26	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F022.D Vial: 20
Acq On : 16 May 2017 08:16 pm Operator: GH
Sample : K4732-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:58:39 2017 Quant Results File: 051517MS30_8260SIM.RES

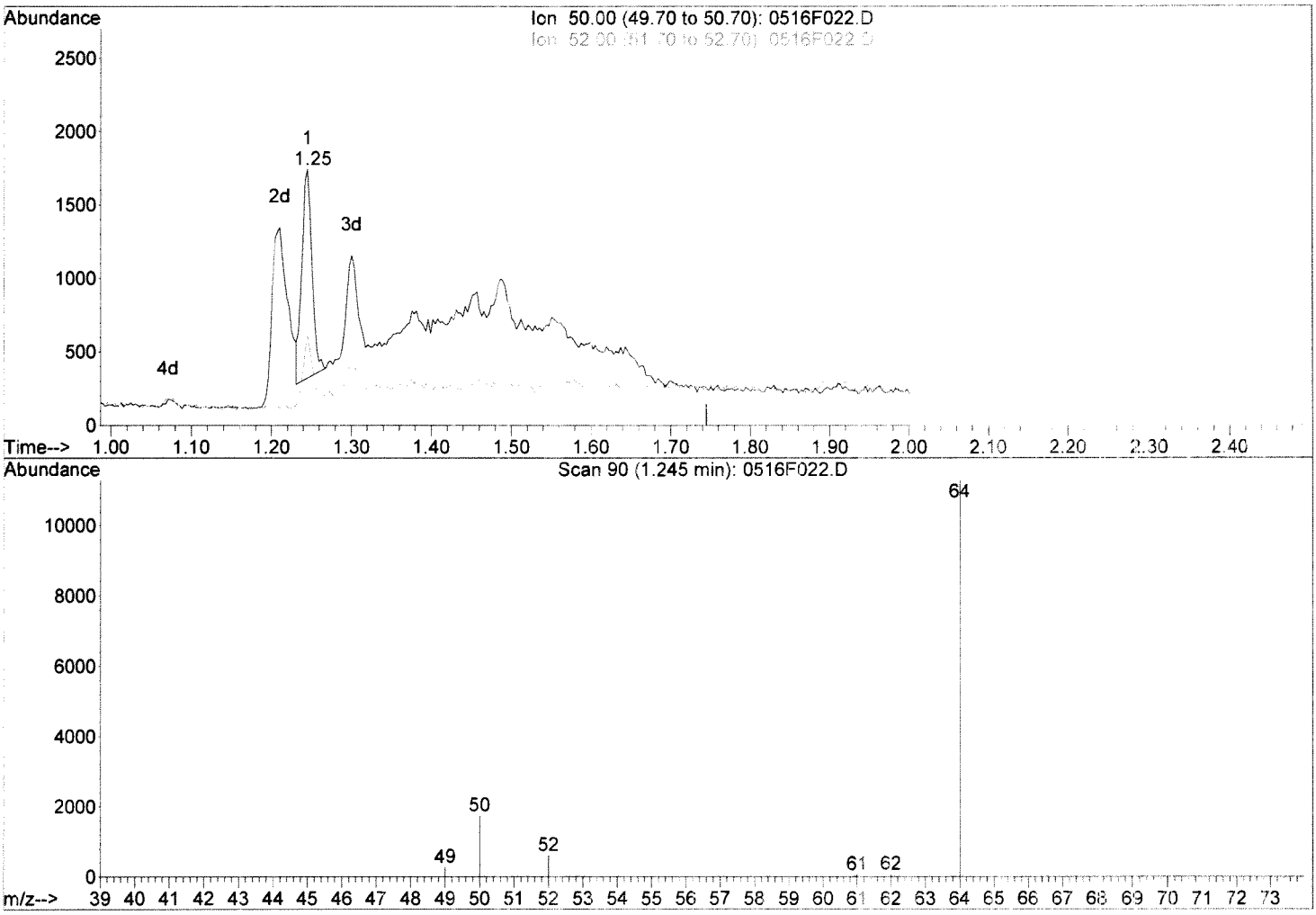
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	51801	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	35929	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14949	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	20022	1045.00	ng/L		0.00
Spiked Amount 1000.000			Recovery = 104.50%				
15) Toluene-d8	8.05	98	42181	1020.90	ng/L		0.00
Spiked Amount 1000.000			Recovery = 102.09%				
25) 4-Bromofluorobenzene	10.73	95	12602	788.42	ng/L		0.00
Spiked Amount 1000.000			Recovery = 78.84%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	1121m	37.81	ng/L		
3) Vinyl Chloride	1.33	62	65	2.26	ng/L	#	1
5) Methylene Chloride	3.08	84	1343	59.87	ng/L		99
7) cis-1,2-Dichloroethene	4.95	96	1176	67.88	ng/L		97
8) Chloroform	5.39	83	214	5.74	ng/L		94
11) Benzene	5.97	78	2039	28.80	ng/L		97
12) 1,2-Dichloroethane	6.12	62	193	7.31	ng/L		79
13) Trichloroethene	6.75	95	2347	134.78	ng/L		97
16) 1,1,2-Trichloroethane	8.62	83	54	3.87	ng/L	#	61
17) Dibromochloromethane	8.63	129	147	8.50	ng/L		81
18) 1,2-Dibromoethane (EDB)	9.10	107	57	4.18	ng/L		86
20) Toluene	8.12	92	12487	396.00	ng/L		97
21) Ethylbenzene	9.66	106	138	9.07	ng/L		97
22) 1,1,1,2-Tetrachloroethane	9.67	131	26	1.37	ng/L	#	72
23) m,p-Xylenes	9.78	106	574	32.97	ng/L		92
24) o-Xylene	10.18	106	390	21.96	ng/L		100
26) 1,1,2,2-Tetrachloroethane	10.93	83	33	1.95	ng/L	#	58
27) 1,2,3-Trichloropropane	10.98	110	16	3.02	ng/L	#	88
28) Tetrachloroethene	8.63	164	155	10.48	ng/L		88
30) 1,4-Dichlorobenzene	11.91	146	129	4.78	ng/L		82

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F022.D Vial: 20
Acq On : 16 May 2017 08:16 pm Operator: GH
Sample : K4732-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:58 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F022.D

(2) Chloromethane (T)

1.25min 42.66ng/L

response 1265

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	35.48
49.00	10.30	11.38
0.00	0.00	0.00

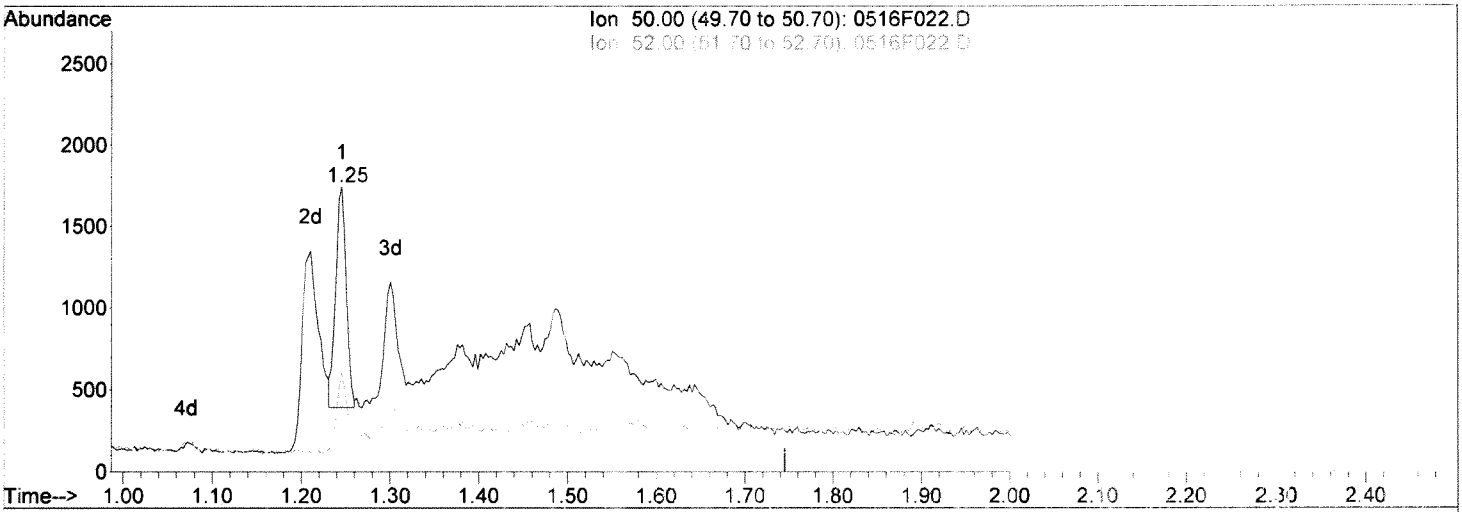
Manual Integration:

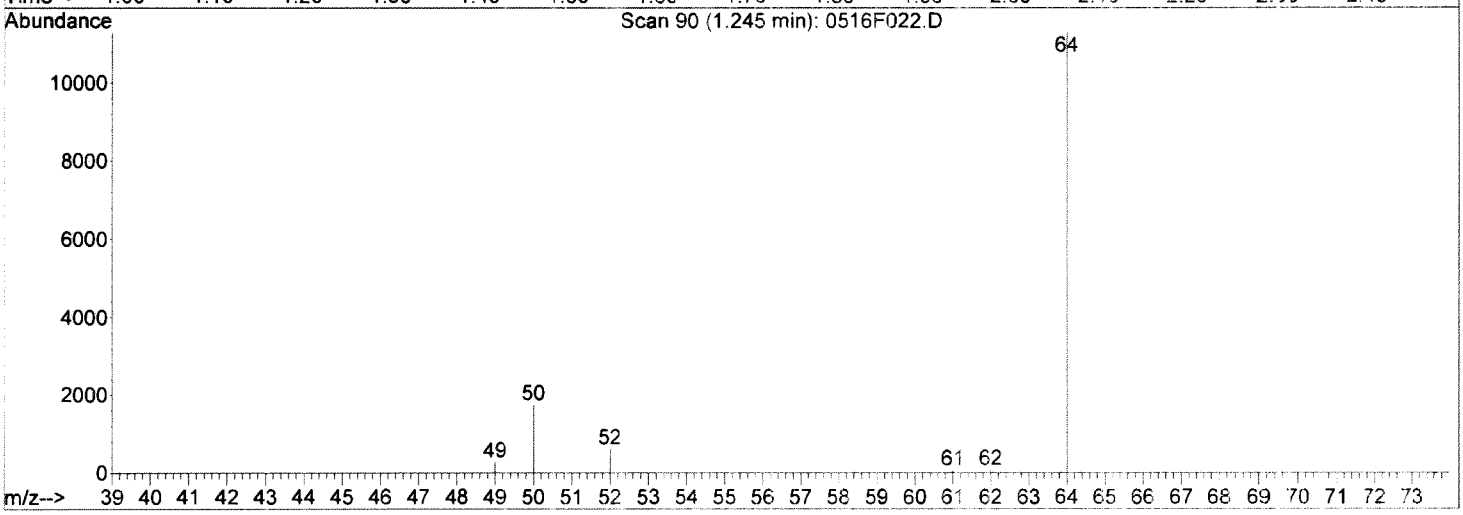
Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F022.D Vial: 20
Acq On : 16 May 2017 08:16 pm Operator: GH
Sample : K4732-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:08 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F022.D

(2) Chloromethane (T)

1.25min 37.81ng/L m

response 1121

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	35.23
49.00	10.30	15.83
0.00	0.00	0.00

Manual Integration:

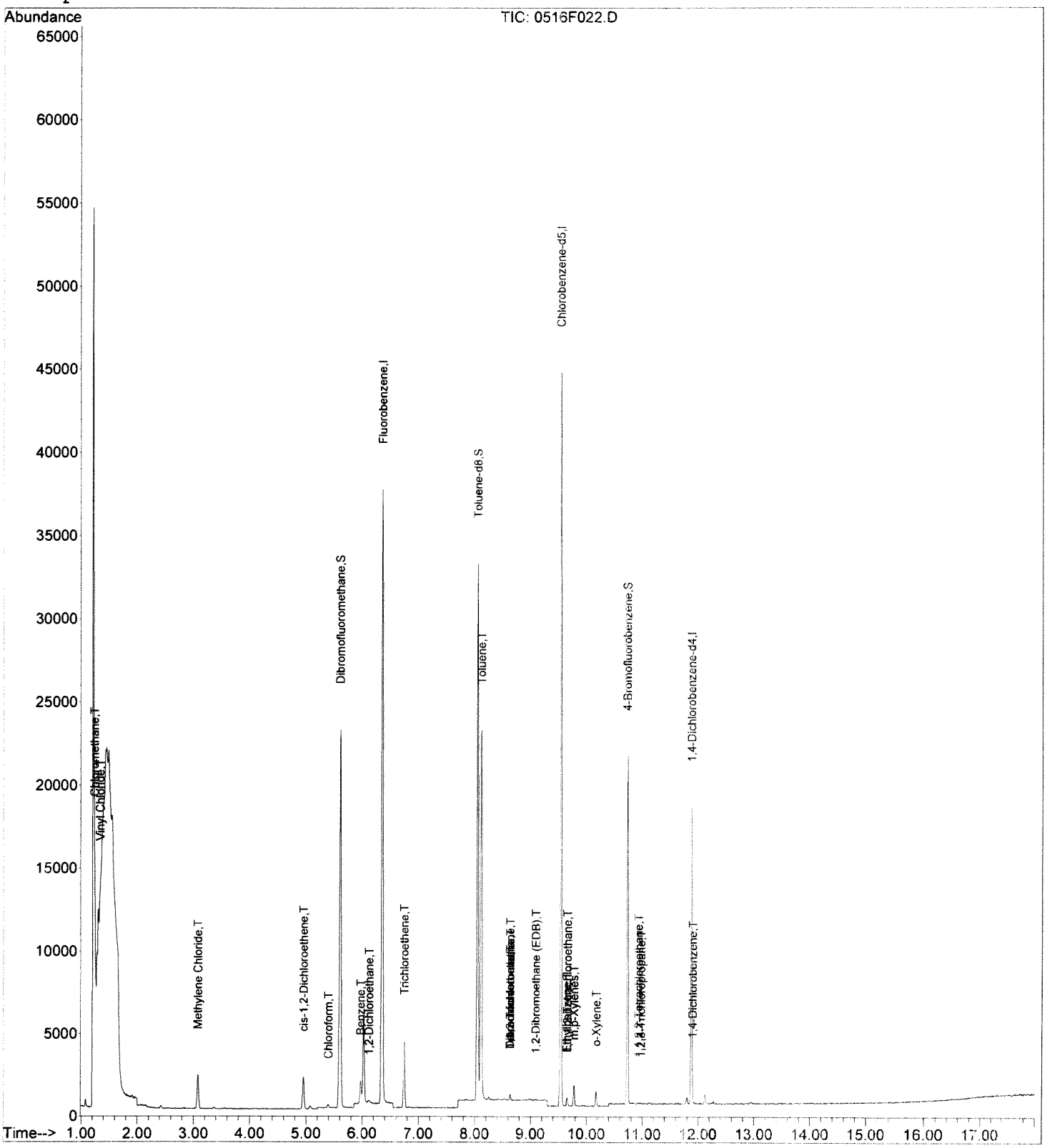
After

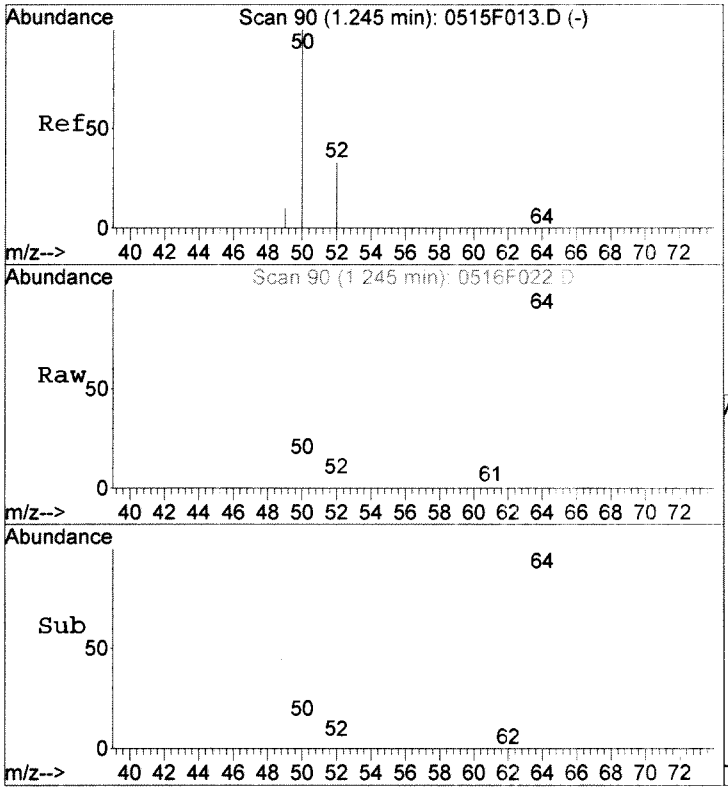
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F022.D Vial: 20
Acq On : 16 May 2017 08:16 pm Operator: GH
Sample : K4732-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:09 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

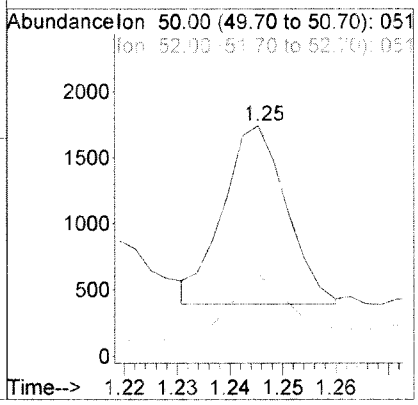


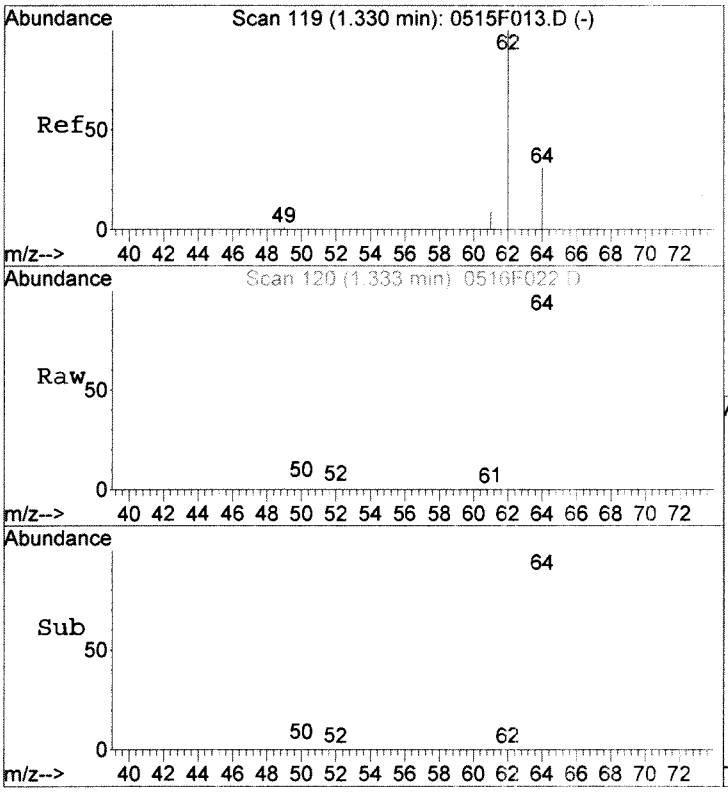


#2
Chloromethane
Concen: 37.81 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 50 Resp: 1121

Ion	Ratio	Lower	Upper
50	100		
52	35.2	2.5	62.5
49	15.8	0.0	40.3

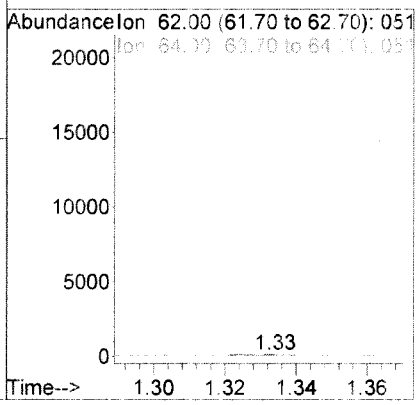


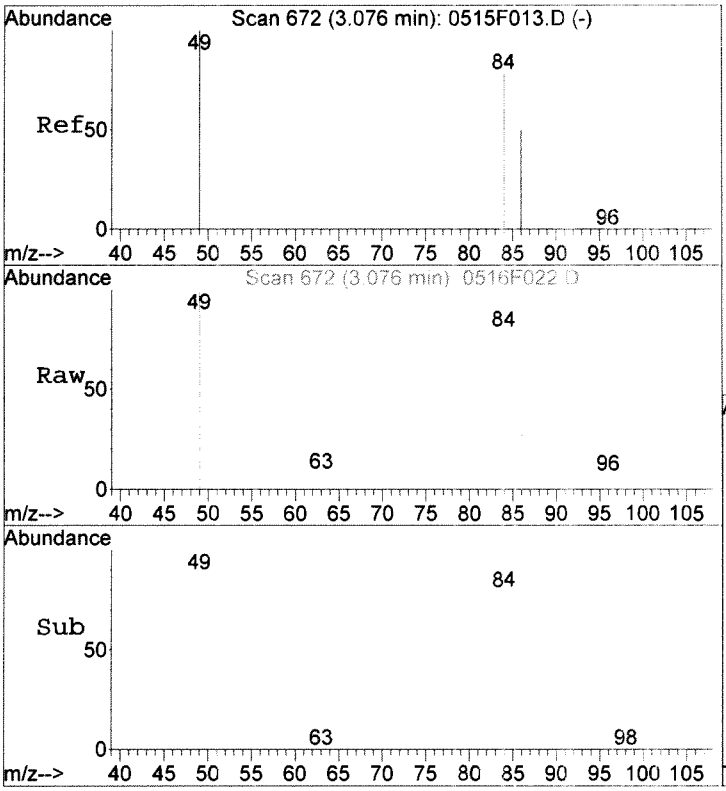


#3
Vinyl Chloride
Concen: 2.26 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 62 Resp: 65

Ion	Ratio	Lower	Upper
62	100		
64	2187.3	1.5	61.5#
61	12.7	0.0	38.6

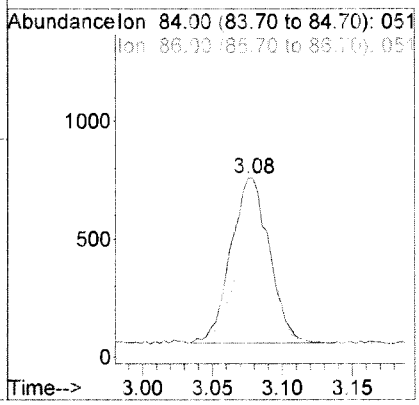


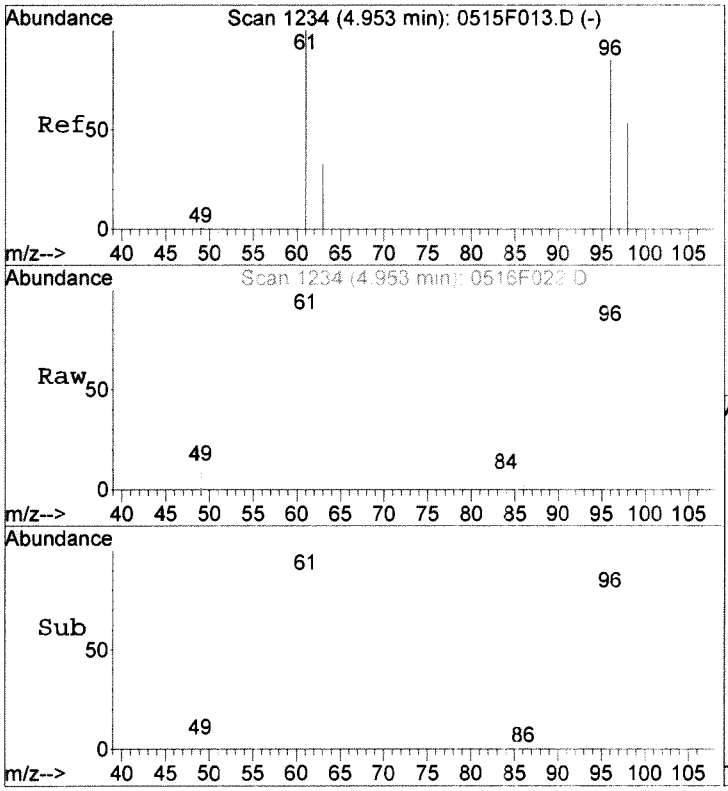


#5
Methylene Chloride
Concen: 59.87 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 84 Resp: 1343

Ion	Ratio	Lower	Upper
84	100		
86	63.7	34.0	94.0
49	128.0	98.8	158.8

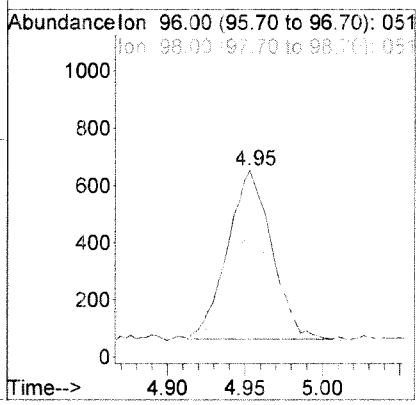


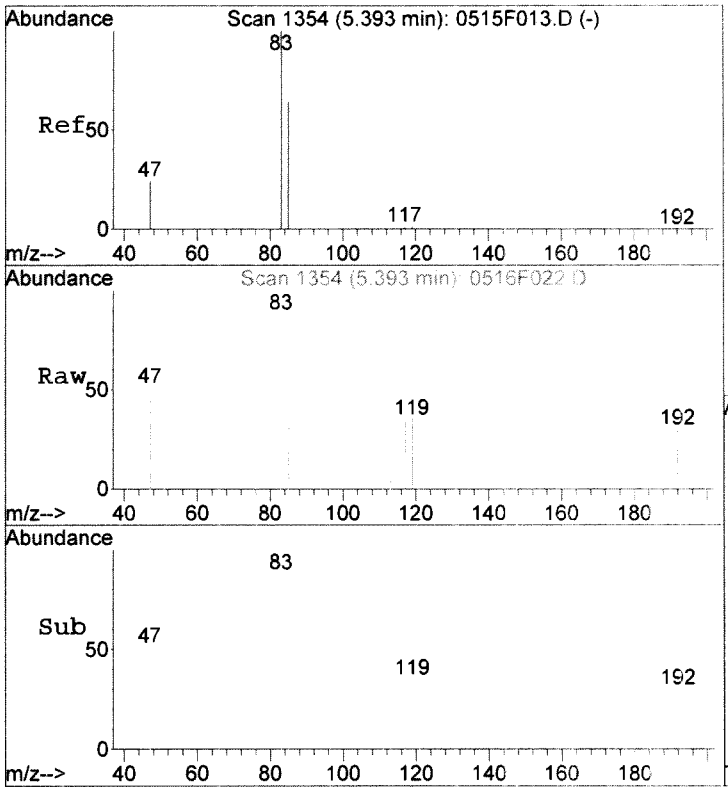


#7
cis-1,2-Dichloroethene
Concen: 67.88 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 96 Resp: 1176

Ion	Ratio	Lower	Upper
96	100		
98	58.1	32.7	92.7
61	124.5	95.4	155.4

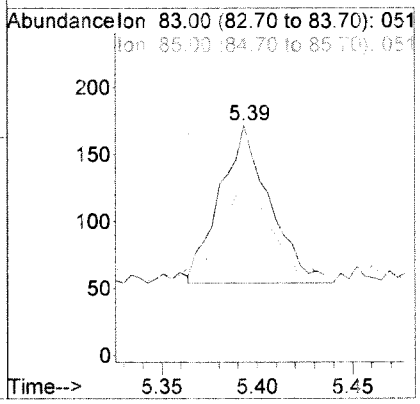


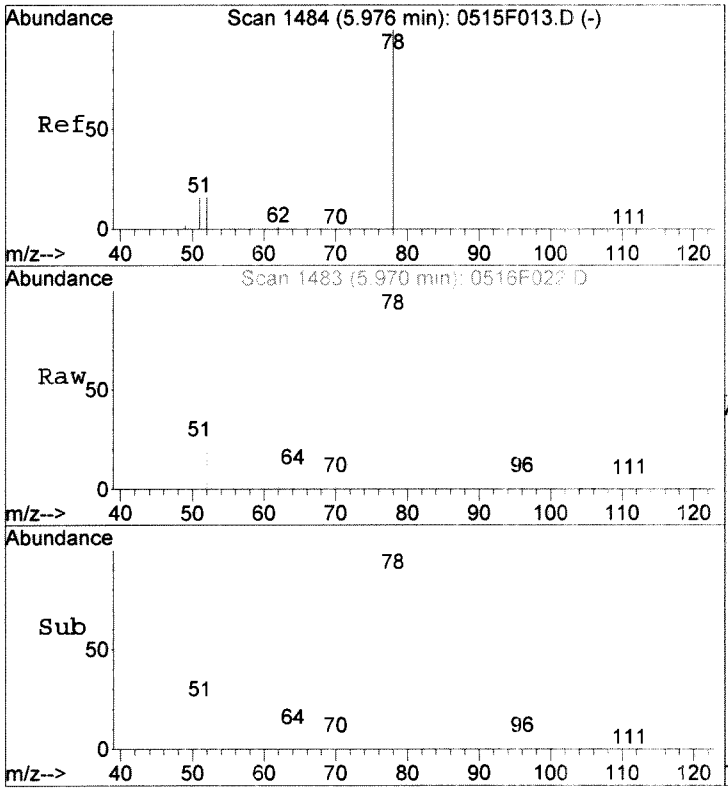


#8
Chloroform
Concen: 5.74 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 83 Resp: 214

Ion	Ratio	Lower	Upper
83	100		
85	66.1	34.0	94.0
47	15.3	0.0	53.5

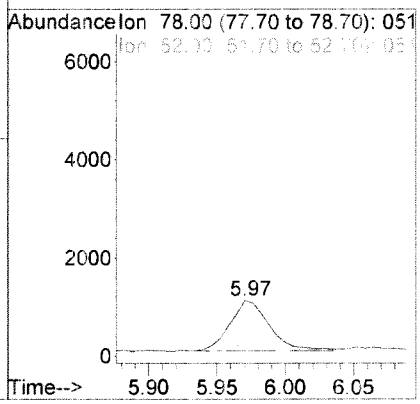


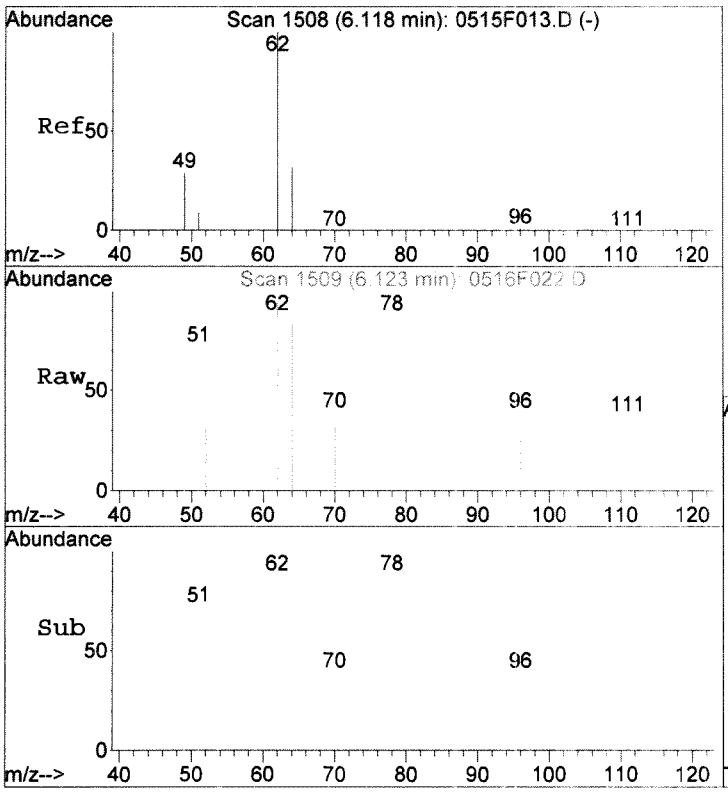


#11
Benzene
Concen: 28.80 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 78 Resp: 2039

Ion	Ratio	Lower	Upper
78	100		
52	16.1	0.0	45.8
51	18.8	0.0	46.5

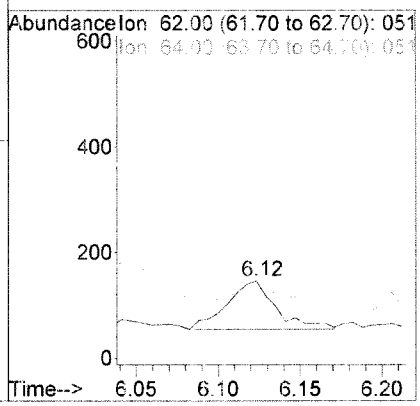


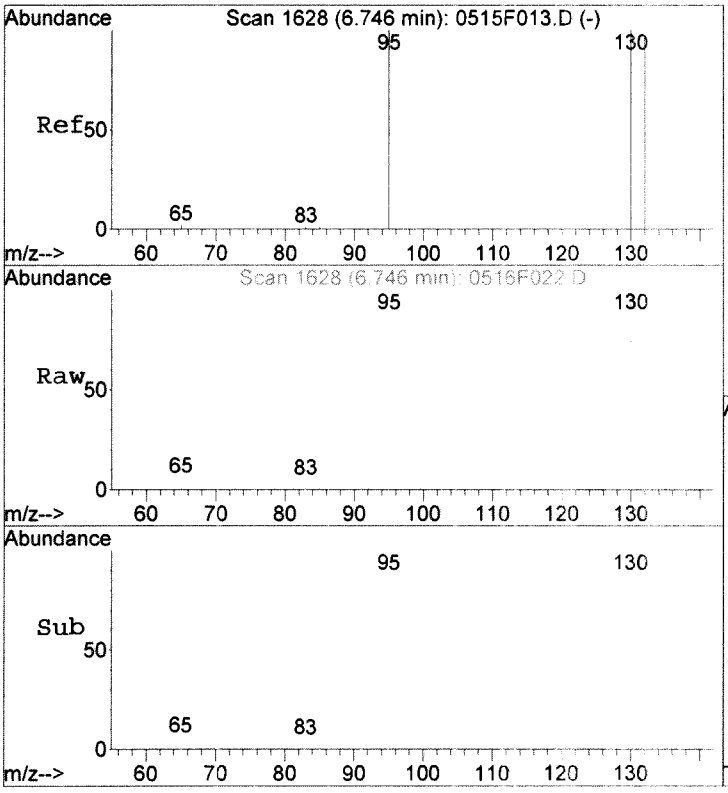


#12
1,2-Dichloroethane
Concen: 7.31 ng/L
RT: 6.12 min Scan# 1509
Delta R.T. 0.01 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 62 Resp: 193

Ion	Ratio	Lower	Upper
62	100		
64	17.4	2.1	62.1
49	20.7	0.0	58.7

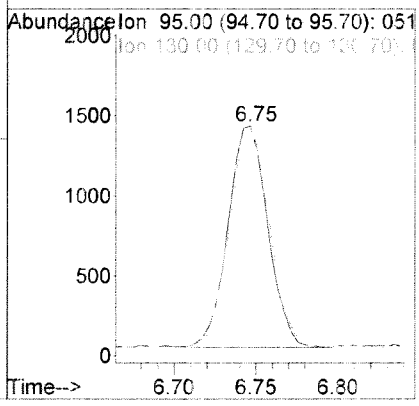


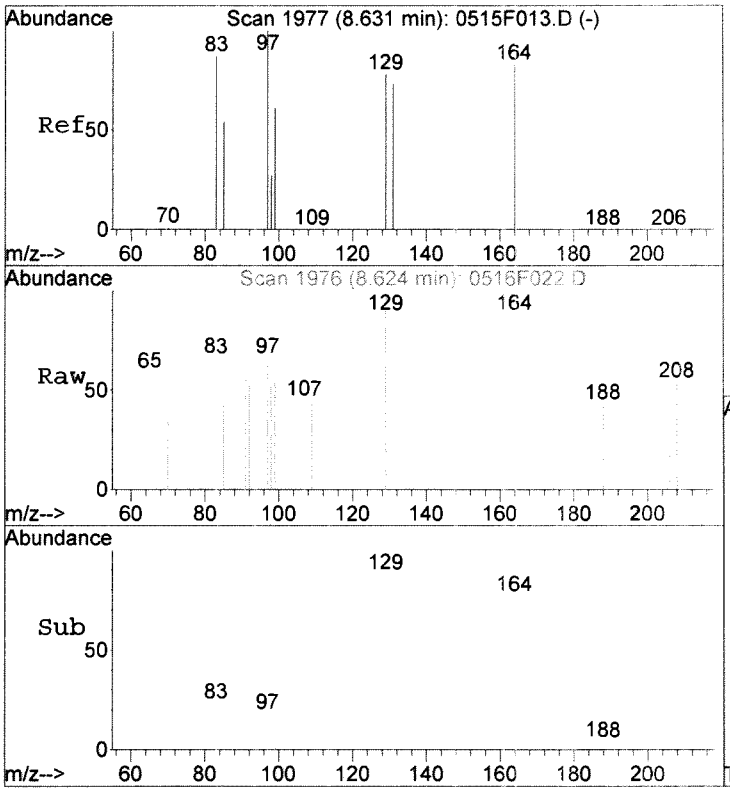


#13
Trichloroethene
Concen: 134.78 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 95 Resp: 2347

Ion	Ratio	Lower	Upper
95	100		
130	98.5	69.5	129.5
132	92.8	67.2	127.2

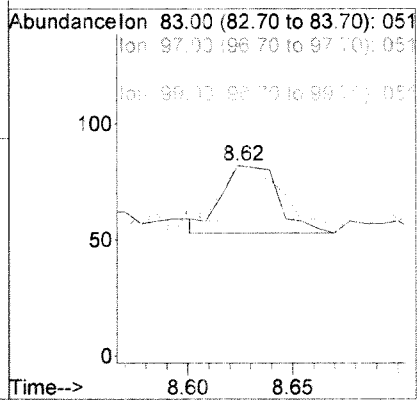


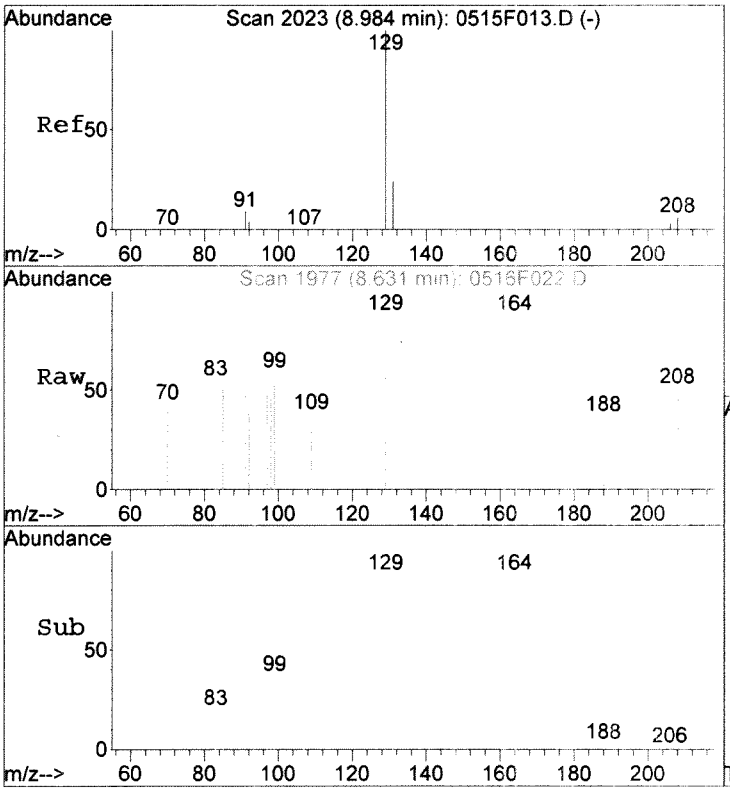


#16
1,1,2-Trichloroethane
Concen: 3.87 ng/L
RT: 8.62 min Scan# 1976
Delta R.T. -0.01 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 83 Resp: 54

Ion	Ratio	Lower	Upper
83	100		
97	89.7	84.4	144.4
85	6.9	32.3	92.3#
99	41.4	39.4	99.4

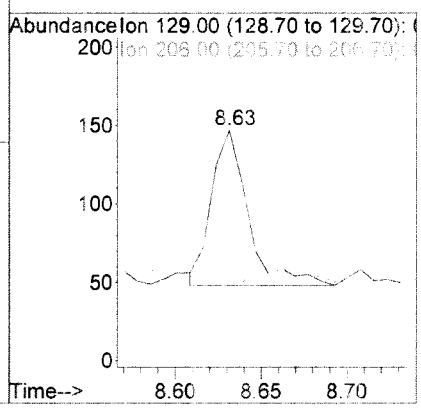


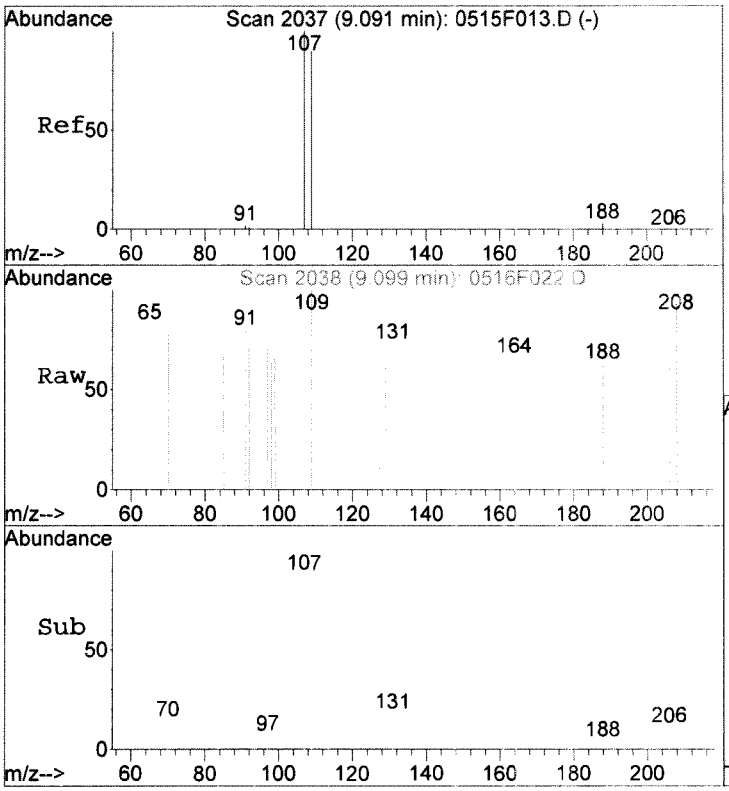


#17
Dibromochloromethane
Concen: 8.50 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.35 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:129 Resp: 147

Ion	Ratio	Lower	Upper
129	100		
206	5.1	0.0	32.8
208	14.1	0.0	35.9

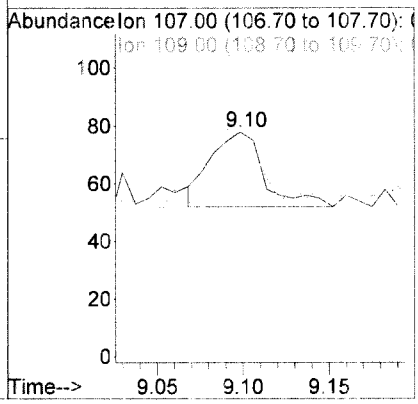


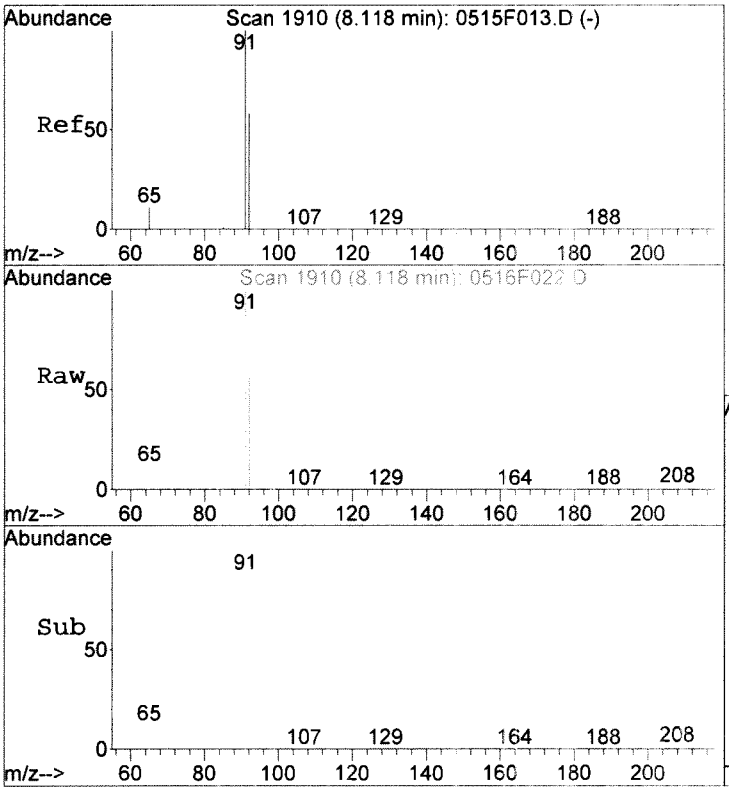


#18
1,2-Dibromoethane (EDB)
Concen: 4.18 ng/L
RT: 9.10 min Scan# 2038
Delta R.T. 0.01 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:107 Resp: 57

Ion	Ratio	Lower	Upper
107	100		
109	103.8	60.3	120.3
188	3.8	0.0	33.5

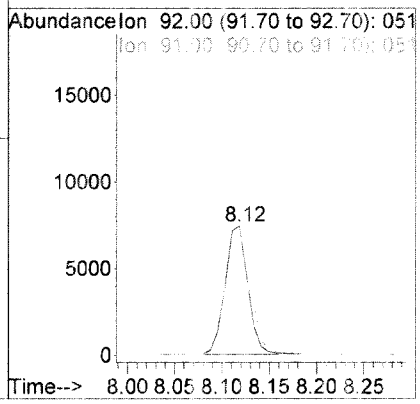


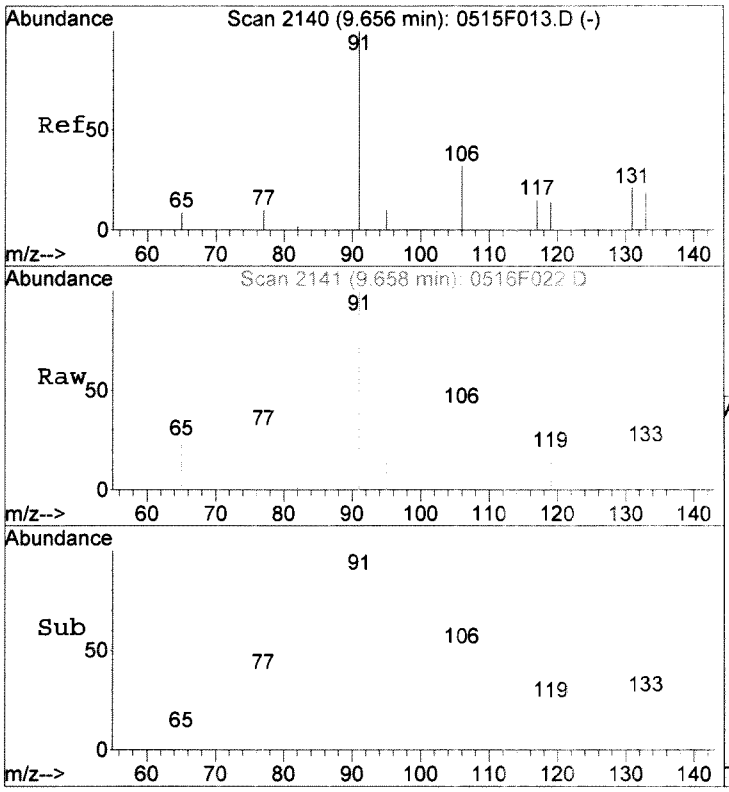


#20
Toluene
Concen: 396.00 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 92 Resp: 12487

Ion	Ratio	Lower	Upper
92	100		
91	178.4	143.6	203.6
65	20.8	0.0	49.9

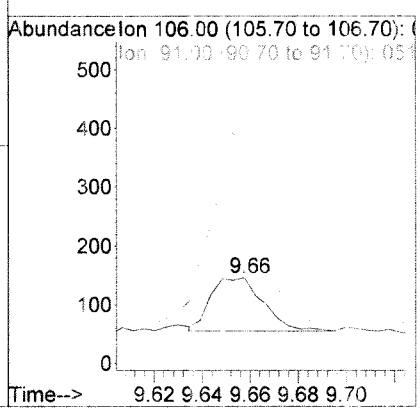


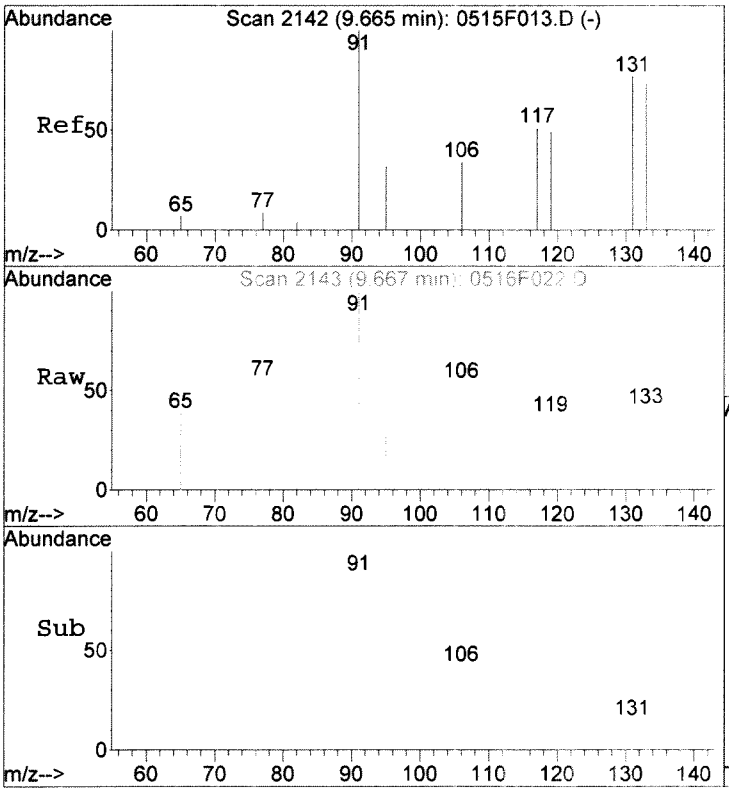


#21
Ethylbenzene
Concen: 9.07 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:106 Resp: 138

Ion	Ratio	Lower	Upper
106	100		
91	319.8	285.7	345.7
77	25.3	1.3	61.3

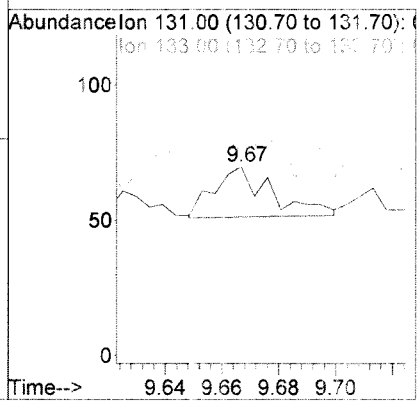


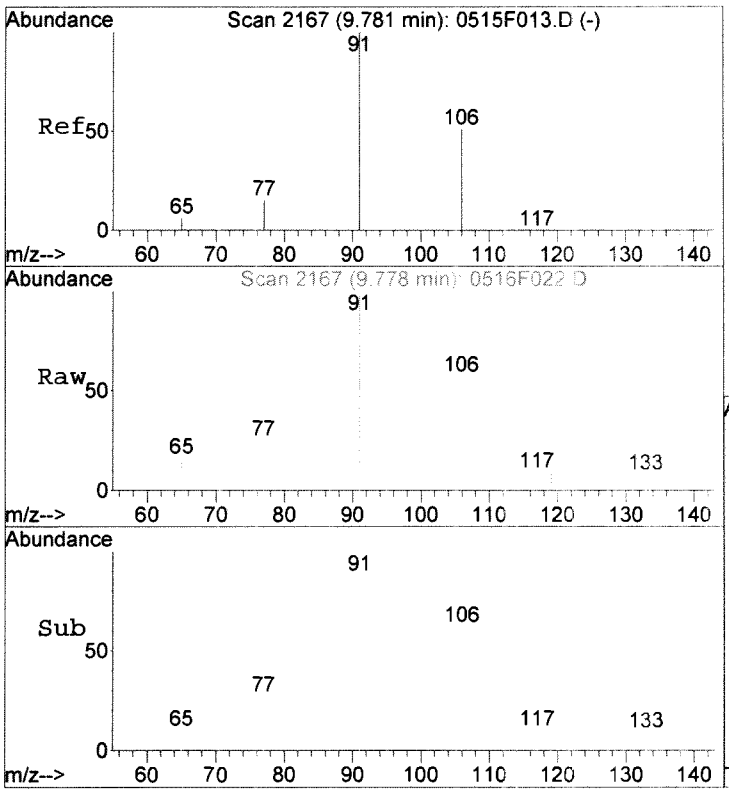


#22
1,1,1,2-Tetrachloroethane
Concen: 1.37 ng/L
RT: 9.67 min Scan# 2143
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:131 Resp: 26

Ion	Ratio	Lower	Upper
131	100		
133	55.6	74.4	114.4#
119	55.6	43.9	83.9

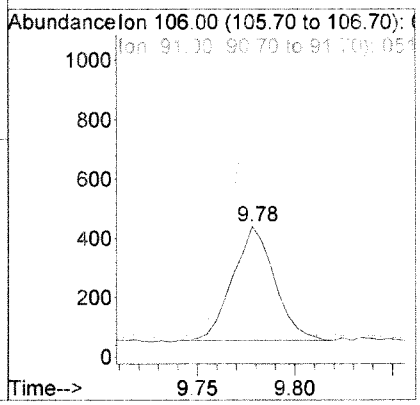


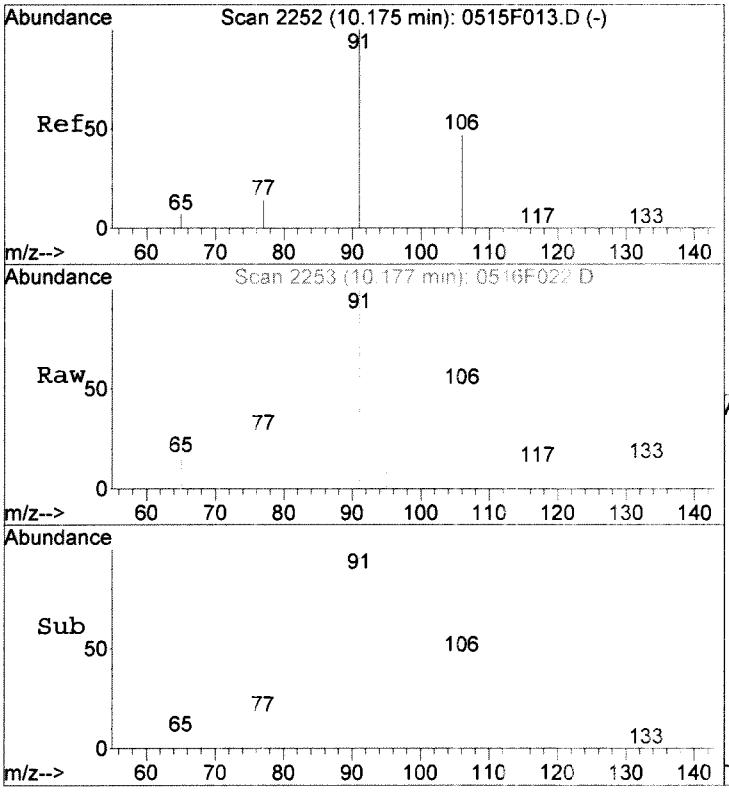


#23
m,p-Xylenes
Concen: 32.97 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:106 Resp: 574

Ion	Ratio	Lower	Upper
106	100		
91	183.2	166.8	226.8
77	30.1	0.0	58.7

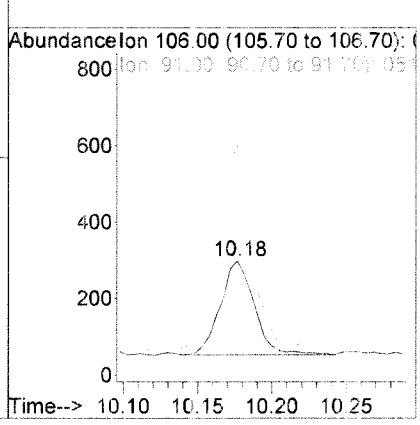


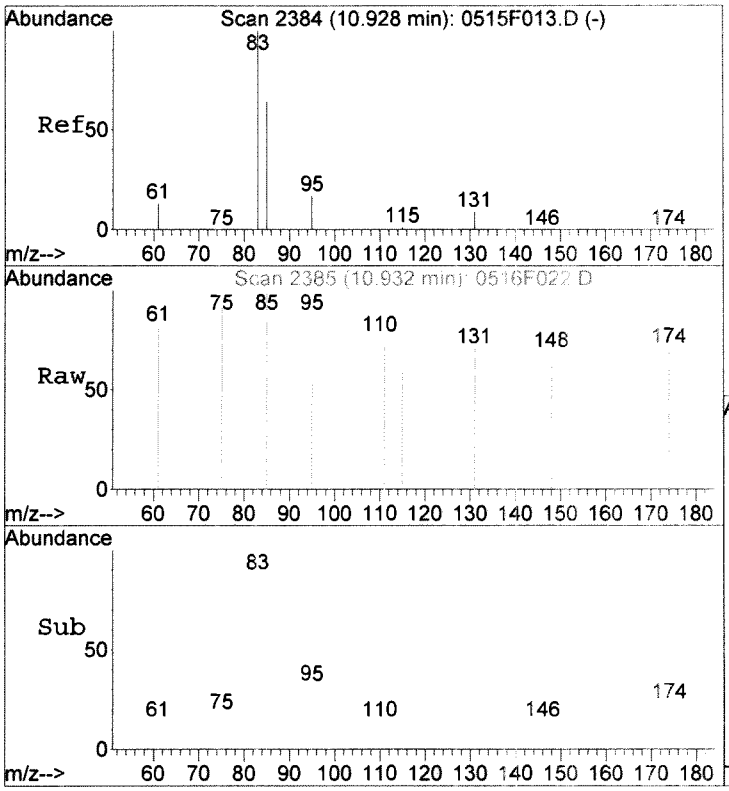


#24
o-Xylene
Concen: 21.96 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:106 Resp: 390

Ion	Ratio	Lower	Upper
106	100		
91	214.6	184.3	244.3
65	13.4	0.0	44.6

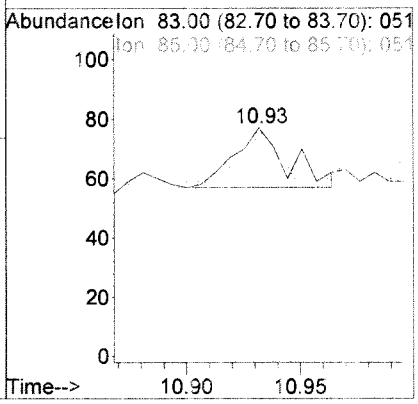


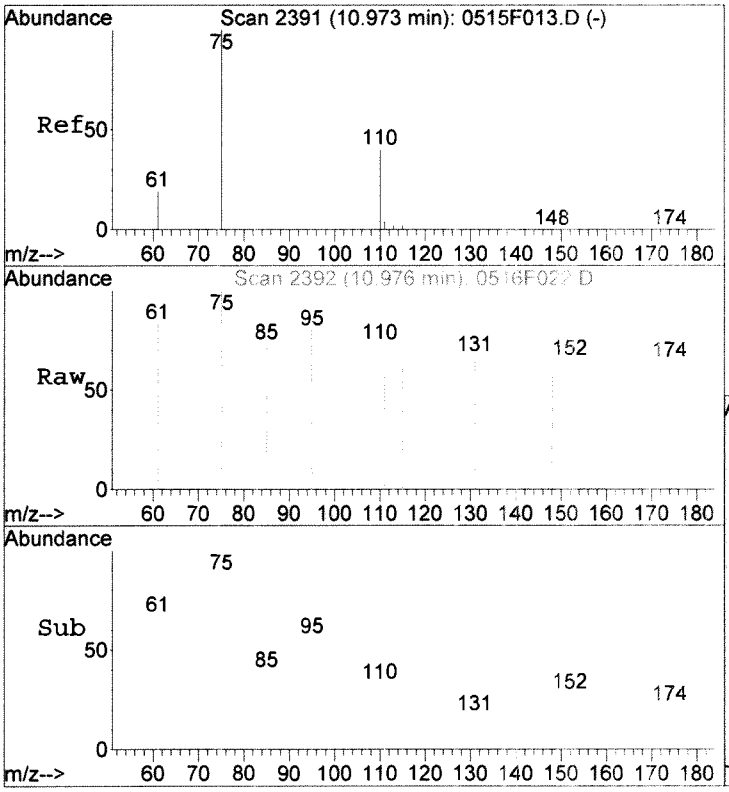


#26
1,1,2,2-Tetrachloroethane
Concen: 1.95 ng/L
RT: 10.93 min Scan# 2385
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion: 83 Resp: 33

Ion	Ratio	Lower	Upper
83	100		
85	95.0	34.1	94.1#
131	30.0	0.0	28.8#

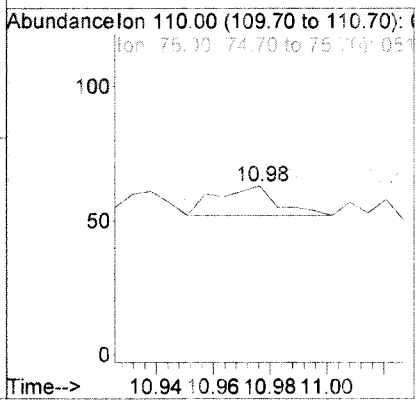


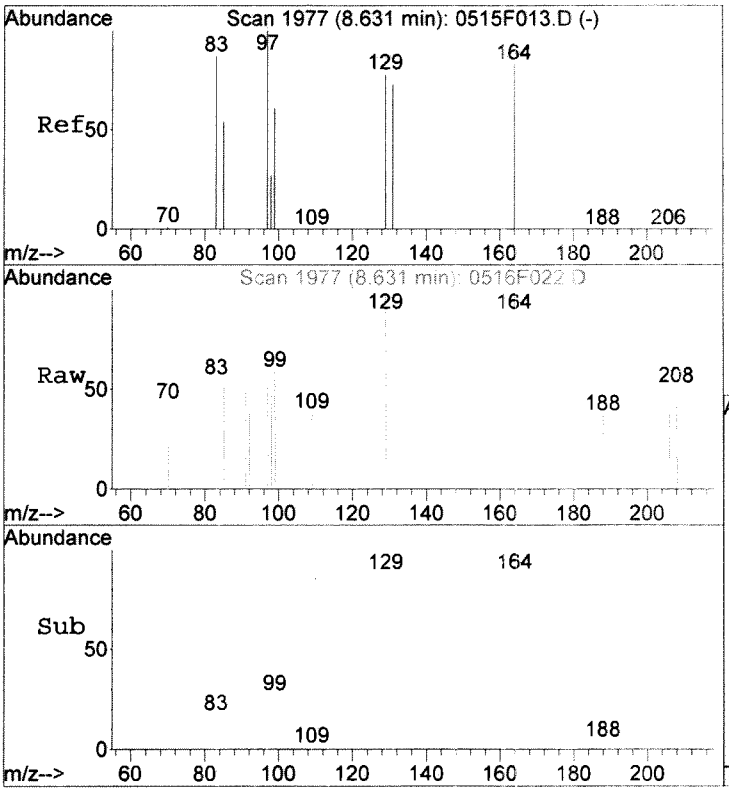


#27
1,2,3-Trichloropropane
Concen: 3.02 ng/L
RT: 10.98 min Scan# 2392
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:110 Resp: 16

Ion	Ratio	Lower	Upper
110	100		
75	254.5	230.6	270.6
61	100.0	40.1	80.1#

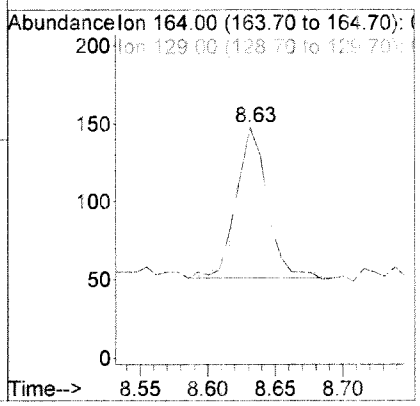


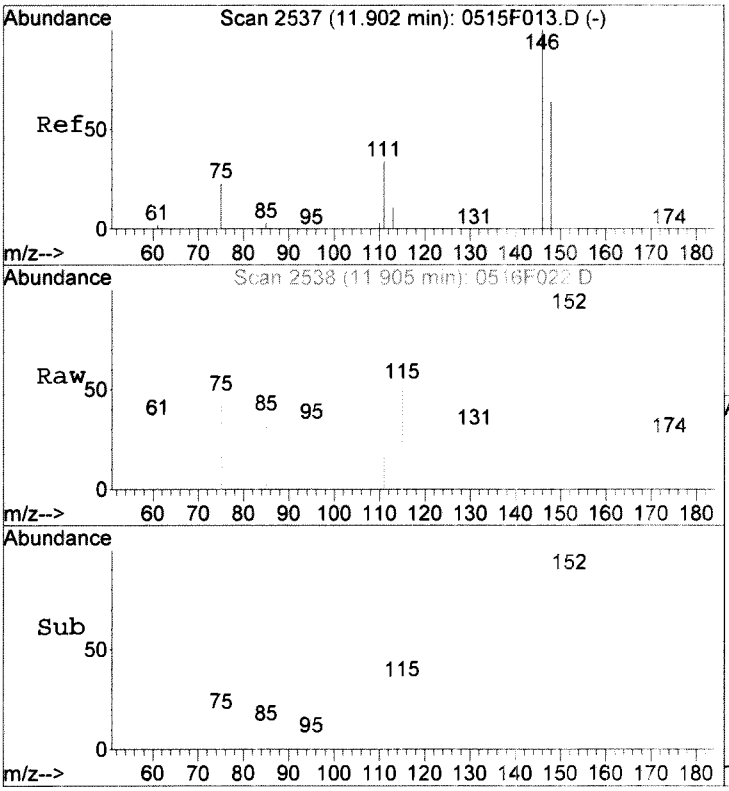


#28
Tetrachloroethene
Concen: 10.48 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:164 Resp: 155

Ion	Ratio	Lower	Upper
164	100		
129	102.1	63.1	123.1
131	74.2	57.4	117.4

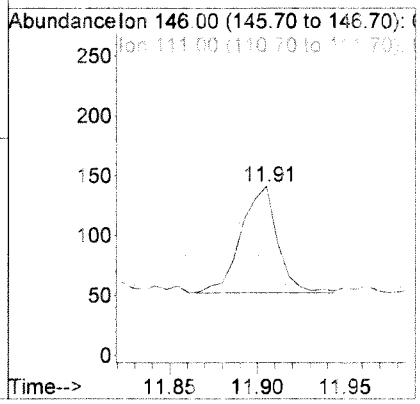


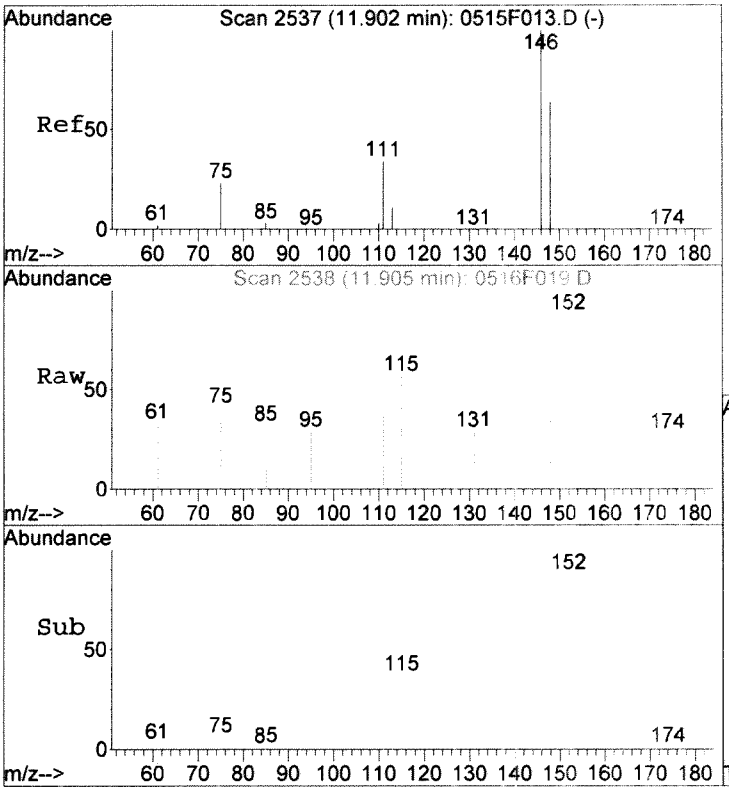


#30
1,4-Dichlorobenzene
Concen: 4.78 ng/L
RT: 11.91 min Scan# 2538
Delta R.T. 0.00 min
Lab File: 0516F022.D
Acq: 16 May 2017 08:16 pm

Tgt Ion:146 Resp: 129

Ion	Ratio	Lower	Upper
146	100		
111	16.9	4.0	64.0
148	55.1	34.3	94.3

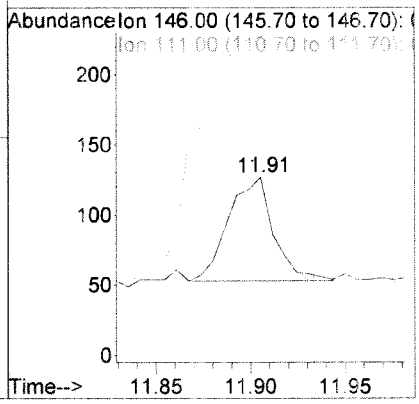




#30
1,4-Dichlorobenzene
Concen: 5.31 ng/L
RT: 11.91 min Scan# 2538
Delta R.T. 0.00 min
Lab File: 0516F019.D
Acq: 16 May 2017 06:53 pm

Tgt Ion:146 Resp: 123

Ion	Ratio	Lower	Upper
146	100		
111	36.5	4.0	64.0
148	63.5	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F023.D
Lab ID: K1704732-004
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 20:43
Date Quantitated: 05/22/2017 12:11
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KAMP

Secondary Review: M

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F023.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 20:43	**Quant Date:**	05/22/2017 12:11	**Vial:**	21
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704732-004			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/10/2017	**Receive Date:**	05/11/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704732
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604848	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	52292	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34717	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	20066	1,037	104	77-123 OK	
1	Toluene-d8	8.05	0.00	0.00	98	41791	1,002	100	74-112 OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11814	764.92	76	46-118 OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	128	4.40	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F023.D Vial: 21
Acq On : 16 May 2017 08:43 pm Operator: GH
Sample : K4732-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:58:49 2017 Quant Results File: 051517MS30_8260SIM.RES

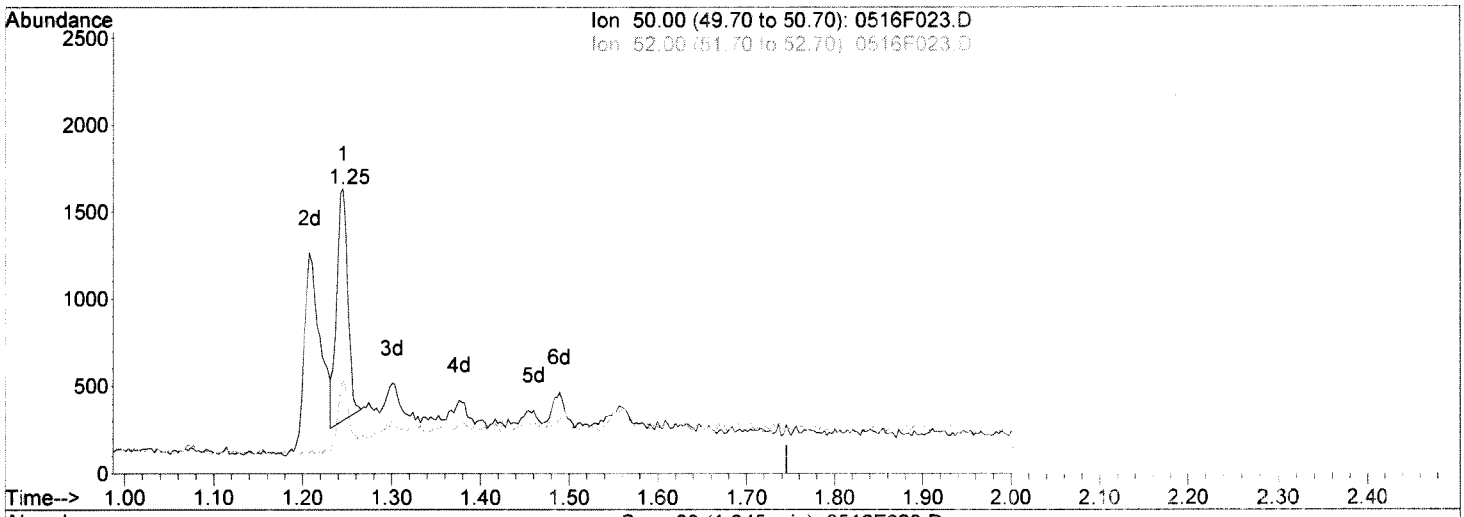
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

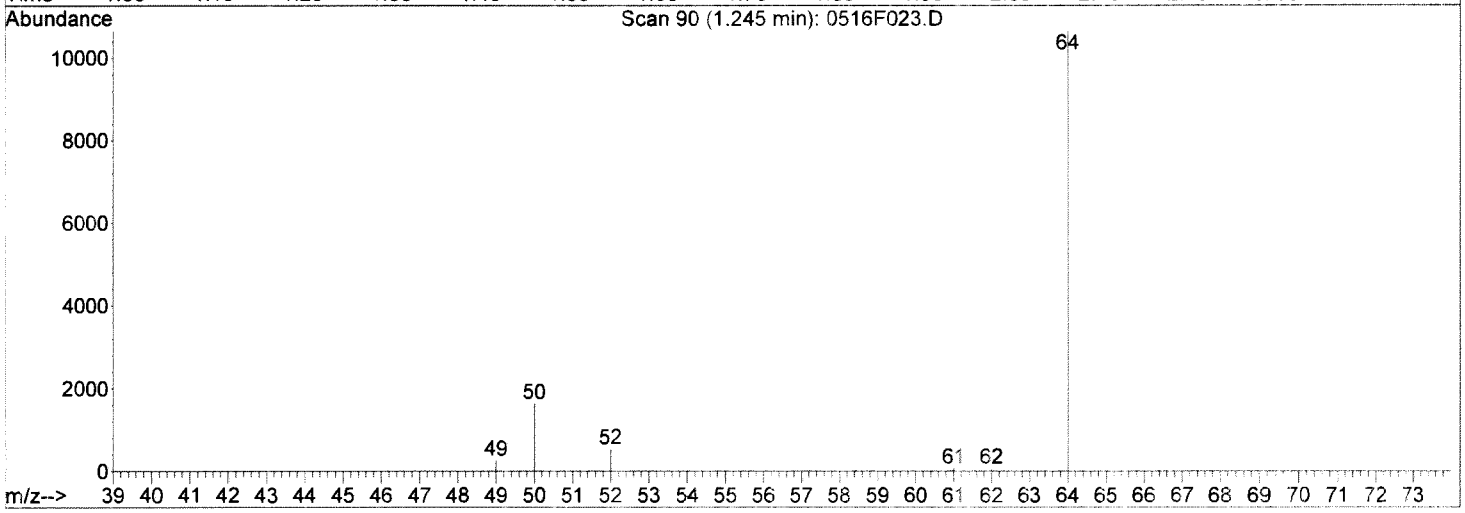
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	52292	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	34717	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13160	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	20066	1037.46	ng/L		0.00
Spiked Amount 1000.000			Recovery = 103.75%				
15) Toluene-d8	8.05	98	41791	1001.96	ng/L		0.00
Spiked Amount 1000.000			Recovery = 100.20%				
25) 4-Bromofluorobenzene	10.73	95	11814	764.92	ng/L		0.00
Spiked Amount 1000.000			Recovery = 76.49%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	1030m	34.41	ng/L		
3) Vinyl Chloride	1.33	62	128	4.40	ng/L	#	1
4) 1,1-Dichloroethene	2.43	96	113	6.99	ng/L		86
5) Methylene Chloride	3.08	84	270	11.92	ng/L		90
6) trans-1,2-Dichloroethene	3.37	96	160	8.72	ng/L		97
7) cis-1,2-Dichloroethene	4.95	96	2059	117.72	ng/L		92
8) Chloroform	5.40	83	95	2.53	ng/L		74
11) Benzene	5.97	78	1520	21.27	ng/L		96
13) Trichloroethene	6.75	95	14178	806.54	ng/L		98
14) Bromodichloromethane	7.36	83	20	0.79	ng/L	#	70
16) 1,1,2-Trichloroethane	8.63	83	386	27.39	ng/L	#	31
20) Toluene	8.12	92	16715	548.58	ng/L		98
21) Ethylbenzene	9.66	106	175	11.91	ng/L	#	73
23) m,p-Xylenes	9.78	106	747	44.40	ng/L		93
24) o-Xylene	10.17	106	402	23.43	ng/L		94
26) 1,1,2,2-Tetrachloroethane	10.93	83	18	1.10	ng/L	#	21
28) Tetrachloroethene	8.63	164	13712	959.92	ng/L		99
30) 1,4-Dichlorobenzene	11.90	146	92	3.87	ng/L	#	67

(#) = qualifier out of range (m) = manual integration
0516F023.D 051517MS30_8260SIM.M Mon May 22 12:11:33 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F023.D Vial: 21
Acq On : 16 May 2017 08:43 pm Operator: GH
Sample : K4732-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:58 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F023.D

(2) Chloromethane (T)

1.25min 39.16ng/L

response 1172

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	33.25
49.00	10.30	11.85
0.00	0.00	0.00

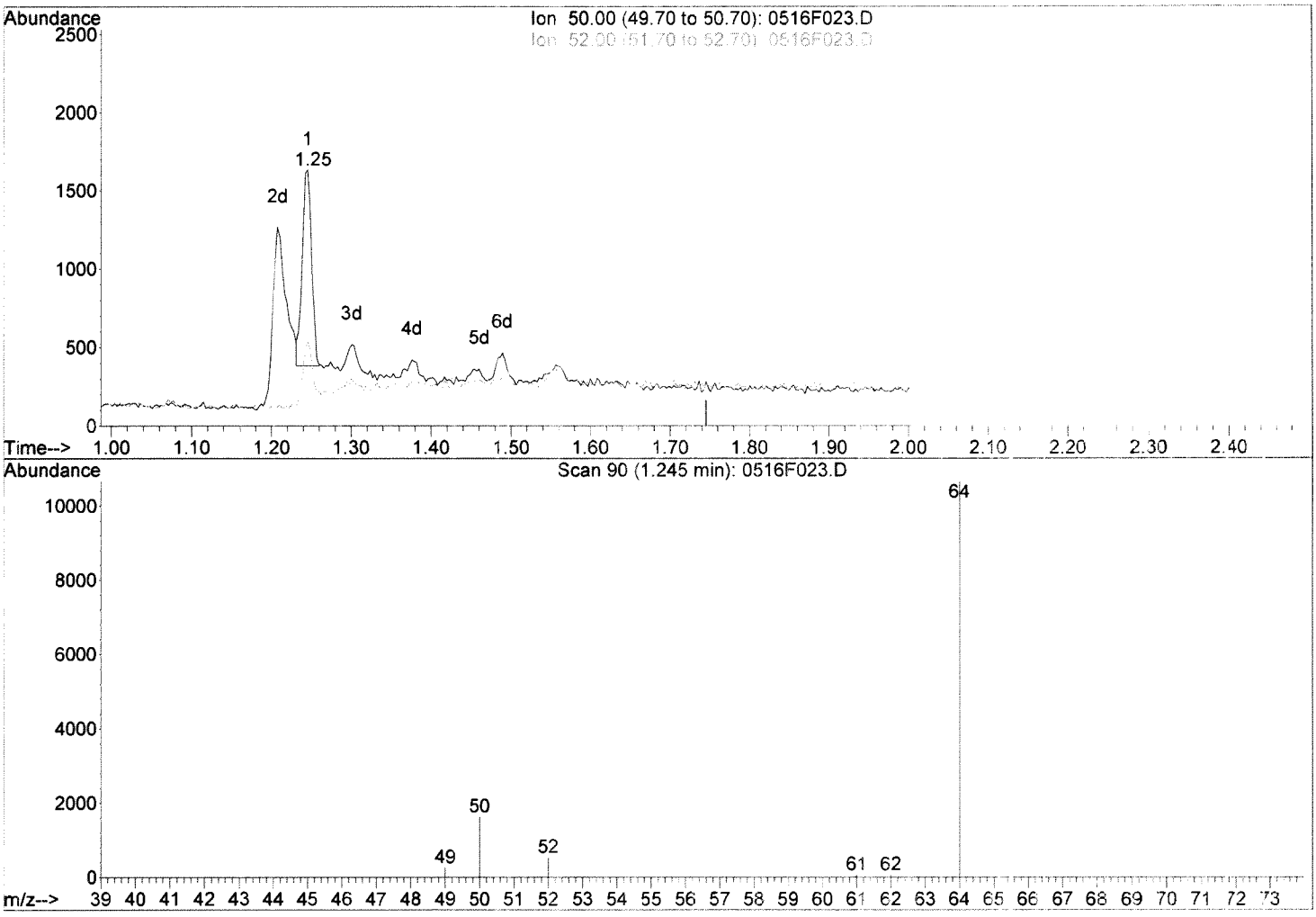
Manual Integration:

Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F023.D Vial: 21
Acq On : 16 May 2017 08:43 pm Operator: GH
Sample : K4732-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:10 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F023.D

(2) Chloromethane (T)

1.25min 34.41ng/L m

response 1030

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	32.99
49.00	10.30	16.03
0.00	0.00	0.00

Manual Integration:

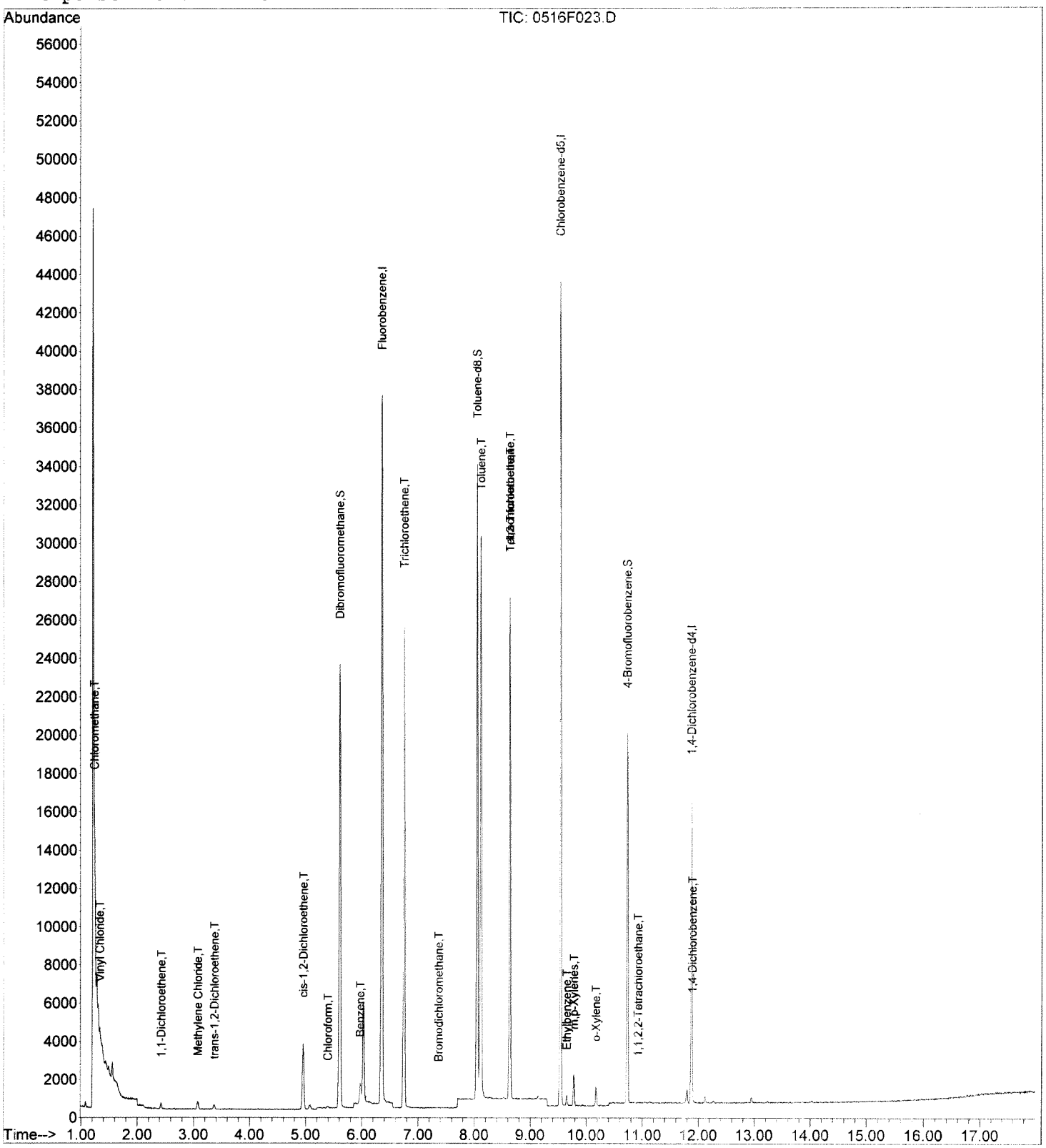
After

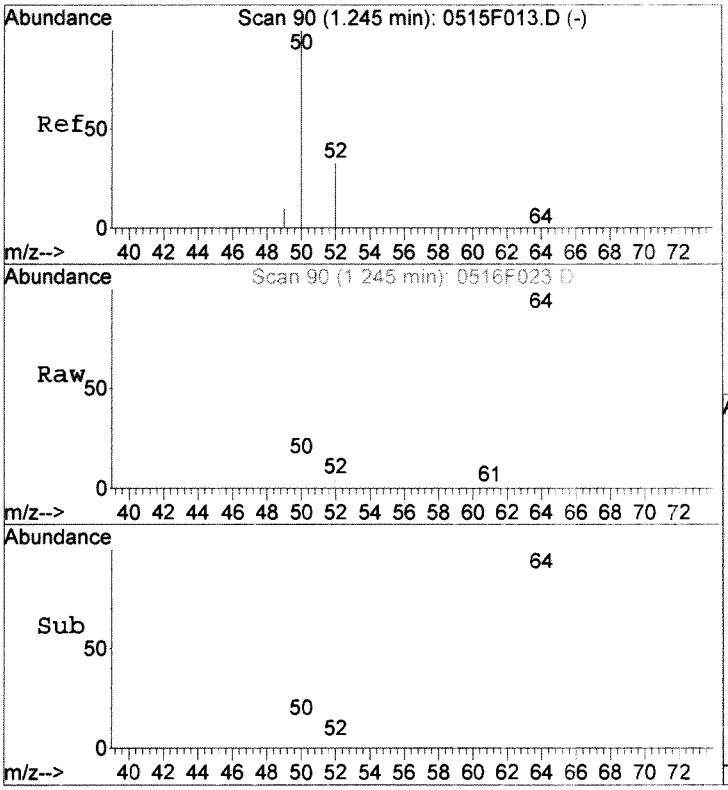
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F023.D Vial: 21
Acq On : 16 May 2017 08:43 pm Operator: GH
Sample : K4732-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:11 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

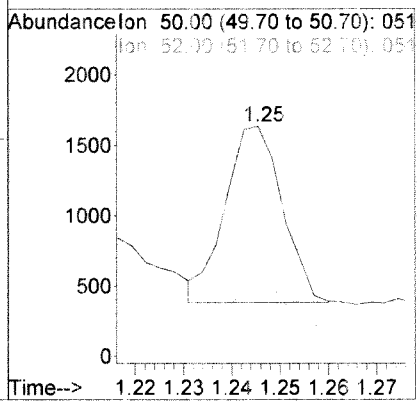


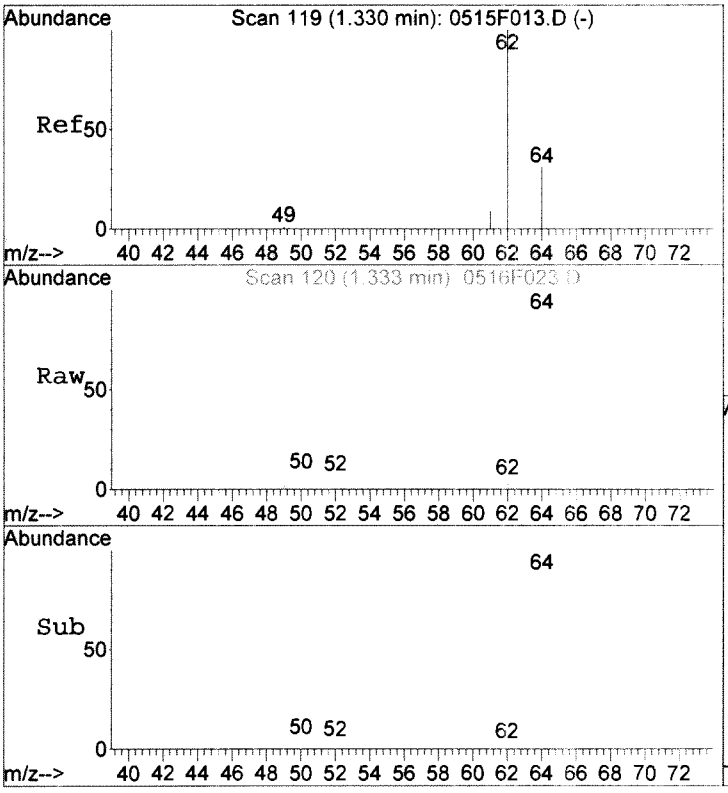


#2
Chloromethane
Concen: 34.41 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 50 Resp: 1030

Ion	Ratio	Lower	Upper
50	100		
52	33.0	2.5	62.5
49	16.0	0.0	40.3

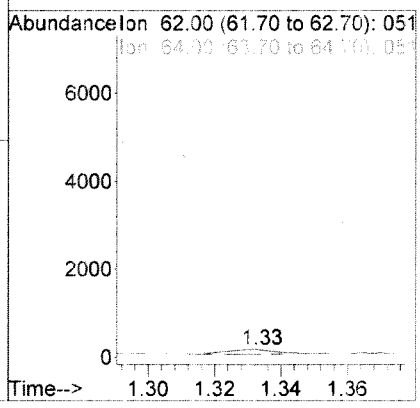


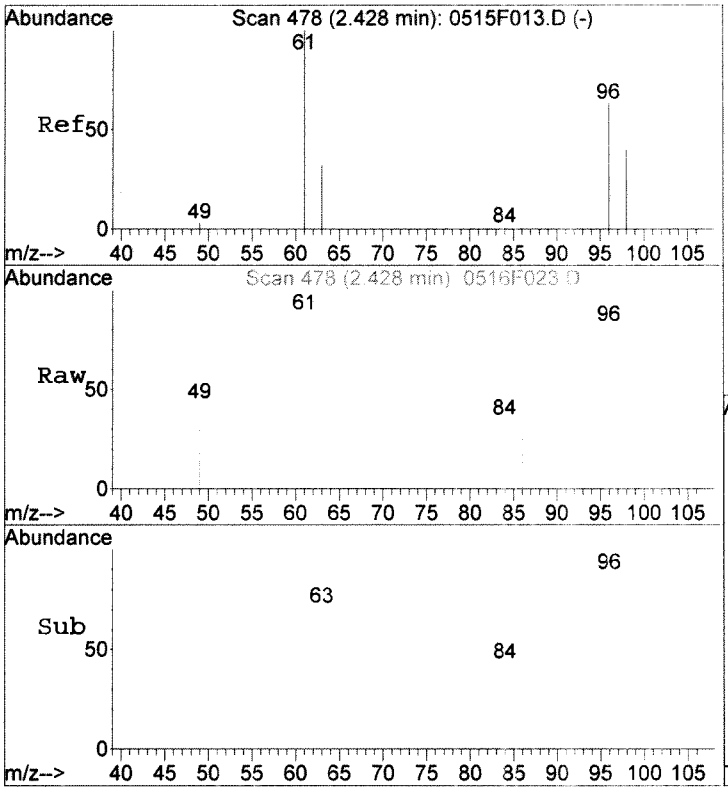


#3
Vinyl Chloride
Concen: 4.40 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 62 Resp: 128

Ion	Ratio	Lower	Upper
62	100		
64	541.1	1.5	61.5#
61	6.5	0.0	38.6

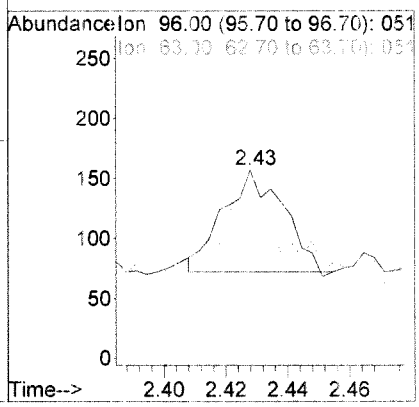


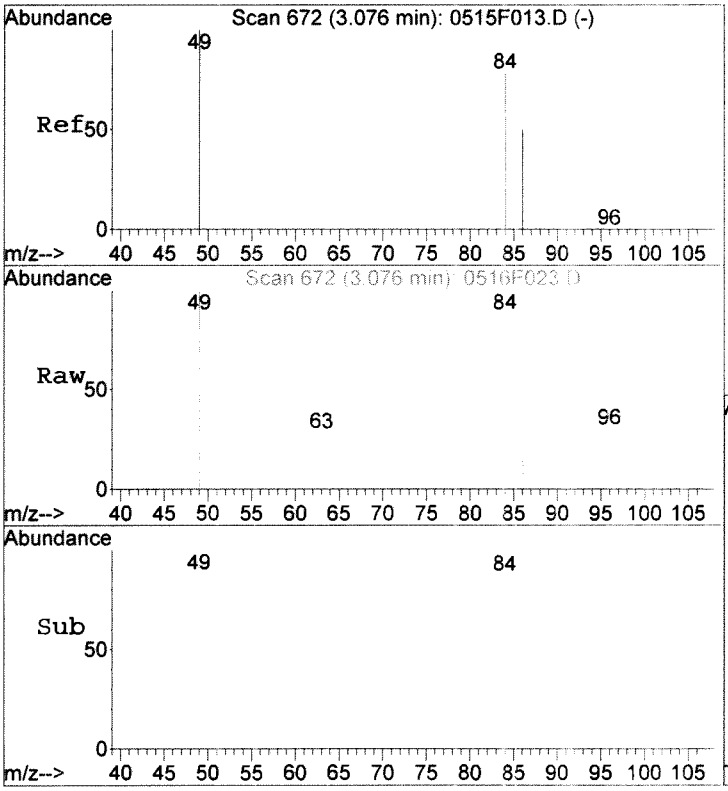


#4
1,1-Dichloroethene
Concen: 6.99 ng/L
RT: 2.43 min Scan# 478
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 96 Resp: 113

Ion	Ratio	Lower	Upper
96	100		
63	40.0	21.4	81.4
61	142.4	129.1	189.1

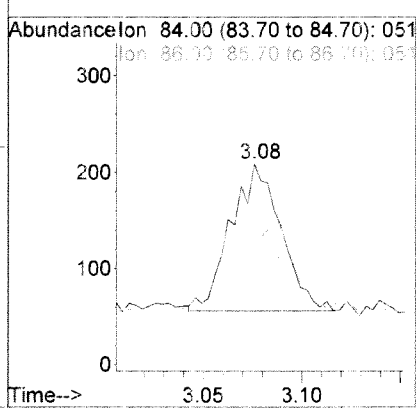


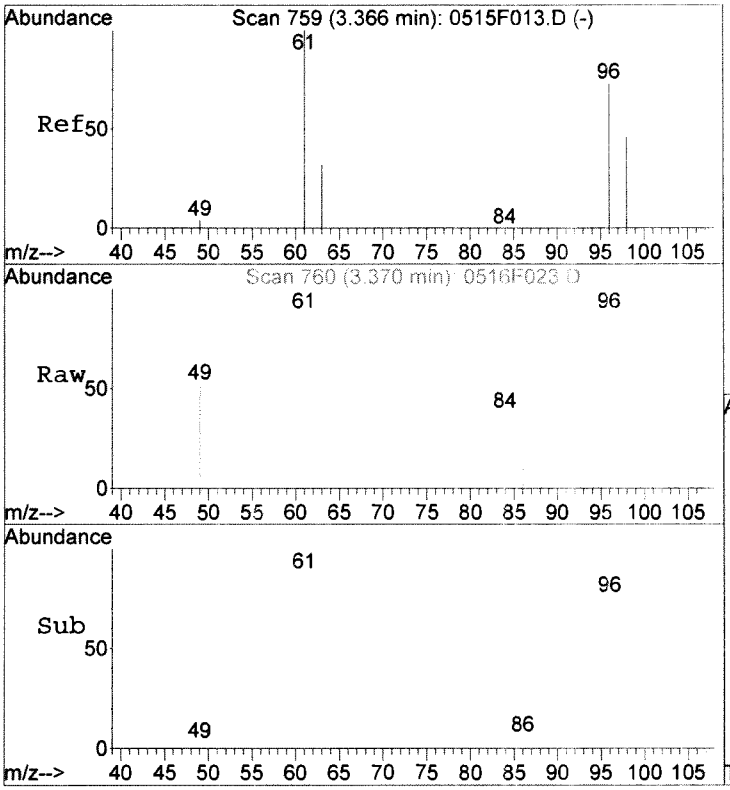


#5
Methylene Chloride
Concen: 11.92 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 84 Resp: 270

Ion	Ratio	Lower	Upper
84	100		
86	65.4	34.0	94.0
49	112.4	98.8	158.8

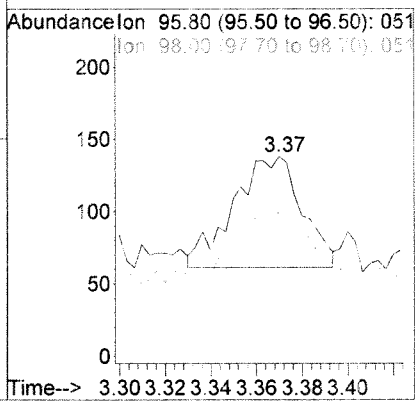


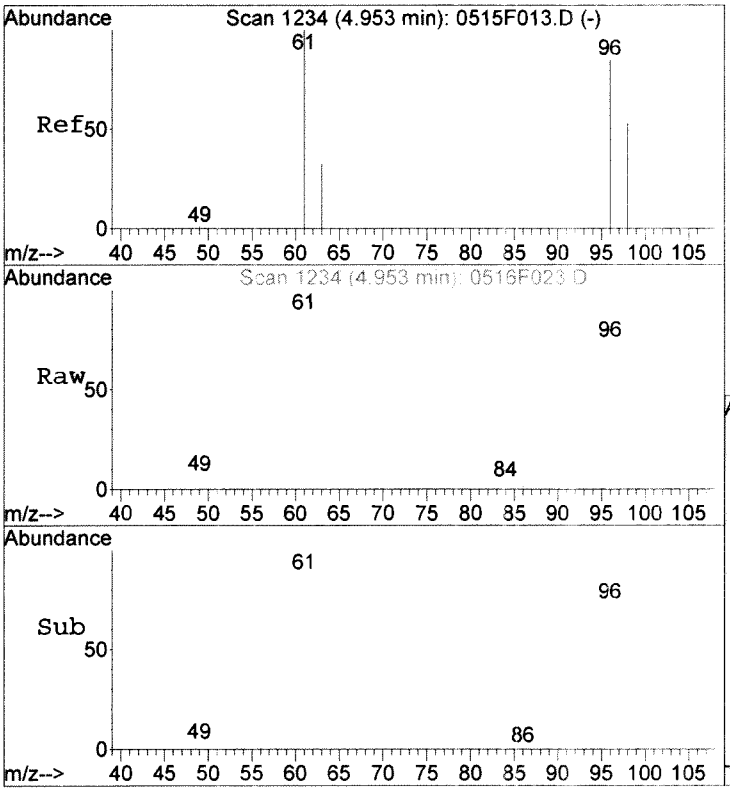


#6
trans-1,2-Dichloroethene
Concen: 8.72 ng/L
RT: 3.37 min Scan# 760
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 96 Resp: 160

Ion	Ratio	Lower	Upper
96	100		
98	60.9	32.9	92.9
61	133.3	107.3	167.3

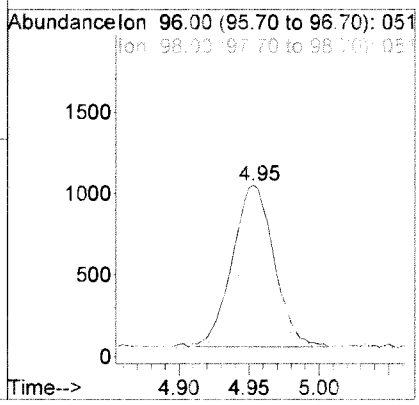


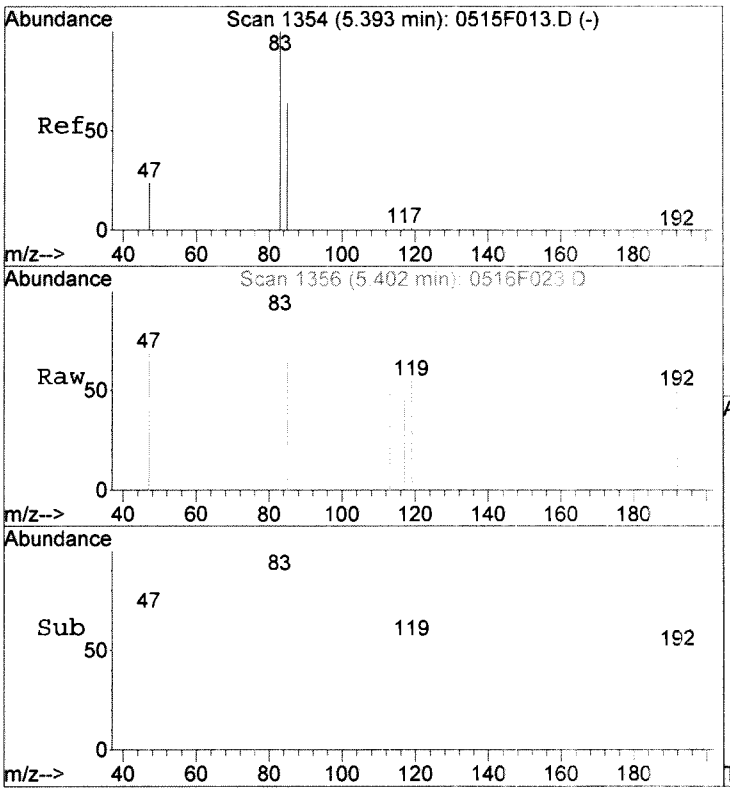


#7
cis-1,2-Dichloroethene
Concen: 117.72 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 96 Resp: 2059

Ion	Ratio	Lower	Upper
96	100		
98	66.7	32.7	92.7
61	136.7	95.4	155.4

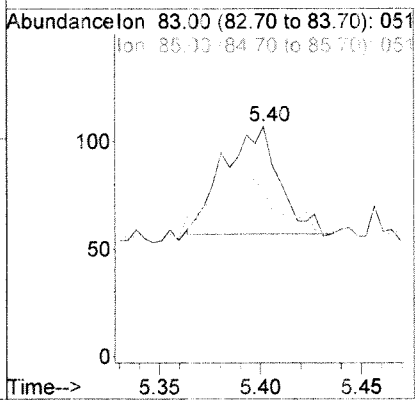


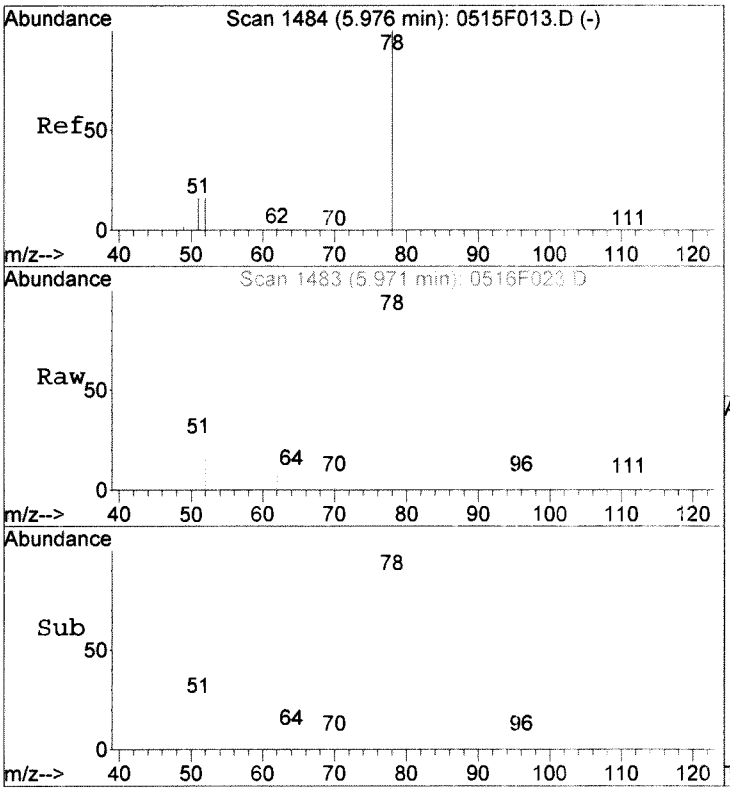


#8
Chloroform
Concen: 2.53 ng/L
RT: 5.40 min Scan# 1356
Delta R.T. 0.01 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 83 Resp: 95

Ion	Ratio	Lower	Upper
83	100		
85	38.0	34.0	94.0
47	20.0	0.0	53.5

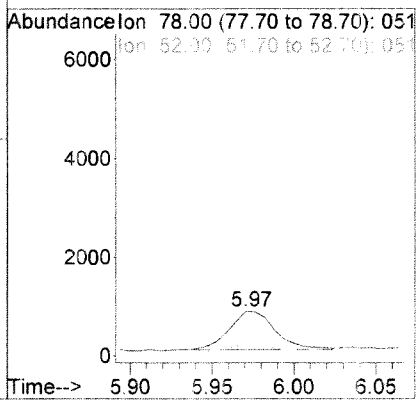


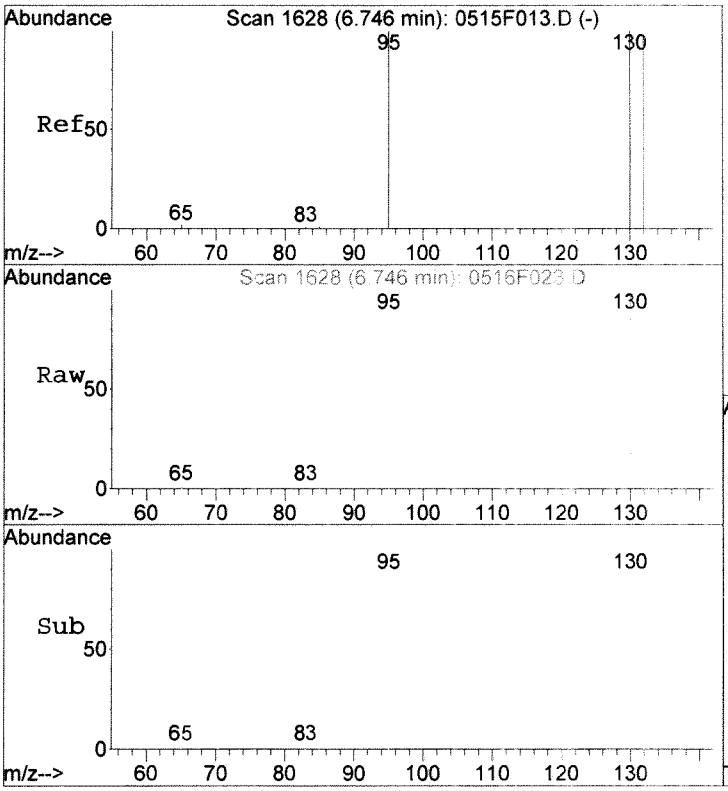


#11
Benzene
Concen: 21.27 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 78 Resp: 1520

Ion	Ratio	Lower	Upper
78	100		
52	15.0	0.0	45.8
51	18.9	0.0	46.5

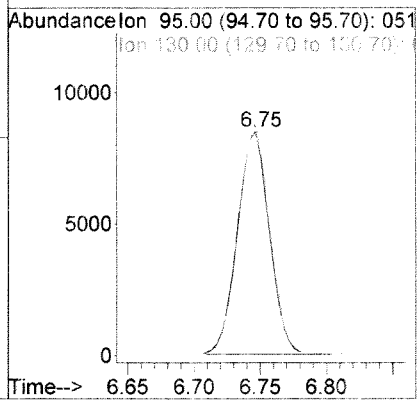


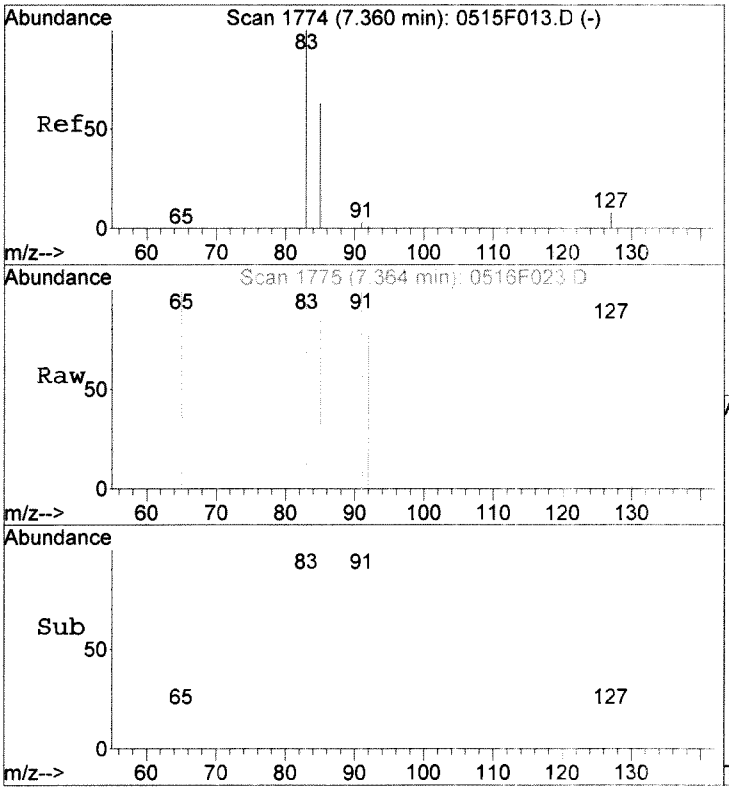


#13
Trichloroethene
Concen: 806.54 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 95 Resp: 14178

Ion	Ratio	Lower	Upper
95	100		
130	103.0	69.5	129.5
132	98.1	67.2	127.2

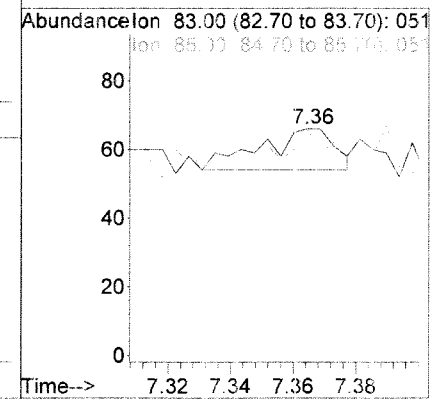


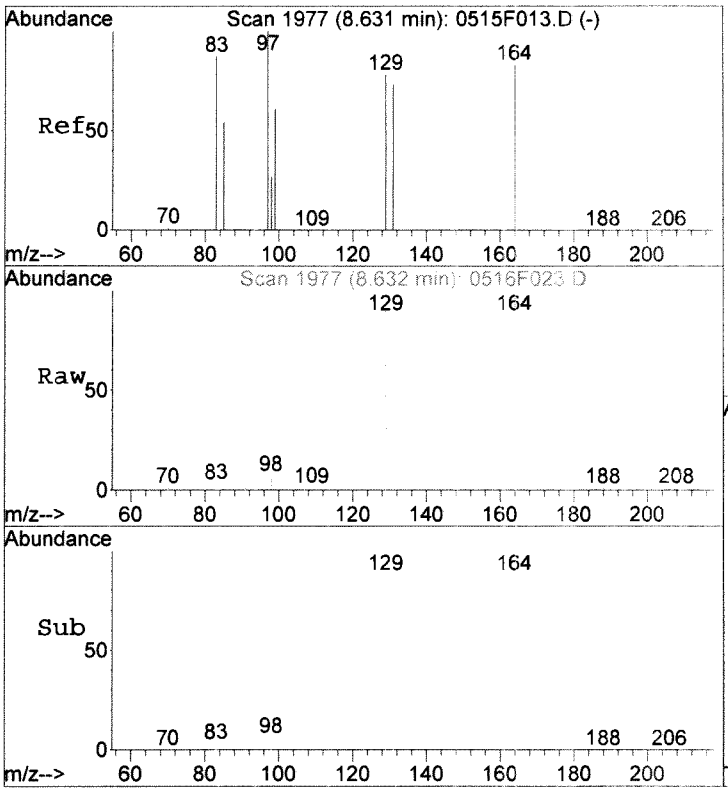


#14
Bromodichloromethane
Concen: 0.79 ng/L
RT: 7.36 min Scan# 1775
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 83 Resp: 20

Ion	Ratio	Lower	Upper
83	100		
85	75.0	33.1	93.1
127	58.3	0.0	38.1#

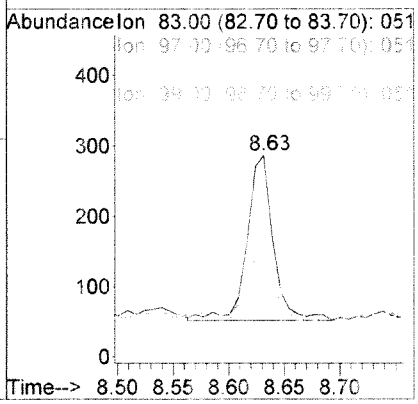


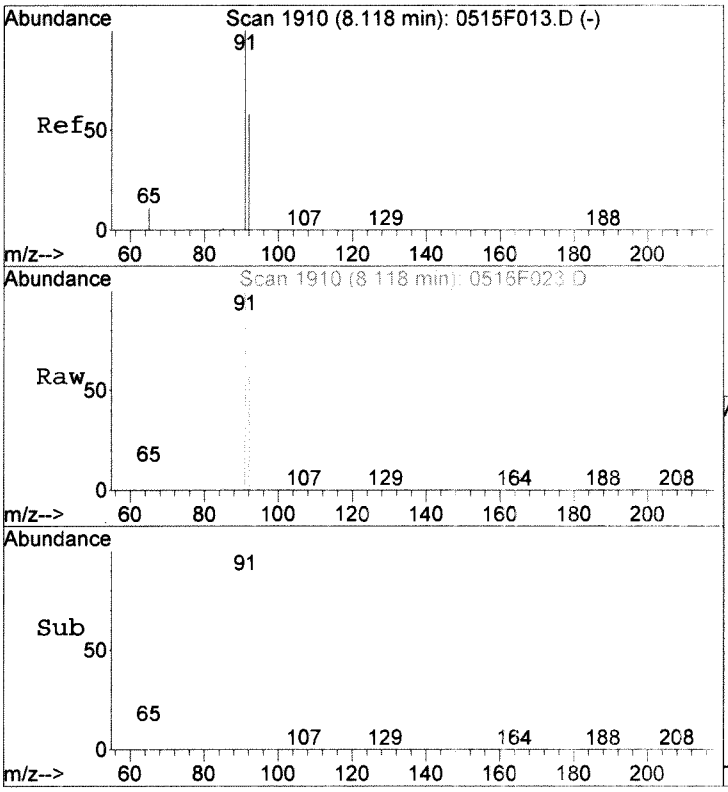


#16
1,1,2-Trichloroethane
Concen: 27.39 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 83 Resp: 386

Ion	Ratio	Lower	Upper
83	100		
97	39.6	84.4	144.4#
85	19.1	32.3	92.3#
99	4.7	39.4	99.4#

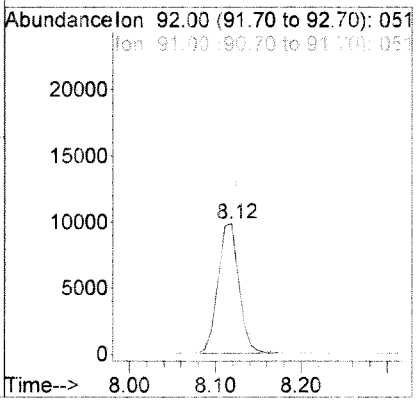


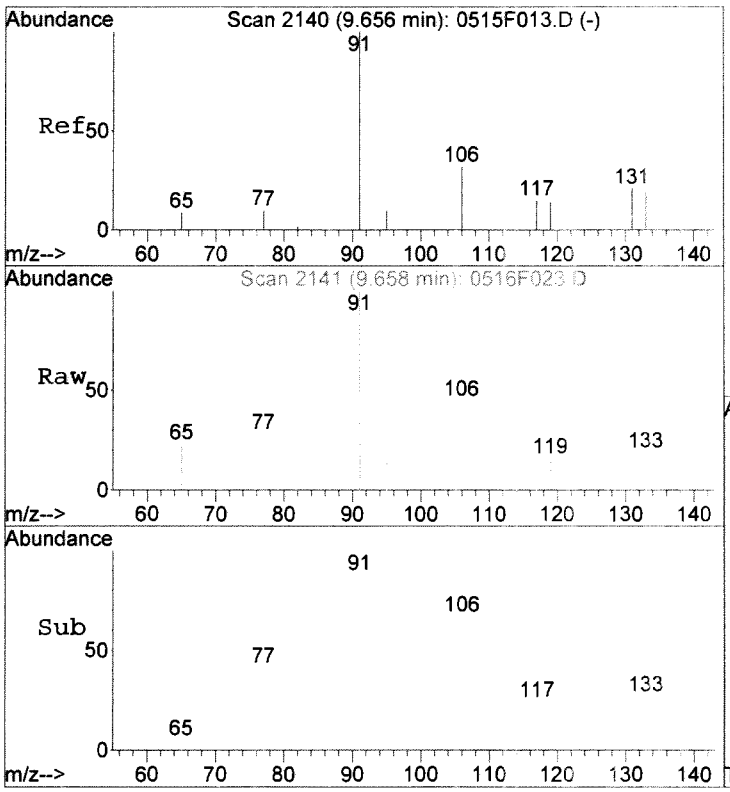


#20
Toluene
Concen: 548.58 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 92 Resp: 16715

Ion	Ratio	Lower	Upper
92	100		
91	176.1	143.6	203.6
65	20.3	0.0	49.9

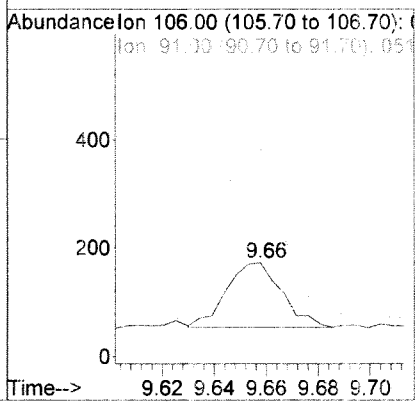


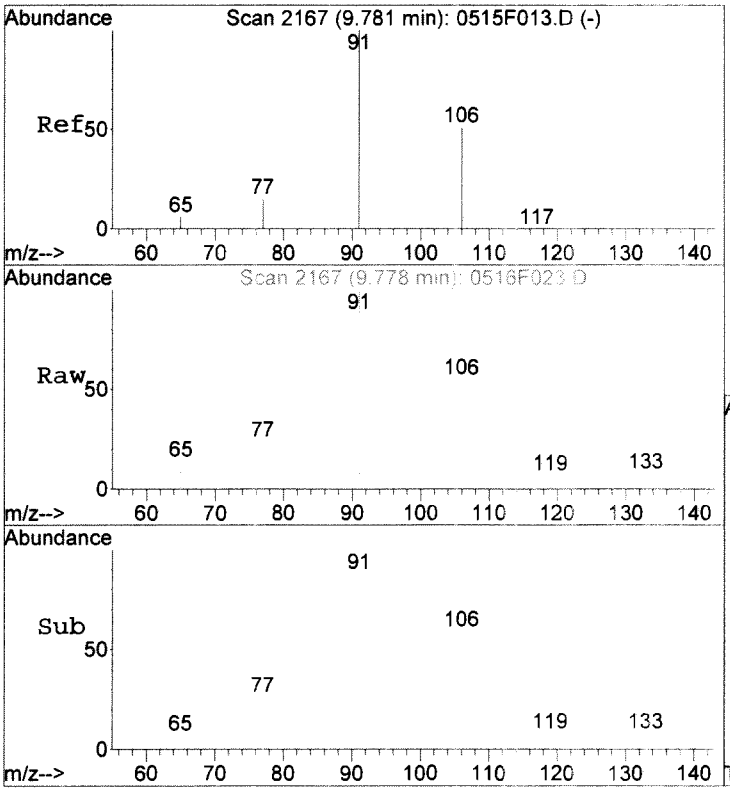


#21
Ethylbenzene
Concen: 11.91 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion:106 Resp: 175

Ion	Ratio	Lower	Upper
106	100		
91	258.8	285.7	345.7#
77	22.7	1.3	61.3

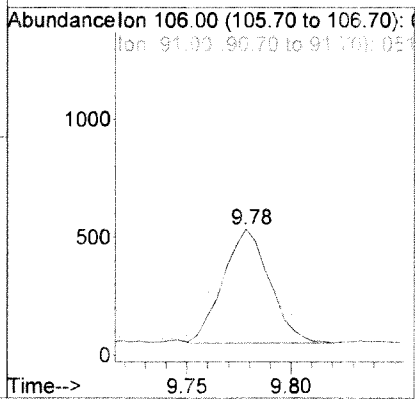


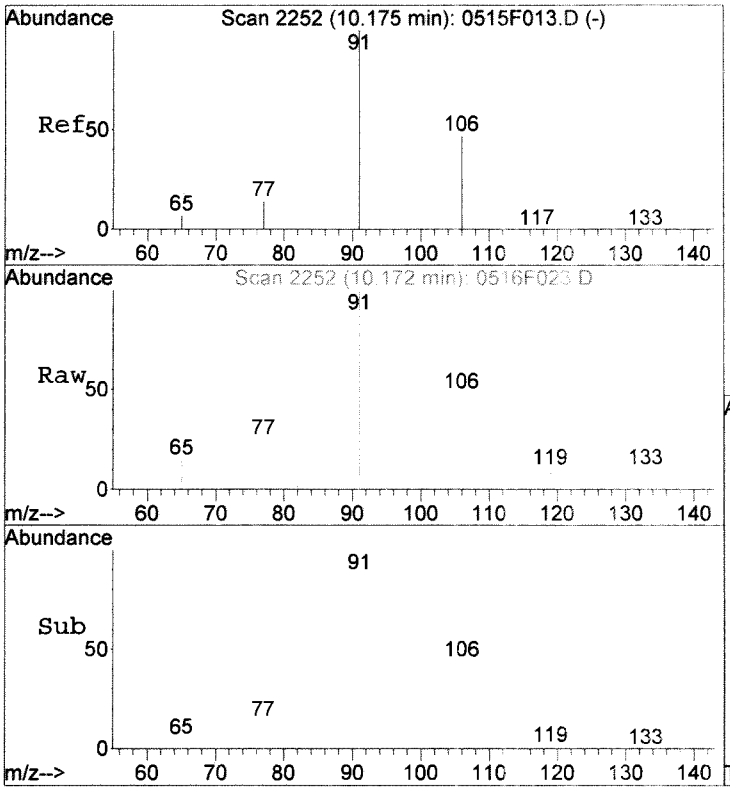


#23
m,p-Xylenes
Concen: 44.40 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion:106 Resp: 747

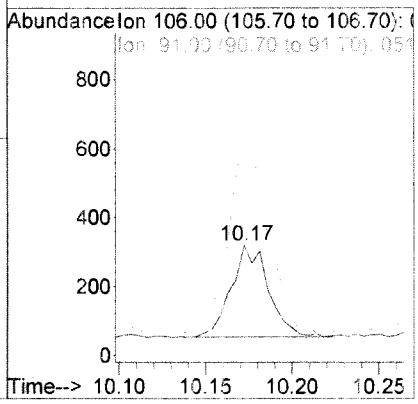
Ion	Ratio	Lower	Upper
106	100		
91	186.3	166.8	226.8
77	31.6	0.0	58.7

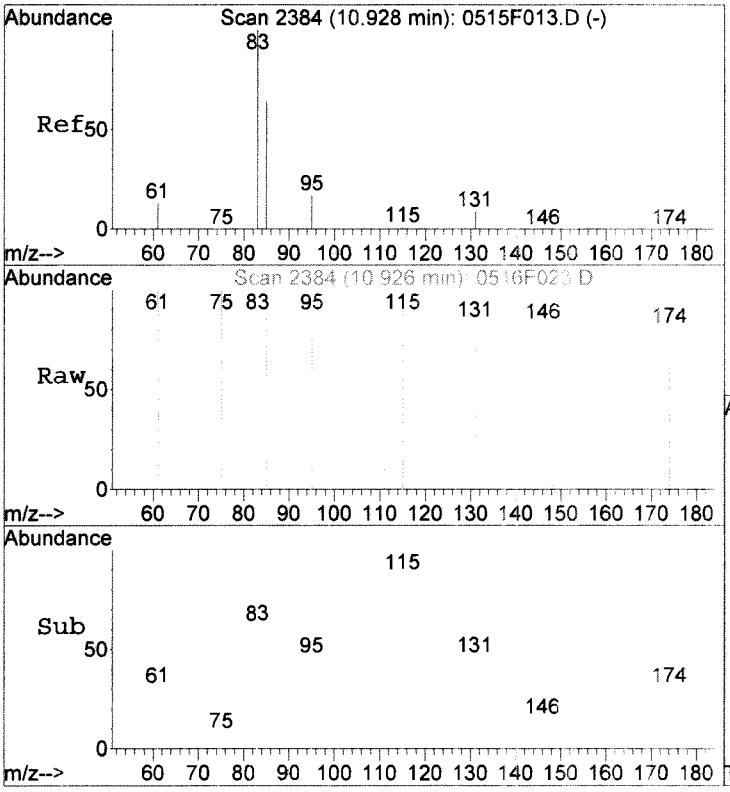




#24
o-Xylene
Concen: 23.43 ng/L
RT: 10.17 min Scan# 2252
Delta R.T. -0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

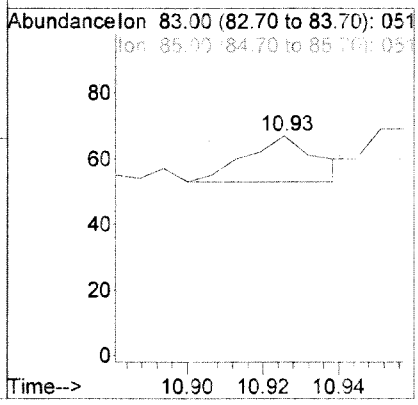
Tgt Ion:106	Resp:	402	
Ion	Ratio	Lower	Upper
106	100		
91	224.3	184.3	244.3
65	12.0	0.0	44.6

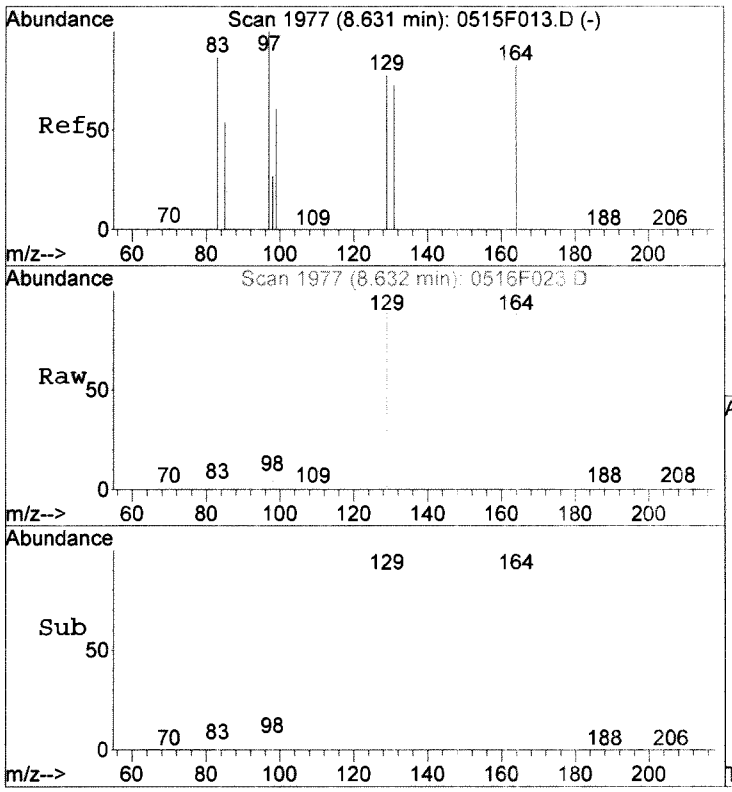




#26
1,1,2,2-Tetrachloroethane
Concen: 1.10 ng/L
RT: 10.93 min Scan# 2384
Delta R.T. -0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion: 83	Resp:	18	
Ion	Ratio	Lower	Upper
83	100		
85	0.0	34.1	94.1#
131	28.6	0.0	28.8

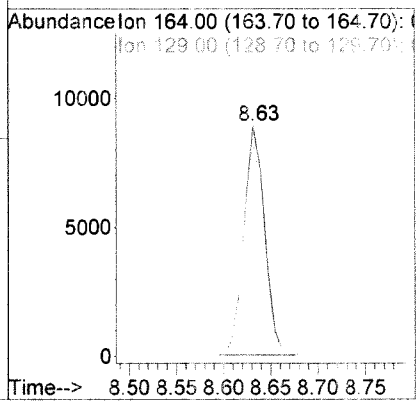


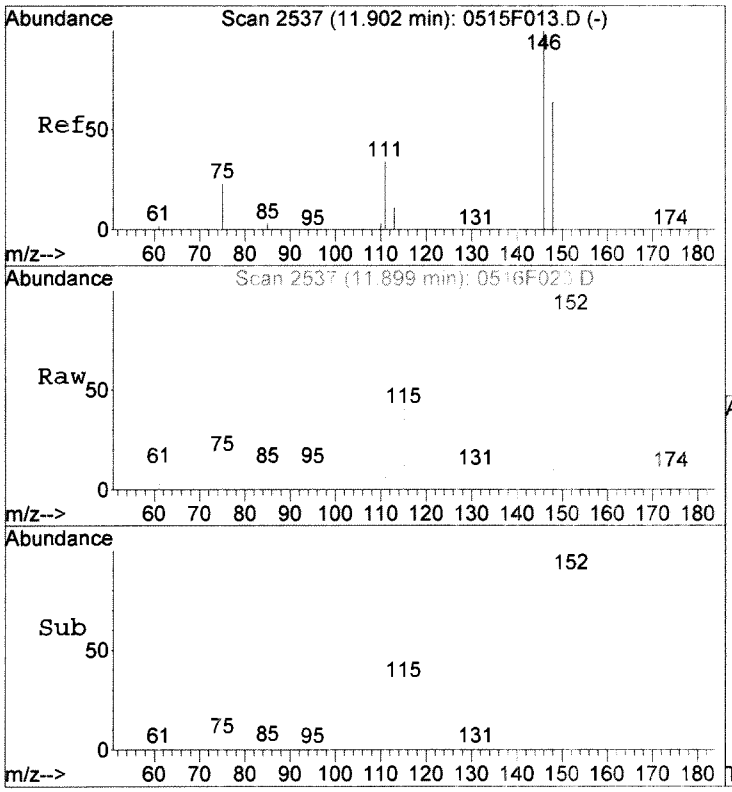


#28
Tetrachloroethene
Concen: 959.92 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion:164 Resp: 13712

Ion	Ratio	Lower	Upper
164	100		
129	93.7	63.1	123.1
131	89.1	57.4	117.4

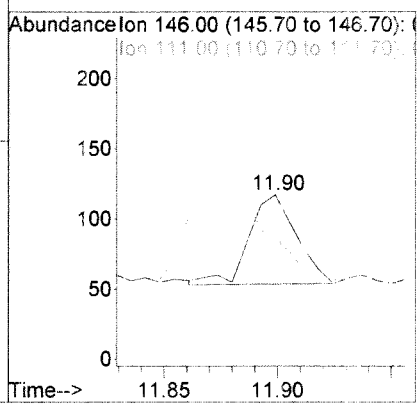




#30
1,4-Dichlorobenzene
Concen: 3.87 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F023.D
Acq: 16 May 2017 08:43 pm

Tgt Ion:146 Resp: 92

Ion	Ratio	Lower	Upper
146	100		
111	46.0	4.0	64.0
148	95.2	34.3	94.3#



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F013.D
Lab ID: KWG1704141-3
RunType: MB
Matrix: WATER

Date Acquired: 05/16/2017 16:08
Date Quantitated: 05/22/2017 11:50
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NT
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: KS 5/22/17

Secondary Review: MJ

Printed: 05/22/2017 12:37:05
u:\Stealth\Crystal.rpt\except2.rpt

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F013.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 16:08	**Quant Date:**	05/22/2017 11:50	**Vial:**	1
Run Type:	MB	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-3			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604864	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15373
Title:			
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:		**Quant based on**	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	56405	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37159	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	14478	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19441	931.85	93	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	44603	991.40	99	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12387	749.32	75	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	267	8.27	8.27	J	
1	Vinyl Chloride	1.33		0.00	62	59	1.88	4.6	U	
1	1,1-Dichloroethene	2.42		0.00	96	17	0.9700	5.9	U	
1	Methylene Chloride	3.08	0.01	0.00	84	2259	92.48	92.5	J	
1	trans-1,2-Dichloroethene	3.36		0.00	96	42	2.12	3.5	U	
1	cis-1,2-Dichloroethene				96	0		6.5	U	
1	Chloroform	5.39		0.00	83	4804	118.44	118		
1	Carbon Tetrachloride	5.38	-0.28	-0.04	117	26	0.9700	7.2	U	
1	Benzene	5.97		0.00	78	1513	19.62	19.6	J	
1	1,2-Dichloroethane	6.35	0.23	0.04	62	914	31.78	31.8		
1	Trichloroethene (TCE)	6.74		0.00	95	71	3.74	3.9	U	
1	Bromodichloromethane	7.36		0.00	83	31	1.14	3.4	U	
1	1,1,2-Trichloroethane	8.63		0.00	83	23	1.51	9.0	U	
1	Dibromochloromethane	8.63	-0.35	-0.06	129	74	3.93	8.8	U	
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	34	2.29	4.5	U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: checks for co-elution

Data File:	J:\MS30\DATA\051617_SIM\05 6F013.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 16:08	**Quant Date:**	05/22/2017 11:51	**Vial:**	1
Run Type:	MB	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-3			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12	0.01	0.00	92	366	11.22	11.2	J	
2	Ethylbenzene	9.66	0.01	0.00	106	50	3.18	5.6	U	
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	20	1.02	3.9	U	
2	m,p-Xylenes	9.78		0.00	106	162	9.00	9.5	U	
2	o-Xylene	10.18		0.00	106	132	7.19	7.19	J	
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	38	2.17	8.7	U	
2	1,2,3-Trichloropropane	10.97		0.00	110	19	3.46	11	U	
2	Tetrachloroethene (PCE)	8.62	-0.01	0.00	164	85	5.56	5.9	U	
3	1,4-Dichlorobenzene	11.90		0.00	146	180	6.89	7.1	U	

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F013.D Vial: 11
Acq On : 16 May 2017 04:08 pm Operator: GH
Sample : MB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:50:39 2017 Quant Results File: 051517MS30_8260SIM.RES

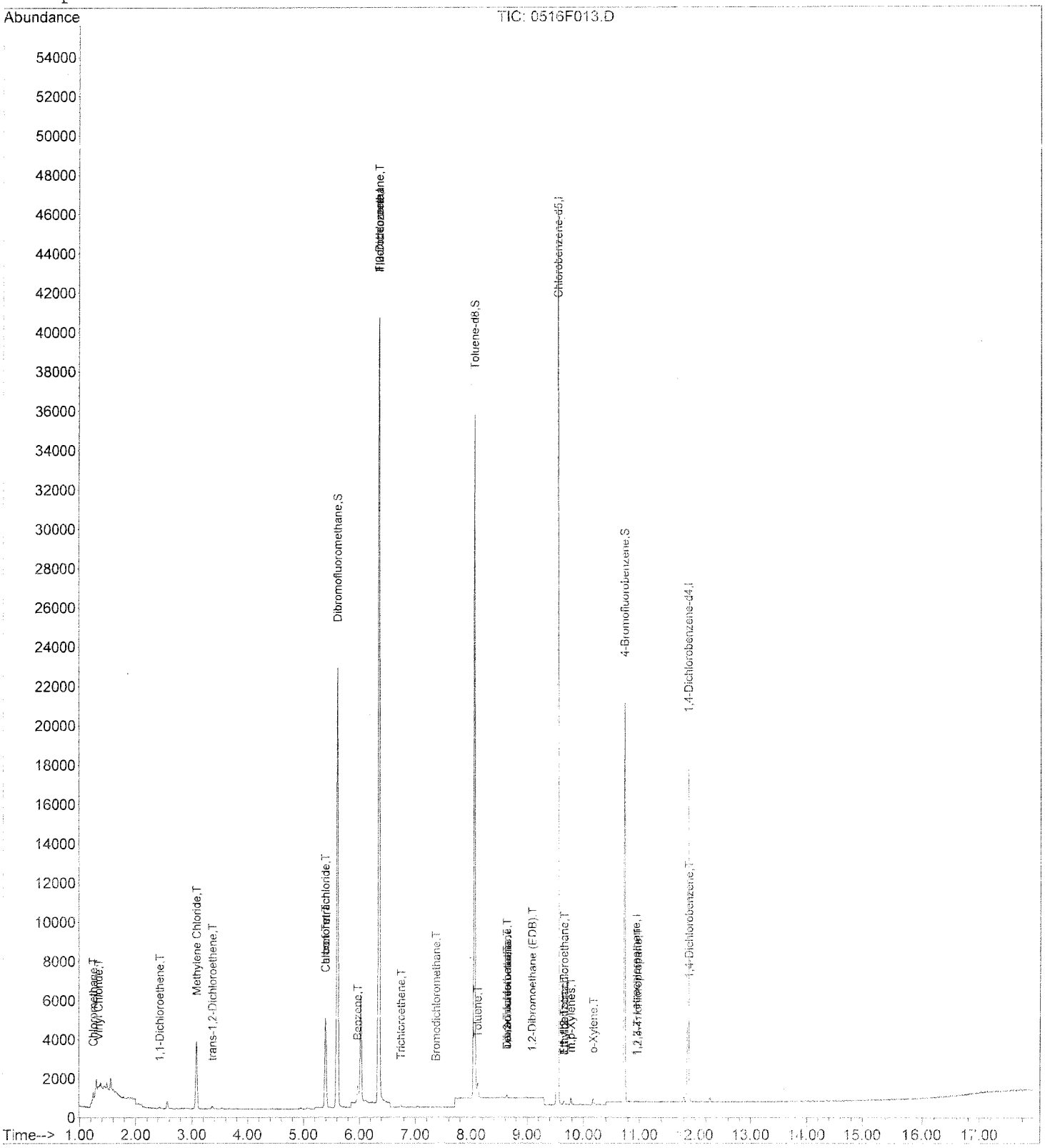
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

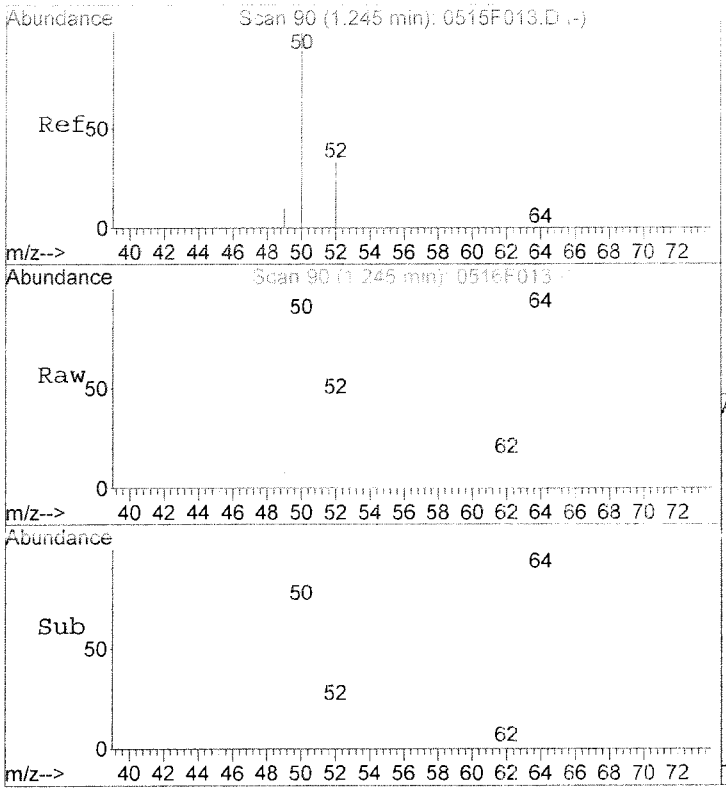
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	56405	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	37159	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14478	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19441	931.85	ng/L		0.00
Spiked Amount 1000.000			Recovery = 93.19%				
15) Toluene-d8	8.05	98	44603	991.40	ng/L		0.00
Spiked Amount 1000.000			Recovery = 99.14%				
25) 4-Bromofluorobenzene	10.73	95	12387	749.32	ng/L		0.00
Spiked Amount 1000.000			Recovery = 74.93%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	267	8.27	ng/L		91
3) Vinyl Chloride	1.33	62	59	1.88	ng/L	#	42
4) 1,1-Dichloroethene	2.42	96	17	0.97	ng/L	#	14
5) Methylene Chloride	3.08	84	2259	92.48	ng/L		95
6) trans-1,2-Dichloroethene	3.36	96	42	2.12	ng/L	#	56
8) Chloroform	5.39	83	4804	118.44	ng/L		98
10) Carbon Tetrachloride	5.38	117	26	0.97	ng/L	#	37
11) Benzene	5.97	78	1513	19.62	ng/L		94
12) 1,2-Dichloroethane	6.35	62	914	31.78	ng/L	#	8
13) Trichloroethene	6.74	95	71	3.74	ng/L	#	65
14) Bromodichloromethane	7.36	83	31	1.14	ng/L		74
16) 1,1,2-Trichloroethane	8.63	83	23	1.51	ng/L	#	78
17) Dibromochloromethane	8.63	129	74	3.93	ng/L		92
18) 1,2-Dibromoethane (EDB)	9.09	107	34	2.29	ng/L	#	27
20) Toluene	8.12	92	366	11.22	ng/L		92
21) Ethylbenzene	9.66	106	50	3.18	ng/L	#	74
22) 1,1,1,2-Tetrachloroethane	9.67	131	20	1.02	ng/L	#	29
23) m,p-Xylenes	9.78	106	162	9.00	ng/L		90
24) o-Xylene	10.18	106	132	7.19	ng/L	#	74
26) 1,1,2,2-Tetrachloroethane	10.93	83	38	2.17	ng/L	#	66
27) 1,2,3-Trichloropropane	10.97	110	19	3.46	ng/L	#	27
28) Tetrachloroethene	8.62	164	85	5.56	ng/L	#	68
30) 1,4-Dichlorobenzene	11.90	146	180	6.89	ng/L		81

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F013.D Vial: 11
Acq On : 16 May 2017 04:08 pm Operator: GH
Sample : MB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:50 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

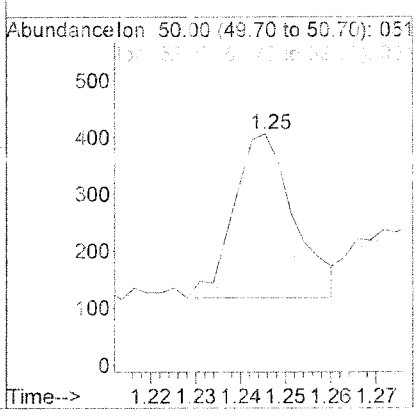


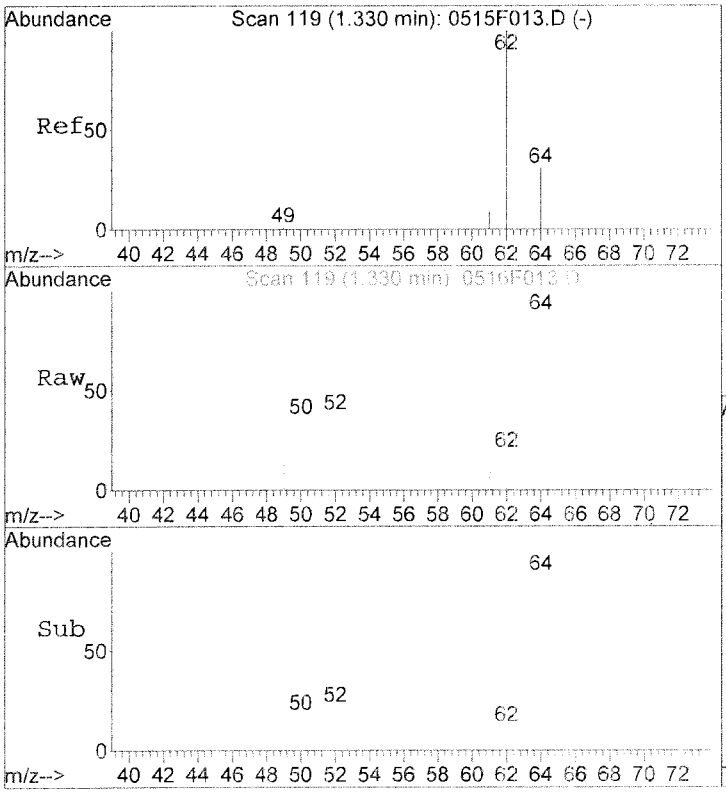


#2
Chloroethane
Concen: 8.27 ng/L
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 50 Resp: 267

Ion	Ratio	Lower	Upper
50	100		
52	38.9	2.5	62.5
49	10.8	0.0	40.3

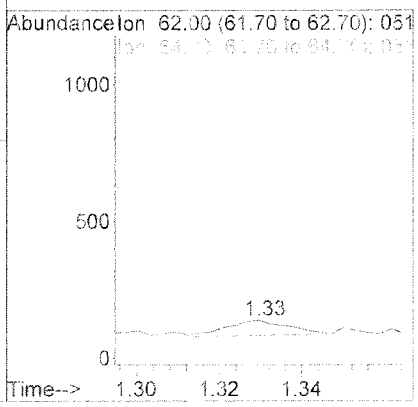


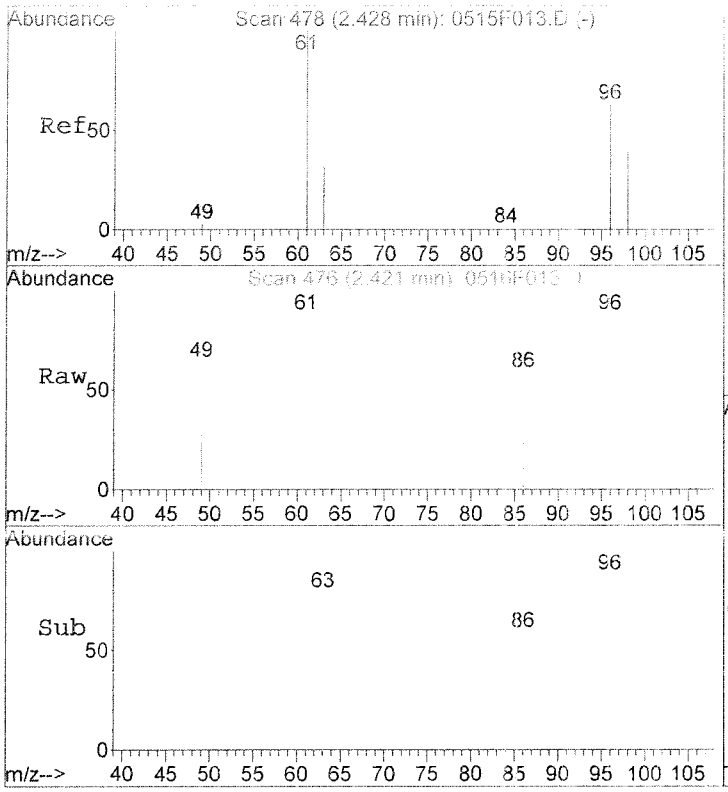


#3
Vinyl Chloride
Concen: 1.88 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 62 Resp: 59

Ion	Ratio	Lower	Upper
62	100		
64	0.0	1.5	61.5#
61	30.8	0.0	38.6

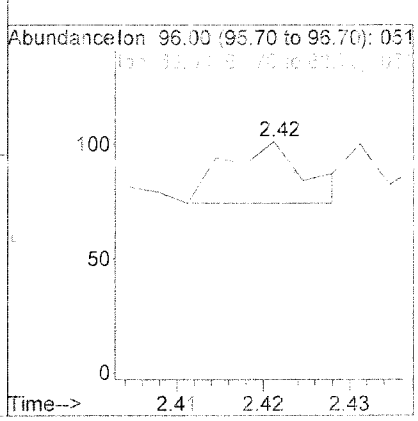


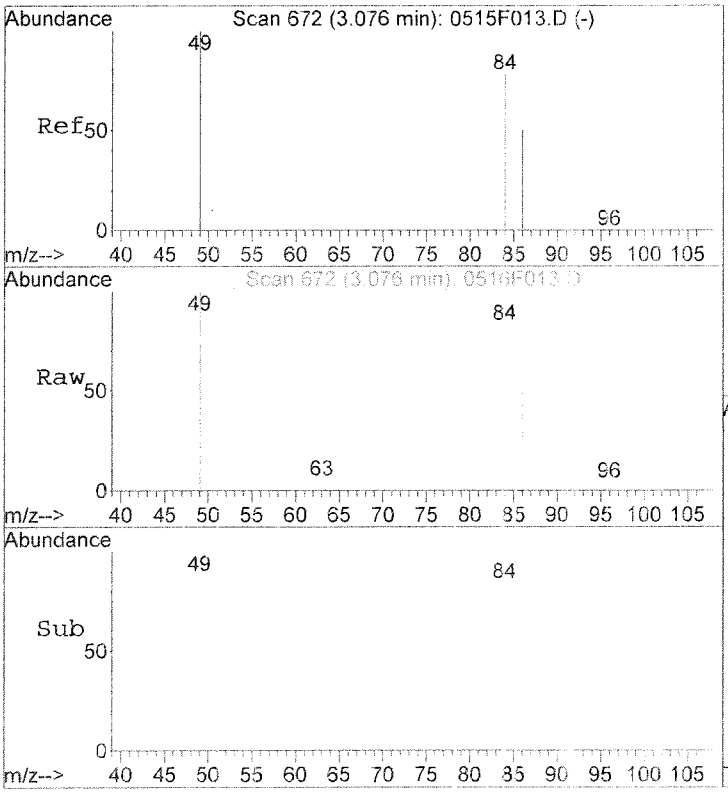


#4
1,1-Dichloroethene
Concen: 0.57 ng/L
RT: 2.42 min Scan# 476
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 96 Resp: 17

Ion	Ratio	Lower	Upper
96	100		
63	0.0	21.4	81.4#
61	40.7	129.1	189.1#

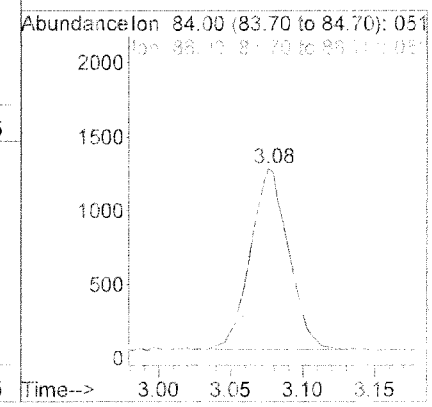


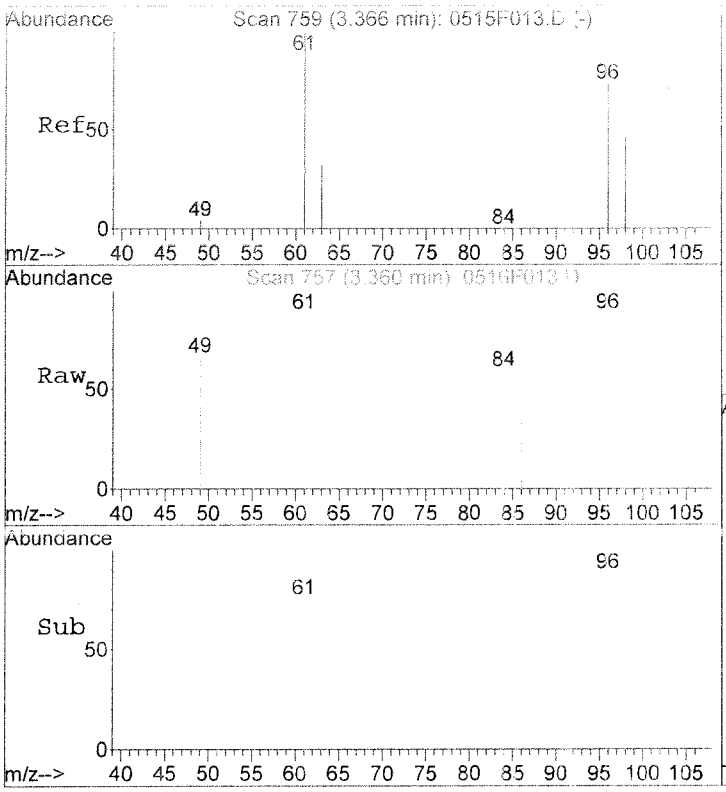


#5
Methylene Chloride
Concen: 92.48 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 84 Resp: 2259

Ion	Ratio	Lower	Upper
84	100		
86	61.6	34.0	94.0
49	121.1	98.8	158.8

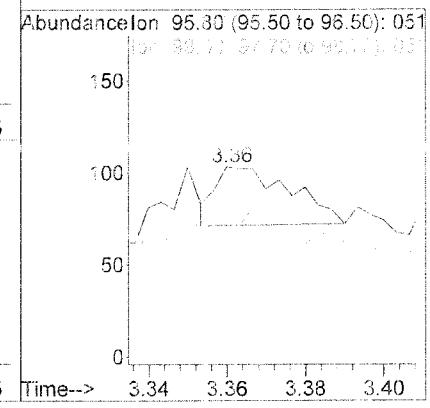


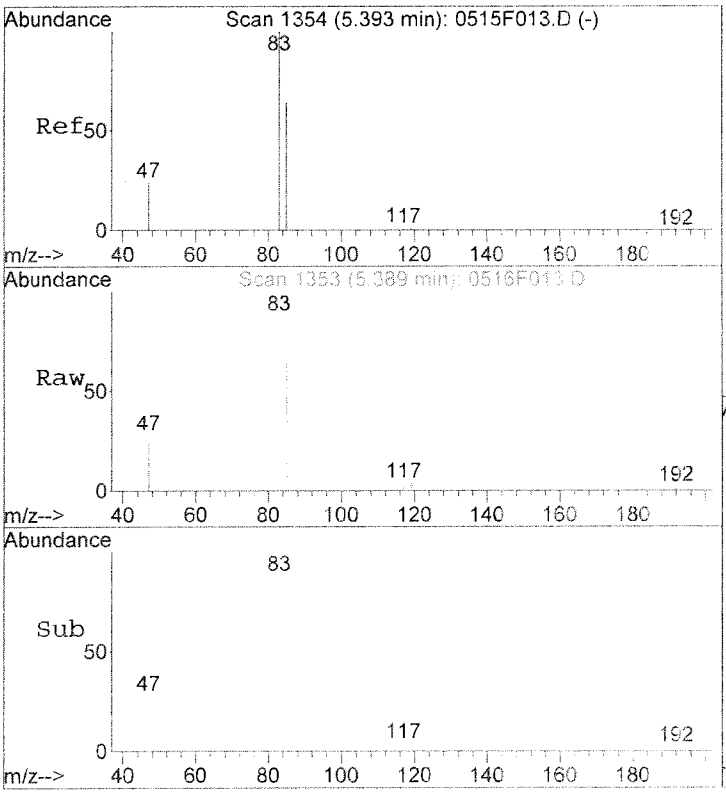


#6
trans-1,2-Dichloroethene
Concen: 2.12 ng/L
RT: 3.36 min Scan# 757
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 96 Resp: 42

Ion	Ratio	Lower	Upper
96	100		
98	38.7	32.9	92.9
61	77.4	107.3	167.3#

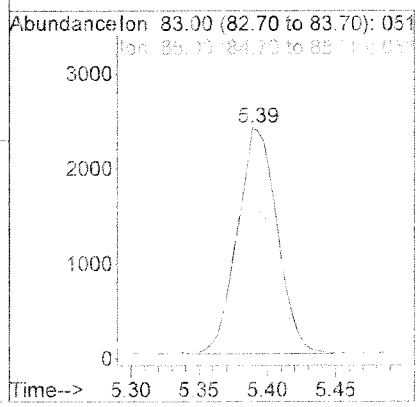


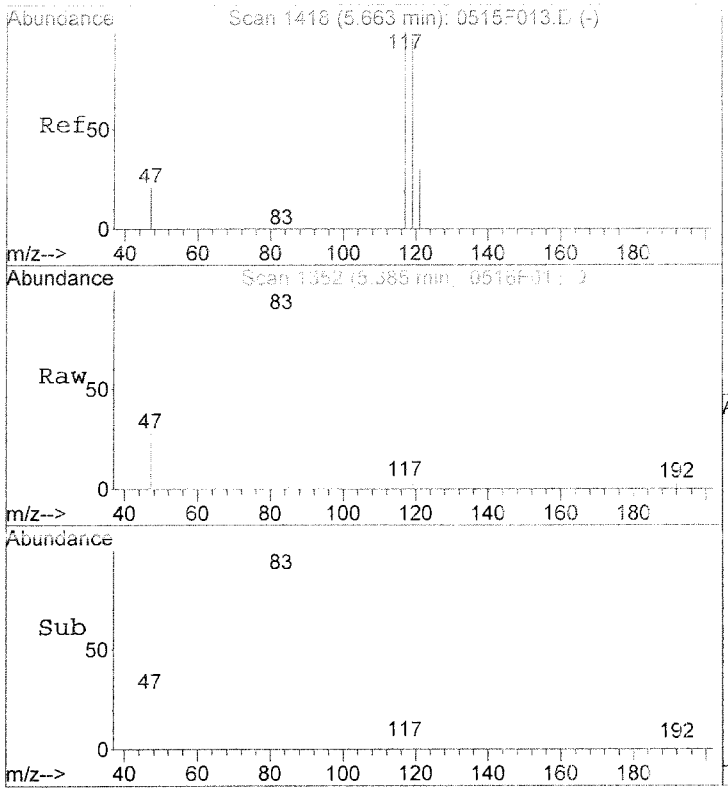


#8
Chloroform
Concen: 118.44 ng/L
RT: 5.39 min Scan# 1353
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 4804

Ion	Ratio	Lower	Upper
83	100		
85	63.3	34.0	94.0
47	25.6	0.0	53.5

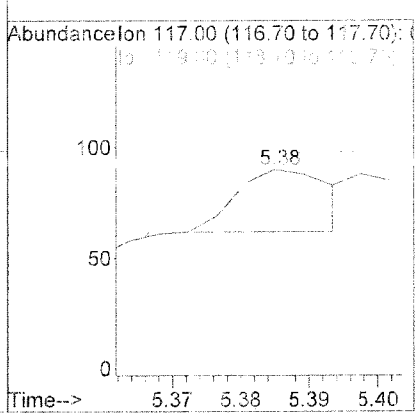


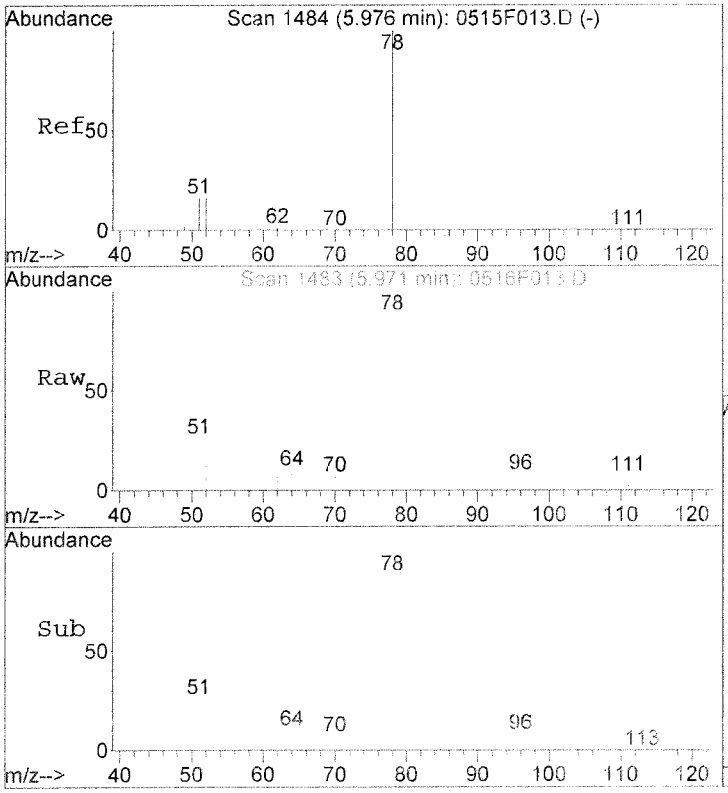


#10
Carbon Tetrachloride
Concen: 0.97 ng/L
RT: 5.38 min Scan# 1352
Delta R.T. -0.28 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:117 Resp: 26

Ion	Ratio	Lower	Upper
117	100		
119	32.1	65.9	125.9#
121	0.0	0.3	60.3#

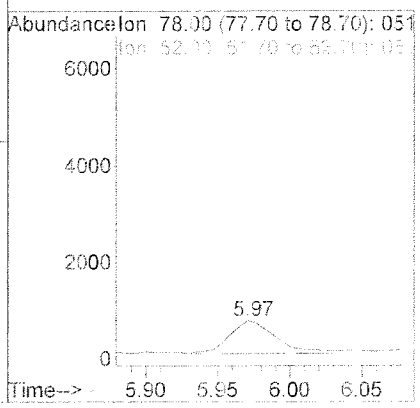


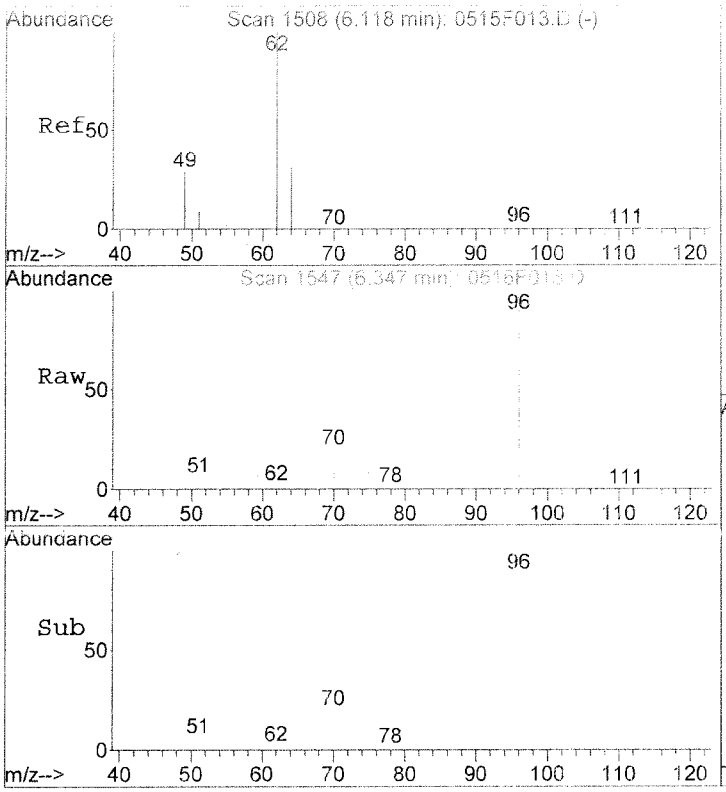


#11
Benzene
Concen: 19.62 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 78 Resp: 1513

Ion	Ratio	Lower	Upper
78	100		
52	11.6	0.0	45.8
51	17.1	0.0	46.5

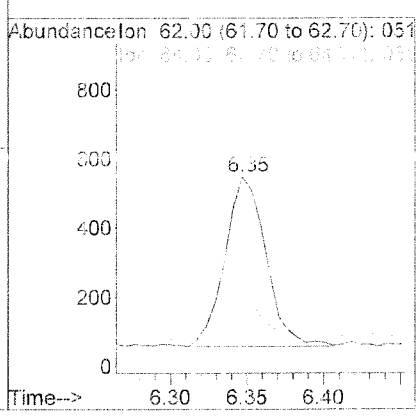


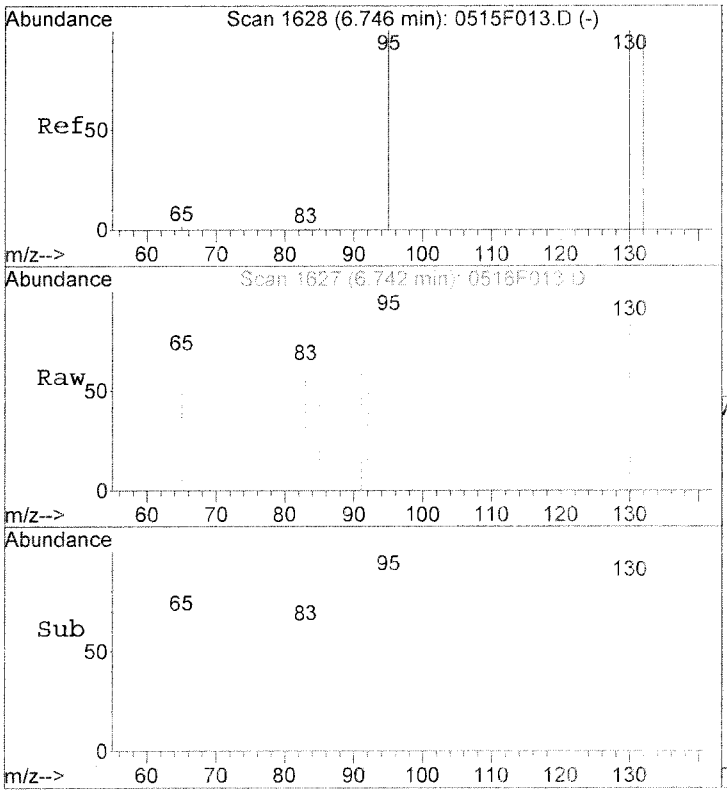


#12
1,2-Dichloroethane
Concen: 31.78 ng/L
RT: 6.35 min Scan# 1547
Delta R.T. 0.23 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 62 Resp: 914

Ion	Ratio	Lower	Upper
62	100		
64	22.2	2.1	62.1
49	121.8	0.0	58.7#

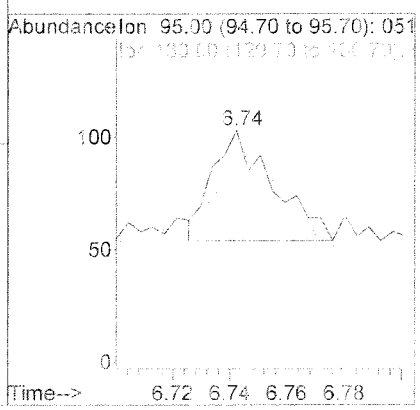


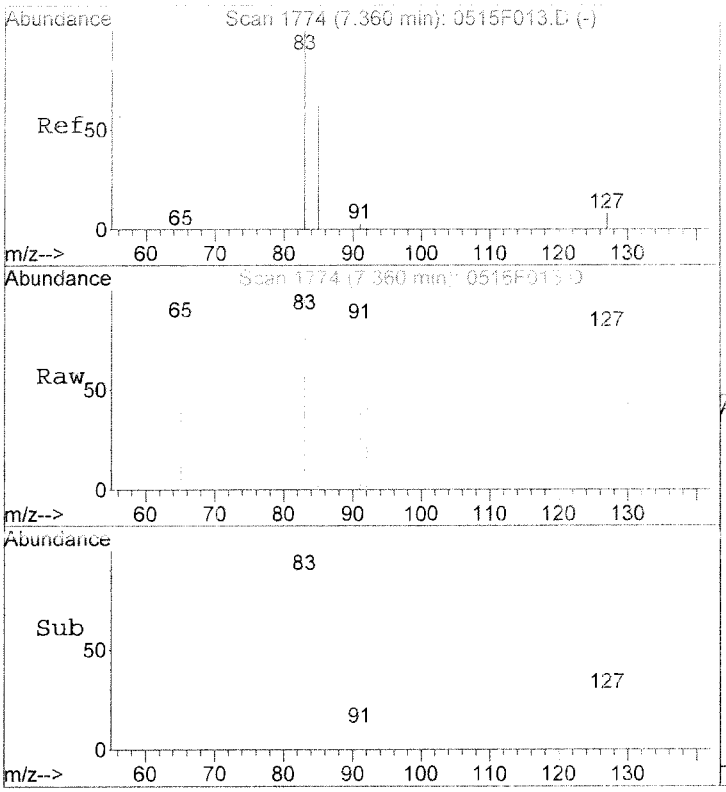


#13
Trichloroethene
Concen: 3.74 ng/L
RT: 6.74 min Scan# 1627
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 95 Resp: 71

Ion	Ratio	Lower	Upper
95	100		
130	75.5	69.5	129.5
132	51.0	67.2	127.2#

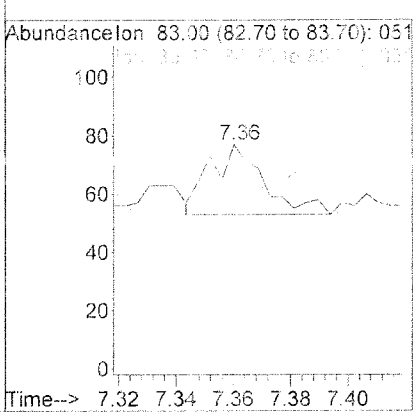


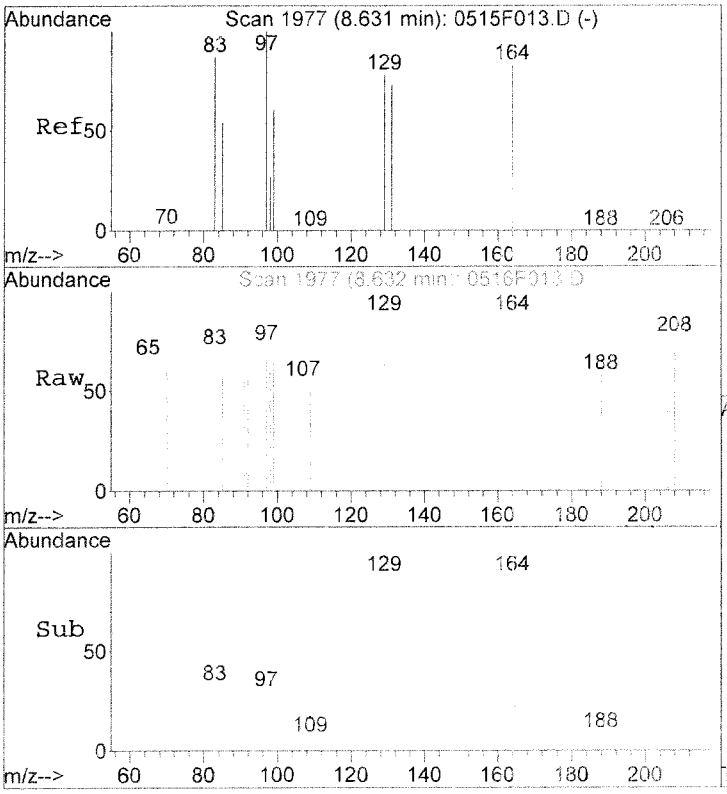


#14
Bromodichloromethane
Concen: 1.14 ng/L
RT: 7.36 min Scan# 1774
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 31

Ion	Ratio	Lower	Upper
83	100		
85	45.8	33.1	93.1
127	29.2	0.0	38.1

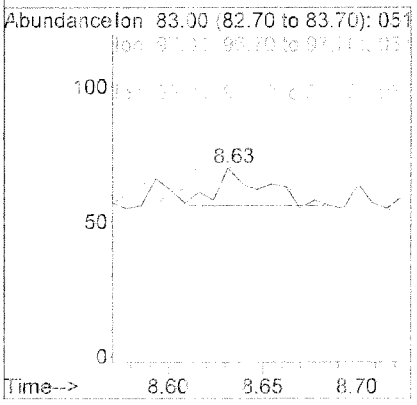


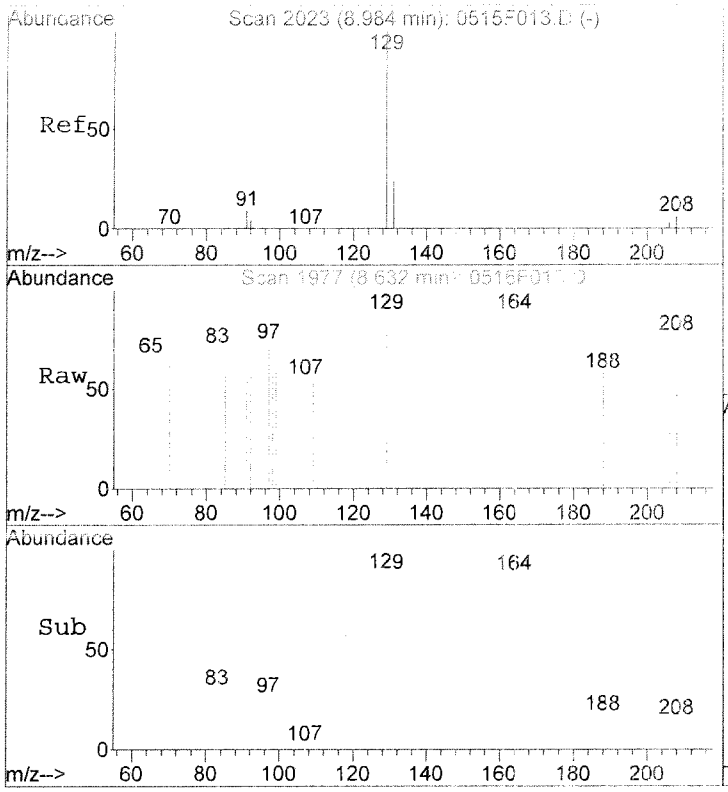


#16
1,1,2-Trichloroethane
Concen: 1.51 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 23

Ion	Ratio	Lower	Upper
83	100		
97	135.7	84.4	144.4
85	28.6	32.3	92.3#
99	64.3	39.4	99.4

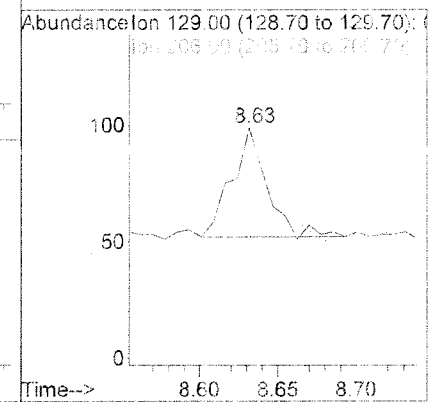


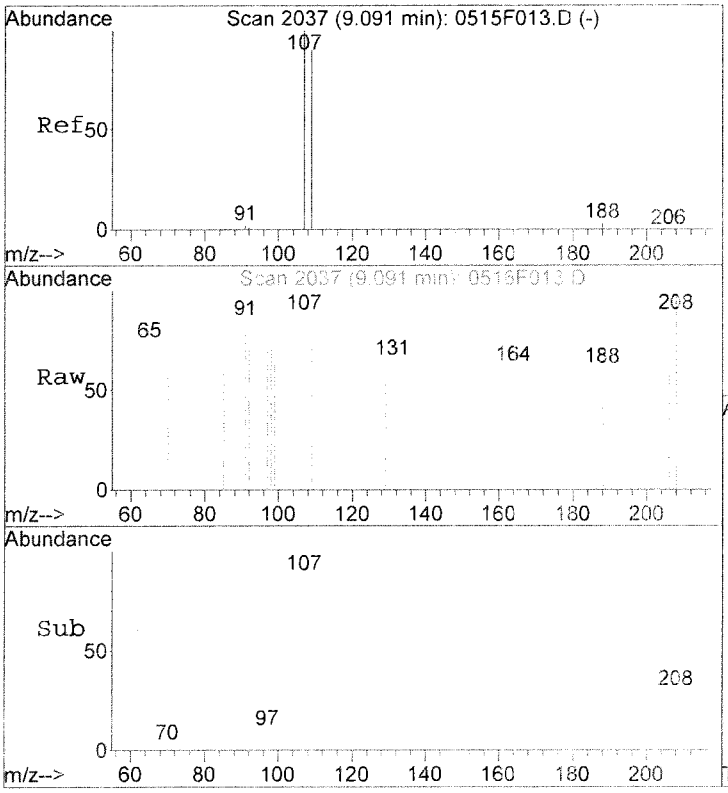


#17
Dibromochloromethane
Concen: 3.93 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.35 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:129 Resp: 74

Ion	Ratio	Lower	Upper
129	100		
206	0.0	0.0	32.8
208	8.5	0.0	35.9

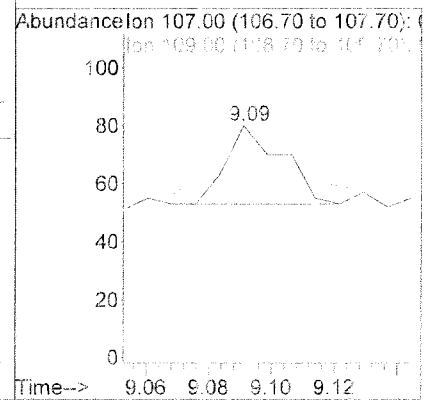


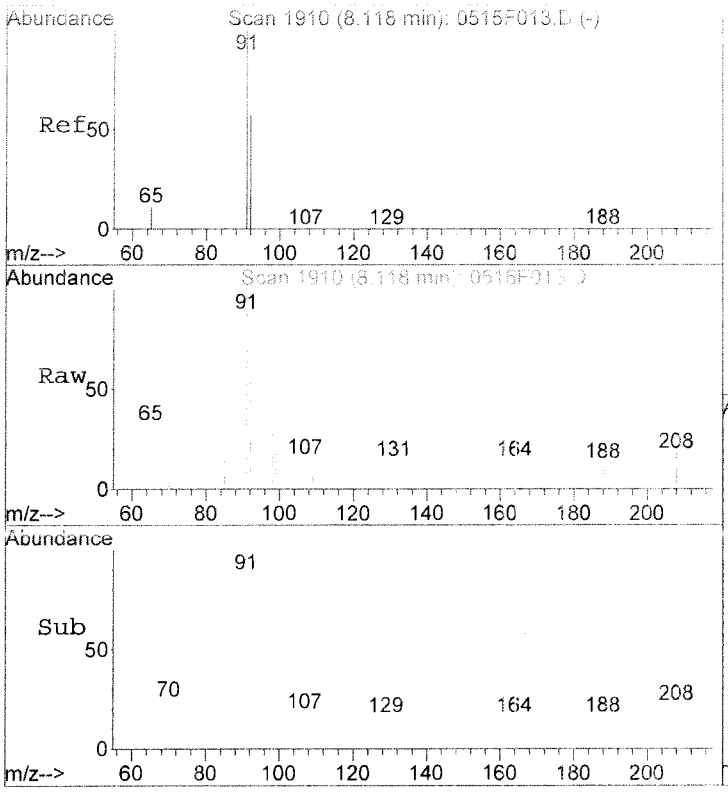


#18
1,2-Dibromoethane (EDB)
Concen: 2.29 ng/L
RT: 9.09 min Scan# 2037
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:107 Resp: 34

Ion	Ratio	Lower	Upper
107	100		
109	18.5	60.3	120.3#
188	3.7	0.0	33.5

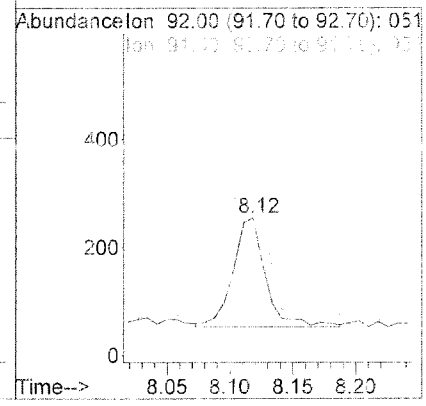


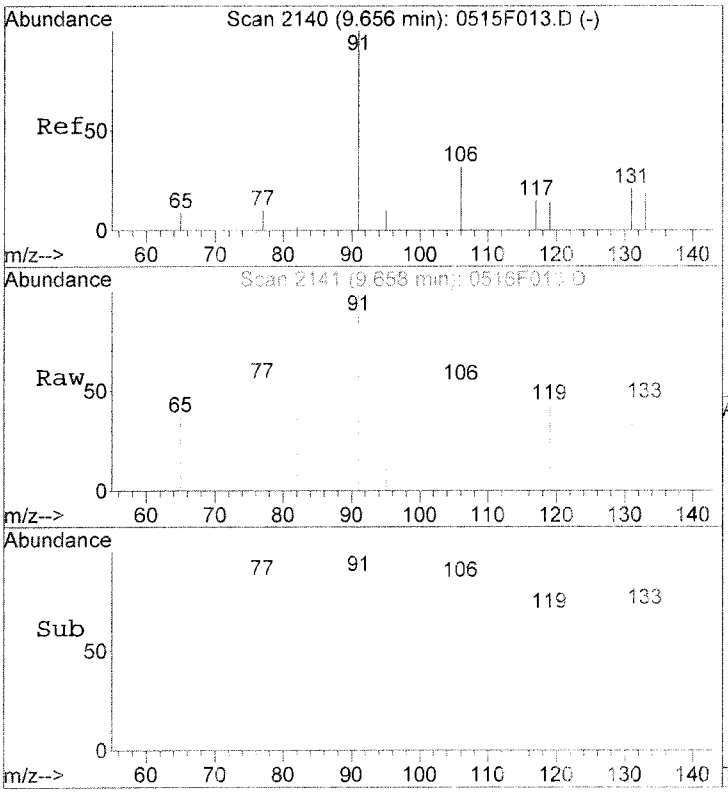


#20
Toluene
Concen: 11.22 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 92 Resp: 366

Ion	Ratio	Lower	Upper
92	100		
91	163.6	143.6	203.6
65	28.3	0.0	49.9

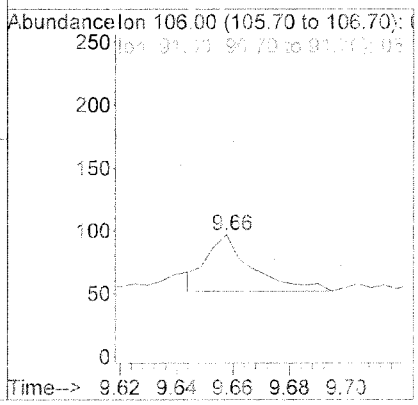


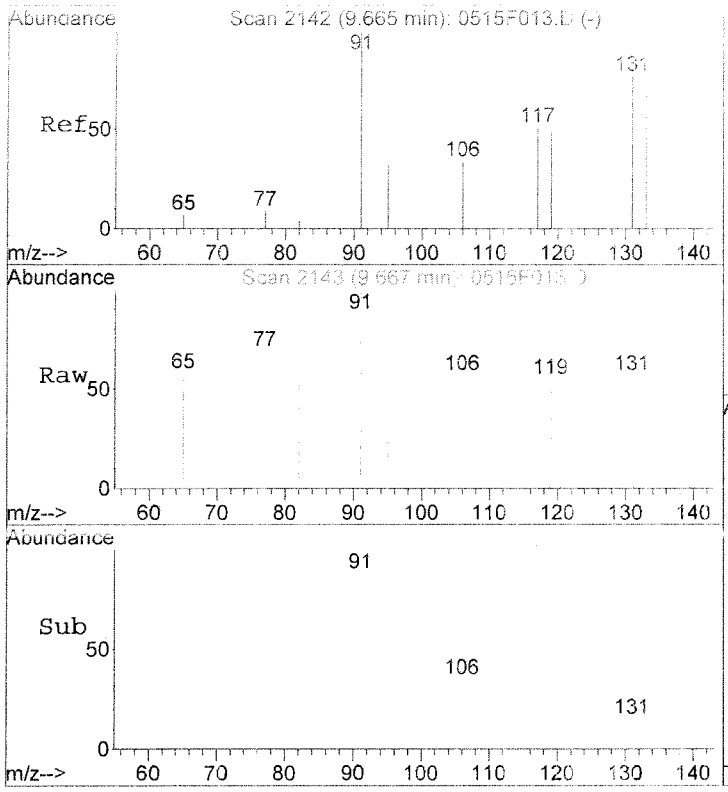


#21
Ethylbenzene
Concen: 3.18 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 50

Ion	Ratio	Lower	Upper
106	100		
91	264.4	285.7	345.7#
77	46.7	1.3	61.3

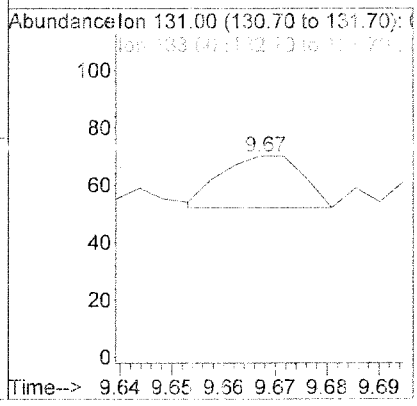


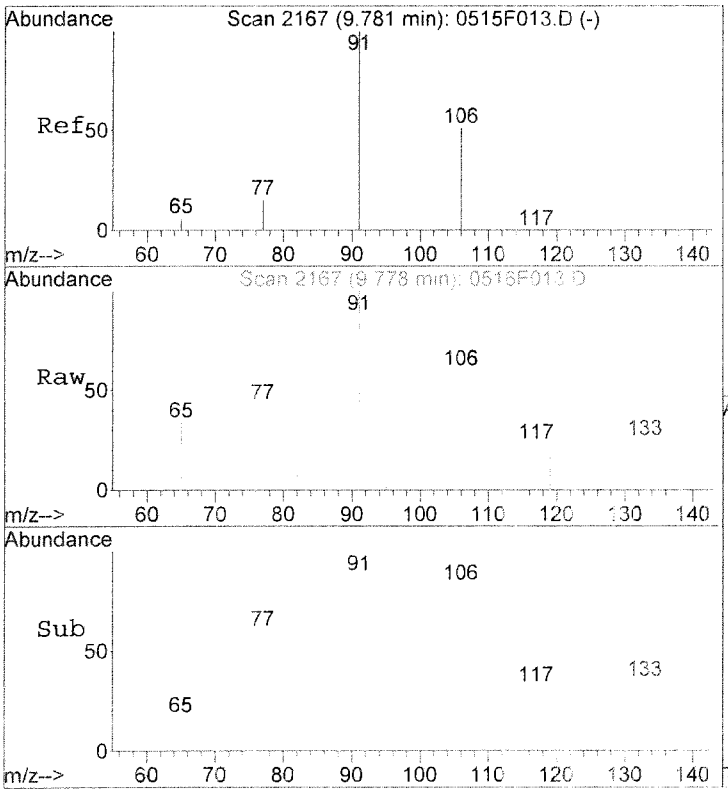


#22
1,1,1,2-Tetrachloroethane
Concen: 1.02 ng/L
RT: 9.67 min Scan# 2143
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:131 Resp: 20

Ion	Ratio	Lower	Upper
131	100		
133	33.3	74.4	114.4#
119	0.0	43.9	83.9#

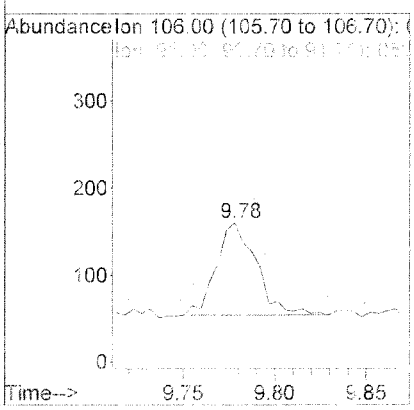


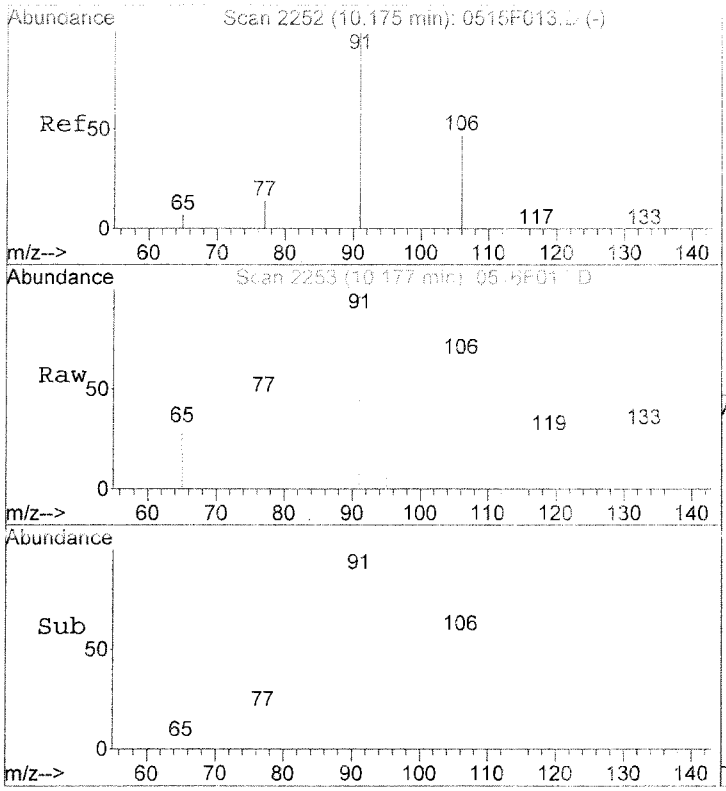


#23
m,p-Xylenes
Concen: 9.00 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 162

Ion	Ratio	Lower	Upper
106	100		
91	184.0	166.8	226.8
77	38.7	0.0	58.7

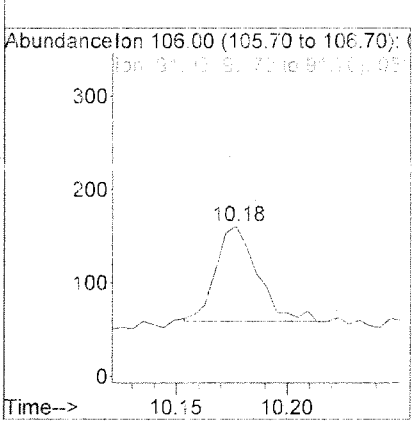


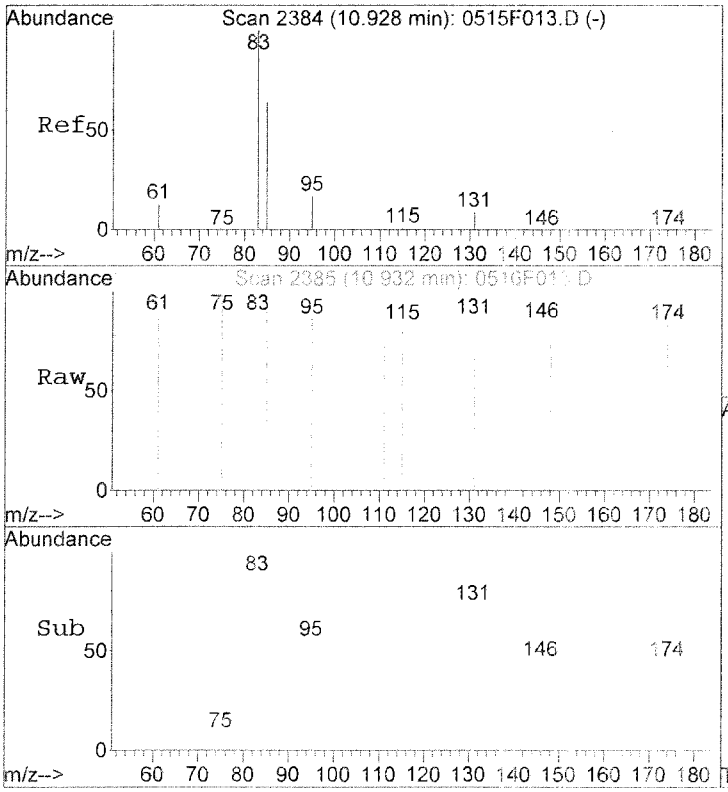


#24
o-Xylene
Concen: 7.19 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 132

Ion	Ratio	Lower	Upper
106	100		
91	171.6	184.3	244.3#
65	11.8	0.0	44.6

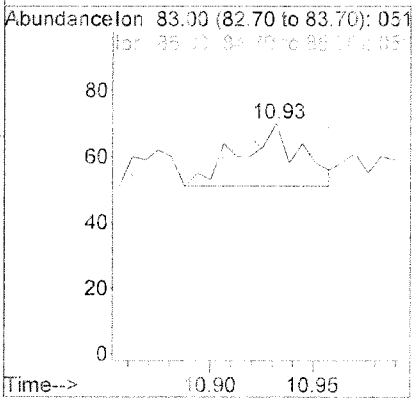


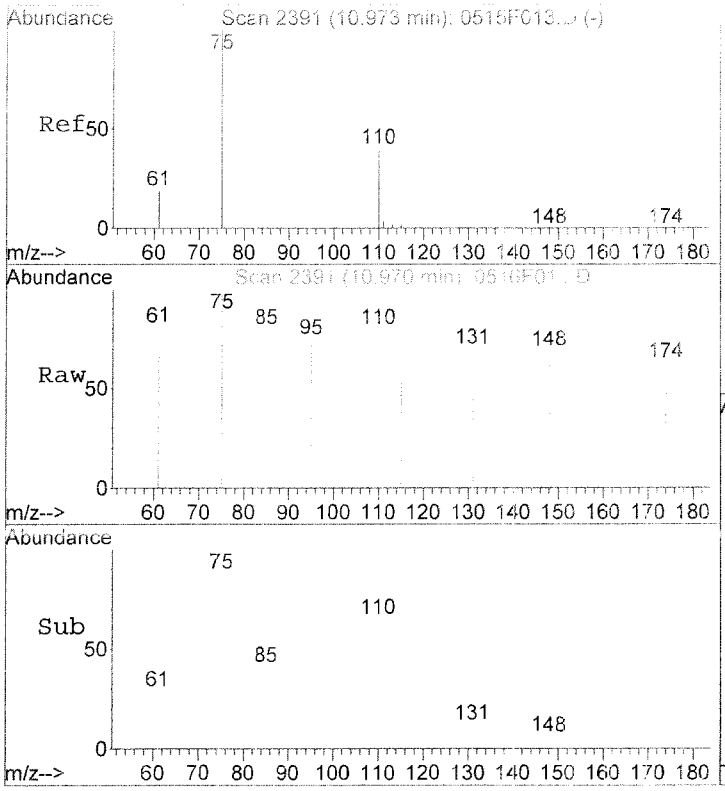


#26
1,1,2,2-Tetrachloroethane
Concen: 2.17 ng/L
RT: 10.93 min Scan# 2385
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 38

Ion	Ratio	Lower	Upper
83	100		
85	42.1	34.1	94.1
131	36.8	0.0	28.8#

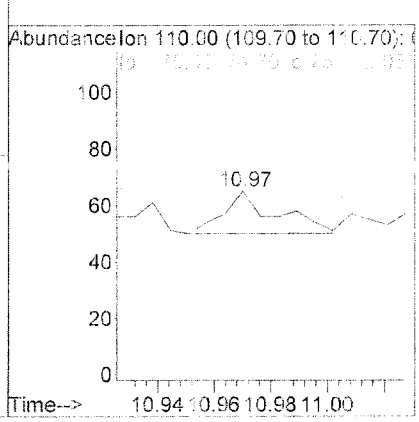


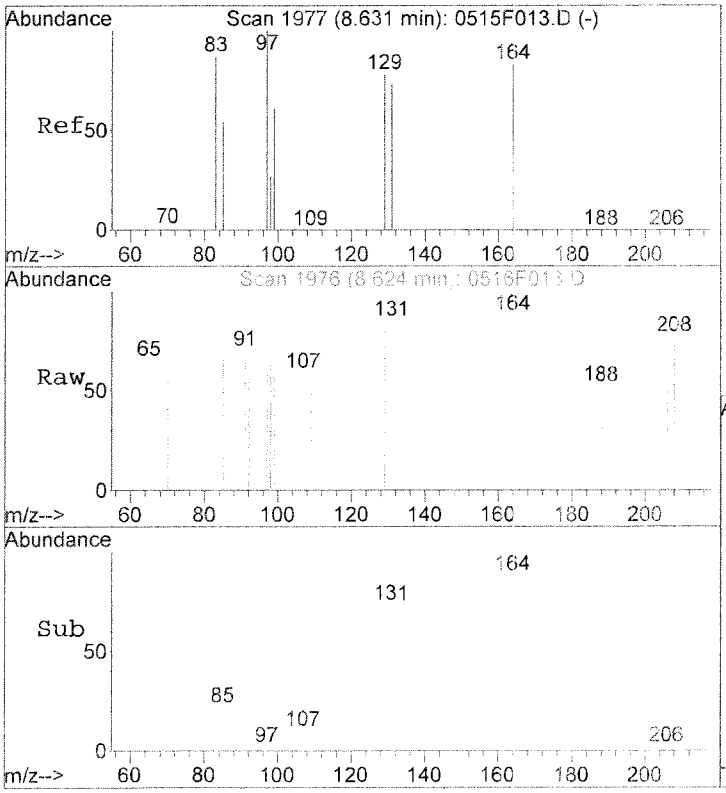


#42
1,2,3-Trichloropropane
Concen: 3.46 ng/L
RT: 10.97 min Scan# 2391
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:110 Resp: 19

Ion	Ratio	Lower	Upper
110	100		
75	126.7	230.6	270.6#
61	0.0	40.1	80.1#

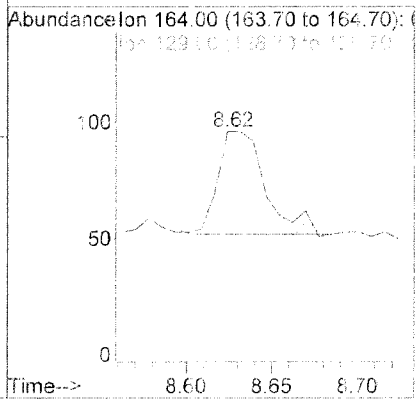


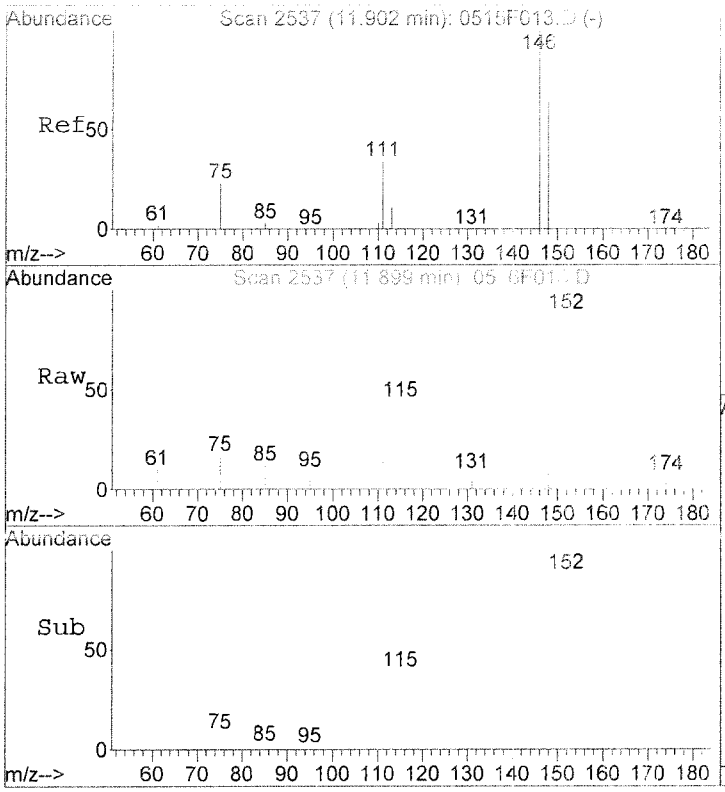


#28
Tetrachloroethene
Concen: 5.56 ng/L
RT: 8.62 min Scan# 1976
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:164 Resp: 85

Ion	Ratio	Lower	Upper
164	100		
129	56.8	63.1	123.1#
131	63.6	57.4	117.4

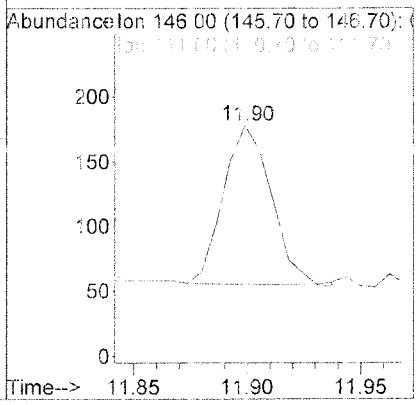




#33
1,4-Dichlorobenzene
Concen: 6.39 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:146 Resp: 180

Ion	Ratio	Lower	Upper
146	100		
111	36.1	4.0	64.0
148	86.1	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F010.D
Lab ID: KWG1704141-1
RunType: LCS
Matrix: WATER

Date Acquired: 05/16/2017 14:43
Date Quantitated: 05/16/2017 15:10
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NC
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: K. Shultz

Secondary Review: M

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F010.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:43	**Quant Date:**	05/16/2017 15:10	**Vial:**	8
Run Type:	LCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-1			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604862	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15373
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D			**Quant based on**	**Method**

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	58644	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	39127	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	18416	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19719	909.09	91	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	47162	1,008	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	14476	831.64	83	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	66304	1.975	1980		
1	Vinyl Chloride	1.33		0.00	62	65973	2.022	2020		
1	1,1-Dichloroethene	2.43	0.01	0.00	96	36052	1.987	1990		
1	Methylene Chloride	3.08	0.01	0.00	84	51307	2.020	2020		
1	trans-1,2-Dichloroethene	3.36		0.00	96	40499	1.969	1970		
1	cis-1,2-Dichloroethene	4.95		0.00	96	38412	1.958	1960		
1	Chloroform	5.39		0.00	83	85949	2.038	2040		
1	Carbon Tetrachloride	5.66		0.00	117	56845	2.043	2040		
1	Benzene	5.97		0.00	78	151781	1.894	1890		
1	1,2-Dichloroethane	6.12		0.00	62	55698	1.863	1860		
1	Trichloroethene (TCE)	6.74		0.00	95	40211	2.040	2040		
1	Bromodichloromethane	7.36		0.00	83	52915	1.874	1870		
1	1,1,2-Trichloroethane	8.63		0.00	83	29227	1.849	1850		
1	Dibromochloromethane	8.98		0.00	129	35099	1.792	1790		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	29187	1.889	1890		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F010.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:43	**Quant Date:**	05/16/2017 15:10	**Vial:**	8
Run Type:	LCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-1			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11		0.00	92	67393	1.963	1960		
2	Ethylbenzene	9.65		0.00	106	32989	1.992	1990		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	39185	1.899	1900		
2	m,p-Xylenes	9.78		0.00	106	78163	4.123	4120		
2	o-Xylene	10.18		0.00	106	39126	2.023	2020		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	32750	1.777	1780		
2	1,2,3-Trichloropropane	10.97		0.00	110	10584	1.832	1830		
2	Tetrachloroethene (PCE)	8.63		0.00	164	32099	1.994	1990		
3	1,4-Dichlorobenzene	11.90		0.00	146	70690	2.127	2130		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Lab Control Spike Summary Report

Lab Control Spike Information — ListJoinID : LI18885

Data File:	I:\MS30\DATA\051617_SIM\0516F010.D	**Instrument:**	MS30
Lab ID:	KWG1704141-1	**Dilution:**	1
Client ID:	Lab Control Sample	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/16/2017 14:43
Matrix:	WATER	**Quant Date:**	05/16/2017 15:10

Duplicate Lab Control Spike Information

Data File:	I:\MS30\DATA\051617_SIM\0516F011.D	**Instrument:**	MS30
Lab ID:	KWG1704141-2	**Dilution:**	1
Client ID:	Duplicate Lab Control Sample	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/16/2017 15:13
Matrix:	WATER	**Quant Date:**	05/16/2017 16:09

	LCS			DLCS					
Parameter Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	2020	2000	101	2030	2000	102	70-136	1	20

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Data File : I:\MS30\DATA\051617_SIM\0516F010.D Vial: 8
Acq On : 16 May 2017 02:43 pm Operator: GH
Sample : SIM LCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 15:10:15 2017 Quant Results File: 051517MS30_8260SIM.RES

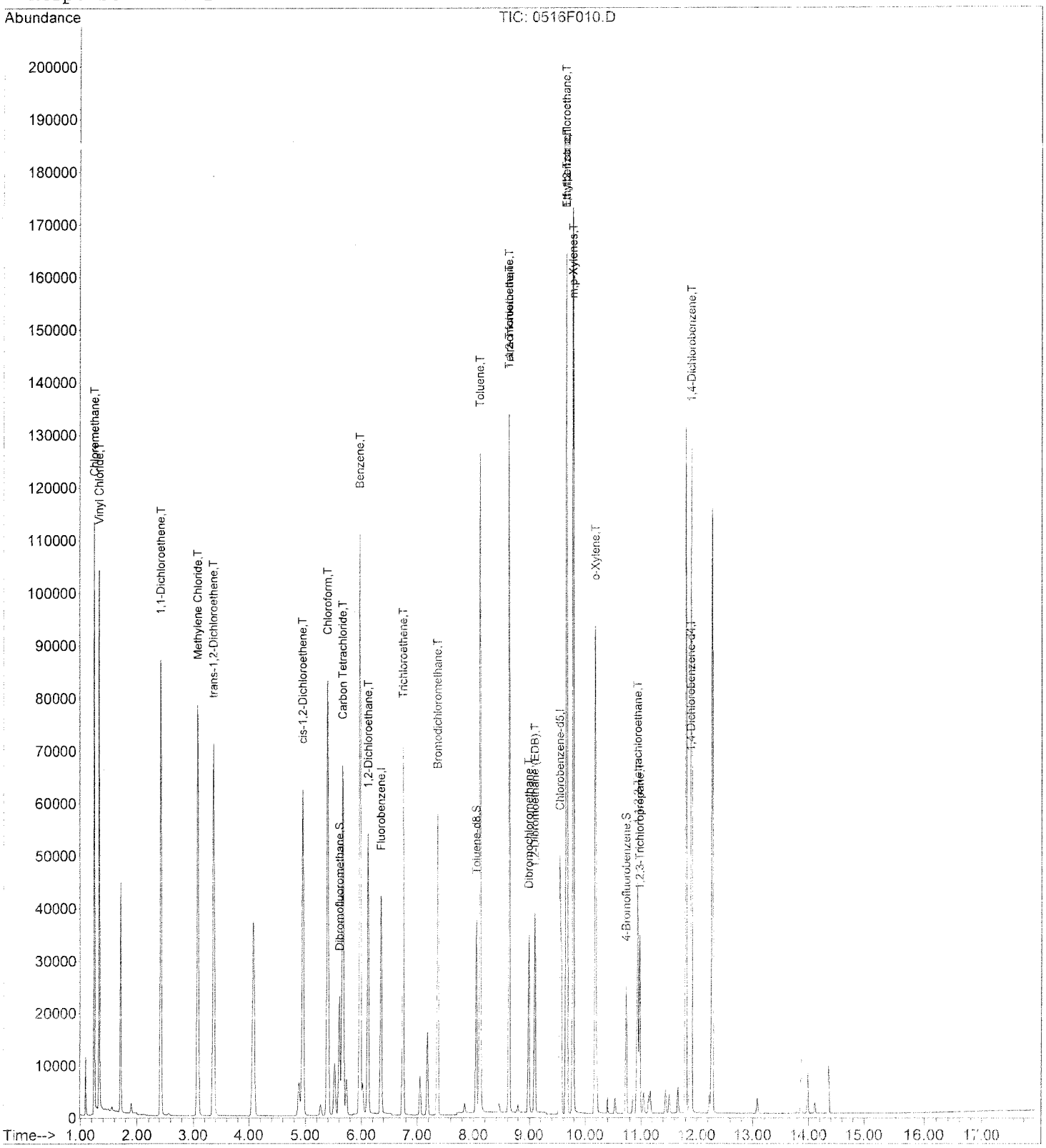
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	58644	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	39127	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	18416	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19719	909.09	ng/L	0.00
Spiked Amount 1000.000			Recovery = 90.91%			
15) Toluene-d8	8.05	98	47162	1008.26	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.83%			
25) 4-Bromofluorobenzene	10.73	95	14476	831.64	ng/L	0.00
Spiked Amount 1000.000			Recovery = 83.16%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	66304	1975.30	ng/L	99
3) Vinyl Chloride	1.33	62	65973	2022.47	ng/L	99
4) 1,1-Dichloroethene	2.43	96	36052	1987.48	ng/L	100
5) Methylene Chloride	3.08	84	51307	2020.19	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	40499	1968.69	ng/L	98
7) cis-1,2-Dichloroethene	4.95	96	38412	1958.35	ng/L	97
8) Chloroform	5.39	83	85949	2038.05	ng/L	99
10) Carbon Tetrachloride	5.66	117	56845	2042.52	ng/L	100
11) Benzene	5.97	78	151781	1893.55	ng/L	99
12) 1,2-Dichloroethane	6.12	62	55698	1862.70	ng/L	99
13) Trichloroethene	6.74	95	40211	2039.72	ng/L	99
14) Bromodichloromethane	7.36	83	52915	1873.60	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	29227	1848.95	ng/L	98
17) Dibromochloromethane	8.98	129	35099	1791.89	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	29187	1888.99	ng/L	98
20) Toluene	8.11	92	67393	1962.54	ng/L	98
21) Ethylbenzene	9.65	106	32989	1991.69	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	39185	1898.78	ng/L	99
23) m,p-Xylenes	9.78	106	78163	4122.52	ng/L	96
24) o-Xylene	10.18	106	39126	2023.29	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	32750	1777.26	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	10584	1831.89	ng/L	91
28) Tetrachloroethene	8.63	164	32099	1993.85	ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	70690	2127.20	ng/L	97

(#) = qualifier out of range (m) = manual integration
0516F010.D 051517MS30_8260SIM.M Mon May 22 11:48:16 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F010.D Vial: 8
Acq On : 16 May 2017 02:43 pm Operator: GH
Sample : SIM LCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 15:10 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F011.D
Lab ID: KWG1704141-2
RunType: DLCS
Matrix: WATER

Date Acquired: 05/16/2017 15:13
Date Quantitated: 05/16/2017 16:09
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NT
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: KA 5/17/17

Secondary Review: AW

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F011.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 15:13	**Quant Date:**	05/16/2017 16:09	**Vial:**	9
Run Type:	DLCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-2			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604863	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D			**Quant based on**	**Method**

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	59220	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	40747	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	21076	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19751	901.71	90	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	47658	1,009	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	15527	856.56	86	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	68318	2,016	2020		
1	Vinyl Chloride	1.33		0.00	62	67020	2,035	2030		
1	1,1-Dichloroethene	2.43	0.01	0.00	96	36658	2,001	2000		
1	Methylene Chloride	3.08	0.01	0.00	84	55174	2,151	2150		
1	trans-1,2-Dichloroethene	3.36		0.00	96	41995	2,022	2020		
1	cis-1,2-Dichloroethene	4.95		0.00	96	40427	2,041	2040		
1	Chloroform	5.39		0.00	83	90174	2,117	2120		
1	Carbon Tetrachloride	5.66		0.00	117	57417	2,043	2040		
1	Benzene	5.97		0.00	78	159999	1,977	1980		
1	1,2-Dichloroethane	6.12		0.00	62	57995	1,921	1920		
1	Trichloroethene (TCE)	6.75	0.01	0.00	95	40926	2,056	2060		
1	Bromodichloromethane	7.36		0.00	83	56116	1,968	1970		
1	1,1,2-Trichloroethane	8.63		0.00	83	30187	1,891	1890		
1	Dibromochloromethane	8.98		0.00	129	37213	1,881	1880		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	30199	1,935	1940		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F011.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 15:13	**Quant Date:**	05/16/2017 16:03	**Vial:**	9
Run Type:	DLCS	**MethodJoinID:**	MI1547	**Dilution:**	1.0
Lab ID:	KWG1704141-2			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11		0.00	92	71530	2.000	2000		
2	Ethylbenzene	9.66	0.01	0.00	106	35239	2.043	2040		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	41745	1.942	1940		
2	m,p-Xylenes	9.78		0.00	106	83552	4.232	4230		
2	o-Xylene	10.18		0.00	106	42330	2.102	2100		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	34256	1.785	1790		
2	1,2,3-Trichloropropane	10.97		0.00	110	10726	1.783	1780		
2	Tetrachloroethene (PCE)	8.63		0.00	164	33932	2.024	2020		
3	1,4-Dichlorobenzene	11.90		0.00	146	77228	2.031	2030		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F011.D Vial: 9
Acq On : 16 May 2017 03:13 pm Operator: GH
Sample : SIM DLCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 16:09:44 2017 Quant Results File: 051517MS30_8260SIM.RES

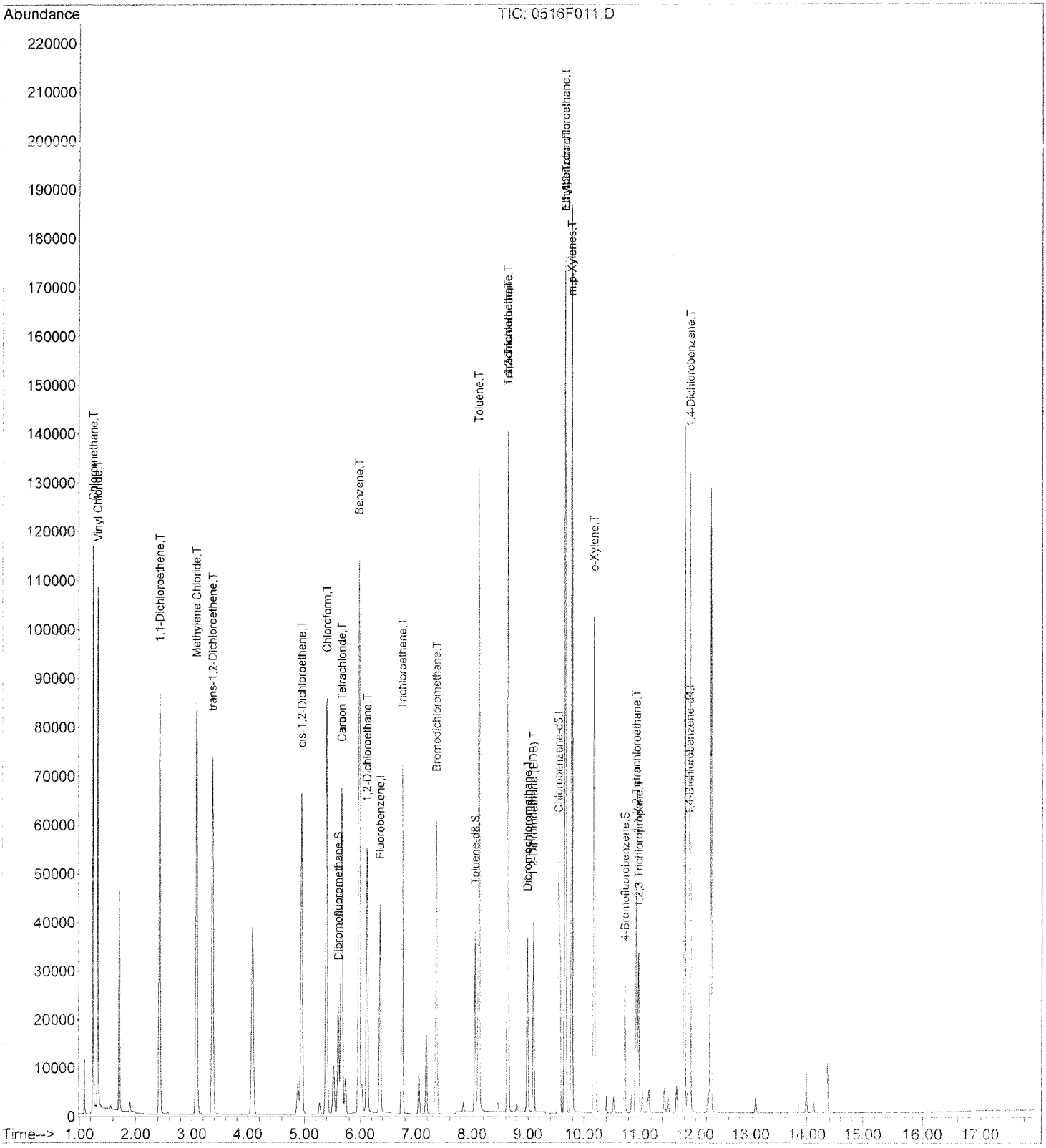
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	59220	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	40747	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	21076	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19751	901.71	ng/L	0.00
Spiked Amount 1000.000			Recovery = 90.17%			
15) Toluene-d8	8.05	98	47658	1008.96	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.90%			
25) 4-Bromofluorobenzene	10.73	95	15527	856.56	ng/L	0.00
Spiked Amount 1000.000			Recovery = 85.66%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	68318	2015.50	ng/L	99
3) Vinyl Chloride	1.33	62	67020	2034.58	ng/L	99
4) 1,1-Dichloroethene	2.43	96	36658	2001.24	ng/L	99
5) Methylene Chloride	3.08	84	55174	2151.32	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	41995	2021.56	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	40427	2041.03	ng/L	97
8) Chloroform	5.39	83	90174	2117.44	ng/L	99
10) Carbon Tetrachloride	5.66	117	57417	2043.01	ng/L	100
11) Benzene	5.97	78	159999	1976.66	ng/L	100
12) 1,2-Dichloroethane	6.12	62	57995	1920.65	ng/L	99
13) Trichloroethene	6.75	95	40926	2055.79	ng/L	98
14) Bromodichloromethane	7.36	83	56116	1967.61	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	30187	1891.10	ng/L	99
17) Dibromochloromethane	8.98	129	37213	1881.34	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	30199	1935.47	ng/L	99
20) Toluene	8.11	92	71530	2000.19	ng/L	97
21) Ethylbenzene	9.66	106	35239	2042.95	ng/L	99
22) 1,1,1,2-Tetrachloroethane	9.67	131	41745	1942.41	ng/L	98
23) m,p-Xylenes	9.78	106	83552	4231.55	ng/L	100
24) o-Xylene	10.18	106	42330	2101.95	ng/L	99
26) 1,1,2,2-Tetrachloroethane	10.93	83	34256	1785.08	ng/L	100
27) 1,2,3-Trichloropropane	10.97	110	10726	1782.65	ng/L	98
28) Tetrachloroethene	8.63	164	33932	2023.91	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	77228	2030.64	ng/L	100

(#) = qualifier out of range (m) = manual integration
0516F011.D 051517MS30_8260SIM.M Mon May 22 11:48:50 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F011.D Vial: 9
Acq On : 16 May 2017 03:13 pm Operator: GH
Sample : SIM DLCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 16:09 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



545355

Date: 5/16/17

By: [illegible]

IS/SS Std. ID: 86VOA.32G 6/11/17

CCV Std ID: 86VOA.36D 5/22/17

MS/DMS/LCS/ICV Std ID: I

BFB Std. ID: 86VOA.33D 6/11/17

ALS Environmental
Injection Log
MS30 - Agilent 5977B

Tune File: 3FB where.u

New Tune: No

ICAL Date: 5/15/17 Cal 15375

Second RV: [illegible]

LIMS ID: KWG1703959(A) / 4141

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	0516F008	S...TUNE.M	4.4 µl → 44 ml		
2	SIM CCV	9	B2605IM.M	2 µl → 50 ml		
3	LCS	10				
4	DLCS	11				
5	IB	12				
6	MB	13				
7	4569-5TB	14				041117
8	1	15				
9	2	16				
10	3	17				transfered due to soil
11	4	18				
12	4732-2TB	19				033017
13	4857-2TB	20				041117
14	4732-1	21				
15	3	22				transfered due to soil
16	4	23				
17	4857-1	24				
18	3	25				transfered due to soil
19	4	26				
20	5	27				
21	SIM CCV	28		2 µl → 50 ml		
22						
23						
24						
25						
26						
27						

R:\VOA\Injection Logs\INJLOG_MS30_Rev1

Exception Report

Data File: J:\MS30\DATA\051617_SIM\0516F008.D
Lab ID: KWG1703959-1
RunType: TUNE
Matrix: WATER

Date Acquired: 05/16/2017 15:23
Date Quantitated:
Batch ID: KWG1703959
Analysis Method: BFB
ListJoinID: LJ774

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review: KS 5/22/17

Secondary Review: JW

Data File:	J:\MS30\DATA\051617_SIM\0516F008.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 13:23	**Quant Date:**		**Vial:**	6
Run Type:	TUNE	**ListJoinID:**	LJ774	**Dilution:**	1.0
Lab ID:	KWG1703959-1			**Soln Conc. Units:**	

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	BFB	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	GC/MS Tuning Evaluation	**Report List ID:**	LJ774
Tune Ref:		**Method ID:**	MJ159
MB Ref:		**Quant based on Report List**	

Tune Results

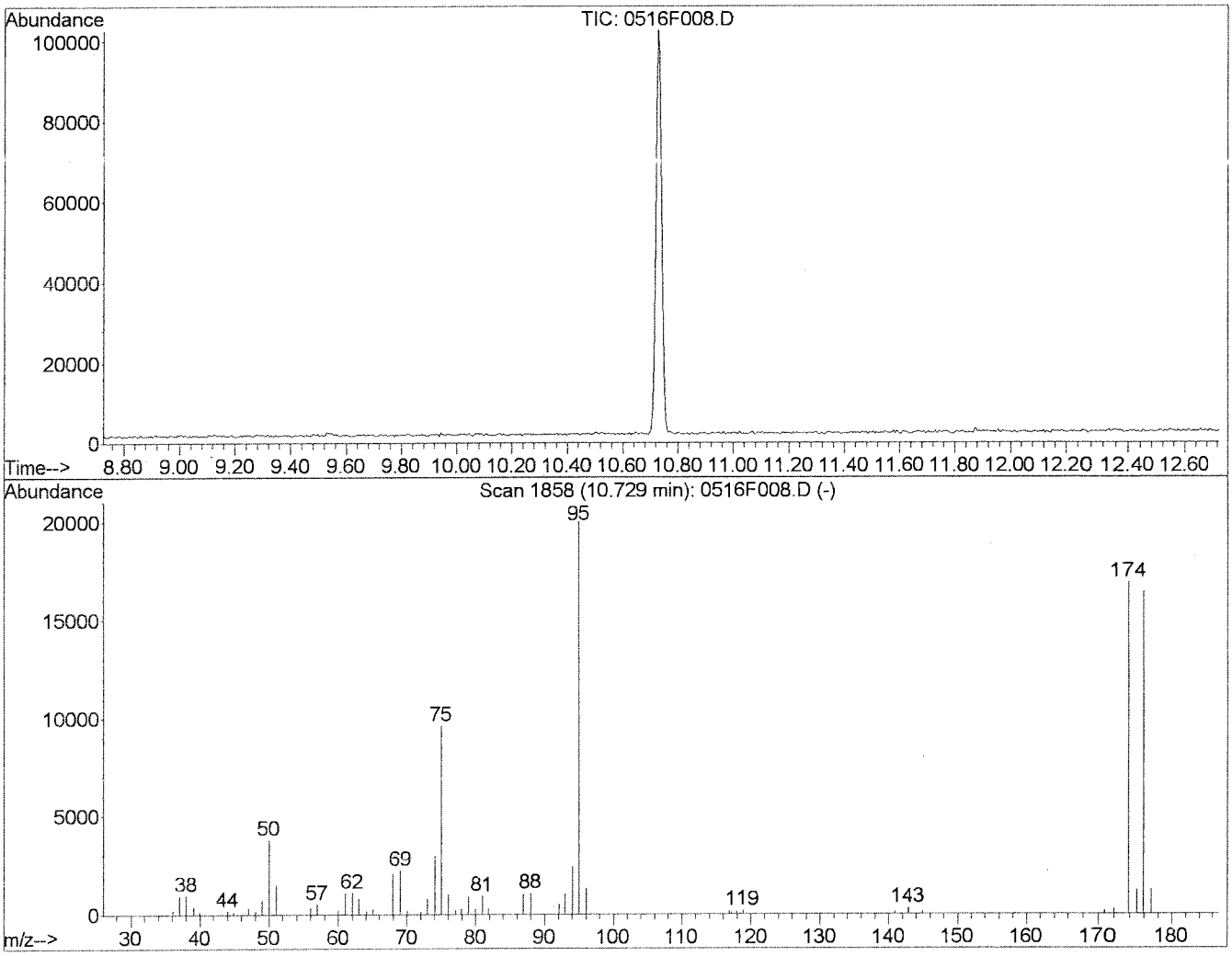
Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	18.9	3789	Pass
75	95	30	60	48.0	9597	Pass
95	95	100	100	100.0	20008	Pass
96	95	5	9	6.6	1323	Pass
173	174	0	2	0.0	0	Pass
174	95	50	120	84.4	16896	Pass
175	174	5	9	7.3	1228	Pass
176	174	95	101	97.2	16416	Pass
177	176	5	9	7.6	1245	Pass

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\051617_SIM\0516F008.D Vial: 6
Acq On : 16 May 2017 01:23 pm Operator: GH
Sample : 50NG BFB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM



Spectrum Information: Scan 1858 Apex - 1849 Jan 5/16/17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	3789	PASS
75	95	30	60	48.0	9597	PASS
95	95	100	100	100.0	20008	PASS
96	95	5	9	6.6	1323	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	84.4	16896	PASS
175	174	5	9	7.3	1228	PASS
176	174	95	101	97.2	16416	PASS
177	176	5	9	7.6	1245	PASS

J:\MS30\DATA\051617_SIM\0516F008.D 051517MS30_8260SIM.M Tue May 16 13:4

Exception Report

Data File: J:\MS30\DATA\051617_SIM\0516F009.D
Lab ID: KWG1703959-2
RunType: CCV
Matrix: WATER

Date Acquired: 05/16/2017 14:07
Date Quantitated: 05/16/2017 14:53
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	M

Primary Review: [signature]

Secondary Review: [signature]

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F009.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:07	**Quant Date:**	05/16/2017 14:33	**Vial:**	7
Run Type:	CCV	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-2			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15373
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:				**Quant based on**	**Method**

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	58376	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	40304	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	20058	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	19504	903.31		77-123	NA	
1	Toluene-d8	8.05			98	46545	999.64		74-112	NA	
2	4-Bromofluorobenzene	10.73			95	14647	816.89		46-118	NA	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.24			50	58402	1.748			
1	Vinyl Chloride	1.33			62	57794	1.780			
1	1,1-Dichloroethene	2.42			96	31225	1.729			
1	Methylene Chloride	3.07			84	46679	1.846			
1	trans-1,2-Dichloroethene	3.36			96	35404	1.729			
1	cis-1,2-Dichloroethene	4.95			96	33819	1.732			
1	Chloroform	5.39			83	77039	1.835			
1	Carbon Tetrachloride	5.66			117	49874	1.800			
1	Benzene	5.97			78	133379	1.672			
1	1,2-Dichloroethane	6.12			62	47849	1.608			
1	Trichloroethene (TCE)	6.74			95	34090	1.737			
1	Bromodichloromethane	7.36			83	46946	1.670			
1	1,1,2-Trichloroethane	8.63			83	24603	1.564			
1	Dibromochloromethane	8.98			129	30833	1.581			
1	1,2-Dibromoethane (EDB)	9.09			107	24287	1.579			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F009.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:07	**Quant Date:**	05/16/2017 14:33	**Vial:**	7
Run Type:	CCV	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-2			**Soln Conc. Units:**	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11			92	58545	1.655			
2	Ethylbenzene	9.65			106	29072	1.704			
2	1,1,1,2-Tetrachloroethane	9.67			131	34951	1.644			
2	m,p-Xylenes	9.78			106	68053	3.484			
2	o-Xylene	10.18			106	34152	1.715			
2	1,1,2,2-Tetrachloroethane	10.93			83	27775	1.463			
2	1,2,3-Trichloropropane	10.97			110	8449	1.420			
2	Tetrachloroethene (PCE)	8.63			164	28619	1.726			
3	1,4-Dichlorobenzene	11.90			146	61924	1.711			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15375
Method ID: MJ1547

DataFile: J:\MS30\DATA\051617_SIM\0516F009.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff		Soln Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	20	0.1	0.572	0.500	-13				
Vinyl Chloride		MS	AverageRF	20	0.1	0.556	0.495	-11				
1,1-Dichloroethene		MS	AverageRF	20	0.1	0.309	0.267	-14				
Methylene Chloride		MS	AverageRF	20	0.1	0.433	0.400	-8				
trans-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.351	0.303	-14				
cis-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.334	0.290	-13				
Chloroform		MS	AverageRF	20	0.2	0.719	0.660	-8				
Dibromofluoromethane		SURR	AverageRF	20	0.01	0.370	0.334	-10				
Carbon Tetrachloride		MS	AverageRF	20	0.1	0.475	0.427	-10				
Benzene		MS	AverageRF	20	0.5	1.367	1.142	-16				
1,2-Dichloroethane		MS	AverageRF	20	0.1	0.510	0.410	-20				
Trichloroethene (TCE)		MS	AverageRF	20	0.2	0.336	0.292	-13				
Bromodichloromethane		MS	AverageRF	20	0.2	0.482	0.402	-17				
Toluene-d8		SURR	AverageRF	20	0.01	0.798	0.797	0				
Toluene		MS	AverageRF	20	0.4	0.878	0.726	-17				
1,1,2-Trichloroethane		MS	AverageRF	20	0.1	0.270	0.211	-22	*			
Tetrachloroethene (PCE)		MS	AverageRF	20	0.2	0.411	0.355	-14				
Dibromochloromethane		MS	AverageRF	20	0.1	0.334	0.264	-21	*			
1,2-Dibromoethane (EDB)		MS	AverageRF	20	0.1	0.263	0.208	-21	*			
Ethylbenzene		MS	AverageRF	20	0.1	0.423	0.361	-15				
1,1,1,2-Tetrachloroethane		MS	AverageRF	20	0.01	0.527	0.434	-18				
m,p-Xylenes		MS	AverageRF	20	0.1	0.485	0.422	-13				
o-Xylene		MS	AverageRF	20	0.3	0.494	0.424	-14				
4-Bromofluorobenzene		SURR	AverageRF	20	0.01	0.445	0.363	-18				
1,1,2,2-Tetrachloroethane		MS	AverageRF	20	0.3	0.471	0.345	-27	*			
1,2,3-Trichloropropane		MS	AverageRF	20	0.1	0.148	0.105	-29	*			
1,4-Dichlorobenzene		MS	AverageRF	20	0.5	1.804	1.544	-14				

5 Compounds Failed CCV Criteria (18.52 Percent)

Data File : J:\MS30\DATA\051617_SIM\0516F009.D Vial: 7
Acq On : 16 May 2017 02:07 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 14:33:40 2017 Quant Results File: 051517MS30_8260SIM.RES

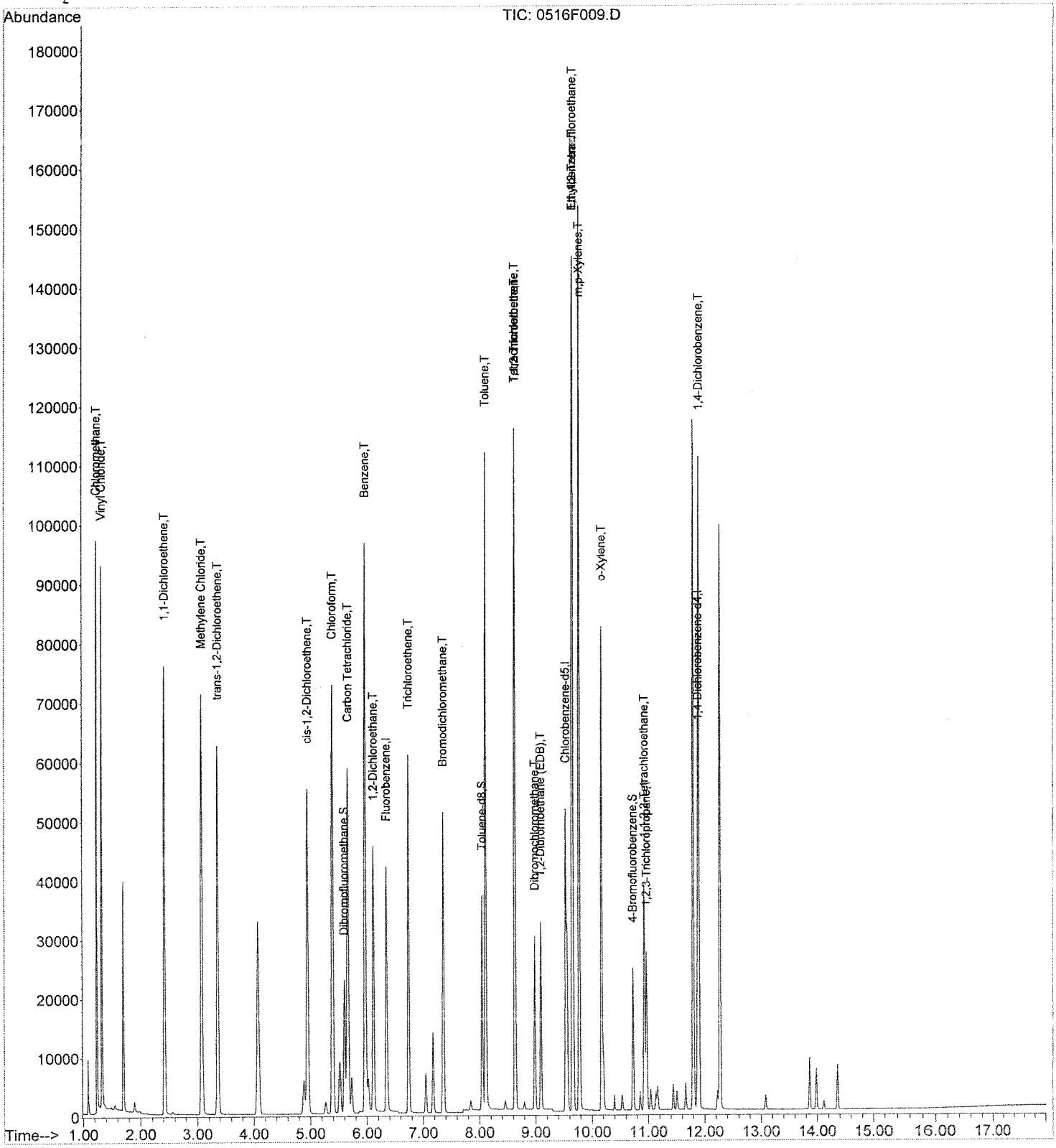
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	58376	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	40304	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	20058	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19504	903.31	ng/L	0.00
Spiked Amount 1000.000			Recovery = 90.33%			
15) Toluene-d8	8.05	98	46545	999.64	ng/L	0.00
Spiked Amount 1000.000			Recovery = 99.96%			
25) 4-Bromofluorobenzene	10.73	95	14647	816.89	ng/L	0.00
Spiked Amount 1000.000			Recovery = 81.69%			
Target Compounds						Qvalue
2) Chloromethane	1.24	50	58402	1747.87	ng/L	99
3) Vinyl Chloride	1.33	62	57794	1779.87	ng/L	100
4) 1,1-Dichloroethene	2.42	96	31225	1729.28	ng/L	95
5) Methylene Chloride	3.07	84	46679	1846.40	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	35404	1728.92	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	33819	1732.10	ng/L	98
8) Chloroform	5.39	83	77039	1835.16	ng/L	99
10) Carbon Tetrachloride	5.66	117	49874	1800.27	ng/L	99
11) Benzene	5.97	78	133379	1671.61	ng/L	98
12) 1,2-Dichloroethane	6.12	62	47849	1607.55	ng/L	99
13) Trichloroethene	6.74	95	34090	1737.17	ng/L	99
14) Bromodichloromethane	7.36	83	46946	1669.88	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	24603	1563.57	ng/L	97
17) Dibromochloromethane	8.98	129	30833	1581.33	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	24287	1579.08	ng/L	97
20) Toluene	8.11	92	58545	1655.09	ng/L	98
21) Ethylbenzene	9.65	106	29072	1703.95	ng/L	98
22) 1,1,1,2-Tetrachloroethane	9.67	131	34951	1644.15	ng/L	99
23) m,p-Xylenes	9.78	106	68053	3484.47	ng/L	98
24) o-Xylene	10.18	106	34152	1714.50	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	27775	1463.27	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	8449	1419.65	ng/L	92
28) Tetrachloroethene	8.63	164	28619	1725.78	ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	61924	1710.87	ng/L	98

(#) = qualifier out of range (m) = manual integration
0516F009.D 051517MS30_8260SIM.M Tue May 16 14:35:12 2017 Page 1

Data File : J:\MS30\DATA\051617_SIM\0516F009.D Vial: 7
Acq On : 16 May 2017 02:07 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 14:33 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F028.D
Lab ID: KWG1703959-3
RunType: CCVA
Matrix: WATER

Date Acquired: 05/16/2017 23:01
Date Quantitated: 05/17/2017 07:59
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NT

Primary Review: Ka Shirley

Secondary Review: MH

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F028.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 23:01	**Quant Date:**	05/17/2017 07:59	**Vial:**	26
Run Type:	CCVA	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-3			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:			
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:		**Quant based on Method**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	53531	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37155	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	19884	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	19399	979.76		77-123	NA	
1	Toluene-d8	8.05			98	42955	1,006		74-112	NA	
2	4-Bromofluorobenzene	10.73			95	14703	889.51		46-118	NA	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25			50	64215	2.096			
1	Vinyl Chloride	1.33			62	61816	2.076			
1	1,1-Dichloroethene	2.43			96	34327	2.073			
1	Methylene Chloride	3.08			84	53073	2.289			
1	trans-1,2-Dichloroethene	3.37			96	38041	2.026			
1	cis-1,2-Dichloroethene	4.95			96	36025	2.012			
1	Chloroform	5.39			83	86050	2.235			
1	Carbon Tetrachloride	5.66			117	54071	2.128			
1	Benzene	5.98			78	140684	1.923			
1	1,2-Dichloroethane	6.12			62	56307	2.063			
1	Trichloroethene (TCE)	6.75			95	36798	2.045			
1	Bromodichloromethane	7.36			83	53481	2.075			
1	1,1,2-Trichloroethane	8.63			83	29700	2.058			
1	Dibromochloromethane	8.98			129	36460	2.039			
1	1,2-Dibromoethane (EDB)	9.09			107	29255	2.074			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F028.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 23:01	**Quant Date:**	05/17/2017 07:59	**Vial:**	26
Run Type:	CCVA	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-3			**Soln Conc. Units:**	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12			92	60822	1.865			
2	Ethylbenzene	9.65			106	30067	1.912			
2	1,1,1,2-Tetrachloroethane	9.67			131	39515	2.016			
2	m,p-Xylenes	9.78			106	71108	3.949			
2	o-Xylene	10.18			106	36115	1.967			
2	1,1,2,2-Tetrachloroethane	10.93			83	35930	2.053			
2	1,2,3-Trichloropropane	10.97			110	10951	1.996			
2	Tetrachloroethene (PCE)	8.63			164	29961	1.960			
3	1,4-Dichlorobenzene	11.90			146	67634	1.885			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15375
Method ID: MJ1547
DataFile: I:\MS30\DATA\051617_SIM\0516F028.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff	Soln Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	50	0.1	0.572	0.600	5			
Vinyl Chloride		MS	AverageRF	50	0.1	0.556	0.577	4			
1,1-Dichloroethene		MS	AverageRF	50	0.1	0.309	0.321	4			
Methylene Chloride		MS	AverageRF	50	0.1	0.433	0.496	14			
trans-1,2-Dichloroethene		MS	AverageRF	50	0.1	0.351	0.355	1			
cis-1,2-Dichloroethene		MS	AverageRF	50	0.1	0.334	0.336	1			
Chloroform		MS	AverageRF	50	0.2	0.719	0.804	12			
Dibromofluoromethane		SURR	AverageRF	50	0.01	0.370	0.362	-2			
Carbon Tetrachloride		MS	AverageRF	50	0.1	0.475	0.505	6			
Benzene		MS	AverageRF	50	0.5	1.367	1.314	-4			
1,2-Dichloroethane		MS	AverageRF	50	0.1	0.510	0.526	3			
Trichloroethene (TCE)		MS	AverageRF	50	0.2	0.336	0.344	2			
Bromodichloromethane		MS	AverageRF	50	0.2	0.482	0.500	4			
Toluene-d8		SURR	AverageRF	50	0.01	0.798	0.802	1			
Toluene		MS	AverageRF	50	0.4	0.878	0.818	-7			
1,1,2-Trichloroethane		MS	AverageRF	50	0.1	0.270	0.277	3			
Tetrachloroethene (PCE)		MS	AverageRF	50	0.2	0.411	0.403	-2			
Dibromochloromethane		MS	AverageRF	50	0.1	0.334	0.341	2			
1,2-Dibromoethane (EDB)		MS	AverageRF	50	0.1	0.263	0.273	4			
Ethylbenzene		MS	AverageRF	50	0.1	0.423	0.405	-4			
1,1,1,2-Tetrachloroethane		MS	AverageRF	50	0.01	0.527	0.532	1			
m,p-Xylenes		MS	AverageRF	50	0.1	0.485	0.478	-1			
o-Xylene		MS	AverageRF	50	0.3	0.494	0.486	-2			
4-Bromofluorobenzene		SURR	AverageRF	50	0.01	0.445	0.396	-11			
1,1,2,2-Tetrachloroethane		MS	AverageRF	50	0.3	0.471	0.484	3			
1,2,3-Trichloropropane		MS	AverageRF	50	0.1	0.148	0.147	0			
1,4-Dichlorobenzene		MS	AverageRF	50	0.5	1.804	1.701	-6			

Data File : I:\MS30\DATA\051617_SIM\0516F028.D Vial: 26
Acq On : 16 May 2017 11:01 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:59:44 2017 Quant Results File: 051517MS30_8260SIM.RES

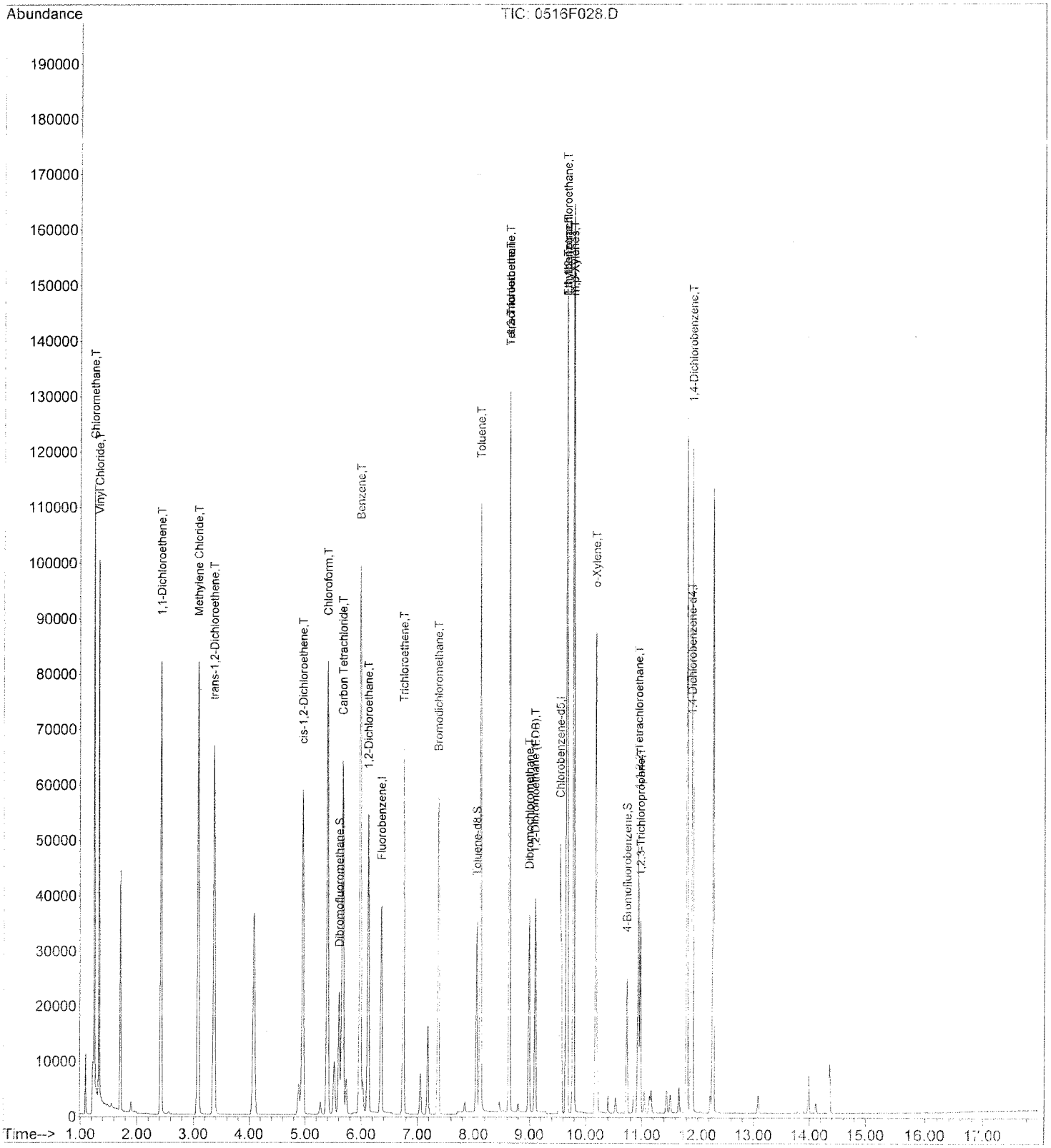
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53531	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37155	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	19884	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19399	979.76	ng/L	0.00
Spiked Amount 1000.000			Recovery = 97.98%			
15) Toluene-d8	8.05	98	42955	1006.03	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.60%			
25) 4-Bromofluorobenzene	10.73	95	14703	889.51	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.95%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	64215	2095.79	ng/L	100
3) Vinyl Chloride	1.33	62	61816	2076.04	ng/L	99
4) 1,1-Dichloroethene	2.43	96	34327	2073.14	ng/L	99
5) Methylene Chloride	3.08	84	53073	2289.32	ng/L	98
6) trans-1,2-Dichloroethene	3.37	96	38041	2025.83	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	36025	2012.08	ng/L	98
8) Chloroform	5.39	83	86050	2235.34	ng/L	100
10) Carbon Tetrachloride	5.66	117	54071	2128.42	ng/L	99
11) Benzene	5.98	78	140684	1922.75	ng/L	100
12) 1,2-Dichloroethane	6.12	62	56307	2062.93	ng/L	99
13) Trichloroethene	6.75	95	36798	2044.88	ng/L	97
14) Bromodichloromethane	7.36	83	53481	2074.51	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	29700	2058.33	ng/L	99
17) Dibromochloromethane	8.98	129	36460	2039.16	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	29255	2074.24	ng/L	98
20) Toluene	8.12	92	60822	1865.19	ng/L	100
21) Ethylbenzene	9.65	106	30067	1911.62	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	39515	2016.40	ng/L	99
23) m,p-Xylenes	9.78	106	71108	3949.47	ng/L	96
24) o-Xylene	10.18	106	36115	1966.71	ng/L	97
26) 1,1,2,2-Tetrachloroethane	10.93	83	35930	2053.32	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	10951	1996.00	ng/L #	87
28) Tetrachloroethene	8.63	164	29961	1959.82	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	67634	1884.98	ng/L	99

(#) = qualifier out of range (m) = manual integration
0516F028.D 051517MS30_8260SIM.M Mon May 22 12:18:27 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F028.D Vial: 26
Acq On : 16 May 2017 11:01 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:59 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Date: 5/15/17

By: AM

IS/SS Std. ID: 8260A.32E 6/10/17

CCV Std ID: —

MS/DMS/LCS/ICV Std ID: see ICAL prep

BFB Std. ID: 8260A.33D 6/11/17

ALS Environmental
Injection Log
MS30 - Agilent 5977B

Tune File: BFB.attune.u

New Tune: No

ICAL Date: 5/15/17 Cal 15375

Second RV: KL 5/17/17

LIMS ID:

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	0515F002	SIMTUNE.M ~~8260SIM.M~~	4.4µl→44ml		
2	IB	3	8260SIM.M			
3	IB	4				
4	IB	5				
5	SIM ICAL 5PPT	6		see ICAL prep		
6	10	7				
7	20	8				
8	50	9				
9	100	10				
10	500	11				
11	1000	12				
12	2000	13				
13	5000	14				
14	7000	15				
15	10000	16				
16	IB	17				
17	IB	18				
18	IB	19				
19	ICV	20		see ICALprep 2		
20	ICV	21				NR not needed
21	BFB	0516F002	SIMTUNE.M	4.4µl→44ml		
22	Mix 6 only ICV	2 3	8260SIM.M	2µl/2.5µl→5ml		8VOA 37B/36E 5/22/17
23						
24						
25						
26						
27						

INTIAL CALIBRATION CURVE

Date 5/15/17 Analysis 8260 SIM H2O

Prepared By [illegible] Instrument MS30

Stock Solution #1 86VOA.36E 5/22/17 Analytes Surrogate Init. Concentration 20ppm

Stock Solution #2 86VOA.36D 5/22/17 Analytes 8260 mix Init. Concentration 50 ppm

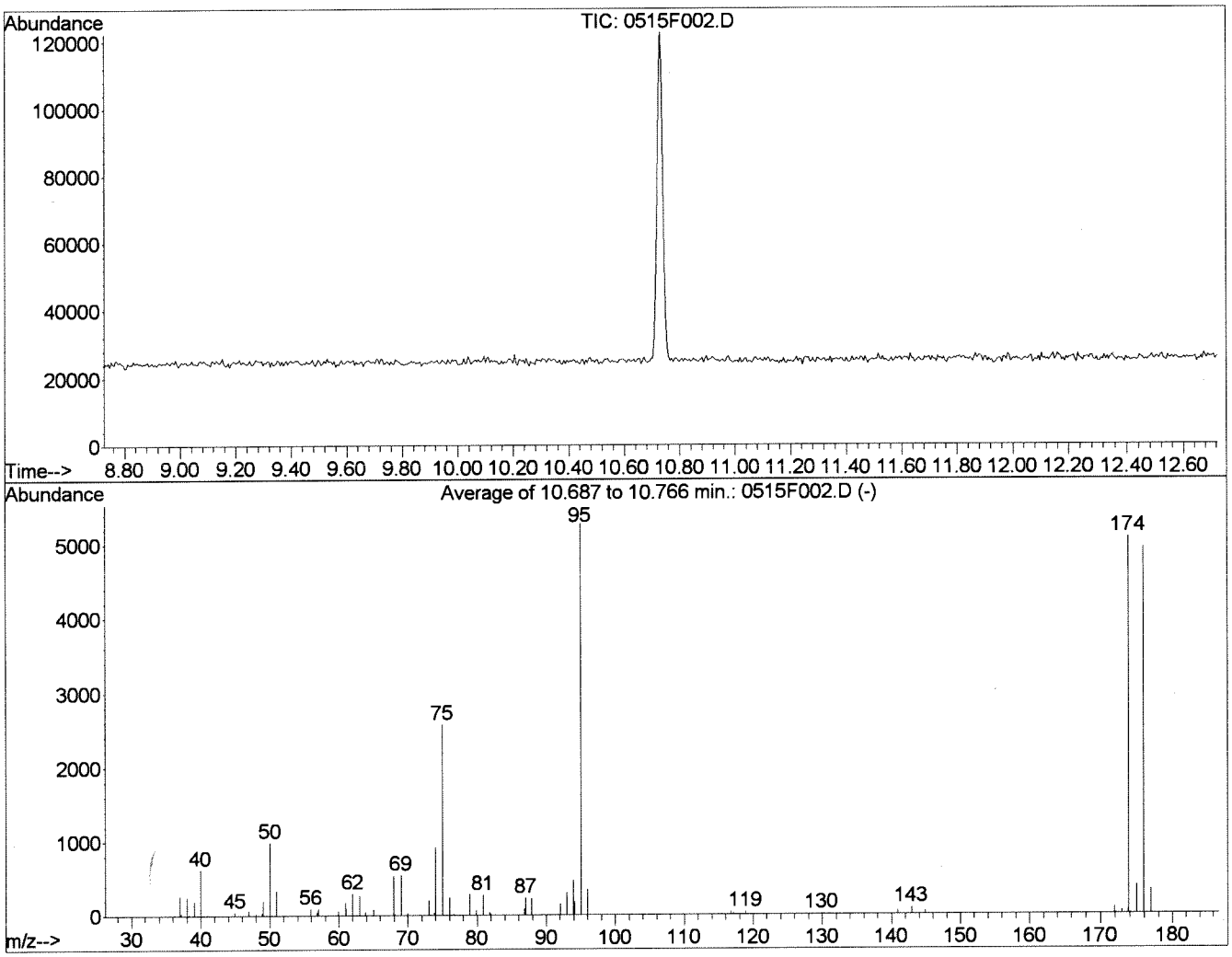
Stock Solution #3 86VOA.37A 5/22/17 Analytes 8260 low mix Init. Concentration 0.5 ppm

#	Aliquot of Stock Solution #1 (uL)	Final Conc. of #1 (ug/L)	Aliquot of Stock Solution #2 (uL)	Final Conc. of #2 (ug/L)	Aliquot of Stock Solution #3 (uL)	Final Conc. of #3 (ug/L)	Final Volume (mL)	Notes
1	-	-	-	-	0.5	0.005	50	
2	-	-	-	-	1.0	0.01	50	
3	-	-	-	-	2.0	0.02	50	
4	0.50	0.2	-	-	5.0	0.05	50	
5	1.0	0.4	-	-	10	0.1	50	
6	1.5	0.6	-	-	50	0.5	50	
7	2.0	0.8	1.0	1.0	-	-	50	
8 (CCV)	2.5	1.0	2.0	2.0	-	-	50	
9	5.0	2.0	5.0	5.0	-	-	50	
10	6.0	2.4	7.0	7.0	-	-	50	
11	10	4.0	10	10	-	-	50	

ICV: 2.5 µl of 20ppm Surr. (86VOA.36E 5/22/17) + 2µl of Cresent ICV (86VOA.30A 5/16/17) to 50ml H_2O

Data File : J:\MS30\DATA\051517_SIM\0515F002.D
Acq On : 15 May 2017 03:21 pm
Sample : 50NG BFB
Misc :
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM

Vial: 2
Operator: GH
Inst : MS30
Multiplr: 1.00



Spectrum Information: Average of 10.687 to 10.766 min. whole peak - 1848

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	985	PASS
75	95	30	60	48.6	2569	PASS
95	95	100	100	100.0	5285	PASS
96	95	5	9	6.6	351	PASS
173	174	0.00	2	0.9	44	PASS
174	95	50	120	96.2	5082	PASS
175	174	5	9	7.5	380	PASS
176	174	95	101	97.2	4941	PASS
177	176	5	9	6.7	331	PASS

5/15/17

KR 5/17/17

J:\MS30\DATA\051517_SIM\0515F002.D 051517MS30_8260SIM.M Mon May 15 15:4

Data File : J:\MS30\DATA\051517_SIM\0515F005.D Vial: 5
Acq On : 15 May 2017 05:09 pm Operator: GH
Sample : IB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 07:59:54 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Mon May 15 08:39:31 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	53793	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	36088	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14292	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	416	22.01	ng/L		0.00
Spiked Amount 1000.000			Recovery =	2.20%			
15) Toluene-d8	8.05	98	1258	32.38	ng/L		0.00
Spiked Amount 1000.000			Recovery =	3.24%			
25) 4-Bromofluorobenzene	10.73	95	386	26.83	ng/L		0.00
Spiked Amount 1000.000			Recovery =	2.68%			
Target Compounds							Qvalue
2) Chloromethane	1.24	50	352	11.60	ng/L		85
5) Methylene Chloride	3.08	84	584	23.13	ng/L		97
8) Chloroform	5.39	83	88	2.24	ng/L		65
11) Benzene	5.97	78	940	13.50	ng/L		92
13) Trichloroethene	6.74	95	52	2.94	ng/L	#	80
20) Toluene	8.12	92	132	4.48	ng/L		76
23) m,p-Xylenes	9.78	106	150	8.80	ng/L	#	57
24) o-Xylene	10.17	106	148	8.57	ng/L		90
28) Tetrachloroethene	8.62	164	42	2.89	ng/L	#	69
30) 1,4-Dichlorobenzene	11.90	146	150	5.80	ng/L		87

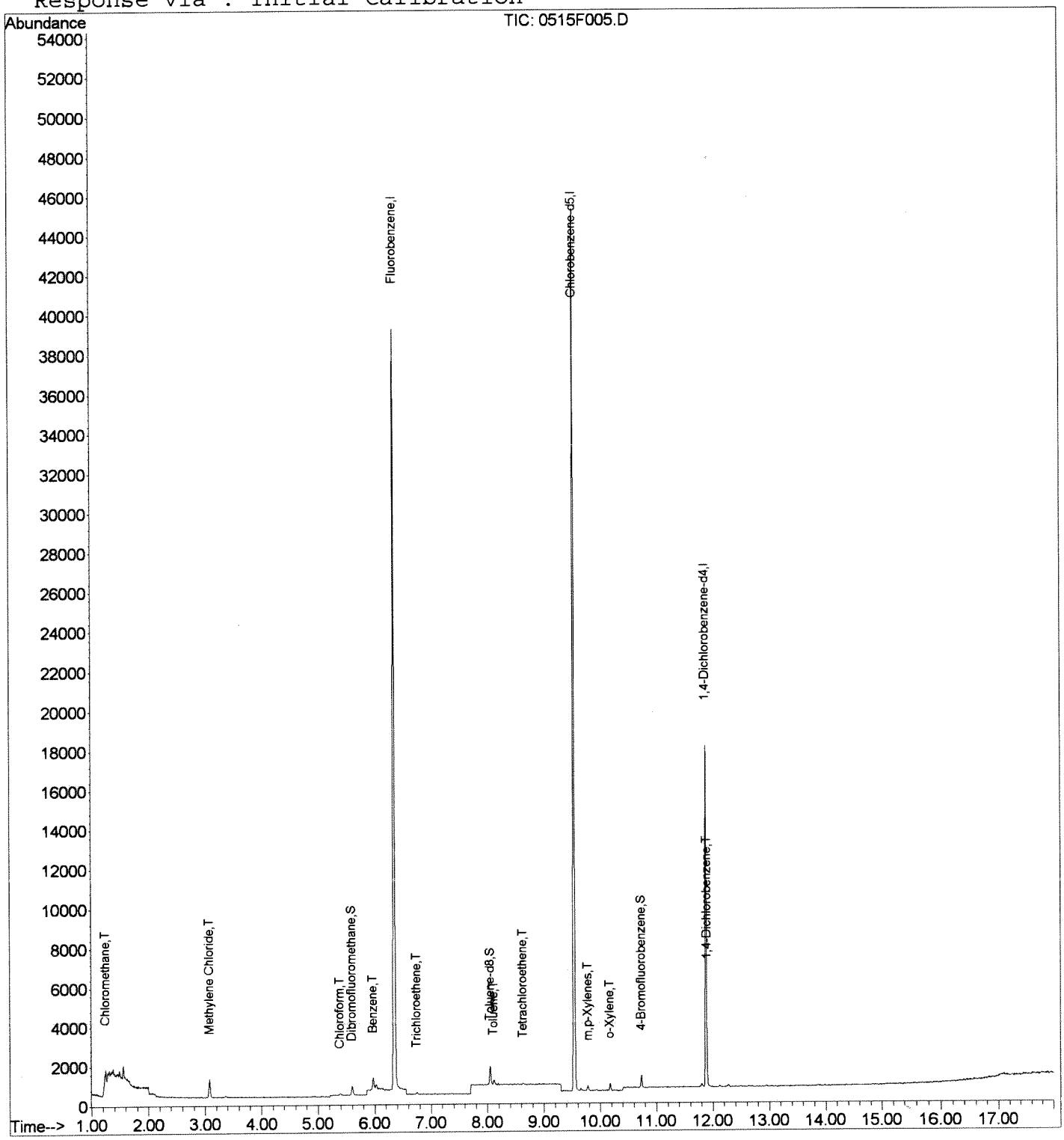
MM 5/17/17

KAB 5/17/17

(#) = qualifier out of range (m) = manual integration
0515F005.D 051517MS30_8260SIM.M Wed May 17 09:10:52 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F005.D Vial: 5
Acq On : 15 May 2017 05:09 pm Operator: GH
Sample : IB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 9:10 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:22 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

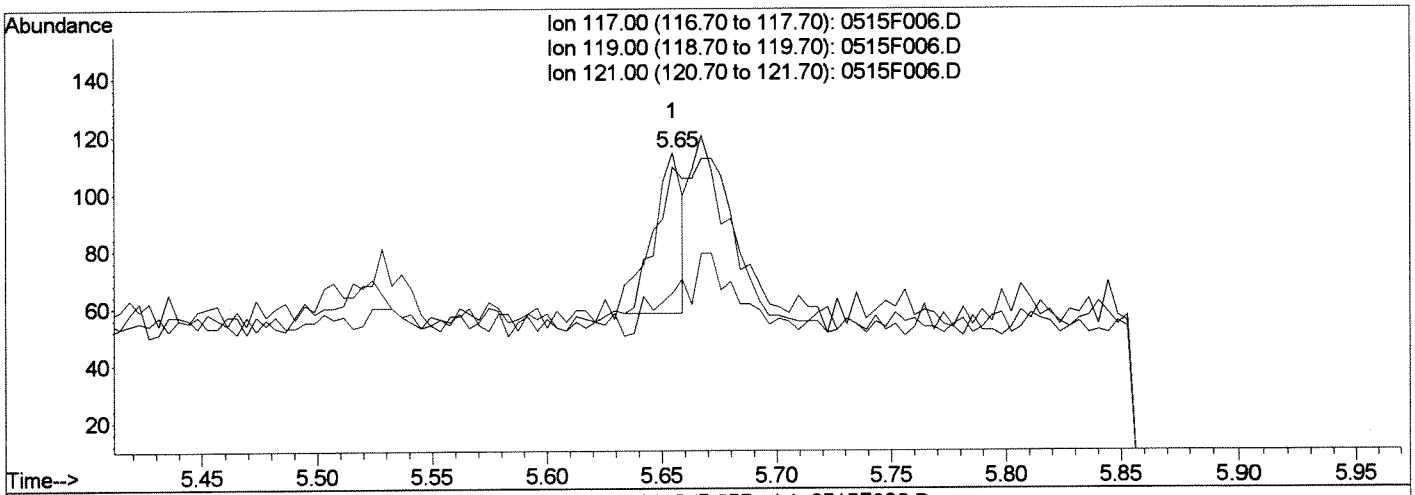
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54000	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	35910	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	14141	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	0.00	98	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	446	14.89	ng/L	98
3) Vinyl Chloride	1.33	62	186	6.44	ng/L	87
6) trans-1,2-Dichloroethene	3.36	96	161	8.91	ng/L #	71
7) cis-1,2-Dichloroethene	4.96	96	127	7.26	ng/L #	71
8) Chloroform	5.39	83	310	8.06	ng/L	96
10) Carbon Tetrachloride	5.67	117	120m	4.80	ng/L	
12) 1,2-Dichloroethane	6.12	62	162	5.99	ng/L #	58
13) Trichloroethene	6.74	95	155	8.99	ng/L	97
14) Bromodichloromethane	7.36	83	146	5.66	ng/L	92
16) 1,1,2-Trichloroethane	8.63	83	95	6.58	ng/L	91
17) Dibromochloromethane	8.98	129	109	6.10	ng/L	76
18) 1,2-Dibromoethane (EDB)	9.10	107	104	7.18	ng/L	95
20) Toluene	8.12	92	263	9.18	ng/L	94
21) Ethylbenzene	9.66	106	110	7.77	ng/L #	94
22) 1,1,1,2-Tetrachloroethane	9.67	131	117	6.29	ng/L #	74
23) m,p-Xylenes	9.77	106	277	16.61	ng/L #	81
24) o-Xylene	10.18	106	235	13.81	ng/L	90
26) 1,1,2,2-Tetrachloroethane	10.93	83	127	7.26	ng/L	95
28) Tetrachloroethene	8.63	164	130m	9.35	ng/L	
30) 1,4-Dichlorobenzene	11.90	146	273	10.90	ng/L	89

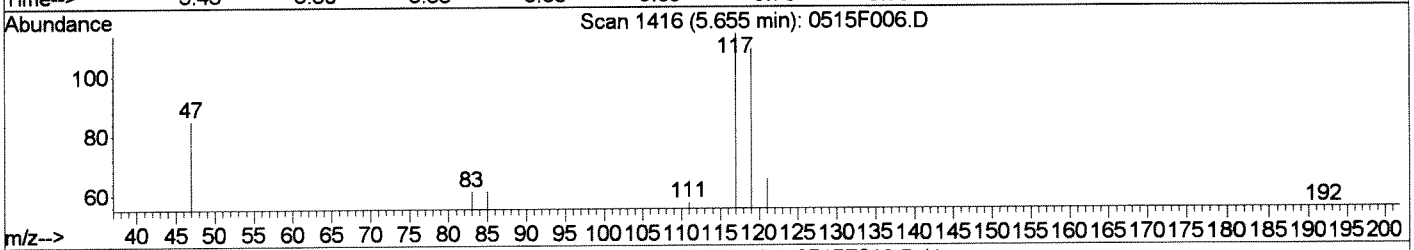
5/16/17

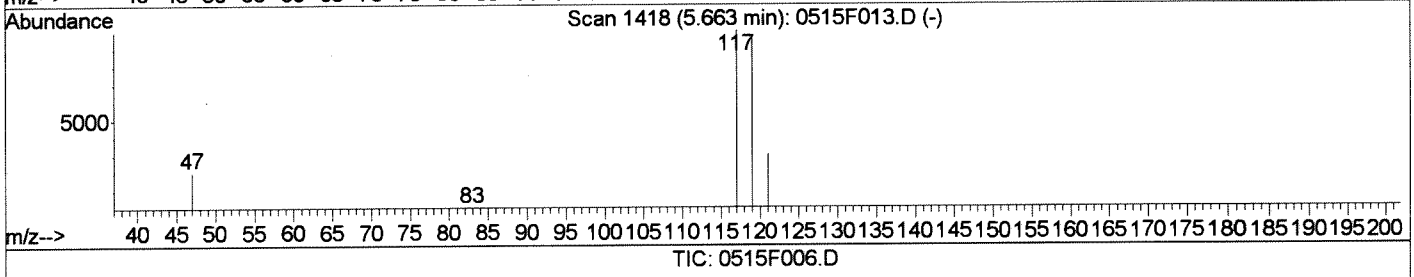
(#) = qualifier out of range (m) = manual integration
0515F006.D 051517MS30_8260SIM.M Tue May 16 11:28:37 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:25 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(10) Carbon Tetrachloride (T)

5.65min 1.88ng/L

response 47

Ion	Exp%	Act%
117.00	100	100
119.00	95.90	73.21
121.00	30.30	26.79
0.00	0.00	0.00

Manual Integration:

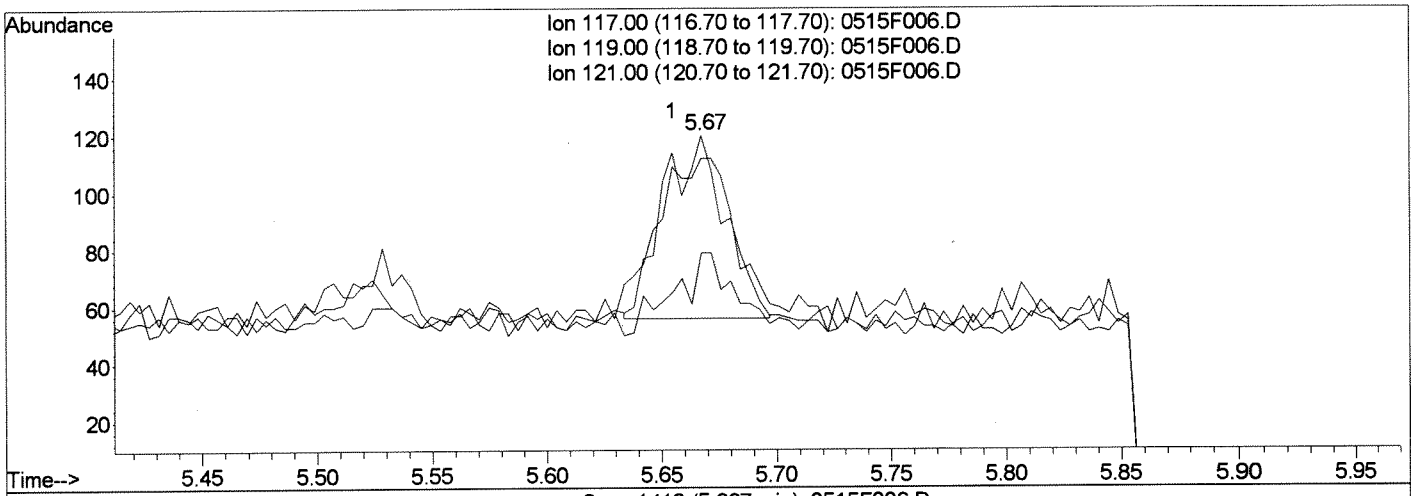
Before

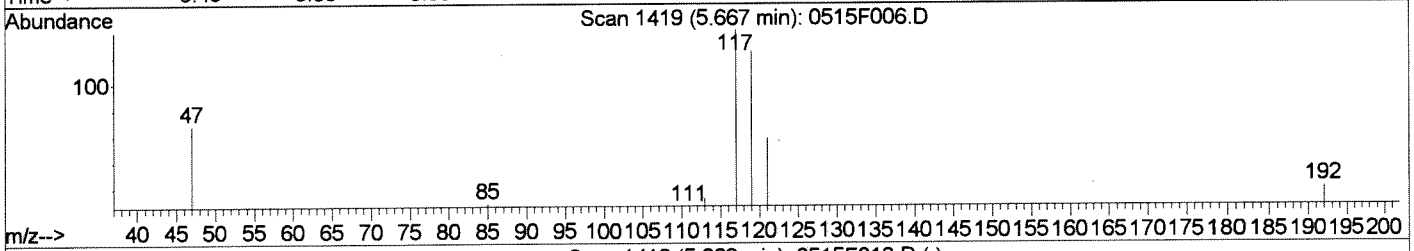
05/16/17

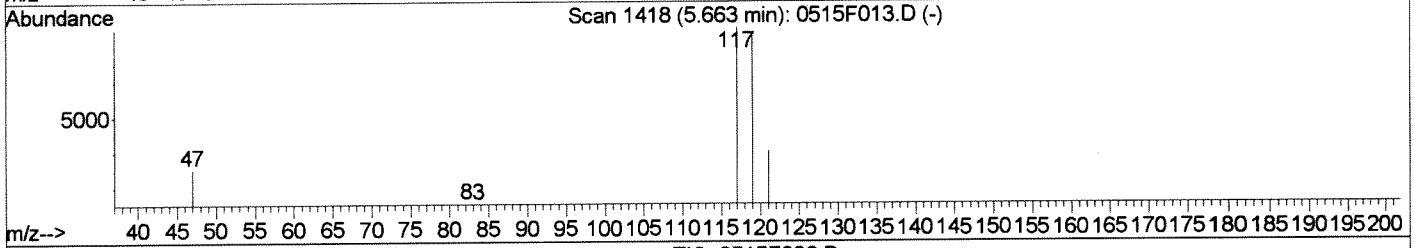
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:25:51 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:25 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(10) Carbon Tetrachloride (T)

5.67min 4.80ng/L m

response 120

Ion	Exp%	Act%
117.00	100	100
119.00	95.90	93.33
121.00	30.30	65.83#
0.00	0.00	0.00

Manual Integration:

After

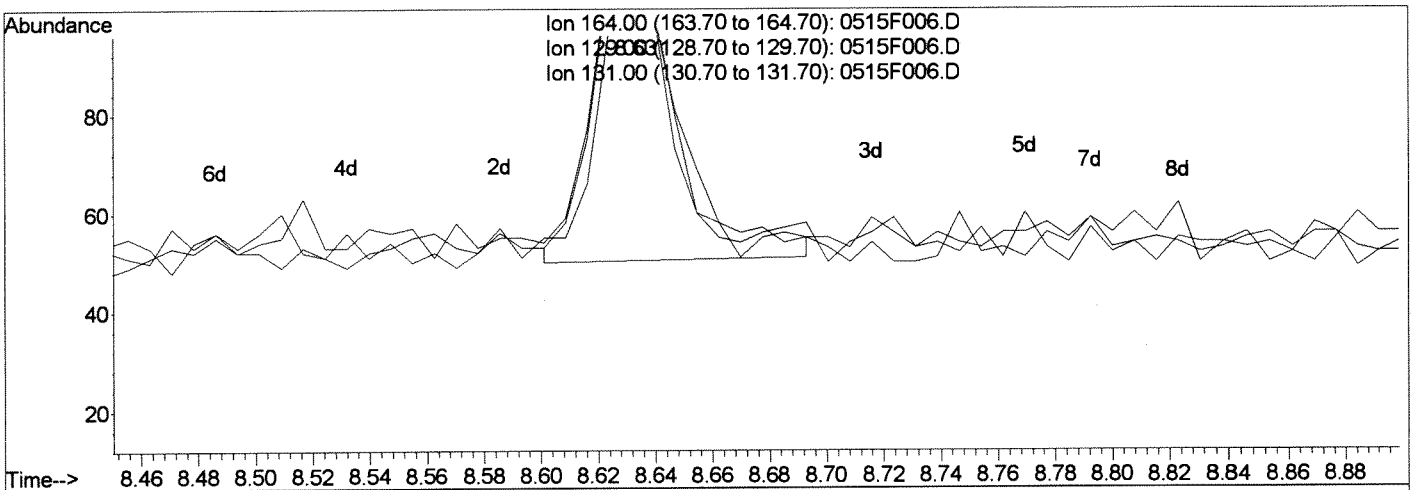
Split peak

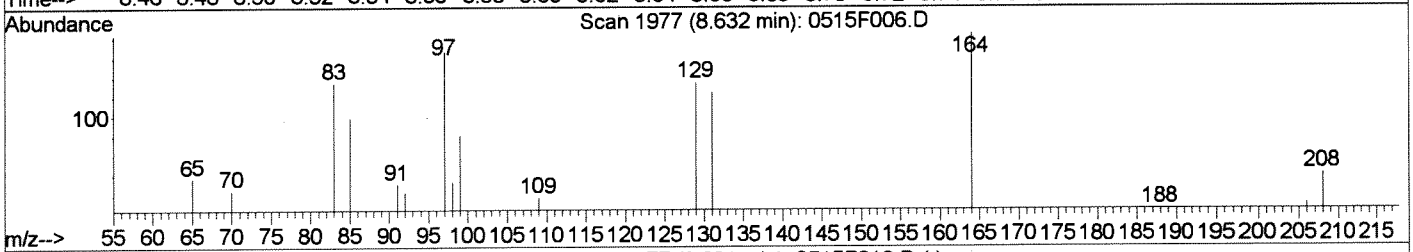
05/16/17

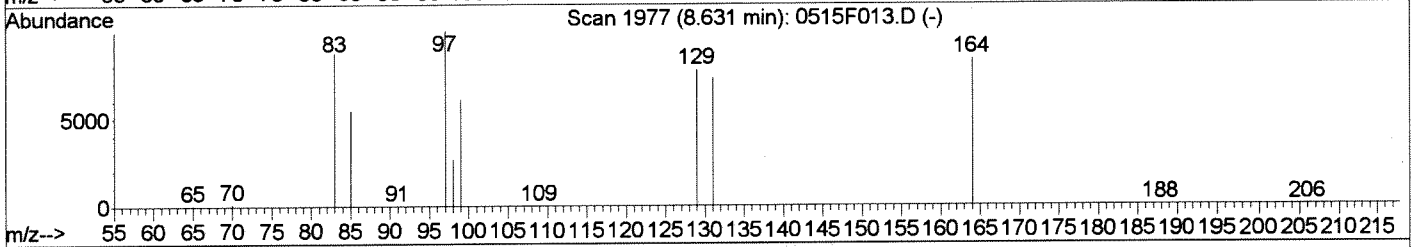
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:25:59 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:26 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(28) Tetrachloroethene (T)

8.63min 10.43ng/L

response 145

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	69.66
131.00	87.40	65.17
0.00	0.00	0.00

Manual Integration:

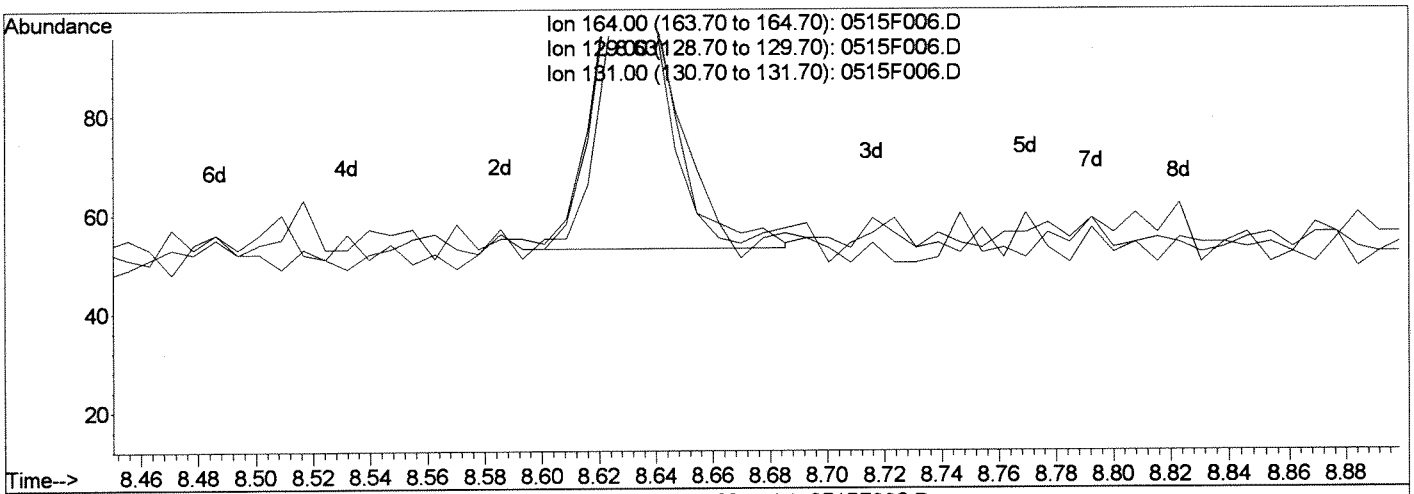
Before

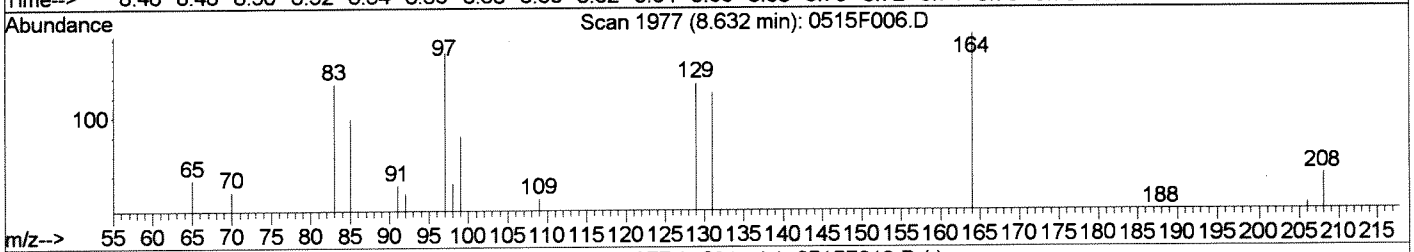
05/16/17

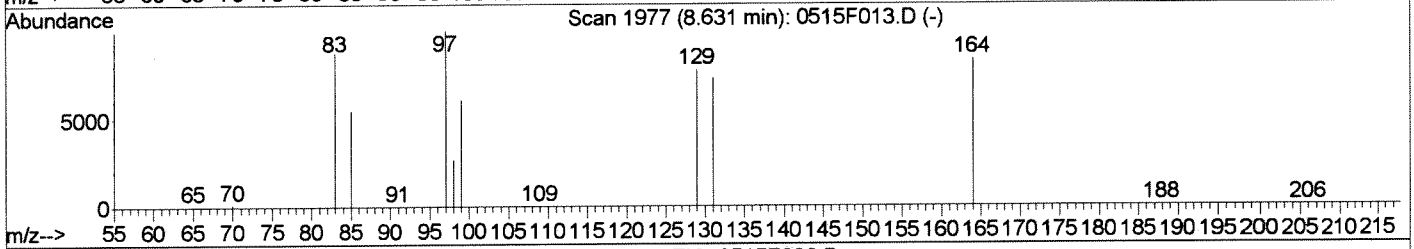
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:26:59 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:27 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(28) Tetrachloroethene (T)

8.63min 9.35ng/L m

response 130

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	82.39
131.00	87.40	78.87
0.00	0.00	0.00

Manual Integration:

After

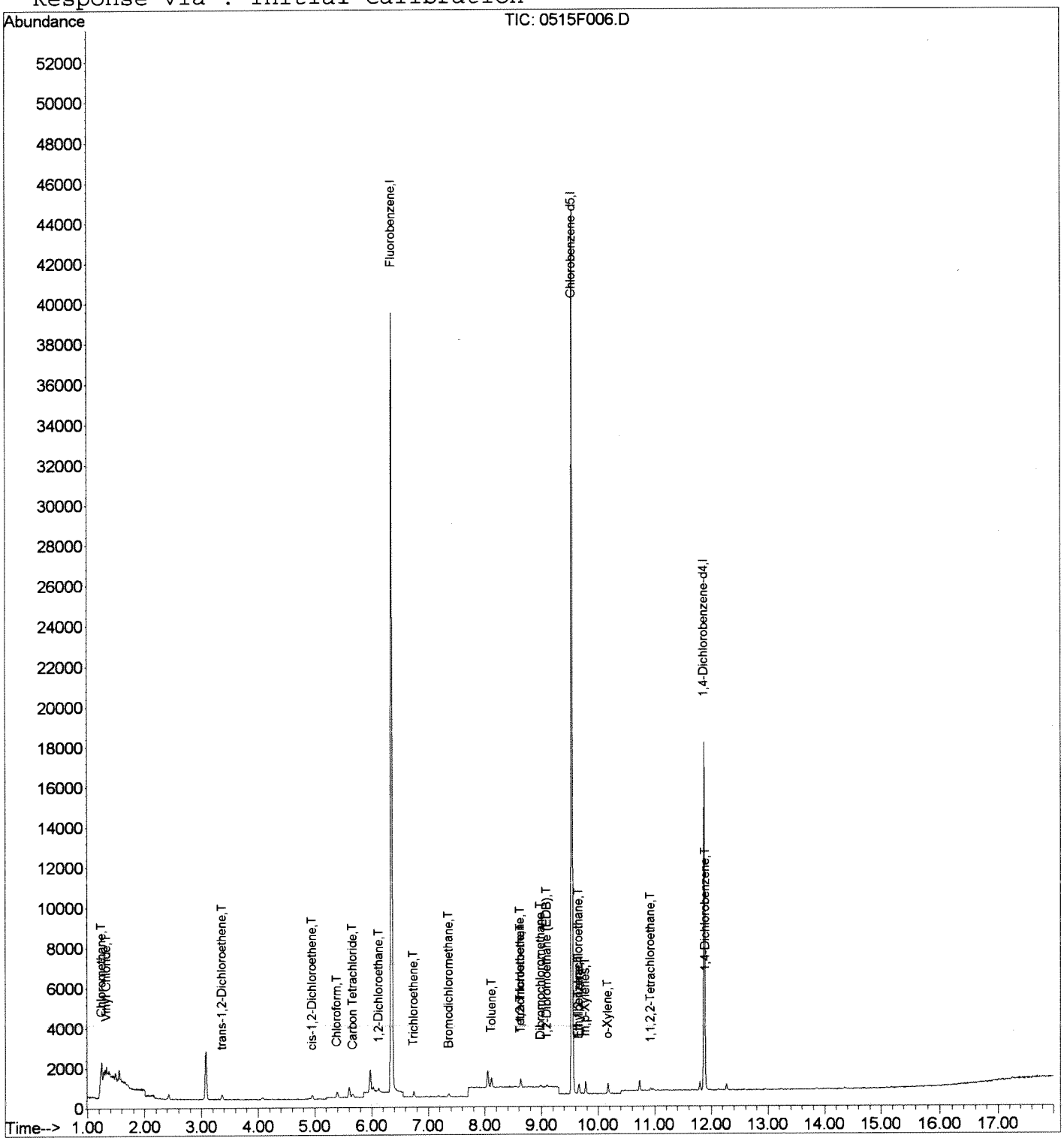
Baseline correction

05/16/17

0515F006.D 051517MS30_8260SIM.M Tue May 16 08:27:11 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:27 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F007.D Vial: 7
Acq On : 15 May 2017 06:04 pm Operator: GH
Sample : SIM ICAL 10 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:22 2017 Quant Results File: 051517MS30_8260

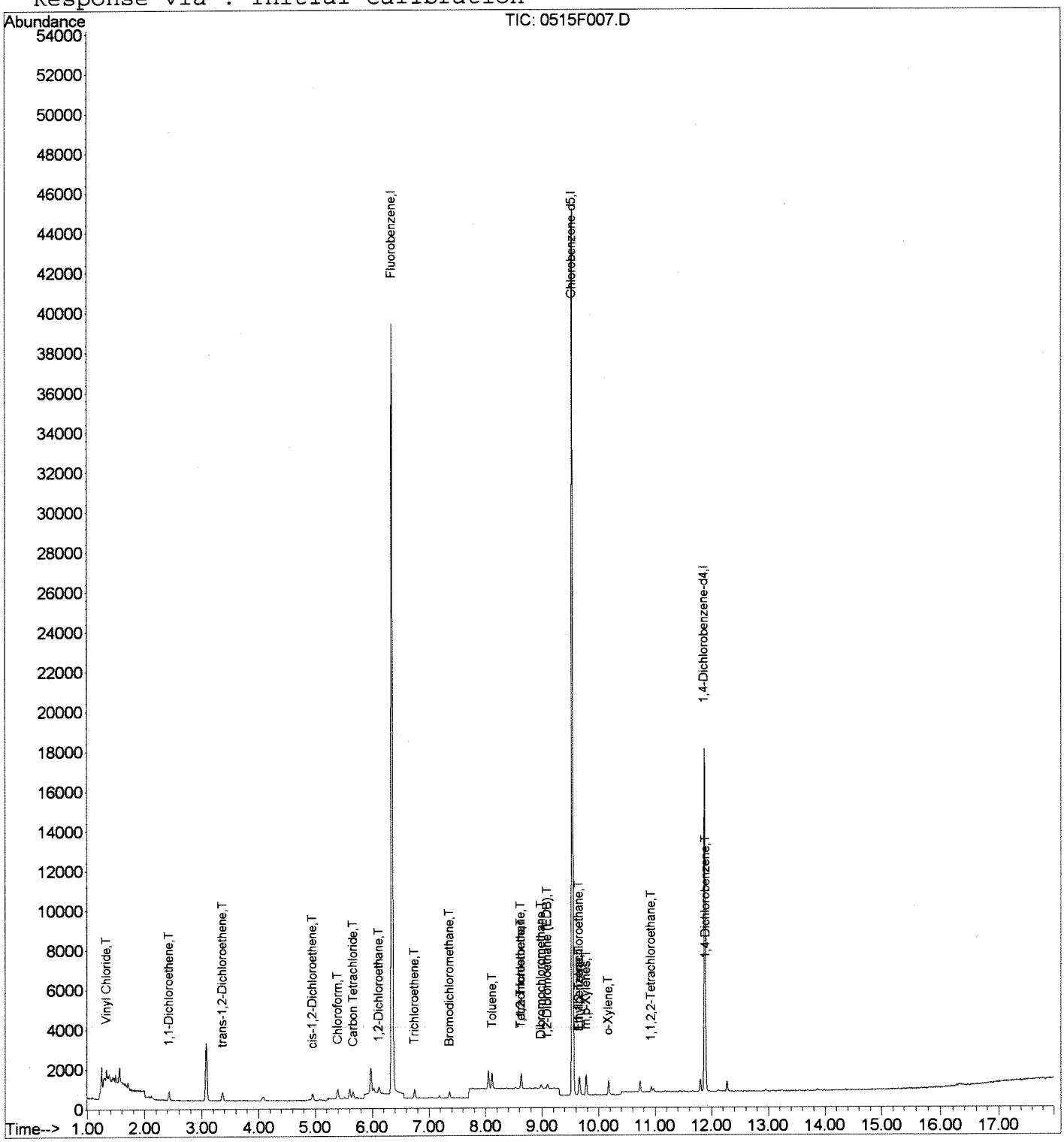
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	53866	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	36149	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14427	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L		
Spiked Amount 1000.000			Recovery =	0.00%			
15) Toluene-d8	0.00	98	0d	0.00	ng/L		
Spiked Amount 1000.000			Recovery =	0.00%			
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L		
Spiked Amount 1000.000			Recovery =	0.00%			
Target Compounds							Qvalue
3) Vinyl Chloride	1.33	62	358	12.43	ng/L		89
4) 1,1-Dichloroethene	2.42	96	185	11.76	ng/L		96
6) trans-1,2-Dichloroethene	3.36	96	249	13.82	ng/L		92
7) cis-1,2-Dichloroethene	4.96	96	196	11.24	ng/L		93
8) Chloroform	5.40	83	527	13.74	ng/L		90
10) Carbon Tetrachloride	5.66	117	285	11.42	ng/L		90
12) 1,2-Dichloroethane	6.12	62	337	12.49	ng/L		95
13) Trichloroethene	6.74	95	239	13.90	ng/L		90
14) Bromodichloromethane	7.36	83	299	11.62	ng/L		94
16) 1,1,2-Trichloroethane	8.63	83	186	12.91	ng/L		92
17) Dibromochloromethane	8.98	129	209	11.73	ng/L		96
18) 1,2-Dibromoethane (EDB)	9.10	107	183	12.67	ng/L		95
20) Toluene	8.11	92	446	15.47	ng/L		88
21) Ethylbenzene	9.65	106	175	12.27	ng/L		96
22) 1,1,1,2-Tetrachloroethane	9.67	131	239	12.77	ng/L		97
23) m,p-Xylenes	9.78	106	466	27.76	ng/L		98
24) o-Xylene	10.18	106	353	20.60	ng/L	#	72
26) 1,1,2,2-Tetrachloroethane	10.93	83	198	11.25	ng/L		94
28) Tetrachloroethene	8.63	164	212	15.14	ng/L		94
30) 1,4-Dichlorobenzene	11.90	146	408	15.96	ng/L		99

(#) = qualifier out of range (m) = manual integration
0515F007.D 051517MS30_8260SIM.M Tue May 16 11:28:38 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F007.D Vial: 7
Acq On : 15 May 2017 06:04 pm Operator: GH
Sample : SIM ICAL 10 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:29 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F008.D Vial: 8
Acq On : 15 May 2017 06:32 pm Operator: GH
Sample : SIM ICAL 20 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:23 2017 Quant Results File: 051517MS30_8260

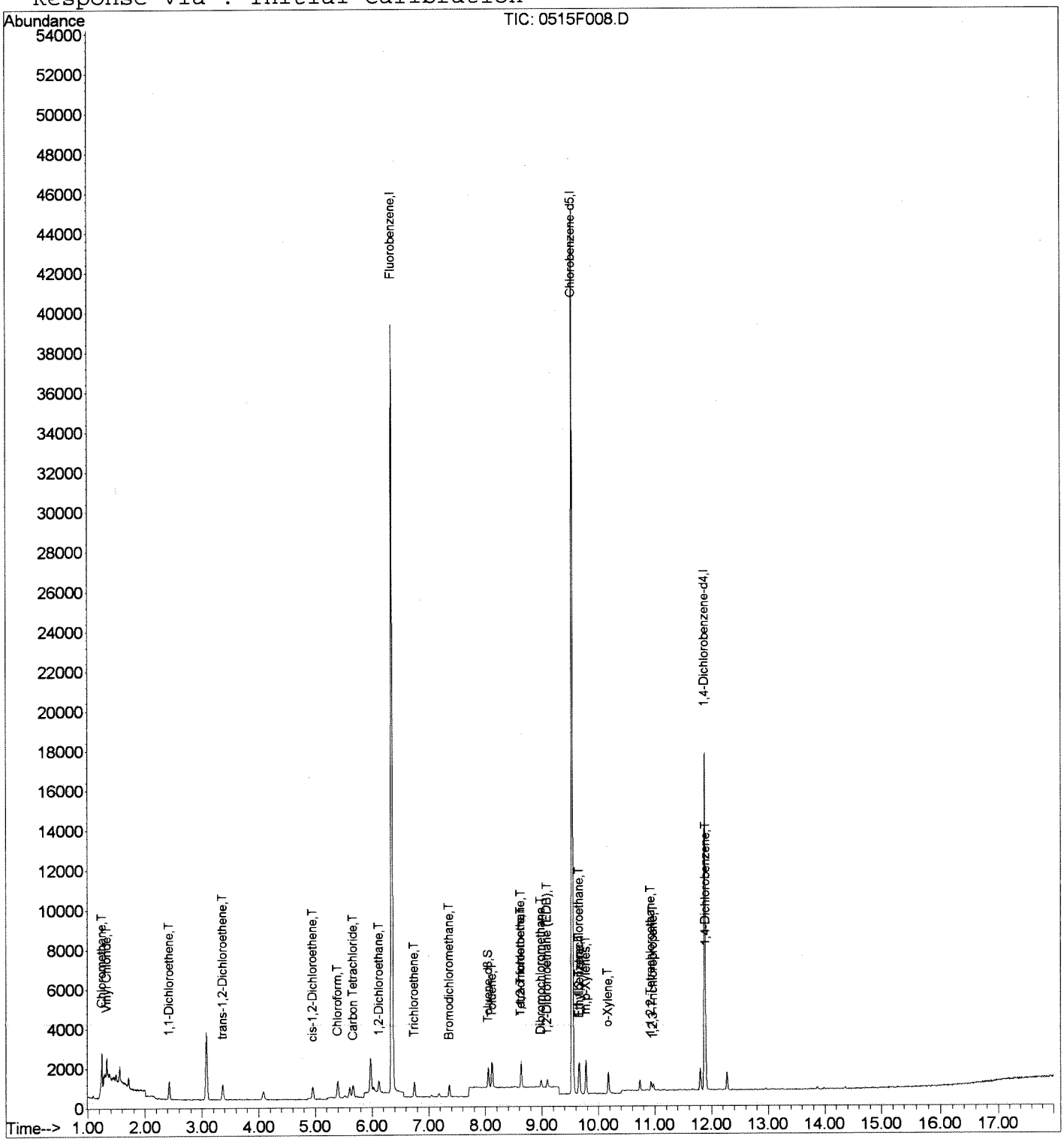
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53288	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36181	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14310	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	8.05	98	1174	28.38	ng/L	0.00
Spiked Amount 1000.000			Recovery =	2.84%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	977	33.05	ng/L	96
3) Vinyl Chloride	1.33	62	650	22.82	ng/L	98
4) 1,1-Dichloroethene	2.43	96	390	25.07	ng/L	93
6) trans-1,2-Dichloroethene	3.36	96	463	25.97	ng/L	88
7) cis-1,2-Dichloroethene	4.95	96	403	23.36	ng/L	91
8) Chloroform	5.40	83	886	23.34	ng/L	98
10) Carbon Tetrachloride	5.66	117	526	21.31	ng/L	98
12) 1,2-Dichloroethane	6.12	62	602	22.55	ng/L	93
13) Trichloroethene	6.74	95	436	25.63	ng/L	91
14) Bromodichloromethane	7.36	83	552	21.68	ng/L	97
16) 1,1,2-Trichloroethane	8.63	83	336	23.58	ng/L	98
17) Dibromochloromethane	8.98	129	400	22.70	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.09	107	303	21.20	ng/L	94
20) Toluene	8.12	92	767	26.58	ng/L	96
21) Ethylbenzene	9.66	106	301	21.09	ng/L #	82
22) 1,1,1,2-Tetrachloroethane	9.67	131	452	24.12	ng/L	96
23) m,p-Xylenes	9.78	106	761	45.29	ng/L	99
24) o-Xylene	10.18	106	462	26.94	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	335	19.01	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	140	26.54	ng/L #	82
28) Tetrachloroethene	8.63	164	350	24.98	ng/L	90
30) 1,4-Dichlorobenzene	11.90	146	605	23.87	ng/L	96

(#) = qualifier out of range (m) = manual integration
0515F008.D 051517MS30_8260SIM.M Tue May 16 11:28:39 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F008.D Vial: 8
Acq On : 15 May 2017 06:32 pm Operator: GH
Sample : SIM ICAL 20 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:31 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F009.D Vial: 9
Acq On : 15 May 2017 06:59 pm Operator: GH
Sample : SIM ICAL 50 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:23 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53815	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36068	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14684	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	4998	257.68	ng/L	0.00
Spiked Amount 1000.000			Recovery =	25.77%		
15) Toluene-d8	8.05	98	9805	234.71	ng/L	0.00
Spiked Amount 1000.000			Recovery =	23.47%		
25) 4-Bromofluorobenzene	10.73	95	3404	229.62	ng/L	0.00
Spiked Amount 1000.000			Recovery =	22.96%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	2004	67.13	ng/L	94
3) Vinyl Chloride	1.33	62	1672	58.12	ng/L	90
4) 1,1-Dichloroethene	2.42	96	947	60.27	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	1083	60.16	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	966	55.45	ng/L	97
8) Chloroform	5.39	83	2192	57.19	ng/L	96
10) Carbon Tetrachloride	5.66	117	1354	54.31	ng/L	94
11) Benzene	5.97	78	4799	70.29	ng/L	97
12) 1,2-Dichloroethane	6.12	62	1452	53.86	ng/L	99
13) Trichloroethene	6.75	95	1007	58.62	ng/L	95
14) Bromodichloromethane	7.36	83	1369	53.24	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	776	53.92	ng/L	97
17) Dibromochloromethane	8.98	129	929	52.20	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.09	107	754	52.25	ng/L	94
20) Toluene	8.11	92	1648	57.29	ng/L	97
21) Ethylbenzene	9.65	106	753	52.92	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	1079	57.77	ng/L	97
23) m,p-Xylenes	9.78	106	1770	105.66	ng/L	94
24) o-Xylene	10.18	106	995	58.21	ng/L	97
26) 1,1,2,2-Tetrachloroethane	10.93	83	897	51.06	ng/L	93
27) 1,2,3-Trichloropropane	10.97	110	274	52.10	ng/L #	87
28) Tetrachloroethene	8.63	164	804	57.56	ng/L	95
30) 1,4-Dichlorobenzene	11.90	146	1400	53.82	ng/L	96

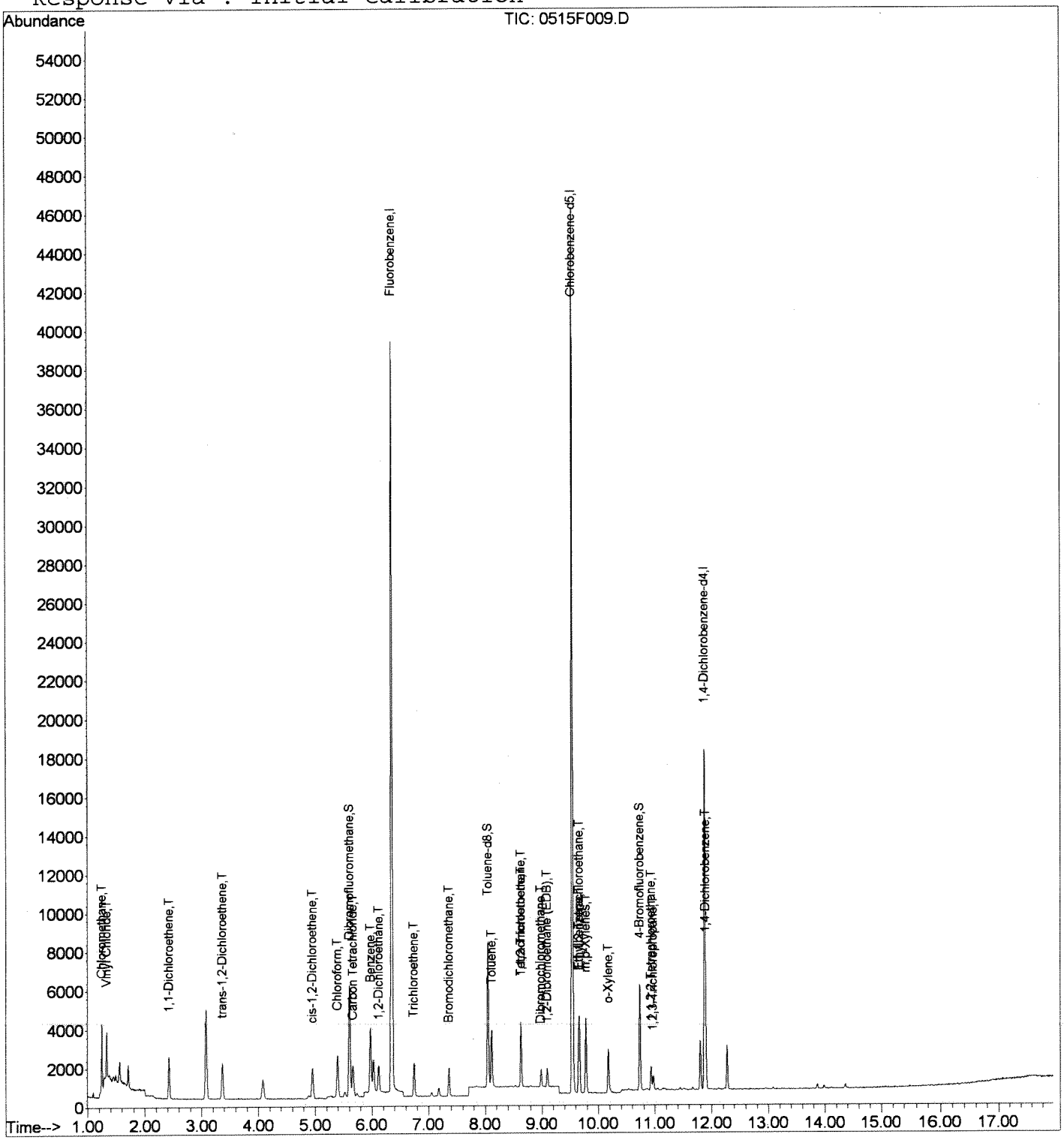
(#) = qualifier out of range (m) = manual integration
0515F009.D 051517MS30_8260SIM.M Tue May 16 11:28:40 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F009.D
Acq On : 15 May 2017 06:59 pm
Sample : SIM ICAL 50 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:31 2017

Vial: 9
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F010.D Vial: 10
Acq On : 15 May 2017 07:27 pm Operator: GH
Sample : SIM ICAL 100 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53624m	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	34959	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13492	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	8434	436.38	ng/L	0.00
Spiked Amount 1000.000			Recovery =	43.64%		
15) Toluene-d8	8.05	98	16399	393.96	ng/L	0.00
Spiked Amount 1000.000			Recovery =	39.40%		
25) 4-Bromofluorobenzene	10.73	95	5475	381.03	ng/L	0.00
Spiked Amount 1000.000			Recovery =	38.10%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	3551	119.38	ng/L	98
3) Vinyl Chloride	1.33	62	3238	112.96	ng/L	98
4) 1,1-Dichloroethene	2.42	96	1813	115.80	ng/L	98
5) Methylene Chloride	3.08	84	4275	176.20	ng/L	97
6) trans-1,2-Dichloroethene	3.37	96	2044	113.95	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	1845	106.28	ng/L	98
8) Chloroform	5.39	83	4147	108.58	ng/L	100
10) Carbon Tetrachloride	5.67	117	2769	111.46	ng/L	99
11) Benzene	5.97	78	8321	122.30	ng/L	97
12) 1,2-Dichloroethane	6.12	62	2775	103.31	ng/L	97
13) Trichloroethene	6.75	95	1894	110.64	ng/L	96
14) Bromodichloromethane	7.36	83	2647	103.31	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	1538	107.25	ng/L	95
17) Dibromochloromethane	8.98	129	1771	99.87	ng/L	98
18) 1,2-Dibromoethane (EDB)	9.09	107	1410	98.05	ng/L	96
20) Toluene	8.12	92	3154	113.13	ng/L	98
21) Ethylbenzene	9.65	106	1486	107.75	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	1951	107.76	ng/L	94
23) m,p-Xylenes	9.78	106	3341	205.77	ng/L	99
24) o-Xylene	10.18	106	1737	104.84	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	1751	102.84	ng/L	98
27) 1,2,3-Trichloropropane	10.98	110	507	99.47	ng/L #	84
28) Tetrachloroethene	8.63	164	1642	121.27	ng/L	95
30) 1,4-Dichlorobenzene	11.90	146	2594	108.53	ng/L	97

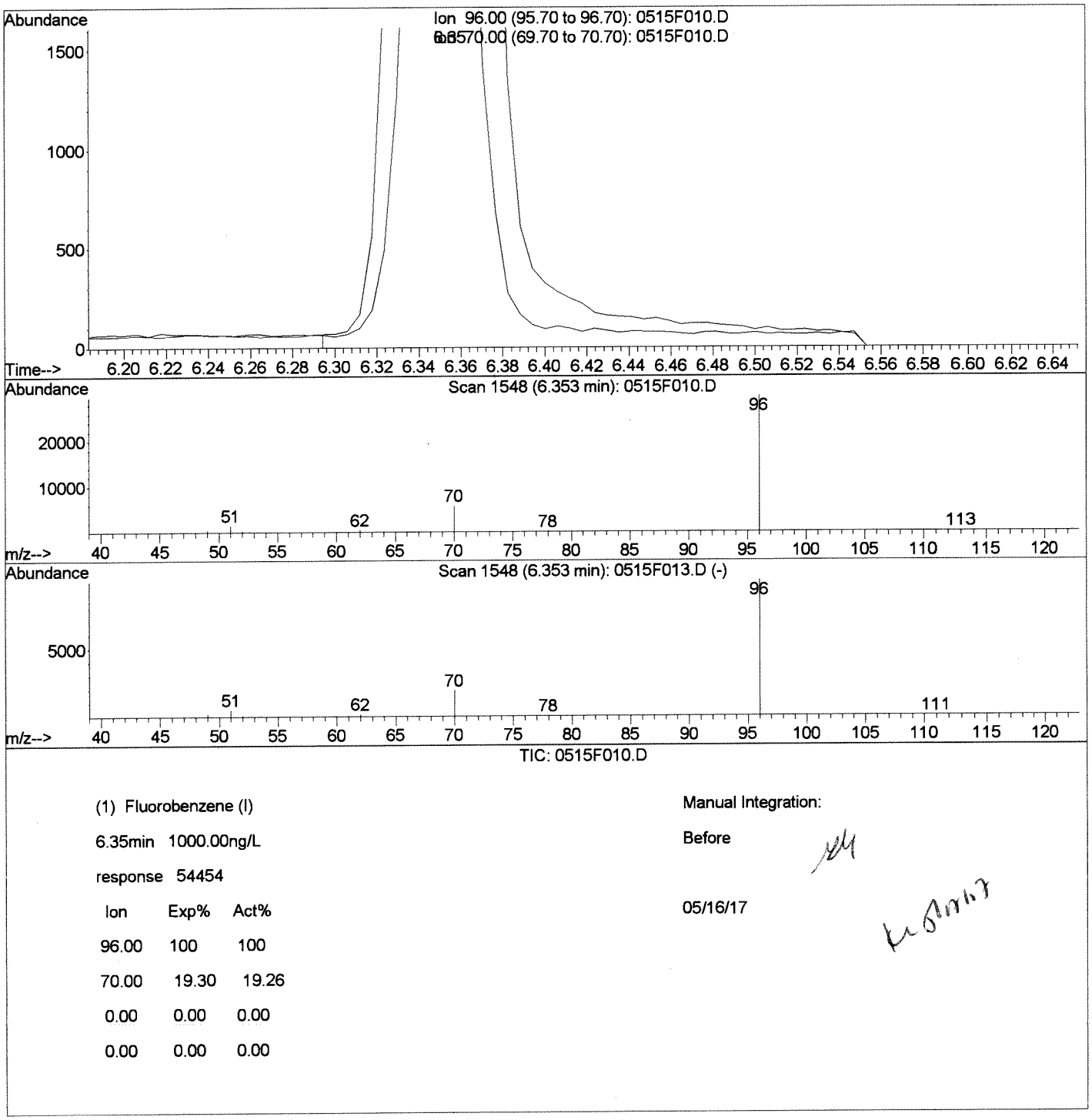
(#) = qualifier out of range (m) = manual integration
0515F010.D 051517MS30_8260SIM.M Tue May 16 11:28:40 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F010.D
Acq On : 15 May 2017 07:27 pm
Sample : SIM ICAL 100 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017

Vial: 10
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration



TIC: 0515F010.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L

response 54454

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.26
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

Before

05/16/17

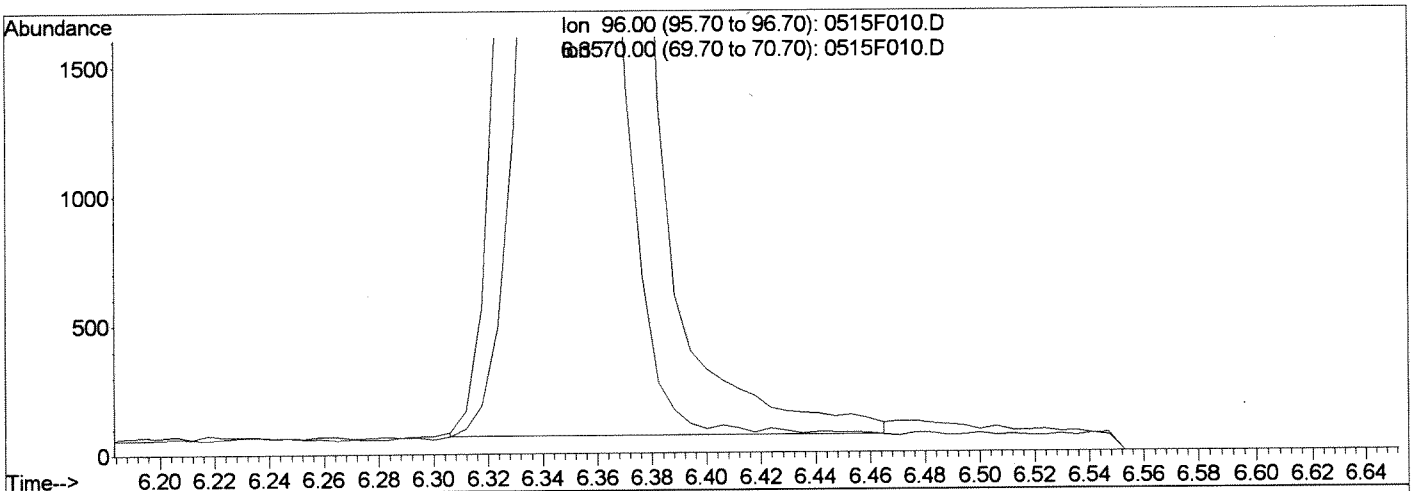
0515F010.D 051517MS30_8260SIM.M Tue May 16 08:32:32 2017

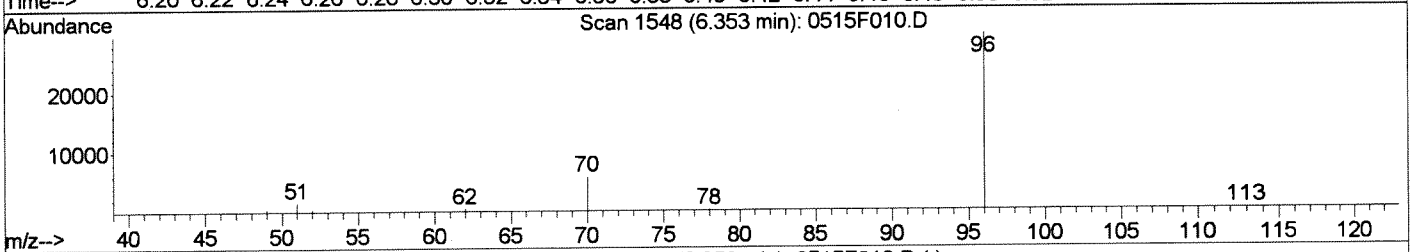
Data File : J:\MS30\DATA\051517_SIM\0515F010.D
Acq On : 15 May 2017 07:27 pm
Sample : SIM ICAL 100 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:32 2017

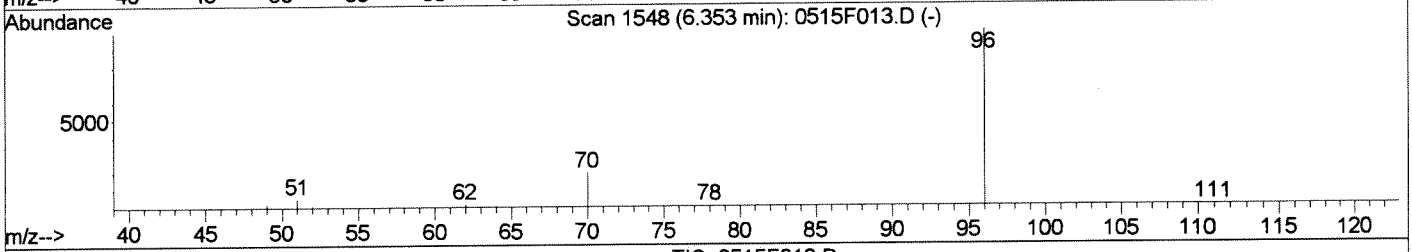
Vial: 10
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F010.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L m

response 53624

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.26
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

After

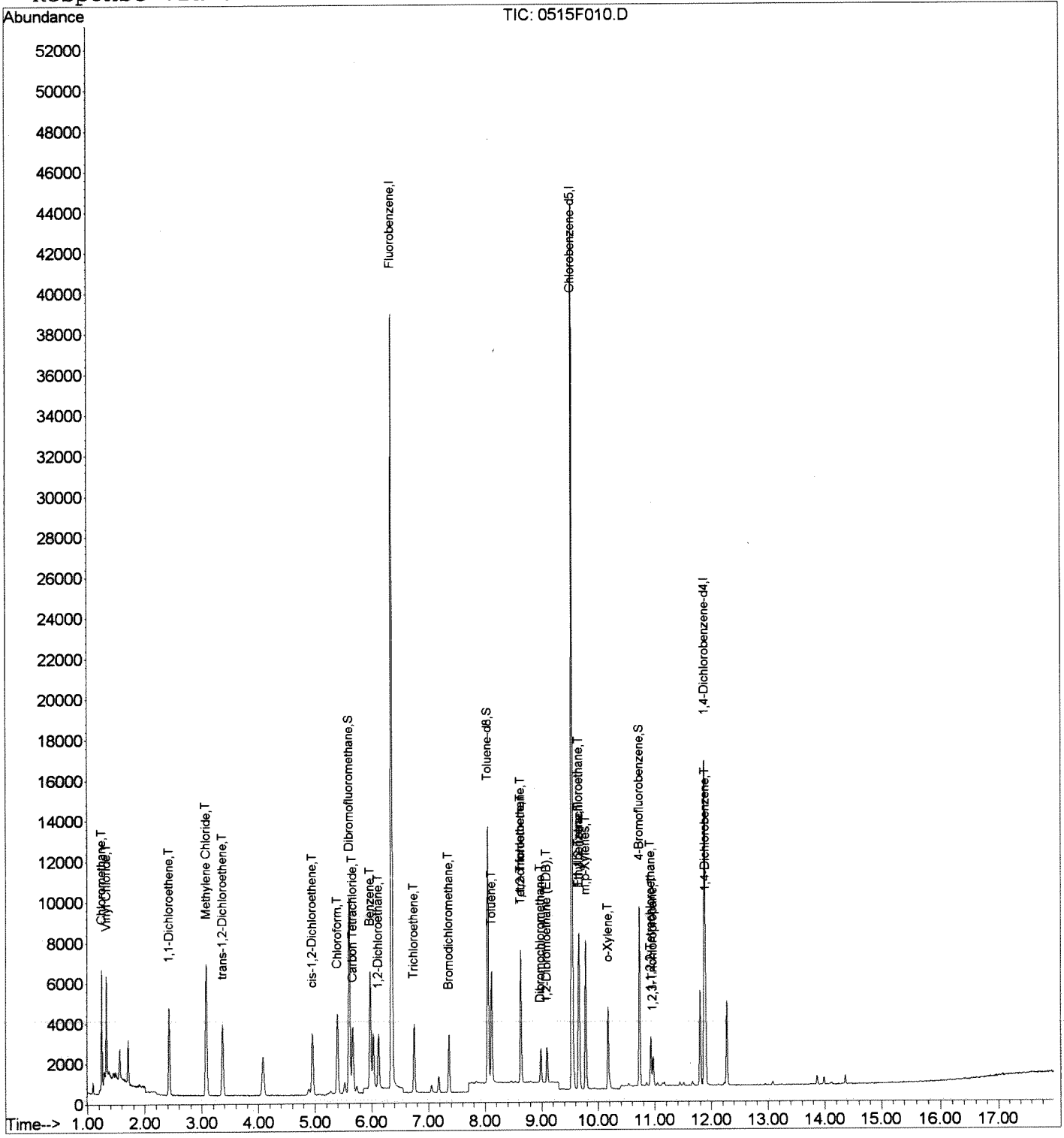
Baseline correction

05/16/17

0515F010.D 051517MS30_8260SIM.M Tue May 16 08:32:42 2017

Data File : J:\MS30\DATA\051517_SIM\0515F010.D Vial: 10
Acq On : 15 May 2017 07:27 pm Operator: GH
Sample : SIM ICAL 100 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:32 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F011.D Vial: 11
Acq On : 15 May 2017 07:54 pm Operator: GH
Sample : SIM ICAL 500 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

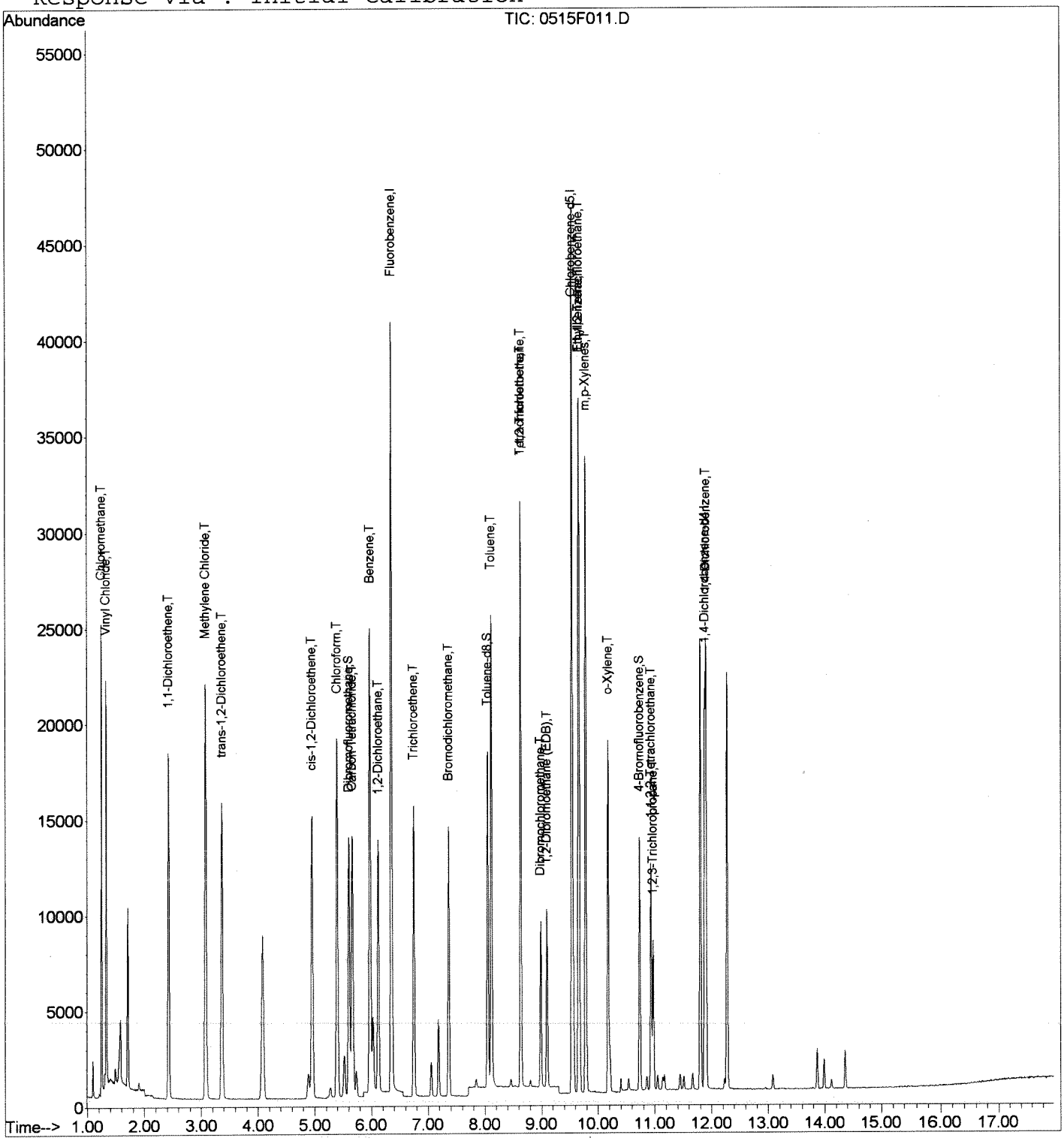
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55534	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37036	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	15685	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	11936	596.34	ng/L	0.00
Spiked Amount 1000.000			Recovery =	59.63%		
15) Toluene-d8	8.05	98	22426	520.22	ng/L	0.00
Spiked Amount 1000.000			Recovery =	52.02%		
25) 4-Bromofluorobenzene	10.73	95	8171	536.77	ng/L	0.00
Spiked Amount 1000.000			Recovery =	53.68%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	14515	471.20	ng/L	99
3) Vinyl Chloride	1.33	62	13266	446.89	ng/L	100
4) 1,1-Dichloroethene	2.42	96	7430	458.26	ng/L	98
5) Methylene Chloride	3.08	84	14375	572.10	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	8815	474.51	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	8819	490.54	ng/L	99
8) Chloroform	5.39	83	19444	491.59	ng/L	98
10) Carbon Tetrachloride	5.66	117	11582	450.16	ng/L	99
11) Benzene	5.97	78	34178	485.07	ng/L	99
12) 1,2-Dichloroethane	6.12	62	14038	504.63	ng/L	99
13) Trichloroethene	6.75	95	8395	473.54	ng/L	99
14) Bromodichloromethane	7.36	83	13224	498.39	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	7423	499.84	ng/L	97
17) Dibromochloromethane	8.98	129	9057	493.17	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	7132	478.92	ng/L	98
20) Toluene	8.12	92	13706	464.03	ng/L	99
21) Ethylbenzene	9.65	106	6617	452.91	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	9684	504.90	ng/L	97
23) m,p-Xylenes	9.78	106	15240	885.99	ng/L	97
24) o-Xylene	10.18	106	7801	444.44	ng/L	99
26) 1,1,2,2-Tetrachloroethane	10.93	83	8563	474.73	ng/L	100
27) 1,2,3-Trichloropropane	10.98	110	2468	457.03	ng/L	90
28) Tetrachloroethene	8.63	164	6654	463.88	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	13085	470.93	ng/L	97

KA 5/17/17

(#) = qualifier out of range (m) = manual integration
0515F011.D 051517MS30_8260SIM.M Tue May 16 11:28:41 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F011.D Vial: 11
Acq On : 15 May 2017 07:54 pm Operator: GH
Sample : SIM ICAL 500 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F012.D Vial: 12
Acq On : 15 May 2017 08:22 pm Operator: GH
Sample : SIM ICAL 1000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

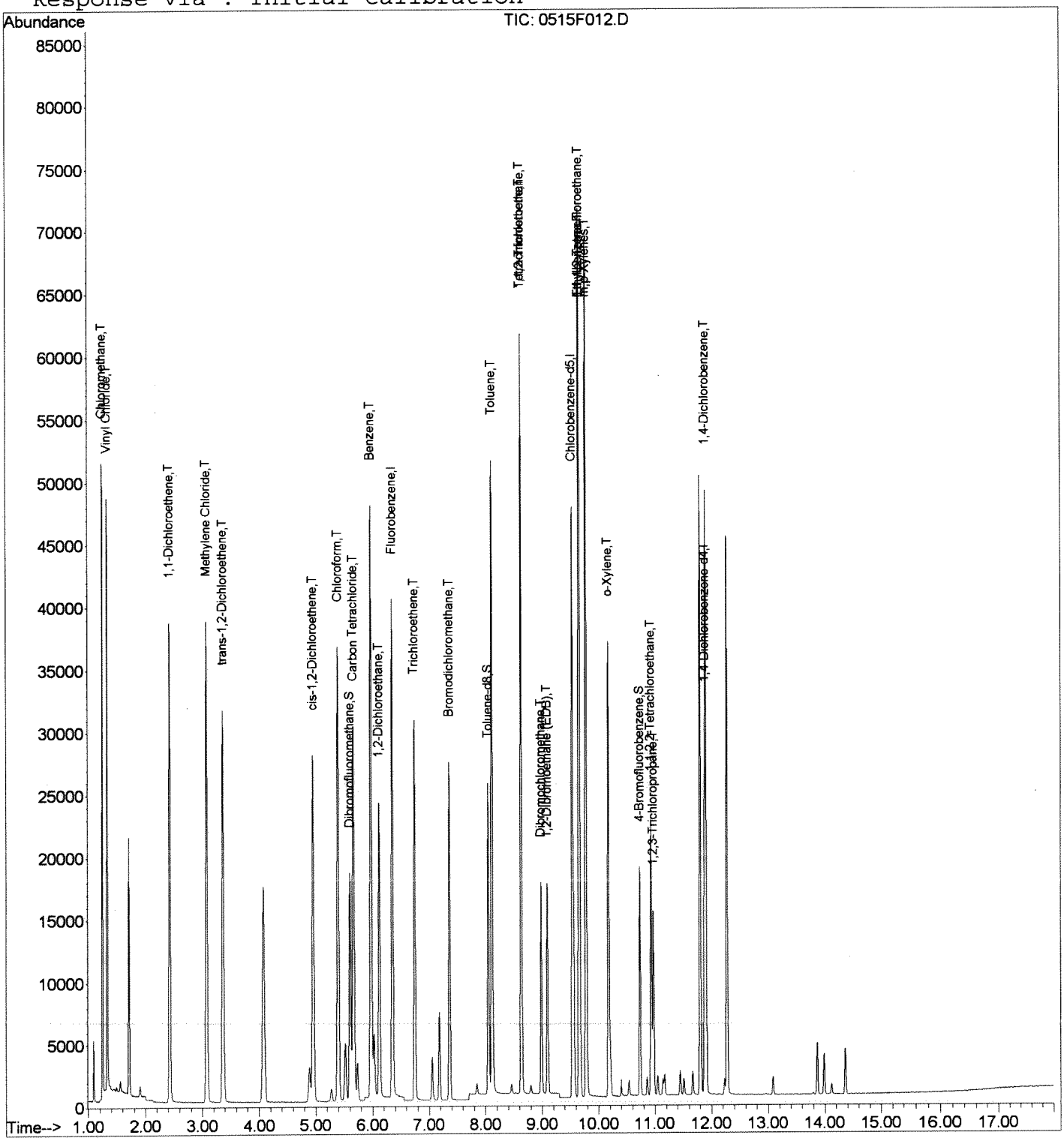
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55597	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37494	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	16911	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	15912	794.08	ng/L	0.00
Spiked Amount 1000.000			Recovery =	79.41%		
15) Toluene-d8	8.05	98	31433	728.33	ng/L	0.00
Spiked Amount 1000.000			Recovery =	72.83%		
25) 4-Bromofluorobenzene	10.73	95	11239	729.29	ng/L	0.00
Spiked Amount 1000.000			Recovery =	72.93%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	30227	980.15	ng/L	100
3) Vinyl Chloride	1.33	62	29539	993.95	ng/L	100
4) 1,1-Dichloroethene	2.43	96	16005	986.02	ng/L	96
5) Methylene Chloride	3.08	84	25180	1000.98	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	18045	970.25	ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	17026	945.97	ng/L	98
8) Chloroform	5.39	83	37861	956.12	ng/L	99
10) Carbon Tetrachloride	5.67	117	25728	998.85	ng/L	99
11) Benzene	5.97	78	66852	947.73	ng/L	99
12) 1,2-Dichloroethane	6.12	62	26005	933.75	ng/L	99
13) Trichloroethene	6.75	95	17240	971.35	ng/L	98
14) Bromodichloromethane	7.36	83	24928	938.43	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	13740	924.16	ng/L	98
17) Dibromochloromethane	8.98	129	16985	923.82	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	13316	893.16	ng/L	99
20) Toluene	8.12	92	28013	936.82	ng/L	99
21) Ethylbenzene	9.65	106	13641	922.27	ng/L	95
22) 1,1,1,2-Tetrachloroethane	9.67	131	18397	947.46	ng/L	100
23) m,p-Xylenes	9.78	106	31387	1802.42	ng/L	99
24) o-Xylene	10.18	106	15806	889.51	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	16171	885.56	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	4805	878.93	ng/L	90
28) Tetrachloroethene	8.63	164	14096	970.70	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	26890	897.61	ng/L	98

(#) = qualifier out of range (m) = manual integration
0515F012.D 051517MS30_8260SIM.M Tue May 16 11:28:42 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F012.D Vial: 12
Acq On : 15 May 2017 08:22 pm Operator: GH
Sample : SIM ICAL 1000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F013.D Vial: 13
Acq On : 15 May 2017 08:49 pm Operator: GH
Sample : SIM ICAL 2000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

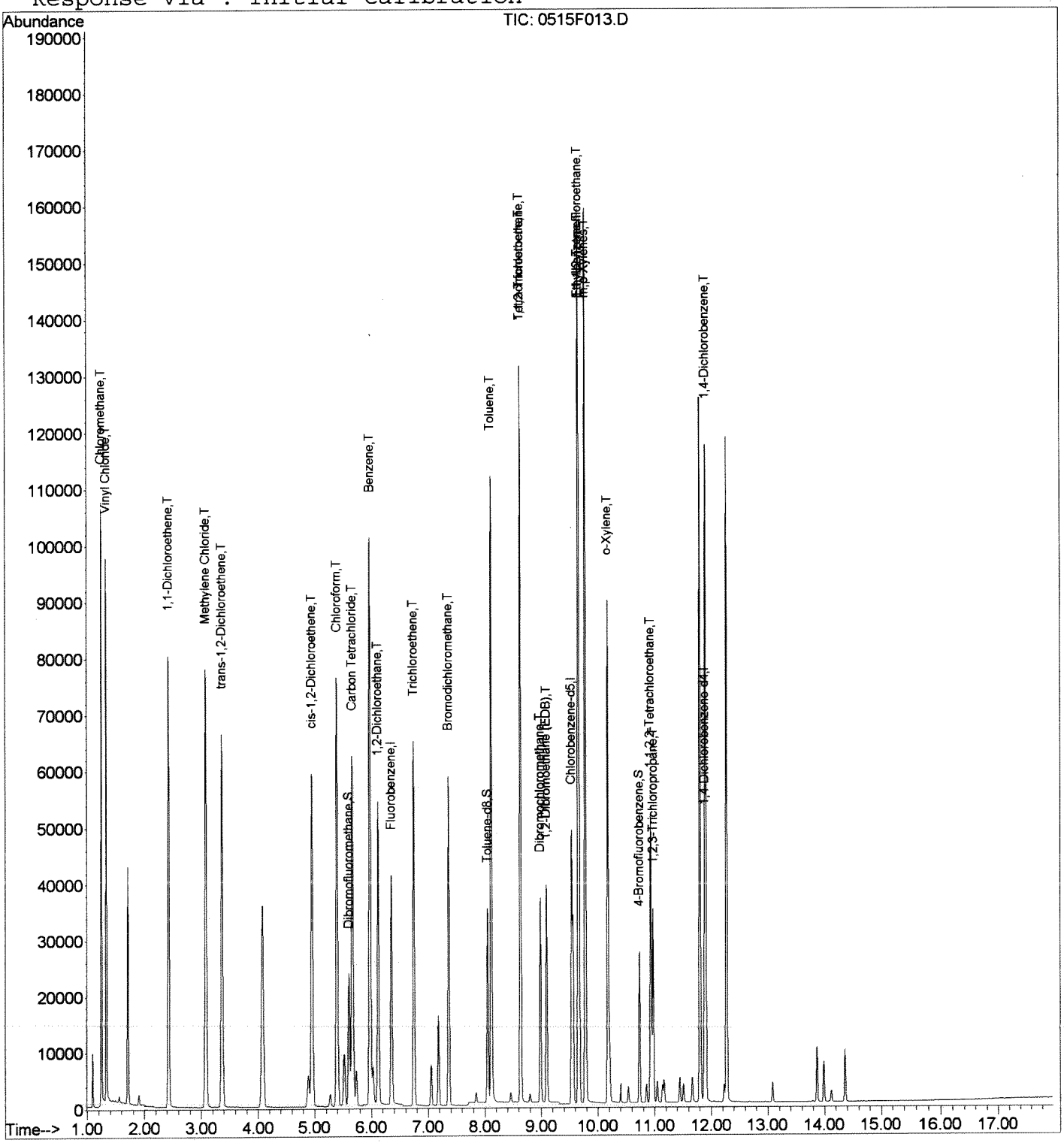
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	56584	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	38599	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	19339	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20394	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
15) Toluene-d8	8.05	98	43924	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
25) 4-Bromofluorobenzene	10.73	95	15865	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	62773	2000.00	ng/L	100
3) Vinyl Chloride	1.33	62	60493	2000.00	ng/L	100
4) 1,1-Dichloroethene	2.43	96	33040	2000.00	ng/L	100
5) Methylene Chloride	3.08	84	51204	2000.00	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	37857	2000.00	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	36636	2000.00	ng/L	100
8) Chloroform	5.39	83	80603	2000.00	ng/L	100
10) Carbon Tetrachloride	5.66	117	52430	2000.00	ng/L	100
11) Benzene	5.98	78	143583	2000.00	ng/L	100
12) 1,2-Dichloroethane	6.12	62	56689	2000.00	ng/L	100
13) Trichloroethene	6.75	95	36127	2000.00	ng/L	100
14) Bromodichloromethane	7.36	83	54070	2000.00	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	30263	2000.00	ng/L	100
17) Dibromochloromethane	8.98	129	37424	2000.00	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	30347	2000.00	ng/L	100
20) Toluene	8.12	92	61567	2000.00	ng/L	100
21) Ethylbenzene	9.66	106	30453	2000.00	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	39979	2000.00	ng/L	100
23) m,p-Xylenes	9.78	106	71708	4000.00	ng/L	100
24) o-Xylene	10.17	106	36586	2000.00	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	37598	2000.00	ng/L	100
27) 1,2,3-Trichloropropane	10.97	110	11256	2000.00	ng/L	100
28) Tetrachloroethene	8.63	164	29899	2000.00	ng/L	100
30) 1,4-Dichlorobenzene	11.90	146	68517	2000.00	ng/L	100

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F013.D 051517MS30_8260SIM.M Tue May 16 11:28:42 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F013.D Vial: 13
Acq On : 15 May 2017 08:49 pm Operator: GH
Sample : SIM ICAL 2000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F014.D Vial: 14
Acq On : 15 May 2017 09:16 pm Operator: GH
Sample : SIM ICAL 5000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

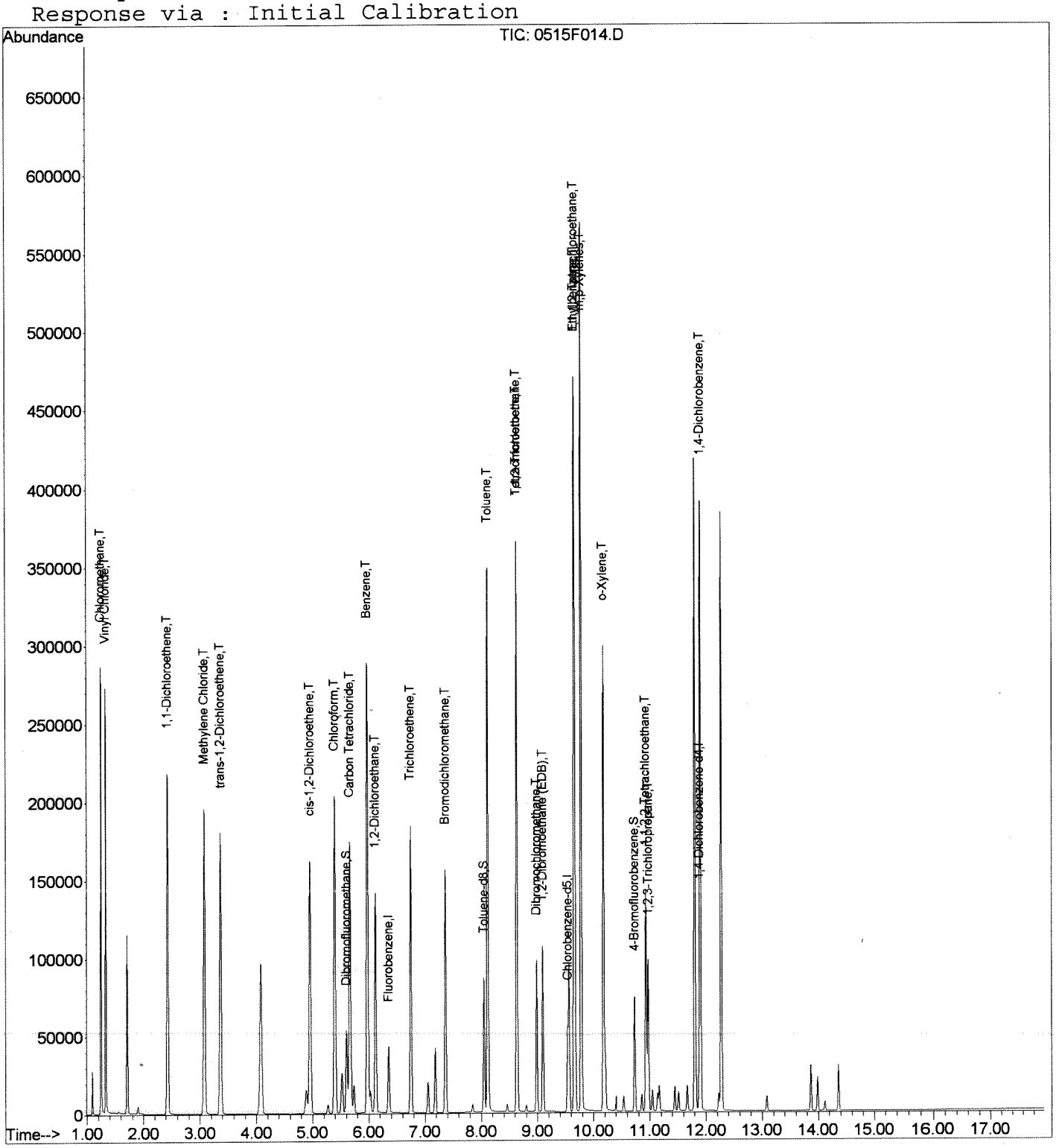
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	60512	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	41870	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	25034	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	45799	2099.93	ng/L	0.00
Spiked Amount 1000.000			Recovery = 209.99%			
15) Toluene-d8	8.05	98	109697	2335.31	ng/L	0.00
Spiked Amount 1000.000			Recovery = 233.53%			
25) 4-Bromofluorobenzene	10.73	95	44167	2566.44	ng/L	0.00
Spiked Amount 1000.000			Recovery = 256.64%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	170484	5079.17	ng/L	99
3) Vinyl Chloride	1.33	62	167624	5182.19	ng/L	100
4) 1,1-Dichloroethene	2.43	96	91872	5200.26	ng/L	99
5) Methylene Chloride	3.08	84	129131	4716.38	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	103750	5125.36	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	100373	5123.79	ng/L	98
8) Chloroform	5.39	83	213436	4952.20	ng/L	99
10) Carbon Tetrachloride	5.66	117	148990	5314.46	ng/L	100
11) Benzene	5.98	78	406583	5295.76	ng/L	100
12) 1,2-Dichloroethane	6.12	62	147871	4878.28	ng/L	100
13) Trichloroethene	6.75	95	102151	5288.02	ng/L	99
14) Bromodichloromethane	7.36	83	144084	4983.58	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	80353	4965.61	ng/L	100
17) Dibromochloromethane	8.98	129	99829	4988.71	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	81400	5016.38	ng/L	96
20) Toluene	8.12	92	190354	5700.55	ng/L	100
21) Ethylbenzene	9.66	106	97674	5913.60	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	108103	4985.50	ng/L	100
23) m,p-Xylenes	9.78	106	252528	12985.99	ng/L	99
24) o-Xylene	10.18	106	125617	6330.48	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	102034	5003.61	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	31464	5153.86	ng/L	98
28) Tetrachloroethene	8.63	164	88054	5429.95	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	230355	5194.37	ng/L	99

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F014.D 051517MS30_8260SIM.M Tue May 16 11:28:43 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F014.D Vial: 14
Acq On : 15 May 2017 09:16 pm Operator: GH
Sample : SIM ICAL 5000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F015.D Vial: 15
Acq On : 15 May 2017 09:44 pm Operator: GH
Sample : SIM ICAL 7000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

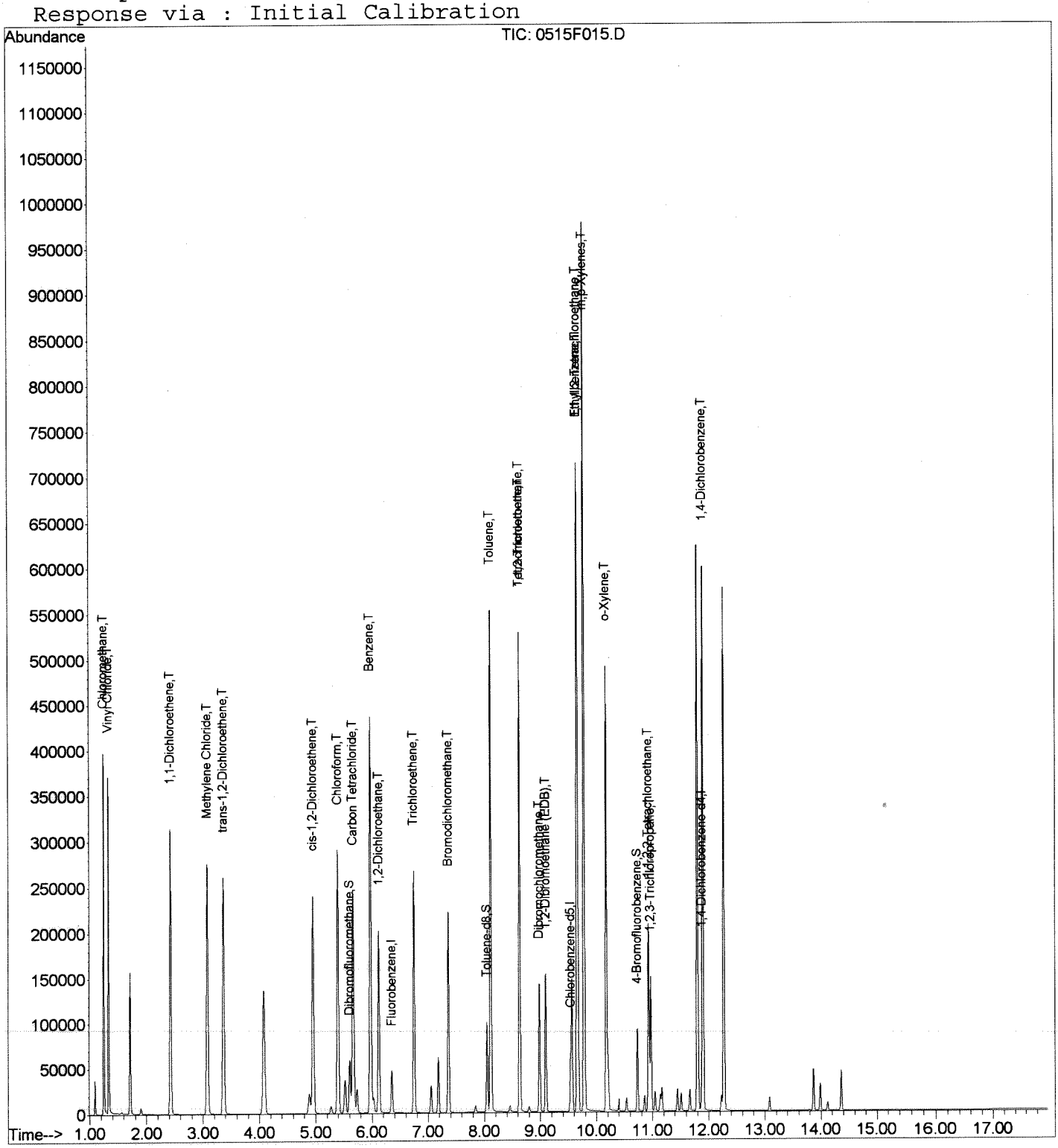
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	66029	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.53	117	45952	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	27571	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	51534	2165.46	ng/L	0.00
Spiked Amount 1000.000			Recovery = 216.55%			
15) Toluene-d8	8.05	98	122928	2398.32	ng/L	0.00
Spiked Amount 1000.000			Recovery = 239.83%			
25) 4-Bromofluorobenzene	10.73	95	54946	2909.16	ng/L	0.00
Spiked Amount 1000.000			Recovery = 290.92%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	240127	6556.27	ng/L	100
3) Vinyl Chloride	1.33	62	233426	6613.53	ng/L	100
4) 1,1-Dichloroethene	2.43	96	131429	6817.73	ng/L	99
5) Methylene Chloride	3.08	84	181435	6073.04	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	149069	6748.85	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	147769	6912.96	ng/L	98
8) Chloroform	5.39	83	302940	6441.61	ng/L	99
10) Carbon Tetrachloride	5.66	117	209920	6862.19	ng/L	100
11) Benzene	5.97	78	606848	7243.79	ng/L	99
12) 1,2-Dichloroethane	6.12	62	213596	6457.78	ng/L	99
13) Trichloroethene	6.75	95	147889	7016.05	ng/L	99
14) Bromodichloromethane	7.36	83	207061	6563.43	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	117283	6642.20	ng/L	99
17) Dibromochloromethane	8.98	129	145981	6685.52	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	121464	6859.95	ng/L	98
20) Toluene	8.12	92	294679	8040.87	ng/L	100
21) Ethylbenzene	9.66	106	155203	8561.93	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	154446	6490.02	ng/L	99
23) m,p-Xylenes	9.78	106	422544	19798.67	ng/L	99
24) o-Xylene	10.17	106	202681	9306.79	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	153008	6836.77	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	47406	7075.40	ng/L	98
28) Tetrachloroethene	8.63	164	127181	7146.07	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	346345	7091.24	ng/L	99

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F015.D 051517MS30_8260SIM.M Tue May 16 11:28:44 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F015.D Vial: 15
Acq On : 15 May 2017 09:44 pm Operator: GH
Sample : SIM ICAL 7000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F016.D Vial: 16
Acq On : 15 May 2017 10:12 pm Operator: GH
Sample : SIM ICAL 10000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:26 2017 Quant Results File: 051517MS30_8260

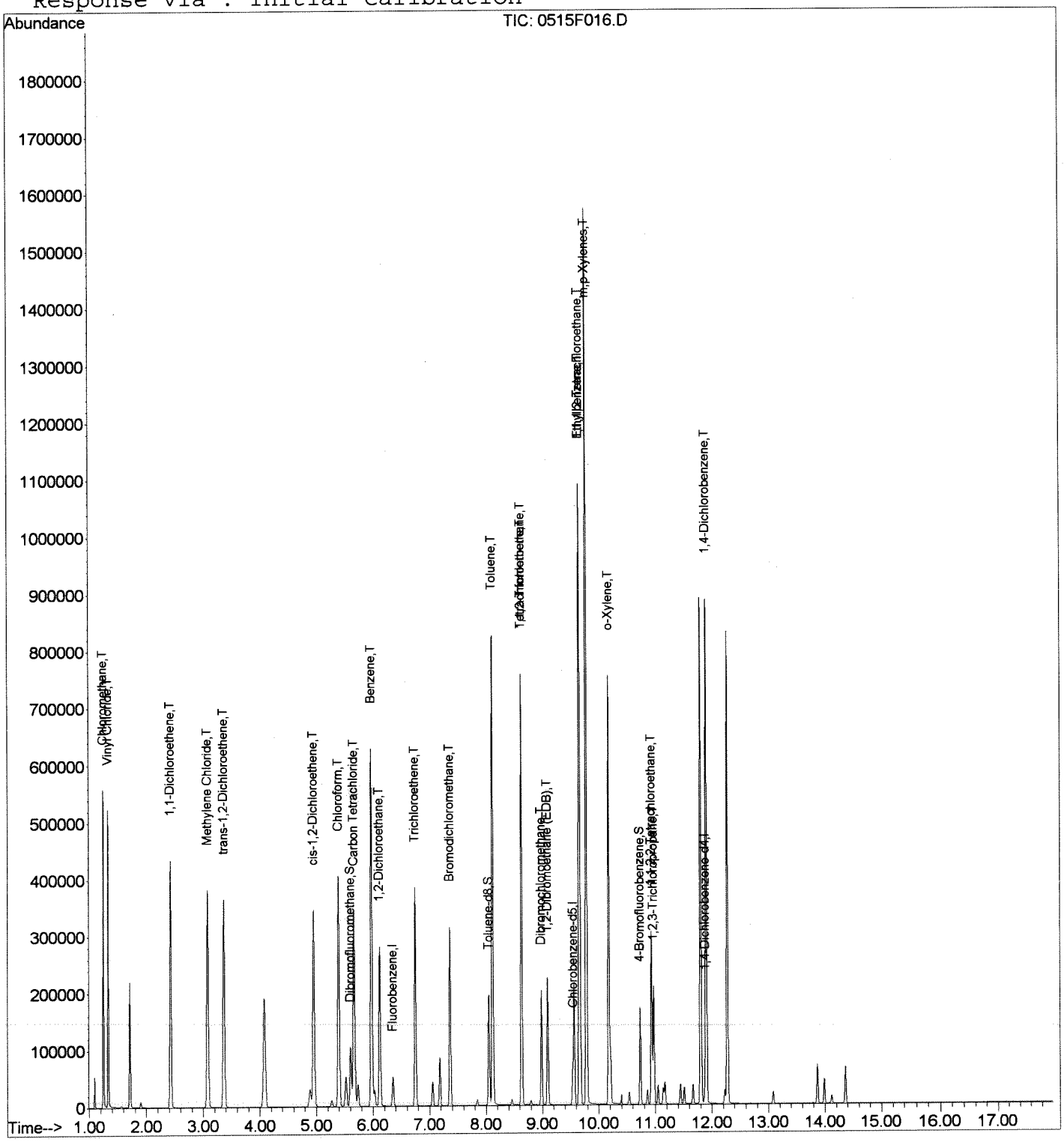
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	70658	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	49882	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	30847	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	90840	3567.03 ng/L	0.00
Spiked Amount 1000.000			Recovery	= 356.70%	
15) Toluene-d8	8.05	98	245121	4469.01 ng/L	0.00
Spiked Amount 1000.000			Recovery	= 446.90%	
25) 4-Bromofluorobenzene	10.73	95	103056	5026.50 ng/L	0.00
Spiked Amount 1000.000			Recovery	= 502.65%	
Target Compounds					Qvalue
2) Chloromethane	1.25	50	330636	8436.06 ng/L	100
3) Vinyl Chloride	1.33	62	325025	8605.46 ng/L	100
4) 1,1-Dichloroethene	2.43	96	182523	8847.89 ng/L	99
5) Methylene Chloride	3.08	84	251569	7868.93 ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	209862	8878.71 ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	212375	9284.48 ng/L	98
8) Chloroform	5.39	83	422832	8401.93 ng/L	99
10) Carbon Tetrachloride	5.66	117	292333	8930.18 ng/L	100
11) Benzene	5.97	78	876596	9778.20 ng/L	99
12) 1,2-Dichloroethane	6.12	62	301120	8507.52 ng/L	99
13) Trichloroethene	6.75	95	211752	9387.67 ng/L	98
14) Bromodichloromethane	7.36	83	292438	8662.43 ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	165516	8759.72 ng/L	99
17) Dibromochloromethane	8.98	129	207103	8863.36 ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	174839	9227.52 ng/L	98
20) Toluene	8.12	92	455267	11444.07 ng/L	99
21) Ethylbenzene	9.65	106	242741	12336.03 ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	218417	8455.06 ng/L	100
23) m,p-Xylenes	9.78	106	678470	29285.67 ng/L	97
24) o-Xylene	10.18	106	312017	13198.53 ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	216291	8902.99 ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	66660	9165.23 ng/L	92
28) Tetrachloroethene	8.63	164	182229	9432.42 ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	503448	9213.13 ng/L	98

(#) = qualifier out of range (m) = manual integration
0515F016.D 051517MS30_8260SIM.M Tue May 16 11:28:44 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F016.D Vial: 16
Acq On : 15 May 2017 10:12 pm Operator: GH
Sample : SIM ICAL 10000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:45:36 2017 Quant Results File: 051517MS30_8260

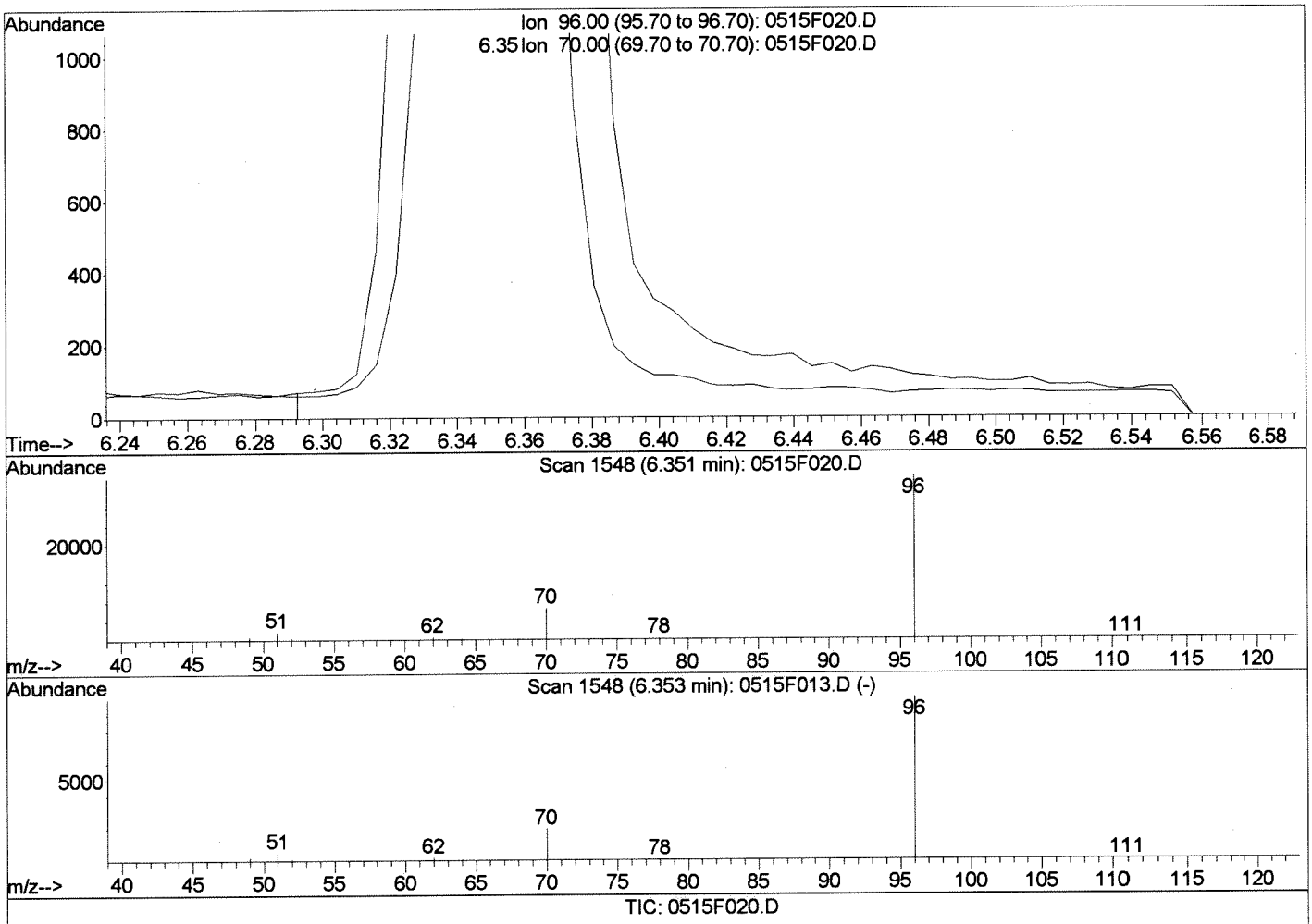
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	60011m	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	42478	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	20752	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20634	929.60	ng/L	0.00
Spiked Amount 1000.000			Recovery = 92.96%			
15) Toluene-d8	8.05	98	51260	1070.91	ng/L	0.00
Spiked Amount 1000.000			Recovery = 107.09%			
25) 4-Bromofluorobenzene	10.73	95	16790	888.49	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.85%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	53040	1544.15	ng/L	99
3) Vinyl Chloride	1.33	62	53703	1608.82	ng/L	99
4) 1,1-Dichloroethene	2.43	96	37588	2024.96	ng/L	98
5) Methylene Chloride	3.08	84	53605	2062.59	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	41221	1958.14	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	40390	2012.29	ng/L	98
8) Chloroform	5.39	83	87226	2021.22	ng/L	99
10) Carbon Tetrachloride	5.66	117	57968	2035.43	ng/L	99
11) Benzene	5.97	78	153889	1876.12	ng/L	100
12) 1,2-Dichloroethane	6.12	62	59693	1950.83	ng/L	99
13) Trichloroethene	6.75	95	40581	2011.60	ng/L	98
14) Bromodichloromethane	7.36	83	59078	2044.17	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	32272	1995.07	ng/L	98
17) Dibromochloromethane	8.98	129	38530	1922.24	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	31349	1982.70	ng/L	97
20) Toluene	8.12	92	72439	1943.07	ng/L	99
21) Ethylbenzene	9.65	106	36388	2023.60	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	41345	1845.40	ng/L	99
23) m,p-Xylenes	9.78	106	84779	4118.72	ng/L	97
24) o-Xylene	10.18	106	41872	1994.48	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	40199	2009.41	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	11537	1839.31	ng/L #	89
28) Tetrachloroethene	8.63	164	33789	1933.26	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	77205	2061.73	ng/L	97

(#) = qualifier out of range (m) = manual integration
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:31:11 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:45 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0515F020.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L

response 60778

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

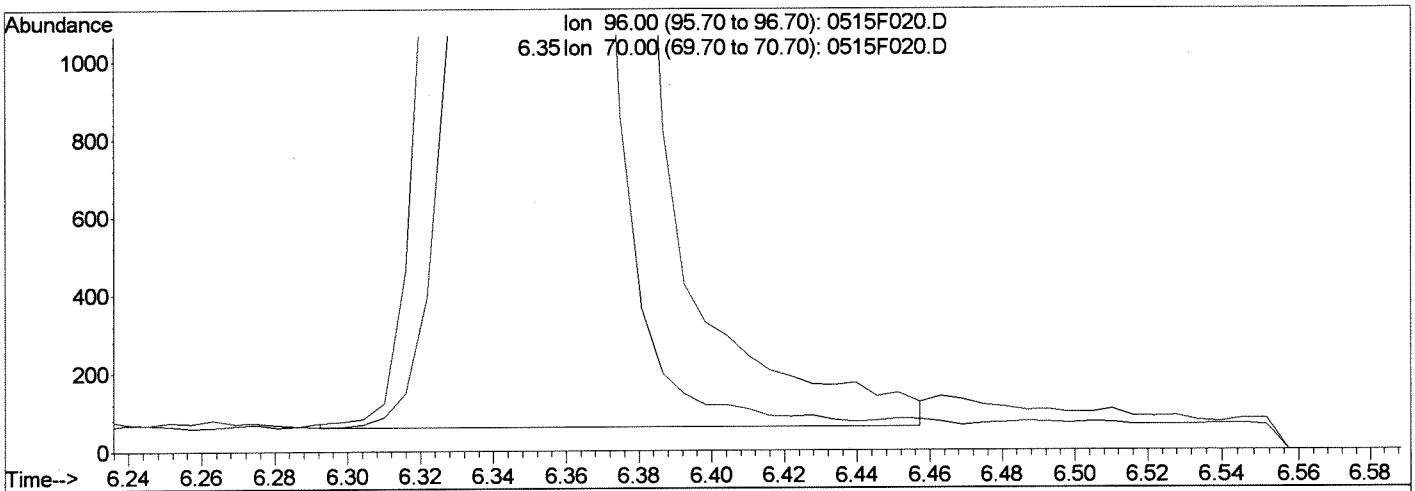
Before

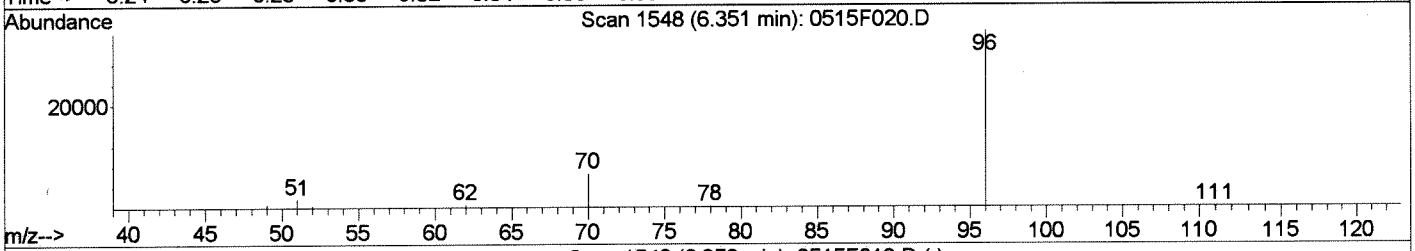
05/16/17

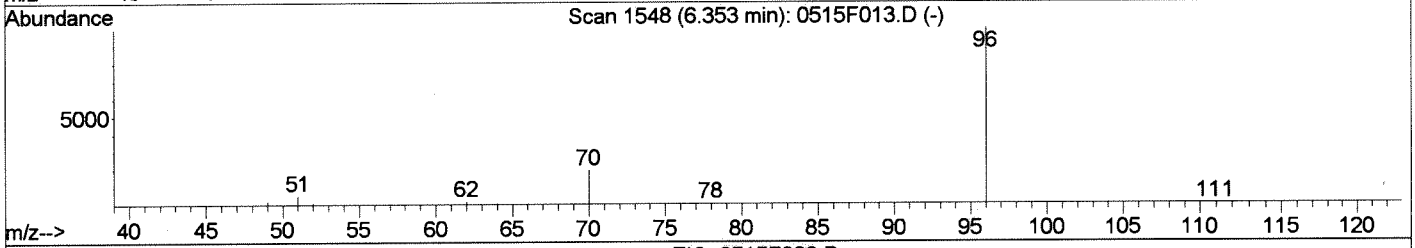
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:29:21 2017

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:29 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration







TIC: 0515F020.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L m

response 60011

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

After

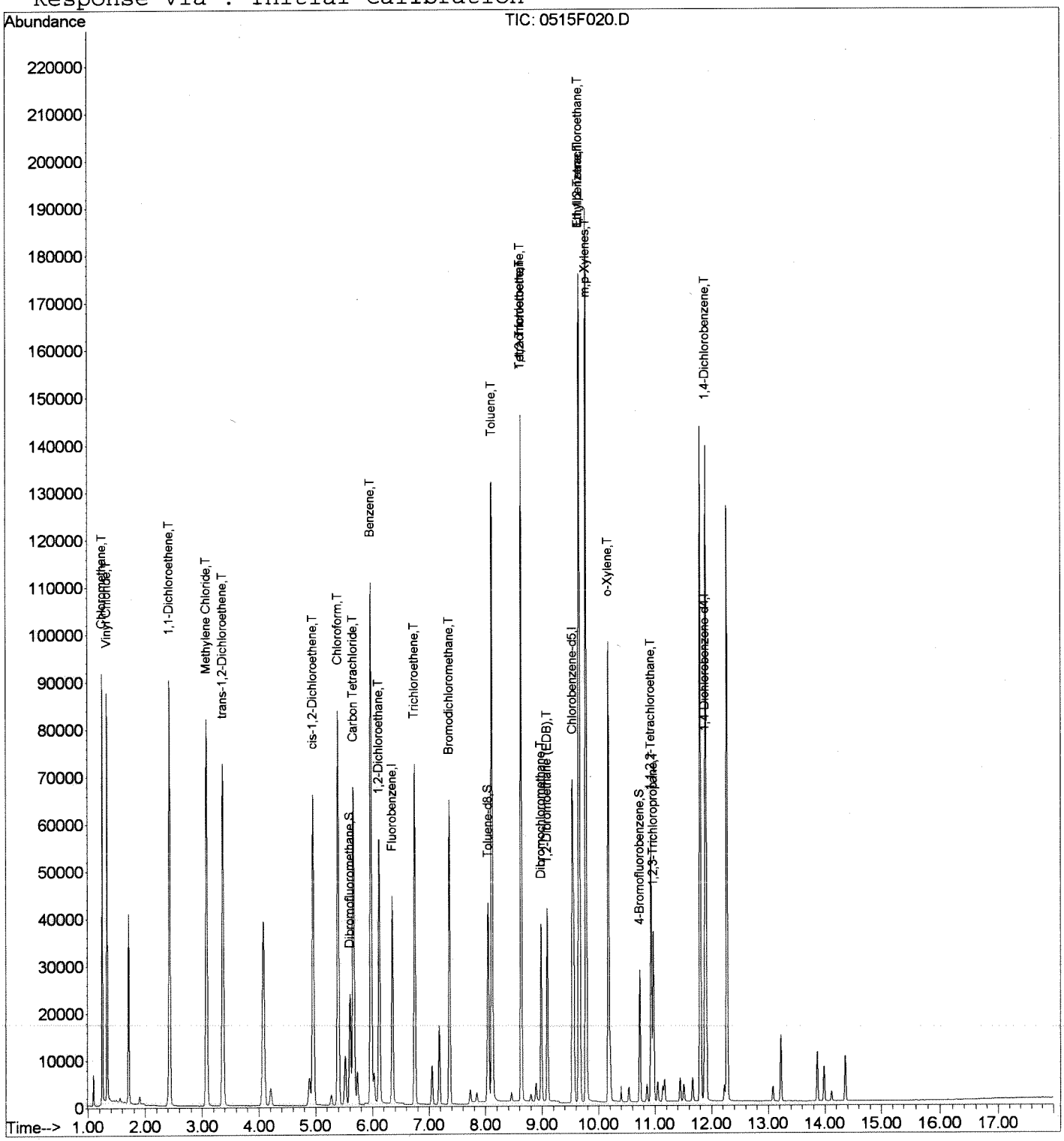
Baseline correction

05/16/17

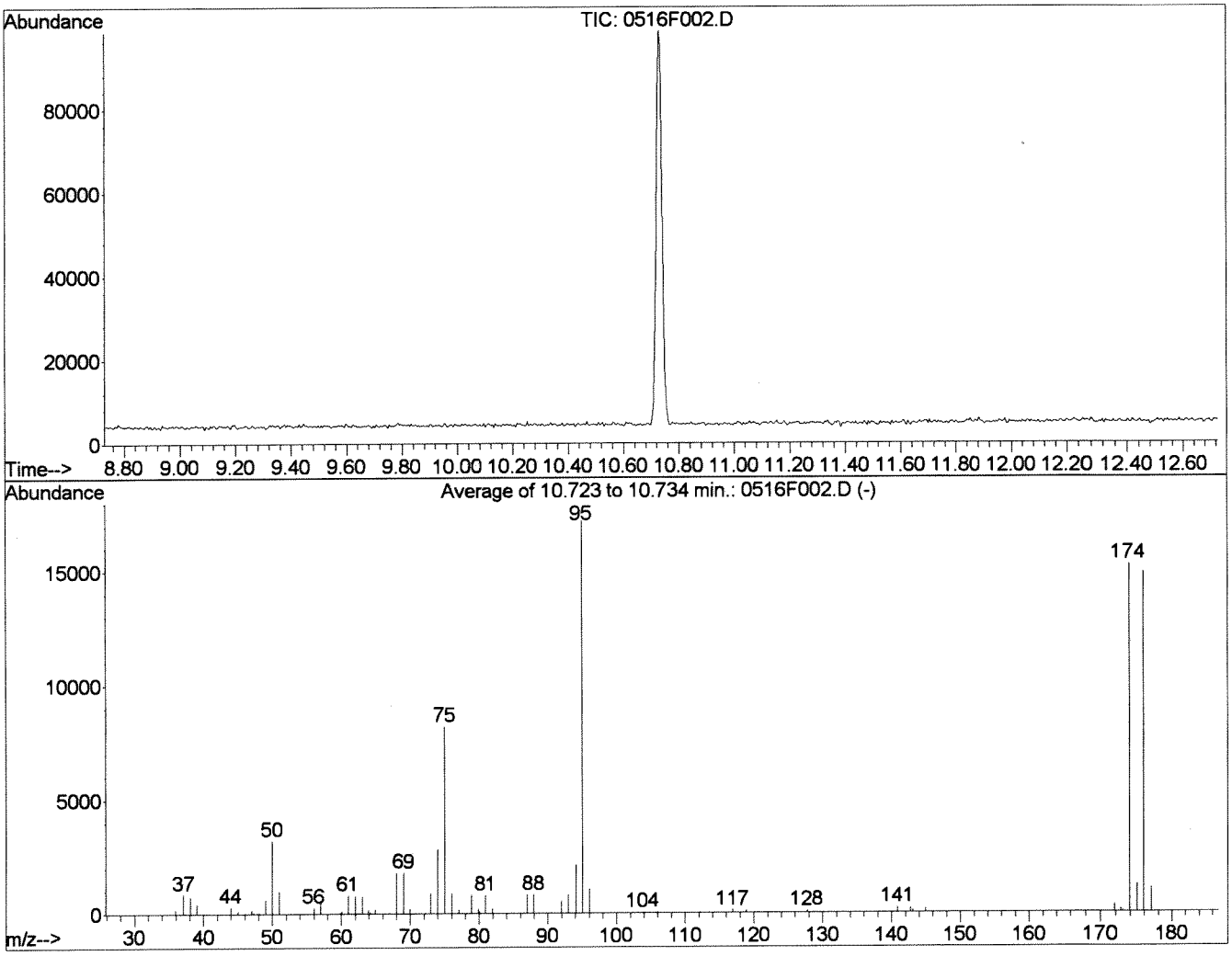
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:29:41 2017

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:29 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051617_SIM\0516F002.D Vial: 2
Acq On : 16 May 2017 09:55 am Operator: GH
Sample : 50NG BFB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM



AutoFind: Scans 1857, 1858, 1859; Background Corrected with Scan 1850

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.7	3221	PASS
75	95	30	60	47.6	8172	PASS
95	95	100	100	100.0	17186	PASS
96	95	5	9	6.2	1069	PASS
173	174	0.00	2	0.9	133	PASS
174	95	50	120	88.7	15241	PASS
175	174	5	9	8.0	1212	PASS
176	174	95	101	97.9	14914	PASS
177	176	5	9	7.1	1052	PASS

J:\MS30\DATA\051617_SIM\0516F002.D 051517MS30_8260SIM.M Tue May 16 11:2

Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051617_SIM\0516F003.D Vial: 3
Acq On : 16 May 2017 10:36 am Operator: GH
Sample : MIX 6 ONLY ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:57:48 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54623	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36181	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14352	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20829	1030.95	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.10%			
15) Toluene-d8	8.05	98	45229	1038.12	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.81%			
25) 4-Bromofluorobenzene	10.73	95	14176	880.72	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.07%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	64784	2072.09	ng/L	100
3) Vinyl Chloride	1.33	62	60947	2005.93	ng/L	99
30) 1,4-Dichlorobenzene	11.91	146	198	7.65	ng/L	95

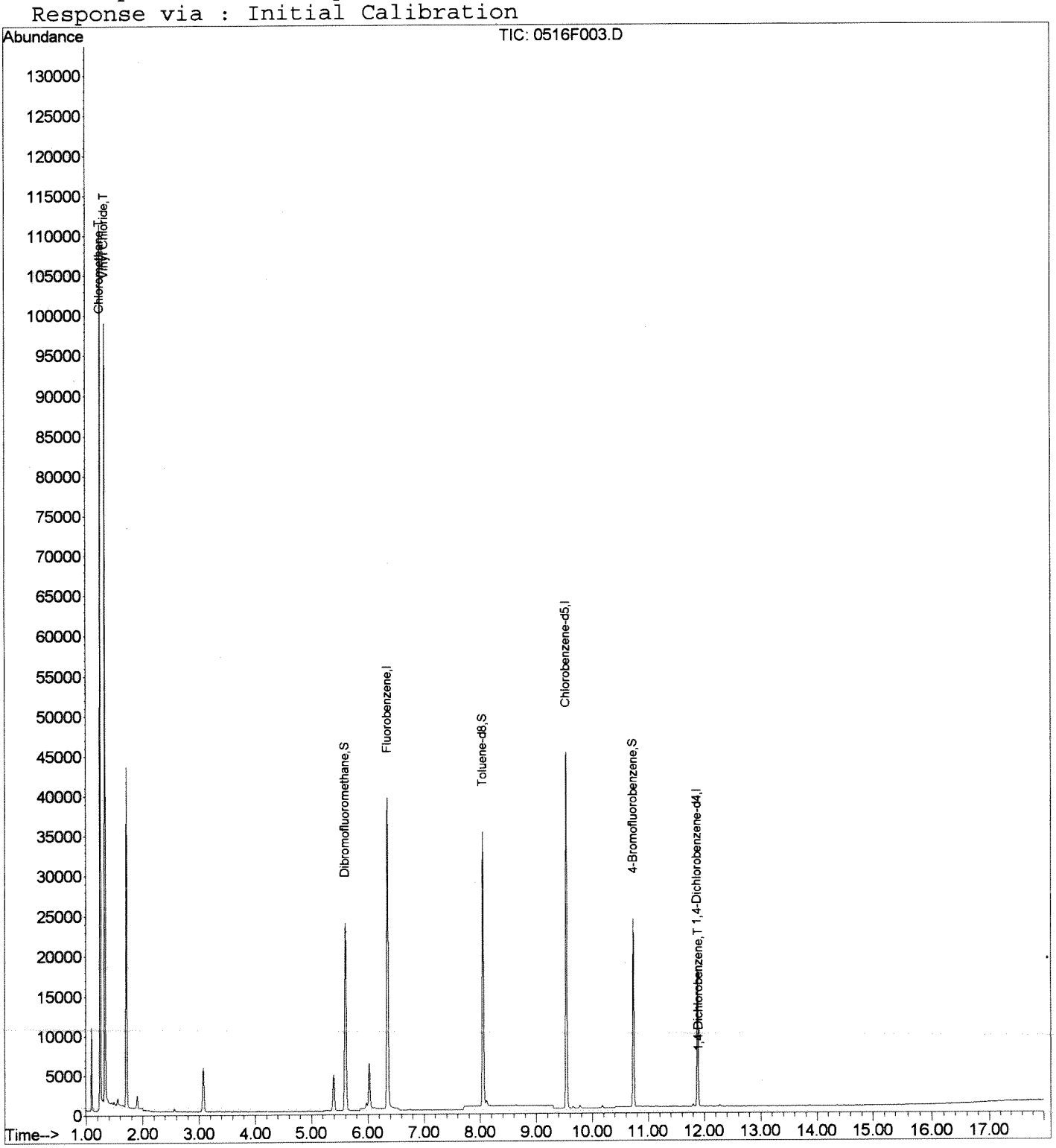
5/16/17

5/16/17

(#) = qualifier out of range (m) = manual integration
0516F003.D 051517MS30_8260SIM.M Tue May 16 11:28:45 2017 Page 1

Data File : J:\MS30\DATA\051617_SIM\0516F003.D Vial: 3
Acq On : 16 May 2017 10:36 am Operator: GH
Sample : MIX 6 ONLY ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:28 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Appendix B10
GCAL Report 217053111 dated June 8, 2017

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 06/08/2017

GCAL Report 217053111

Project ARNG OMS 28/ 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 217053111

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 217053111

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

See subcontract laboratory report case narrative.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21705311101	OMS-28-GW11-11-S	Water	05/13/2017 11:50	05/18/2017 10:10
21705311102	OMS-28-GW11-11-C	Water	05/13/2017 00:01	05/18/2017 10:10
21705311103	OMS-28-GW58-31-S	Water	05/15/2017 08:50	05/18/2017 10:10
21705311104	OMS-28-GW49-12-S	Water	05/15/2017 14:45	05/18/2017 10:10
21705311105	OMS-28-GW62-19-S	Water	05/16/2017 14:30	05/18/2017 10:10
21705311106	OMS-28-GW34-31-S	Water	05/17/2017 11:00	05/18/2017 10:10
21705311107	OMS-28-GW06-11-S	Water	05/17/2017 16:00	05/18/2017 10:10
21705311108	OMS-28-GW06-11-MS	Water	05/17/2017 16:00	05/18/2017 10:10
21705311109	OMS-28-GW06-11-MSD	Water	05/17/2017 16:00	05/18/2017 10:10

Client ID: 4838 - AECOM
SDG: 217053111
PM: AMK

Chain of Custody and Analytical Requ

AECOM

ct Name / Site Name: ARNG OMS 28 Mobile AL

t Name: GCAL

ected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Number of containers	VC (8260SIM)	Comments	Cooler ID
MS-28-GW11-11-S	5/13/17	1150	7. 11	Split	WG	3	X		1
MS-28-GW11-11-c	5/13/17		.	TB	WQ	3	X		2
MS-28-GW58-31-S	5/15/17	0850	27 31	Split	WG	3	X		3
MS-28-GW49-12-S	5/15/17	1445	8. 12	Split	WG	3	X		4
MS-28-GW62-19-S	5/16/17	1430	15. 19	Split	WG	3	X		5
MS-28-GW34-32-S	5/17/17	1100	28 32	Split	WG	3	X		6
MS-28-GW06-11-S	5/17/17	1600	7. 11	Split	WG	3	X		7
MS-28-GW06-11-MS	5/17/17	1600	7. 11	MS	WG	3	X		8
MS28-GW06-11-MSD	5/17/17	1600	7. 11	SD	WG	3	X		9
			.						
			.						
			.						
			.						

Sample Analysis Requested

uments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
Randy Morgan	5-17-17	1800	1.		
			2.		
			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: FedEx
Analytical Lab: ALS Kelso
Lab Receipient:

Shipped: XXX
Airbill #: 8731 2991 9225
Location: Kelso WA
Date: 5/18/17 Time: 1010

Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

Project Number

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Anna Kinchen

SAMPLE RECEIVING CHECKLIST

217053111

SAMPLE DELIVERY GROUP 217053111	
Client PM AMK 4838 - AECOM	**Transport Method** OTHER
Profile Number 264814	**Received By** Reese, Sean M.
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 05/18/17

CHECKLIST	YES	NO	NA
Samples received with proper thermal and chemical preservation?	☐	☐	☑
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☐	☐	☑
When used, were custody seals intact?	☐	☐	☑
COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	☐	☐	☑
Short holds or RUSH samples received?	☐	☐	☑
All containers received in good condition and within hold time?	☐	☐	☑
All sample labels and containers received match the chain of custody?	☐	☐	☑
Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	☐	☐	☑
Preservative added to any containers?	☐	☐	☑
VOC water containers received with headspace < 6mm?	☐	☐	☑
Received filtered sample volume for dissolved analysis?	☐	☐	☑
Trip blank present in all coolers containing VOC waters?	☐	☐	☑
Samples collected in containers provided by GCAL?	☐	☐	☑

COOLERS		
Airbill	**Thermometer ID:** NA	**Temp(°C)**
		NA

DISCREPANCIES	LAB PRESERVATIONS
None	None

NOTES	SUBOUTS ONLY

Revision 1.6

Page 1 of 1

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

May 31, 2017

Analytical Report for Service Request No: K1705066

Anna Kinchen
Gulf Coast Analytical Laboratories
7979 GSRI Avenue
Baton Rouge, LA 70820

RE: ARNG OMS 28 Mobile AL / 60439687.2.3

Dear Anna,

Enclosed are the results of the sample(s) submitted to our laboratory May 18, 2017
For your reference, these analyses have been assigned our service request number **K1705066.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	Gulf Coast Analytical Labs GCAL	**Service Request No.:**	K1705066
Project:	ARNG OMS 28 Mobile AL/ 60439687.2.3	**Date Received:**	05/18/17
Sample Matrix:	Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Seven water samples were received for analysis at ALS Environmental on 05/18/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260-SIM

No anomalies associated with the analysis of these samples were observed.

Approved by_____

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

K1705066

AECOM

Chain of Custody and Analytical Request

Laboratory: ALS Kelso

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	Sample Analysis Requested: VC (8260SIM)	Comments	Cooler ID
OMS-28-GW11-11-S	5/13/17	1150	7-11	Split	WG	3	X		
OMS-28-GW11-11-c	5/13/17		-	TB	WQ	2	X		
OMS-28-GW58-31-S	5/15/17	0850	27 31	Split	WG	3	X		
OMS-28-GW49-12-S	5/15/17	1445	8-12	Split	WG	3	X		
OMS-28-GW62-19-S	5/16/17	1430	15-19	Split	WG	3	X		
OMS-28-GW34-31-S	5/17/17	1100	28 32	Split	WG	3	X		
OMS-28-GW06-11-S	5/17/17	1600	7-11	Split	WG	3	X		
OMS-28-GW06-11-MS	5/17/17	1600	7-11	MS	WG	3	X		
OMS28-GW06-11-MSD	5/17/17	1600	7-11	SD	WG	3	X		
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
Randy Morgan	5-17-17	1800	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XX

Method of Shipment: FedEx — Shipped: 8731 2991 9225

Analytical Lab: ALS Kelso — Airbill #:

Lab Receipient: — Location: Kelso WA

Date: 5/18/17 — Time: 1010

1) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

Project Number

Purchase Order Number

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Anna Kinchen

Analytical Data To: Anna Kinchen

PC K2

Cooler Receipt and Preservation Form

Client GCAL/AECOM Service Request *K17* 05044

Received: 5/5/17 Opened: 5/5/17 By: S Unloaded: 5/5/17 By: S

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? one, front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.2	-0.4	—	—	-0.2	298		8731 2991 6275	

4. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1705066
Project: ARNG OMS 28 Mobile AL

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
OMS-28-GW11-11-S	K1705066-001	05/13/2017	05/18/2017
OMS-28-GW11-11-C	K1705066-002	05/13/2017	05/18/2017
OMS-28-GW58-31-S	K1705066-003	05/15/2017	05/18/2017
OMS-28-GW49-12-S	K1705066-004	05/15/2017	05/18/2017
OMS-28-GW62-19-S	K1705066-005	05/16/2017	05/18/2017
OMS-28-GW34-31-S	K1705066-006	05/17/2017	05/18/2017
OMS-28-GW06-11-S	K1705066-007	05/17/2017	05/18/2017
OMS-28-GW06-11-SMS	KWG1704213-1	05/17/2017	05/18/2017
OMS-28-GW06-11-SDMS	KWG1704213-2	05/17/2017	05/18/2017

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/13/2017
Sample Matrix:	Water	**Date Received:**	05/18/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW11-11-S	**Units:**	ng/L
Lab Code:	K1705066-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/23/17	05/23/17	KWG1704213	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	110	77-123	05/23/17	Acceptable
Toluene-d8	103	74-112	05/23/17	Acceptable
4-Bromofluorobenzene	85	46-118	05/23/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/13/2017
Sample Matrix:	Water	**Date Received:**	05/18/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW11-11-C	**Units:**	ng/L
Lab Code:	K1705066-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/23/17	05/23/17	KWG1704213	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	107	77-123	05/23/17	Acceptable
Toluene-d8	102	74-112	05/23/17	Acceptable
4-Bromofluorobenzene	79	46-118	05/23/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/15/2017
Sample Matrix:	Water	**Date Received:**	05/18/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW58-31-S	**Units:**	ng/L
Lab Code:	K1705066-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/23/17	05/23/17	KWG1704213	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	77-123	05/23/17	Acceptable
Toluene-d8	101	74-112	05/23/17	Acceptable
4-Bromofluorobenzene	77	46-118	05/23/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/15/2017
Sample Matrix:	Water	**Date Received:**	05/18/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW49-12-S	**Units:**	ng/L
Lab Code:	K1705066-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/23/17	05/23/17	KWG1704213	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	109	77-123	05/23/17	Acceptable
Toluene-d8	103	74-112	05/23/17	Acceptable
4-Bromofluorobenzene	80	46-118	05/23/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/16/2017
Sample Matrix:	Water	**Date Received:**	05/18/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW62-19-S	**Units:**	ng/L
Lab Code:	K1705066-005	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	**8.0**	J	20	15	4.6	1	05/23/17	05/23/17	KWG1704213	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	77-123	05/23/17	Acceptable
Toluene-d8	107	74-112	05/23/17	Acceptable
4-Bromofluorobenzene	77	46-118	05/23/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/17/2017
Sample Matrix:	Water	**Date Received:**	05/18/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW34-31-S	**Units:**	ng/L
Lab Code:	K1705066-006	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/23/17	05/23/17	KWG1704213	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	77-123	05/23/17	Acceptable
Toluene-d8	102	74-112	05/23/17	Acceptable
4-Bromofluorobenzene	78	46-118	05/23/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/17/2017
Sample Matrix:	Water	**Date Received:**	05/18/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW06-11-S	**Units:**	ng/L
Lab Code:	K1705066-007	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/23/17	05/23/17	KWG1704213	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	110	77-123	05/23/17	Acceptable
Toluene-d8	101	74-112	05/23/17	Acceptable
4-Bromofluorobenzene	78	46-118	05/23/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KWG1704213-5	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/23/17	05/23/17	KWG1704213	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	110	77-123	05/23/17	Acceptable
Toluene-d8	101	74-112	05/23/17	Acceptable
4-Bromofluorobenzene	76	46-118	05/23/17	Acceptable

Comments:

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1705066
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B **Units:** Percent
Analysis Method: 8260C SIM **Level:** Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
OMS-28-GW11-11-S	K1705066-001	110	103	85
OMS-28-GW11-11-C	K1705066-002	107	102	79
OMS-28-GW58-31-S	K1705066-003	108	101	77
OMS-28-GW49-12-S	K1705066-004	109	103	80
OMS-28-GW62-19-S	K1705066-005	108	107	77
OMS-28-GW34-31-S	K1705066-006	108	102	78
OMS-28-GW06-11-S	K1705066-007	110	101	78
Method Blank	KWG1704213-5	110	101	76
OMS-28-GW06-11-SMS	KWG1704213-1	99	102	86
OMS-28-GW06-11-SDMS	KWG1704213-2	99	103	85
Lab Control Sample	KWG1704213-3	103	104	88
Duplicate Lab Control Sample	KWG1704213-4	101	101	86

Surrogate Recovery Control Limits (%)

Sur1	=	Dibromofluoromethane	77-123
Sur2	=	Toluene-d8	74-112
Sur3	=	4-Bromofluorobenzene	46-118

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1705066
Date Analyzed: 05/23/2017
Time Analyzed: 14:16

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS30\DATA\052317_SIM\0523F006.D
Instrument ID: MS30
Analysis Method: 8260C SIM

Lab Code: KWG1704209-2
Analysis Lot: KWG1704209

		Fluorobenzene		Chlorobenzene-d5	
		Area	**RT**	**Area**	**RT**
	ICAL Result ==>	56,584	6.35	38,599	9.54
	Upper Limit ==>	113,168	6.52	77,198	9.71
	Lower Limit ==>	28,292	6.18	19,300	9.37
Associated Analyses					
Continuing Calibration VerificationCCV	KWG1704209-2	47,295	6.35	34,056	9.54
Lab Control Sample	KWG1704213-3	49,185	6.35	35,469	9.54
Duplicate Lab Control Sample	KWG1704213-4	52,837	6.35	37,197	9.54
Method Blank	KWG1704213-5	47,785	6.36	32,380	9.54
OMS-28-GW11-11-S	K1705066-001	48,599	6.35	34,847	9.54
OMS-28-GW11-11-C	K1705066-002	49,564	6.35	35,476	9.54
OMS-28-GW58-31-S	K1705066-003	49,306	6.35	33,791	9.54
OMS-28-GW49-12-S	K1705066-004	49,014	6.35	34,700	9.54
OMS-28-GW62-19-S	K1705066-005	48,803	6.35	34,731	9.54
OMS-28-GW34-31-S	K1705066-006	47,831	6.35	33,053	9.54
OMS-28-GW06-11-S	K1705066-007	47,735	6.35	32,942	9.54
OMS-28-GW06-11-SMS	KWG1704213-1	55,371	6.35	39,000	9.54
OMS-28-GW06-11-SDMS	KWG1704213-2	57,242	6.35	40,926	9.54

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/23/2017
Sample Matrix:	Water	**Date Analyzed:**	05/23/2017

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	OMS-28-GW06-11-S	**Units:**	ng/L
Lab Code:	K1705066-007	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704213

		OMS-28-GW06-11-SMS KWG1704213-1 Matrix Spike			OMS-28-GW06-11-SDMS KWG1704213-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	ND	1810	2000	91	1650	2000	83	70-130	9	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/23/2017
Sample Matrix:	Water	**Date Analyzed:**	05/23/2017

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	EPA 5030B	**Units:**	ng/L
Analysis Method:	8260C SIM	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1704213

	Lab Control Sample KWG1704213-3 Lab Control Spike			Duplicate Lab Control Sample KWG1704213-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	1970	2000	99	1720	2000	86	70-136	14	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/23/2017
Sample Matrix:	Water	**Date Analyzed:**	05/23/2017
		Time Analyzed:	16:49

Method Blank Summary
Volatile Organic Compounds

Sample Name:	Method Blank	**Instrument ID:**	MS30
Lab Code:	KWG1704213-5	**File ID:**	J:\MS30\DATA\052317_SIM\0523F011.D
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704213

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1704213-3	J:\MS30\DATA\052317_SIM\0523F007.D	05/23/17	15:10
Duplicate Lab Control Sample	KWG1704213-4	J:\MS30\DATA\052317_SIM\0523F008.D	05/23/17	15:38
OMS-28-GW11-11-S	K1705066-001	J:\MS30\DATA\052317_SIM\0523F015.D	05/23/17	18:39
OMS-28-GW11-11-C	K1705066-002	J:\MS30\DATA\052317_SIM\0523F016.D	05/23/17	19:06
OMS-28-GW58-31-S	K1705066-003	J:\MS30\DATA\052317_SIM\0523F017.D	05/23/17	19:34
OMS-28-GW49-12-S	K1705066-004	J:\MS30\DATA\052317_SIM\0523F018.D	05/23/17	20:01
OMS-28-GW62-19-S	K1705066-005	J:\MS30\DATA\052317_SIM\0523F019.D	05/23/17	20:29
OMS-28-GW34-31-S	K1705066-006	J:\MS30\DATA\052317_SIM\0523F020.D	05/23/17	20:56
OMS-28-GW06-11-S	K1705066-007	J:\MS30\DATA\052317_SIM\0523F021.D	05/23/17	21:24
OMS-28-GW06-11-SMS	KWG1704213-1	J:\MS30\DATA\052317_SIM\0523F024.D	05/23/17	22:46
OMS-28-GW06-11-SDMS	KWG1704213-2	J:\MS30\DATA\052317_SIM\0523F025.D	05/23/17	23:14

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1705066
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/23/2017
Sample Matrix:	Water	**Date Analyzed:**	05/23/2017
		Time Analyzed:	15:10

Lab Control Sample Summary
Volatile Organic Compounds

Sample Name:	Lab Control Sample	**Instrument ID:**	MS30
Lab Code:	KWG1704213-3	**File ID:**	J:\MS30\DATA\052317_SIM\0523F007.D
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704213

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1704213-5	J:\MS30\DATA\052317_SIM\0523F011.D	05/23/17	16:49
OMS-28-GW11-11-S	K1705066-001	J:\MS30\DATA\052317_SIM\0523F015.D	05/23/17	18:39
OMS-28-GW11-11-C	K1705066-002	J:\MS30\DATA\052317_SIM\0523F016.D	05/23/17	19:06
OMS-28-GW58-31-S	K1705066-003	J:\MS30\DATA\052317_SIM\0523F017.D	05/23/17	19:34
OMS-28-GW49-12-S	K1705066-004	J:\MS30\DATA\052317_SIM\0523F018.D	05/23/17	20:01
OMS-28-GW62-19-S	K1705066-005	J:\MS30\DATA\052317_SIM\0523F019.D	05/23/17	20:29
OMS-28-GW34-31-S	K1705066-006	J:\MS30\DATA\052317_SIM\0523F020.D	05/23/17	20:56
OMS-28-GW06-11-S	K1705066-007	J:\MS30\DATA\052317_SIM\0523F021.D	05/23/17	21:24
OMS-28-GW06-11-SMS	KWG1704213-1	J:\MS30\DATA\052317_SIM\0523F024.D	05/23/17	22:46
OMS-28-GW06-11-SDMS	KWG1704213-2	J:\MS30\DATA\052317_SIM\0523F025.D	05/23/17	23:14

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1705066
Date Analyzed: 05/23/2017
Time Analyzed: 13:39

Tune Summary
Volatile Organic Compounds

File ID: J:\MS30\DATA\052317_SIM\0523F005.D
Instrument ID: MS30
Column:

Analysis Method: 8260C SIM
Analysis Lot: KWG1704209

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	19.5	947	PASS
75	95	30	60	48.5	2355	PASS
95	95	100	100	100.0	4852	PASS
96	95	5	9	6.1	298	PASS
173	174	0	2	1.6	75	PASS
174	95	50	120	96.4	4675	PASS
175	174	5	9	6.9	324	PASS
176	174	95	101	96.3	4501	PASS
177	176	5	9	7.0	316	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1704209-2	J:\MS30\DATA\052317_SIM\0523F006.D	05/23/2017	14:16	
Lab Control Sample	KWG1704213-3	J:\MS30\DATA\052317_SIM\0523F007.D	05/23/2017	15:10	
Duplicate Lab Control Sample	KWG1704213-4	J:\MS30\DATA\052317_SIM\0523F008.D	05/23/2017	15:38	
Method Blank	KWG1704213-5	J:\MS30\DATA\052317_SIM\0523F011.D	05/23/2017	16:49	
OMS-28-GW11-11-S	K1705066-001	J:\MS30\DATA\052317_SIM\0523F015.D	05/23/2017	18:39	
OMS-28-GW11-11-C	K1705066-002	J:\MS30\DATA\052317_SIM\0523F016.D	05/23/2017	19:06	
OMS-28-GW58-31-S	K1705066-003	J:\MS30\DATA\052317_SIM\0523F017.D	05/23/2017	19:34	
OMS-28-GW49-12-S	K1705066-004	J:\MS30\DATA\052317_SIM\0523F018.D	05/23/2017	20:01	
OMS-28-GW62-19-S	K1705066-005	J:\MS30\DATA\052317_SIM\0523F019.D	05/23/2017	20:29	
OMS-28-GW34-31-S	K1705066-006	J:\MS30\DATA\052317_SIM\0523F020.D	05/23/2017	20:56	
OMS-28-GW06-11-S	K1705066-007	J:\MS30\DATA\052317_SIM\0523F021.D	05/23/2017	21:24	
OMS-28-GW06-11-SMS	KWG1704213-1	J:\MS30\DATA\052317_SIM\0523F024.D	05/23/2017	22:46	
OMS-28-GW06-11-SDMS	KWG1704213-2	J:\MS30\DATA\052317_SIM\0523F025.D	05/23/2017	23:14	
Continuing Calibration Verification	KWG1704209-3	J:\MS30\DATA\052317_SIM\0523F026.D	05/23/2017	23:41	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1705066
Project: ARNG OMS 28 Mobile AL **Calibration Date:** 05/15/2017

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL15375 **Column:** MS
Instrument ID: MS30

Level ID	File ID	Level ID	File ID
A	J:\MS30\DATA\051517_SIM\0515F006.D	G	J:\MS30\DATA\051517_SIM\0515F012.D
B	J:\MS30\DATA\051517_SIM\0515F007.D	H	J:\MS30\DATA\051517_SIM\0515F013.D
C	J:\MS30\DATA\051517_SIM\0515F008.D	I	J:\MS30\DATA\051517_SIM\0515F014.D
D	J:\MS30\DATA\051517_SIM\0515F009.D	J	J:\MS30\DATA\051517_SIM\0515F015.D
E	J:\MS30\DATA\051517_SIM\0515F010.D	K	J:\MS30\DATA\051517_SIM\0515F016.D
F	J:\MS30\DATA\051517_SIM\0515F011.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Vinyl Chloride				B	10	0.665	C	20	0.610	D	50	0.621	E	100	0.604
	F	500	0.478	G	1000	0.531	H	2000	0.535	I	5000	0.554	J	7000	0.505
	K	10000	0.460												
Dibromofluoromethane										D	200	0.464	E	400	0.393
	F	600	0.358	G	800	0.358	H	1000	0.360	I	2000	0.378	J	2400	0.325
	K	4000	0.321												
Toluene-d8										D	200	0.911	E	400	0.765
	F	600	0.673	G	800	0.707	H	1000	0.776	I	2000	0.906	J	2400	0.776
	K	4000	0.867												
4-Bromofluorobenzene										D	200	0.472	E	400	0.392
	F	600	0.368	G	800	0.375	H	1000	0.411	I	2000	0.527	J	2400	0.498
	K	4000	0.516												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1705066
Project: ARNG OMS 28 Mobile AL **Calibration Date:** 05/15/2017

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL15375 **Column:** MS
Instrument ID: MS30

		Calibration Evaluation					RRF Evaluation		
Analyte Name	**Compound Type**	**Fit Type**	**Eval.**	**Eval. Result**	**Q**	**Control Criteria**	**Average RRF**	**Q**	**Minimum RRF**
Vinyl Chloride	MS	AverageRF	% RSD	12.0		≤ 15	0.556		0.1
Dibromofluoromethane	SURR	AverageRF	% RSD	12.2		≤ 15	0.370		0.01
Toluene-d8	SURR	AverageRF	% RSD	11.1		≤ 15	0.798		0.01
4-Bromofluorobenzene	SURR	AverageRF	% RSD	14.8		≤ 15	0.445		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1705066
Calibration Date: 05/15/2017
Date Analyzed: 05/16/2017

Second Source Calibration Verification
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration ID: CAL15375
Units: ng/L

File ID: J:\MS30\DATA\051517_SIM\0515F020.D
J:\MS30\DATA\051617_SIM\0516F003.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	2000	0.556	0.558	0	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1705066
Date Analyzed: 05/23/2017

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration Date: 05/15/2017
Calibration ID: CAL15375
Analysis Lot: KWG1704209
Units: ng/L

File ID: J:\MS30\DATA\052317_SIM\0523F006.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	2200	0.1	0.556	0.618	11	NA	± 20	AverageRF
Dibromofluoromethane	1000	1100	0.01	0.370	0.399	8	NA	± 20	AverageRF
Toluene-d8	1000	1000	0.01	0.798	0.821	3	NA	± 20	AverageRF
4-Bromofluorobenzene	1000	900	0.01	0.445	0.399	-10	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1705066
Date Analyzed: 05/23/2017

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration Date: 05/15/2017
Calibration ID: CAL15375
Analysis Lot: KWG1704209
Units: ng/L

File ID: J:\MS30\DATA\052317_SIM\0523F026.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	1800	0.1	0.556	0.513	-8	NA	± 50 %	AverageRF
Dibromofluoromethane	1000	970	0.01	0.370	0.359	-3	NA	± 50 %	AverageRF
Toluene-d8	1000	1000	0.01	0.798	0.812	2	NA	± 50 %	AverageRF
4-Bromofluorobenzene	1000	850	0.01	0.445	0.378	-15	NA	± 50 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1705066
Project: ARNG OMS 28 Mobile AL

Analysis Run Log
Volatile Organic Compounds

Analysis Method: 8260C SIM **Analysis Lot:** KWG1704209
Instrument ID: MS30

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0523F005.D	GC/MS Tuning - Bromofluorobenzene	KWG1704209-1	5/23/2017	13:39		5/23/2017	13:56
0523F006.D	Continuing Calibration Verification	KWG1704209-2	5/23/2017	14:16		5/23/2017	14:33
0523F007.D	Lab Control Sample	KWG1704213-3	5/23/2017	15:10		5/23/2017	15:27
0523F008.D	Duplicate Lab Control Sample	KWG1704213-4	5/23/2017	15:38		5/23/2017	15:56
0523F011.D	Method Blank	KWG1704213-5	5/23/2017	16:49		5/23/2017	17:06
0523F012.D	ZZZZZZ	ZZZZZZ	5/23/2017	17:16		5/23/2017	17:33
0523F013.D	ZZZZZZ	ZZZZZZ	5/23/2017	17:44		5/23/2017	18:01
0523F014.D	ZZZZZZ	ZZZZZZ	5/23/2017	18:11		5/23/2017	18:29
0523F015.D	OMS-28-GW11-11-S	K1705066-001	5/23/2017	18:39		5/23/2017	18:57
0523F016.D	OMS-28-GW11-11-C	K1705066-002	5/23/2017	19:06		5/23/2017	19:23
0523F017.D	OMS-28-GW58-31-S	K1705066-003	5/23/2017	19:34		5/23/2017	19:52
0523F018.D	OMS-28-GW49-12-S	K1705066-004	5/23/2017	20:01		5/23/2017	20:18
0523F019.D	OMS-28-GW62-19-S	K1705066-005	5/23/2017	20:29		5/23/2017	20:46
0523F020.D	OMS-28-GW34-31-S	K1705066-006	5/23/2017	20:56		5/23/2017	21:13
0523F021.D	OMS-28-GW06-11-S	K1705066-007	5/23/2017	21:24		5/23/2017	21:41
0523F022.D	ZZZZZZ	ZZZZZZ	5/23/2017	21:51		5/23/2017	22:08
0523F023.D	ZZZZZZ	ZZZZZZ	5/23/2017	22:19		5/23/2017	22:36
0523F024.D	OMS-28-GW06-11-SMS	KWG1704213-1	5/23/2017	22:46		5/23/2017	23:04
0523F025.D	OMS-28-GW06-11-SDMS	KWG1704213-2	5/23/2017	23:14		5/23/2017	23:32
0523F026.D	Continuing Calibration Verification	KWG1704209-3	5/23/2017	23:41		5/23/2017	23:59

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Service Request: K1705066
Date Extracted: 05/23/2017

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C SIM

Extraction Lot: KWG1704213
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
OMS-28-GW11-11-S	K1705066-001	05/13/17	05/18/17	10ml	10ml	NA	
OMS-28-GW11-11-C	K1705066-002	05/13/17	05/18/17	10ml	10ml	NA	
OMS-28-GW58-31-S	K1705066-003	05/15/17	05/18/17	10ml	10ml	NA	
OMS-28-GW49-12-S	K1705066-004	05/15/17	05/18/17	10ml	10ml	NA	
OMS-28-GW62-19-S	K1705066-005	05/16/17	05/18/17	10ml	10ml	NA	
OMS-28-GW34-31-S	K1705066-006	05/17/17	05/18/17	10ml	10ml	NA	
OMS-28-GW06-11-S	K1705066-007	05/17/17	05/18/17	10ml	10ml	NA	
Method Blank	KWG1704213-5	NA	NA	10ml	10ml	NA	
OMS-28-GW06-11-SMS	KWG1704213-1	05/17/17	05/18/17	10ml	10ml	NA	
OMS-28-GW06-11-SDMS	KWG1704213-2	05/17/17	05/18/17	10ml	10ml	NA	
Lab Control Sample	KWG1704213-3	NA	NA	10ml	10ml	NA	
Duplicate Lab Control Sample	KWG1704213-4	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F015.D
Lab ID: K1705066-001
RunType: SMPL
Matrix: WATER

Date Acquired: 05/23/2017 18:39
Date Quantitated: 05/24/2017 09:10
Batch ID: KWG1704209
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KS 5/24/17

Secondary Review: MN

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F015.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 18:39	**Quant Date:**	05/24/2017 09:10	**Vial:**	9
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1705066-001			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/13/2017	**Receive Date:**	05/18/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	K1705066
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605445	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	48599	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34847	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19786	1,101	110	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	39996	1,032	103	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	13108	845.54	85	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride				62	0d		4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F015.D Vial: 9
Acq On : 23 May 2017 06:39 pm Operator: KR
Sample : K5066-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 08:44:47 2017 Quant Results File: 051517MS30_8260SIM.RES

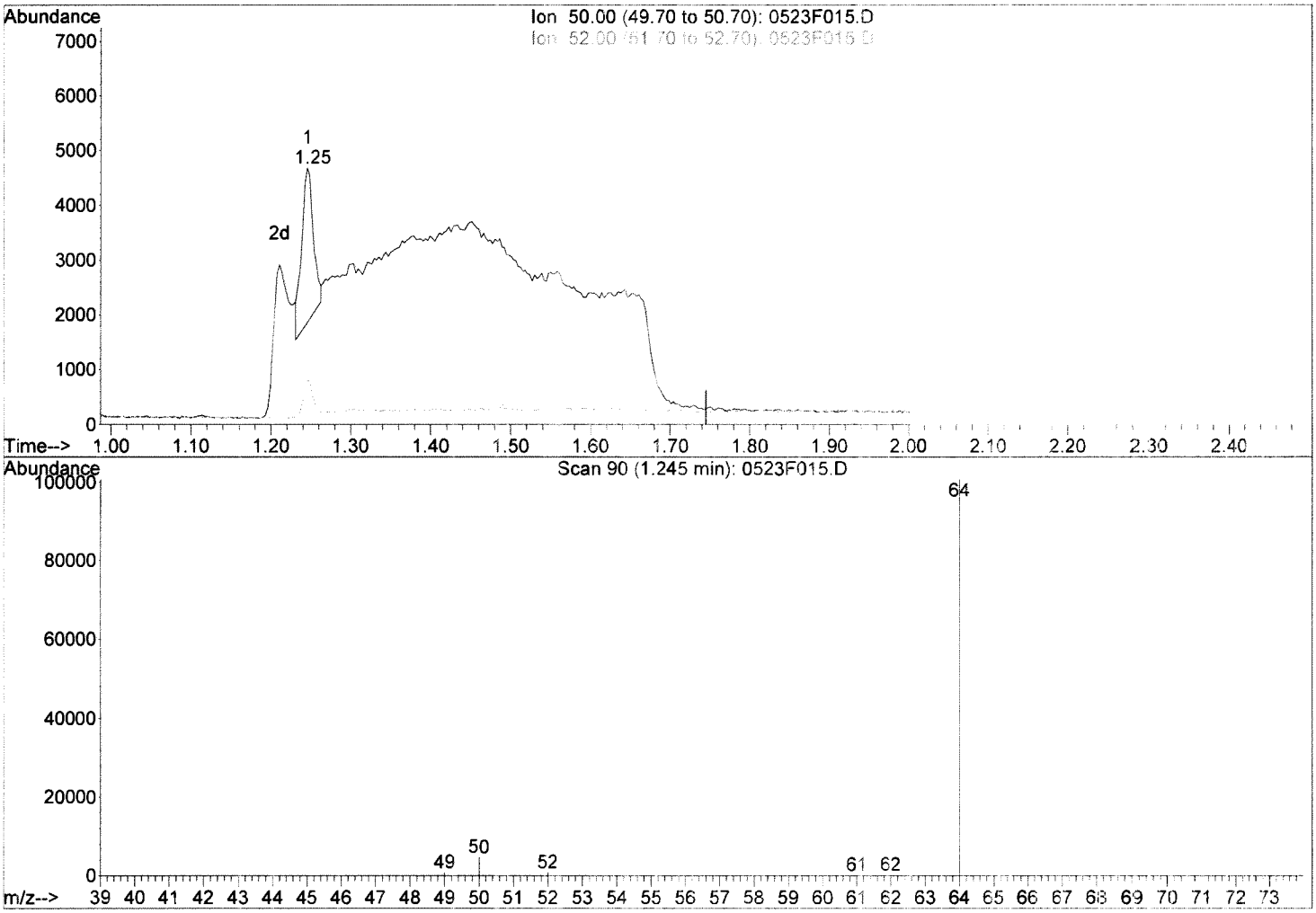
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	48599	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	34847	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	17951	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19786	1100.72	ng/L		0.00
Spiked Amount 1000.000			Recovery = 110.07%				
15) Toluene-d8	8.05	98	39996	1031.80	ng/L		0.00
Spiked Amount 1000.000			Recovery = 103.18%				
25) 4-Bromofluorobenzene	10.73	95	13108	845.54	ng/L		0.00
Spiked Amount 1000.000			Recovery = 84.55%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	2324m	83.55	ng/L		
5) Methylene Chloride	3.08	84	482	22.90	ng/L		93
6) trans-1,2-Dichloroethene	3.37	96	61	3.58	ng/L	#	52
8) Chloroform	5.40	83	289	8.27	ng/L		81
11) Benzene	5.97	78	2099	31.60	ng/L		95
13) Trichloroethene	6.75	95	278	17.02	ng/L		85
16) 1,1,2-Trichloroethane	8.62	83	19	1.45	ng/L	#	50
20) Toluene	8.12	92	57451	1878.50	ng/L		99
21) Ethylbenzene	9.66	106	190	12.88	ng/L	#	73
22) 1,1,1,2-Tetrachloroethane	9.68	131	10	0.54	ng/L	#	38
23) m,p-Xylenes	9.78	106	447	26.47	ng/L		97
24) o-Xylene	10.17	106	461	26.77	ng/L	#	74
28) Tetrachloroethene	8.64	164	84	5.86	ng/L	#	79
30) 1,4-Dichlorobenzene	11.90	146	198	6.11	ng/L	#	63

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F015.D Vial: 9
Acq On : 23 May 2017 06:39 pm Operator: KR
Sample : K5066-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 8:44 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F015.D

(2) Chloromethane (T)

1.25min 105.62ng/L

response 2938

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	27.51
49.00	10.30	12.29
0.00	0.00	0.00

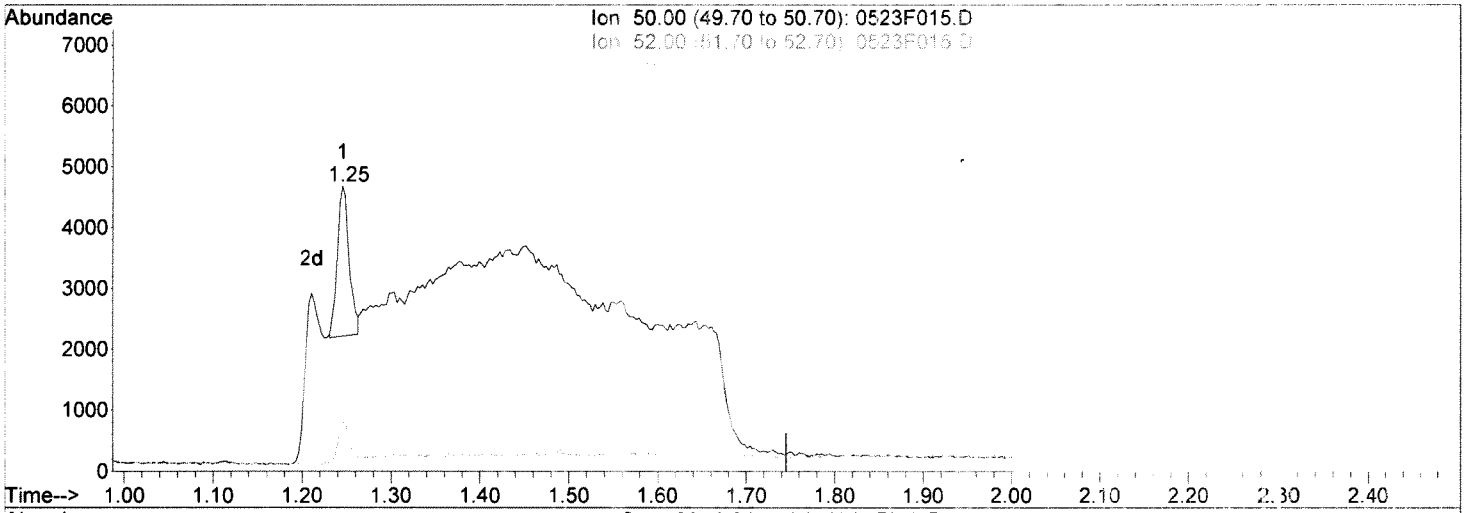
Manual Integration:

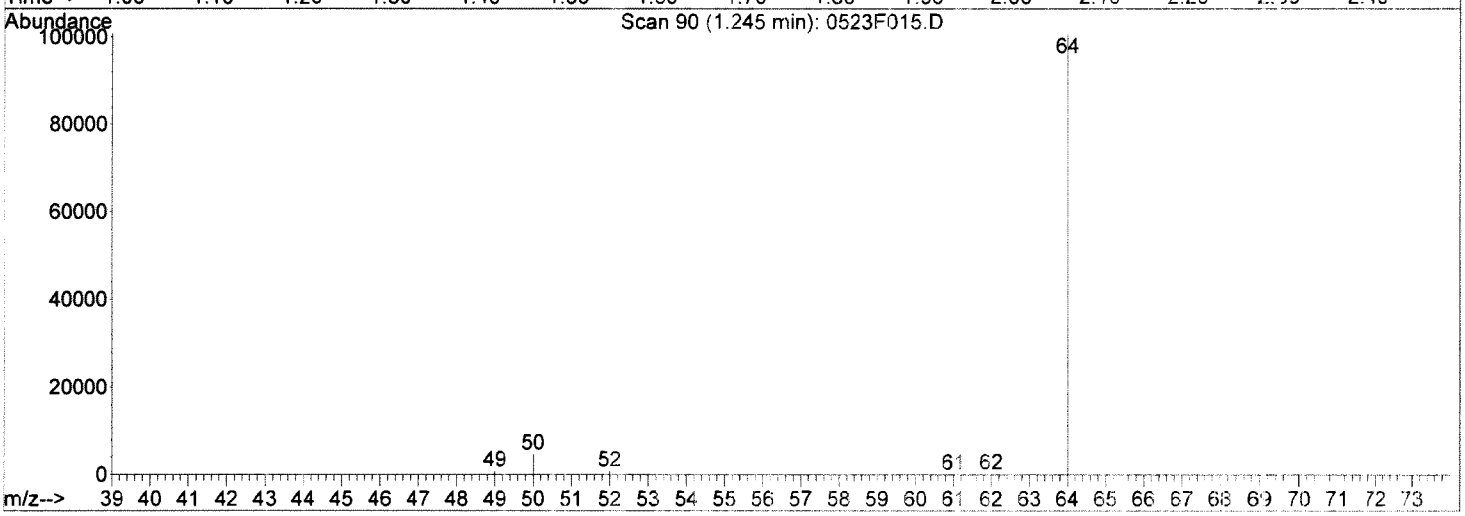
Before

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F015.D Vial: 9
Acq On : 23 May 2017 06:39 pm Operator: KR
Sample : K5066-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:08 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F015.D

(2) Chloromethane (T)

1.25min 83.55ng/L m

response 2324

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	17.17
49.00	10.30	16.57
0.00	0.00	0.00

Manual Integration:

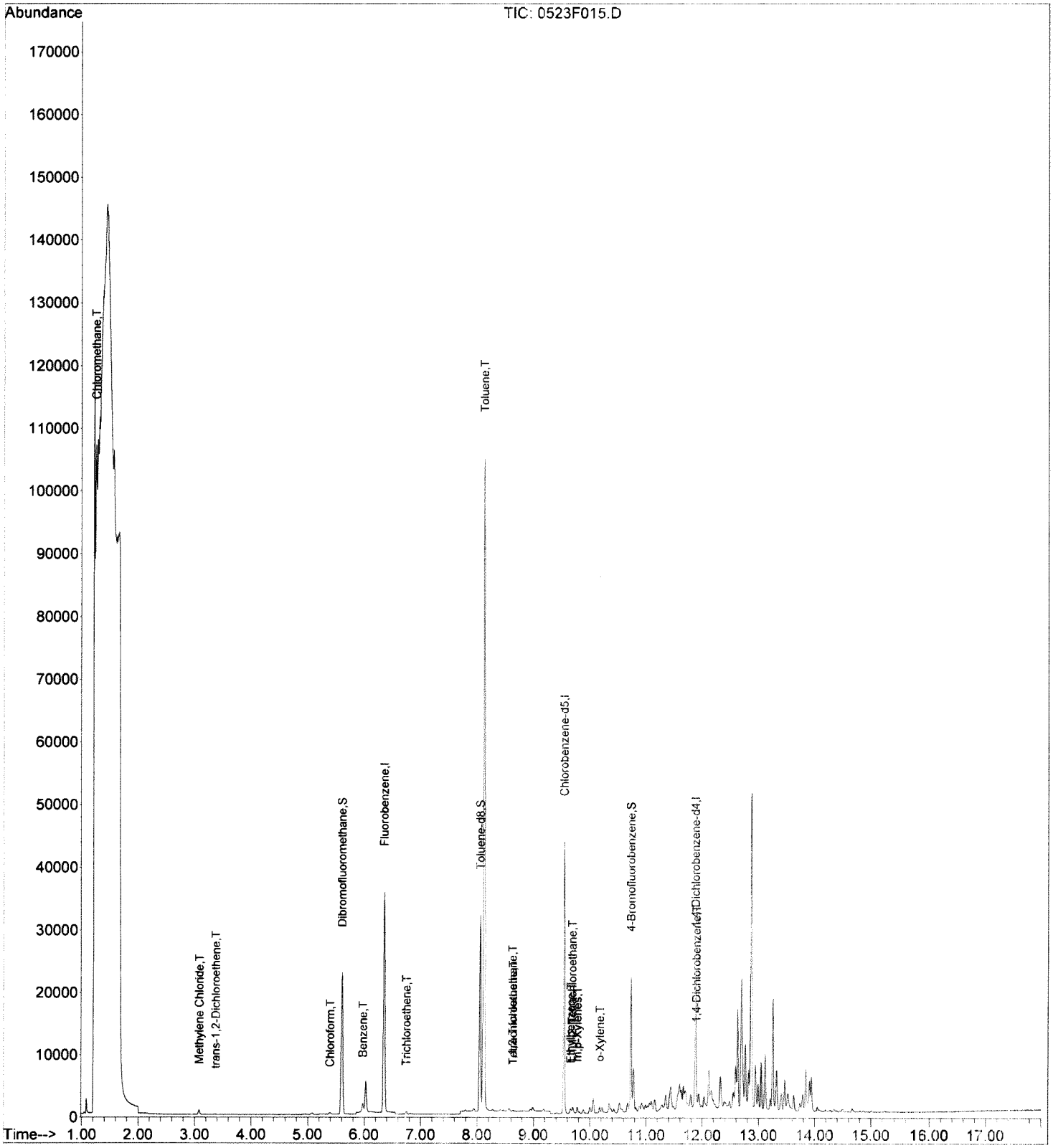
After

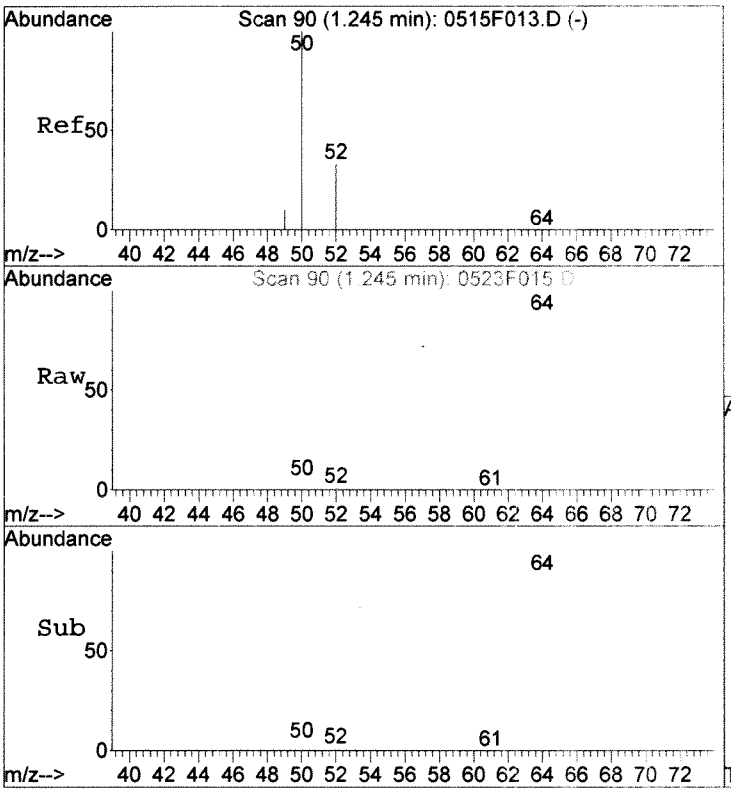
Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F015.D Vial: 9
Acq On : 23 May 2017 06:39 pm Operator: KR
Sample : K5066-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:10 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

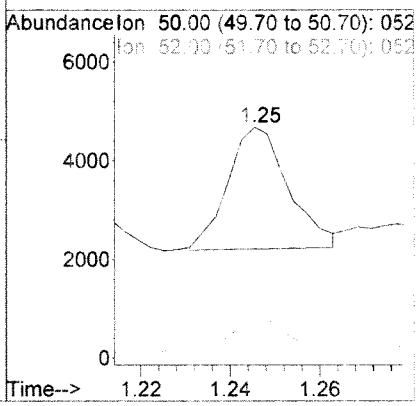


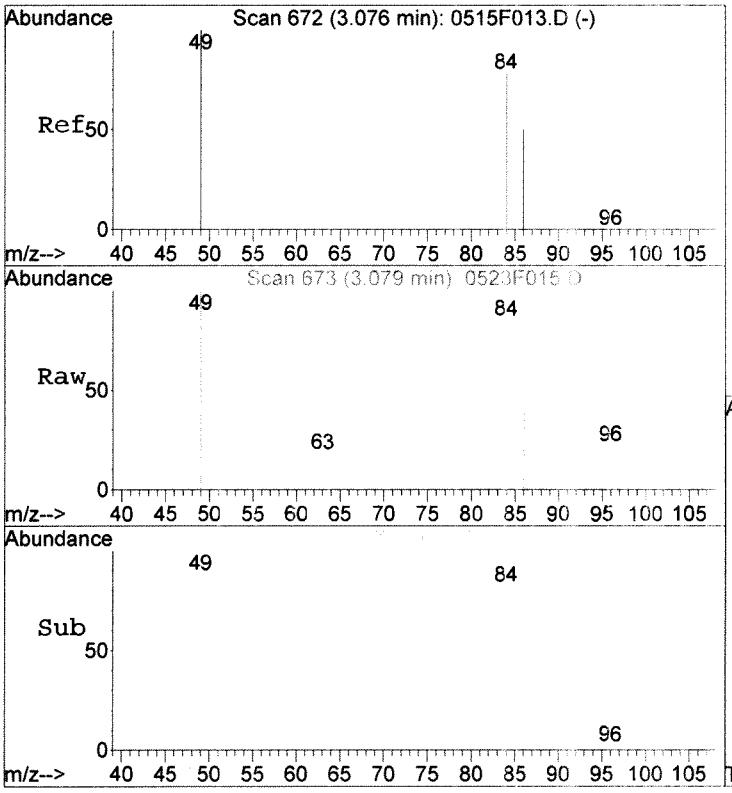


#2
Chloromethane
Concen: 83.55 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion: 50 Resp: 2324

Ion	Ratio	Lower	Upper
50	100		
52	17.2	2.5	62.5
49	16.6	0.0	40.3

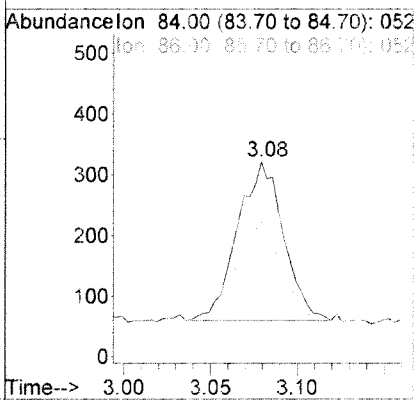


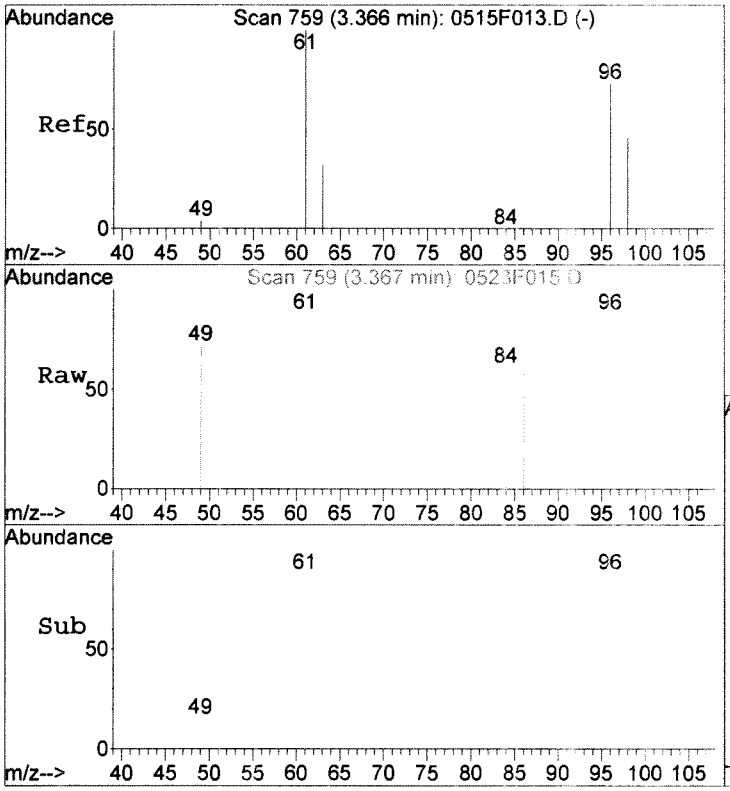


#5
Methylene Chloride
Concen: 22.90 ng/L
RT: 3.08 min Scan# 673
Delta R.T. 0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion: 84 Resp: 482

Ion	Ratio	Lower	Upper
84	100		
86	61.8	34.0	94.0
49	118.7	98.8	158.8

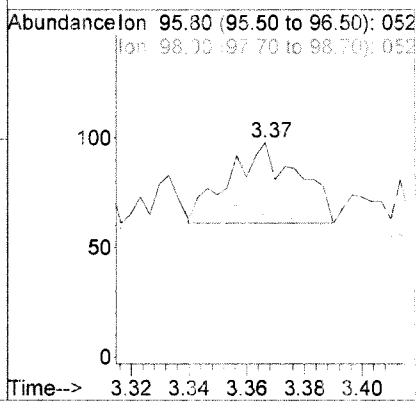


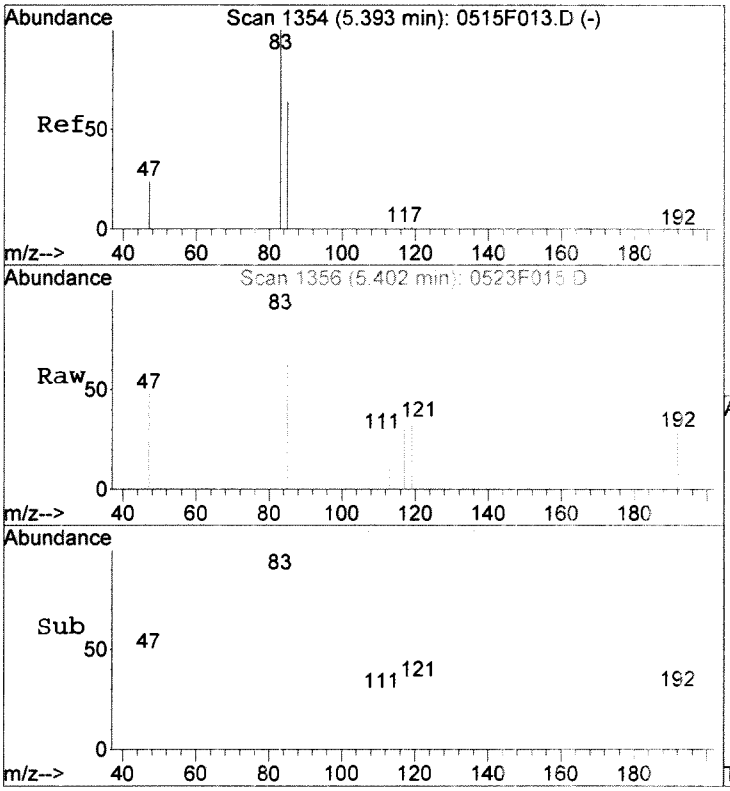


#6
trans-1,2-Dichloroethene
Concen: 3.58 ng/L
RT: 3.37 min Scan# 759
Delta R.T. 0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion: 96 Resp: 61

Ion	Ratio	Lower	Upper
96	100		
98	8.1	32.9	92.9#
61	91.9	107.3	167.3#

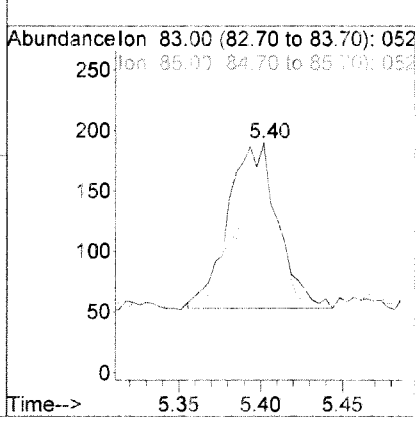


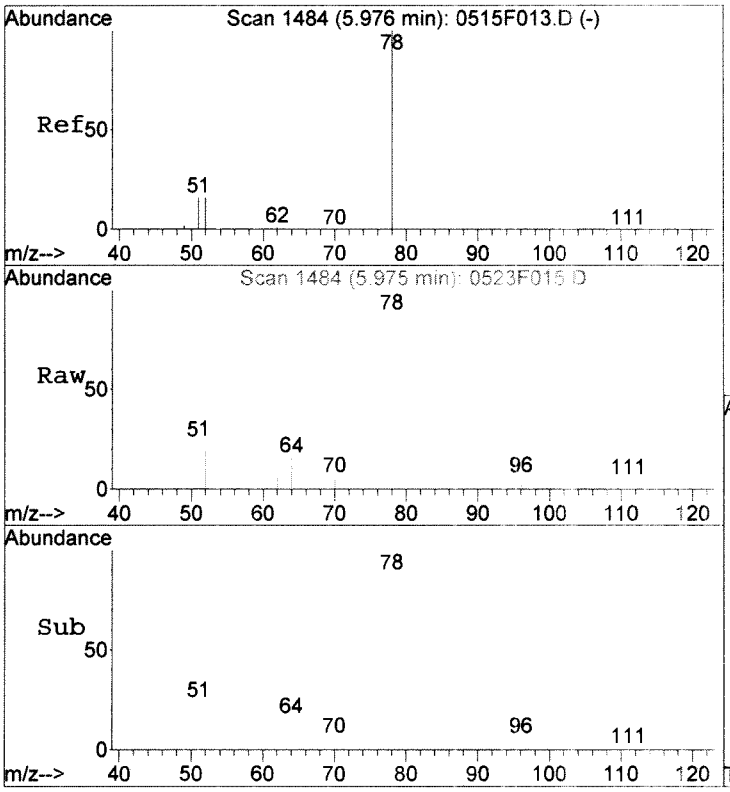


#8
Chloroform
Concen: 8.27 ng/L
RT: 5.40 min Scan# 1356
Delta R.T. 0.01 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion: 83 Resp: 289

Ion	Ratio	Lower	Upper
83	100		
85	46.7	34.0	94.0
47	17.5	0.0	53.5

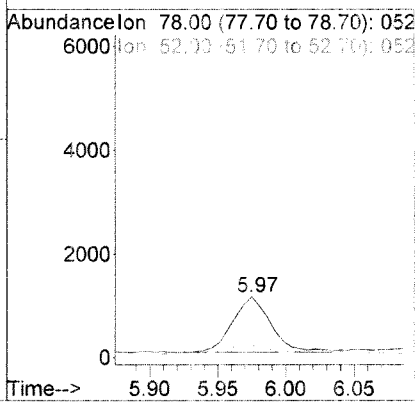


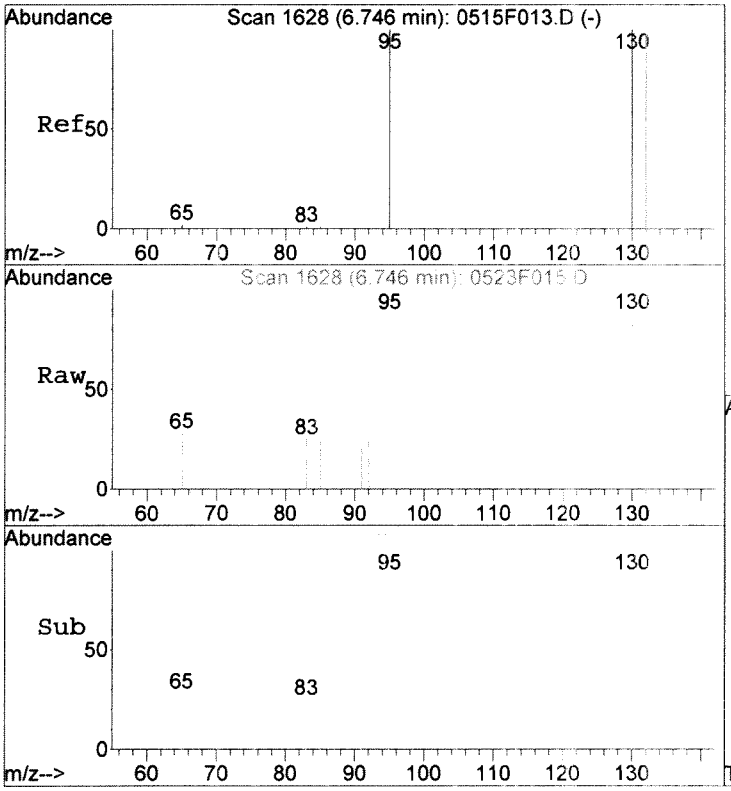


#11
Benzene
Concen: 31.60 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion: 78 Resp: 2099

Ion	Ratio	Lower	Upper
78	100		
52	12.4	0.0	45.8
51	17.4	0.0	46.5

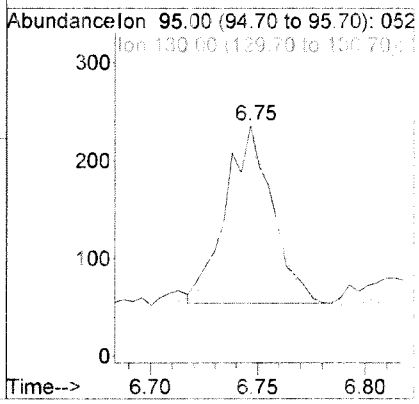


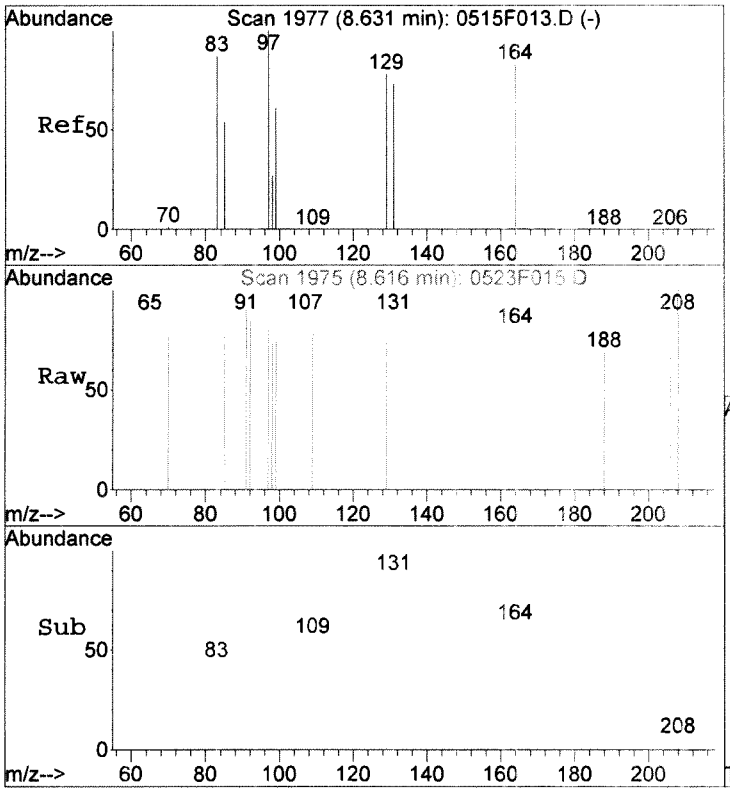


#13
Trichloroethene
Concen: 17.02 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion: 95 Resp: 278

Ion	Ratio	Lower	Upper
95	100		
130	84.1	69.5	129.5
132	82.4	67.2	127.2

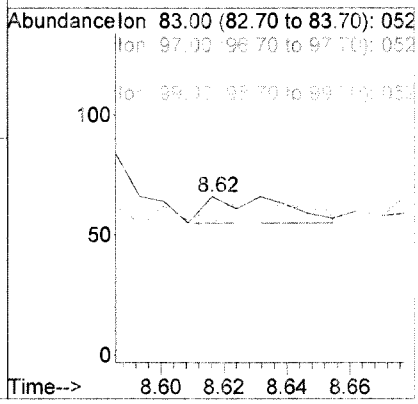


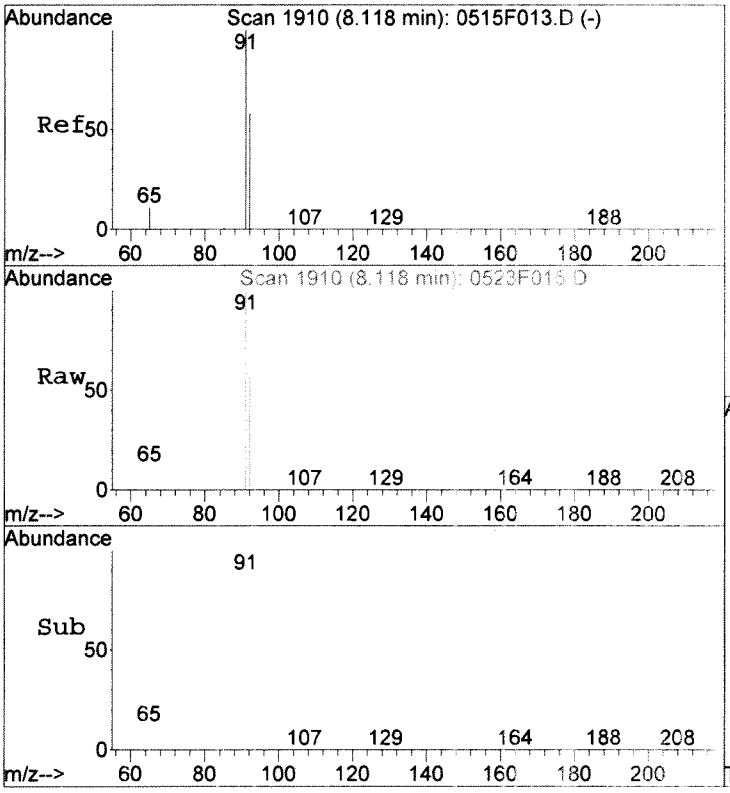


#16
1,1,2-Trichloroethane
Concen: 1.45 ng/L
RT: 8.62 min Scan# 1975
Delta R.T. -0.02 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion: 83 Resp: 19

Ion	Ratio	Lower	Upper
83	100		
97	45.5	84.4	144.4#
85	45.5	32.3	92.3
99	27.3	39.4	99.4#

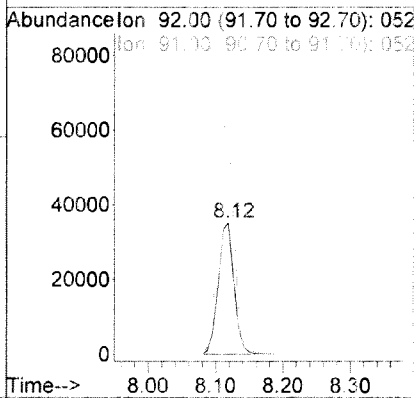


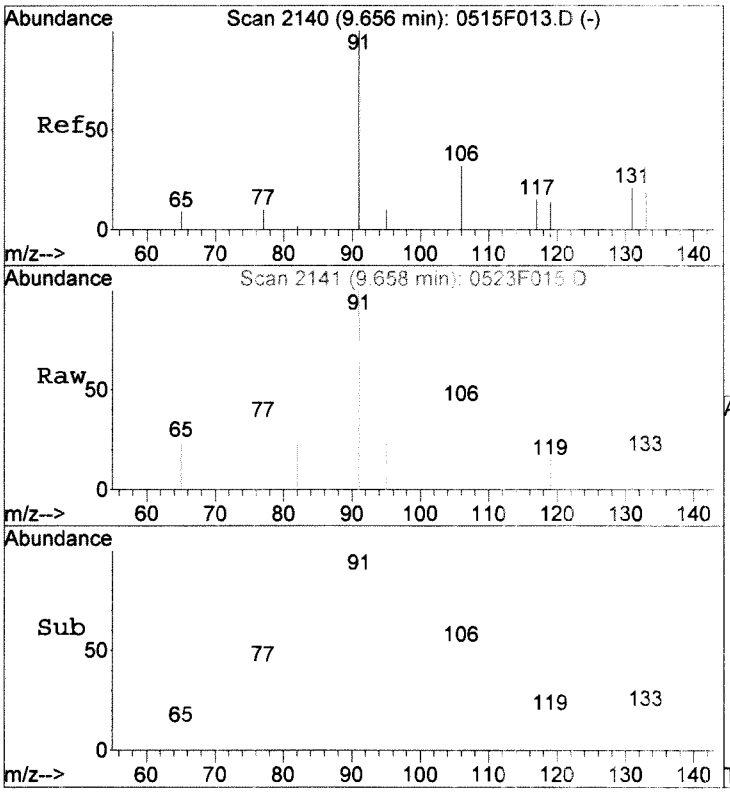


#20
Toluene
Concen: 1878.50 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion: 92 Resp: 57451

Ion	Ratio	Lower	Upper
92	100		
91	174.9	143.6	203.6
65	20.3	0.0	49.9

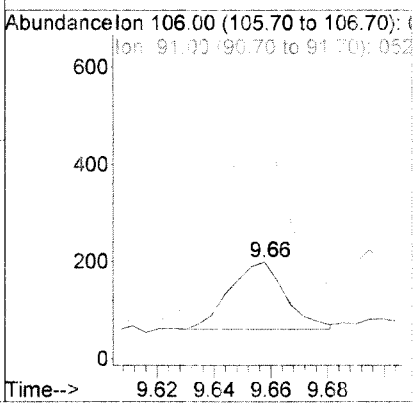


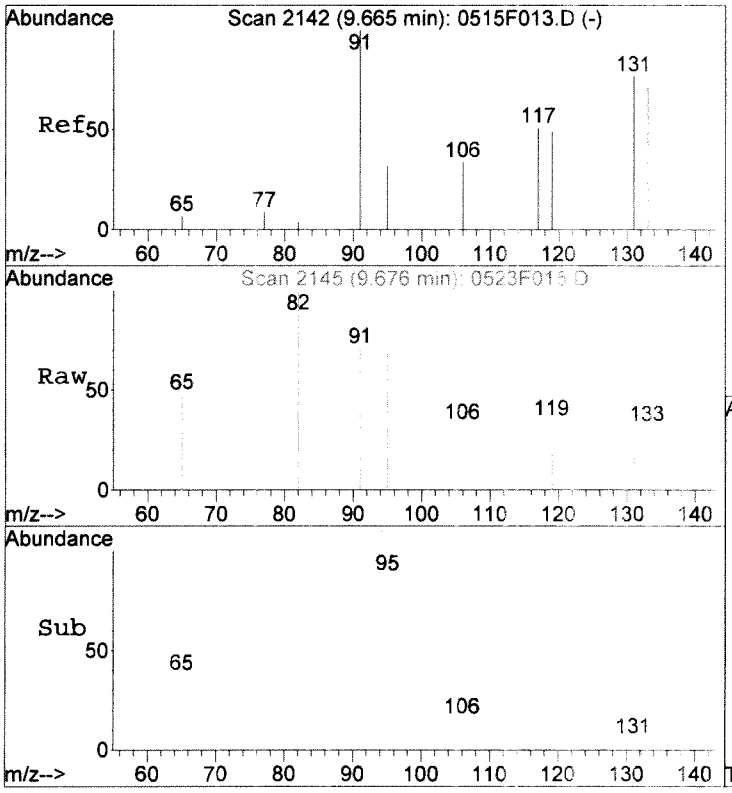


#21
Ethylbenzene
Concen: 12.88 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion:106 Resp: 190

Ion	Ratio	Lower	Upper
106	100		
91	260.9	285.7	345.7#
77	44.9	1.3	61.3

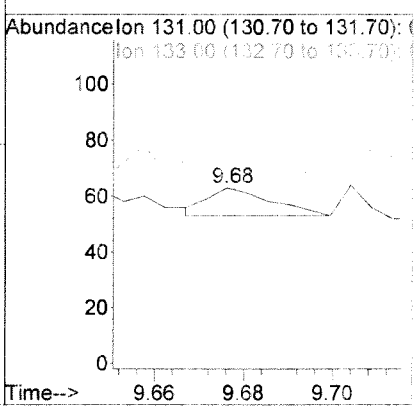


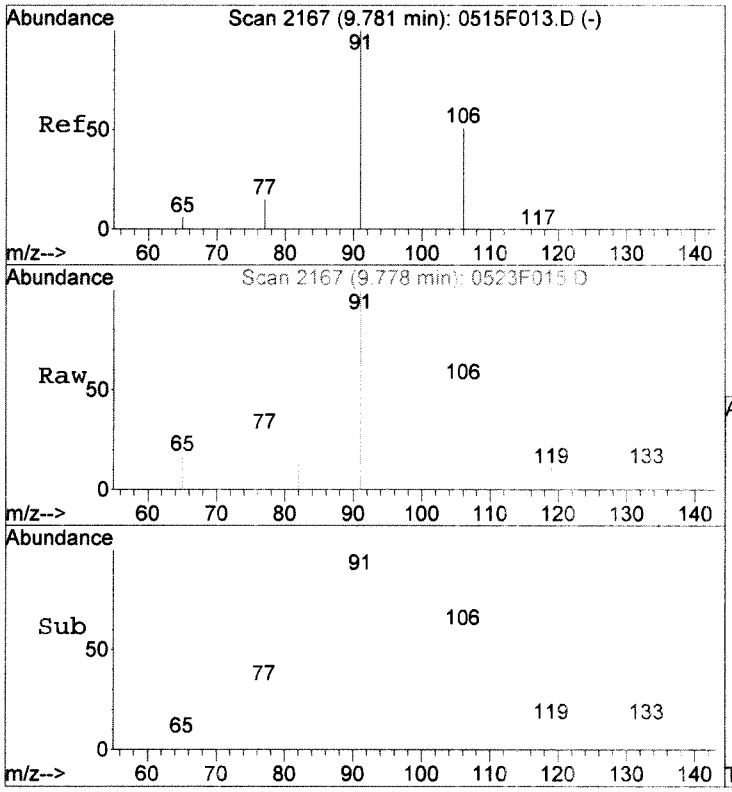


#22
1,1,1,2-Tetrachloroethane
Concen: 0.54 ng/L
RT: 9.68 min Scan# 2145
Delta R.T. 0.01 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion:131 Resp: 10

Ion	Ratio	Lower	Upper
131	100		
133	140.0	74.4	114.4#
119	130.0	43.9	83.9#

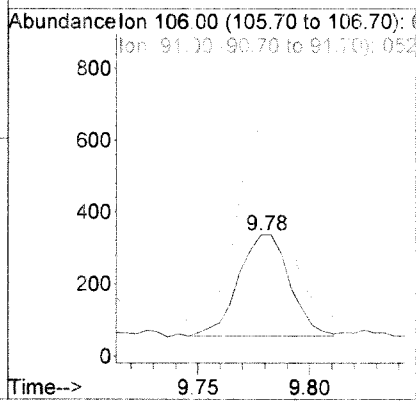


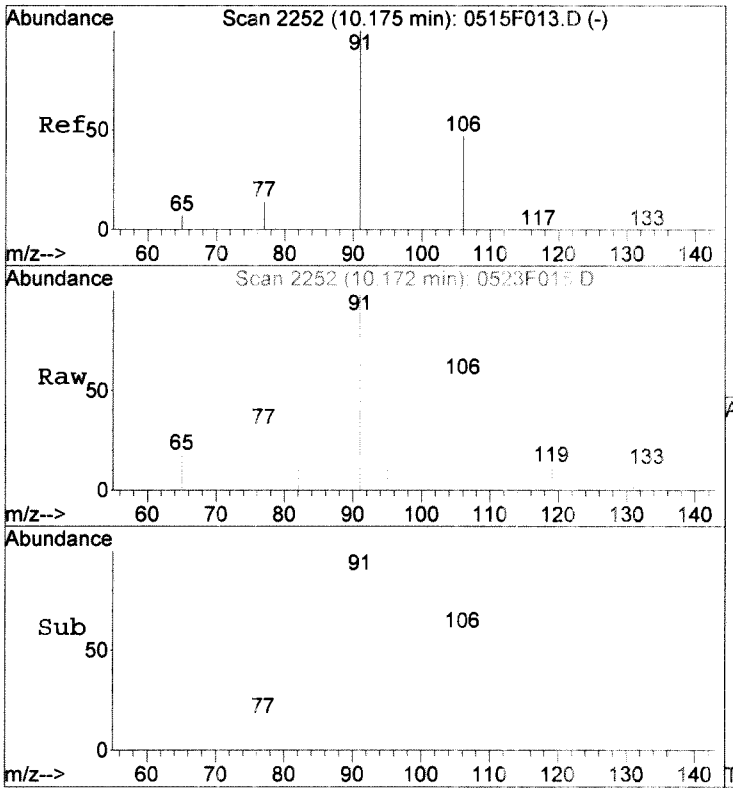


#23
m,p-Xylenes
Concen: 26.47 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion:106 Resp: 447

Ion	Ratio	Lower	Upper
106	100		
91	192.5	166.8	226.8
77	28.9	0.0	58.7

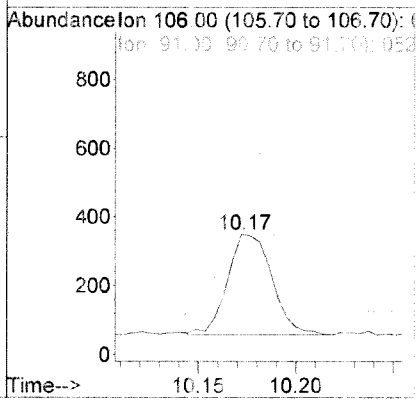


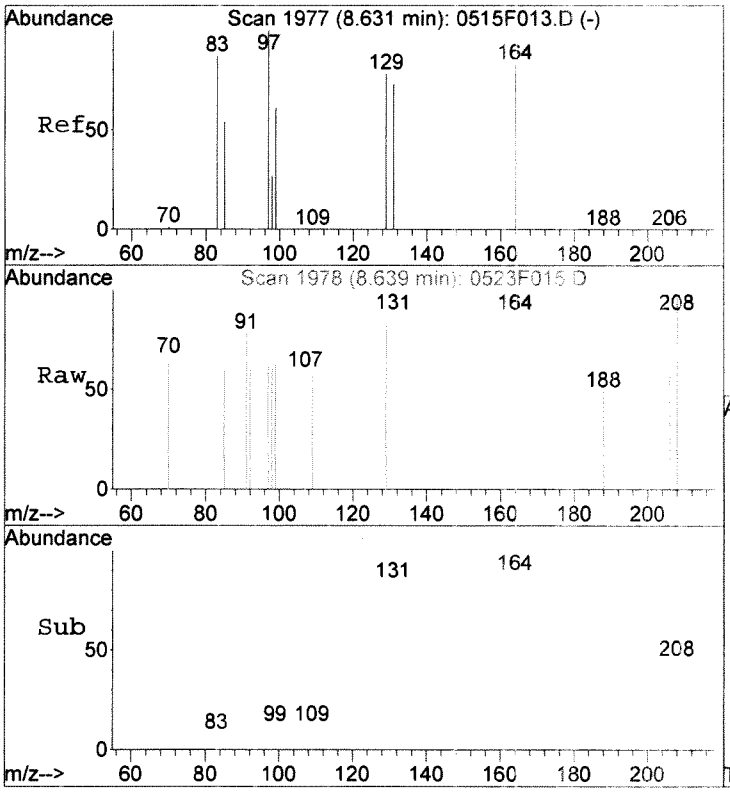


#24
o-Xylene
Concen: 26.77 ng/L
RT: 10.17 min Scan# 2252
Delta R.T. -0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion:106 Resp: 461

Ion	Ratio	Lower	Upper
106	100		
91	172.3	184.3	244.3#
65	10.6	0.0	44.6

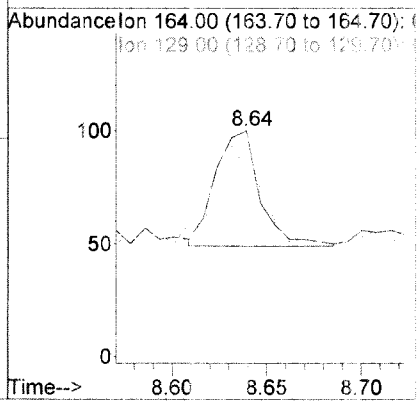


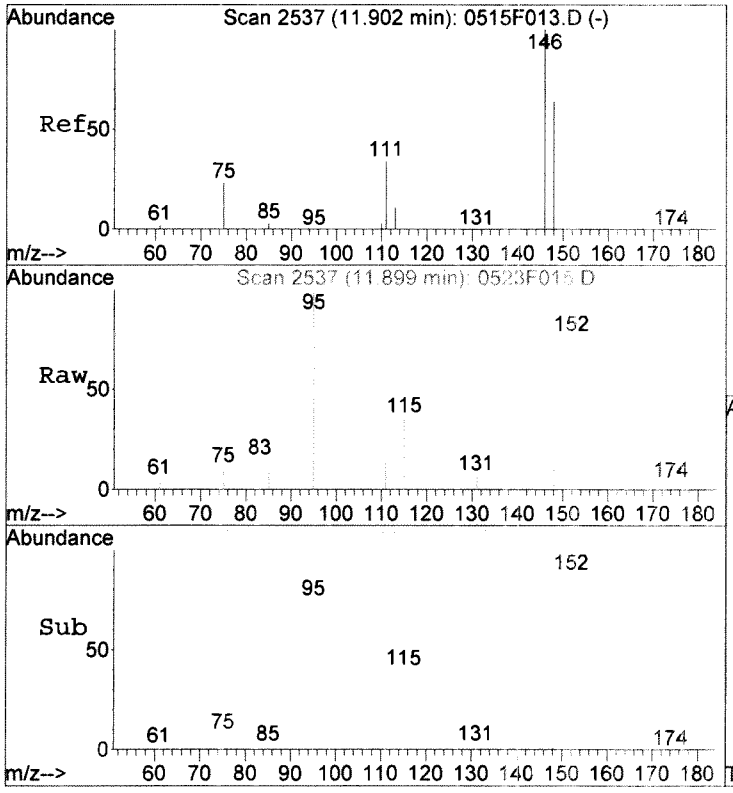


#28
Tetrachloroethene
Concen: 5.86 ng/L
RT: 8.64 min Scan# 1978
Delta R.T. 0.01 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion:164 Resp: 84

Ion	Ratio	Lower	Upper
164	100		
129	62.0	63.1	123.1#
131	80.0	57.4	117.4

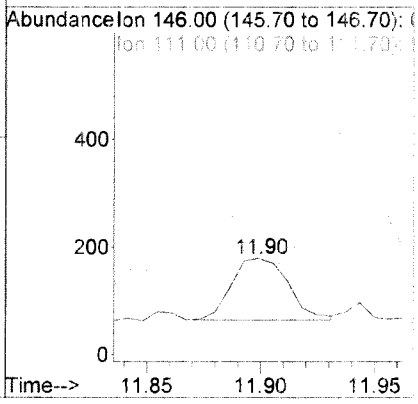




#30
1,4-Dichlorobenzene
Concen: 6.11 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0523F015.D
Acq: 23 May 2017 06:39 pm

Tgt Ion:146 Resp: 198

Ion	Ratio	Lower	Upper
146	100		
111	0.0	4.0	64.0#
148	84.2	34.3	94.3



Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F016.D
Lab ID: K1705066-002
RunType: SMPL
Matrix: WATER

Date Acquired: 05/23/2017 19:06
Date Quantitated: 05/24/2017 09:12
Batch ID: KWG1704209
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KA 5/24/17

Secondary Review: MM

Printed: 05/24/2017 09:47:05
u:\Stealth\Crystal.rpt\except2.rpt

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F016.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 19:06	**Quant Date:**	05/24/2017 09:12	**Vial:**	10
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1705066-002			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/13/2017	**Receive Date:**	05/18/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	K1705066
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605446	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	49564	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	35476	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
I	Dibromofluoromethane	5.60	0.00	0.00	113	19582	1.068	107	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	40311	1.020	102	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12443	788.41	79	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	39	1.41	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F016.D Vial: 10
Acq On : 23 May 2017 07:06 pm Operator: KR
Sample : K5066-002 TB041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 09:10:37 2017 Quant Results File: 051517MS30_8260SIM.RES

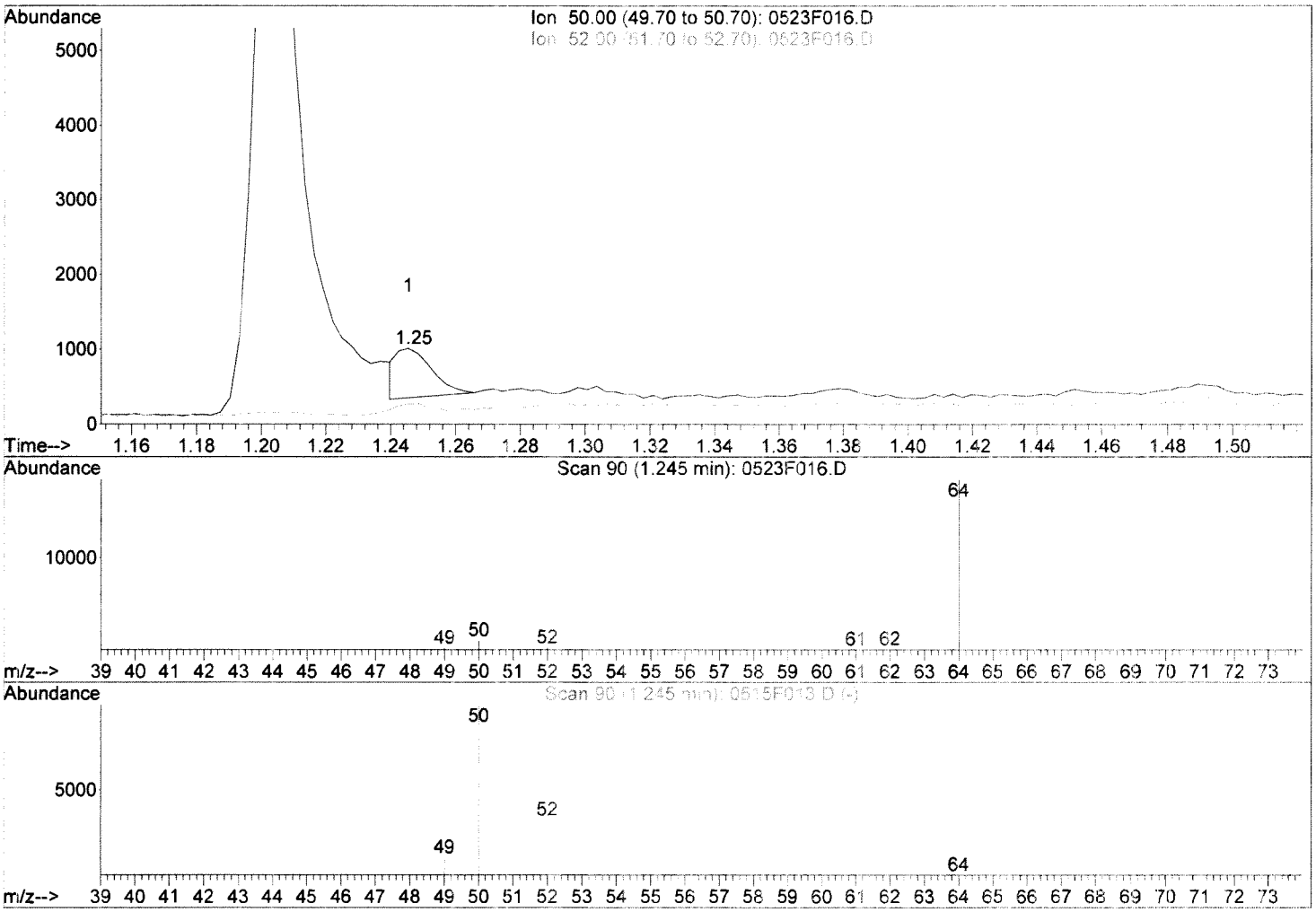
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	49564	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	35476	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	14687	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19582	1068.16	ng/L		0.00
Spiked Amount 1000.000			Recovery = 106.82%				
15) Toluene-d8	8.05	98	40311	1019.67	ng/L		0.00
Spiked Amount 1000.000			Recovery = 101.97%				
25) 4-Bromofluorobenzene	10.73	95	12443	788.41	ng/L		0.00
Spiked Amount 1000.000			Recovery = 78.84%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	431m	15.19	ng/L		
3) Vinyl Chloride	1.33	62	39	1.41	ng/L	#	1
5) Methylene Chloride	3.08	84	1555	72.44	ng/L		95
8) Chloroform	5.39	83	88m	2.47	ng/L		
11) Benzene	5.97	78	1796	26.51	ng/L		99
16) 1,1,2-Trichloroethane	8.63	83	18	1.35	ng/L	#	57
20) Toluene	8.12	92	106049	3406.05	ng/L		100
21) Ethylbenzene	9.65	106	70	4.66	ng/L	#	61
22) 1,1,1,2-Tetrachloroethane	9.66	131	17	0.91	ng/L	#	25
23) m,p-Xylenes	9.78	106	252	14.66	ng/L		83
24) o-Xylene	10.18	106	167	9.52	ng/L	#	77
28) Tetrachloroethene	8.64	164	78	5.34	ng/L	#	76
30) 1,4-Dichlorobenzene	11.90	146	213	8.04	ng/L		79

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F016.D Vial: 10
Acq On : 23 May 2017 07:06 pm Operator: KR
Sample : K5066-002 TB041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:10 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F016.D

(2) Chloromethane (T)

1.25min 17.66ng/L

response 501

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	12.73
49.00	10.30	11.04
0.00	0.00	0.00

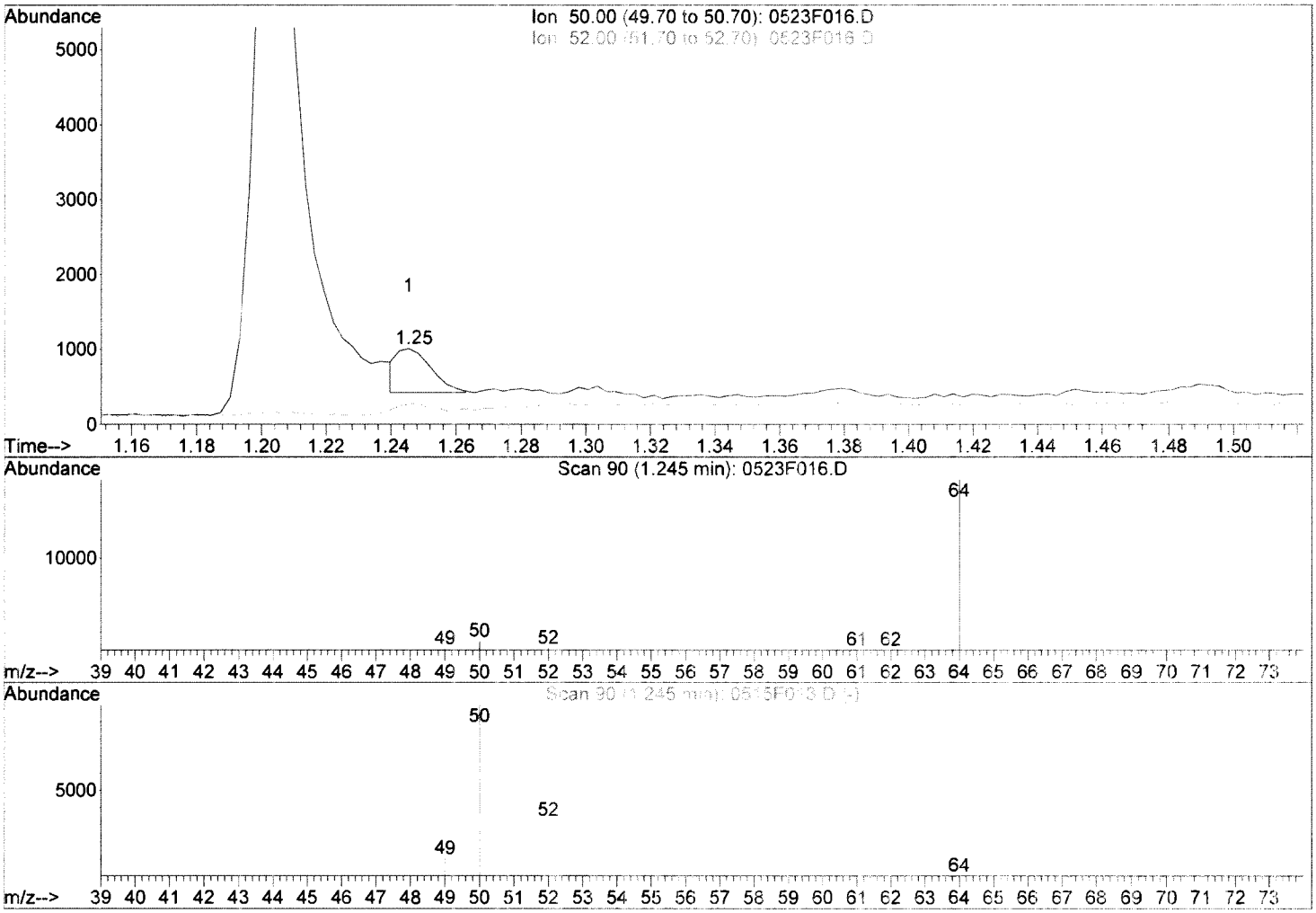
Manual Integration:

Before

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F016.D Vial: 10
Acq On : 23 May 2017 07:06 pm Operator: KR
Sample : K5066-002 TB041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:10 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F016.D

(2) Chloromethane (T)

1.25min 15.19ng/L m

response 431

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	26.14
49.00	10.30	19.31
0.00	0.00	0.00

Manual Integration:

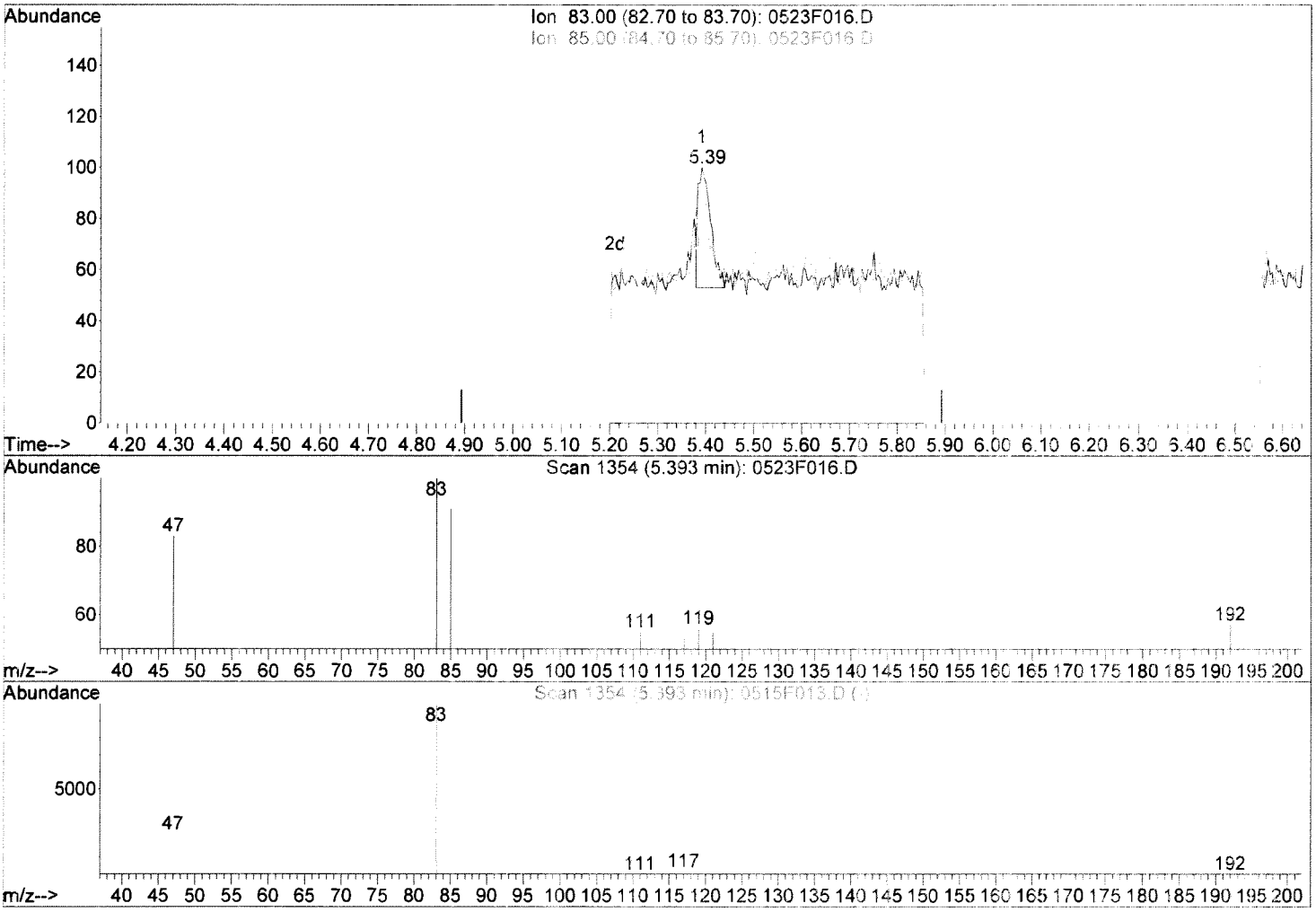
After

Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F016.D Vial: 10
Acq On : 23 May 2017 07:06 pm Operator: KR
Sample : K5066-002 TB041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:11 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F016.D

(8) Chloroform (T)

5.39min 2.38ng/L

response 85

Ion	Exp%	Act%
83.00	100	100
85.00	64.00	68.09
47.00	23.50	40.43
0.00	0.00	0.00

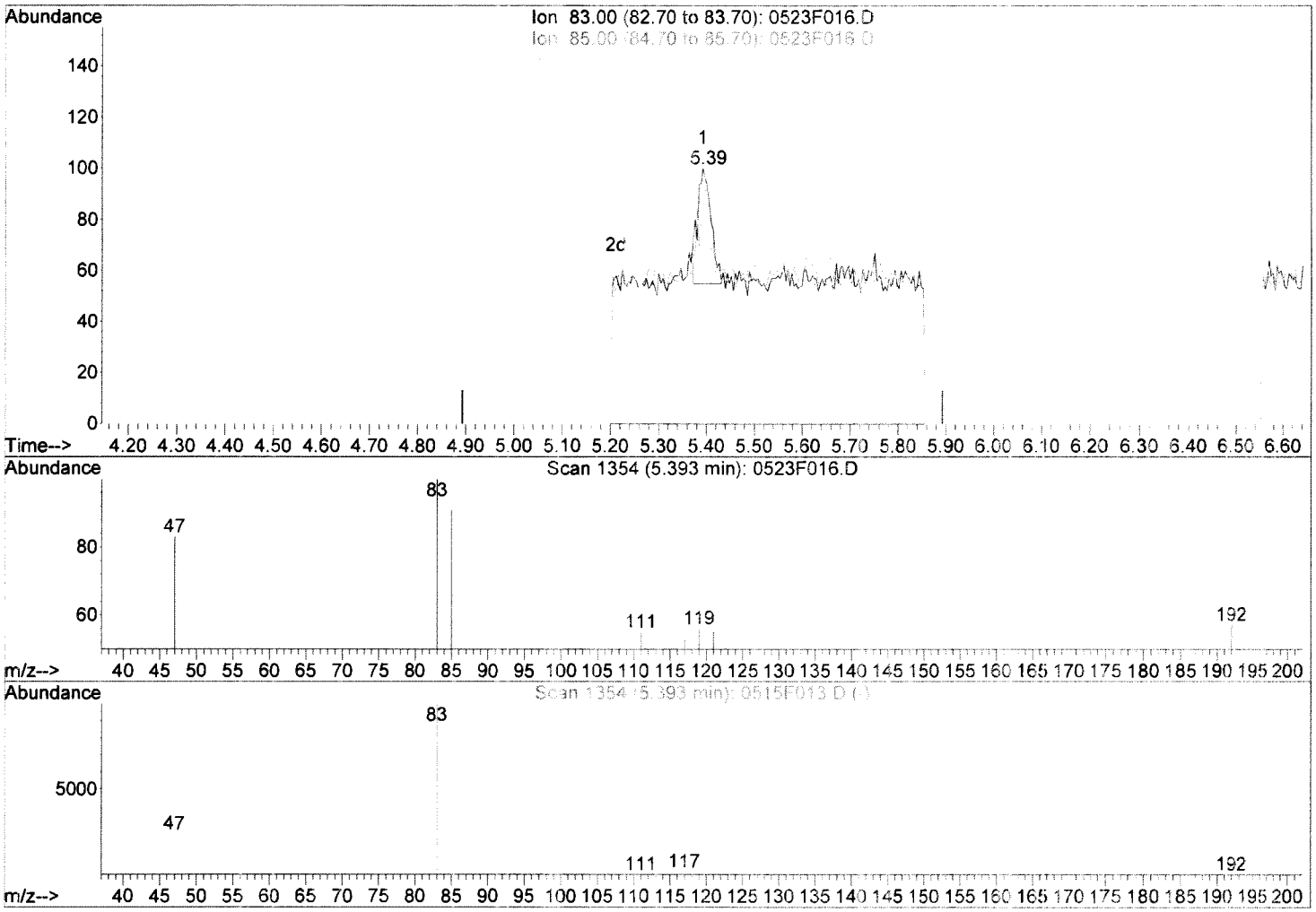
Manual Integration:

Before

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F016.D Vial: 10
Acq On : 23 May 2017 07:06 pm Operator: KR
Sample : K5066-002 TB041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:11 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F016.D

(8) Chloroform (T)

5.39min 2.47ng/L m

response 88

Ion	Exp%	Act%
83.00	100	100
85.00	64.00	91.00
47.00	23.50	83.00#
0.00	0.00	0.00

Manual Integration:

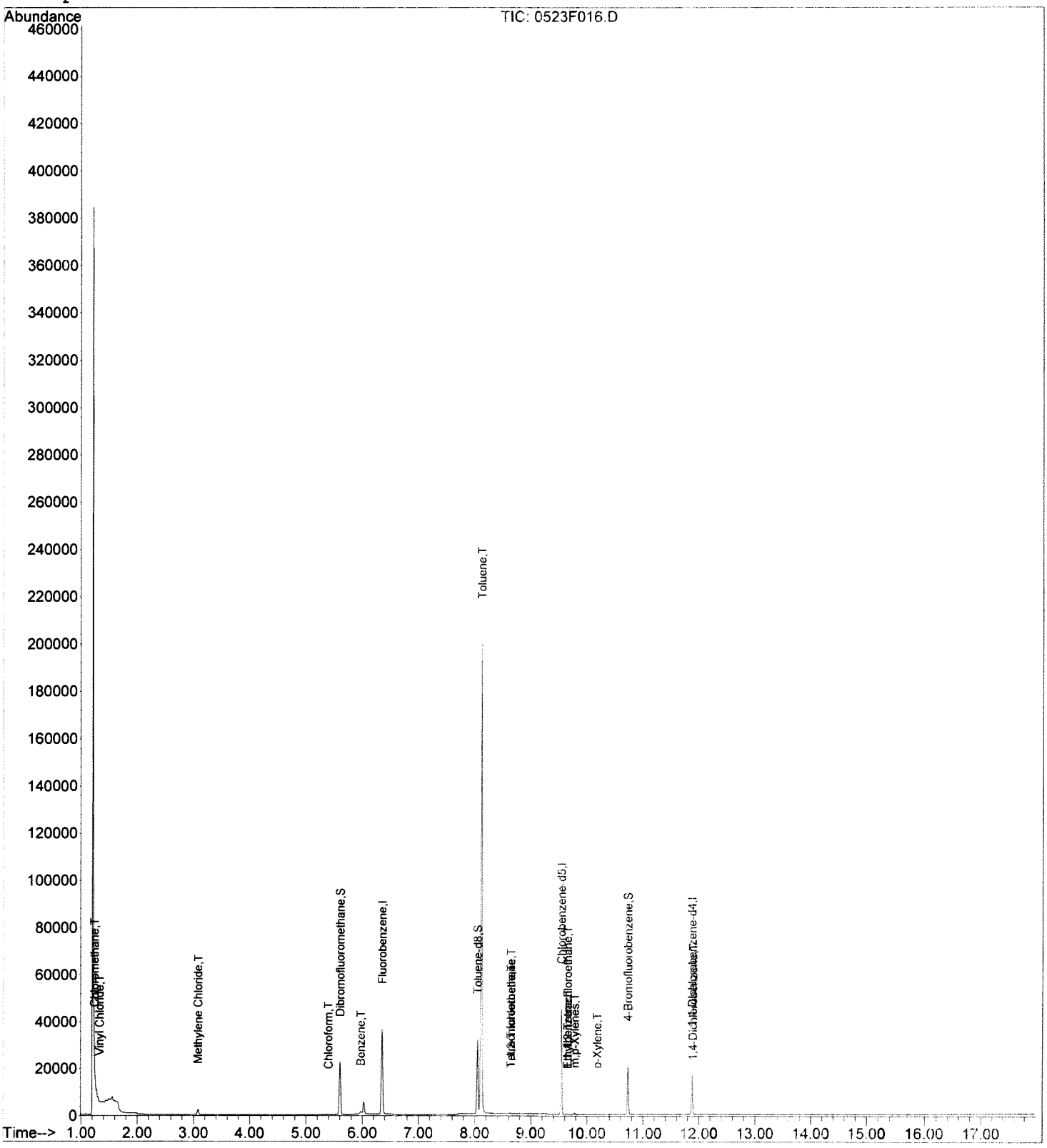
After

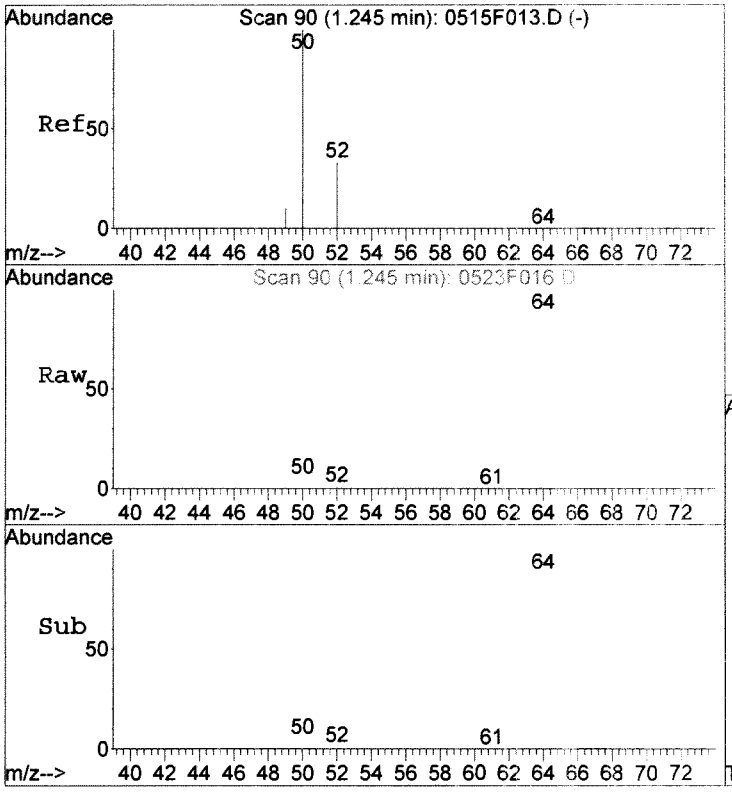
Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F016.D Vial: 10
Acq On : 23 May 2017 07:06 pm Operator: KR
Sample : K5066-002 TB041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:12 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

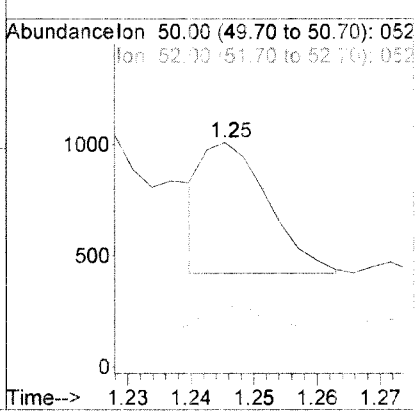


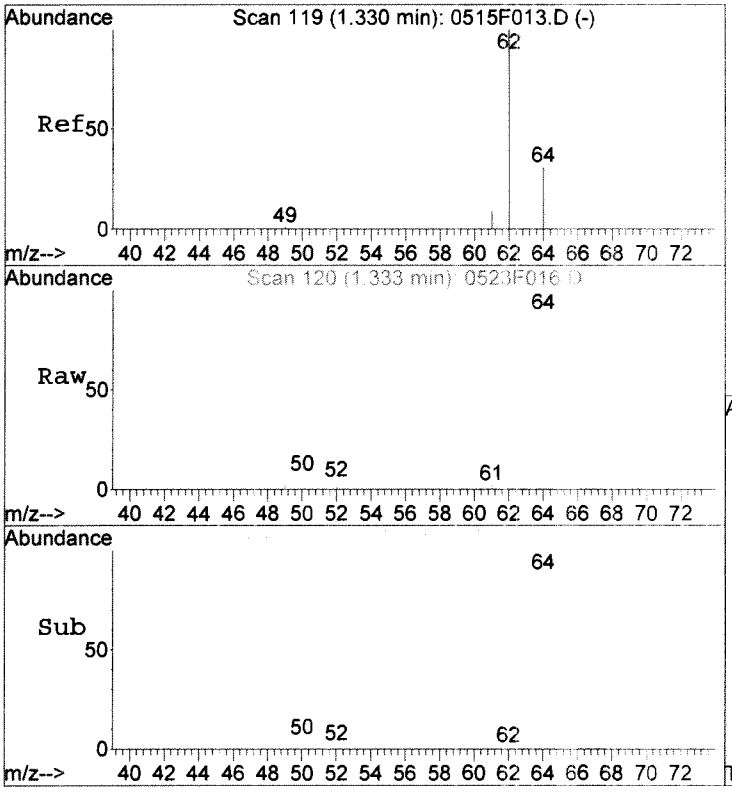


#2
Chloromethane
Concen: 15.19 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion: 50 Resp: 431

Ion	Ratio	Lower	Upper
50	100		
52	26.1	2.5	62.5
49	19.3	0.0	40.3

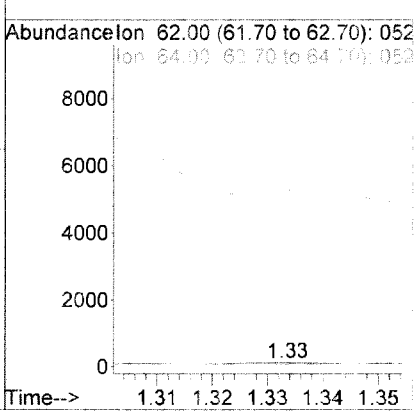


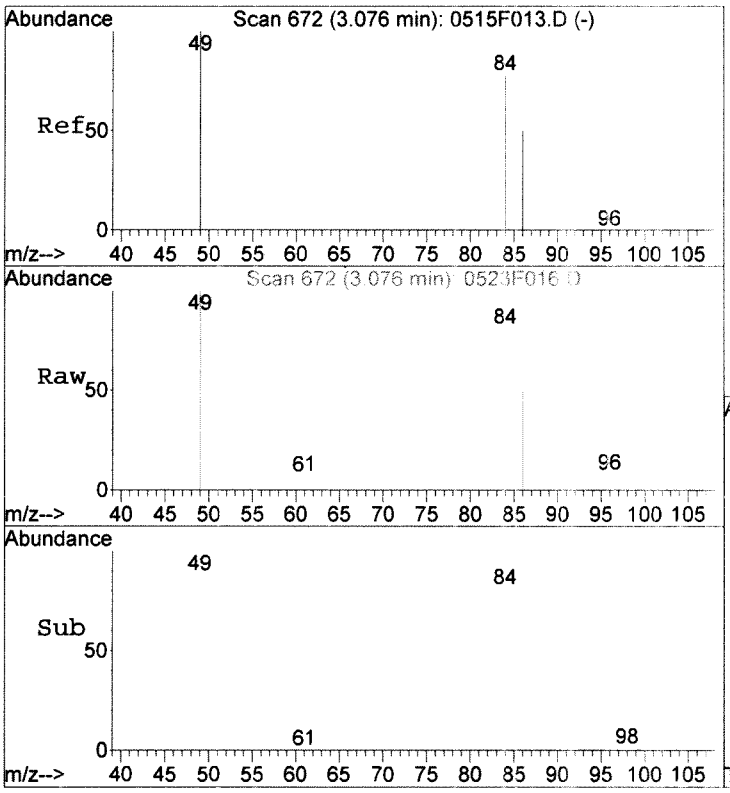


#3
Vinyl Chloride
Concen: 1.41 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion: 62 Resp: 39

Ion	Ratio	Lower	Upper
62	100		
64	707.0	1.5	61.5#
61	4.7	0.0	38.6

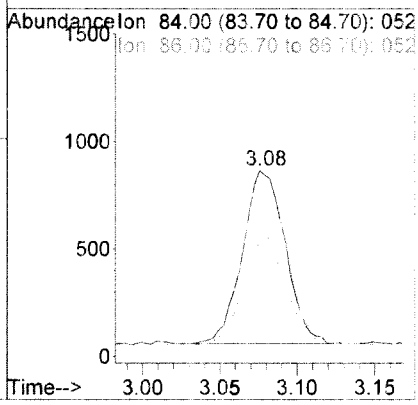


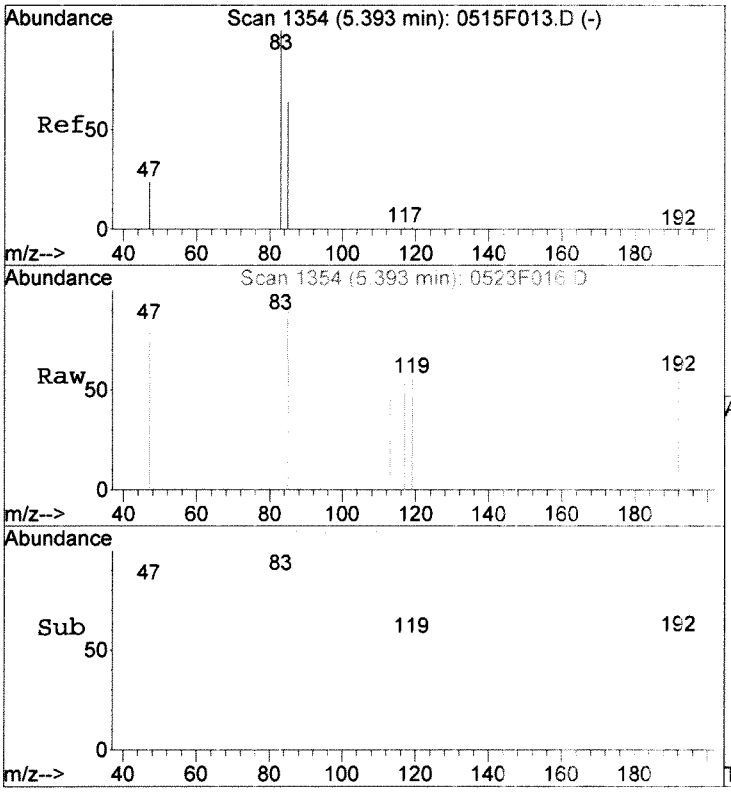


#5
Methylene Chloride
Concen: 72.44 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion: 84 Resp: 1555

Ion	Ratio	Lower	Upper
84	100		
86	57.9	34.0	94.0
49	124.4	98.8	158.8

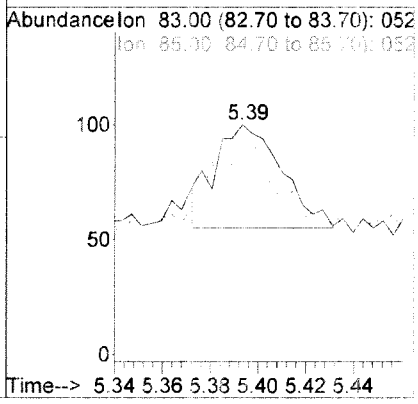


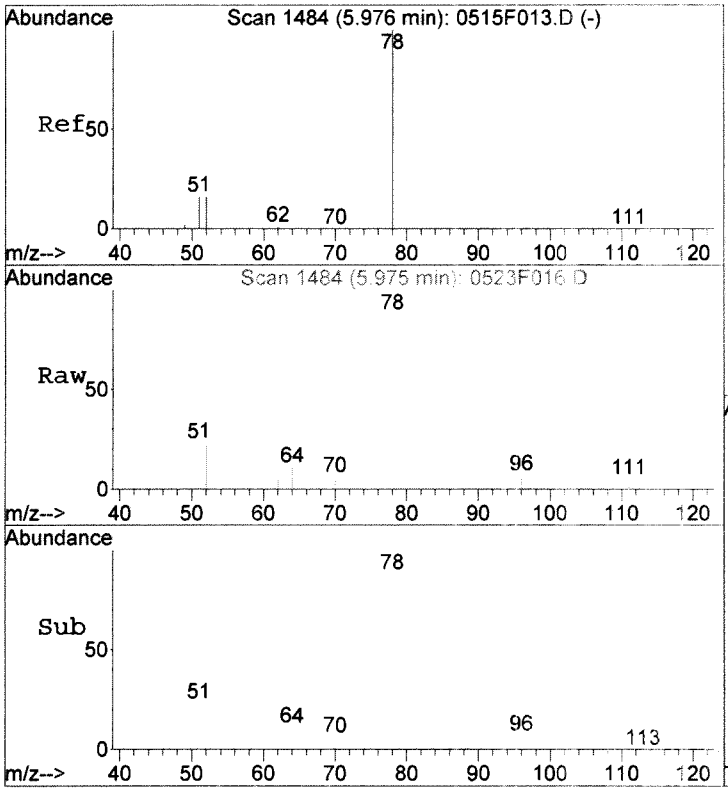


#8
Chloroform
Concen: 2.47 ng/L m
RT: 5.39 min Scan# 1354
Delta R.T. 0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion: 83 Resp: 88

Ion	Ratio	Lower	Upper
83	100		
85	91.0	34.0	94.0
47	83.0	0.0	53.5#

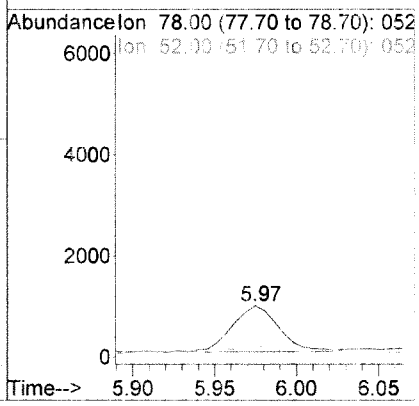


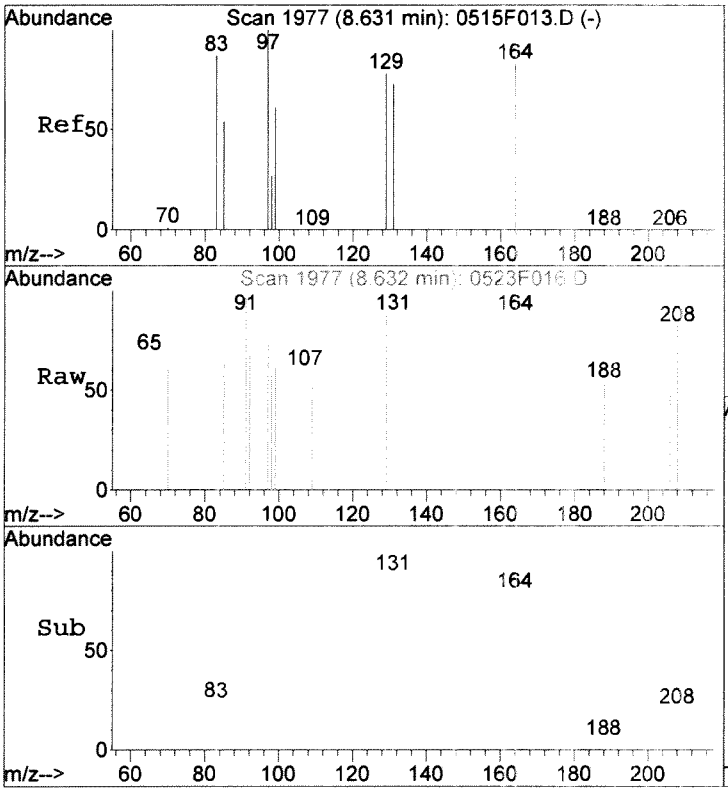


#11
Benzene
Concen: 26.51 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion: 78 Resp: 1796

Ion	Ratio	Lower	Upper
78	100		
52	14.7	0.0	45.8
51	16.7	0.0	46.5

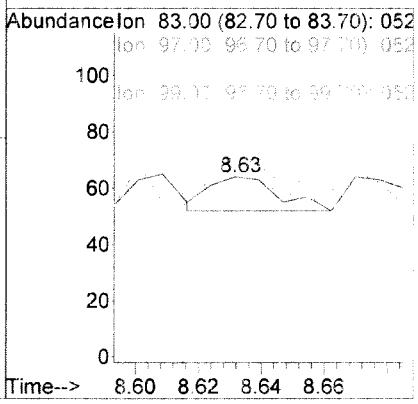


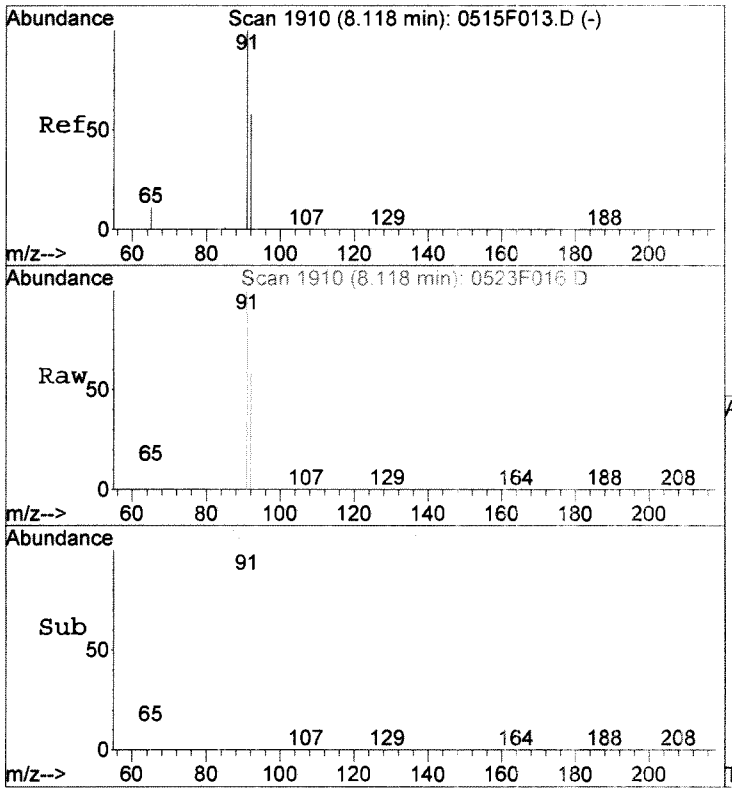


#16
1,1,2-Trichloroethane
Concen: 1.35 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion: 83 Resp: 18

Ion	Ratio	Lower	Upper
83	100		
97	150.0	84.4	144.4#
85	83.3	32.3	92.3
99	8.3	39.4	99.4#

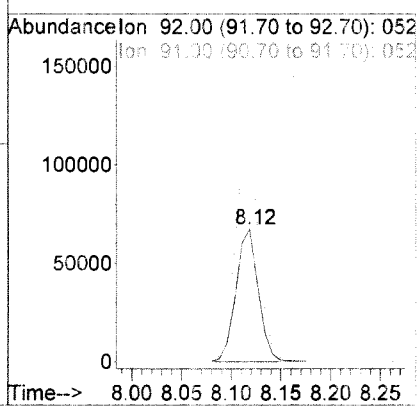


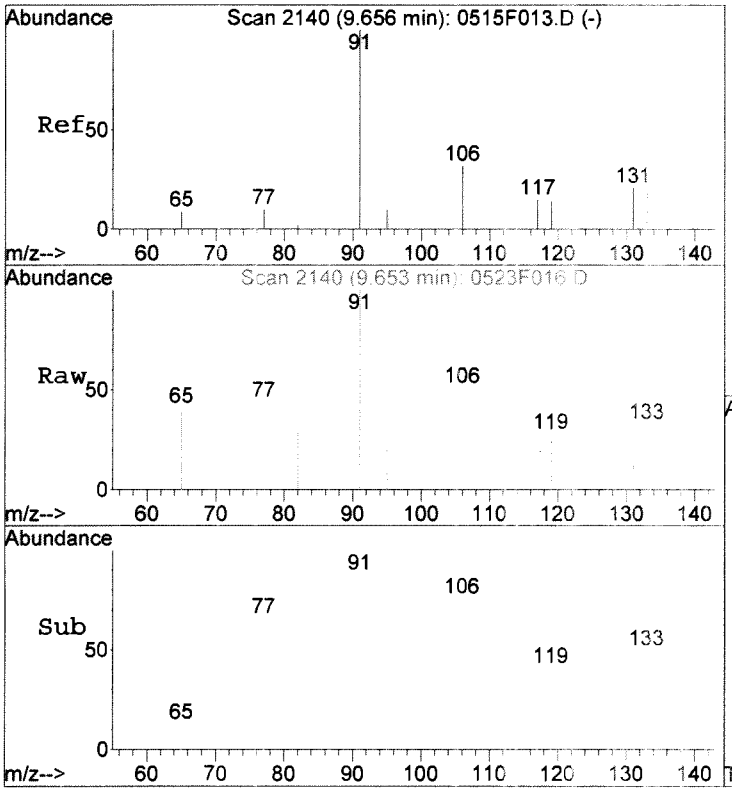


#20
Toluene
Concen: 3406.05 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion: 92 Resp: 106049

Ion	Ratio	Lower	Upper
92	100		
91	173.9	143.6	203.6
65	20.3	0.0	49.9

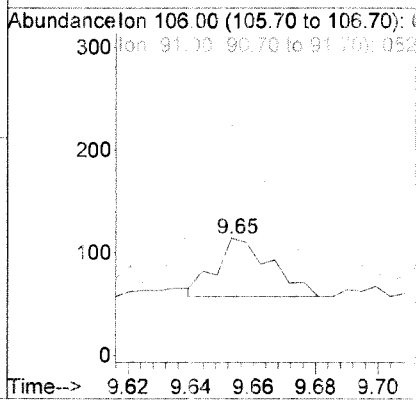


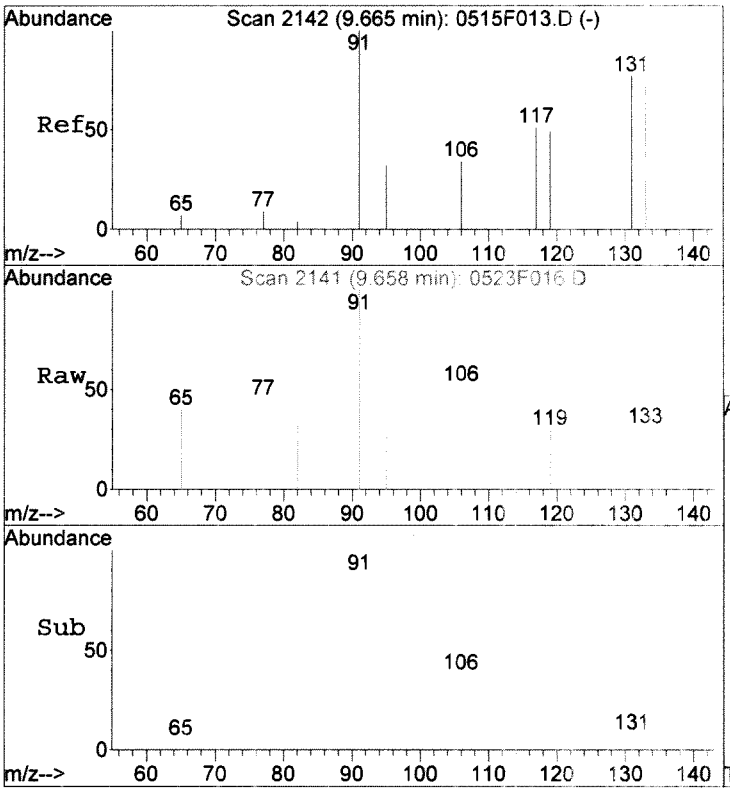


#21
Ethylbenzene
Concen: 4.66 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion:106 Resp: 70

Ion	Ratio	Lower	Upper
106	100		
91	236.8	285.7	345.7#
77	7.0	1.3	61.3

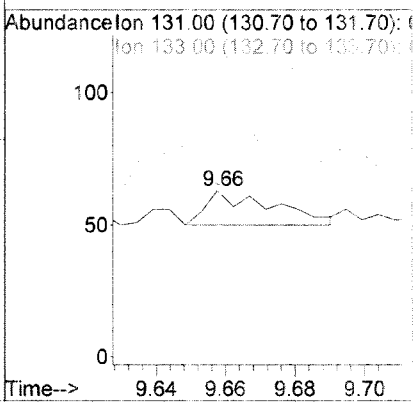


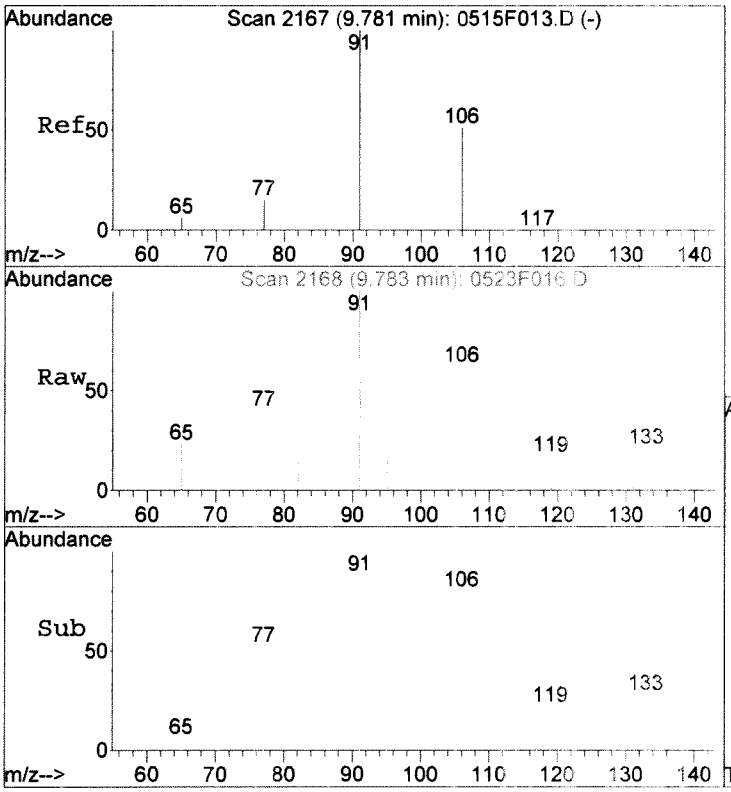


#22
1,1,1,2-Tetrachloroethane
Concen: 0.91 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. -0.01 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion:131 Resp: 17

Ion	Ratio	Lower	Upper
131	100		
133	0.0	74.4	114.4#
119	30.8	43.9	83.9#

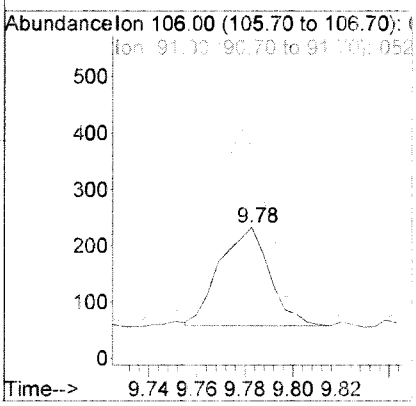


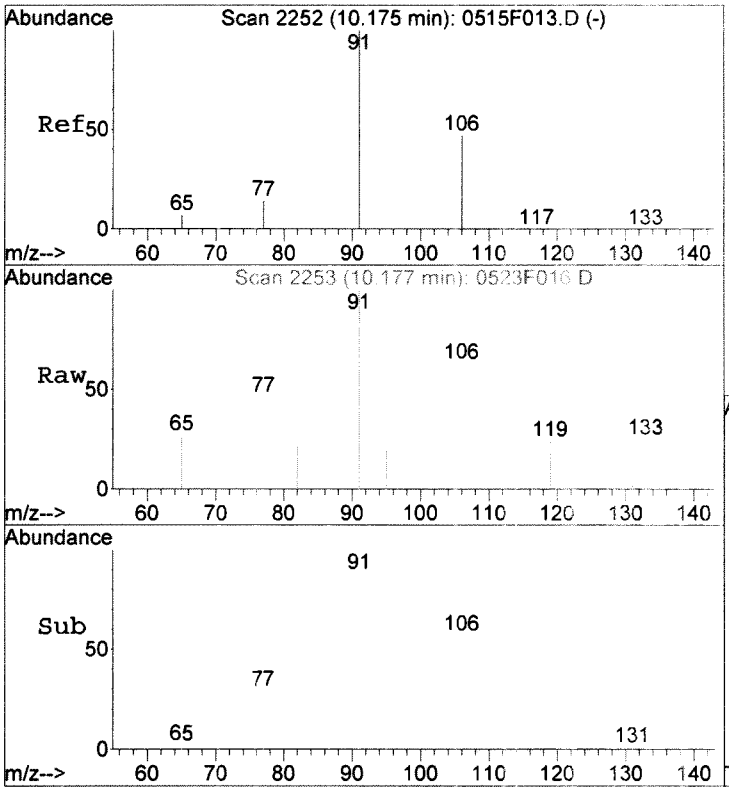


#23
m,p-Xylenes
Concen: 14.66 ng/L
RT: 9.78 min Scan# 2168
Delta R.T. 0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion:106 Resp: 252

Ion	Ratio	Lower	Upper
106	100		
91	171.4	166.8	226.8
77	37.1	0.0	58.7

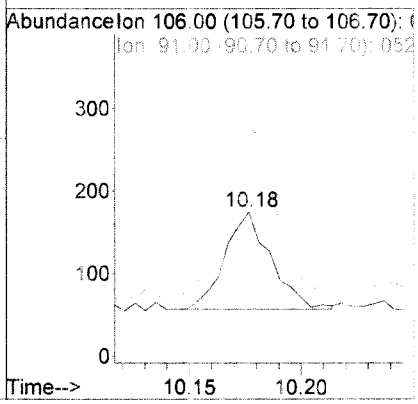


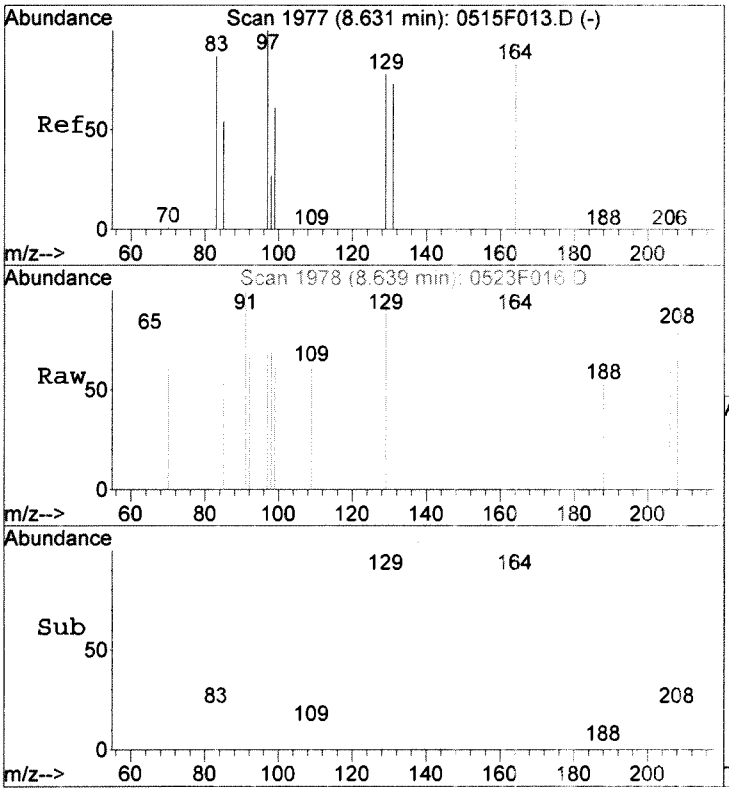


#24
o-Xylene
Concen: 9.52 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion:106 Resp: 167

Ion	Ratio	Lower	Upper
106	100		
91	176.3	184.3	244.3#
65	12.7	0.0	44.6

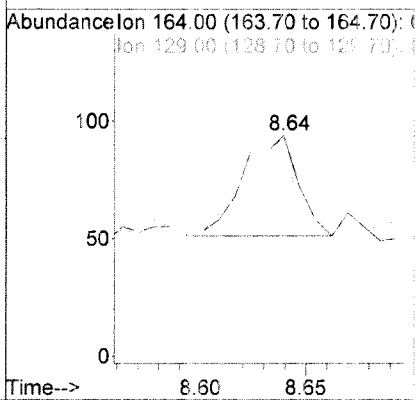


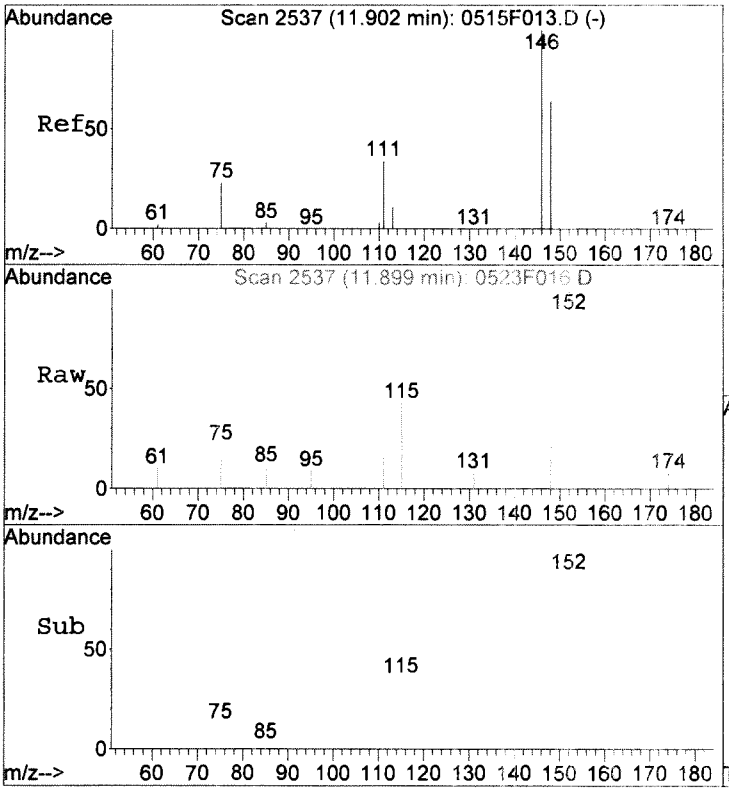


#28
Tetrachloroethene
Concen: 5.34 ng/L
RT: 8.64 min Scan# 1978
Delta R.T. 0.01 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion:164 Resp: 78

Ion	Ratio	Lower	Upper
164	100		
129	95.3	63.1	123.1
131	44.2	57.4	117.4#

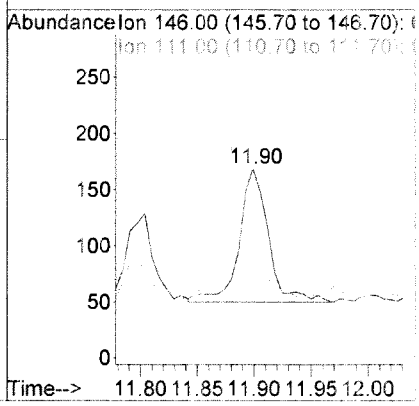




#30
1,4-Dichlorobenzene
Concen: 8.04 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0523F016.D
Acq: 23 May 2017 07:06 pm

Tgt Ion:146 Resp: 213

Ion	Ratio	Lower	Upper
146	100		
111	42.0	4.0	64.0
148	84.0	34.3	94.3



Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F017.D
Lab ID: K1705066-003
RunType: SMPL
Matrix: WATER

Date Acquired: 05/23/2017 19:34
Date Quantitated: 05/24/2017 09:14
Batch ID: KWG1704209
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KA 5/24/17

Secondary Review: [signature] 5/24/17

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F017.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 19:34	**Quant Date:**	05/24/2017 09:14	**Vial:**	11
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1705066-003			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/15/2017	**Receive Date:**	05/18/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	K1705066
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605447	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	49306	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	33791	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19700	1,080	108	77-123	OK
1	Toluene-d8	8.05	0.00	0.00	98	39555	1,006	101	74-112	OK
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11586	770.72	77	46-118	OK

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	60	2.19	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F017.D Vial: 11
Acq On : 23 May 2017 07:34 pm Operator: KR
Sample : K5066-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 09:12:43 2017 Quant Results File: 051517MS30_8260SIM.RES

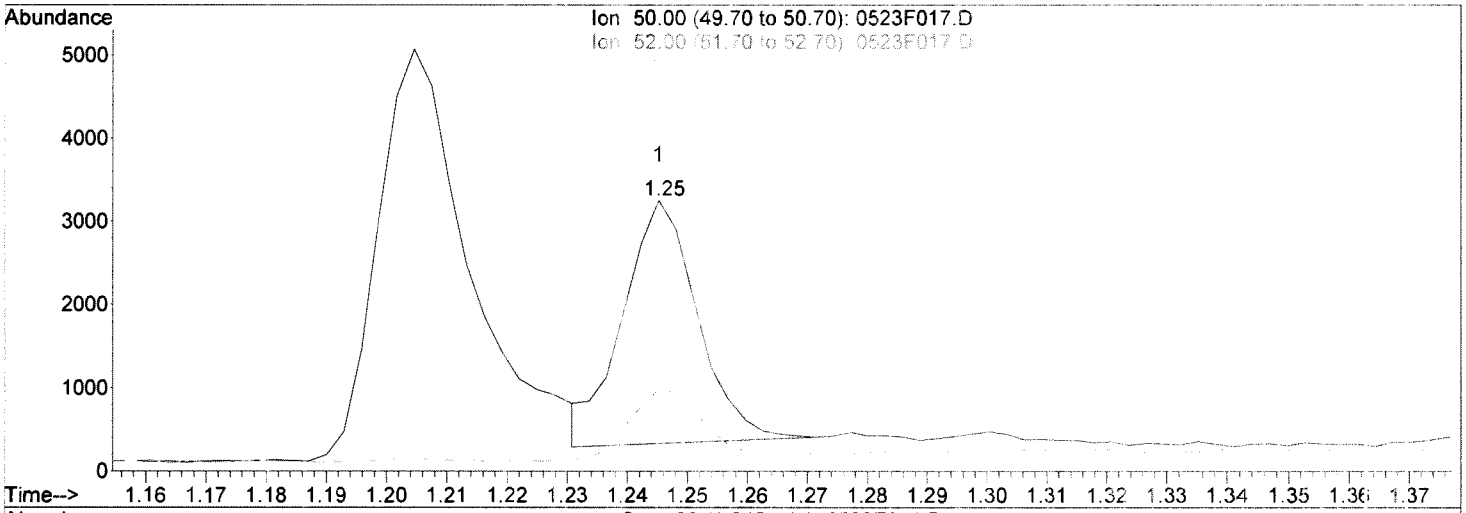
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

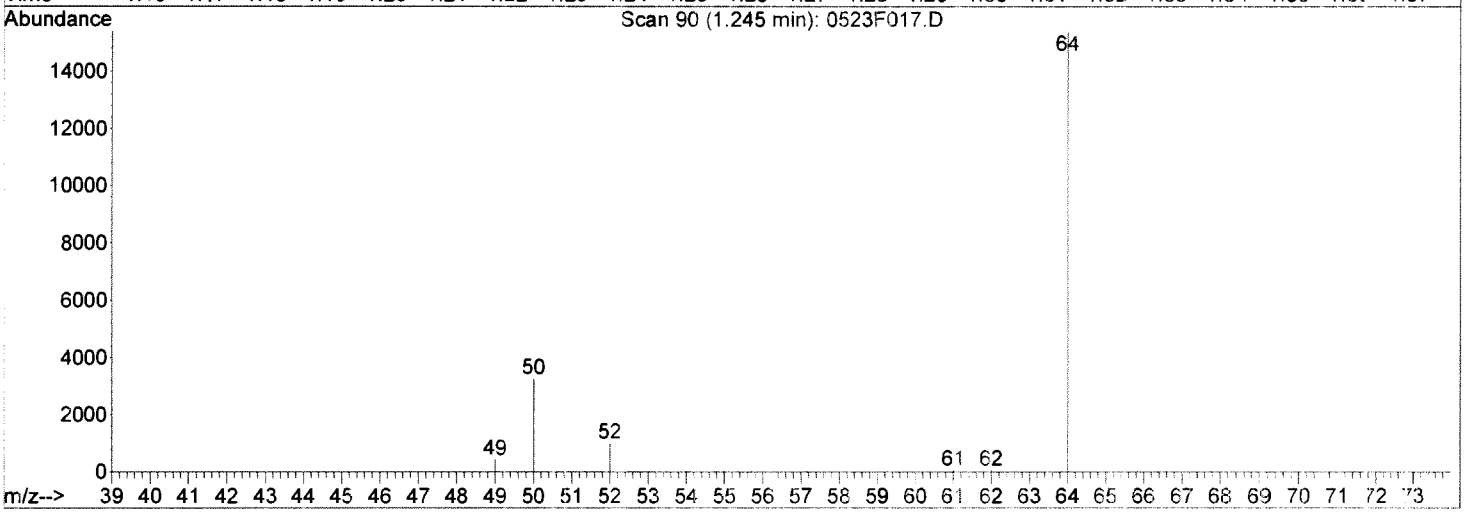
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	49306	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	33791	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	13389	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19700	1080.22	ng/L		0.00
Spiked Amount 1000.000			Recovery = 108.02%				
15) Toluene-d8	8.05	98	39555	1005.79	ng/L		0.00
Spiked Amount 1000.000			Recovery = 100.58%				
25) 4-Bromofluorobenzene	10.73	95	11586	770.72	ng/L		0.00
Spiked Amount 1000.000			Recovery = 77.07%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	2365m	83.80	ng/L		
3) Vinyl Chloride	1.33	62	60	2.19	ng/L	#	1
5) Methylene Chloride	3.08	84	406	19.01	ng/L		84
8) Chloroform	5.39	83	135	3.81	ng/L		84
11) Benzene	5.97	78	1882	27.93	ng/L		98
13) Trichloroethene	6.75	95	67	4.04	ng/L		79
20) Toluene	8.12	92	37956	1279.85	ng/L		100
21) Ethylbenzene	9.66	106	104	7.27	ng/L		93
22) 1,1,1,2-Tetrachloroethane	9.68	131	14	0.79	ng/L	#	29
23) m,p-Xylenes	9.78	106	406	24.79	ng/L		92
24) o-Xylene	10.18	106	261	15.63	ng/L		91
26) 1,1,2,2-Tetrachloroethane	10.94	83	15	0.94	ng/L	#	33
28) Tetrachloroethene	8.62	164	46m	3.31	ng/L		
30) 1,4-Dichlorobenzene	11.90	146	132	5.46	ng/L		75

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F017.D Vial: 11
Acq On : 23 May 2017 07:34 pm Operator: KR
Sample : K5066-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:12 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F017.D

(2) Chloromethane (T)

1.25min 89.19ng/L

response 2517

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	30.03
49.00	10.30	10.29
0.00	0.00	0.00

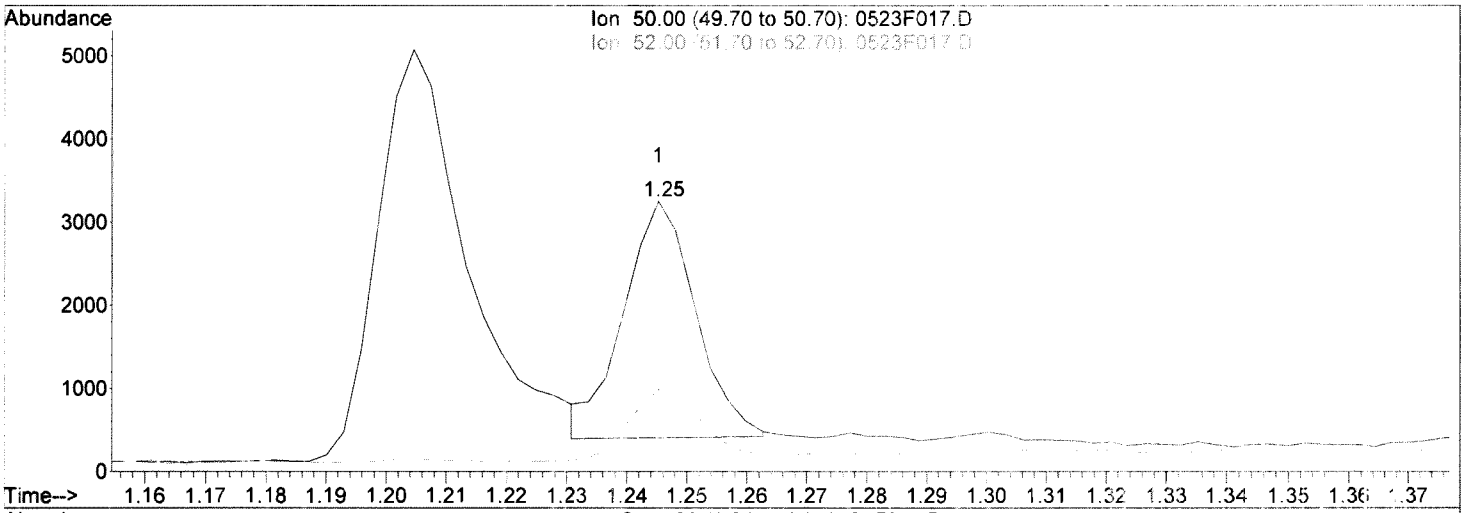
Manual Integration:

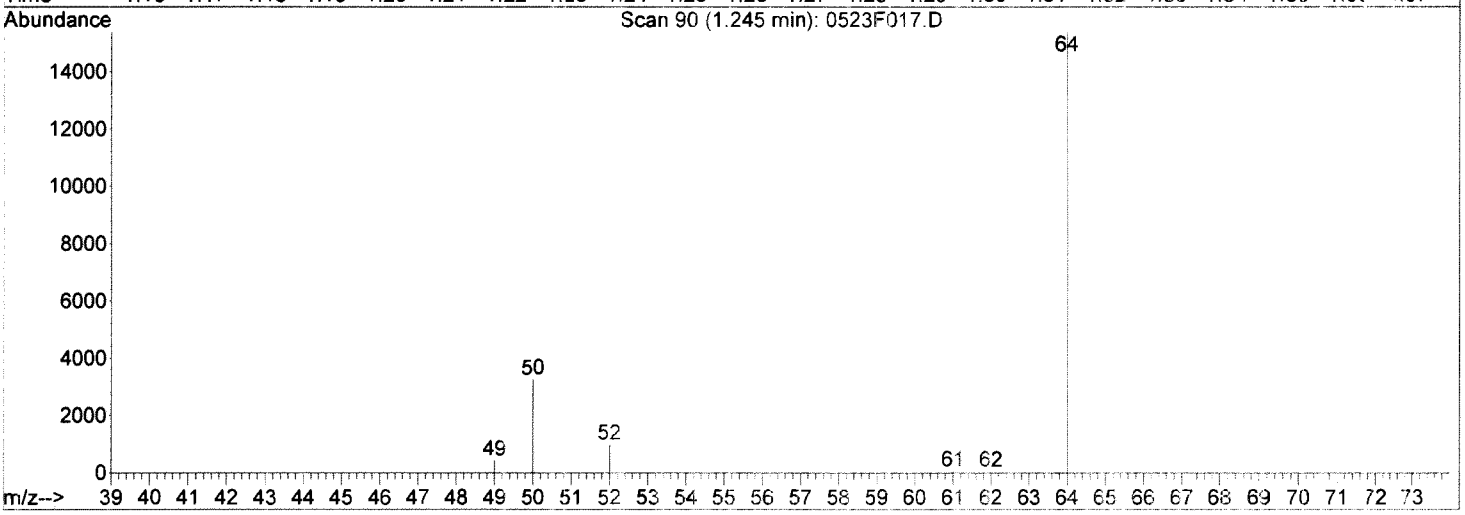
Before

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F017.D Vial: 11
Acq On : 23 May 2017 07:34 pm Operator: KR
Sample : K5066-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:13 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F017.D

(2) Chloromethane (T)

1.25min 83.80ng/L m

response 2365

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	30.39
49.00	10.30	13.40
0.00	0.00	0.00

Manual Integration:

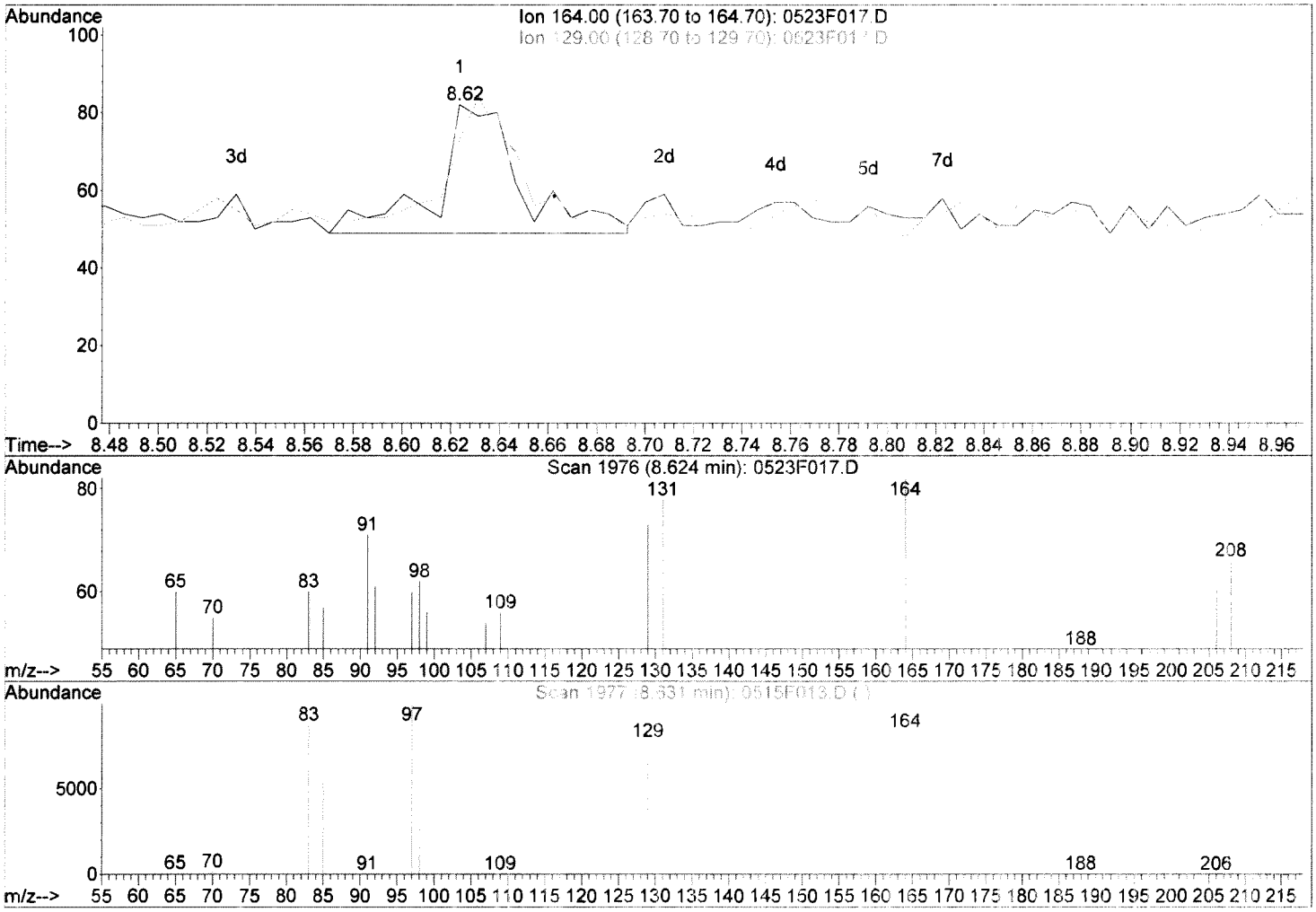
After

Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F017.D Vial: 11
Acq On : 23 May 2017 07:34 pm Operator: KR
Sample : K5066-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:14 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F017.D

(28) Tetrachloroethene (T)

8.62min 5.75ng/L

response 80

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	66.67
131.00	87.40	72.73
0.00	0.00	0.00

Manual Integration:

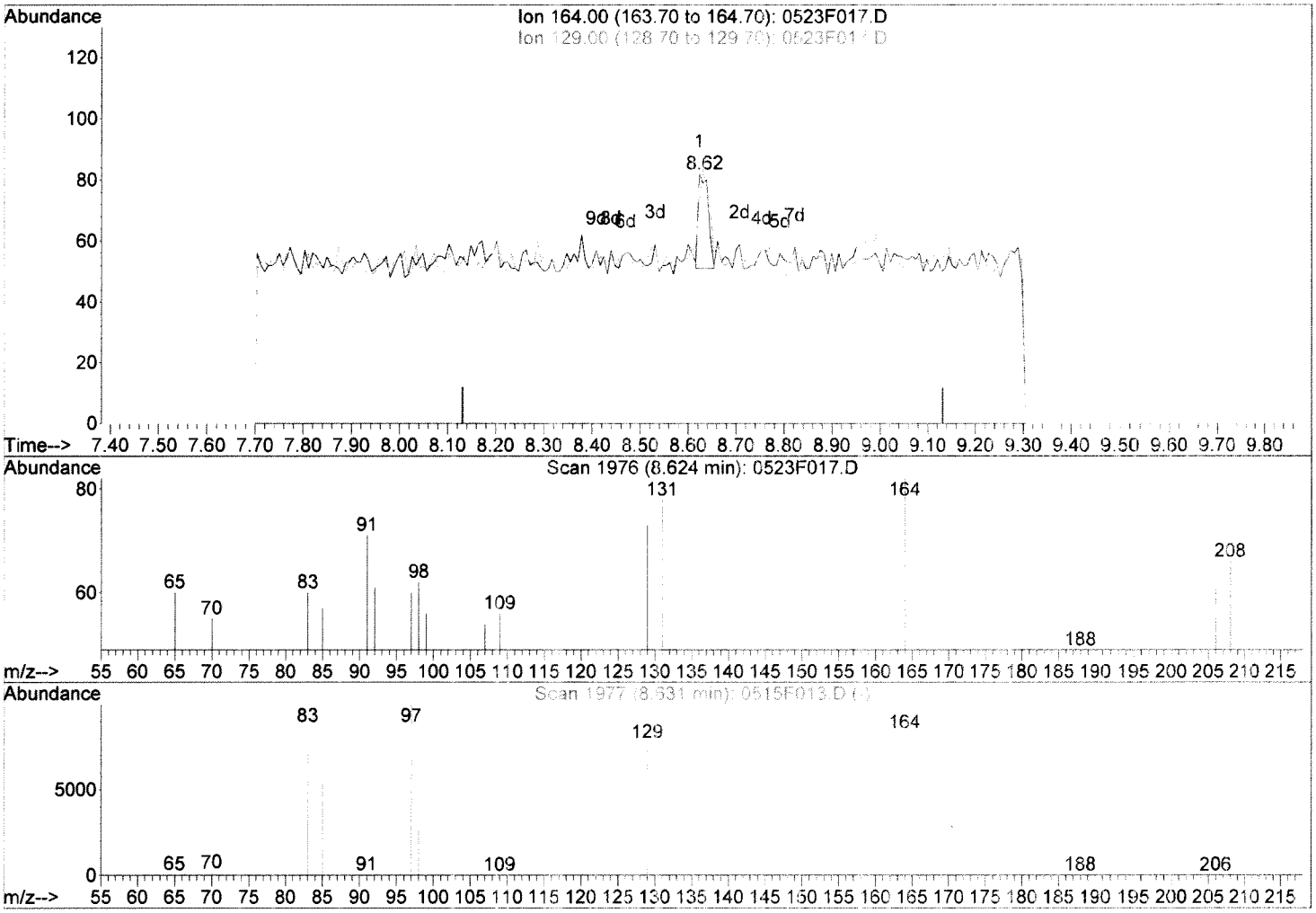
Before

05/24/17

Quantitation Report (Quan)

Data File : J:\MS30\DATA\052317_SIM\0523F017.D Vial: 11
Acq On : 23 May 2017 07:34 pm Operator: KR
Sample : K5066-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:14 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F017.D

(28) Tetrachloroethene (T)

8.62min 3.31ng/L m

response 46

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	89.02
131.00	87.40	95.12
0.00	0.00	0.00

Manual Integration:

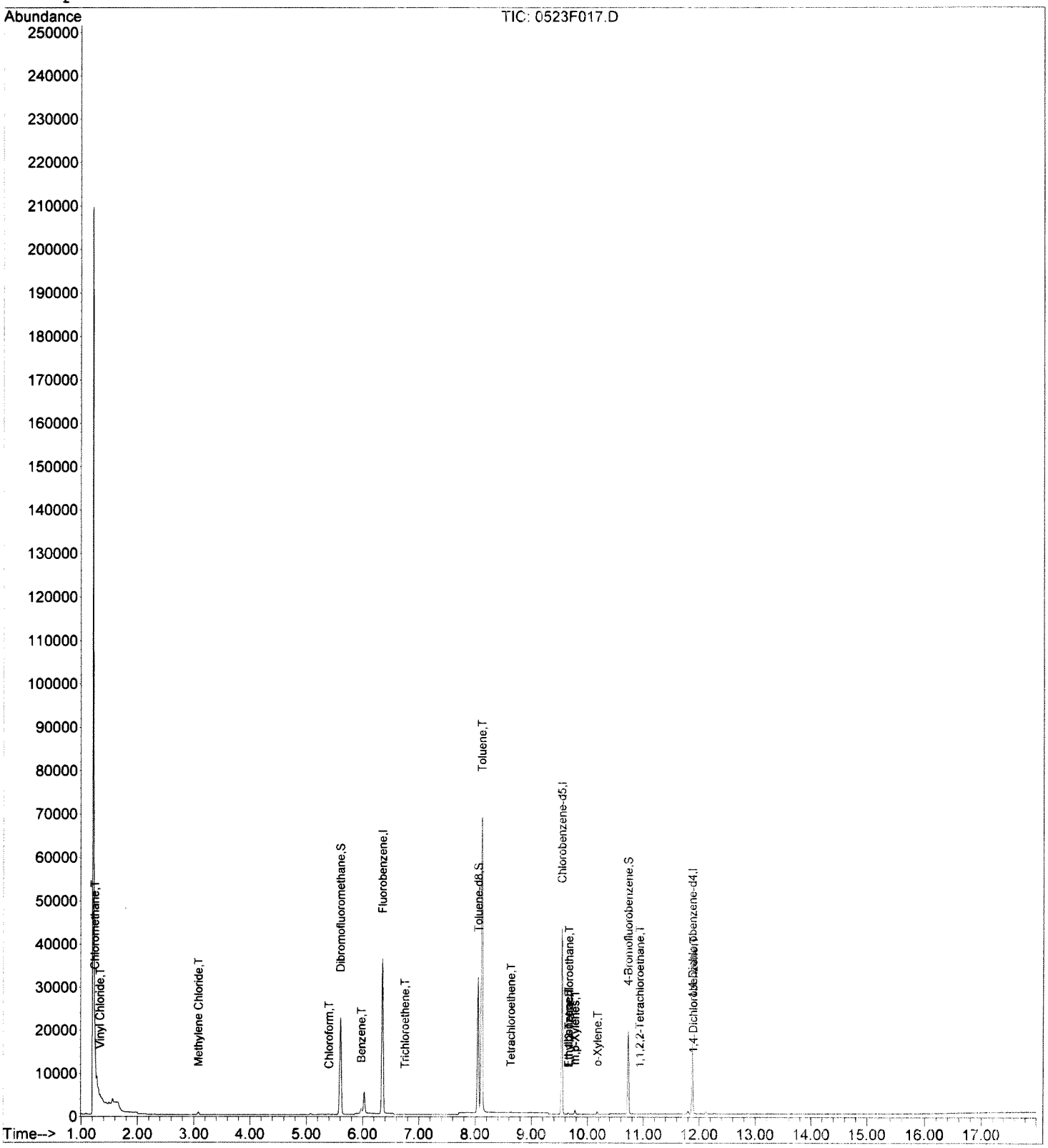
After

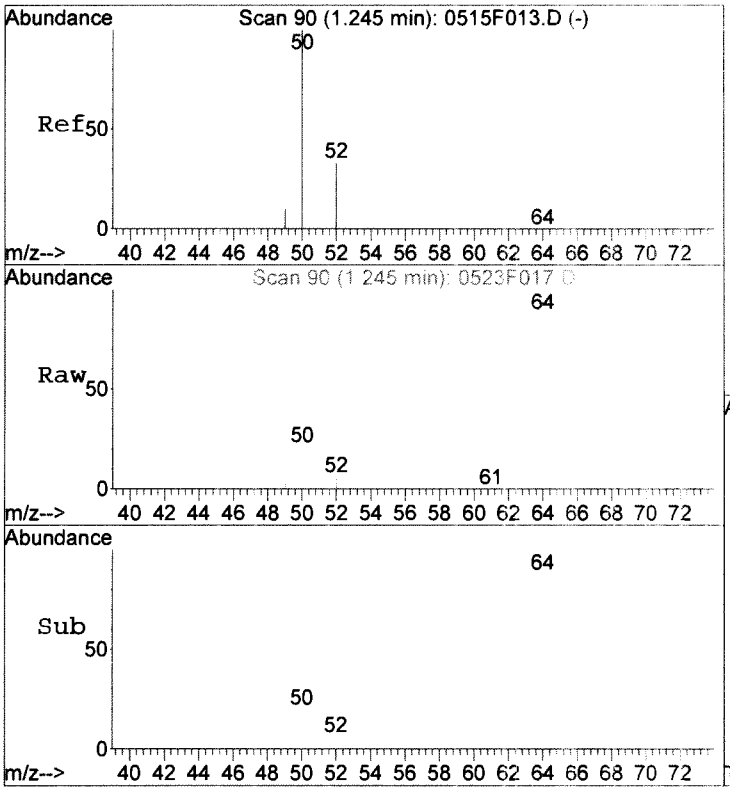
Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F017.D Vial: 11
Acq On : 23 May 2017 07:34 pm Operator: KR
Sample : K5066-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:14 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

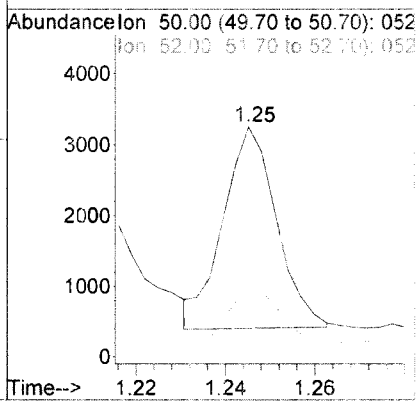


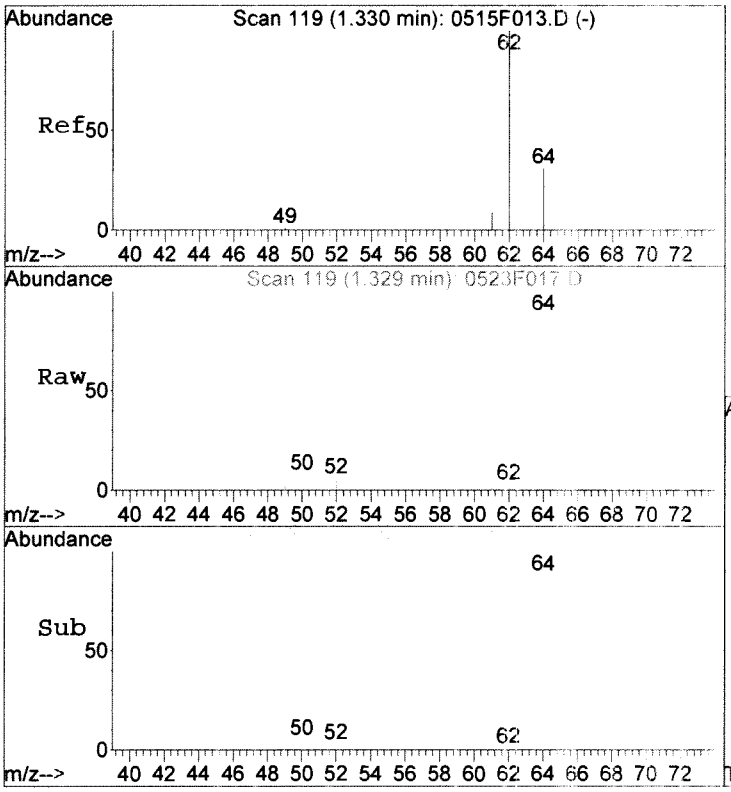


#2
Chloromethane
Concen: 83.80 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. -0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion: 50 Resp: 2365

Ion	Ratio	Lower	Upper
50	100		
52	30.4	2.5	62.5
49	13.4	0.0	40.3

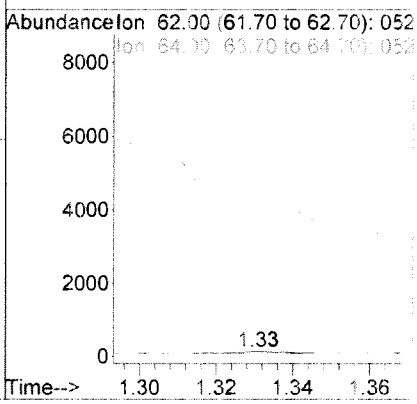


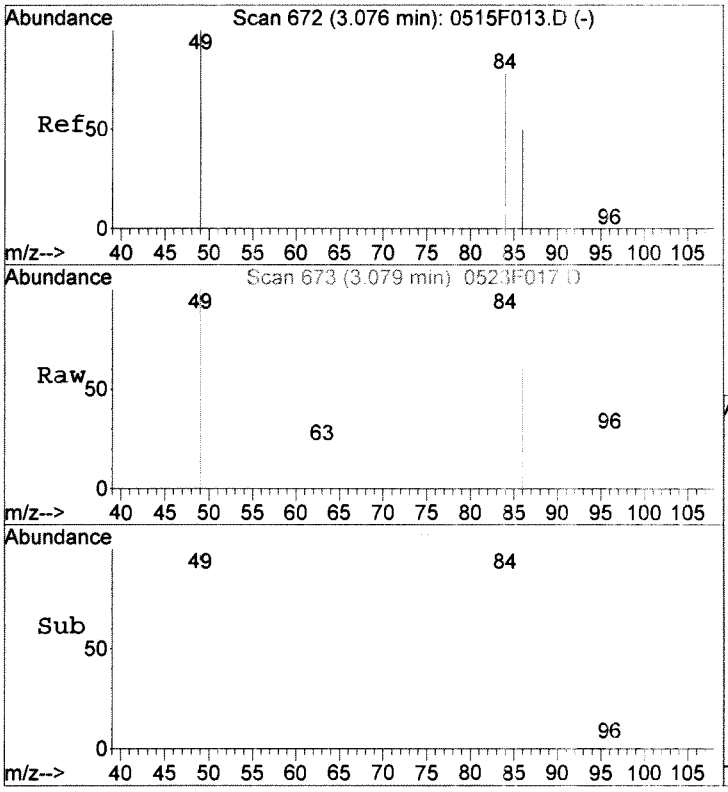


#3
Vinyl Chloride
Concen: 2.19 ng/L
RT: 1.33 min Scan# 119
Delta R.T. -0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion: 62 Resp: 60

Ion	Ratio	Lower	Upper
62	100		
64	905.3	1.5	61.5#
61	0.0	0.0	38.6

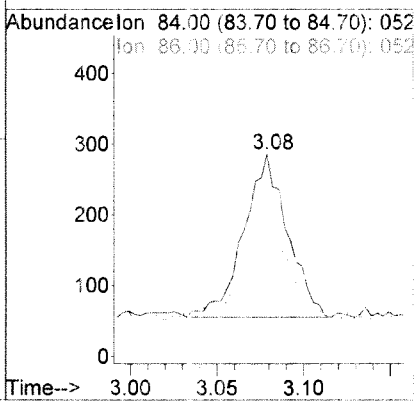


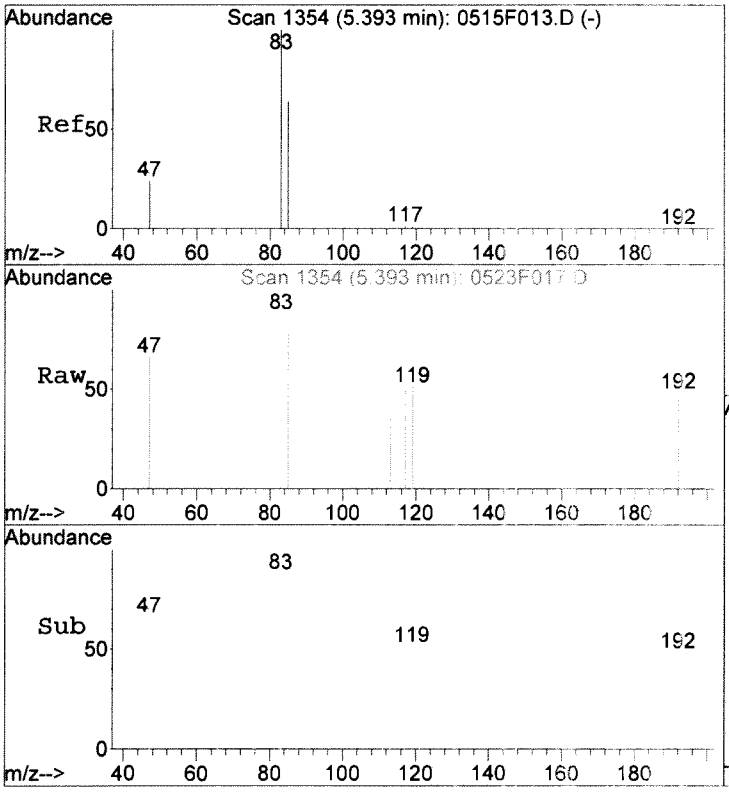


#5
Methylene Chloride
Concen: 19.01 ng/L
RT: 3.08 min Scan# 673
Delta R.T. 0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion: 84 Resp: 406

Ion	Ratio	Lower	Upper
84	100		
86	56.3	34.0	94.0
49	106.9	98.8	158.8

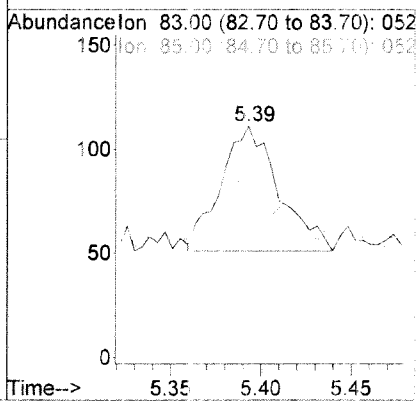


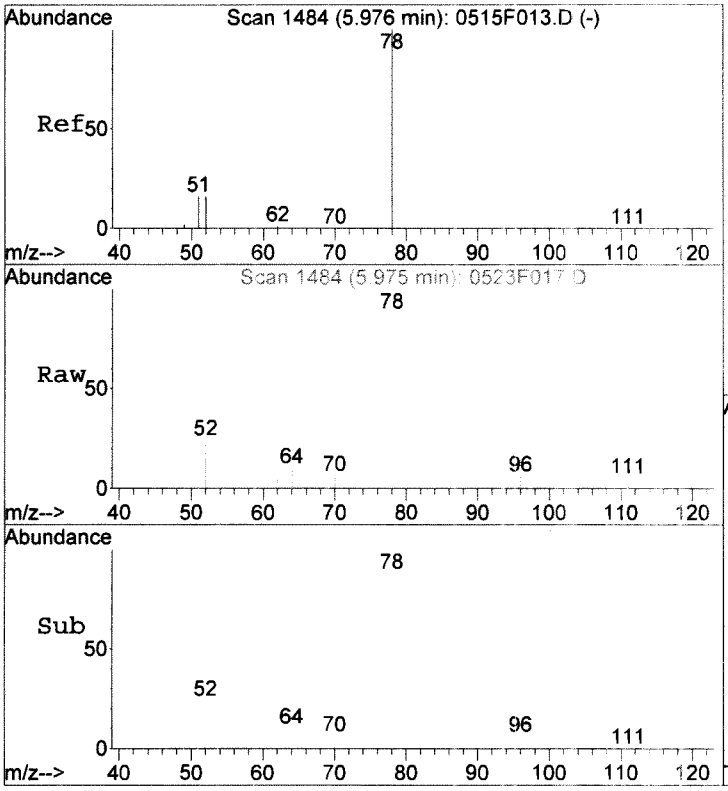


#8
Chloroform
Concen: 3.81 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. -0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion: 83 Resp: 135

Ion	Ratio	Lower	Upper
83	100		
85	53.3	34.0	94.0
47	11.7	0.0	53.5

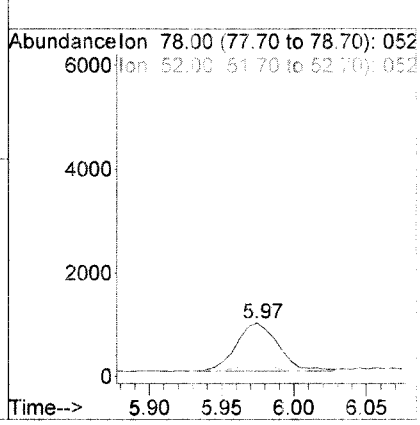


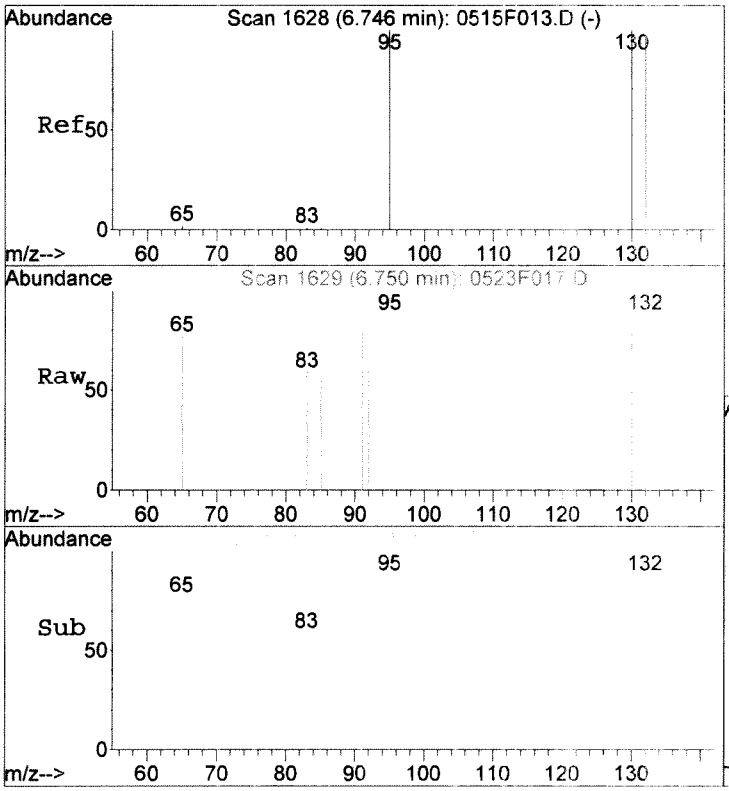


#11
Benzene
Concen: 27.93 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion: 78 Resp: 1882

Ion	Ratio	Lower	Upper
78	100		
52	17.5	0.0	45.8
51	16.6	0.0	46.5

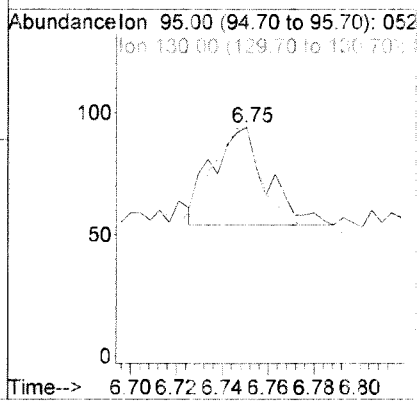


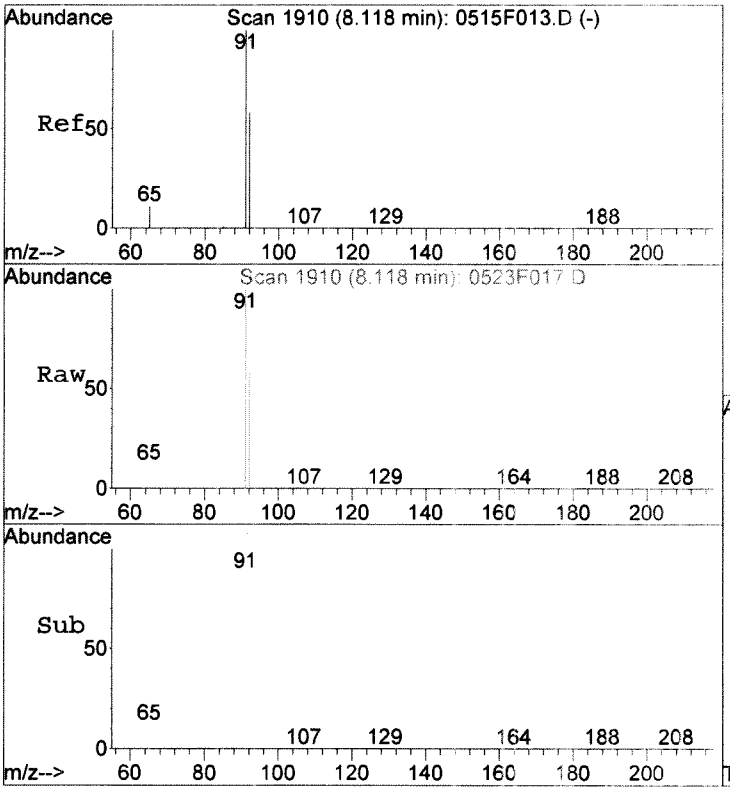


#13
Trichloroethene
Concen: 4.04 ng/L
RT: 6.75 min Scan# 1629
Delta R.T. 0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion: 95 Resp: 67

Ion	Ratio	Lower	Upper
95	100		
130	80.0	69.5	129.5
132	75.0	67.2	127.2

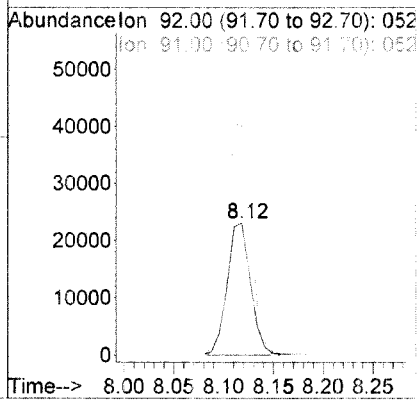


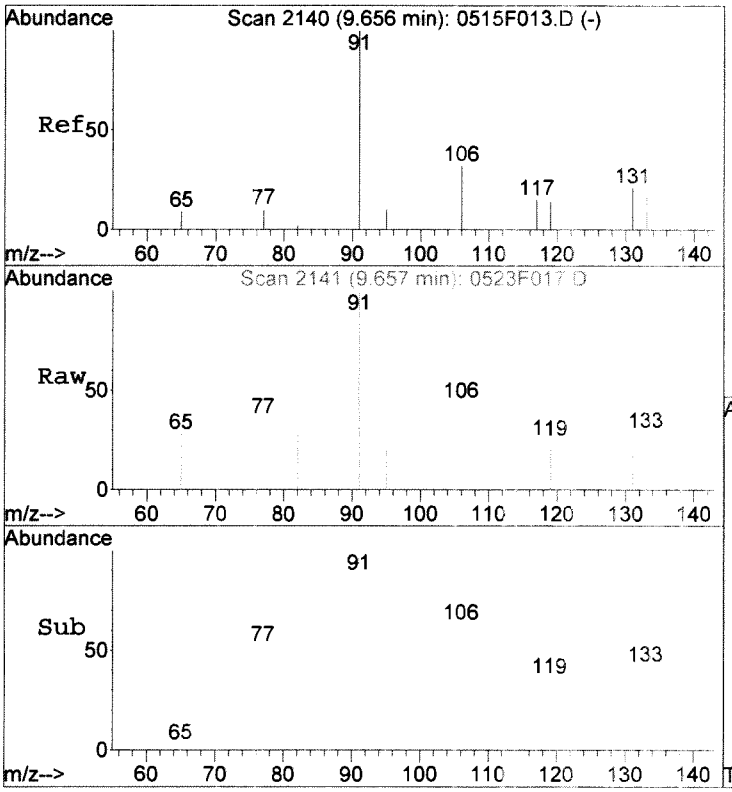


#20
Toluene
Concen: 1279.85 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. -0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion: 92 Resp: 37956

Ion	Ratio	Lower	Upper
92	100		
91	173.7	143.6	203.6
65	20.0	0.0	49.9

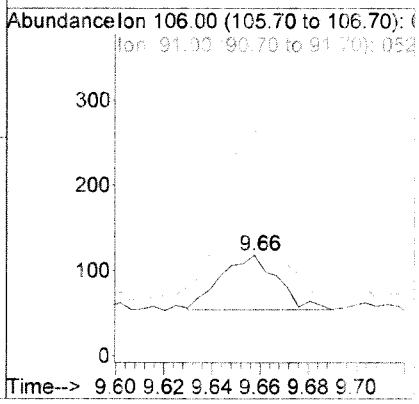


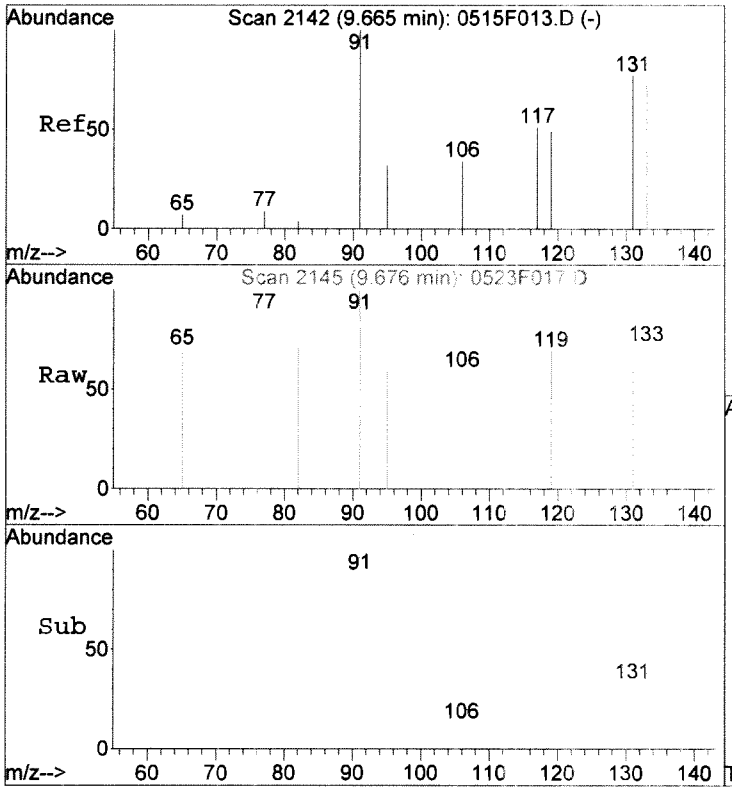


#21
Ethylbenzene
Concen: 7.27 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion:106 Resp: 104

Ion	Ratio	Lower	Upper
106	100		
91	303.1	285.7	345.7
77	25.0	1.3	61.3

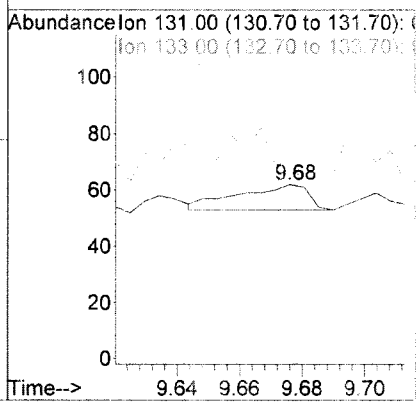


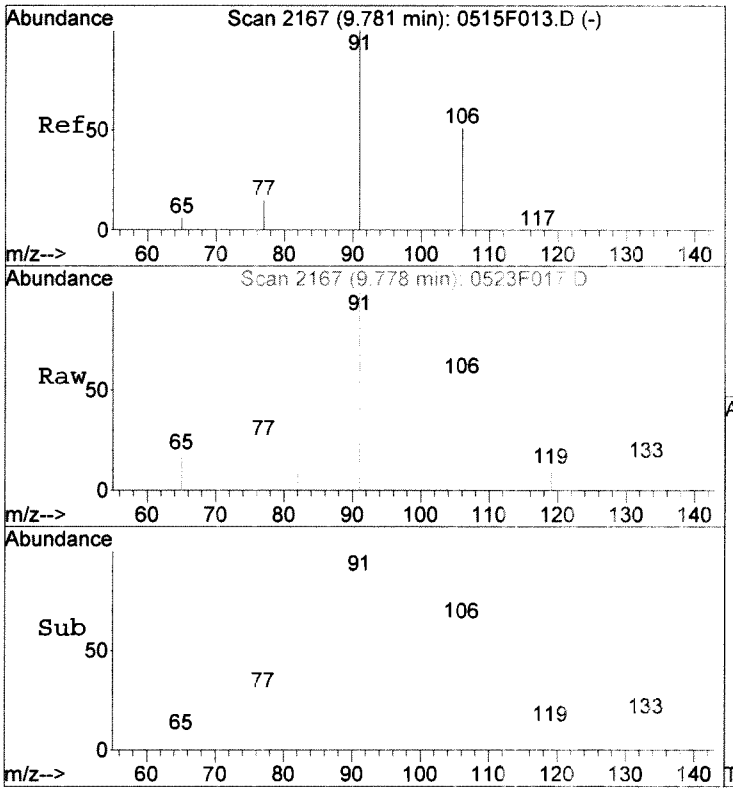


#22
1,1,1,2-Tetrachloroethane
Concen: 0.79 ng/L
RT: 9.68 min Scan# 2145
Delta R.T. 0.01 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion:131 Resp: 14

Ion	Ratio	Lower	Upper
131	100		
133	33.3	74.4	114.4#
119	0.0	43.9	83.9#

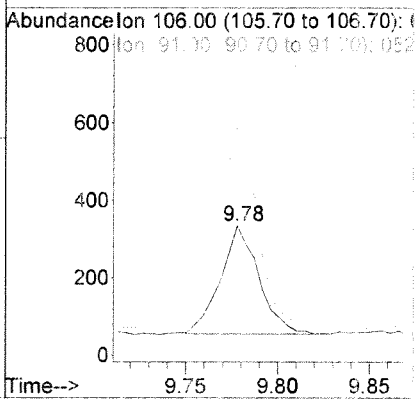


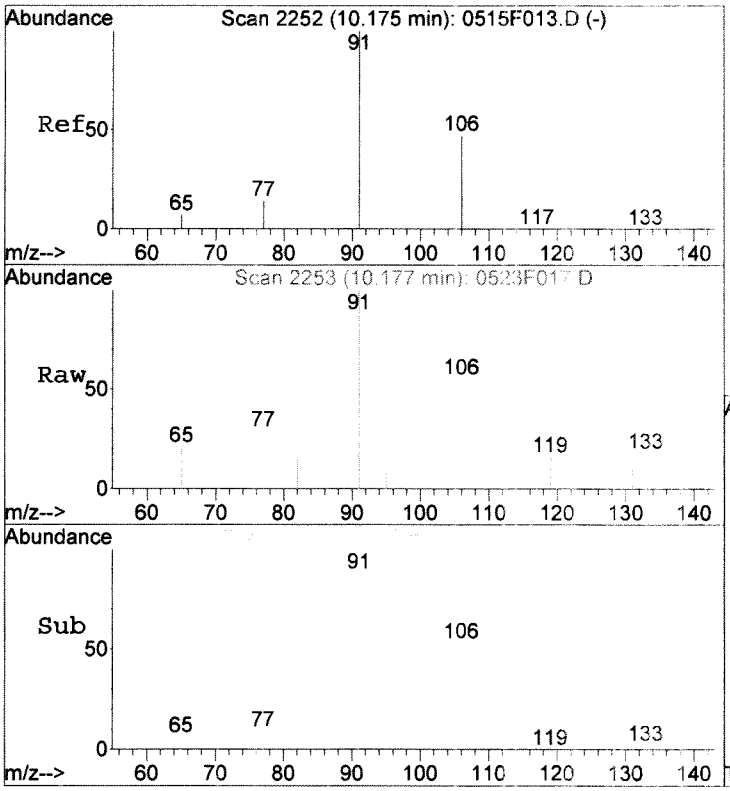


#23
m,p-Xylenes
Concen: 24.79 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion:106 Resp: 406

Ion	Ratio	Lower	Upper
106	100		
91	184.3	166.8	226.8
77	24.3	0.0	58.7

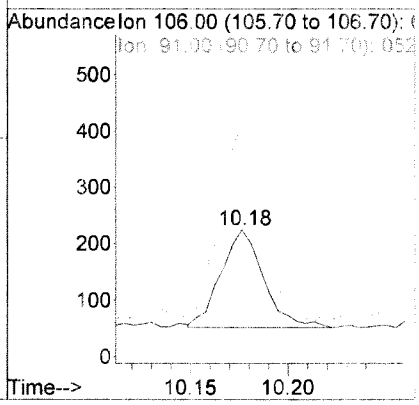


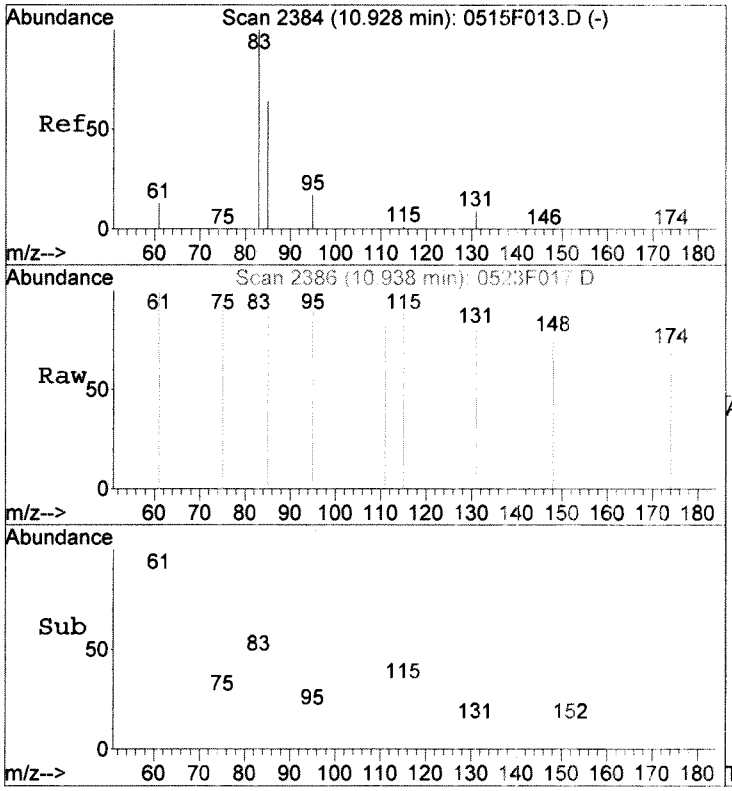


#24
o-Xylene
Concen: 15.63 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion:106 Resp: 261

Ion	Ratio	Lower	Upper
106	100		
91	199.4	184.3	244.3
65	14.5	0.0	44.6

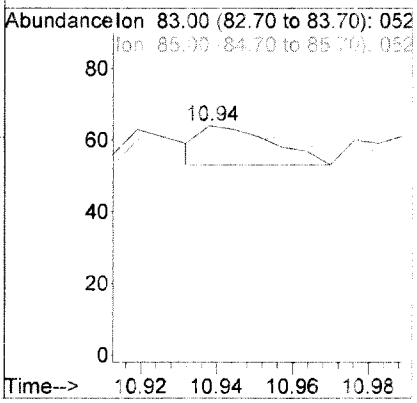


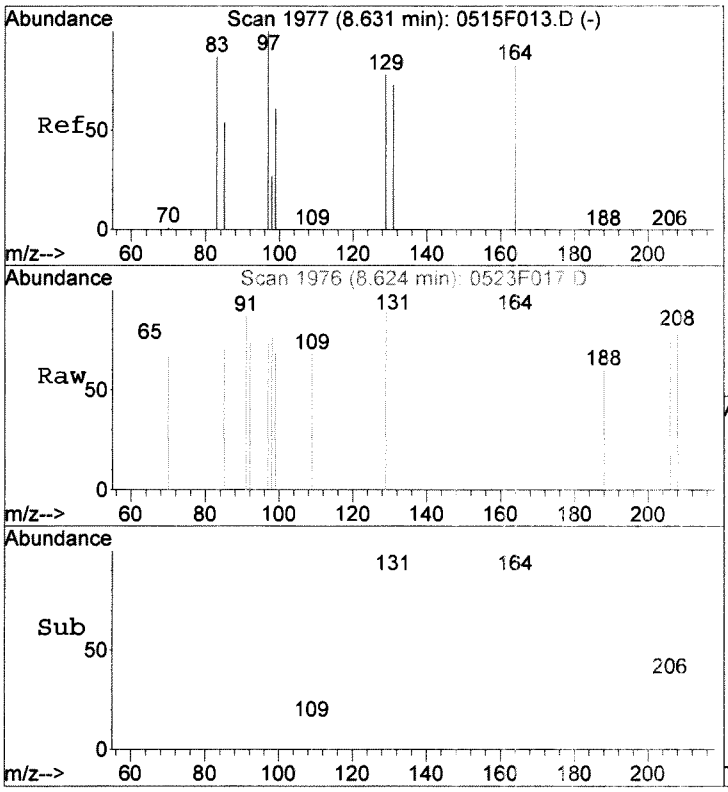


#26
1,1,2,2-Tetrachloroethane
Concen: 0.94 ng/L
RT: 10.94 min Scan# 2386
Delta R.T. 0.01 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion: 83 Resp: 15

Ion	Ratio	Lower	Upper
83	100		
85	18.2	34.1	94.1#
131	54.5	0.0	28.8#

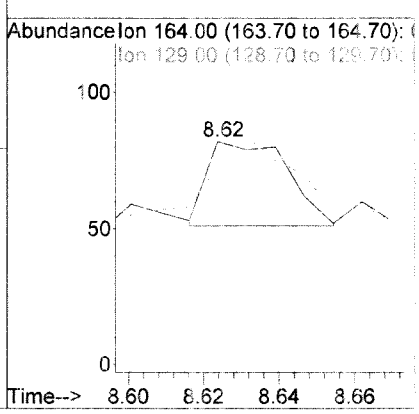


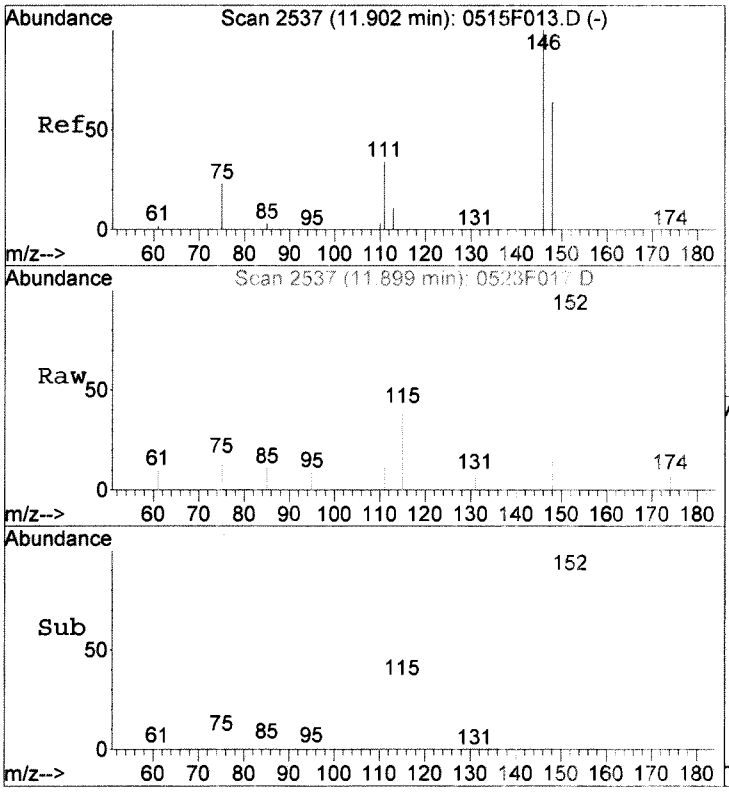


#28
Tetrachloroethene
Concen: 3.31 ng/L m
RT: 8.62 min Scan# 1976
Delta R.T. -0.01 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion:164 Resp: 46

Ion	Ratio	Lower	Upper
164	100		
129	89.0	63.1	123.1
131	95.1	57.4	117.4

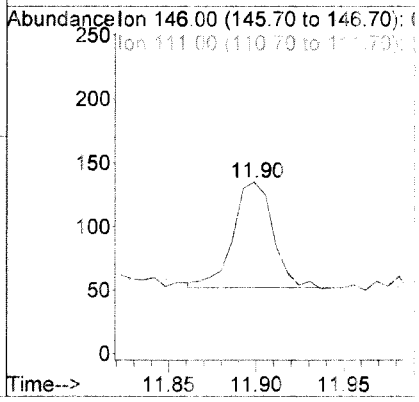




#30
1,4-Dichlorobenzene
Concen: 5.46 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0523F017.D
Acq: 23 May 2017 07:34 pm

Tgt Ion:146 Resp: 132

Ion	Ratio	Lower	Upper
146	100		
111	48.2	4.0	64.0
148	44.6	34.3	94.3



Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F018.D
Lab ID: K1705066-004
RunType: SMPL
Matrix: WATER

Date Acquired: 05/23/2017 20:01
Date Quantitated: 05/24/2017 09:16
Batch ID: KWG1704209
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F018.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 20:01	**Quant Date:**	05/24/2017 09:16	**Vial:**	12
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1705066-004			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/15/2017	**Receive Date:**	05/18/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	K1705066
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605448	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	49014	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34700	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19747	1.089	109	77-123	OK
1	Toluene-d8	8.05	0.00	0.00	98	40237	1.029	103	74-112	OK
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12293	796.33	80	46-118	OK

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	79	2.90	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F018.D Vial: 12
Acq On : 23 May 2017 08:01 pm Operator: KR
Sample : K5066-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 09:14:58 2017 Quant Results File: 051517MS30_8260SIM.RES

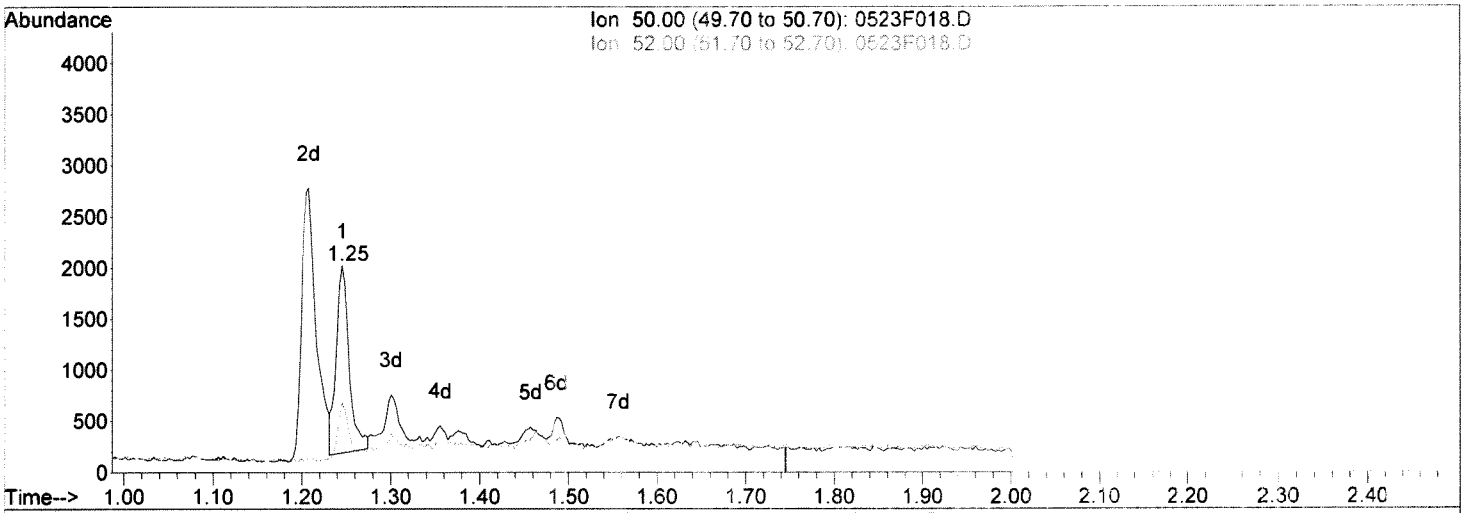
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

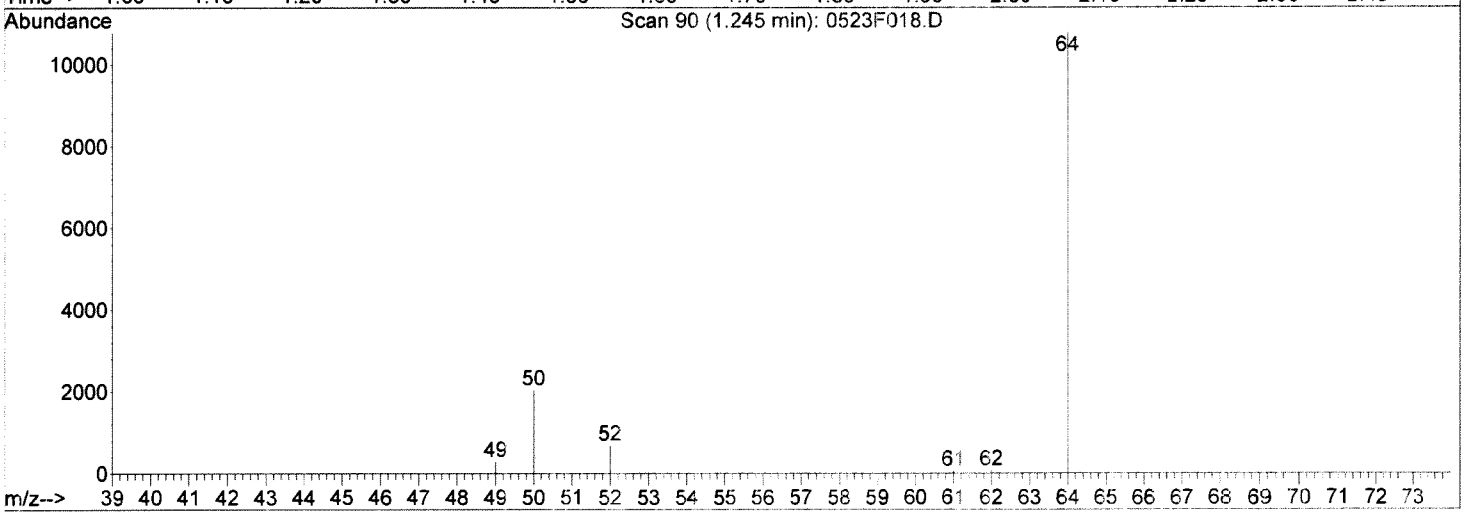
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	49014	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	34700	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14847	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19747	1089.25	ng/L		0.00
Spiked Amount 1000.000			Recovery = 108.93%				
15) Toluene-d8	8.05	98	40237	1029.22	ng/L		0.00
Spiked Amount 1000.000			Recovery = 102.92%				
25) 4-Bromofluorobenzene	10.73	95	12293	796.33	ng/L		0.00
Spiked Amount 1000.000			Recovery = 79.63%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	1394m	49.69	ng/L		
3) Vinyl Chloride	1.33	62	79	2.90	ng/L	#	1
5) Methylene Chloride	3.08	84	314	14.79	ng/L		95
6) trans-1,2-Dichloroethene	3.37	96	101m	5.87	ng/L		
7) cis-1,2-Dichloroethene	4.95	96	715	43.61	ng/L		97
8) Chloroform	5.40	83	297	8.43	ng/L		85
11) Benzene	5.97	78	2195	32.76	ng/L		97
13) Trichloroethene	6.74	95	488	29.62	ng/L		86
14) Bromodichloromethane	7.36	83	46	1.95	ng/L	#	28
20) Toluene	8.12	92	20590	676.09	ng/L		99
21) Ethylbenzene	9.65	106	101	6.88	ng/L	#	74
22) 1,1,1,2-Tetrachloroethane	9.68	131	8	0.44	ng/L	#	47
23) m,p-Xylenes	9.78	106	306	18.20	ng/L		93
24) o-Xylene	10.18	106	211	12.30	ng/L	#	65
26) 1,1,2,2-Tetrachloroethane	10.95	83	48	2.94	ng/L		74
27) 1,2,3-Trichloropropane	10.97	110	17	3.32	ng/L	#	11
28) Tetrachloroethene	8.63	164	61	4.27	ng/L		92
30) 1,4-Dichlorobenzene	11.90	146	158	5.90	ng/L		94

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F018.D Vial: 12
Acq On : 23 May 2017 08:01 pm Operator: KR
Sample : K5066-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:14 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F018.D

(2) Chloromethane (T)

1.25min 66.41ng/L

response 1863

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	32.24
49.00	10.30	9.74
0.00	0.00	0.00

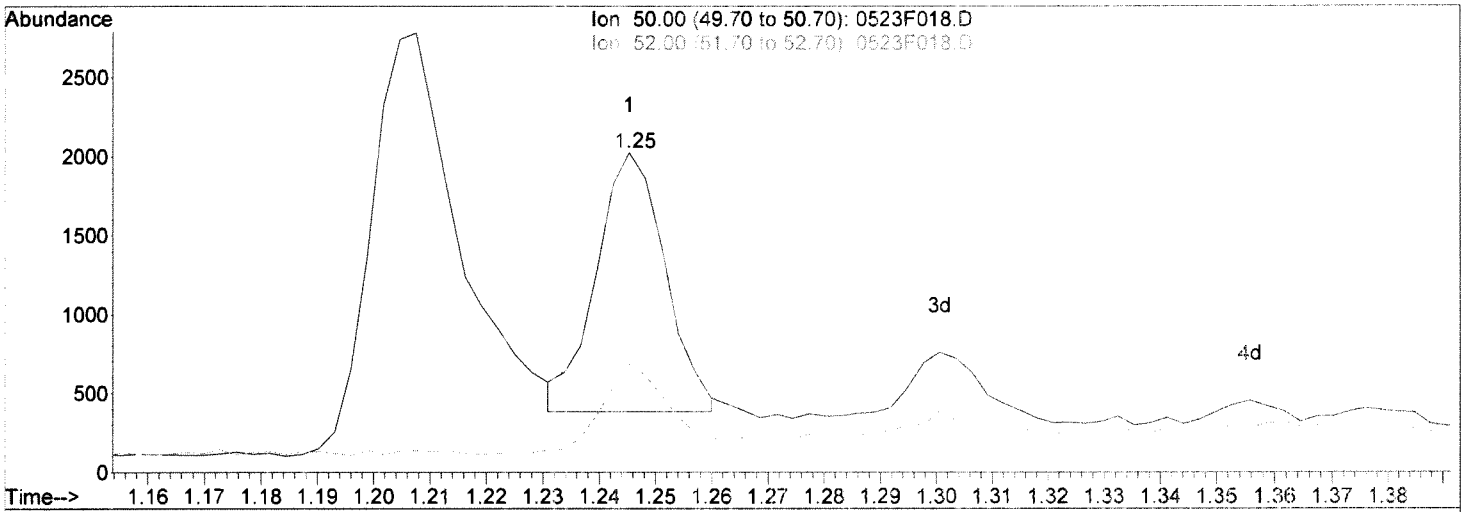
Manual Integration:

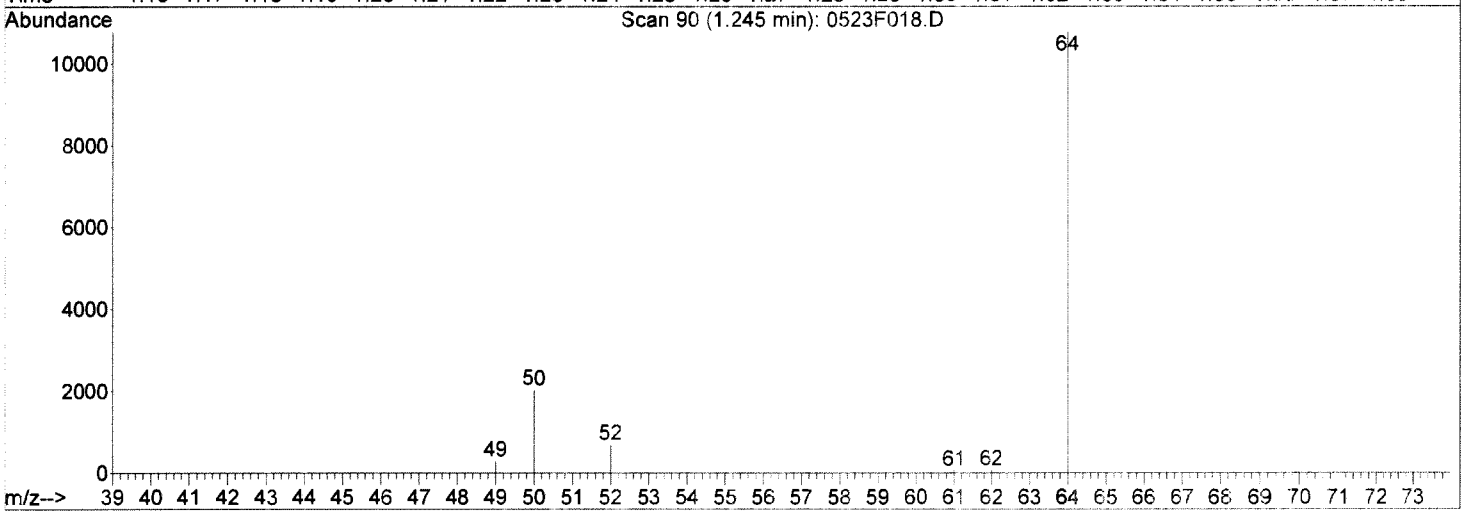
Before

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F018.D Vial: 12
Acq On : 23 May 2017 08:01 pm Operator: KR
Sample : K5066-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:15 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F018.D

(2) Chloromethane (T)

1.25min 49.69ng/L m

response 1394

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	33.76
49.00	10.30	14.12
0.00	0.00	0.00

Manual Integration:

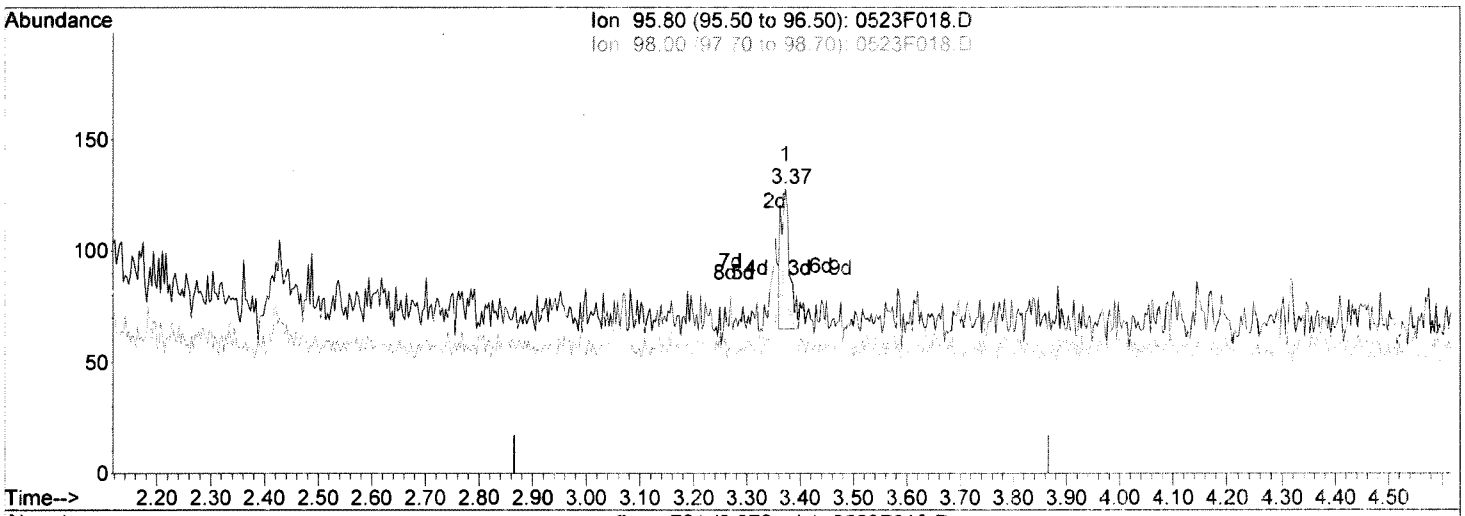
After

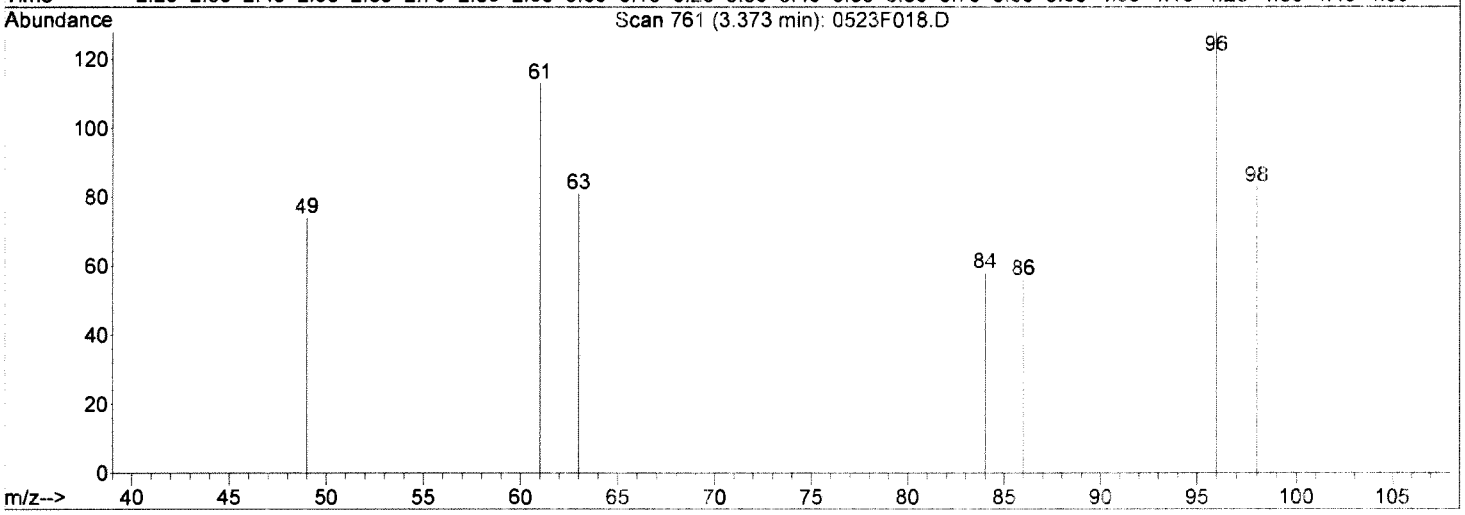
Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F018.D Vial: 12
Acq On : 23 May 2017 08:01 pm Operator: KR
Sample : K5066-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:15 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F018.D

(6) trans-1,2-Dichloroethene (T)

3.37min 4.13ng/L

response 71

Ion	Exp%	Act%
95.80	100	100
98.00	62.90	46.03
61.00	137.30	69.84#
0.00	0.00	0.00

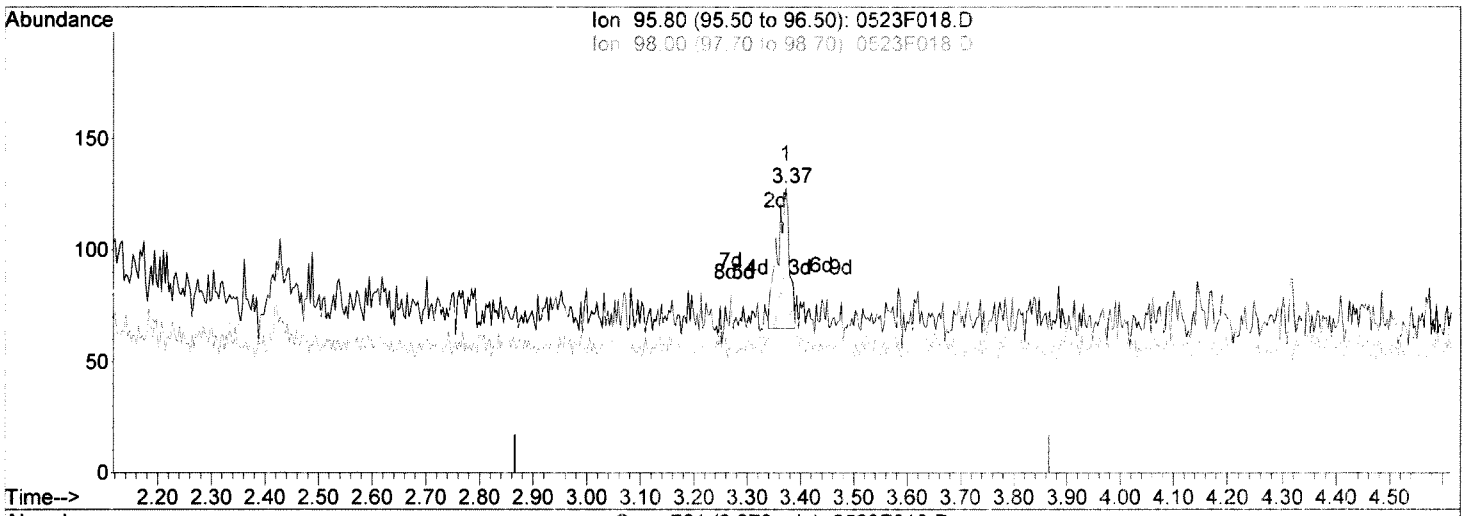
Manual Integration:

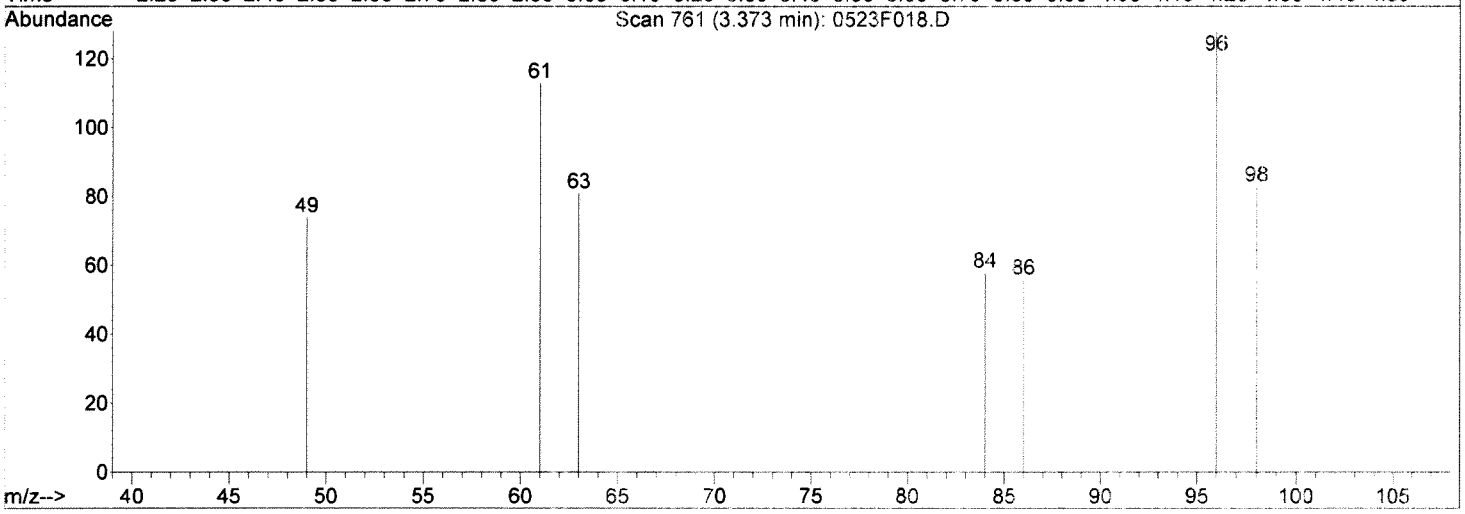
Before

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F018.D Vial: 12
Acq On : 23 May 2017 08:01 pm Operator: KR
Sample : K5066-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:15 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F018.D

(6) trans-1,2-Dichloroethene (T)

3.37min 5.87ng/L m

response 101

Ion	Exp%	Act%
95.80	100	100
98.00	62.90	64.84
61.00	137.30	88.28#
0.00	0.00	0.00

Manual Integration:

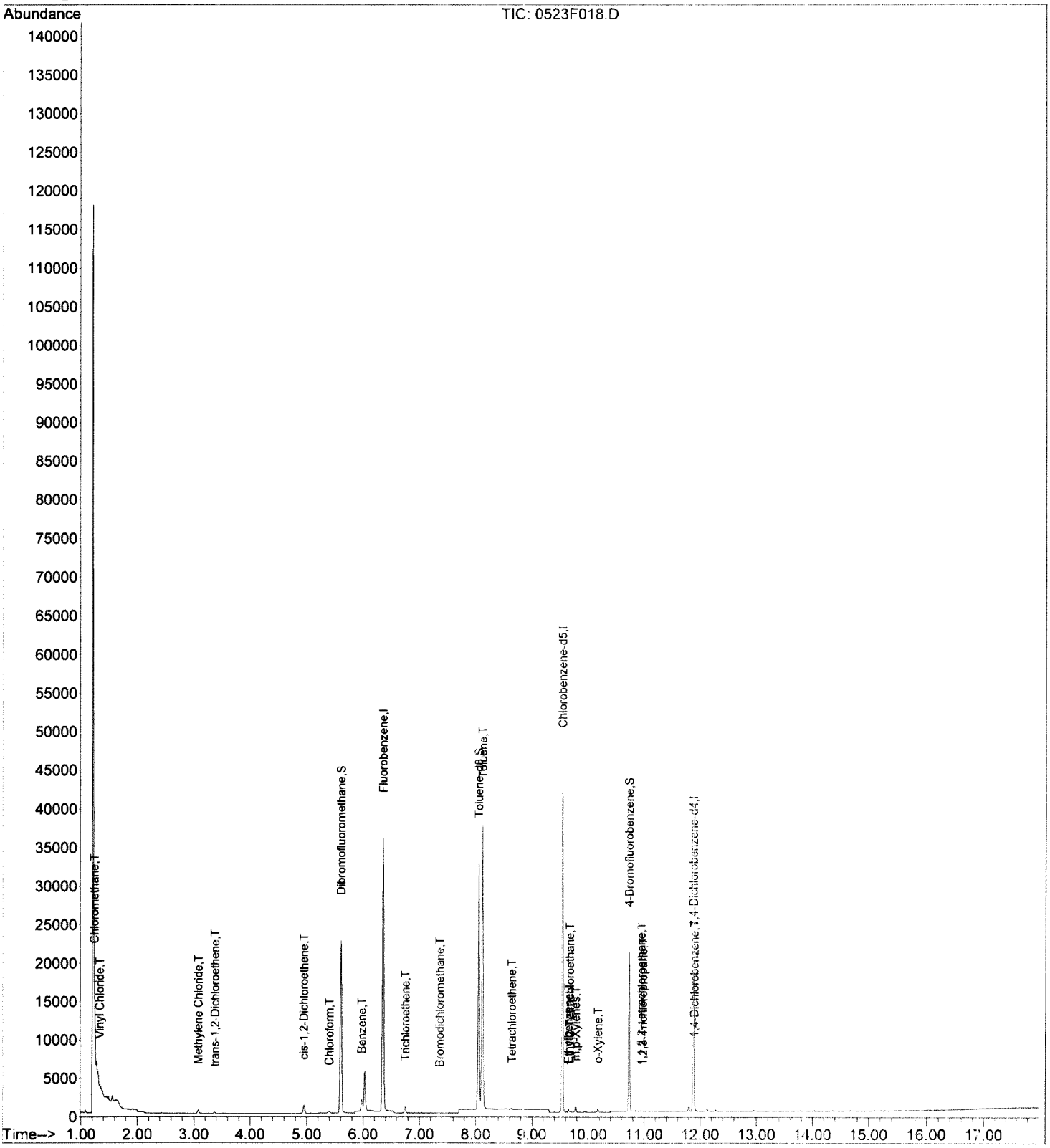
After

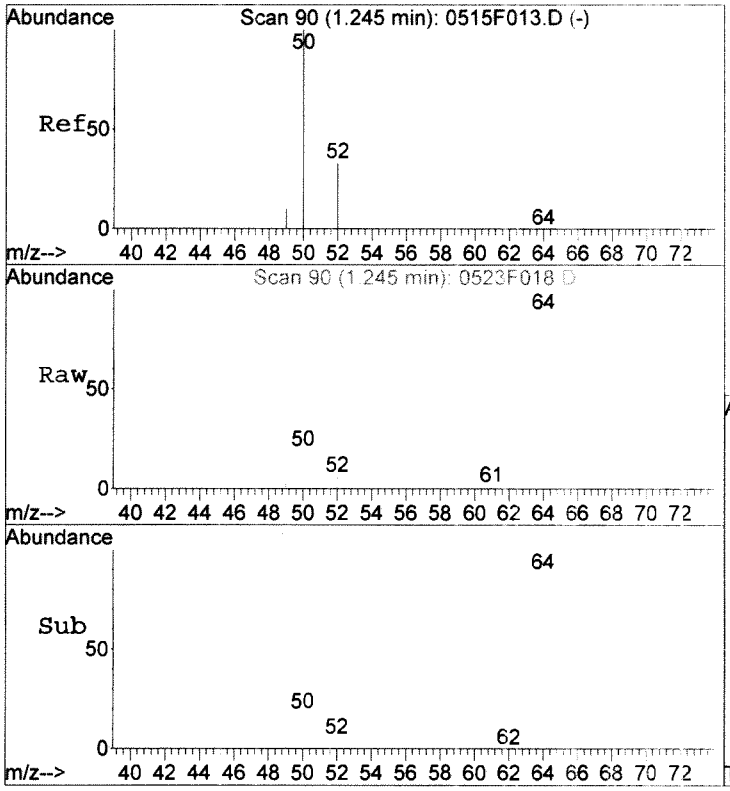
Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F018.D Vial: 12
Acq On : 23 May 2017 08:01 pm Operator: KR
Sample : K5066-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:16 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

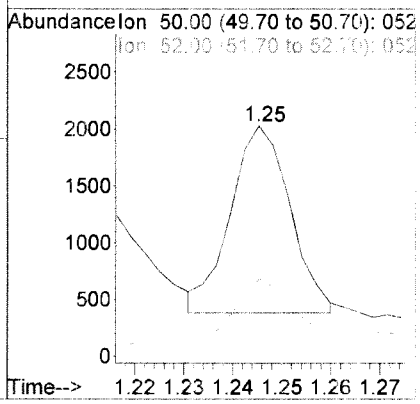


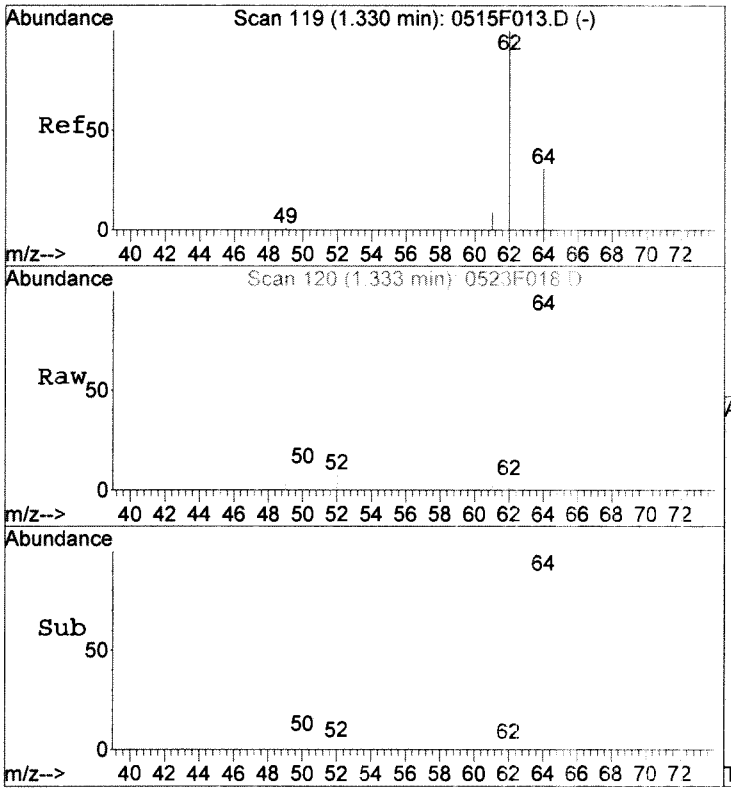


#2
Chloromethane
Concen: 49.69 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 50 Resp: 1394

Ion	Ratio	Lower	Upper
50	100		
52	33.8	2.5	62.5
49	14.1	0.0	40.3

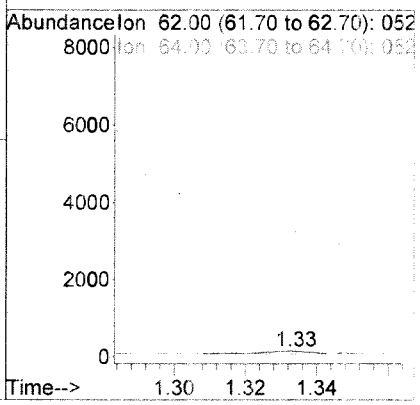


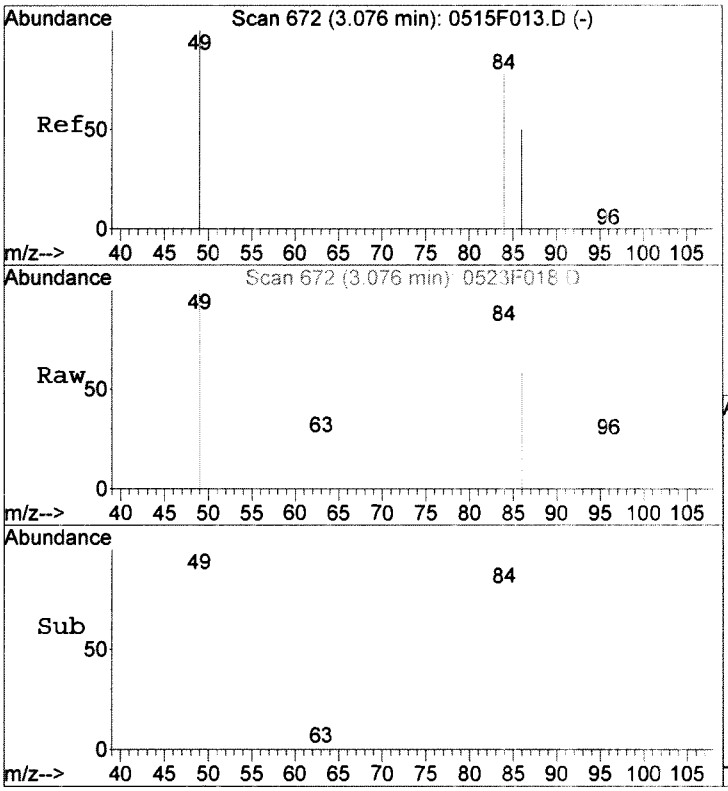


#3
Vinyl Chloride
Concen: 2.90 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 62 Resp: 79

Ion	Ratio	Lower	Upper
62	100		
64	370.3	1.5	61.5#
61	8.1	0.0	38.6

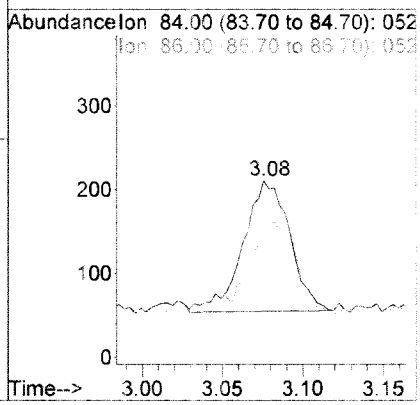


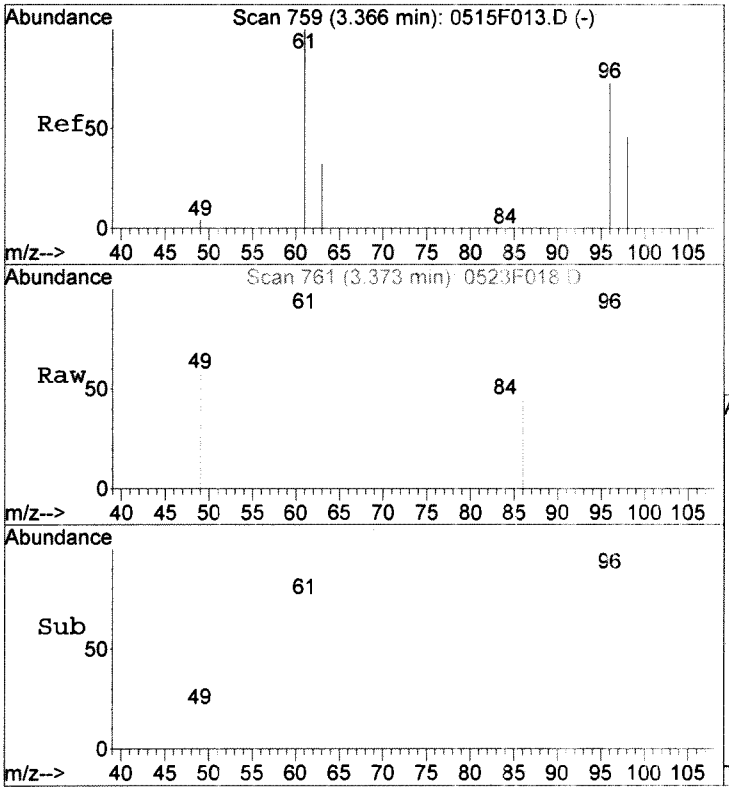


#5
Methylene Chloride
Concen: 14.79 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 84 Resp: 314

Ion	Ratio	Lower	Upper
84	100		
86	62.6	34.0	94.0
49	121.9	98.8	158.8

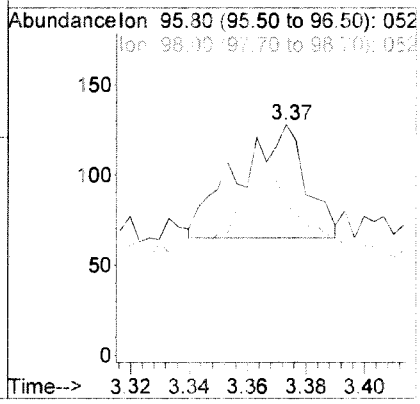


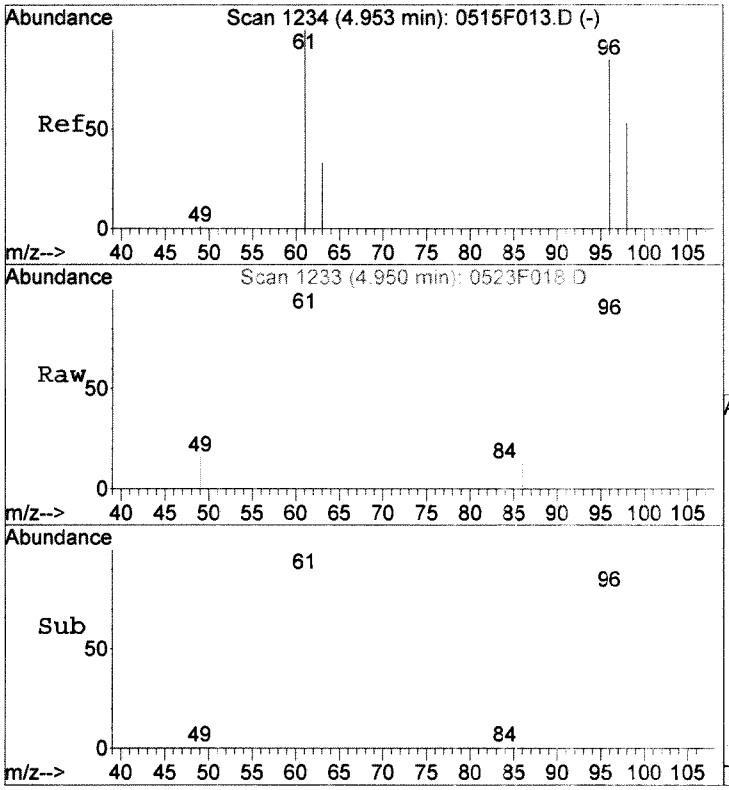


#6
trans-1,2-Dichloroethene
Concen: 5.87 ng/L m
RT: 3.37 min Scan# 761
Delta R.T. 0.01 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 96 Resp: 101

Ion	Ratio	Lower	Upper
96	100		
98	64.8	32.9	92.9
61	88.3	107.3	167.3#

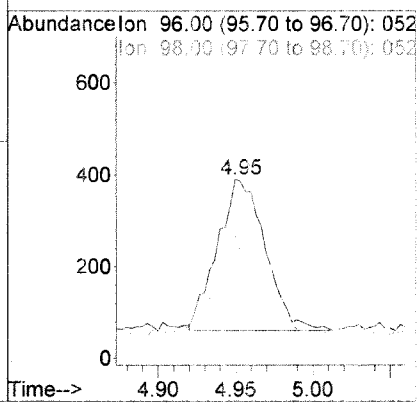


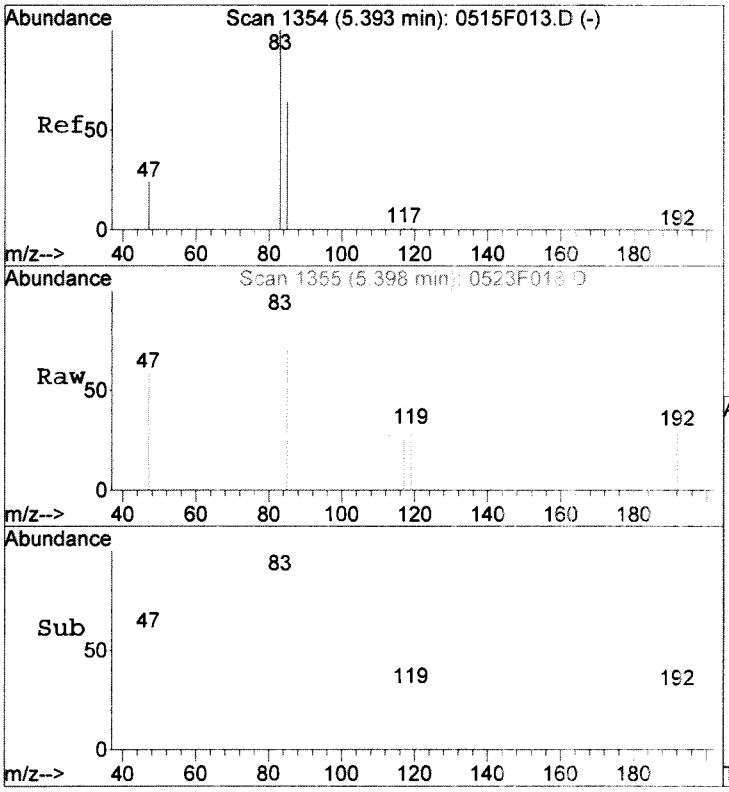


#7
cis-1,2-Dichloroethene
Concen: 43.61 ng/L
RT: 4.95 min Scan# 1233
Delta R.T. -0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 96 Resp: 715

Ion	Ratio	Lower	Upper
96	100		
98	65.2	32.7	92.7
61	121.8	95.4	155.4

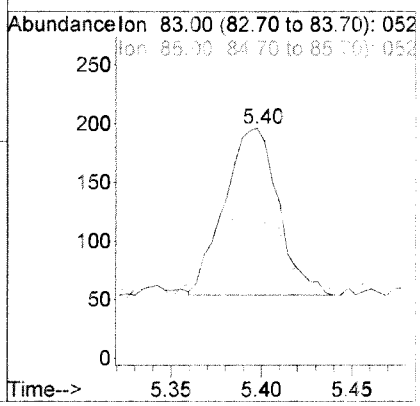


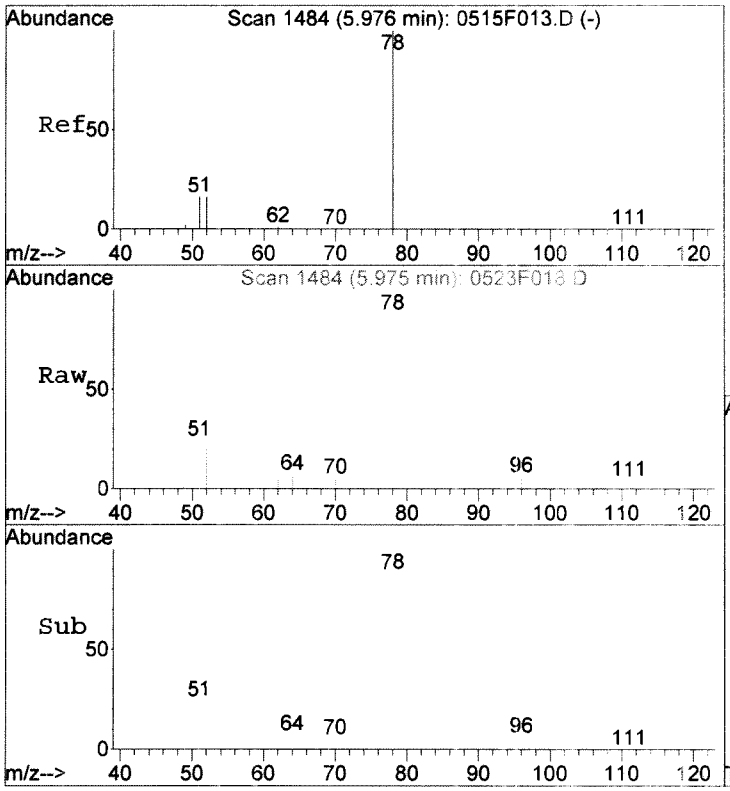


#8
Chloroform
Concen: 8.43 ng/L
RT: 5.40 min Scan# 1355
Delta R.T. 0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 83 Resp: 297

Ion	Ratio	Lower	Upper
83	100		
85	55.6	34.0	94.0
47	37.3	0.0	53.5

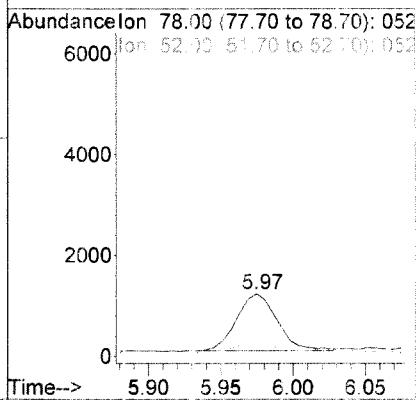


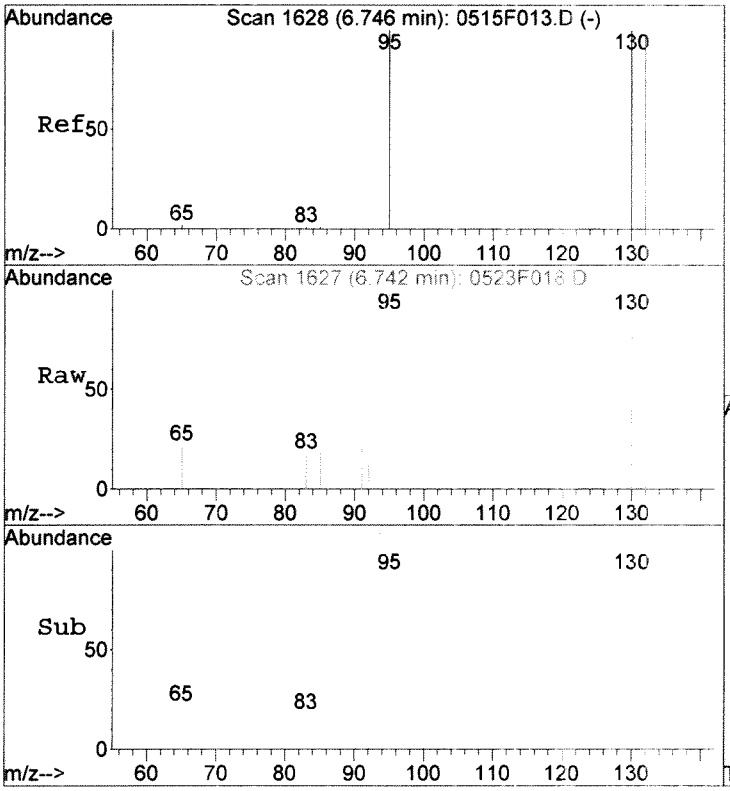


#11
Benzene
Concen: 32.76 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 78 Resp: 2195

Ion	Ratio	Lower	Upper
78	100		
52	16.0	0.0	45.8
51	18.7	0.0	46.5

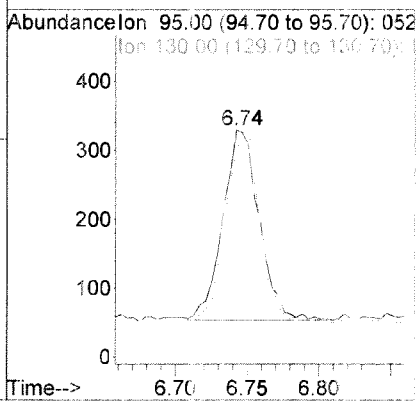


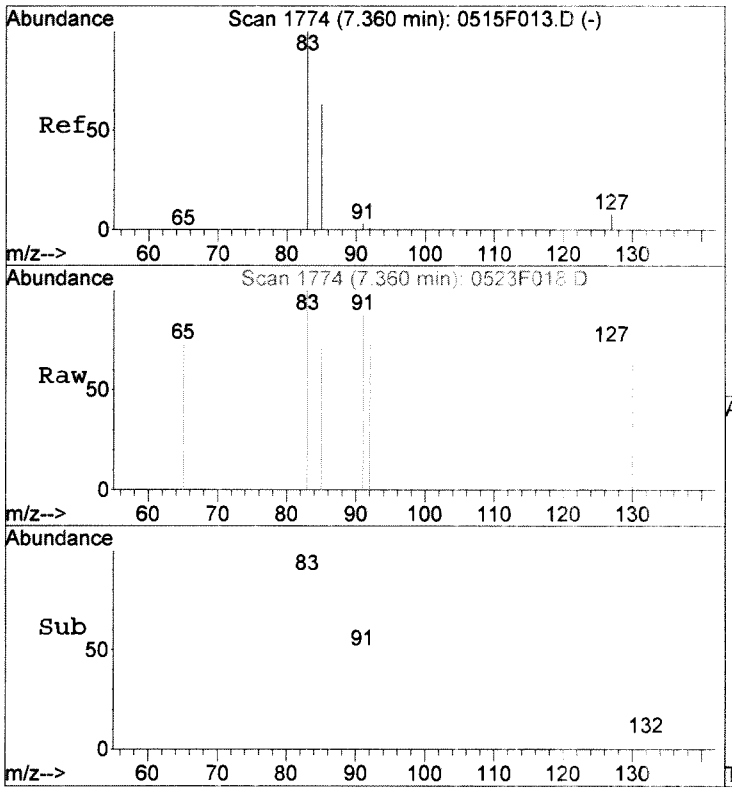


#13
Trichloroethene
Concen: 29.62 ng/L
RT: 6.74 min Scan# 1627
Delta R.T. -0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 95 Resp: 488

Ion	Ratio	Lower	Upper
95	100		
130	90.9	69.5	129.5
132	78.9	67.2	127.2

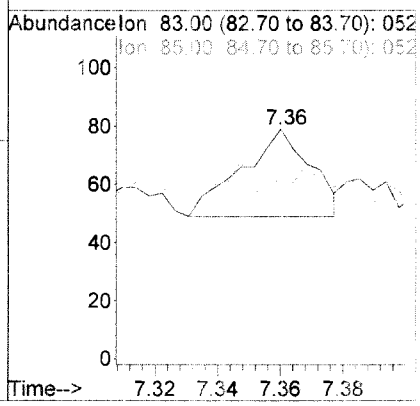


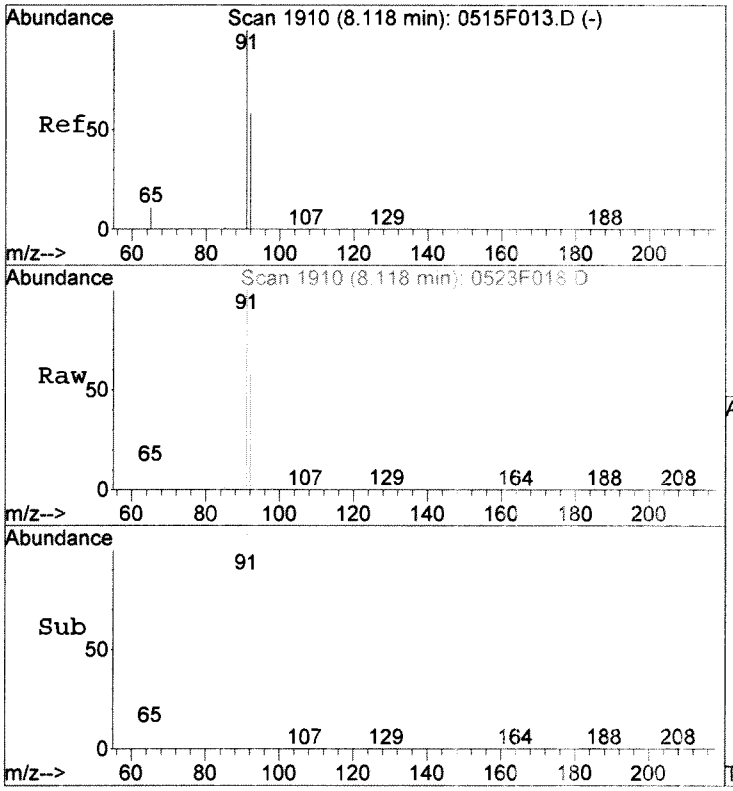


#14
Bromodichloromethane
Concen: 1.95 ng/L
RT: 7.36 min Scan# 1774
Delta R.T. 0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 83 Resp: 46

Ion	Ratio	Lower	Upper
83	100		
85	3.3	33.1	93.1#
127	20.0	0.0	38.1

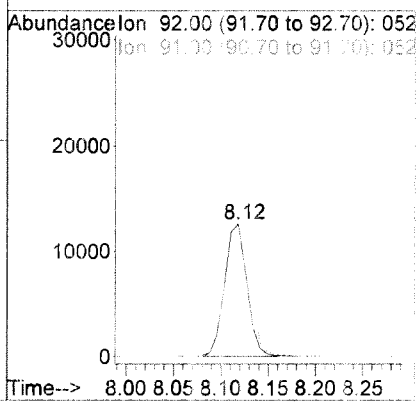


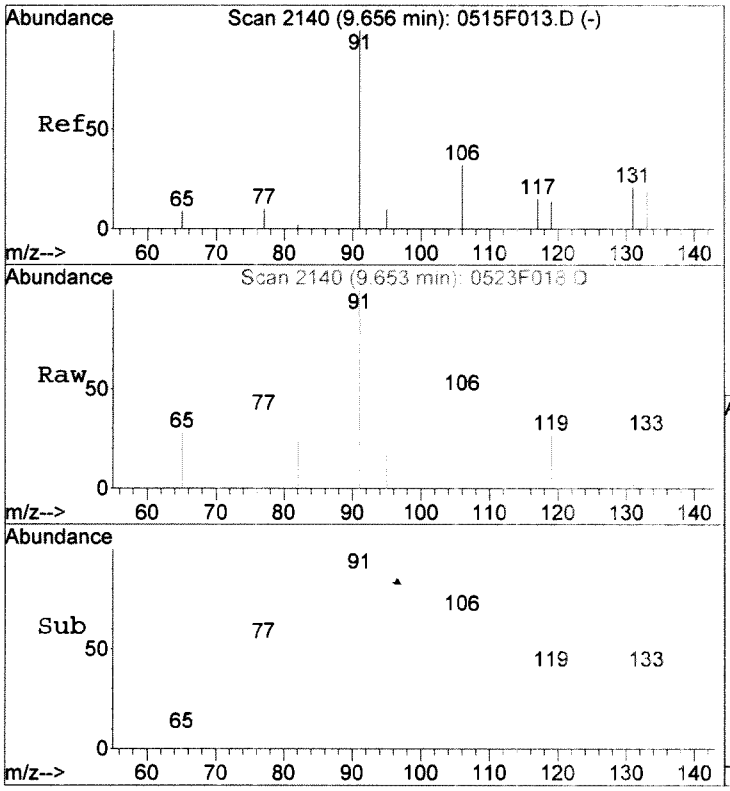


#20
Toluene
Concen: 676.09 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 92 Resp: 20590

Ion	Ratio	Lower	Upper
92	100		
91	172.6	143.6	203.6
65	19.7	0.0	49.9

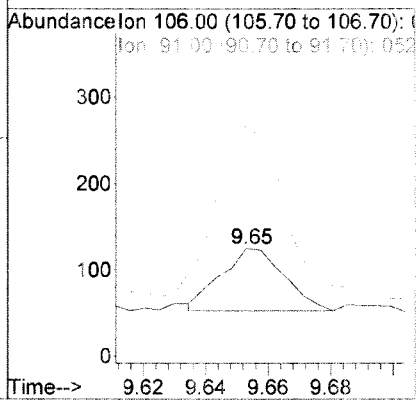


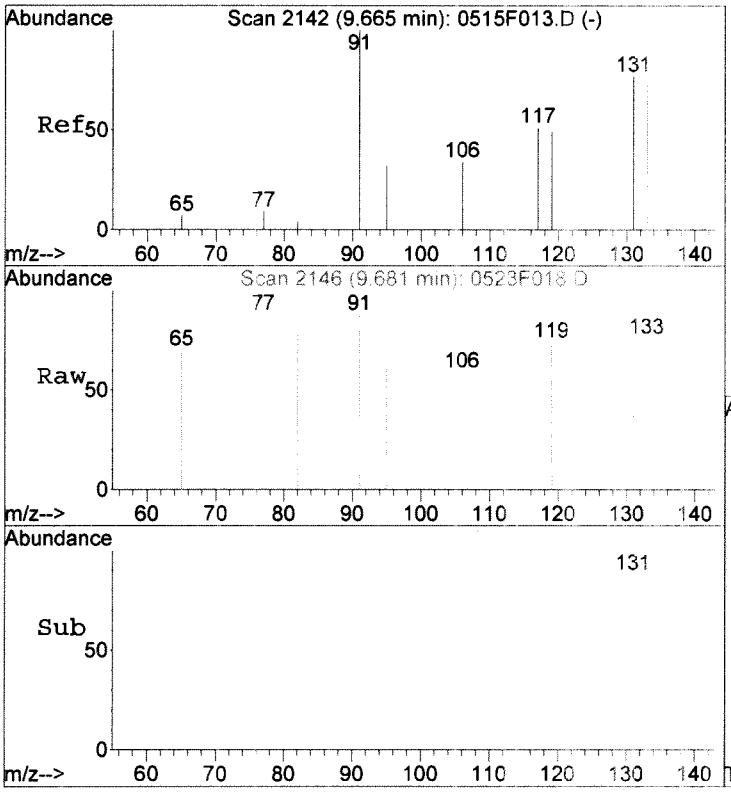


#21
Ethylbenzene
Concen: 6.88 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion:106 Resp: 101

Ion	Ratio	Lower	Upper
106	100		
91	258.3	285.7	345.7#
77	29.2	1.3	61.3

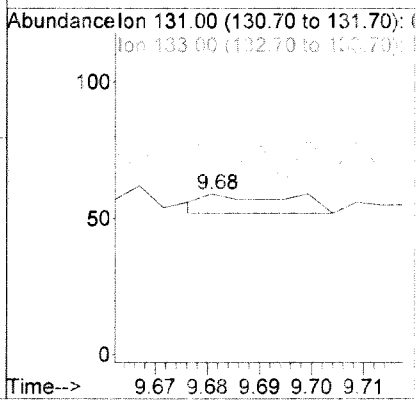


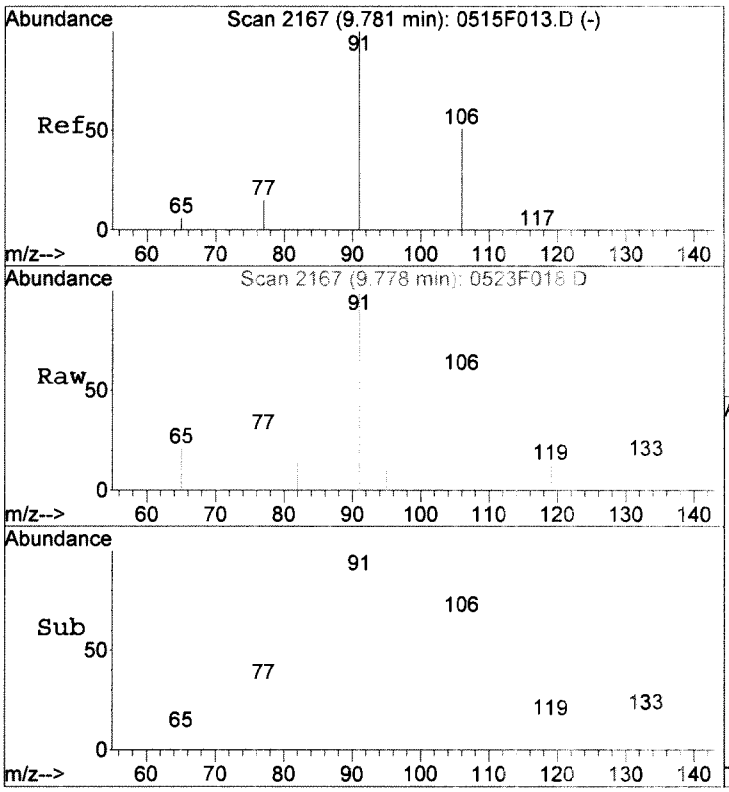


#22
1,1,1,2-Tetrachloroethane
Concen: 0.44 ng/L
RT: 9.68 min Scan# 2146
Delta R.T. 0.02 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion:131 Resp: 8

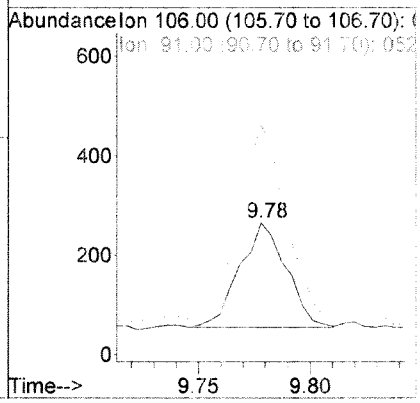
Ion	Ratio	Lower	Upper
131	100		
133	14.3	74.4	114.4#
119	71.4	43.9	83.9

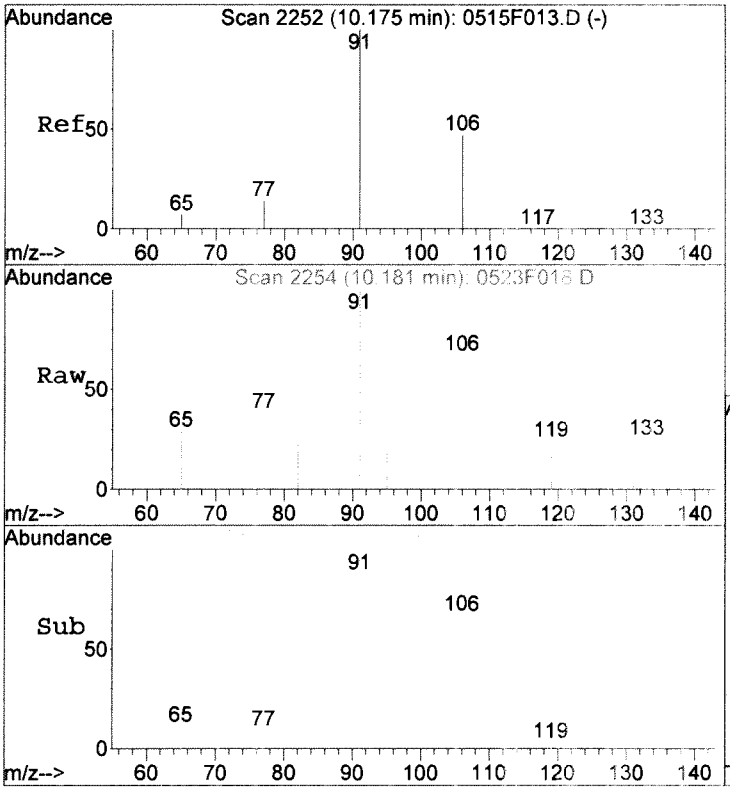




#23
m,p-Xylenes
Concen: 18.20 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

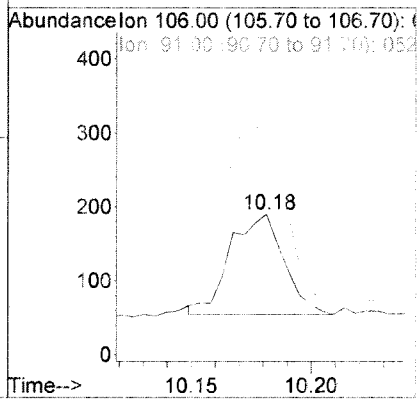
Tgt Ion:106	Resp:	306	
Ion	Ratio	Lower	Upper
106	100		
91	185.3	166.8	226.8
77	25.6	0.0	58.7

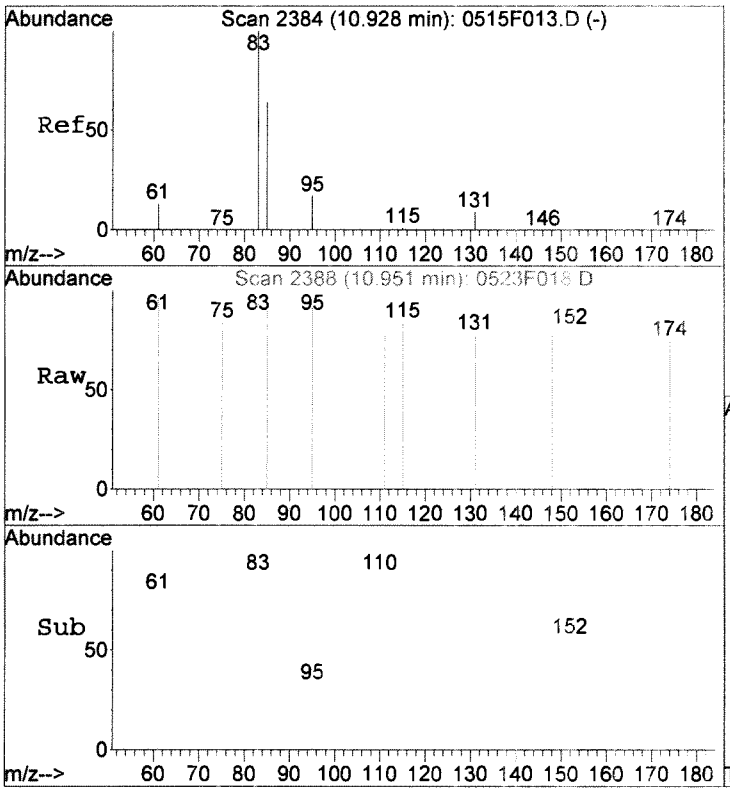




#24
o-Xylene
Concen: 12.30 ng/L
RT: 10.18 min Scan# 2254
Delta R.T. 0.01 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion:106	Resp:	211	
Ion	Ratio	Lower	Upper
106	100		
91	155.1	184.3	244.3#
65	12.5	0.0	44.6

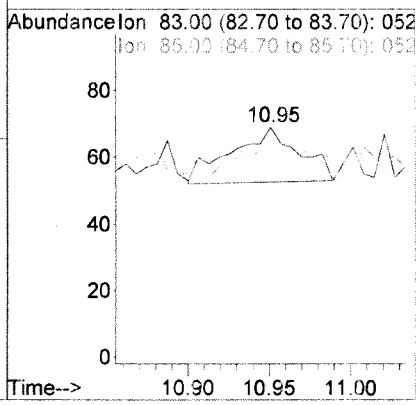


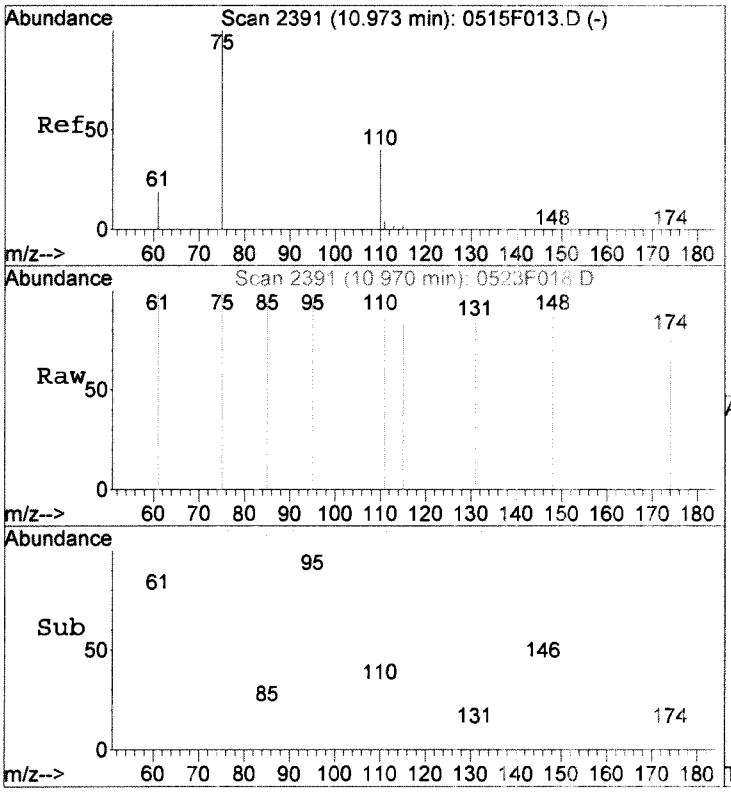


#26
1,1,2,2-Tetrachloroethane
Concen: 2.94 ng/L
RT: 10.95 min Scan# 2388
Delta R.T. 0.02 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion: 83 Resp: 48

Ion	Ratio	Lower	Upper
83	100		
85	43.8	34.1	94.1
131	0.0	0.0	28.8

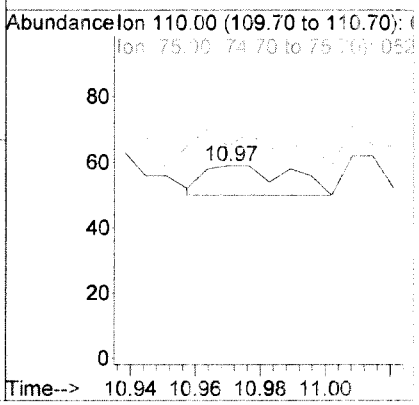


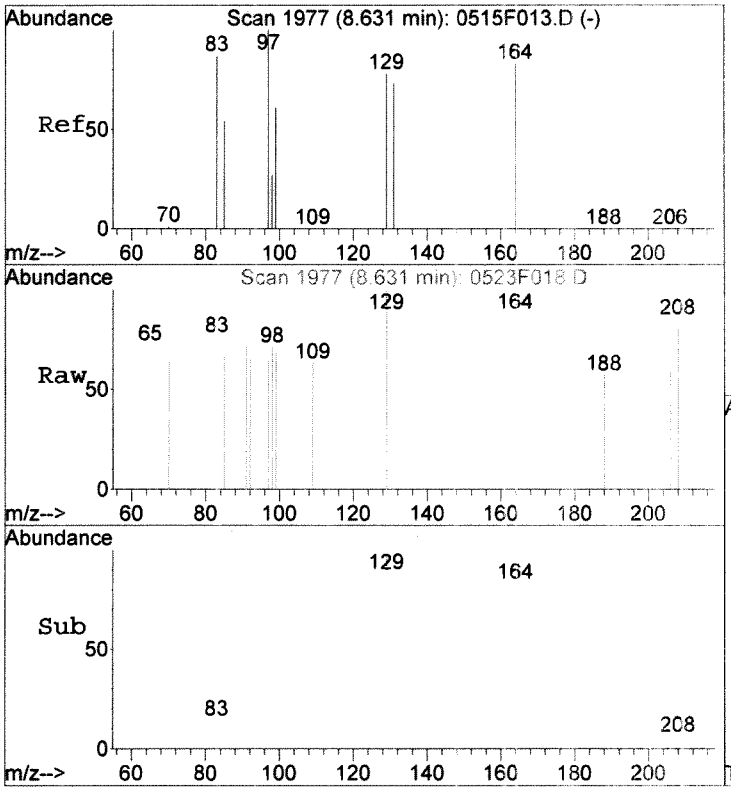


#27
1,2,3-Trichloropropane
Concen: 3.32 ng/L
RT: 10.97 min Scan# 2391
Delta R.T. -0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion:110 Resp: 17

Ion	Ratio	Lower	Upper
110	100		
75	66.7	230.6	270.6#
61	44.4	40.1	80.1

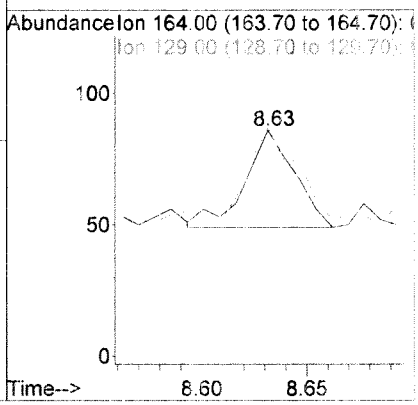


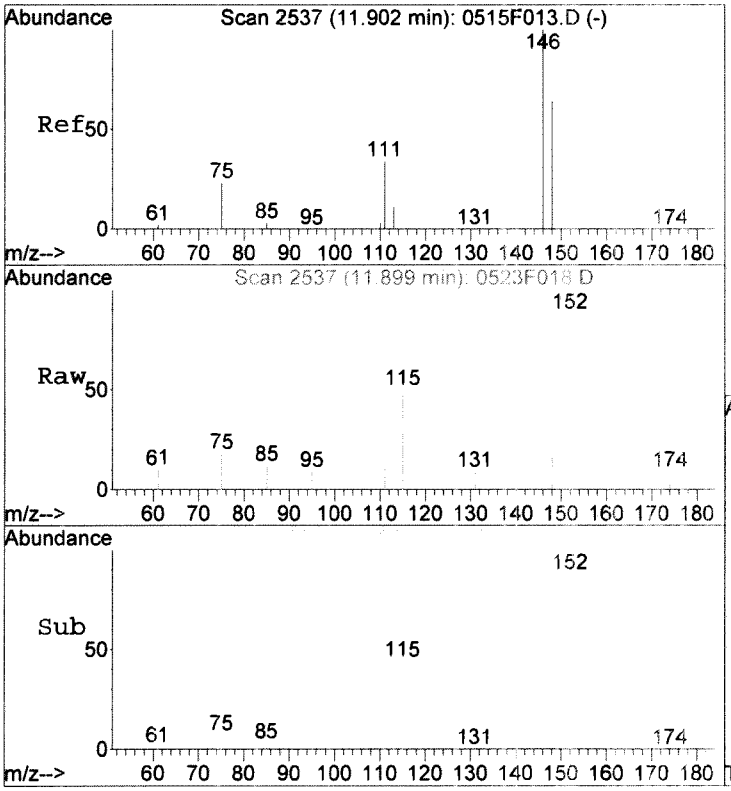


#28
Tetrachloroethene
Concen: 4.27 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion:164 Resp: 61

Ion	Ratio	Lower	Upper
164	100		
129	94.6	63.1	123.1
131	73.0	57.4	117.4

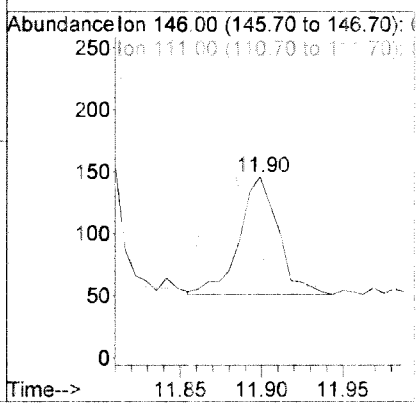




#30
1,4-Dichlorobenzene
Concen: 5.90 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0523F018.D
Acq: 23 May 2017 08:01 pm

Tgt Ion:146 Resp: 158

Ion	Ratio	Lower	Upper
146	100		
111	26.3	4.0	64.0
148	66.3	34.3	94.3



Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F019.D
Lab ID: K1705066-005
RunType: SMPL
Matrix: WATER

Date Acquired: 05/23/2017 20:29
Date Quantitated: 05/24/2017 09:20
Batch ID: KWG 704209
Analysis Method: 8260C SIM
ListJoinID: LJ18835

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F019.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 20:29	**Quant Date:**	05/24/2017 09:20	**Vial:**	13
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1705066-005			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/16/2017	**Receive Date:**	05/18/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	K1705066
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605449	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	48803	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34731	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19546	1.083	108	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	41771	1.073	107	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11894	769.79	77	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	217	7.99	8.0	J	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F019.D Vial: 13
Acq On : 23 May 2017 08:29 pm Operator: KR
Sample : K5066-005 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 09:19:33 2017 Quant Results File: 051517MS30_8260SIM.RES

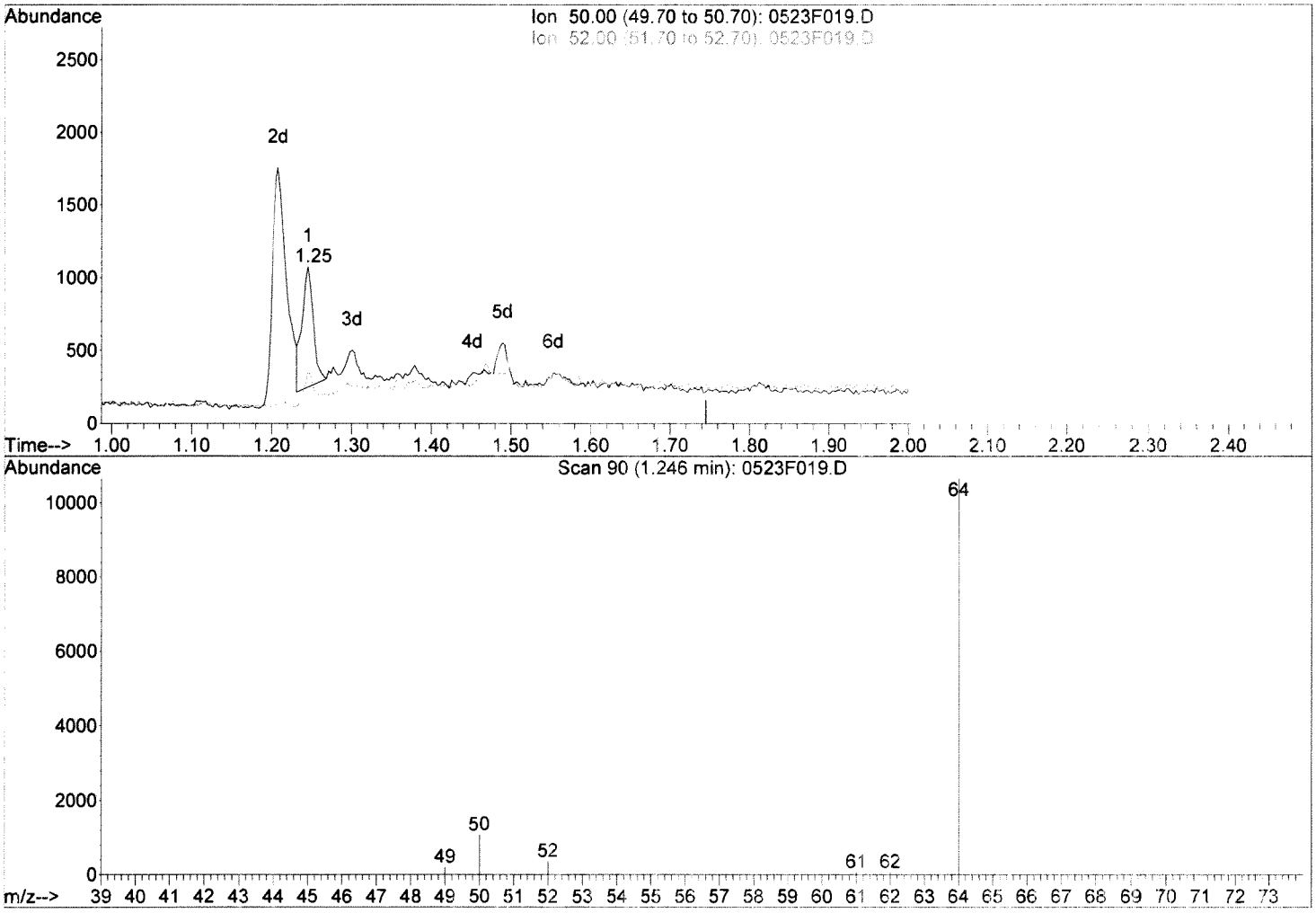
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	48803	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	34731	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13703	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19546	1082.82	ng/L	0.00
Spiked Amount 1000.000			Recovery = 108.28%			
15) Toluene-d8	8.05	98	41771	1073.08	ng/L	0.00
Spiked Amount 1000.000			Recovery = 107.31%			
25) 4-Bromofluorobenzene	10.73	95	11894	769.79	ng/L	0.00
Spiked Amount 1000.000			Recovery = 76.98%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	581m	20.80	ng/L	
3) Vinyl Chloride	1.33	62	217	7.99	ng/L #	1
4) 1,1-Dichloroethene	2.43	96	1747	115.73	ng/L	91
5) Methylene Chloride	3.08	84	700	33.12	ng/L	88
6) trans-1,2-Dichloroethene	3.37	96	501	29.26	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	49209	3014.71	ng/L	97
8) Chloroform	5.39	83	408	11.63	ng/L	97
11) Benzene	5.98	78	7180	107.64	ng/L	99
12) 1,2-Dichloroethane	6.12	62	120	4.82	ng/L	88
13) Trichloroethene	6.75	95	679692	41429.96	ng/L	98
14) Bromodichloromethane	7.35	83	19	0.81	ng/L #	51
20) Toluene	8.12	92	12467	409.00	ng/L	98
21) Ethylbenzene	9.65	106	151	10.27	ng/L #	82
22) 1,1,1,2-Tetrachloroethane	9.67	131	16	0.87	ng/L #	20
23) m,p-Xylenes	9.78	106	599	35.59	ng/L	95
24) o-Xylene	10.18	106	398	23.19	ng/L #	79
26) 1,1,2,2-Tetrachloroethane	10.95	83	41	2.51	ng/L #	24
27) 1,2,3-Trichloropropane	10.97	110	9	1.75	ng/L #	1
28) Tetrachloroethene	8.63	164	67	4.69	ng/L	69
30) 1,4-Dichlorobenzene	11.90	146	139	5.62	ng/L #	66

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F019.D Vial: 13
Acq On : 23 May 2017 08:29 pm Operator: KR
Sample : K5066-005 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:19 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F019.D

(2) Chloromethane (T)

1.25min 29.46ng/L

response 823

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	31.35
49.00	10.30	10.75
0.00	0.00	0.00

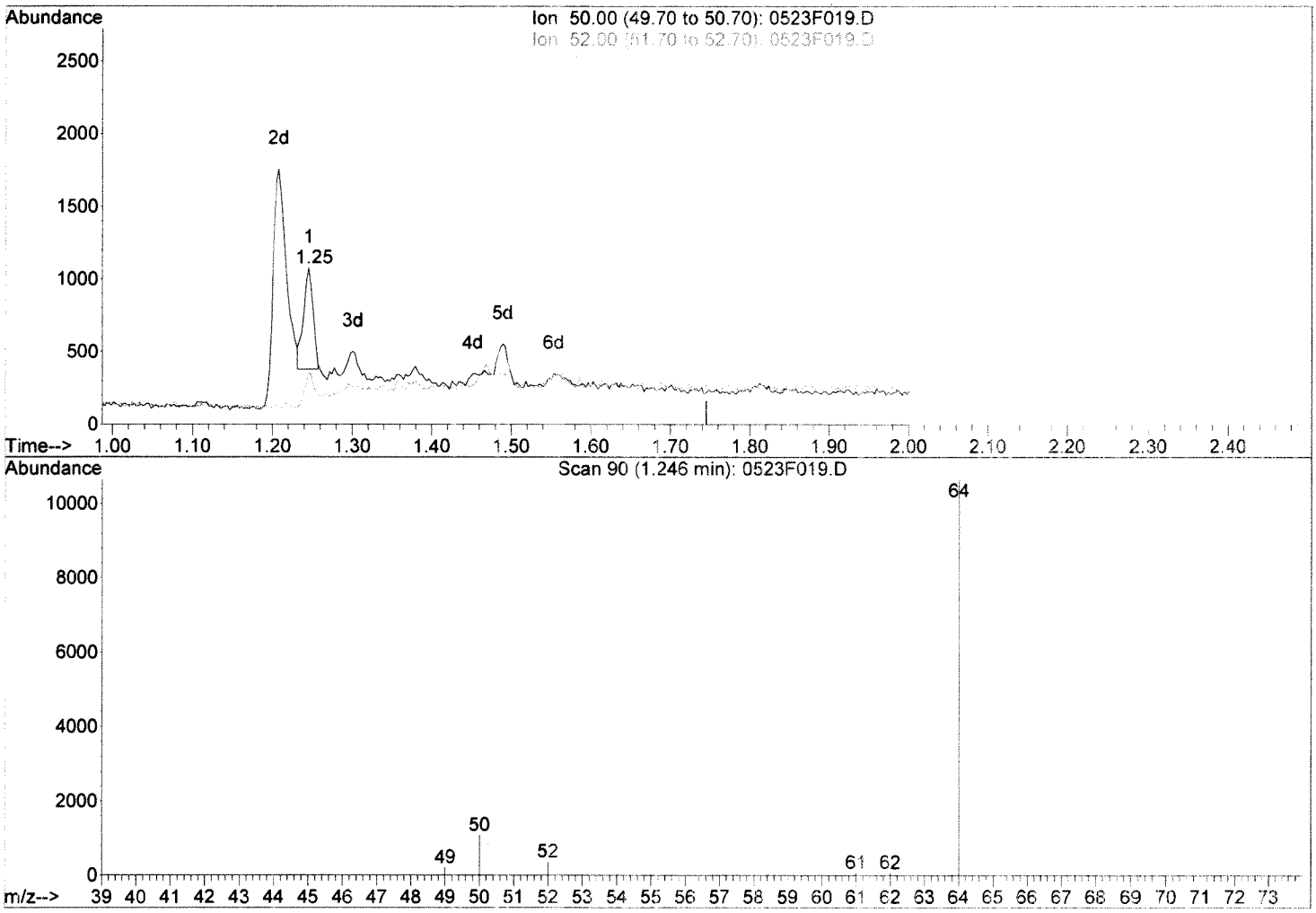
Manual Integration:

Before

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F019.D Vial: 13
Acq On : 23 May 2017 08:29 pm Operator: KR
Sample : K5066-005 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:19 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F019.D

(2) Chloromethane (T)

1.25min 20.80ng/L m

response 581

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	33.55
49.00	10.30	19.05
0.00	0.00	0.00

Manual Integration:

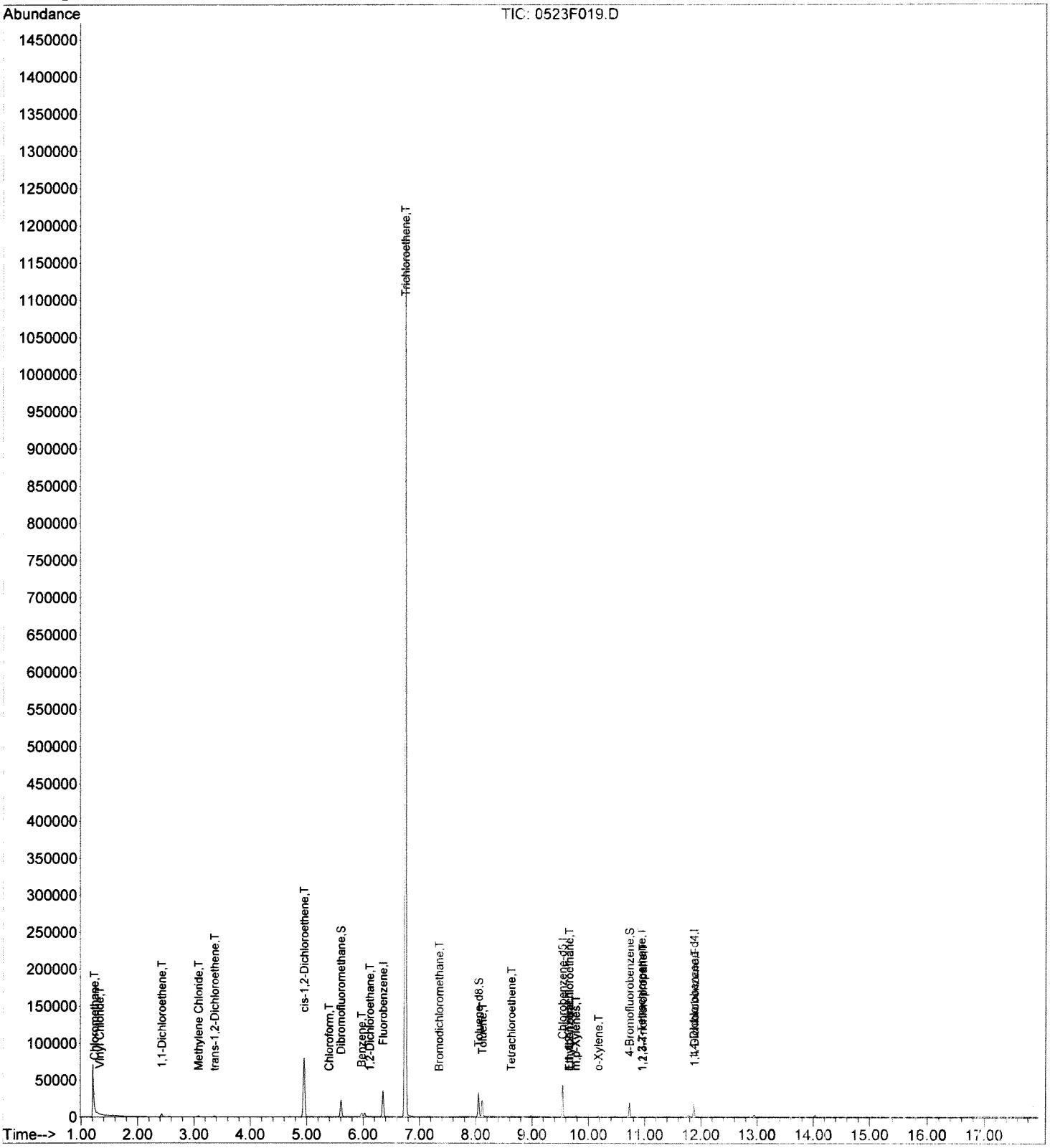
After

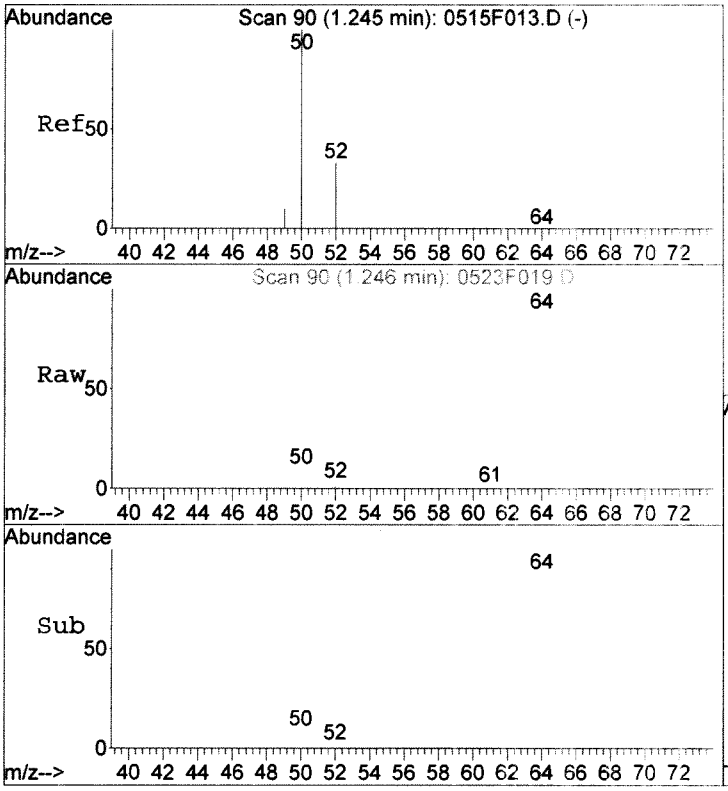
Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F019.D Vial: 13
Acq On : 23 May 2017 08:29 pm Operator: KR
Sample : K5066-005 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:20 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

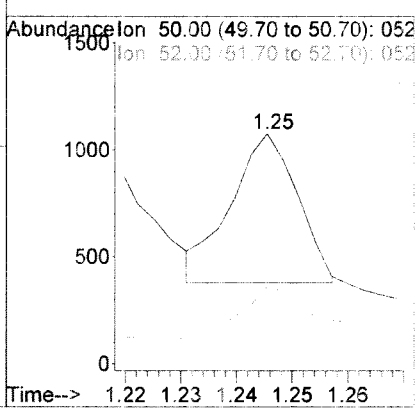


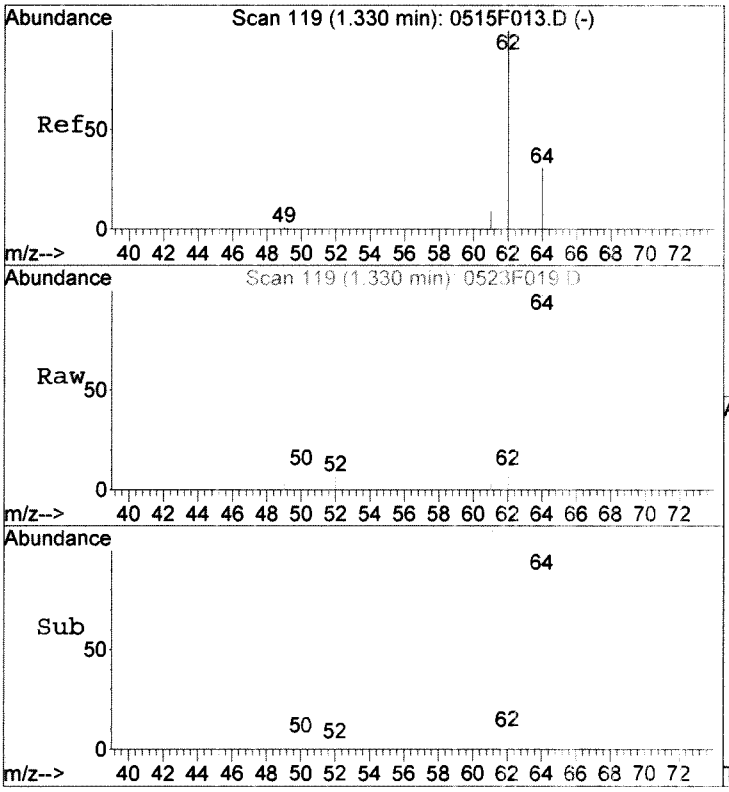


#2
Chloromethane
Concen: 20.80 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 50 Resp: 581

Ion	Ratio	Lower	Upper
50	100		
52	33.6	2.5	62.5
49	19.1	0.0	40.3

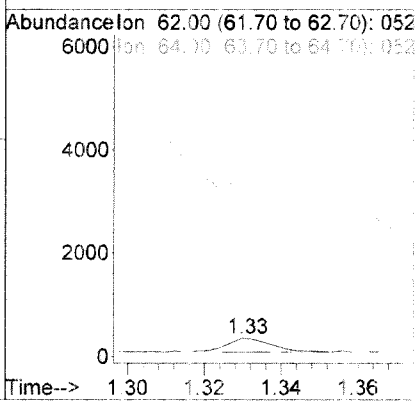


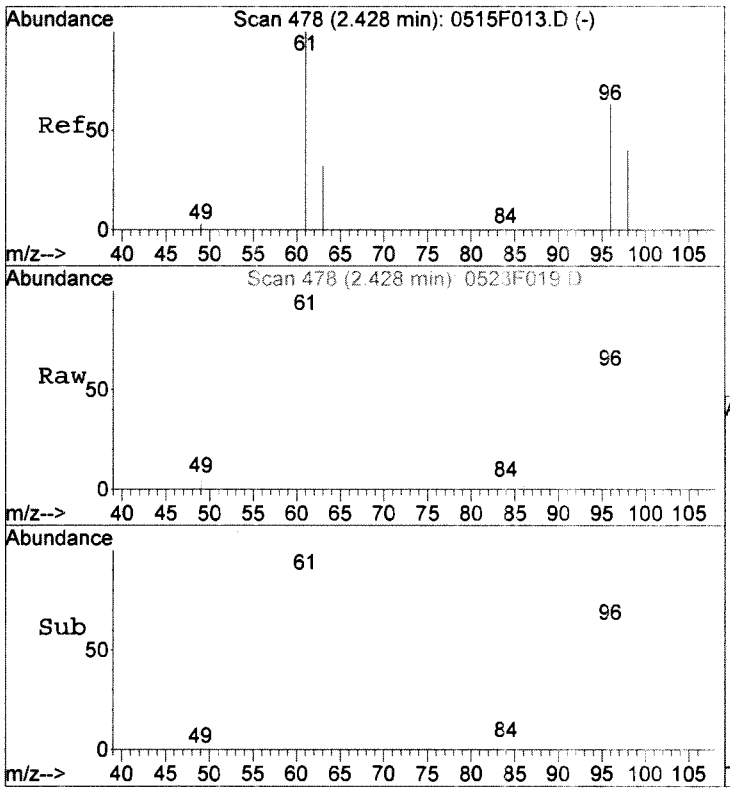


#3
Vinyl Chloride
Concen: 7.99 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 62 Resp: 217

Ion	Ratio	Lower	Upper
62	100		
64	170.6	1.5	61.5#
61	9.4	0.0	38.6

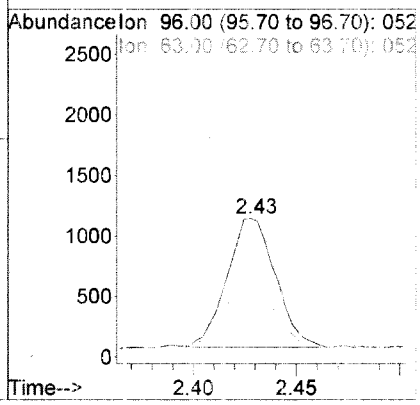


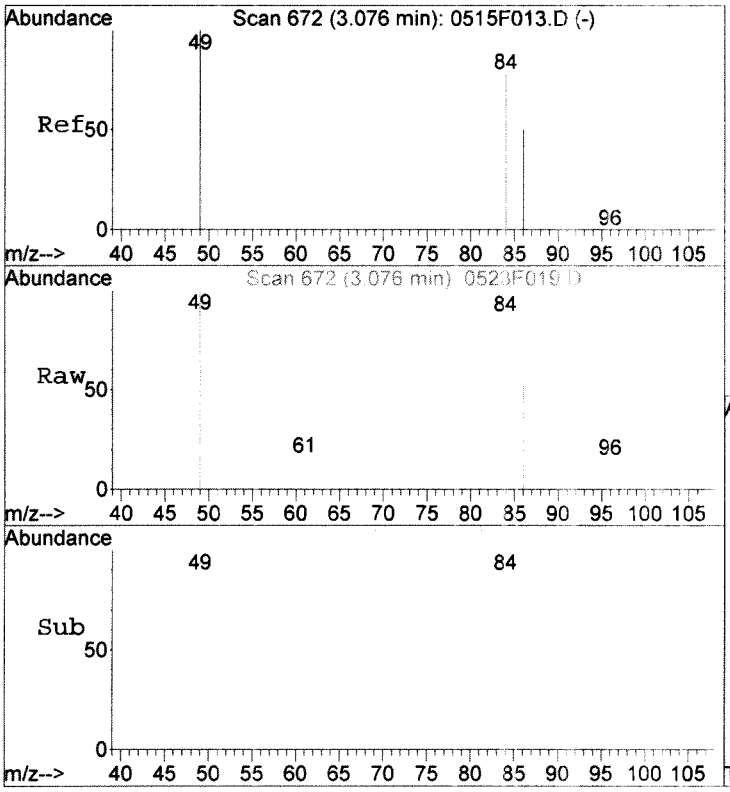


#4
1,1-Dichloroethene
Concen: 115.73 ng/L
RT: 2.43 min Scan# 478
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 96 Resp: 1747

Ion	Ratio	Lower	Upper
96	100		
63	56.1	21.4	81.4
61	171.0	129.1	189.1

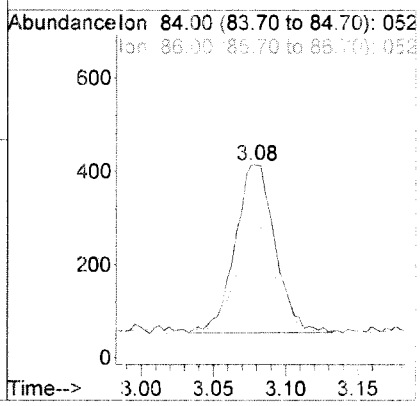


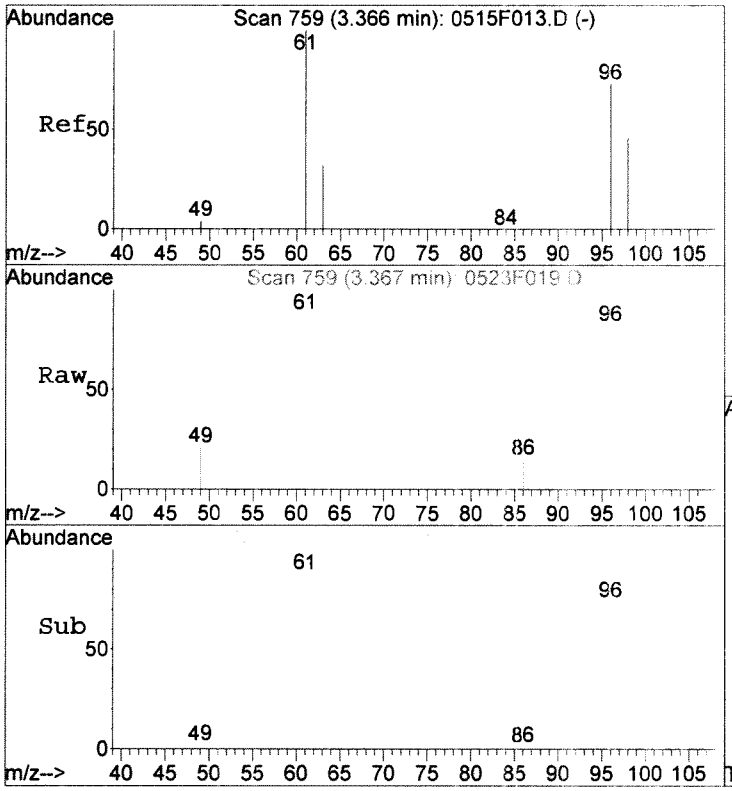


#5
Methylene Chloride
Concen: 33.12 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 84 Resp: 700

Ion	Ratio	Lower	Upper
84	100		
86	56.4	34.0	94.0
49	114.4	98.8	158.8

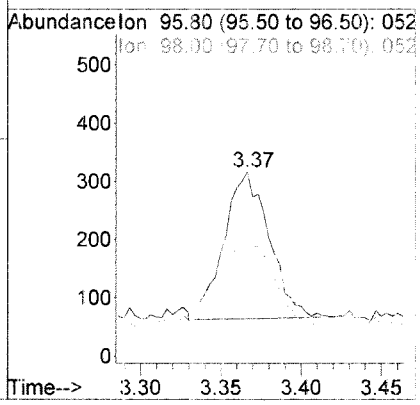


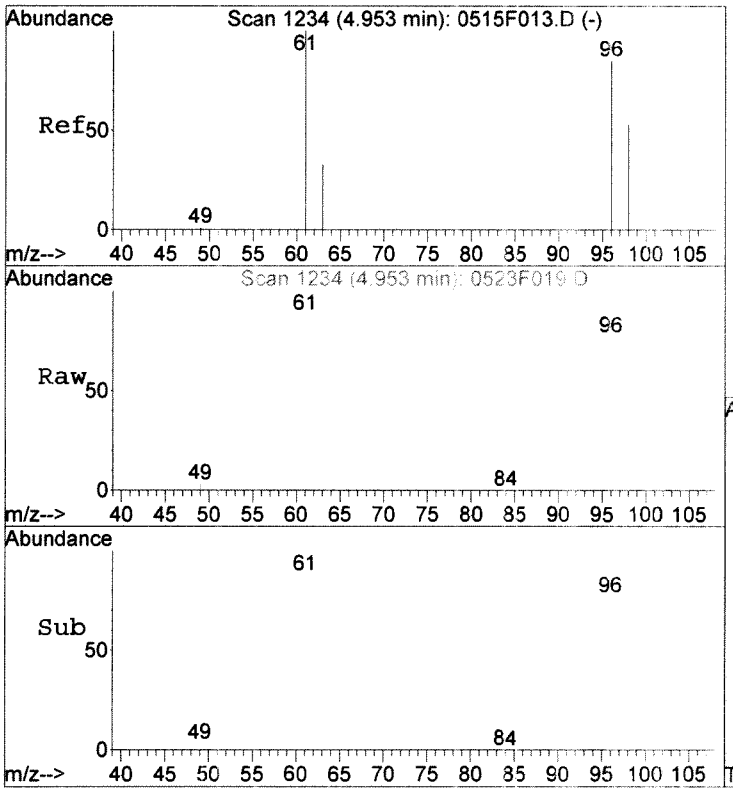


#6
trans-1,2-Dichloroethene
Concen: 29.26 ng/L
RT: 3.37 min Scan# 759
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 96 Resp: 501

Ion	Ratio	Lower	Upper
96	100		
98	64.8	32.9	92.9
61	132.0	107.3	167.3

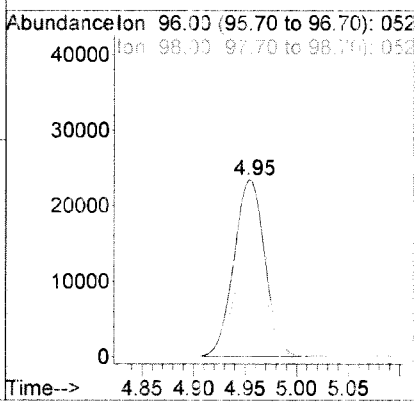


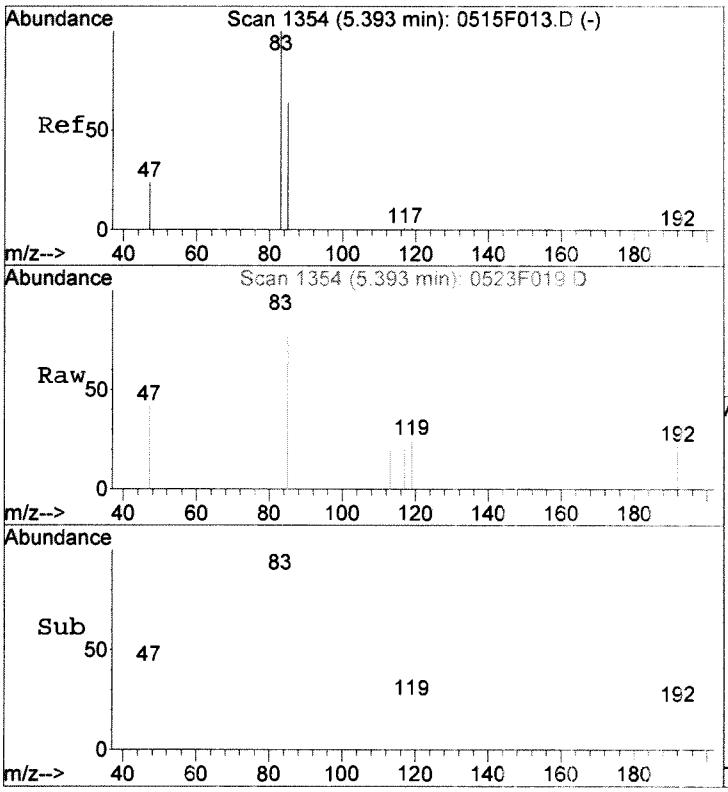


#7
cis-1,2-Dichloroethene
Concen: 3014.71 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 96 Resp: 49209

Ion	Ratio	Lower	Upper
96	100		
98	64.3	32.7	92.7
61	129.6	95.4	155.4

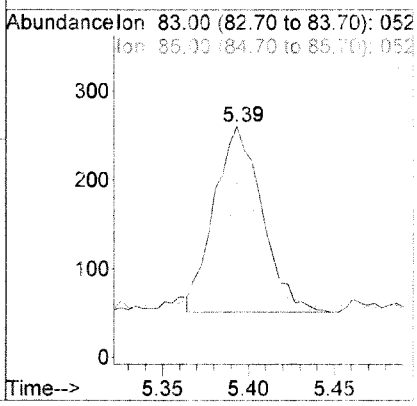


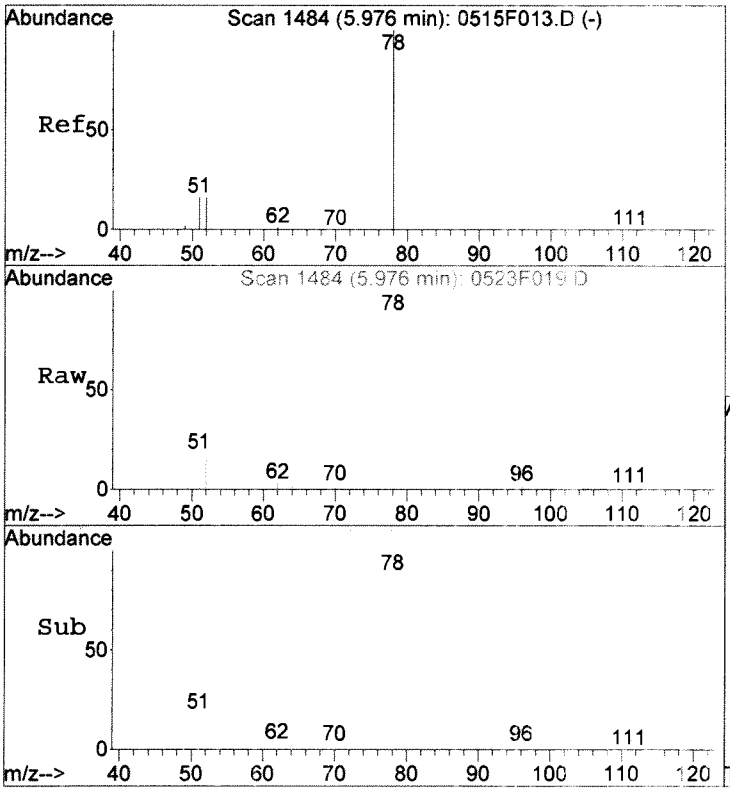


#8
Chloroform
Concen: 11.63 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 83 Resp: 408

Ion	Ratio	Lower	Upper
83	100		
85	65.6	34.0	94.0
47	20.6	0.0	53.5

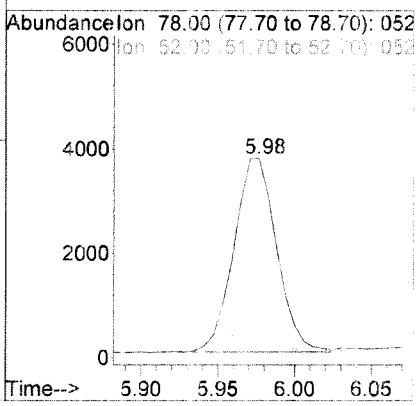


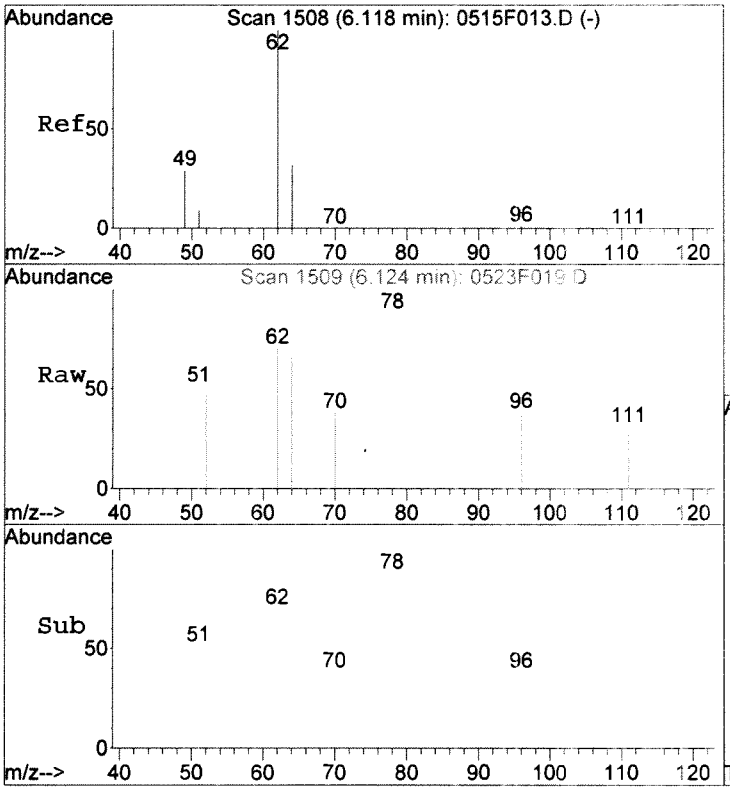


#11
Benzene
Concen: 107.64 ng/L
RT: 5.98 min Scan# 1484
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 78 Resp: 7180

Ion	Ratio	Lower	Upper
78	100		
52	15.5	0.0	45.8
51	16.7	0.0	46.5

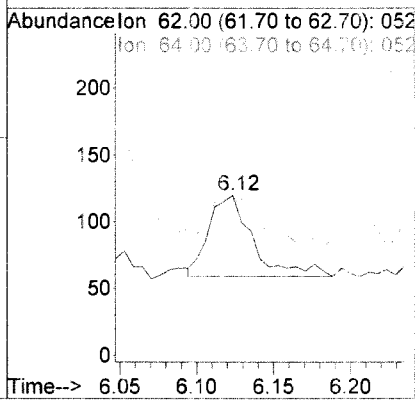


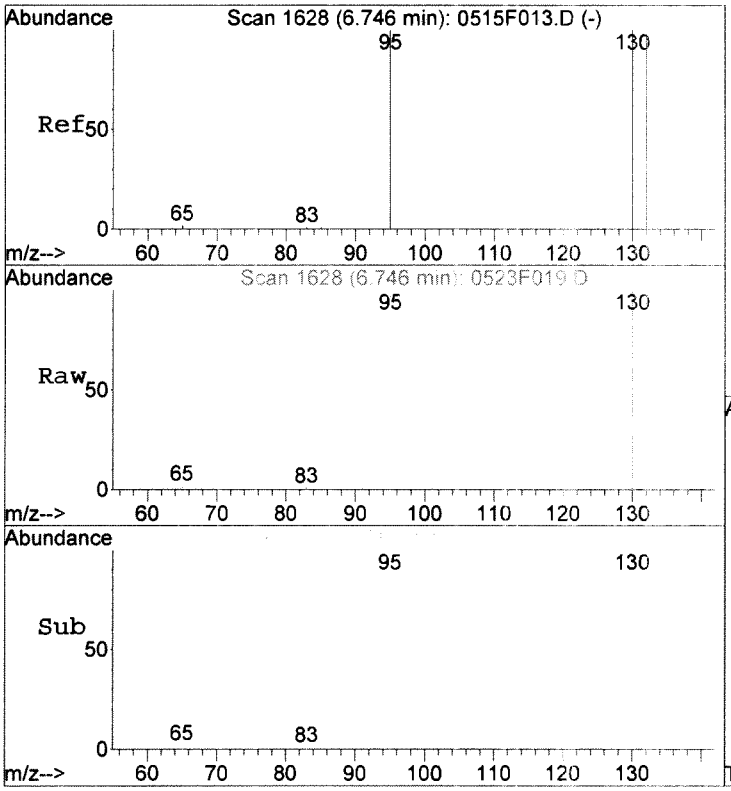


#12
1,2-Dichloroethane
Concen: 4.82 ng/L
RT: 6.12 min Scan# 1509
Delta R.T. 0.01 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 62 Resp: 120

Ion	Ratio	Lower	Upper
62	100		
64	42.6	2.1	62.1
49	31.1	0.0	58.7

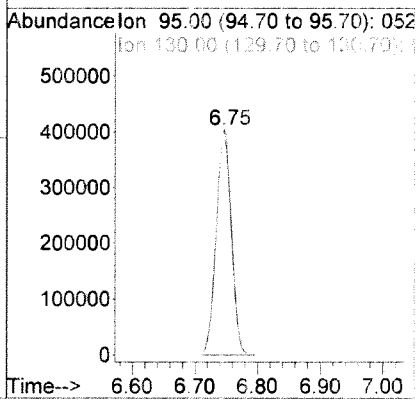


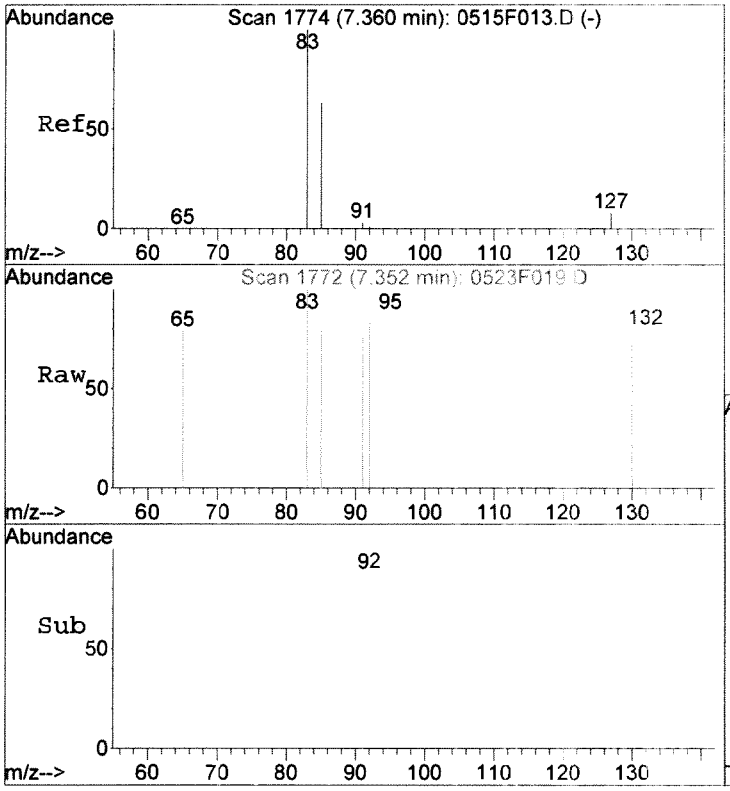


#13
Trichloroethene
Concen: 41429.96 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 95 Resp: 679692

Ion	Ratio	Lower	Upper
95	100		
130	101.9	69.5	129.5
132	98.1	67.2	127.2

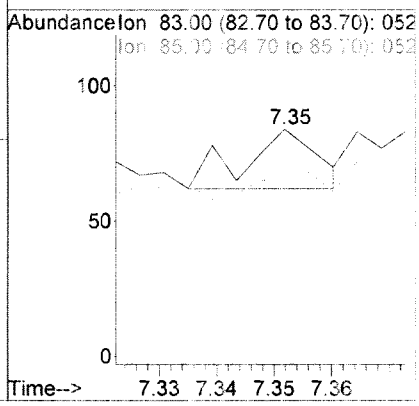


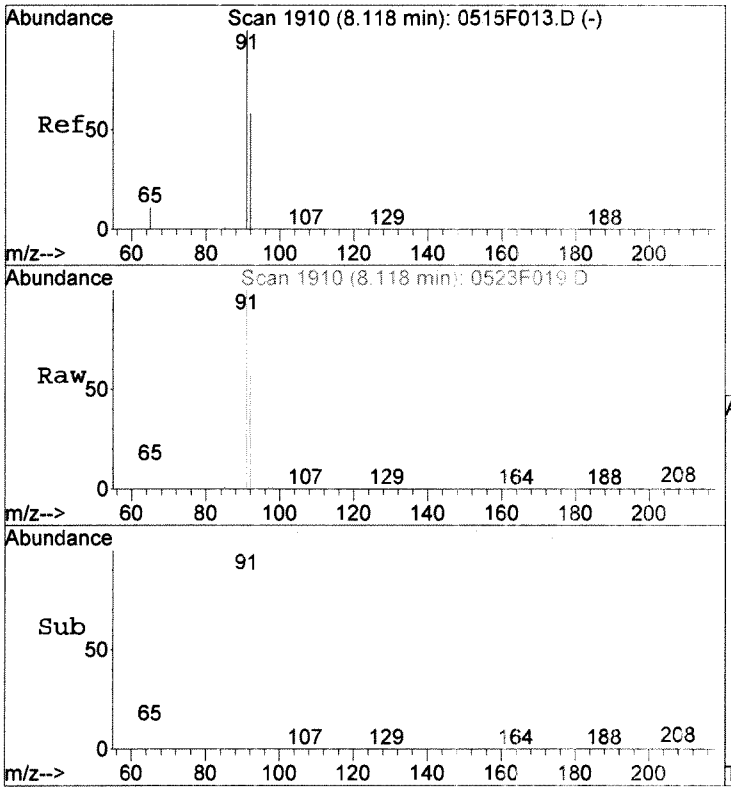


#14
Bromodichloromethane
Concen: 0.81 ng/L
RT: 7.35 min Scan# 1772
Delta R.T. -0.01 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 83 Resp: 19

Ion	Ratio	Lower	Upper
83	100		
85	22.7	33.1	93.1#
127	0.0	0.0	38.1

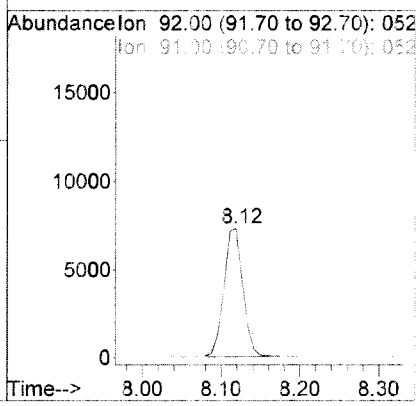


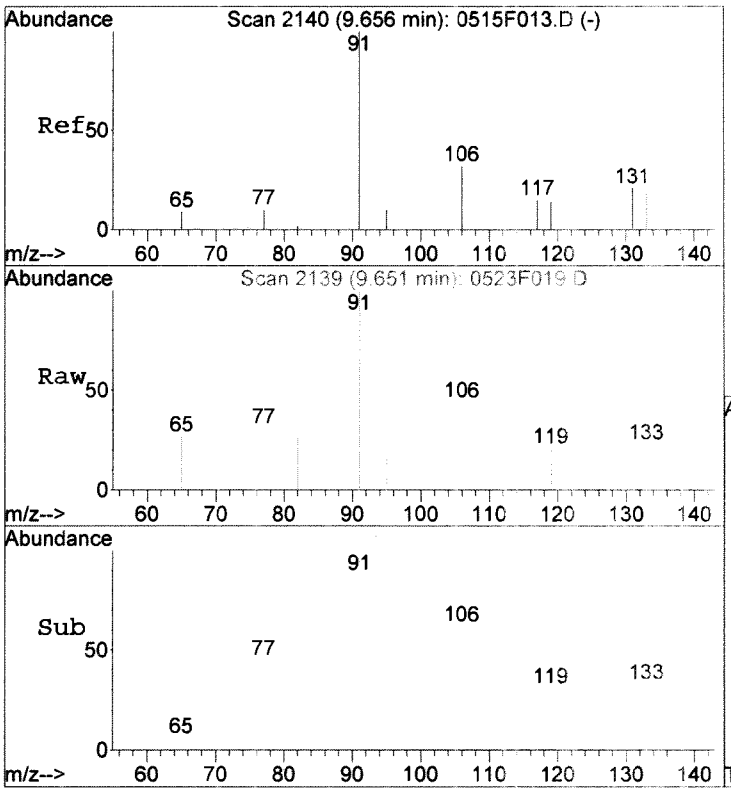


#20
Toluene
Concen: 409.00 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 92 Resp: 12467

Ion	Ratio	Lower	Upper
92	100		
91	177.0	143.6	203.6
65	21.2	0.0	49.9

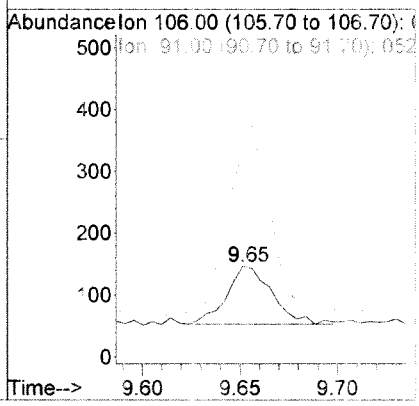


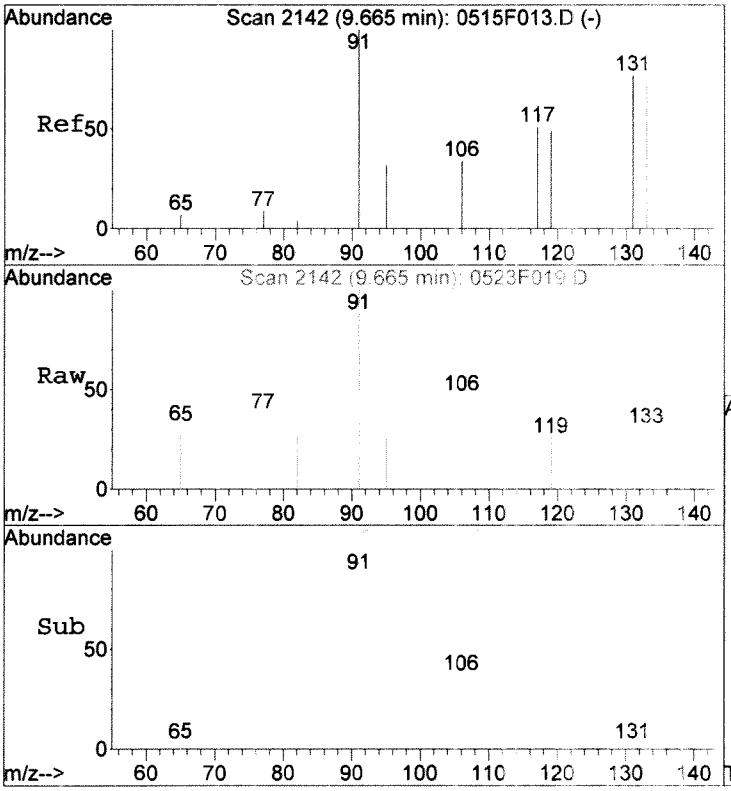


#21
Ethylbenzene
Concen: 10.27 ng/L
RT: 9.65 min Scan# 2139
Delta R.T. -0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion:106 Resp: 151

Ion	Ratio	Lower	Upper
106	100		
91	281.7	285.7	345.7#
77	17.2	1.3	61.3

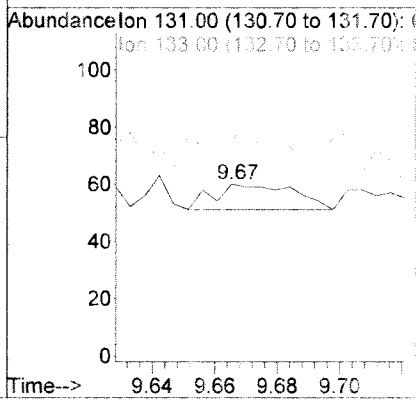


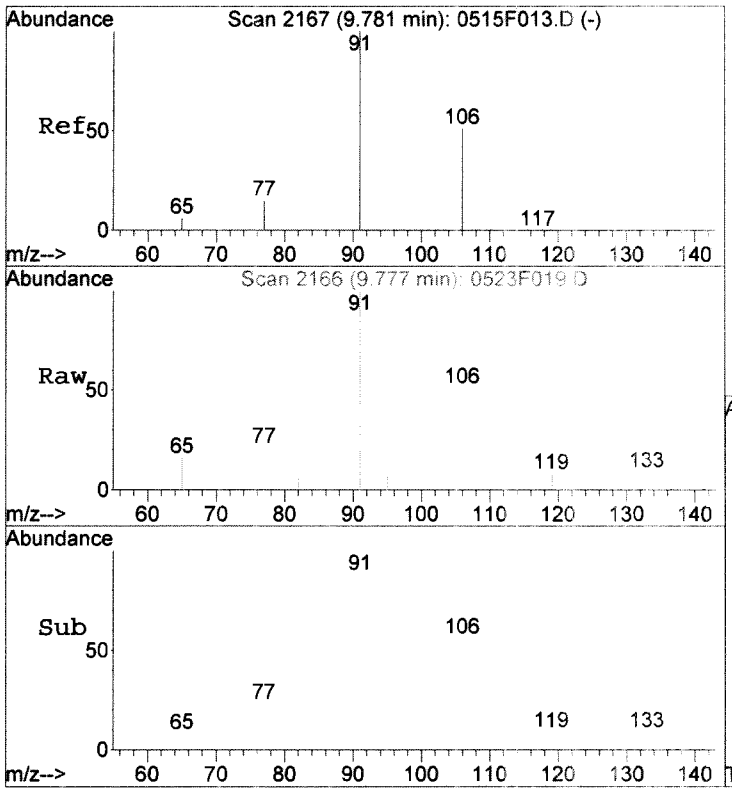


#22
1,1,1,2-Tetrachloroethane
Concen: 0.87 ng/L
RT: 9.67 min Scan# 2142
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion:131 Resp: 16

Ion	Ratio	Lower	Upper
131	100		
133	0.0	74.4	114.4#
119	22.2	43.9	83.9#

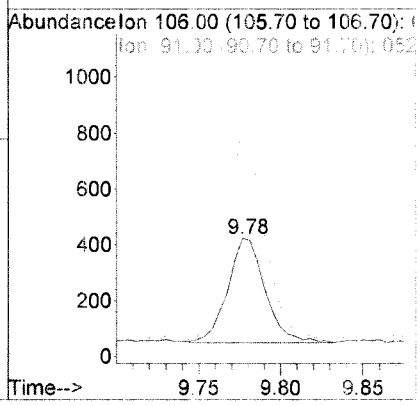


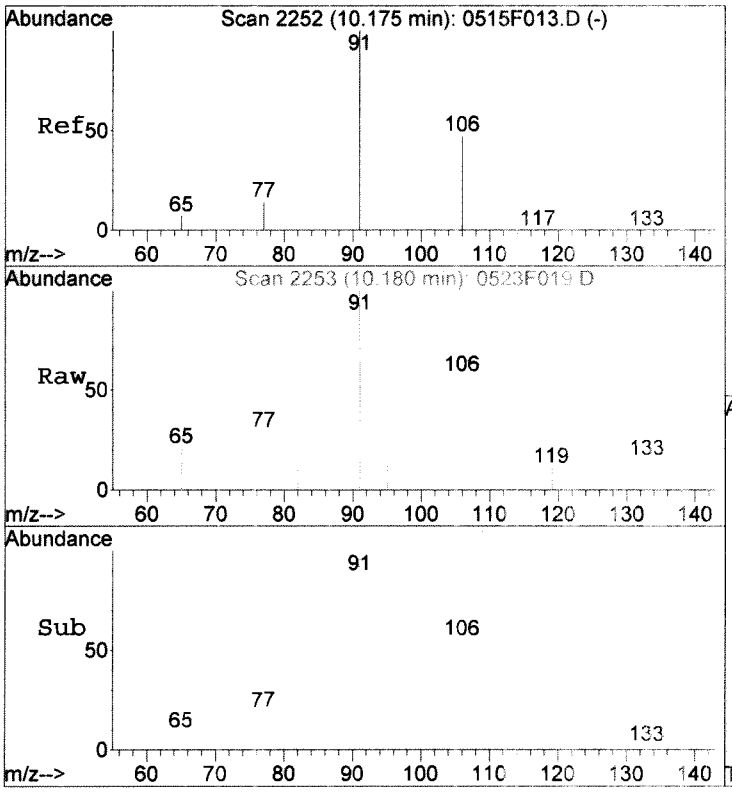


#23
m,p-Xylenes
Concen: 35.59 ng/L
RT: 9.78 min Scan# 2166
Delta R.T. -0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion:106 Resp: 599

Ion	Ratio	Lower	Upper
106	100		
91	203.7	166.8	226.8
77	26.2	0.0	58.7

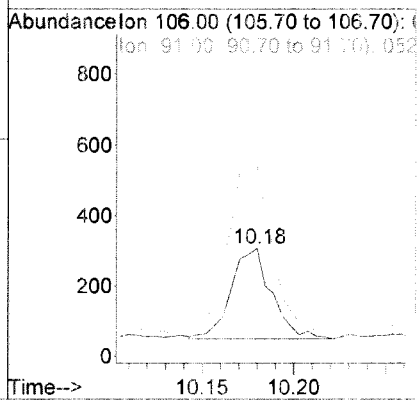


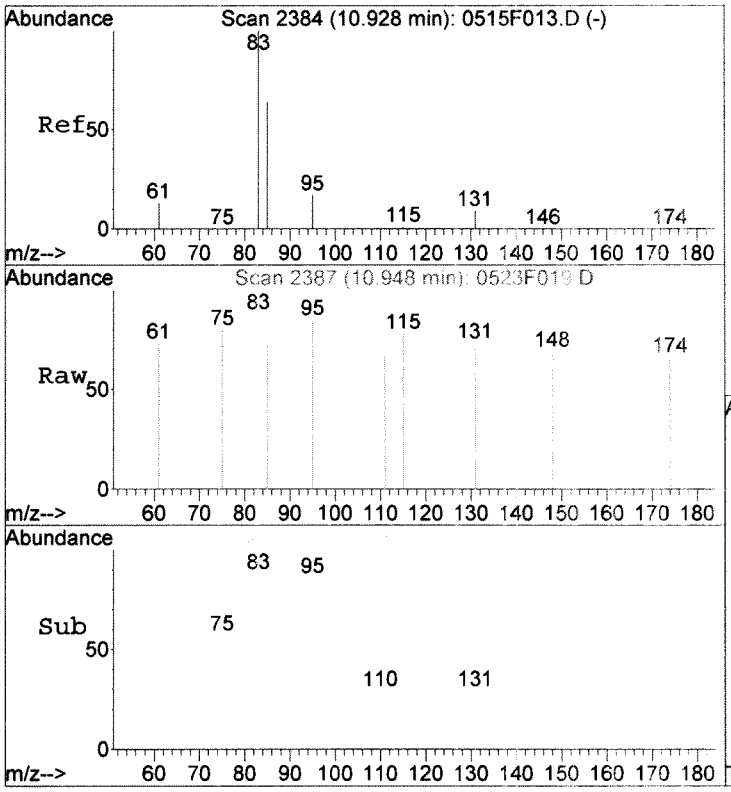


#24
o-Xylene
Concen: 23.19 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.01 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion:106 Resp: 398

Ion	Ratio	Lower	Upper
106	100		
91	180.2	184.3	244.3#
65	17.1	0.0	44.6

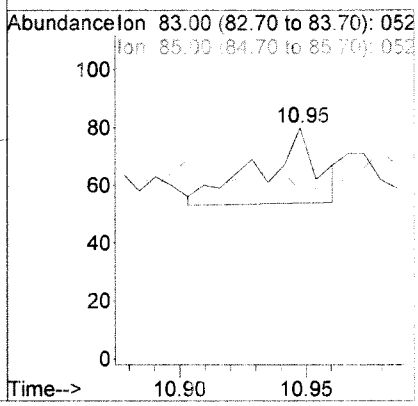


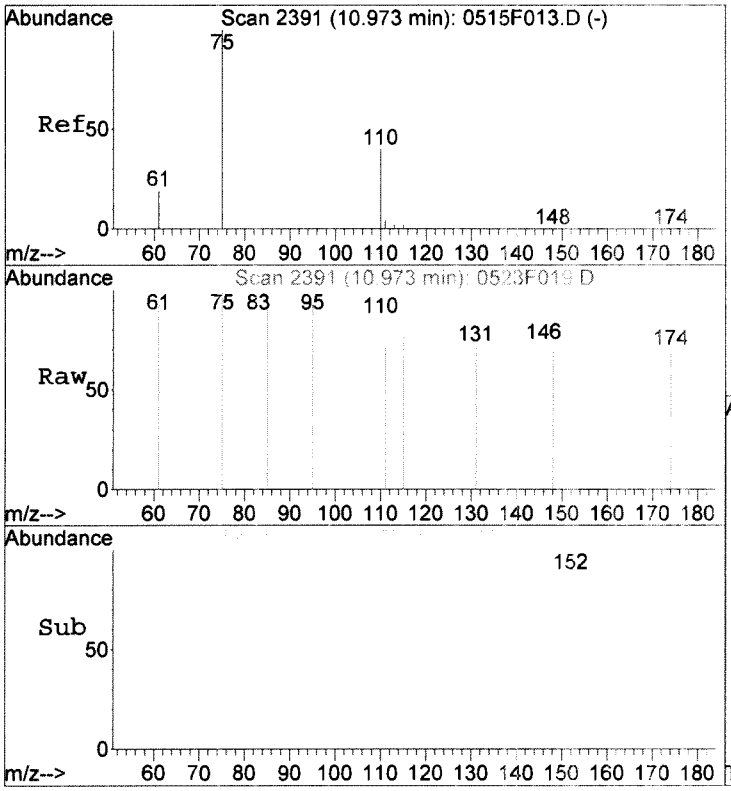


#26
1,1,2,2-Tetrachloroethane
Concen: 2.51 ng/L
RT: 10.95 min Scan# 2387
Delta R.T. 0.02 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion: 83 Resp: 41

Ion	Ratio	Lower	Upper
83	100		
85	0.0	34.1	94.1#
131	20.8	0.0	28.8

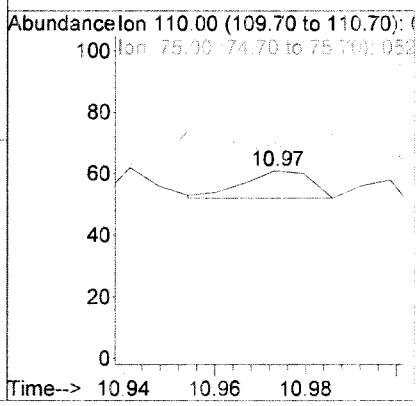


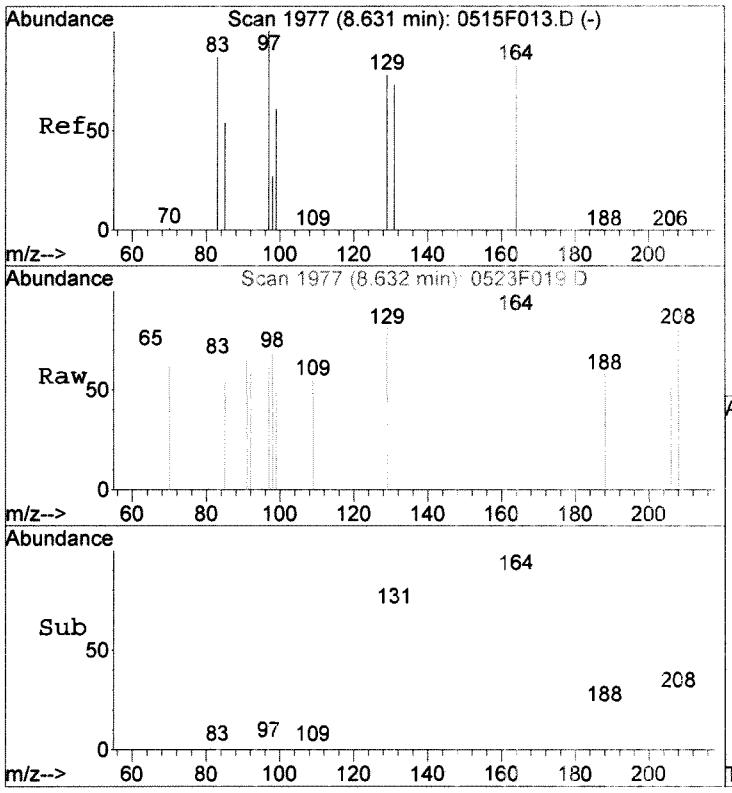


#27
1,2,3-Trichloropropane
Concen: 1.75 ng/L
RT: 10.97 min Scan# 2391
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion:110 Resp: 9

Ion	Ratio	Lower	Upper
110	100		
75	0.0	230.6	270.6#
61	66.7	40.1	80.1

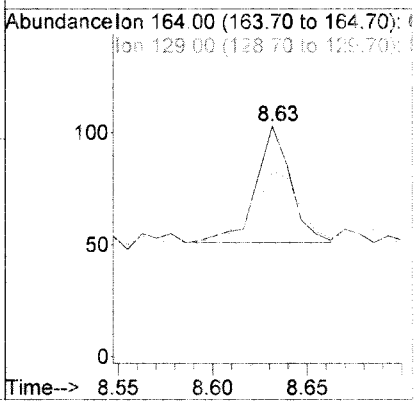


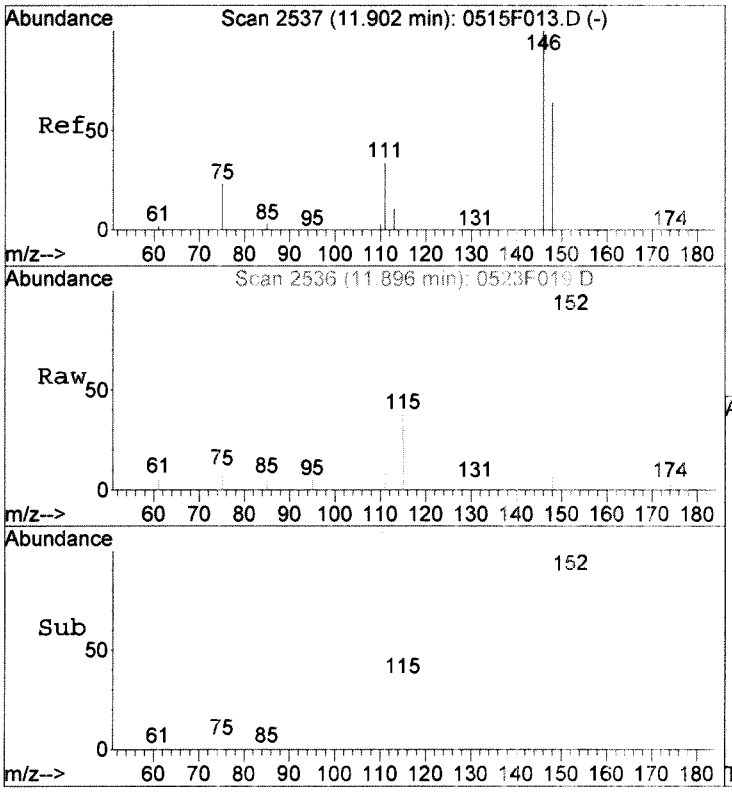


#28
Tetrachloroethene
Concen: 4.69 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion:164 Resp: 67

Ion	Ratio	Lower	Upper
164	100		
129	63.5	63.1	123.1
131	57.7	57.4	117.4

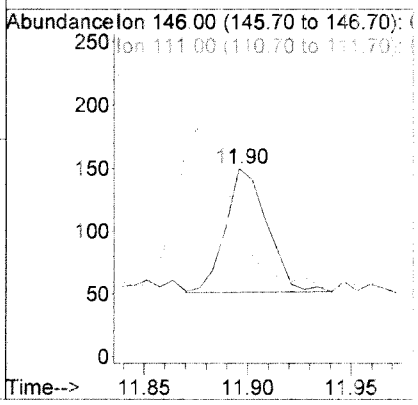




#30
1,4-Dichlorobenzene
Concen: 5.62 ng/L
RT: 11.90 min Scan# 2536
Delta R.T. -0.01 min
Lab File: 0523F019.D
Acq: 23 May 2017 08:29 pm

Tgt Ion:146 Resp: 139

Ion	Ratio	Lower	Upper
146	100		
111	67.3	4.0	64.0#
148	80.6	34.3	94.3



Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F020.D
Lab ID: K1705066-006
RunType: SMPL
Matrix: WATER

Date Acquired: 05/23/2017 20:56
Date Quantitated: 05/24/2017 09:22
Batch ID: KWG 704209
Analysis Method: 8260C SIM
ListJoinID: LJ18835

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: [signature]

Secondary Review: [signature]

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F020.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 20:56	**Quant Date:**	05/24/2017 09:22	**Vial:**	14
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1705066-006			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/17/2017	**Receive Date:**	05/18/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	K1705066
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605450	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	47831	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	33053	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19116	1,081	108	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	38818	1,017	102	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11506	782.49	78	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	40	1.50	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F020.D Vial: 14
Acq On : 23 May 2017 08:56 pm Operator: KR
Sample : K5066-006 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 09:21:11 2017 Quant Results File: 051517MS30_8260SIM.RES

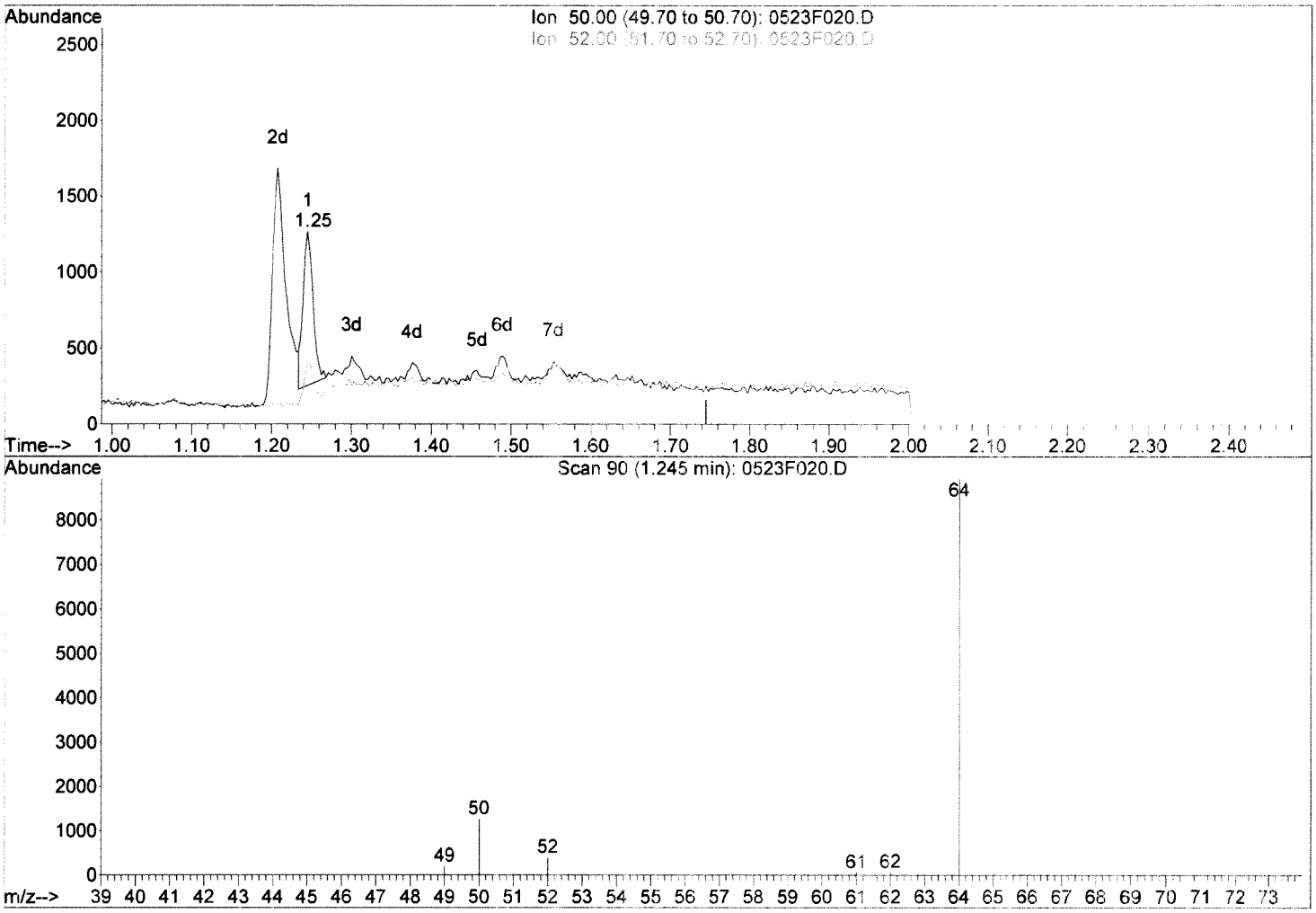
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	47831	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	33053	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14061	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	19116	1080.52 ng/L	0.00
Spiked Amount 1000.000			Recovery = 108.05%		
15) Toluene-d8	8.05	98	38818	1017.49 ng/L	0.00
Spiked Amount 1000.000			Recovery = 101.75%		
25) 4-Bromofluorobenzene	10.73	95	11506	782.49 ng/L	0.00
Spiked Amount 1000.000			Recovery = 78.25%		
Target Compounds					Qvalue
2) Chloromethane	1.25	50	798m	29.15 ng/L	
3) Vinyl Chloride	1.33	62	40	1.50 ng/L #	1
5) Methylene Chloride	3.08	84	275	13.28 ng/L	86
7) cis-1,2-Dichloroethene	4.95	96	338	21.13 ng/L	90
8) Chloroform	5.40	83	293	8.52 ng/L	89
11) Benzene	5.98	78	2032	31.08 ng/L	96
13) Trichloroethene	6.75	95	823	51.18 ng/L	94
14) Bromodichloromethane	7.36	83	38	1.65 ng/L	80
16) 1,1,2-Trichloroethane	8.65	83	19	1.47 ng/L #	49
20) Toluene	8.12	92	9521	328.21 ng/L	97
21) Ethylbenzene	9.66	106	86	6.15 ng/L #	93
22) 1,1,1,2-Tetrachloroethane	9.68	131	19	1.09 ng/L #	74
23) m,p-Xylenes	9.78	106	309	19.29 ng/L	93
24) o-Xylene	10.17	106	225	13.77 ng/L #	82
26) 1,1,2,2-Tetrachloroethane	10.93	83	8	0.51 ng/L #	36
28) Tetrachloroethene	8.63	164	63	4.63 ng/L	83
30) 1,4-Dichlorobenzene	11.90	146	111	4.37 ng/L #	65

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F020.D Vial: 14
Acq On : 23 May 2017 08:56 pm Operator: KR
Sample : K5066-006 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:21 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F020.D

(2) Chloromethane (T)

1.25min 32.47ng/L

response 889

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	26.97
49.00	10.30	9.02
0.00	0.00	0.00

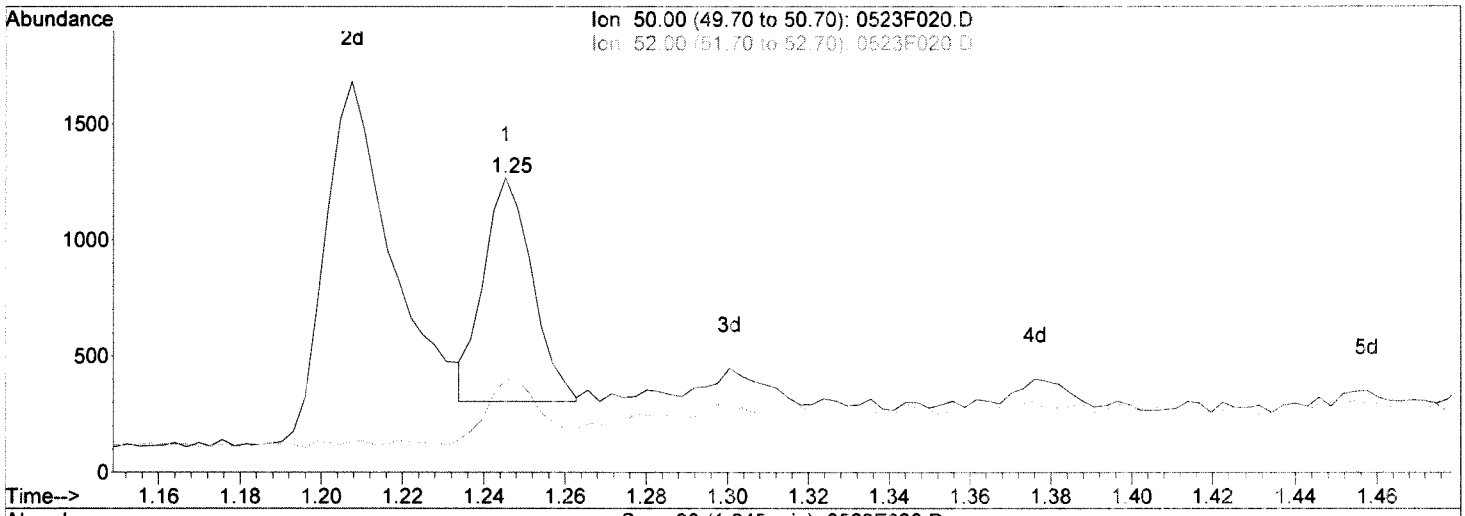
Manual Integration:

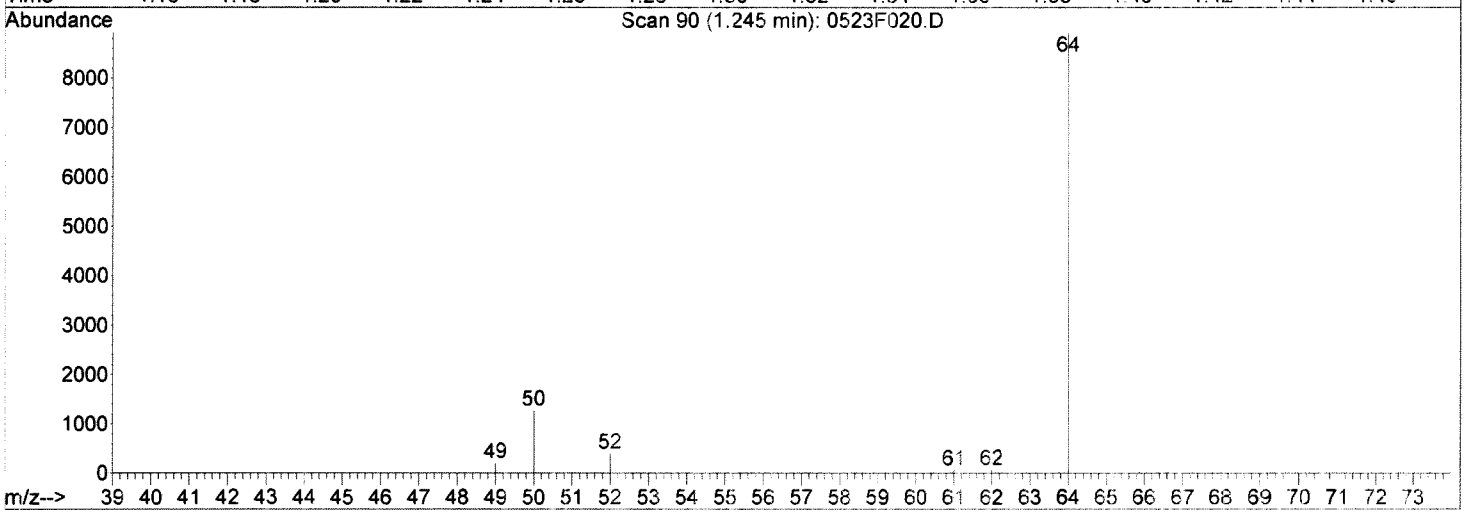
Before

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F020.D Vial: 14
Acq On : 23 May 2017 08:56 pm Operator: KR
Sample : K5066-006 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:21 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F020.D

(2) Chloromethane (T)

1.25min 29.15ng/L m

response 798

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	31.44
49.00	10.30	15.92
0.00	0.00	0.00

Manual Integration:

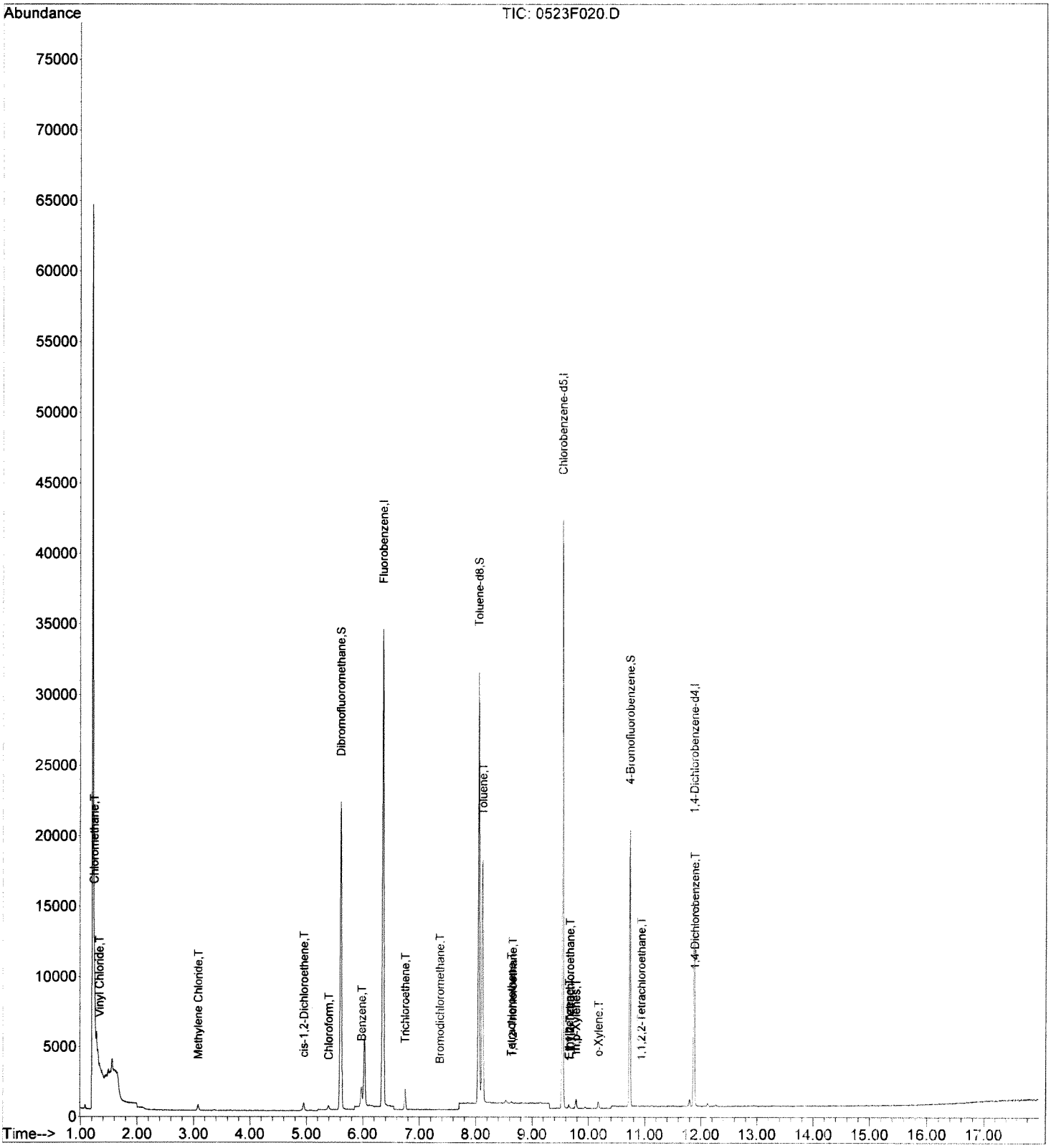
After

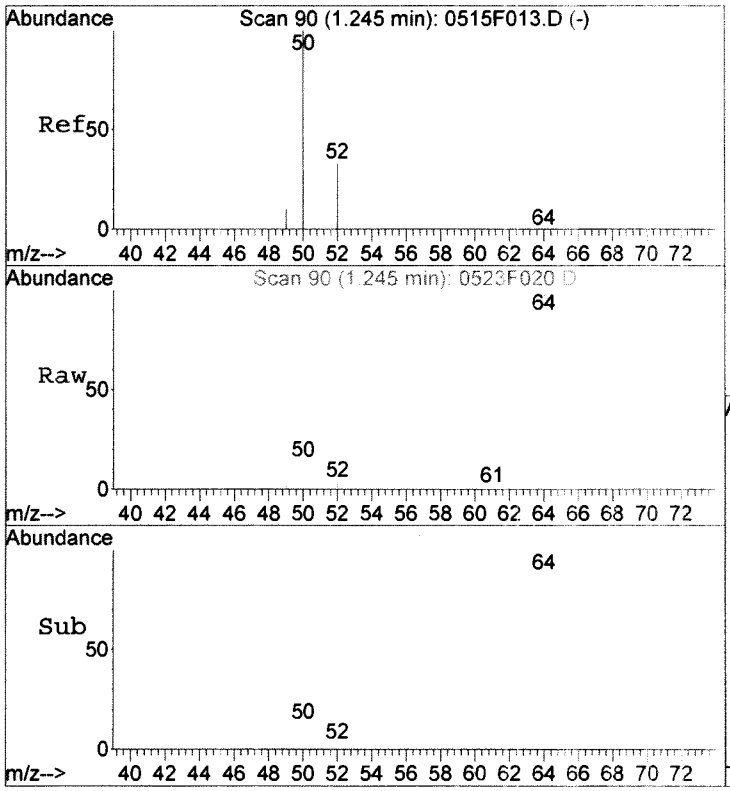
Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F020.D Vial: 14
Acq On : 23 May 2017 08:56 pm Operator: KR
Sample : K5066-006 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:22 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

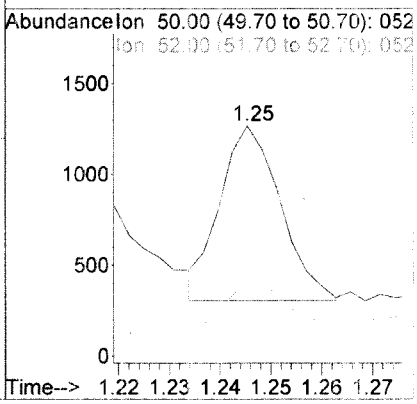


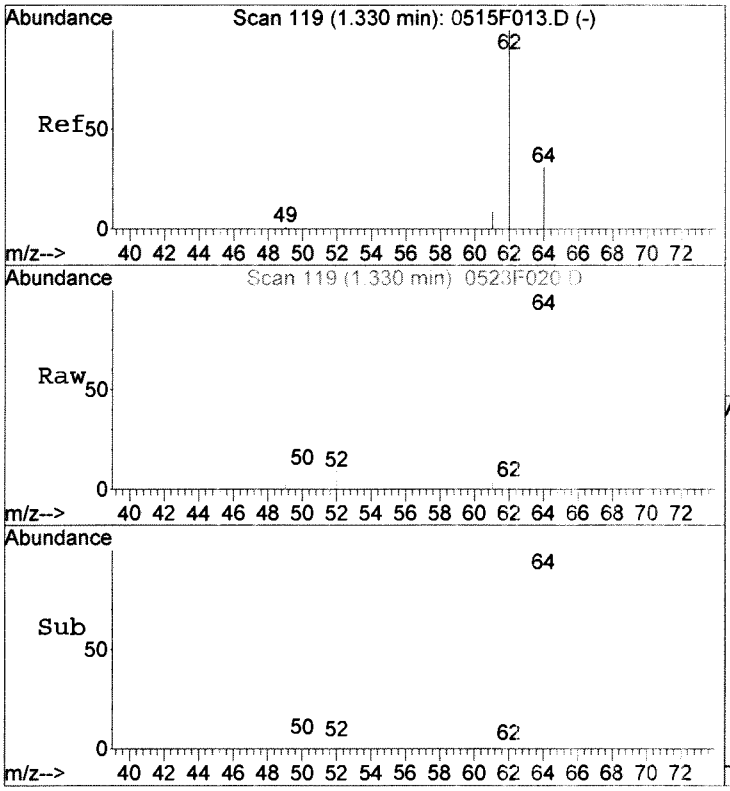


#2
Chloromethane
Concen: 29.15 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 50 Resp: 798

Ion	Ratio	Lower	Upper
50	100		
52	31.4	2.5	62.5
49	15.9	0.0	40.3

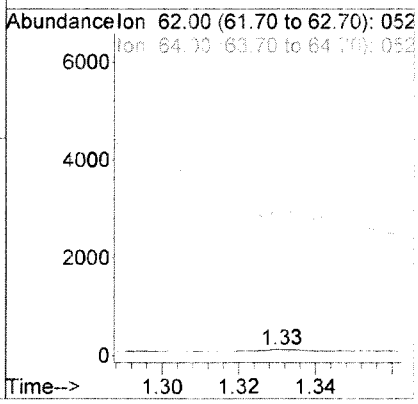


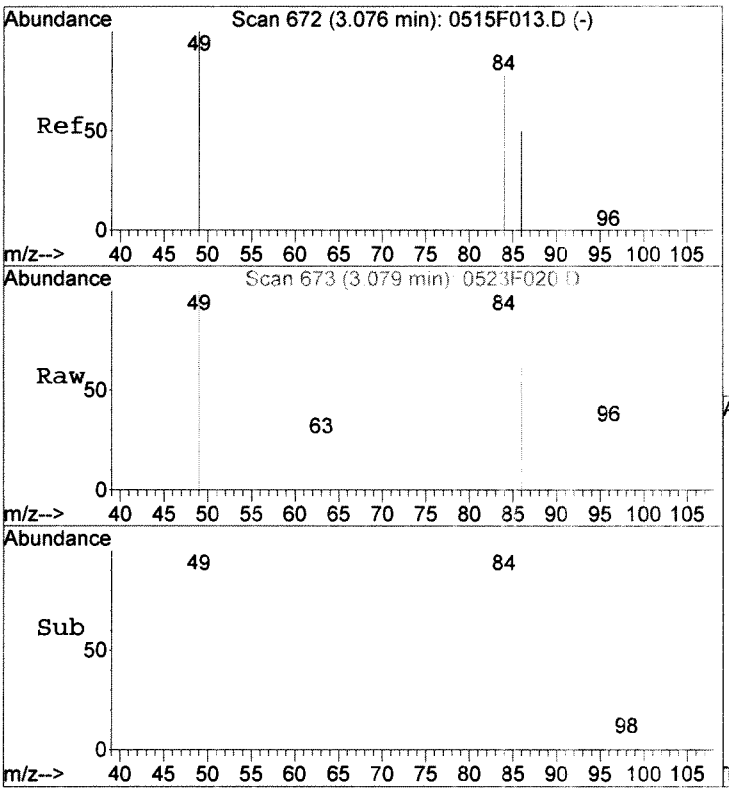


#3
Vinyl Chloride
Concen: 1.50 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 62 Resp: 40

Ion	Ratio	Lower	Upper
62	100		
64	751.1	1.5	61.5#
61	17.8	0.0	38.6

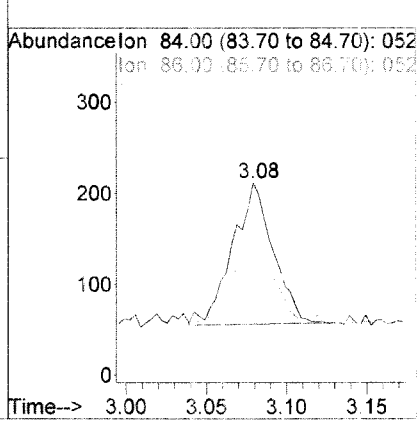


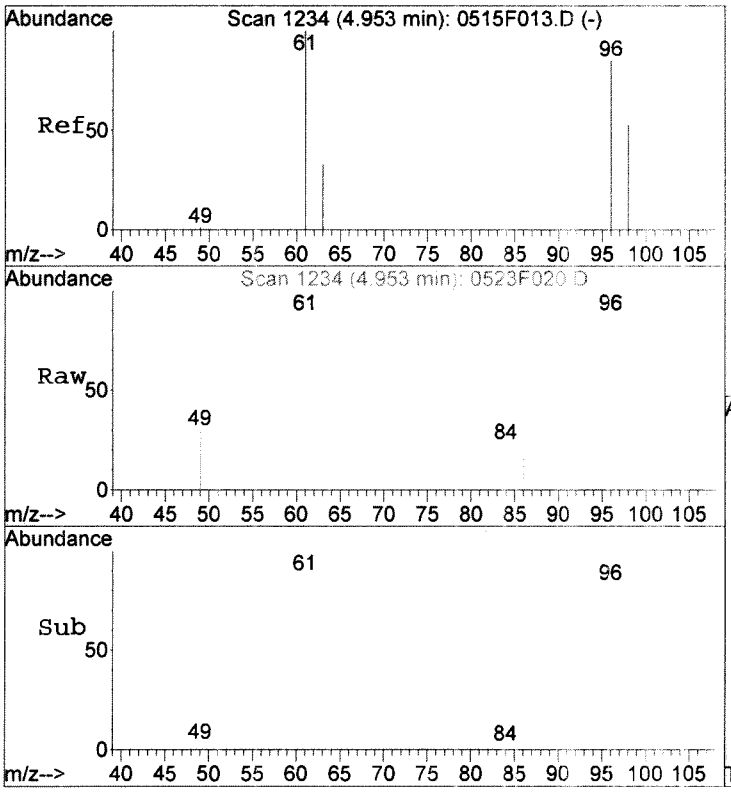


#5
Methylene Chloride
Concen: 13.28 ng/L
RT: 3.08 min Scan# 673
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 84 Resp: 275

Ion	Ratio	Lower	Upper
84	100		
86	55.2	34.0	94.0
49	111.7	98.8	158.8

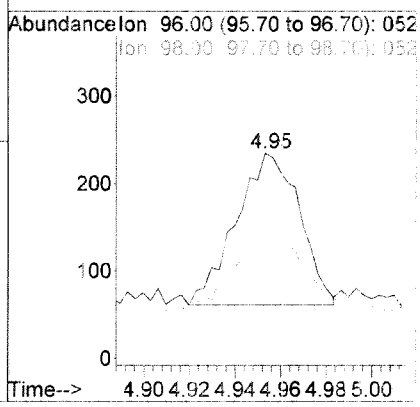


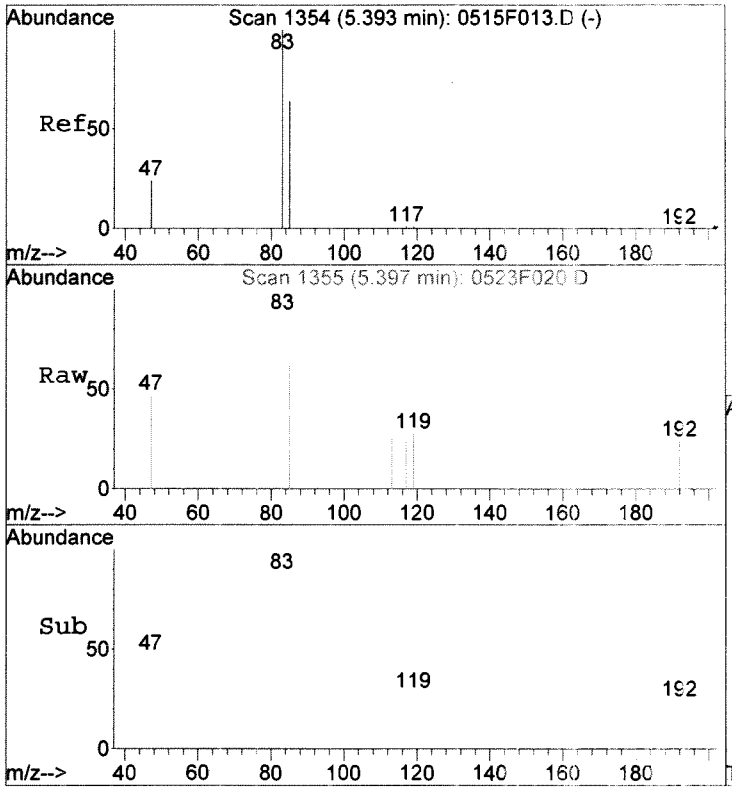


#7
cis-1,2-Dichloroethene
Concen: 21.13 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 96 Resp: 338

Ion	Ratio	Lower	Upper
96	100		
98	63.8	32.7	92.7
61	109.8	95.4	155.4

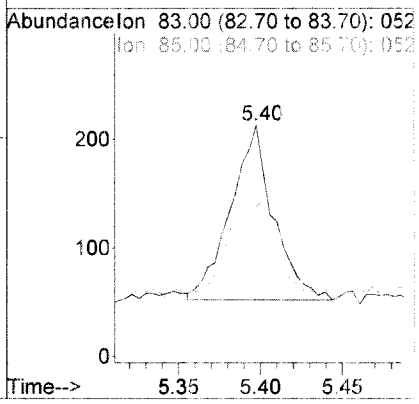


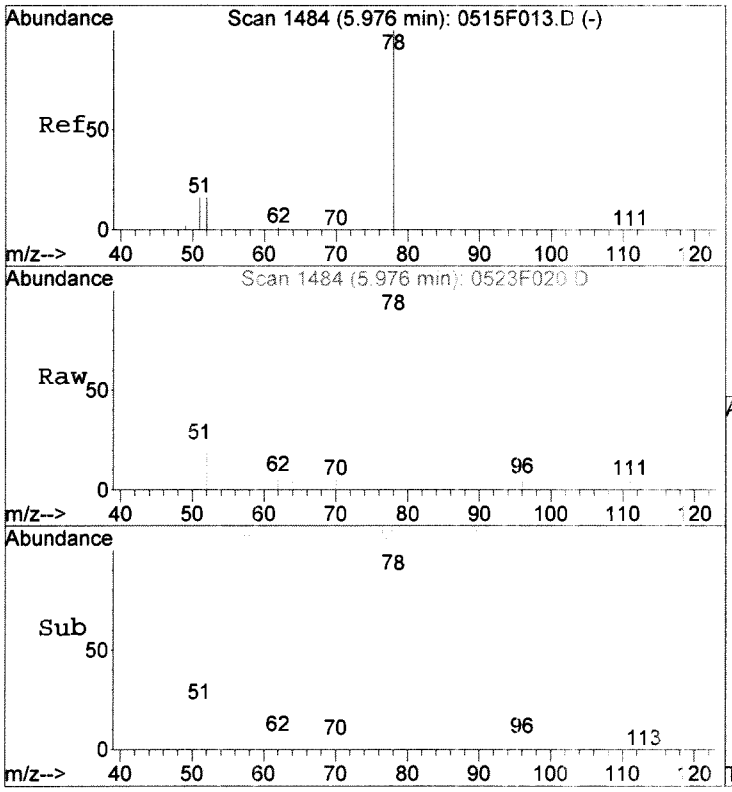


#8
Chloroform
Concen: 8.52 ng/L
RT: 5.40 min Scan# 1355
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 83 Resp: 293

Ion	Ratio	Lower	Upper
83	100		
85	52.2	34.0	94.0
47	23.6	0.0	53.5

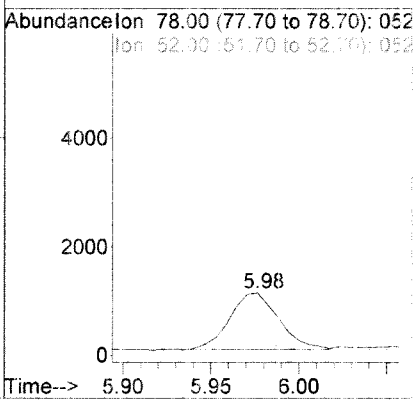


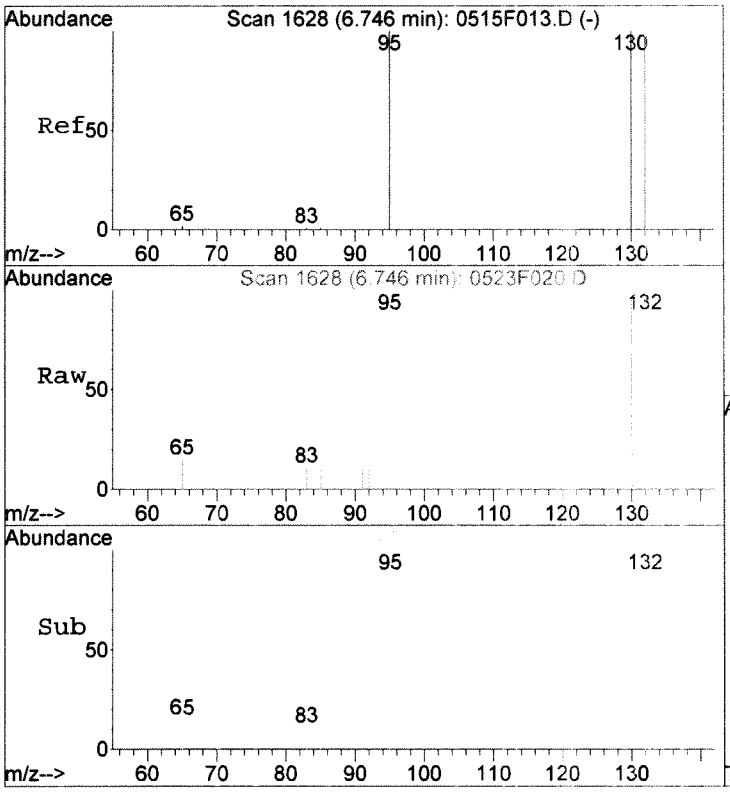


#11
Benzene
Concen: 31.08 ng/L
RT: 5.98 min Scan# 1484
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 78 Resp: 2032

Ion	Ratio	Lower	Upper
78	100		
52	13.6	0.0	45.8
51	17.8	0.0	46.5

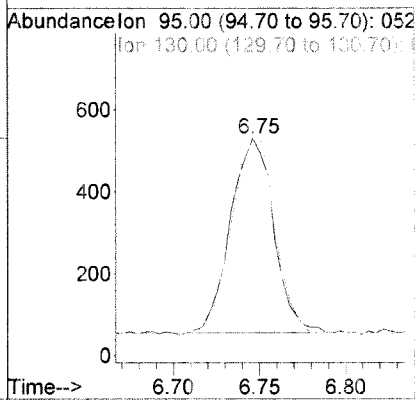


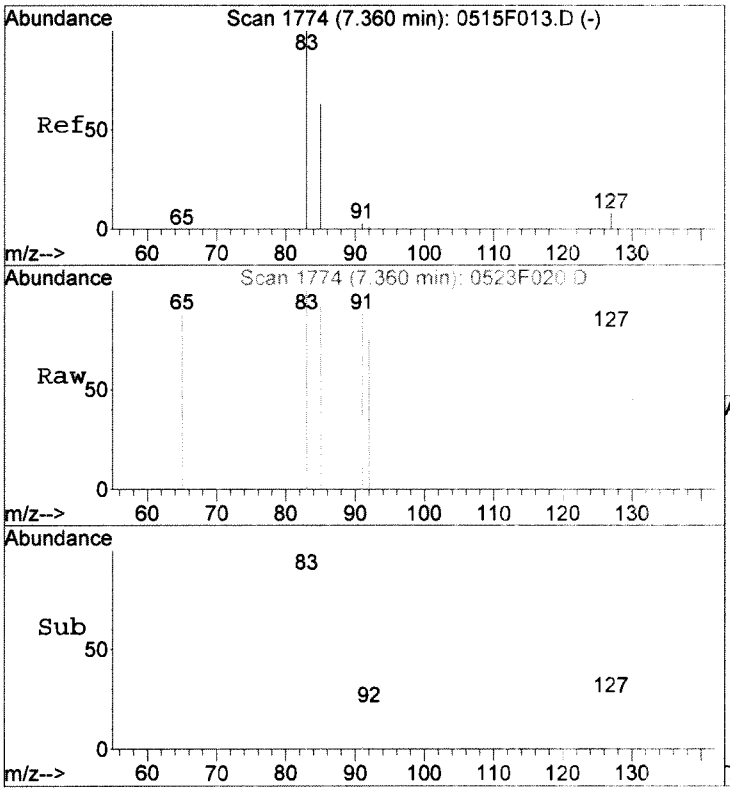


#13
Trichloroethene
Concen: 51.18 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 95 Resp: 823

Ion	Ratio	Lower	Upper
95	100		
130	101.9	69.5	129.5
132	107.4	67.2	127.2

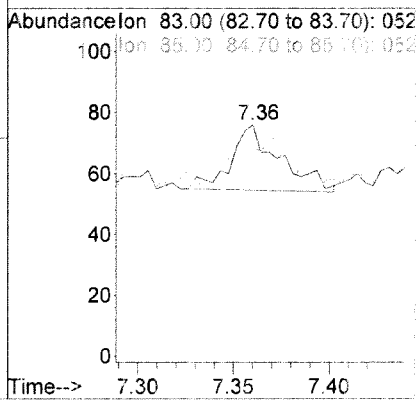


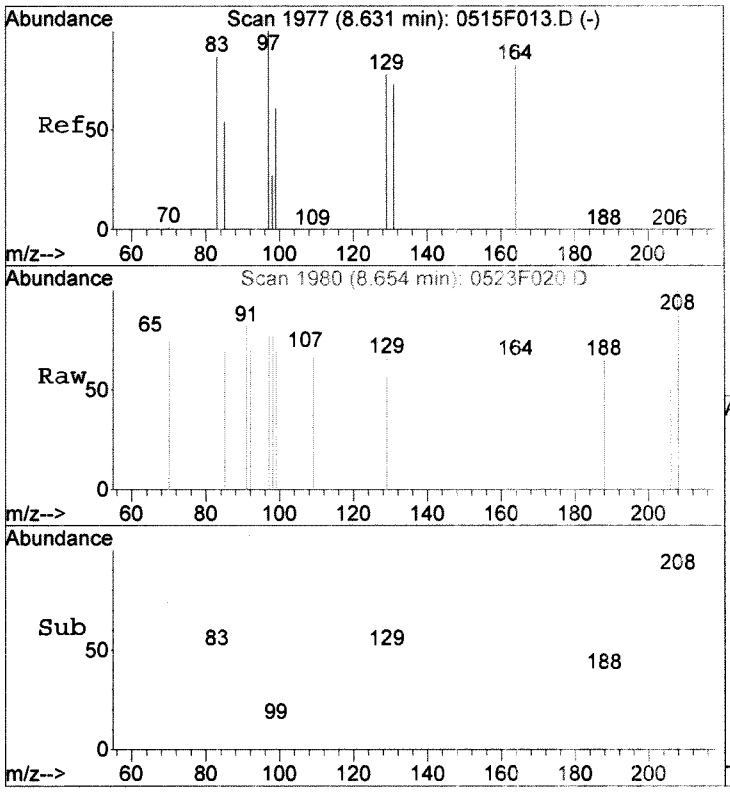


#14
Bromodichloromethane
Concen: 1.65 ng/L
RT: 7.36 min Scan# 1774
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 83 Resp: 38

Ion	Ratio	Lower	Upper
83	100		
85	52.4	33.1	93.1
127	33.3	0.0	38.1

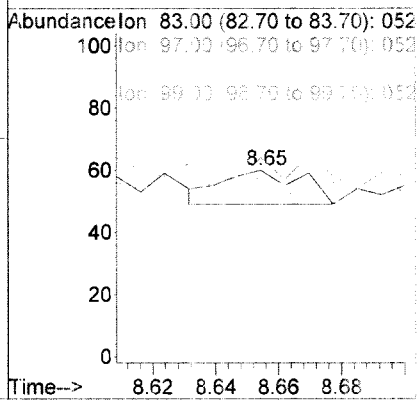


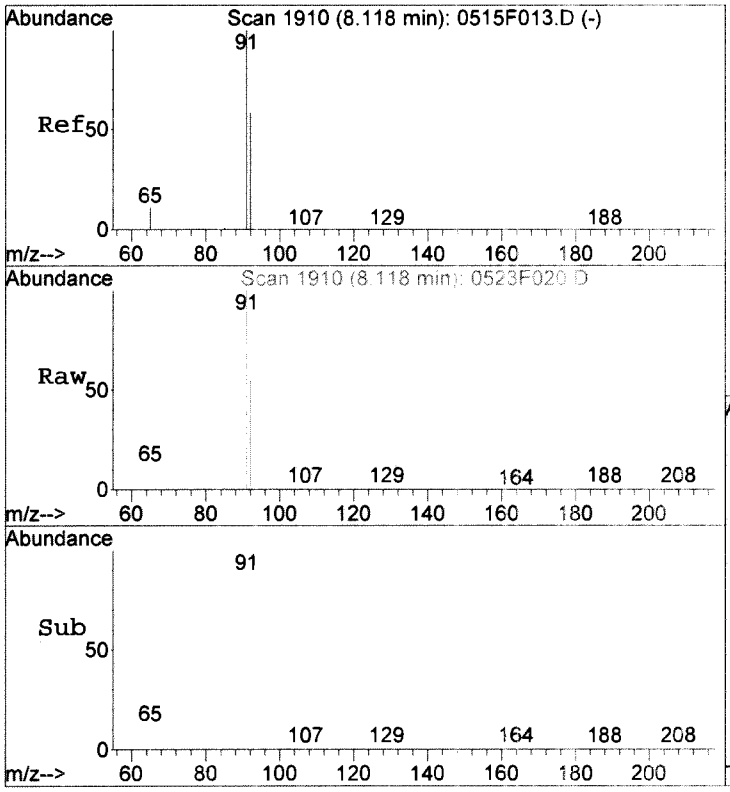


#16
1,1,2-Trichloroethane
Concen: 1.47 ng/L
RT: 8.65 min Scan# 1980
Delta R.T. 0.02 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 83 Resp: 19

Ion	Ratio	Lower	Upper
83	100		
97	54.5	84.4	144.4#
85	9.1	32.3	92.3#
99	45.5	39.4	99.4

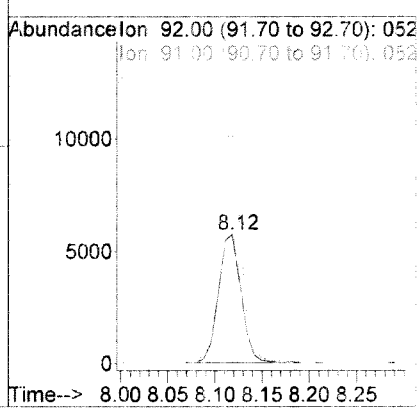


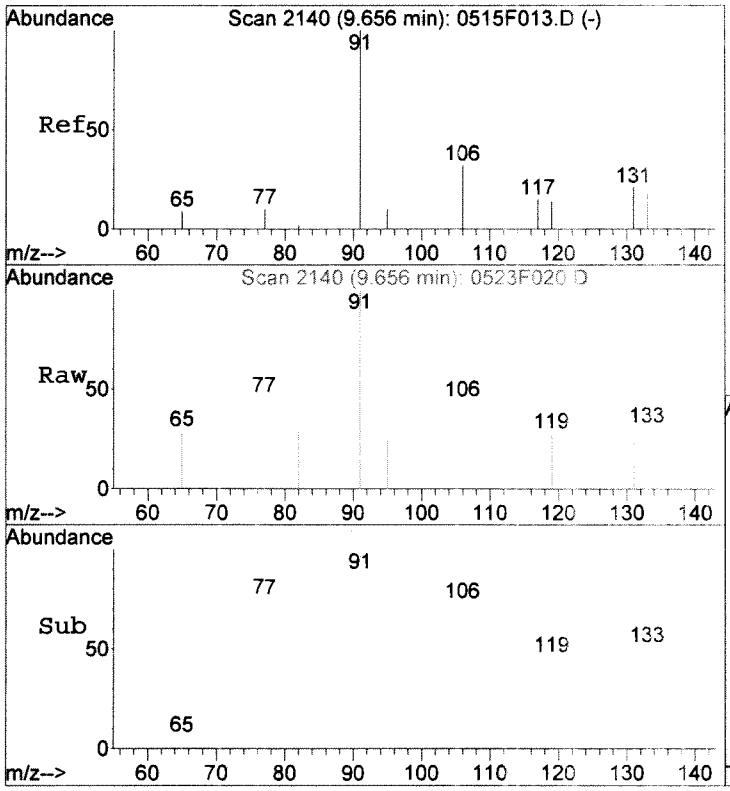


#20
Toluene
Concen: 328.21 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 92 Resp: 9521

Ion	Ratio	Lower	Upper
92	100		
91	178.4	143.6	203.6
65	21.2	0.0	49.9

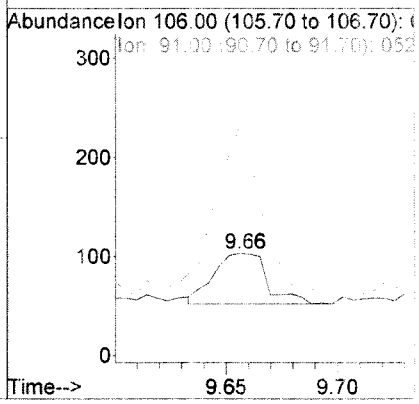


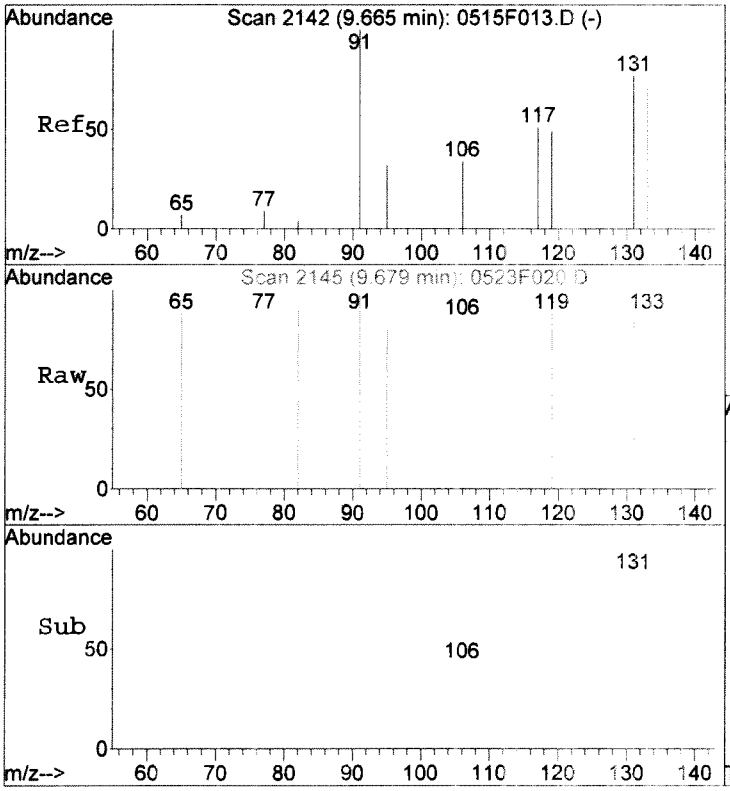


#21
Ethylbenzene
Concen: 6.15 ng/L
RT: 9.66 min Scan# 2140
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion:106 Resp: 86

Ion	Ratio	Lower	Upper
106	100		
91	317.6	285.7	345.7
77	70.6	1.3	61.3#

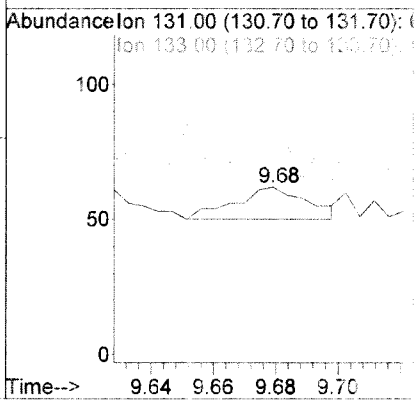


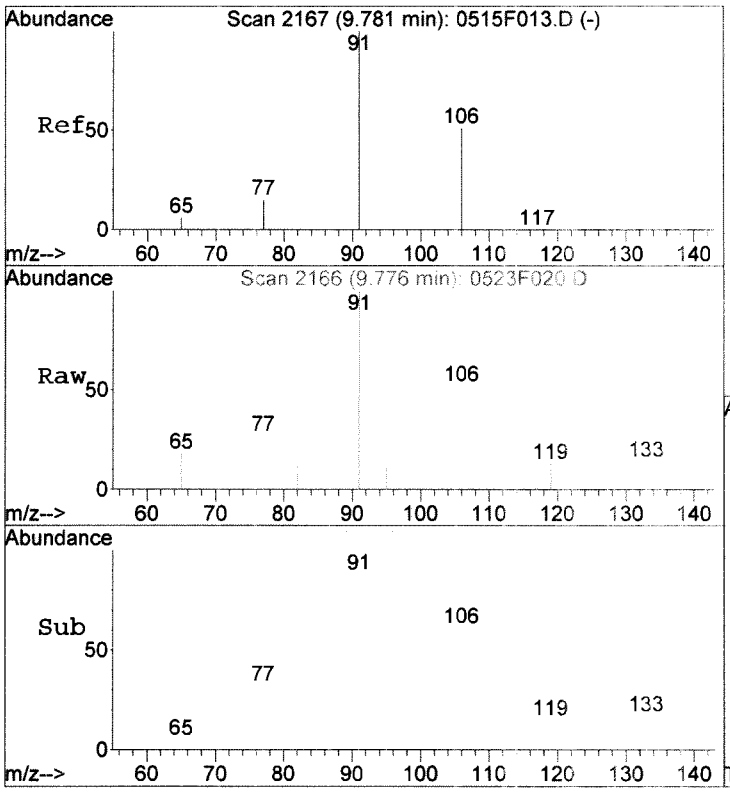


#22
1,1,1,2-Tetrachloroethane
Concen: 1.09 ng/L
RT: 9.68 min Scan# 2145
Delta R.T. 0.01 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion:131 Resp: 19

Ion	Ratio	Lower	Upper
131	100		
133	75.0	74.4	114.4
119	91.7	43.9	83.9#

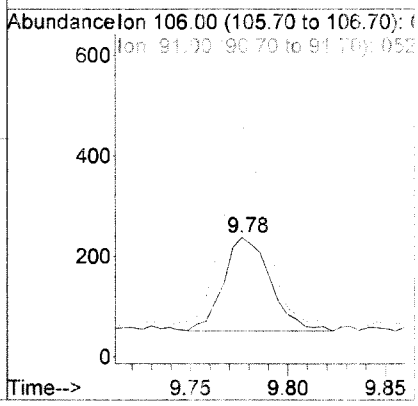


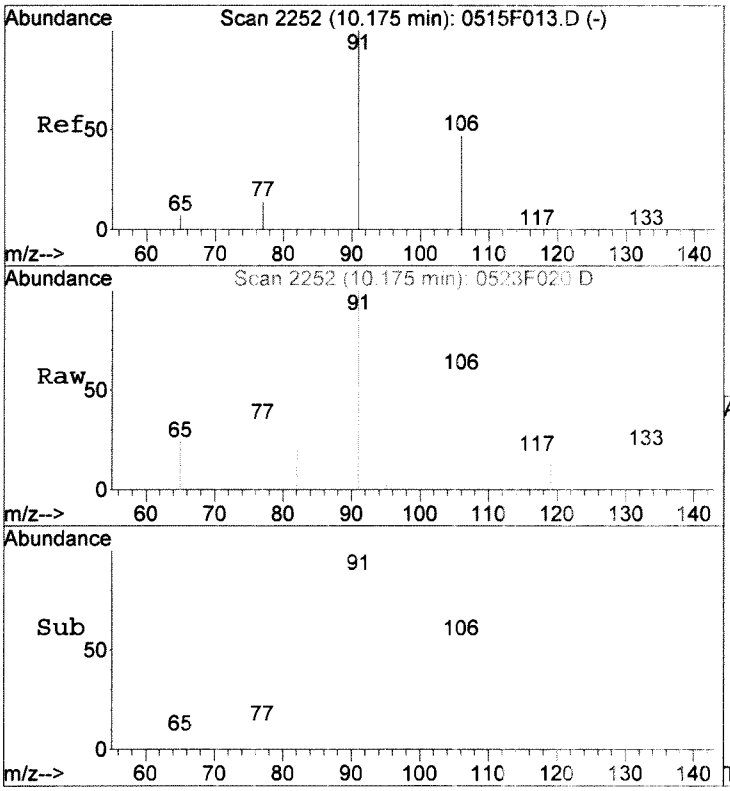


#23
m,p-Xylenes
Concen: 19.29 ng/L
RT: 9.78 min Scan# 2166
Delta R.T. -0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion:106 Resp: 309

Ion	Ratio	Lower	Upper
106	100		
91	208.6	166.8	226.8
77	27.4	0.0	58.7

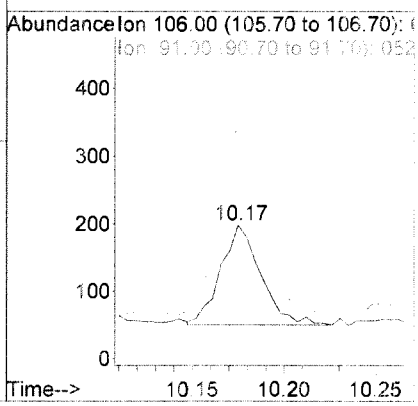


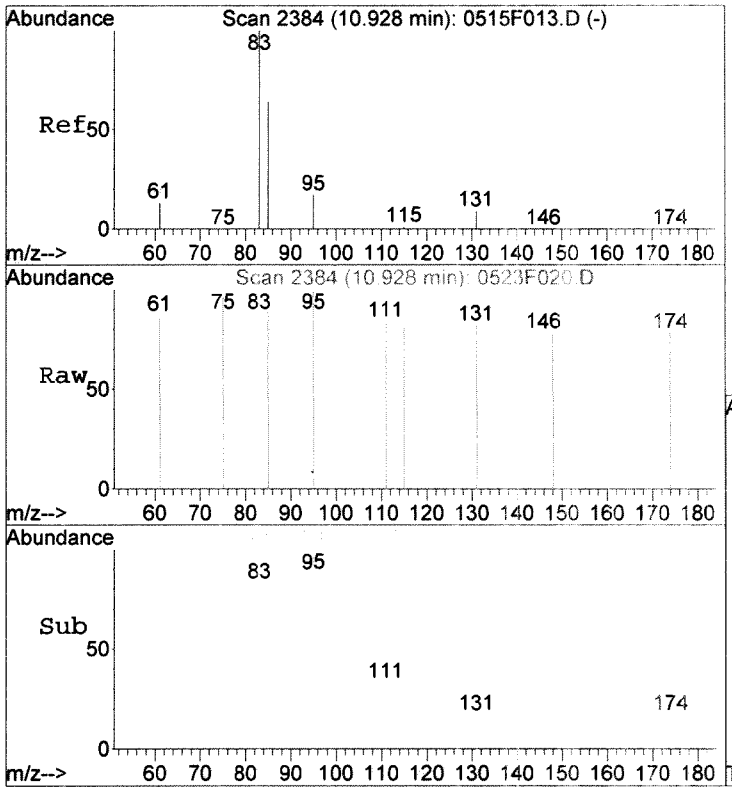


#24
o-Xylene
Concen: 13.77 ng/L
RT: 10.17 min Scan# 2252
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion:106 Resp: 225

Ion	Ratio	Lower	Upper
106	100		
91	183.8	184.3	244.3#
65	14.9	0.0	44.6

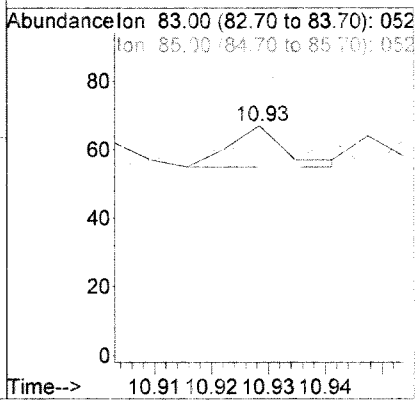


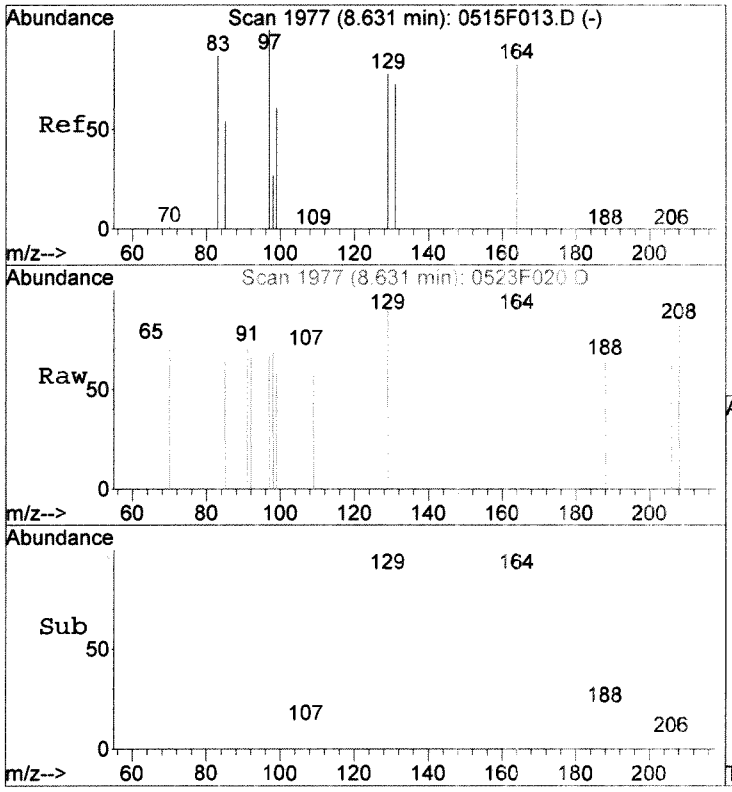


#26
1,1,2,2-Tetrachloroethane
Concen: 0.51 ng/L
RT: 10.93 min Scan# 2384
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion: 83 Resp: 8

Ion	Ratio	Lower	Upper
83	100		
85	16.7	34.1	94.1#
131	41.7	0.0	28.8#

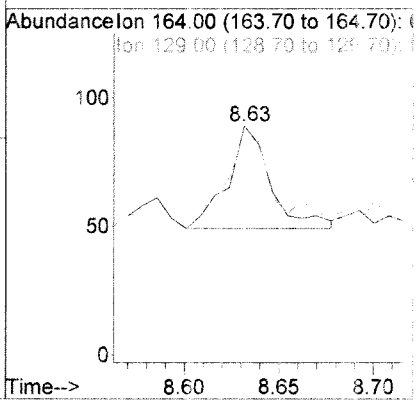


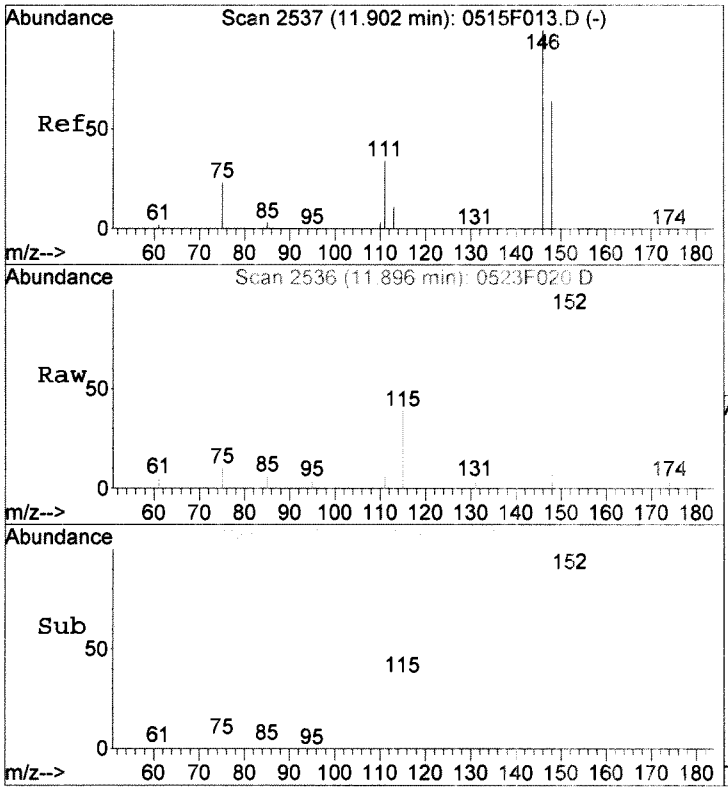


#28
Tetrachloroethene
Concen: 4.63 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion:164 Resp: 63

Ion	Ratio	Lower	Upper
164	100		
129	80.0	63.1	123.1
131	67.5	57.4	117.4

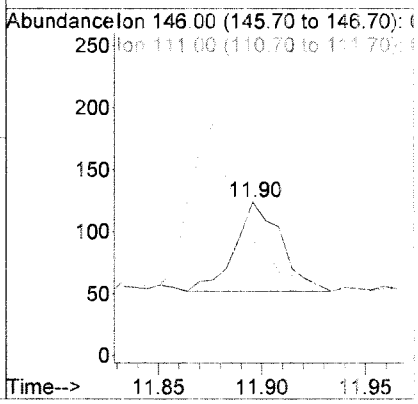




#30
1,4-Dichlorobenzene
Concen: 4.37 ng/L
RT: 11.90 min Scan# 2536
Delta R.T. -0.01 min
Lab File: 0523F020.D
Acq: 23 May 2017 08:56 pm

Tgt Ion:146 Resp: 111

Ion	Ratio	Lower	Upper
146	100		
111	50.0	4.0	64.0
148	94.4	34.3	94.3#



Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F021.D
Lab ID: K1705066-007
RunType: SMPL
Matrix: WATER

Date Acquired: 05/23/2017 21:24
Date Quantitated: 05/24/2017 09:23
Batch ID: KWG1704209
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: Ka 5/24/17

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F021.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 21:24	**Quant Date:**	05/24/2017 09:23	**Vial:**	15
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1705066-007			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/17/2017	**Receive Date:**	05/18/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	K1705066
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605444	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	47735	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	32942	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19471	1,103	110	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	38449	1,010	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11388	777.07	78	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	69	2.60	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F021.D Vial: 15
Acq On : 23 May 2017 09:24 pm Operator: KR
Sample : K5066-007 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 09:22:47 2017 Quant Results File: 051517MS30_8260SIM.RES

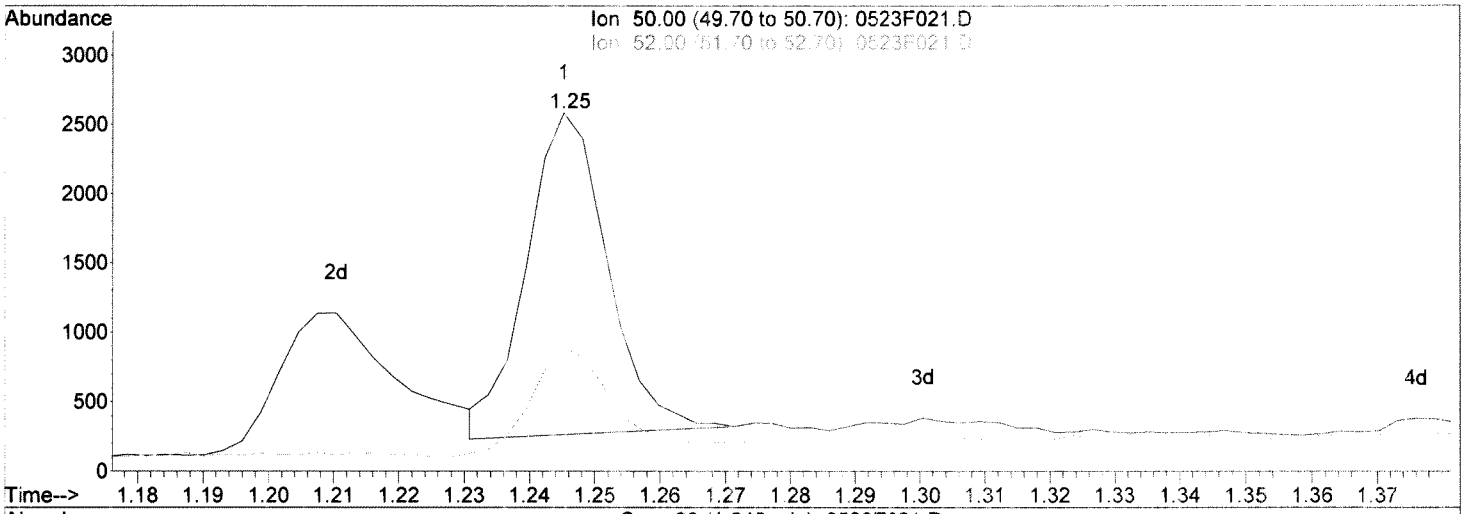
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

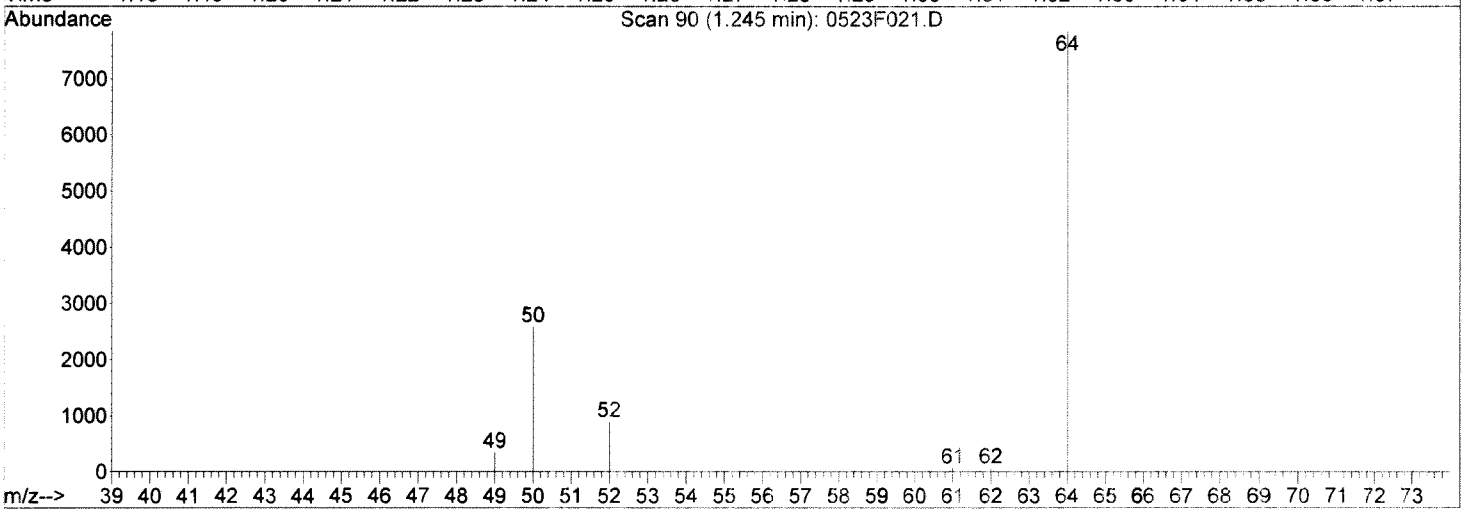
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	47735	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	32942	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13562	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19471	1102.80	ng/L		0.00
Spiked Amount 1000.000			Recovery = 110.28%				
15) Toluene-d8	8.05	98	38449	1009.84	ng/L		0.00
Spiked Amount 1000.000			Recovery = 100.98%				
25) 4-Bromofluorobenzene	10.73	95	11388	777.07	ng/L		0.00
Spiked Amount 1000.000			Recovery = 77.71%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	1841m	67.38	ng/L		
3) Vinyl Chloride	1.33	62	69	2.60	ng/L	#	1
5) Methylene Chloride	3.08	84	411	19.88	ng/L		91
6) trans-1,2-Dichloroethene	3.37	96	77	4.60	ng/L	#	49
7) cis-1,2-Dichloroethene	4.95	96	678	42.47	ng/L		95
8) Chloroform	5.39	83	162	4.72	ng/L		93
11) Benzene	5.97	78	1896	29.06	ng/L		94
13) Trichloroethene	6.75	95	16654	1037.84	ng/L		99
20) Toluene	8.12	92	25481	881.35	ng/L		98
21) Ethylbenzene	9.65	106	78	5.59	ng/L	#	78
22) 1,1,1,2-Tetrachloroethane	9.68	131	14	0.81	ng/L	#	19
23) m,p-Xylenes	9.78	106	256	16.04	ng/L		98
24) o-Xylene	10.18	106	206	12.65	ng/L		82
26) 1,1,2,2-Tetrachloroethane	10.91	83	7	0.45	ng/L		89
27) 1,2,3-Trichloropropane	10.97	110	7	1.44	ng/L	#	2
28) Tetrachloroethene	8.63	164	58	4.28	ng/L		88
30) 1,4-Dichlorobenzene	11.90	146	169	6.91	ng/L		73

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F021.D Vial: 15
Acq On : 23 May 2017 09:24 pm Operator: KR
Sample : K5066-007 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:22 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F021.D

(2) Chloromethane (T)

1.25min 73.31ng/L

response 2003

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	33.78
49.00	10.30	9.68
0.00	0.00	0.00

Manual Integration:

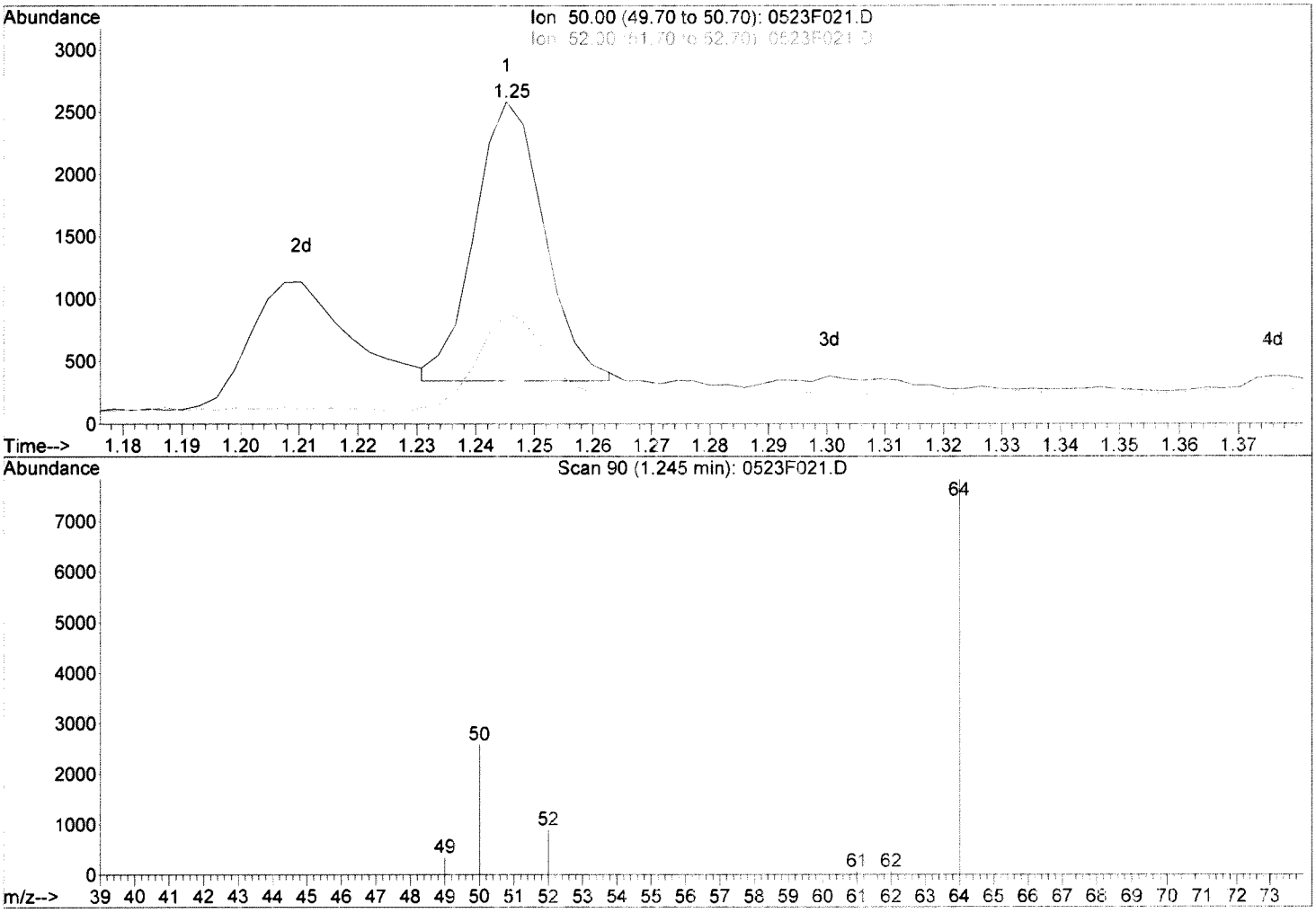
Before

05/24/17

Quantitation Report (Qedit)

Data File : J:\MS30\DATA\052317_SIM\0523F021.D Vial: 15
Acq On : 23 May 2017 09:24 pm Operator: KR
Sample : K5066-007 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:22 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0523F021.D

(2) Chloromethane (T)

1.25min 67.38ng/L m

response 1841

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	34.46
49.00	10.30	13.36
0.00	0.00	0.00

Manual Integration:

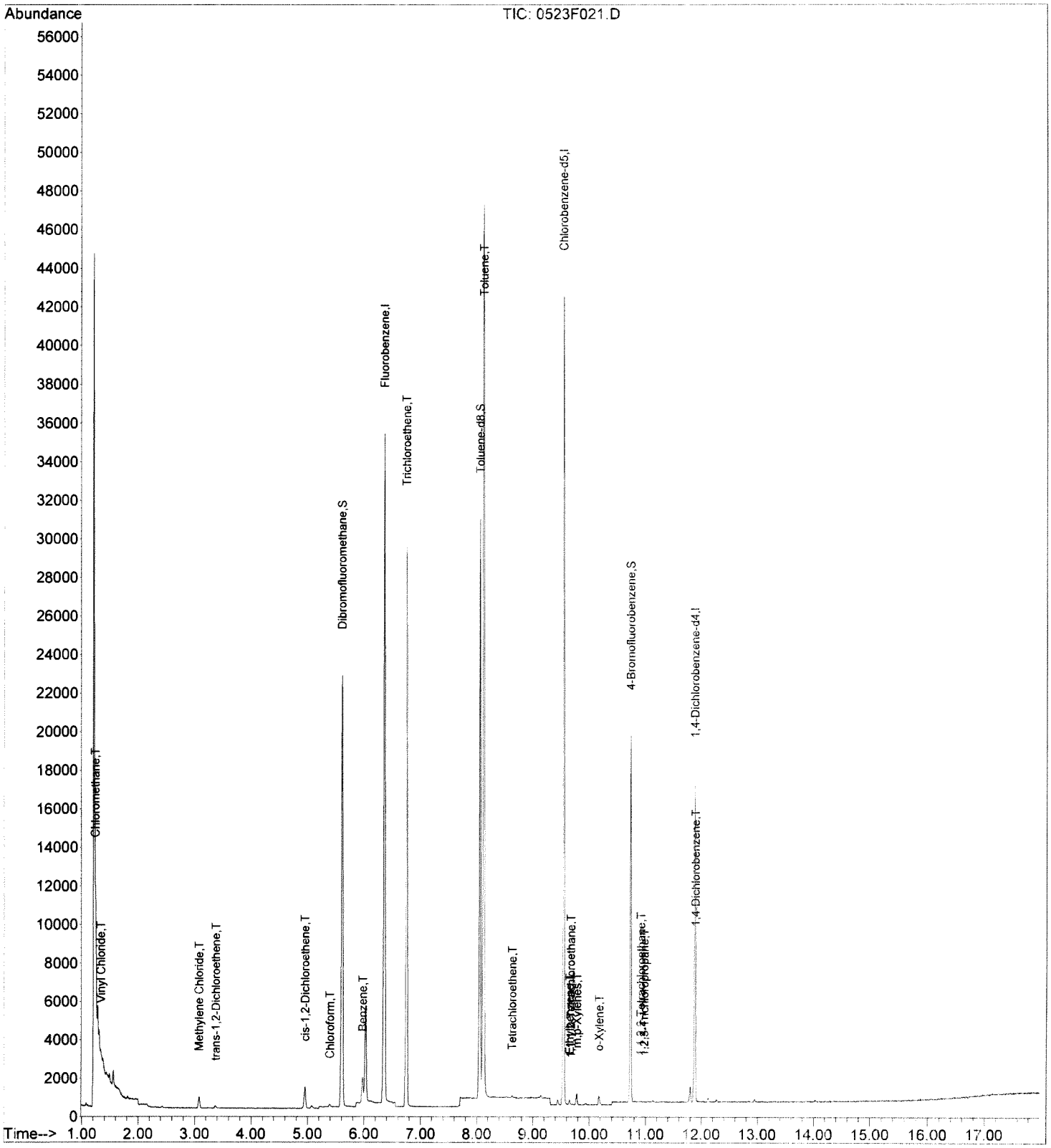
After

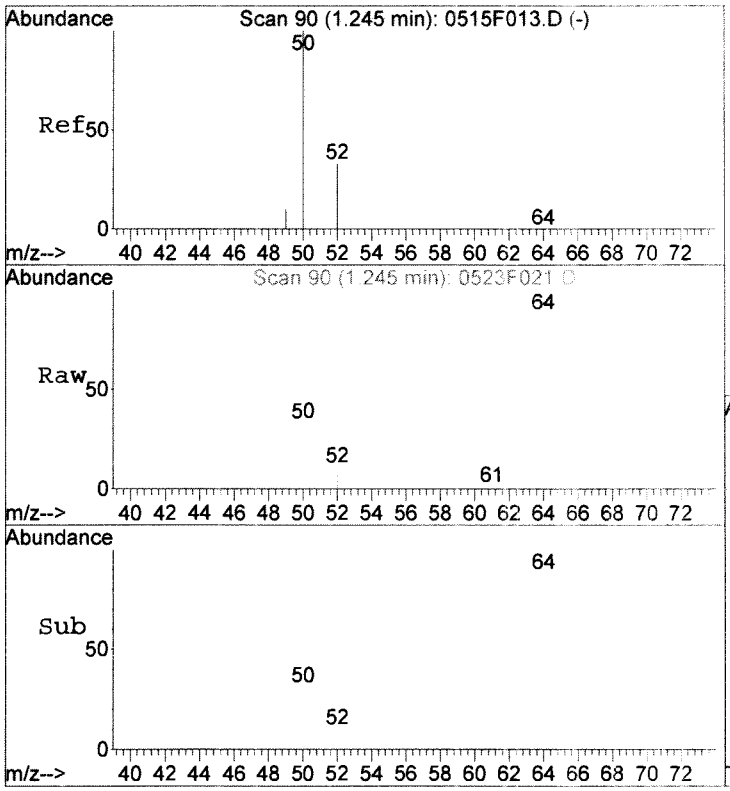
Baseline correction

05/24/17

Data File : J:\MS30\DATA\052317_SIM\0523F021.D Vial: 15
Acq On : 23 May 2017 09:24 pm Operator: KR
Sample : K5066-007 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:23 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

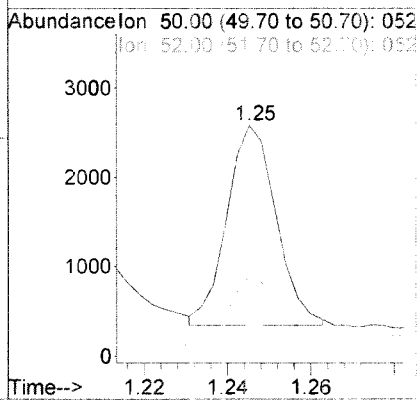


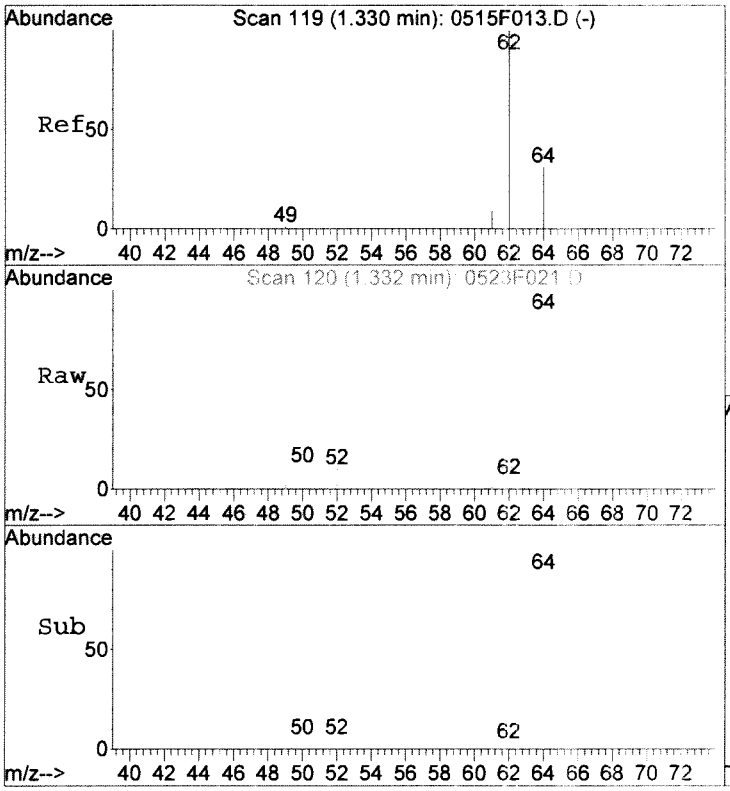


#2
Chloromethane
Concen: 67.38 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 50 Resp: 1841

Ion	Ratio	Lower	Upper
50	100		
52	34.5	2.5	62.5
49	13.4	0.0	40.3

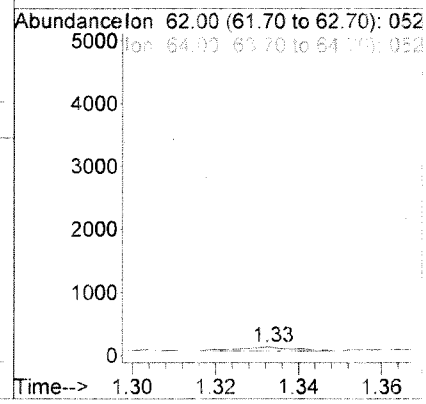


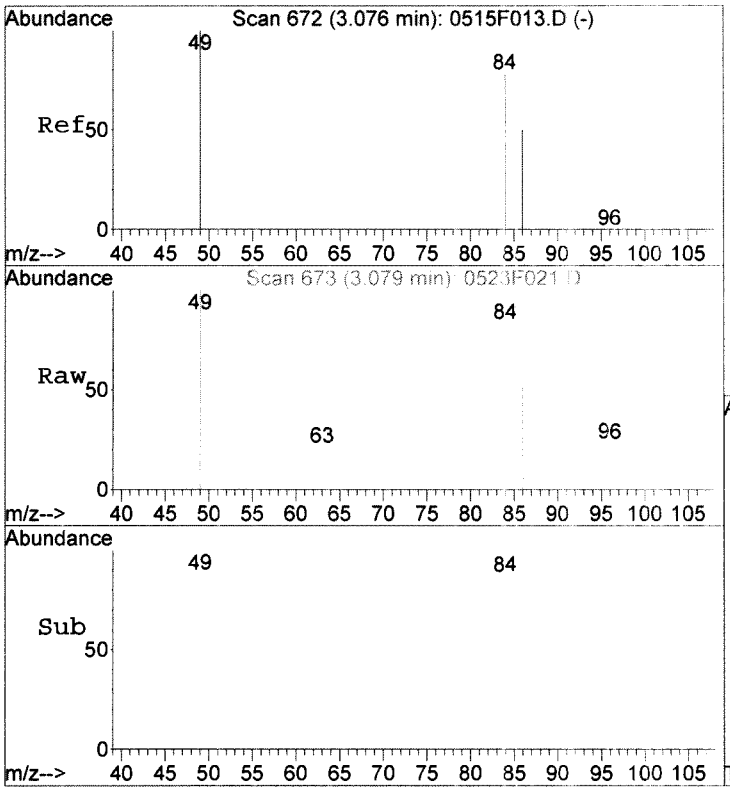


#3
Vinyl Chloride
Concen: 2.60 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 62 Resp: 69

Ion	Ratio	Lower	Upper
62	100		
64	344.3	1.5	61.5#
61	4.3	0.0	38.6

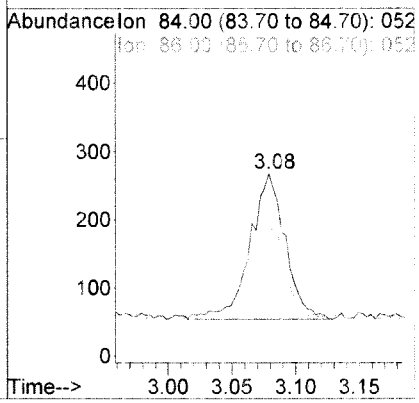


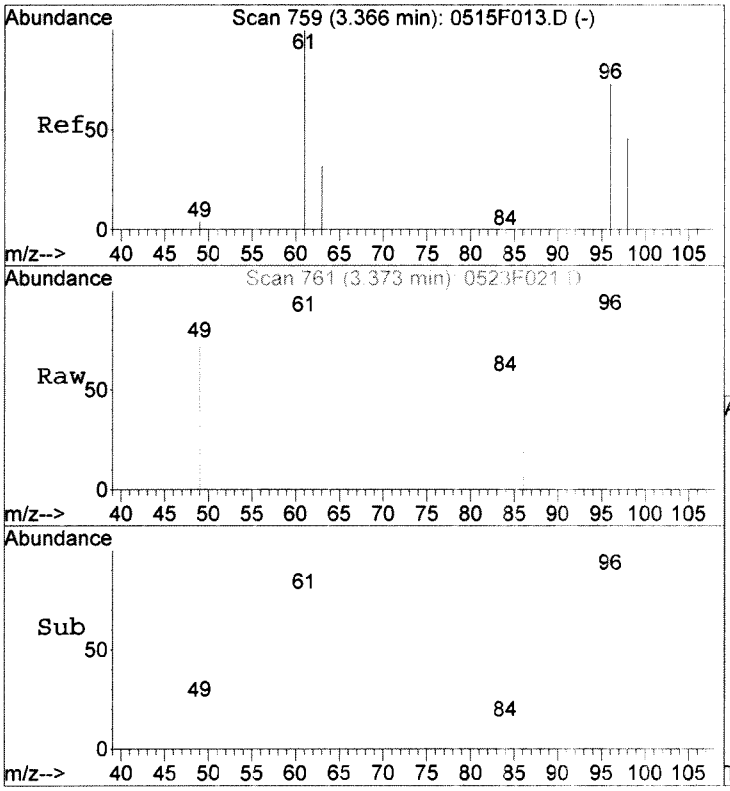


#5
Methylene Chloride
Concen: 19.88 ng/L
RT: 3.08 min Scan# 673
Delta R.T. 0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 84 Resp: 411

Ion	Ratio	Lower	Upper
84	100		
86	53.7	34.0	94.0
49	121.0	98.8	158.8

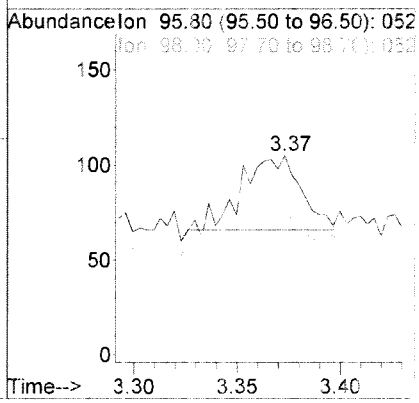


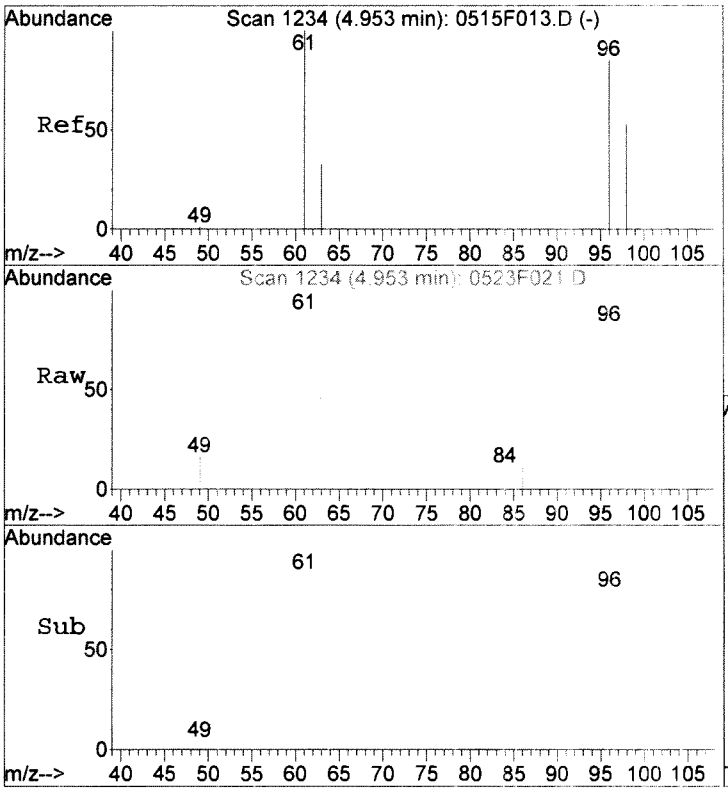


#6
trans-1,2-Dichloroethene
Concen: 4.60 ng/L
RT: 3.37 min Scan# 761
Delta R.T. 0.01 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 96 Resp: 77

Ion	Ratio	Lower	Upper
96	100		
98	17.9	32.9	92.9#
61	79.5	107.3	167.3#

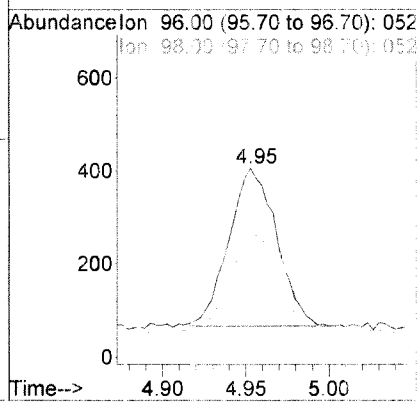


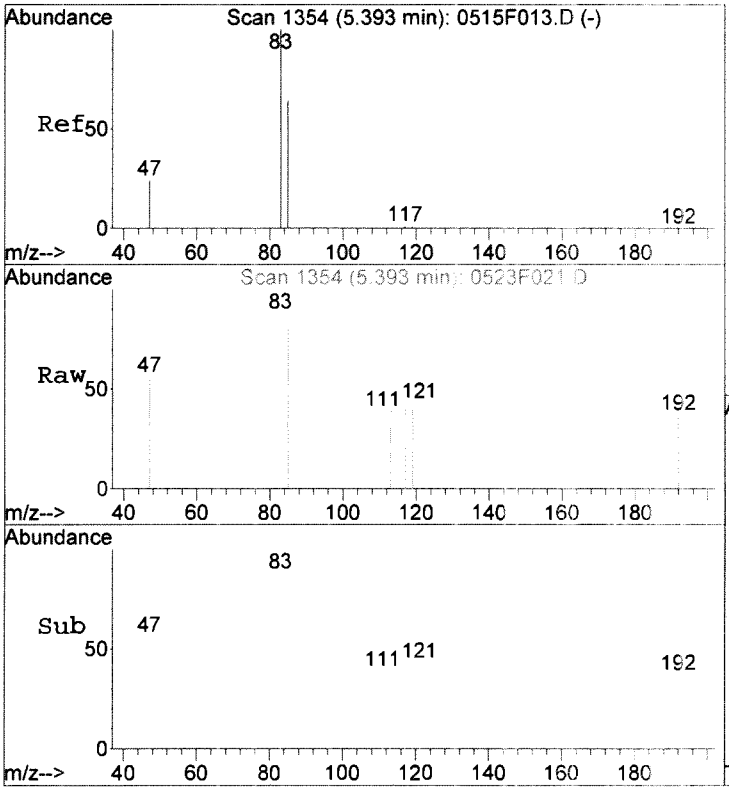


#7
cis-1,2-Dichloroethene
Concen: 42.47 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 96 Resp: 678

Ion	Ratio	Lower	Upper
96	100		
98	54.9	32.7	92.7
61	128.9	95.4	155.4

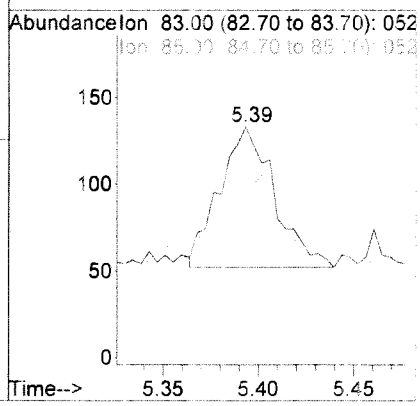


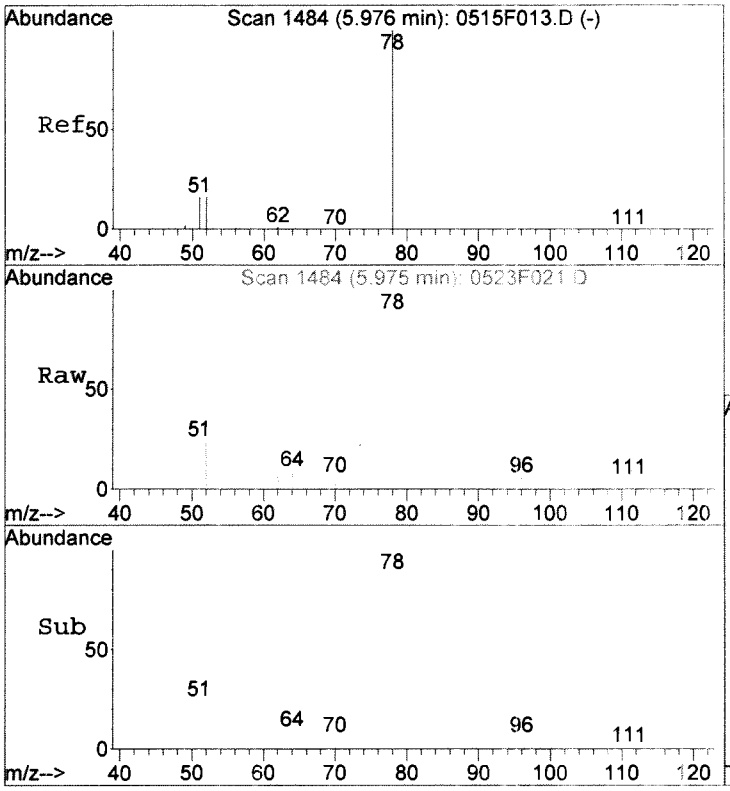


#8
Chloroform
Concen: 4.72 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 83 Resp: 162

Ion	Ratio	Lower	Upper
83	100		
85	64.2	34.0	94.0
47	11.1	0.0	53.5

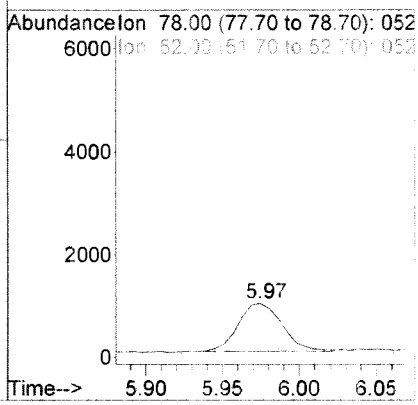


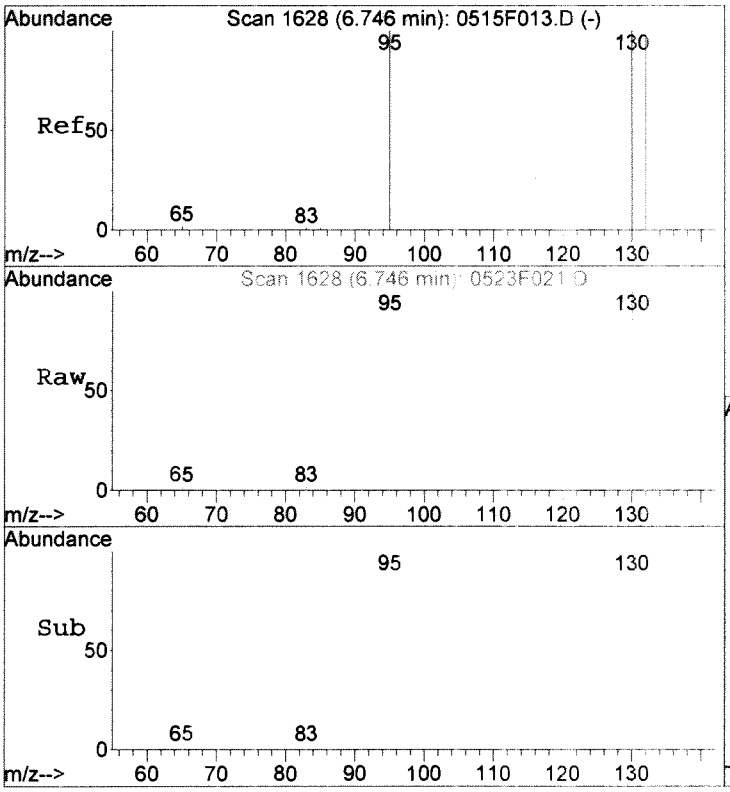


#11
Benzene
Concen: 29.06 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 78 Resp: 1896

Ion	Ratio	Lower	Upper
78	100		
52	18.1	0.0	45.8
51	19.3	0.0	46.5

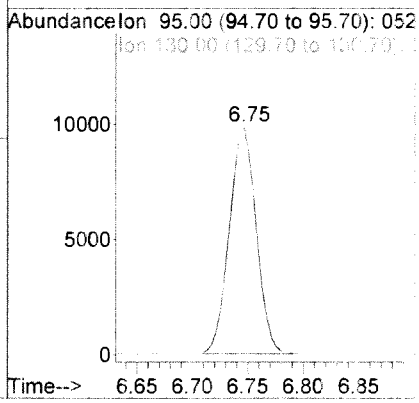


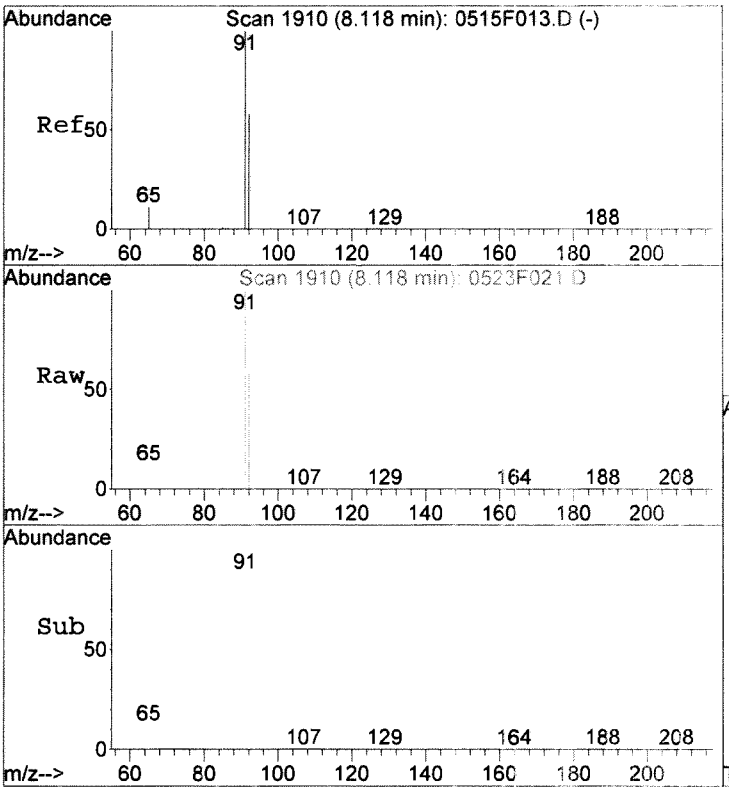


#13
Trichloroethene
Concen: 1037.84 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 95 Resp: 16654

Ion	Ratio	Lower	Upper
95	100		
130	100.2	69.5	129.5
132	98.4	67.2	127.2

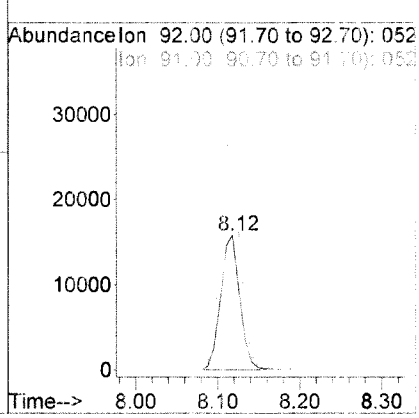


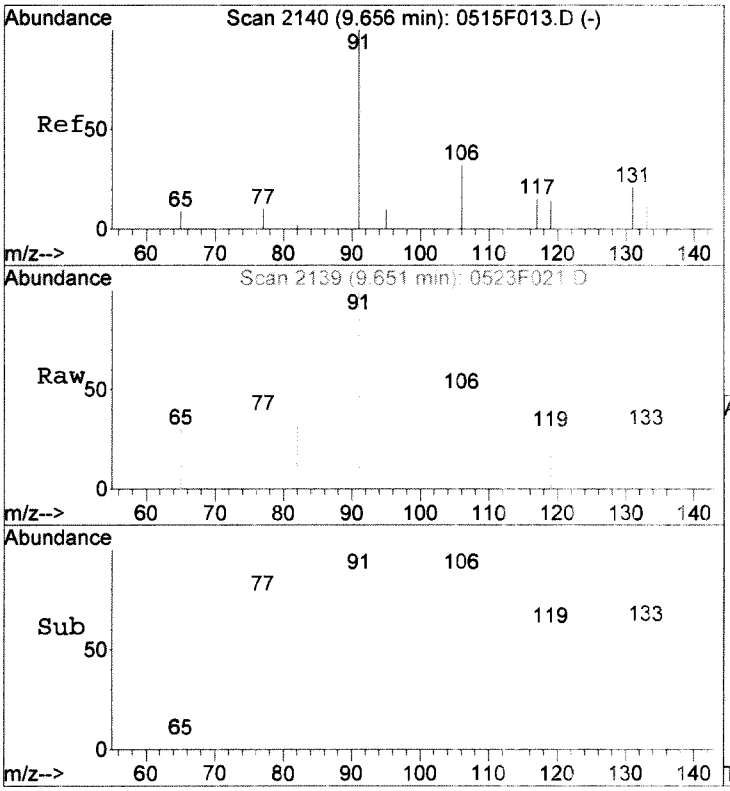


#20
Toluene
Concen: 881.35 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 92 Resp: 25481

Ion	Ratio	Lower	Upper
92	100		
91	171.6	143.6	203.6
65	21.1	0.0	49.9

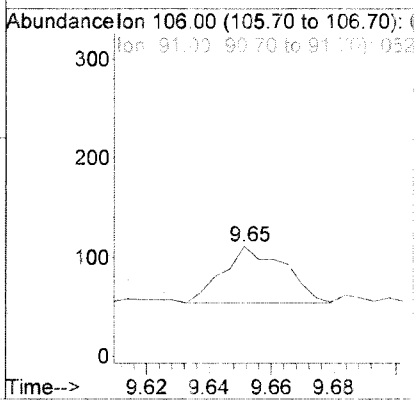


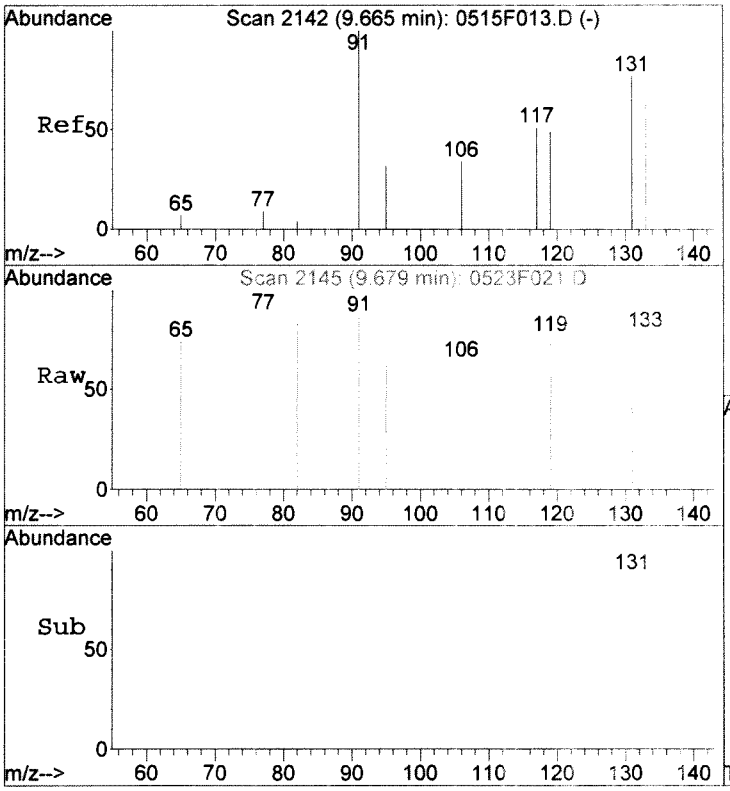


#21
Ethylbenzene
Concen: 5.59 ng/L
RT: 9.65 min Scan# 2139
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion:106 Resp: 78

Ion	Ratio	Lower	Upper
106	100		
91	277.2	285.7	345.7#
77	0.0	1.3	61.3#

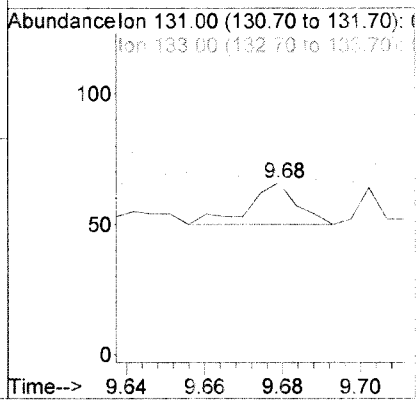


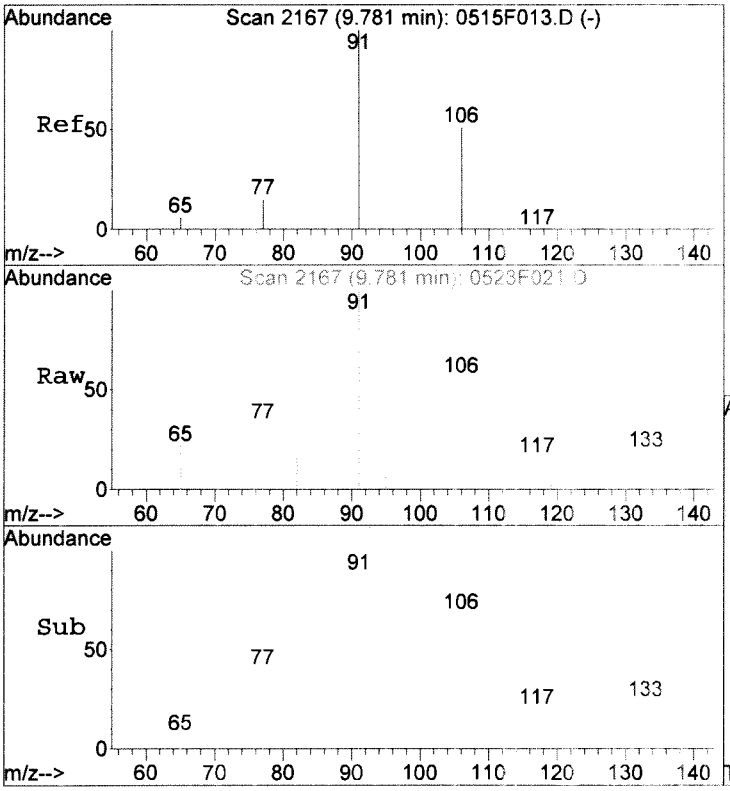


#22
1,1,1,2-Tetrachloroethane
Concen: 0.81 ng/L
RT: 9.68 min Scan# 2145
Delta R.T. 0.01 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion:131 Resp: 14

Ion	Ratio	Lower	Upper
131	100		
133	0.0	74.4	114.4#
119	18.8	43.9	83.9#

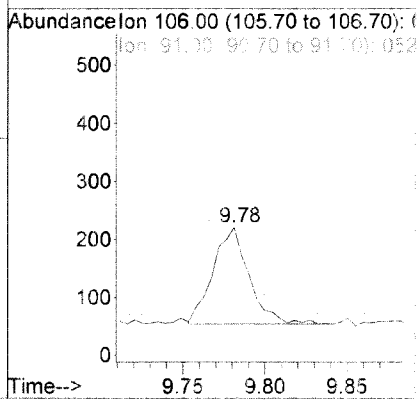


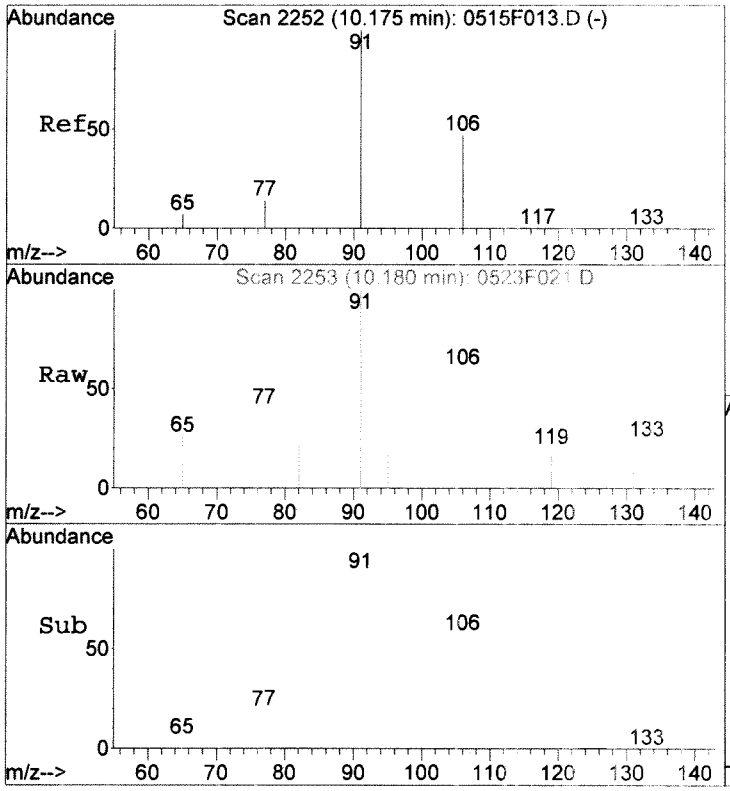


#23
m,p-Xylenes
Concen: 16.04 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. 0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion:106 Resp: 256

Ion	Ratio	Lower	Upper
106	100		
91	195.2	166.8	226.8
77	31.1	0.0	58.7

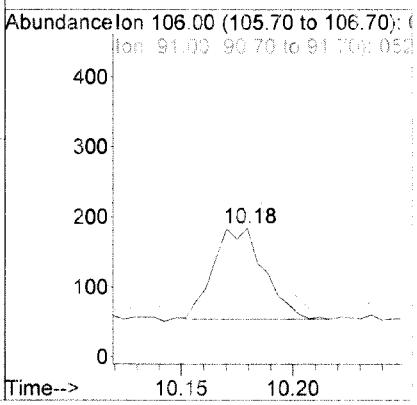


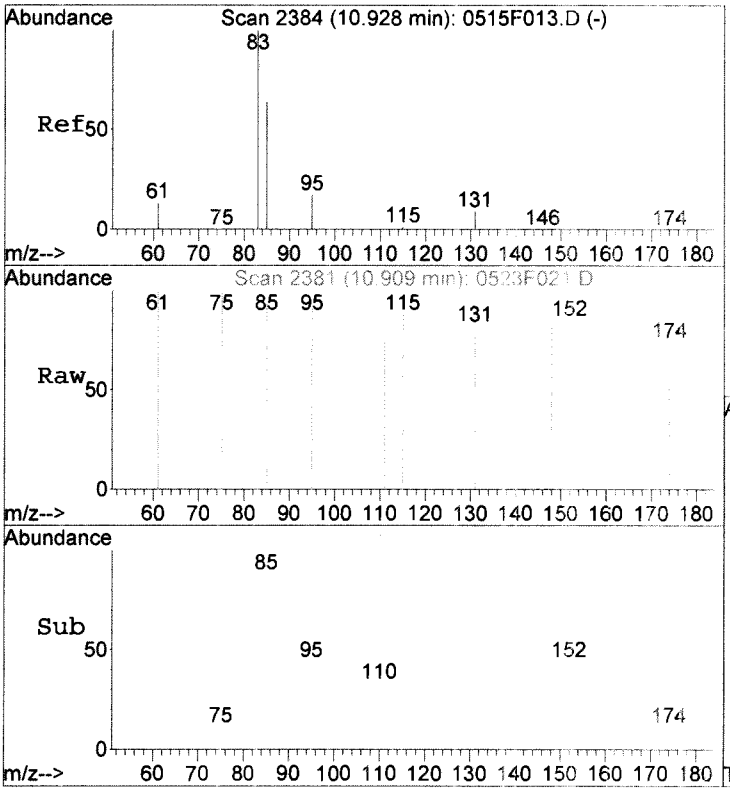


#24
o-Xylene
Concen: 12.65 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.01 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion:106 Resp: 206

Ion	Ratio	Lower	Upper
106	100		
91	184.6	184.3	244.3
65	13.1	0.0	44.6

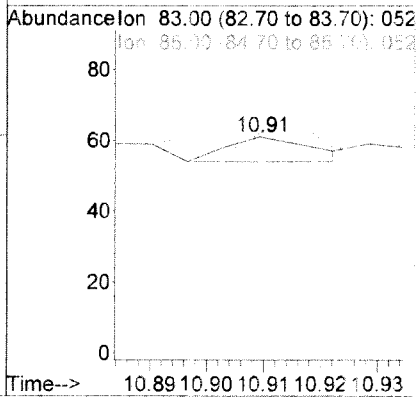


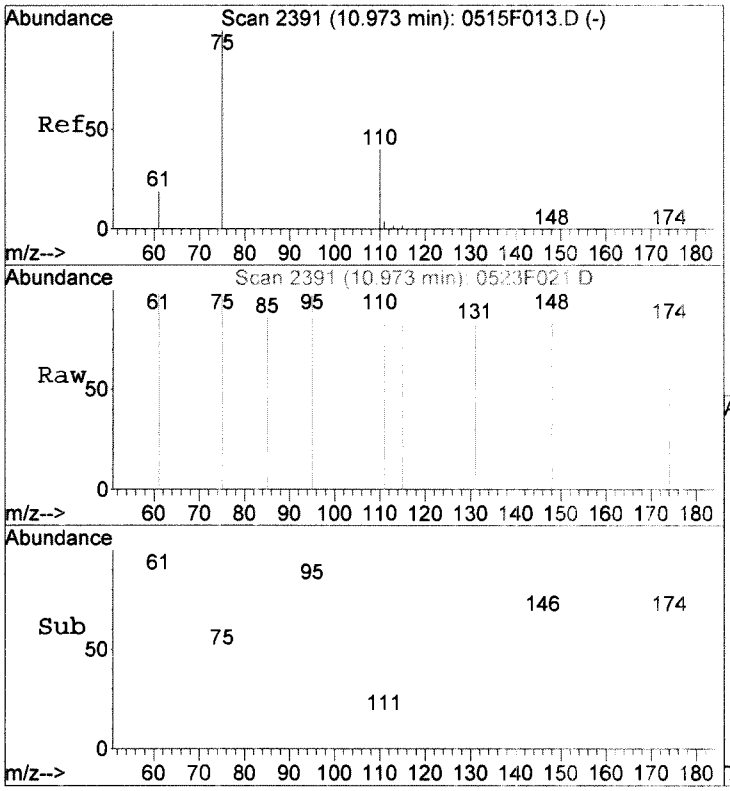


#26
1,1,2,2-Tetrachloroethane
Concen: 0.45 ng/L
RT: 10.91 min Scan# 2381
Delta R.T. -0.02 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion: 83 Resp: 7

Ion	Ratio	Lower	Upper
83	100		
85	57.1	34.1	94.1
131	0.0	0.0	28.8

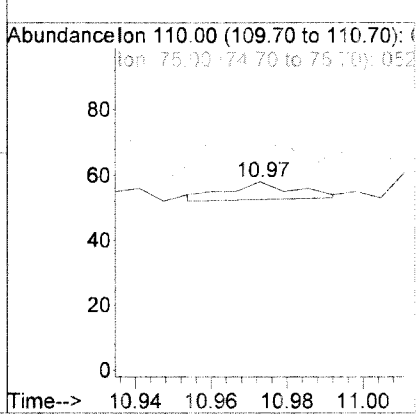


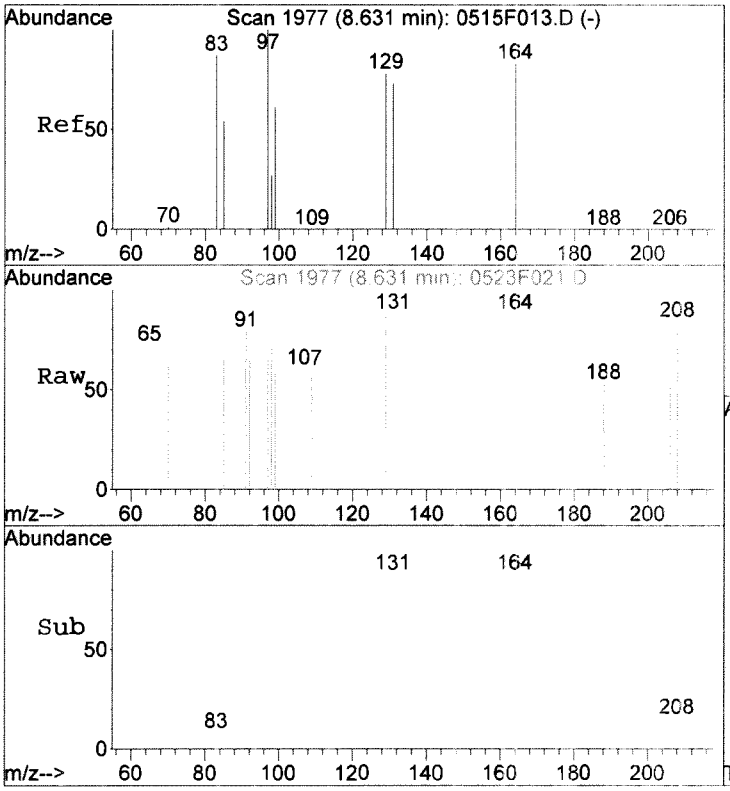


#27
1,2,3-Trichloropropane
Concen: 1.44 ng/L
RT: 10.97 min Scan# 2391
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion:110 Resp: 7

Ion	Ratio	Lower	Upper
110	100		
75	75.0	230.6	270.6#
61	125.0	40.1	80.1#

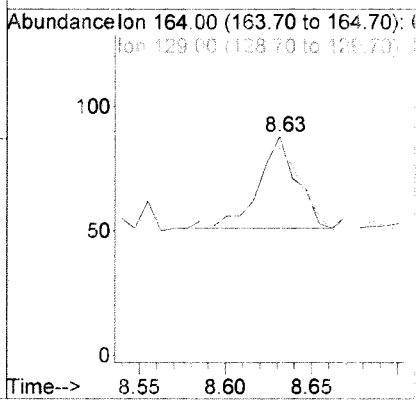


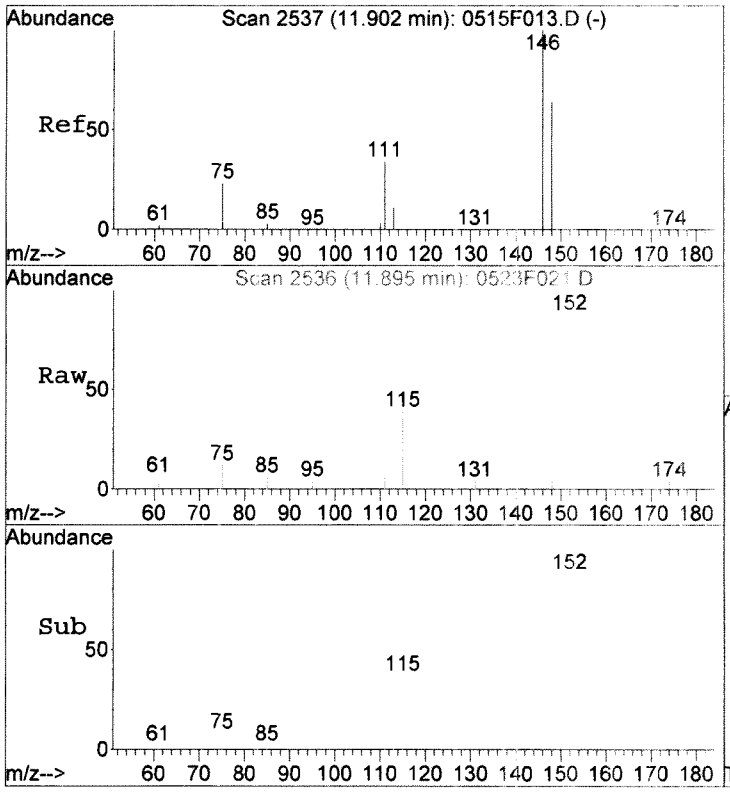


#28
Tetrachloroethene
Concen: 4.28 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.00 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion:164 Resp: 58

Ion	Ratio	Lower	Upper
164	100		
129	89.2	63.1	123.1
131	105.4	57.4	117.4

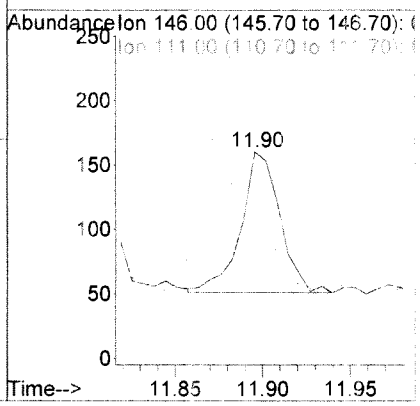




#30
1,4-Dichlorobenzene
Concen: 6.91 ng/L
RT: 11.90 min Scan# 2536
Delta R.T. -0.01 min
Lab File: 0523F021.D
Acq: 23 May 2017 09:24 pm

Tgt Ion:146 Resp: 169

Ion	Ratio	Lower	Upper
146	100		
111	51.4	4.0	64.0
148	44.0	34.3	94.3



Data File: J:\MS30\DATA\052317_SIM\0523F011.D
Lab ID: KWG1704213-5
RunType: MB
Matrix: WATER

Date Acquired: 05/23/2017 16:49
Date Quantified: 05/24/2017 08:37
Batch ID: KWG1704209
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NT
Continuing Calibration Recovery	Methylene Chloride	22.7	NA	20	L
	Chloroform	21.8	NA	20	NC

Primary Review: [signature]

Secondary Review: [signature]

Data File:	J:\MS30\DATA\052317_SIM\0523F011.D			Instrument:	MS30
Acqu Date:	05/23/2017 16:49	Quant Date:	05/24/2017 09:49	Vial:	6
Run Type:	MB	MethodJoinID:	MJ1547	Dilution:	1.0
Lab ID:	KWG1704213-5			Soln Conc. Units:	ng/L

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8260C VOC SIM F	Collect Date:		Receive Date:	05/24/2017

Analysis Lot:	KWG1704209	Prep Lot:	KWG1704213	Report Group:	
Analysis Method:	8260C SIM	Prep Method:	EPA 5030B		
Prep Ref:	1605455	Prep Date:	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	Calibration ID:	CAL15375
Title:			
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	Method ID:	MJ1547
MB Ref:		Quant based on	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.36	0.01	96	47785	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	32380	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.87	-0.01	152	12517	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.61	0.01	0.00	113	19425	1,099	110	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	38555	1,012	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	10901	756.75	76	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25		0.00	50	237m	8.67	8.67	J	
1	Vinyl Chloride	1.33		0.00	62	45	1.69	4.6	U	
1	1,1-Dichloroethene				96	0d		5.9	U	
1	Methylene Chloride	3.09	0.01	0.00	84	2134	103.12	103	J	
1	trans-1,2-Dichloroethene				96	0d		3.5	U	
1	cis-1,2-Dichloroethene	4.96	0.01	0.00	96	43	2.69	6.5	U	
1	Chloroform	5.40	0.01	0.00	83	3471	101.01	101		
1	Carbon Tetrachloride	5.41	-0.25	-0.04	117	56	2.47	7.2	U	
1	Benzene	5.98	0.01	0.00	78	1575	24.11	24.1	J	
1	1,2-Dichloroethane	6.12		0.00	62	57	2.34	5.8	U	
1	Trichloroethene (TCE)	6.74		0.00	95	46	2.86	3.9	U	
1	Bromodichloromethane	7.37	0.01	0.00	83	51	2.22	3.4	U	
1	1,1,2-Trichloroethane	8.63		0.00	83	41	3.18	9.0	U	
1	Dibromochloromethane				129	0d		8.8	U	
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	44	3.49	4.5	U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
a: Acceptance criteria not applicable
b: Insufficient information to determine acceptance
c: Result > MRL, but MRL less than low point of ICAL
e: Check for co-elution

Data File:	J:\MS30\DATA\052317_SIM\0523F011.D			Test Code:	345.1
Acqu Date:	05/23/2017 16:49	Quant Date:	05/24/2017 09:47	Vial:	6
Run Type:	MB	Method/Job ID:	M11547	Dilution:	1.0
Lab ID:	KWG1704213-5			Soil Conc. Units:	ng/L

Target Compounds Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12	0.01	0.00	92	125	4.40	4.40	J	
2	Ethylbenzene	9.65	-0.01	0.00	106	48	3.50	5.6	U	
2	1,1,1,2-Tetrachloroethane				131	0d		3.9	U	
2	m,p-Xylenes	9.78		0.00	106	138	8.80	9.5	U	
2	o-Xylene	10.18		0.00	106	98	6.12	6.12	J	
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	29	1.90	8.7	U	
2	1,2,3-Trichloropropane	10.96	-0.01	0.00	110	12	2.51	11	U	
2	Tetrachloroethene (PCE)	8.64	0.01	0.00	164	107	8.03	8.03	J	
3	1,4-Dichlorobenzene	11.90		0.00	146	232	10.27	10.3	J	

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
+: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result > MRL, but MRL less than lowest point of ICAL
c: Checks for closing standard

Data File : J:\MS30\DATA\051517_SIM\0523F011.D Vial: 6
Acq On : 23 May 2017 04:49 pm Operator: KP
Sample : K5157-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 08:26:26 2017 Quant Results File: 051517MS30_8260SIM.RES

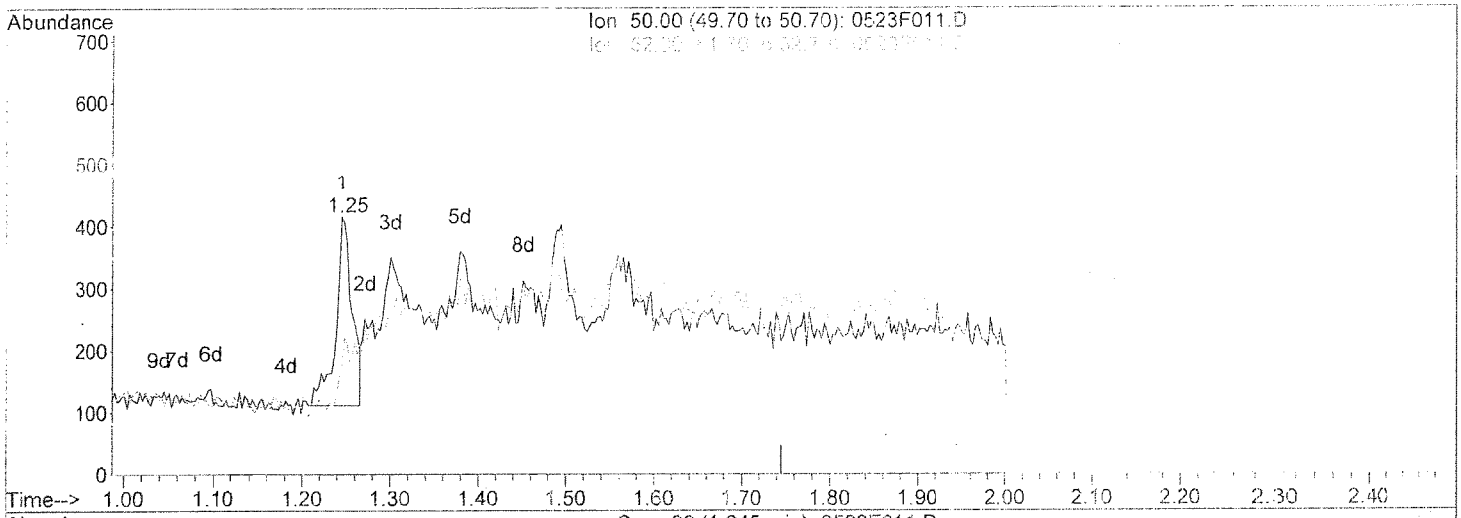
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

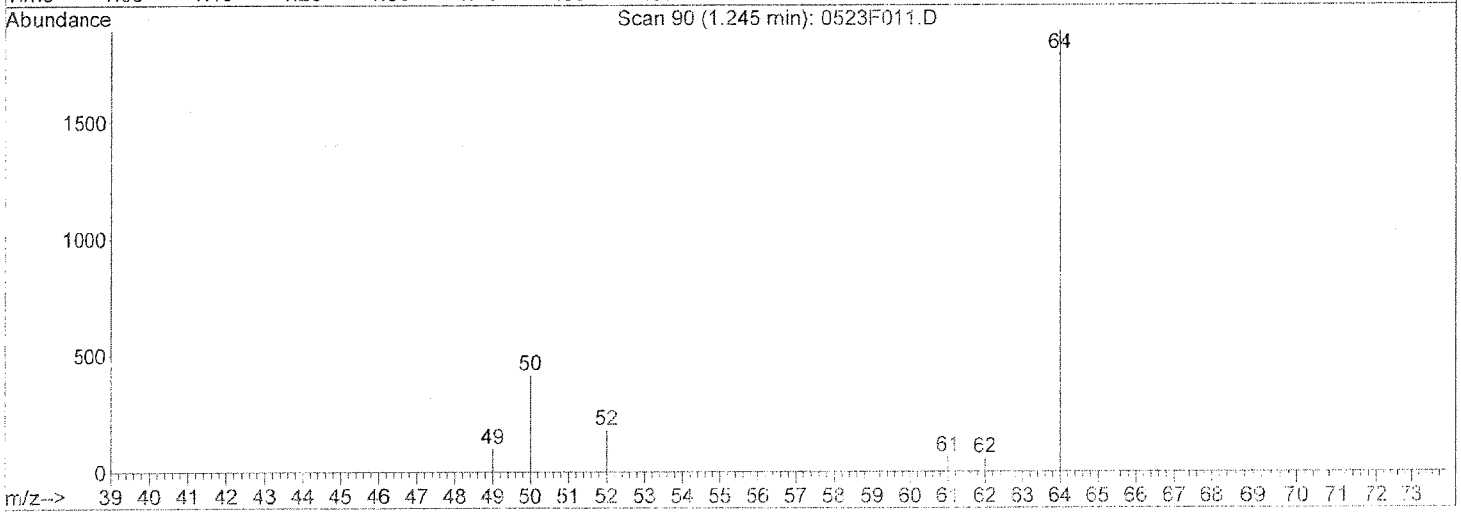
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.36	96	47785	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	32380	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	12517	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.61	113	19425	1099.04	ng/L		0.00
Spiked Amount 1000.000			Recovery = 109.90%				
15) Toluene-d8	8.05	98	38555	1011.56	ng/L		0.00
Spiked Amount 1000.000			Recovery = 101.16%				
25) 4-Bromofluorobenzene	10.73	95	10901	756.75	ng/L		0.00
Spiked Amount 1000.000			Recovery = 75.67%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	237m	8.67	ng/L		
3) Vinyl Chloride	1.33	62	45	1.69	ng/L	#	1
5) Methylene Chloride	3.09	84	2134	103.12	ng/L		96
7) cis-1,2-Dichloroethene	4.96	96	43	2.69	ng/L	#	65
8) Chloroform	5.40	83	3471	101.01	ng/L		98
10) Carbon Tetrachloride	5.41	117	56	2.47	ng/L	#	63
11) Benzene	5.98	78	1575	24.11	ng/L		96
12) 1,2-Dichloroethane	6.12	62	57	2.34	ng/L		75
13) Trichloroethene	6.74	95	46	2.85	ng/L		72
14) Bromodichloromethane	7.37	83	51	2.22	ng/L	#	42
16) 1,1,2-Trichloroethane	8.63	83	41	3.13	ng/L	#	41
18) 1,2-Dibromoethane (EDB)	9.09	107	44	3.49	ng/L		83
20) Toluene	8.12	92	125	4.40	ng/L		85
21) Ethylbenzene	9.65	106	48	3.50	ng/L	#	76
23) m,p-Xylenes	9.78	106	138	8.80	ng/L		88
24) o-Xylene	10.18	106	98	6.12	ng/L		83
26) 1,1,2,2-Tetrachloroethane	10.93	83	29	1.90	ng/L		92
27) 1,2,3-Trichloropropane	10.96	110	12	2.51	ng/L	#	1
28) Tetrachloroethene	8.64	164	107	8.03	ng/L		80
30) 1,4-Dichlorobenzene	11.90	146	232	10.27	ng/L		94

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\05[illegible] Vial: 5
Acq On : 23 May 2017 04:49 pm Operator: KB
Sample : K5157-001 Inst : MS30
Misc : Multip.r: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 8:27 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F011.D

(2) Chloromethane (T)

1.25min 14.37ng/L

response 393

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	21.38
49.00	10.30	7.24
0.00	0.00	0.00

Manual Integration:

Before

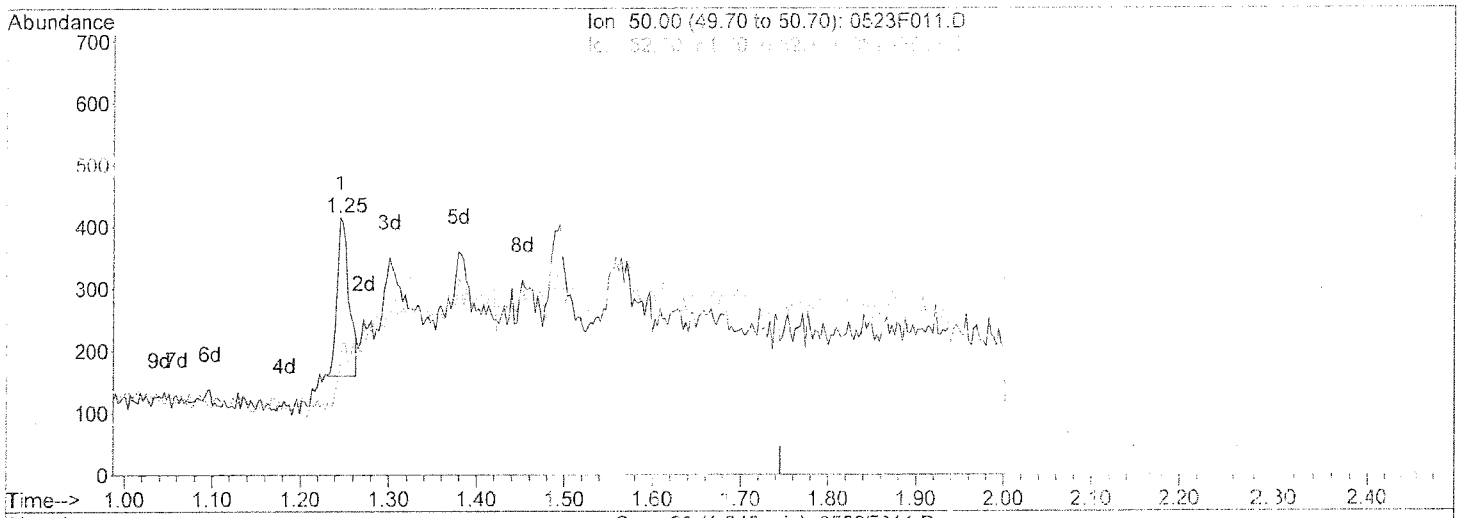
05/24/17

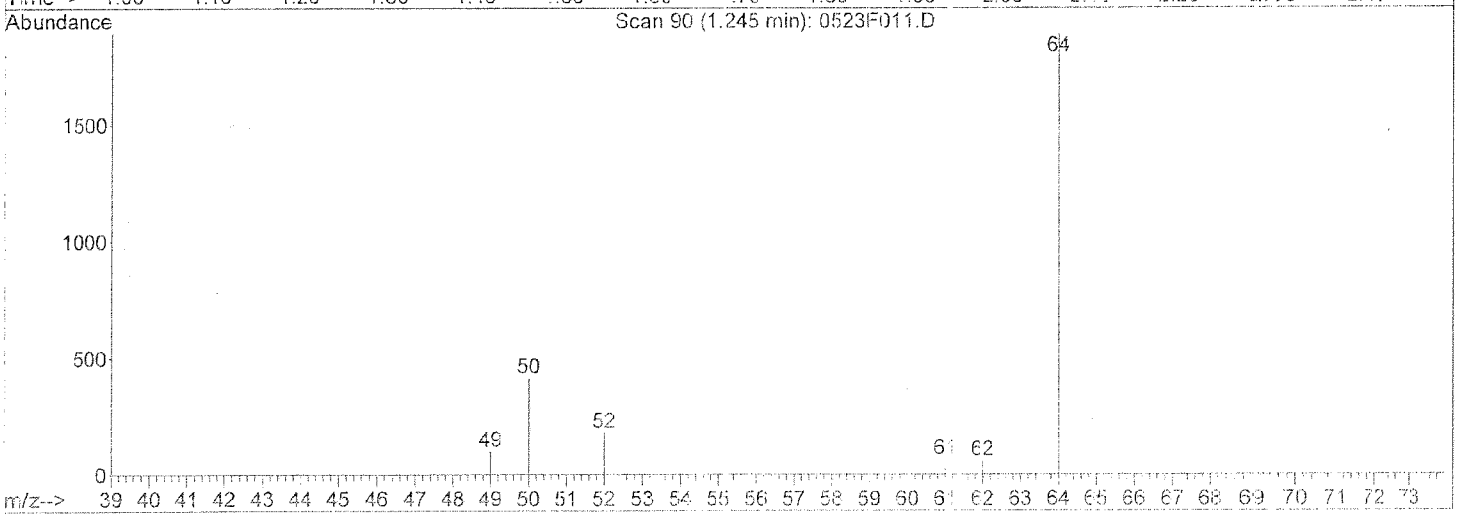
Data File : J:\MS30\DATA\051517_SIM\05.b
Acq On : 23 May 2017 04:49 pm
Sample : K5157-001
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 24 9:49 2017

Operator: KR
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0523F011.D

(2) Chloromethane (T)

1.25min 8.67ng/L m

response 237

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	43.27
49.00	10.30	24.04
0.00	0.00	0.00

Manual Integration:

Afte

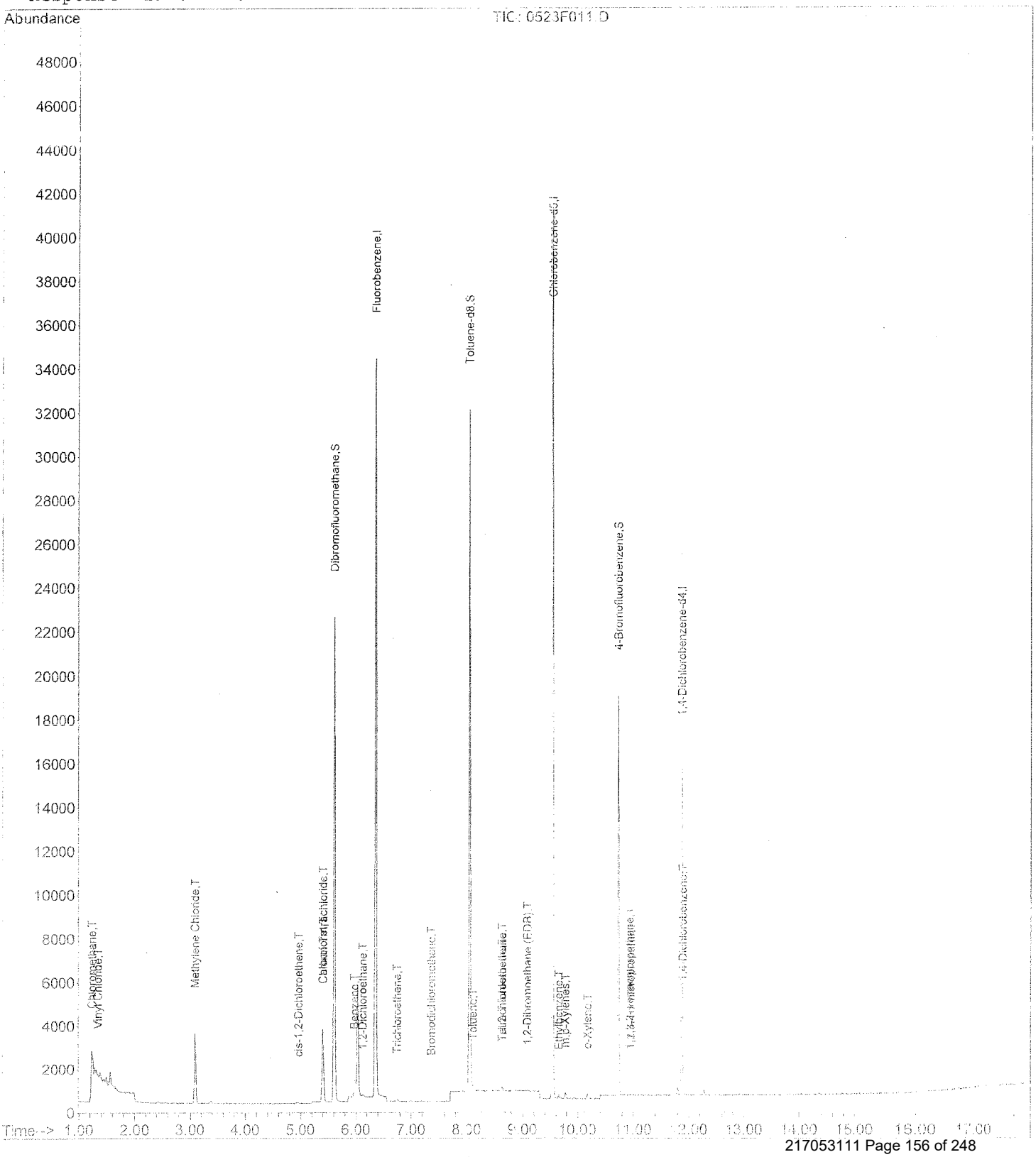
Baseline correction

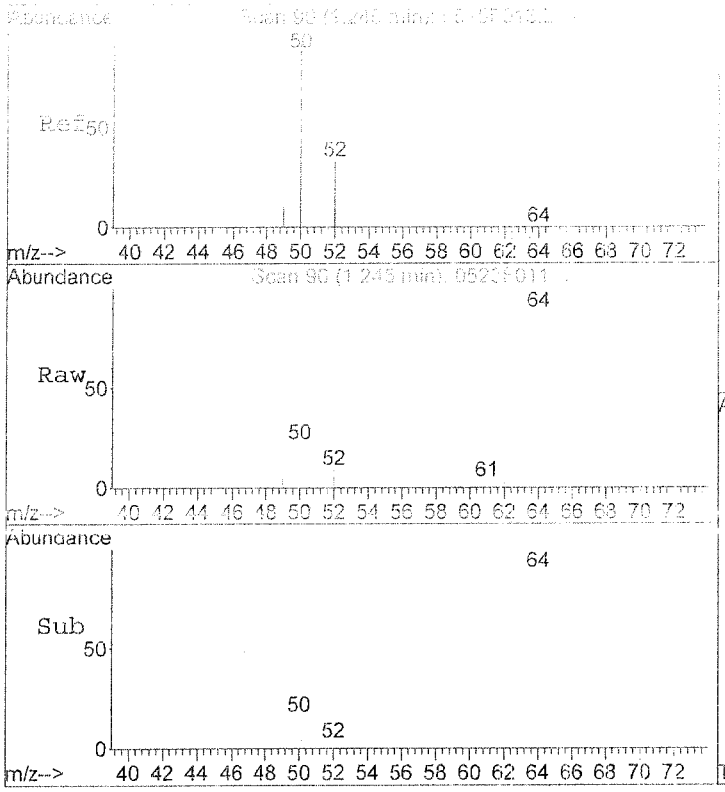
05/24/17

Data File : J:\MS30\DATA\0523F11_SIM 051517MS30 Vials: 5
Acq On : 23 May 2017 04:49 pm Operator: KR
Sample : K5157-001 Inst : MS30
Misc : Multiplier: 1.0

MS Integration Params: RTEINT.P
Quant Time: May 24 9:49 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

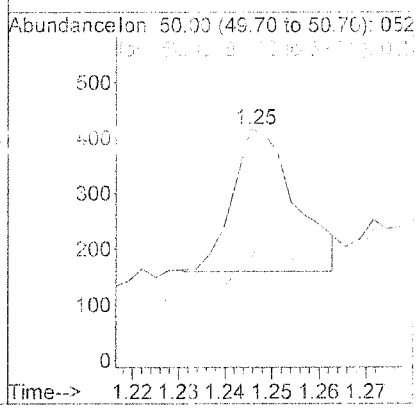


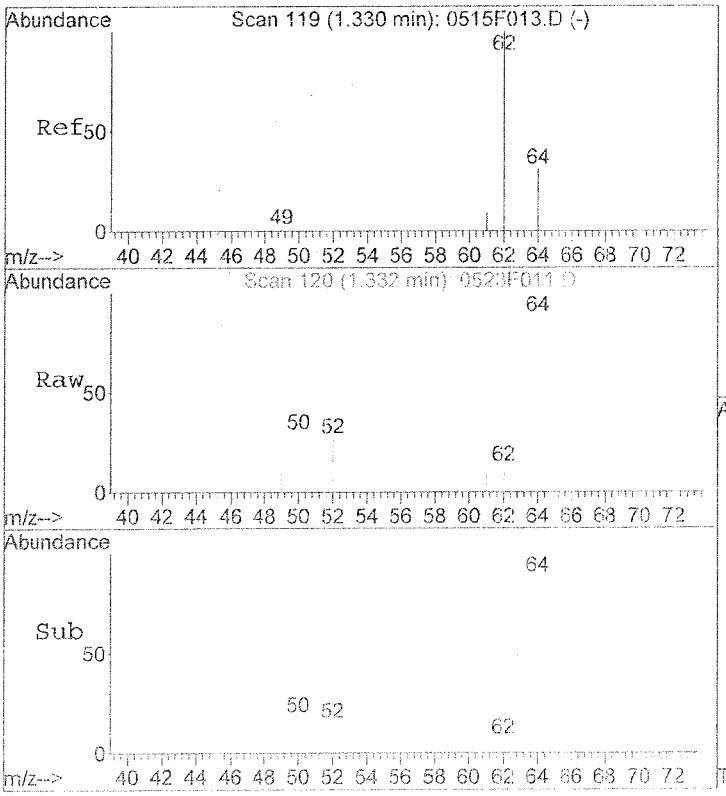


Conc: 0.7 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 50 Resp: 237

Ion	Ratio	Lower	Upper
50	100		
52	43.3	2.5	62.5
49	24.0	0.0	40.3

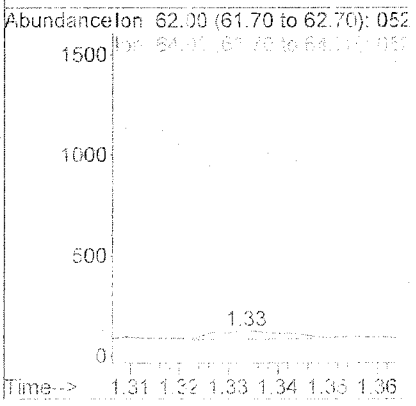


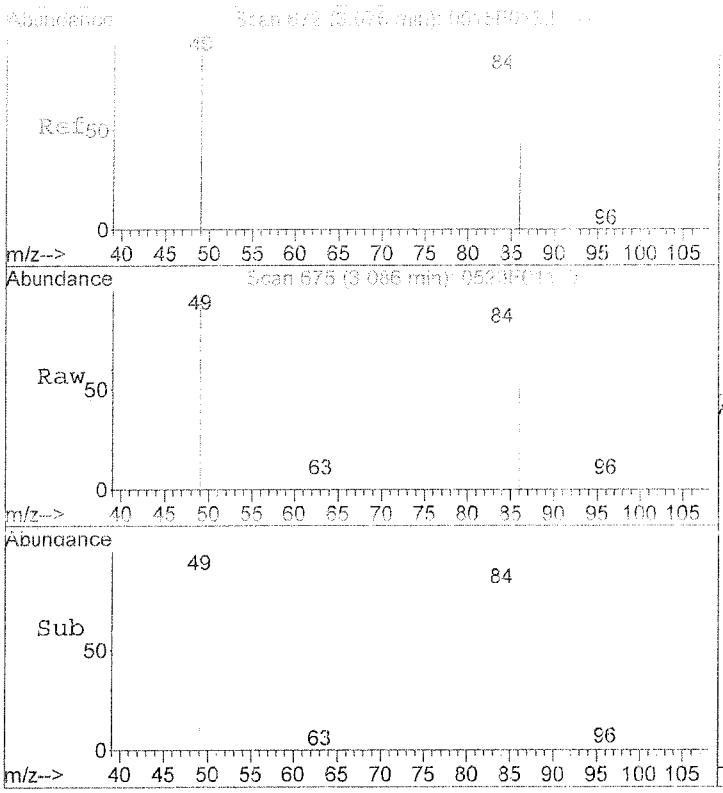


#3
Vinyl Chloride
Concen: 1.69 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 62 Resp: 45

Ion	Ratio	Lower	Upper
62	100		
64	117.9	1.5	61.5#
61	7.7	0.0	38.6

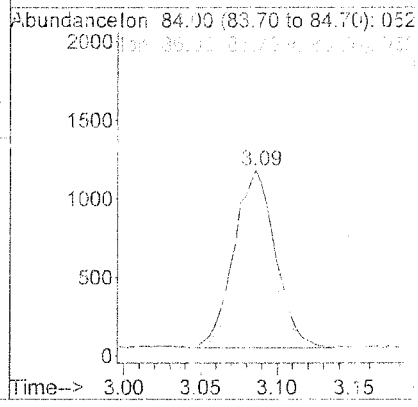


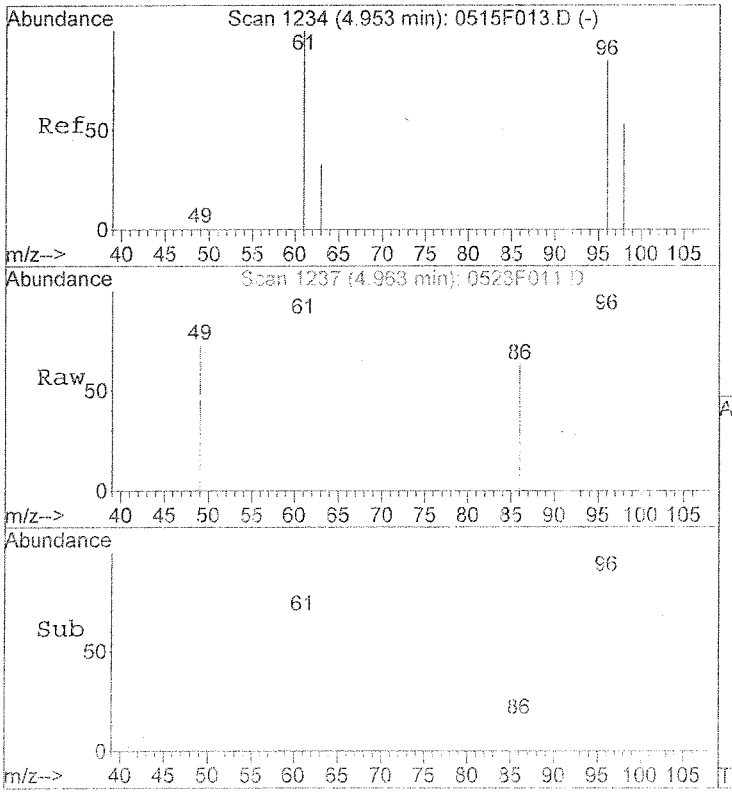


#6
Methylene Chloride
Concen: 113.12 ng/L
RT: 3.09 min Scan# 675
Delta R.T. -.01 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 84 Resp: 2134

Ion	Ratio	Lower	Upper
84	100		
86	61.8	24.0	94.0
49	123.9	98.8	158.8

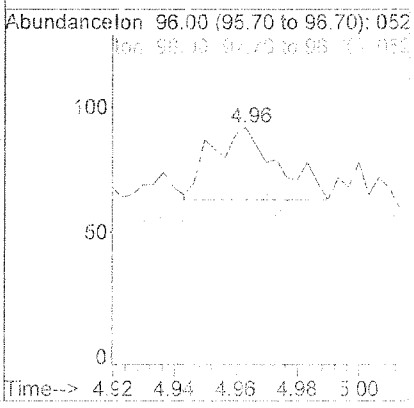


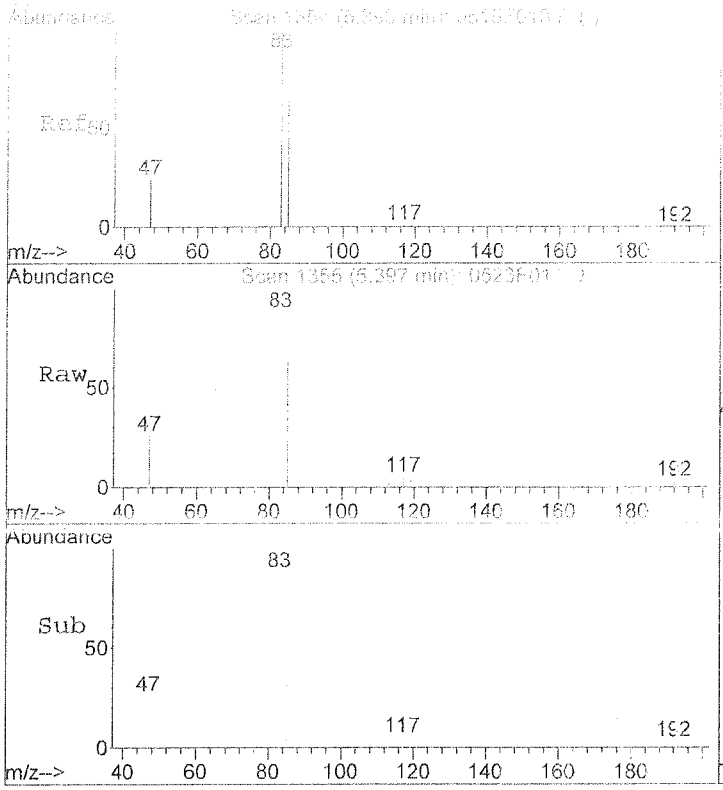


#7
cis-1,2-Dichloroethene
Concen: 2.69 ng/L
RT: 4.96 min Scan# 1237
Delta R.T. 0.01 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 96 Resp: 43

Ion	Ratio	Lower	Upper
96	100		
98	48.3	32.7	92.7
61	75.9	95.4	155.4#

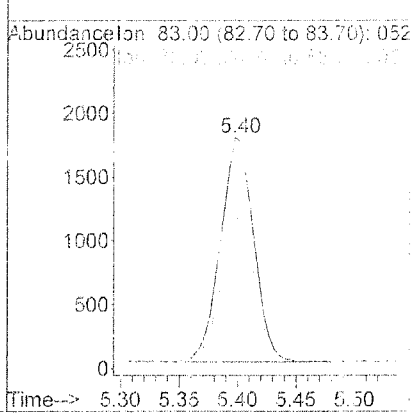


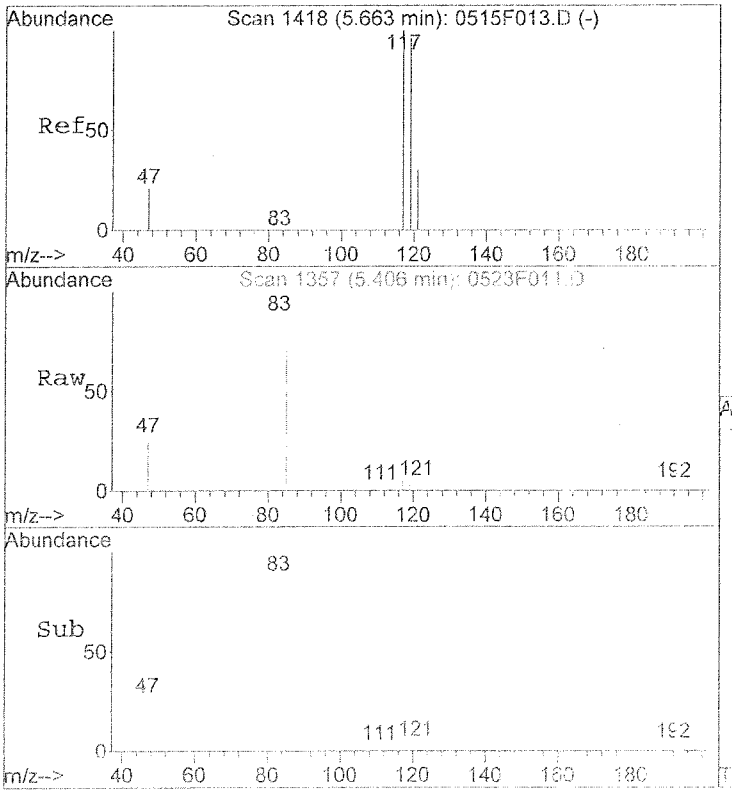


#9
Dibromochloromethane
Concen: 2.11 ng/L
RT: 5.40 min Scan# 1357
Delta R.T. -0.10 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 83 Resp: 3471

Ion	Ratio	Lower	Upper
83	100		
85	62.1	34.0	84.0
47	23.0	0.0	83.5

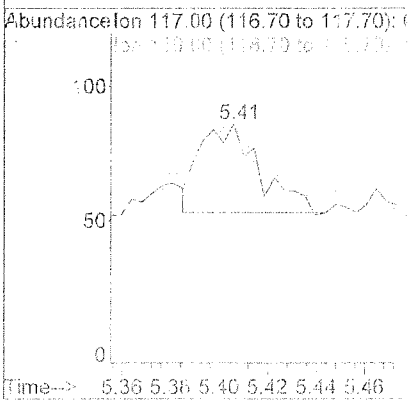


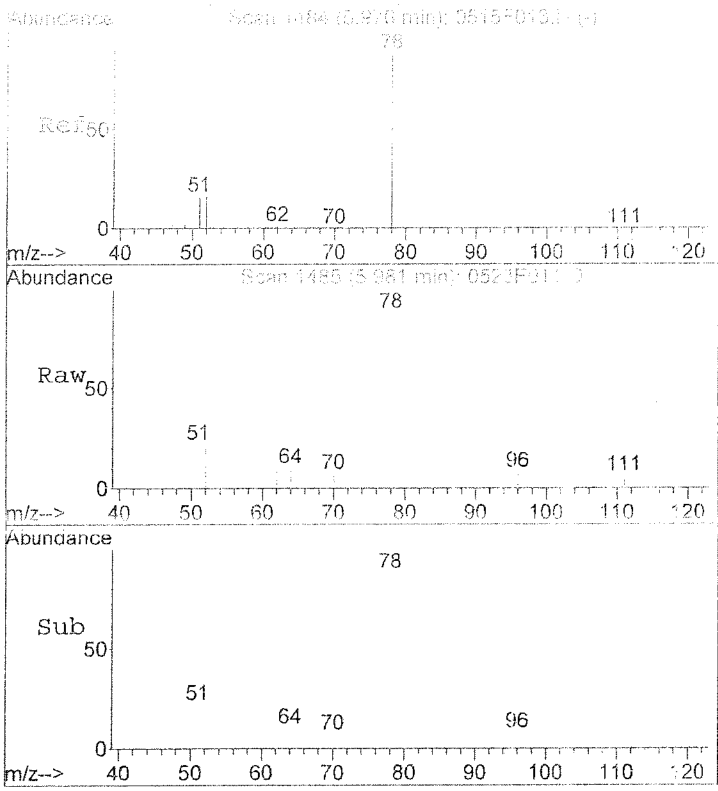


#10
Carbon Tetrachloride
Concen: 2.47 ng/L
RT: 5.41 min Scan# 1357
Delta R.T. -0.26 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion:117 Resp: 56

Ion	Ratio	Lower	Upper
117	100		
119	60.6	65.9	125.9#
121	51.5	0.3	60.3

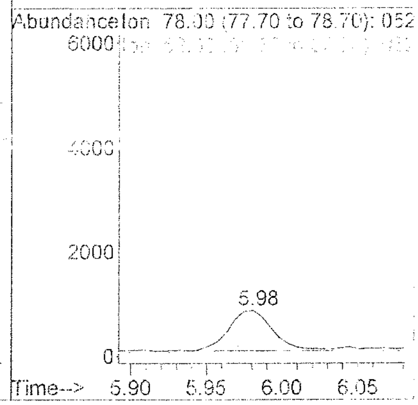


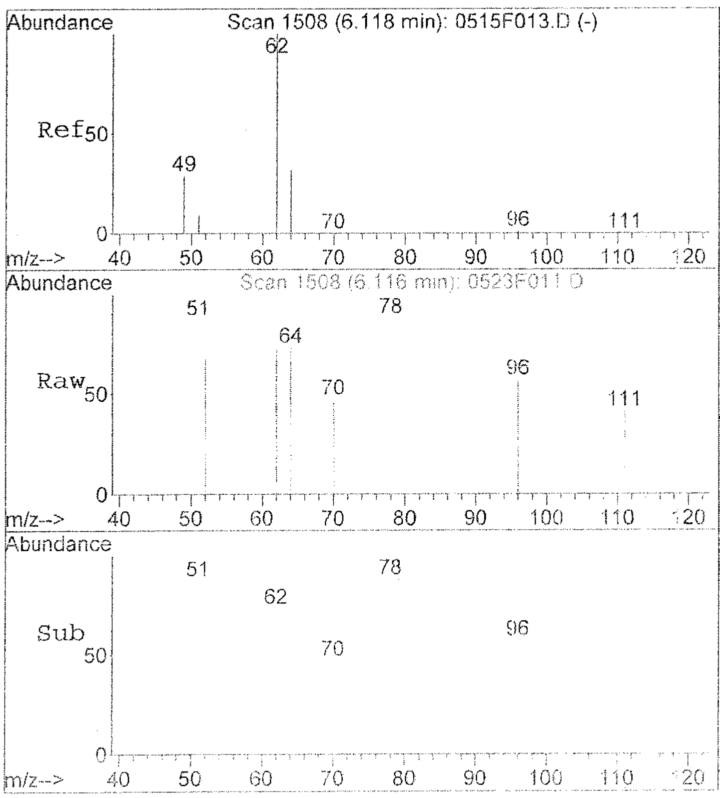


Benzene
Concen: 34.11 ng/L
RT: 5.98 min Scan# 1485
Delta R.T. 0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 78 Resp: 1575

Ion	Ratio	Lower	Upper
78	100		
52	14.5	0.0	45.8
51	14.5	0.0	46.5

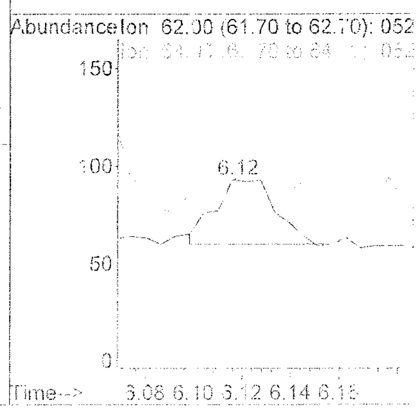


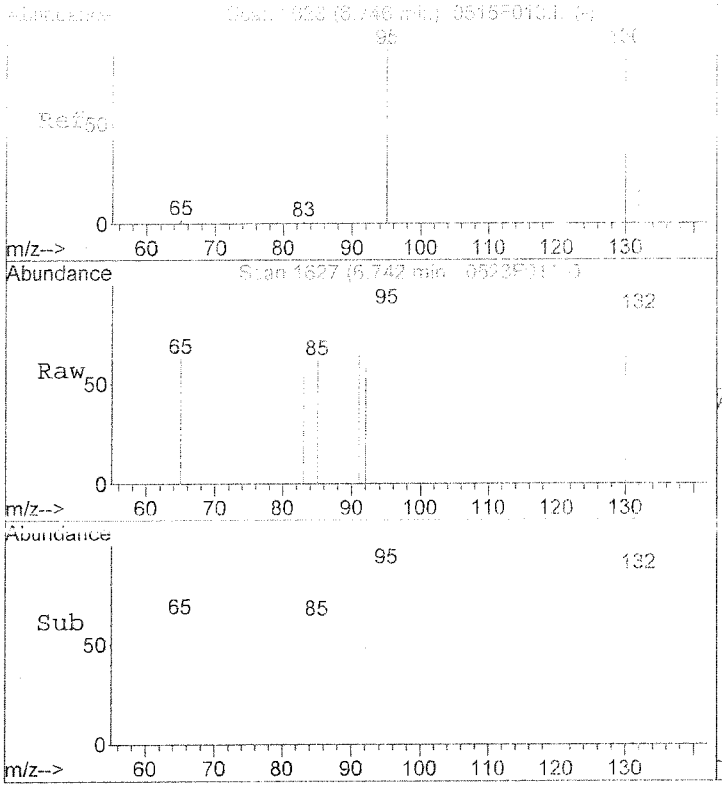


#12
1,2-Dichloroethane
Concen: 2.34 ng/L
RT: 6.12 min Scan# 1508
Delta R.T. -0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 62 Resp: 57

Ion	Ratio	Lower	Upper
62	100		
64	21.2	2.1	62.1
49	45.5	0.0	58.7

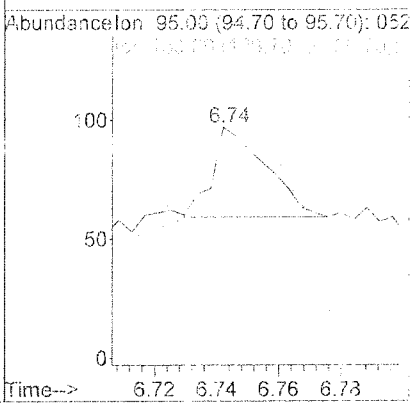


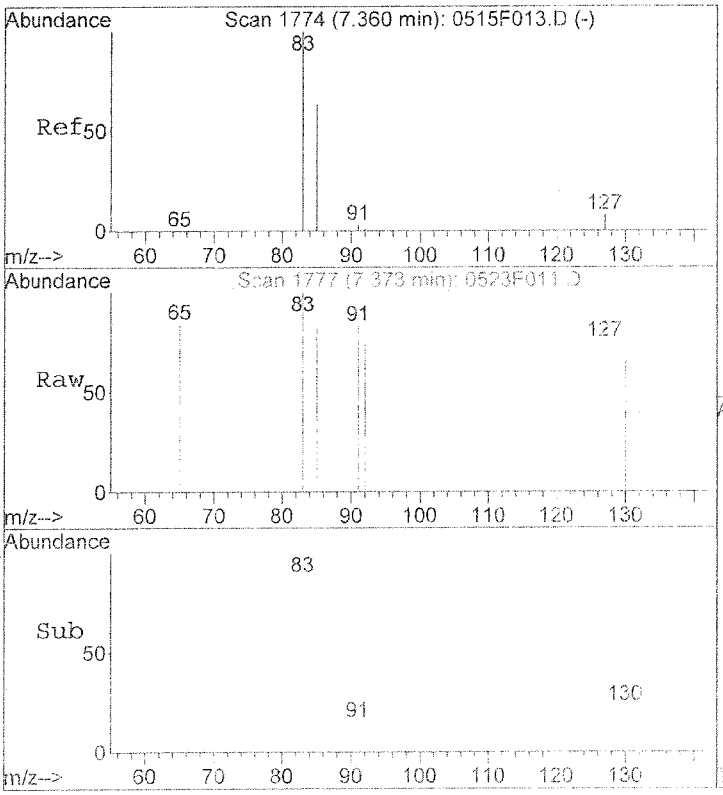


Conc: 2.16 ng/L
RT: 6.74 min Scan# 1627
Delta R.T. -0.03 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 95 Resp: 46

Ion	Ratio	Lower	Upper
95	100		
130	71.1	69.5	129.5
132	71.1	67.2	127.2

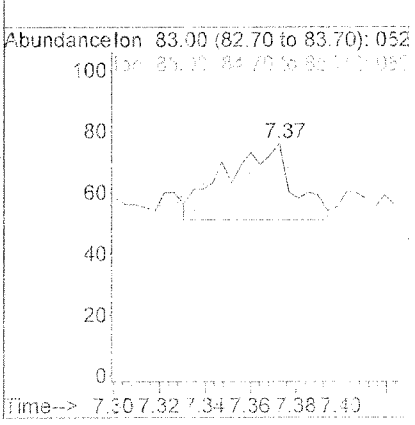


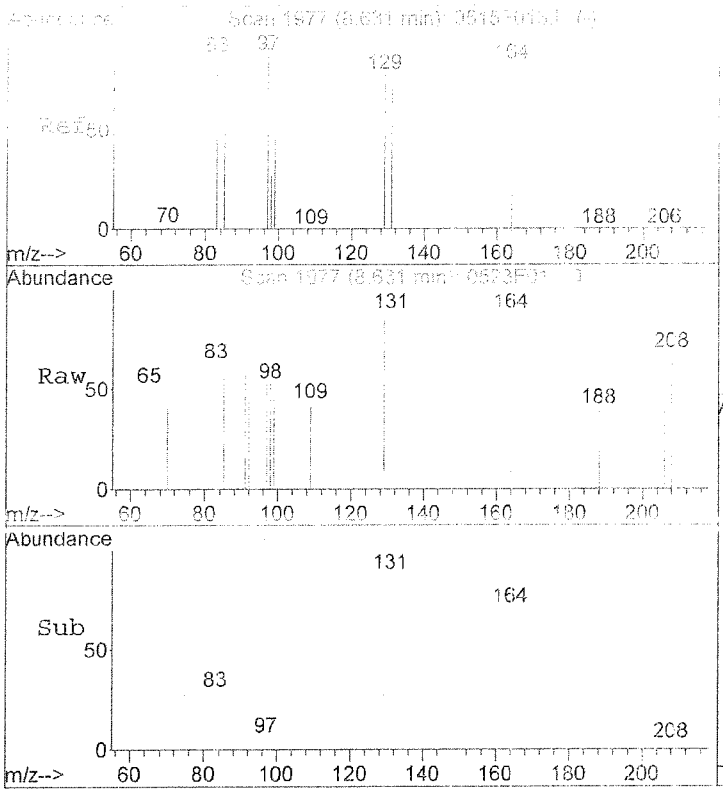


#14
Bromodichloromethane
Concen: 2.22 ng/L
RT: 7.37 min Scan# 1777
Delta R.T. 0.01 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 83 Resp: 51

Ion	Ratio	Lower	Upper
83	100		
85	13.6	33.1	93.1#
127	4.5	0.0	38.1

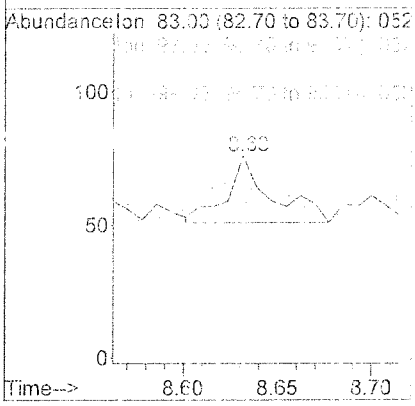


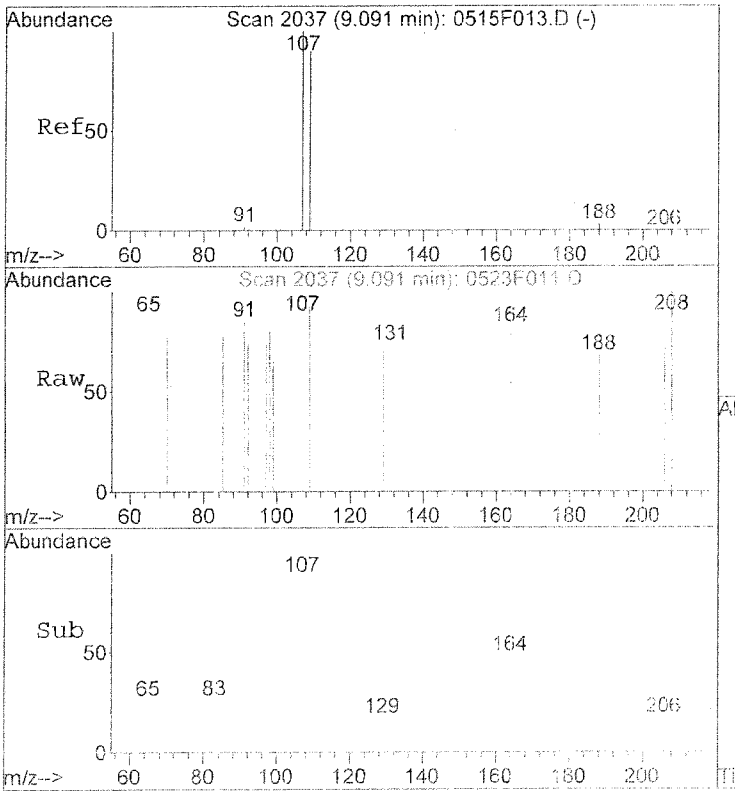


#18
1,2-Dibromoethane (EDB)
Concen: 3.18 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.03 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 83 Resp: 41

Ion	Ratio	Lower	Upper
83	100		
97	32.0	84.4	144.4#
85	52.0	32.3	92.3
99	12.0	39.4	99.4#

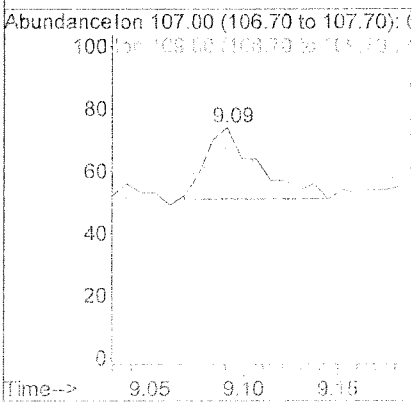


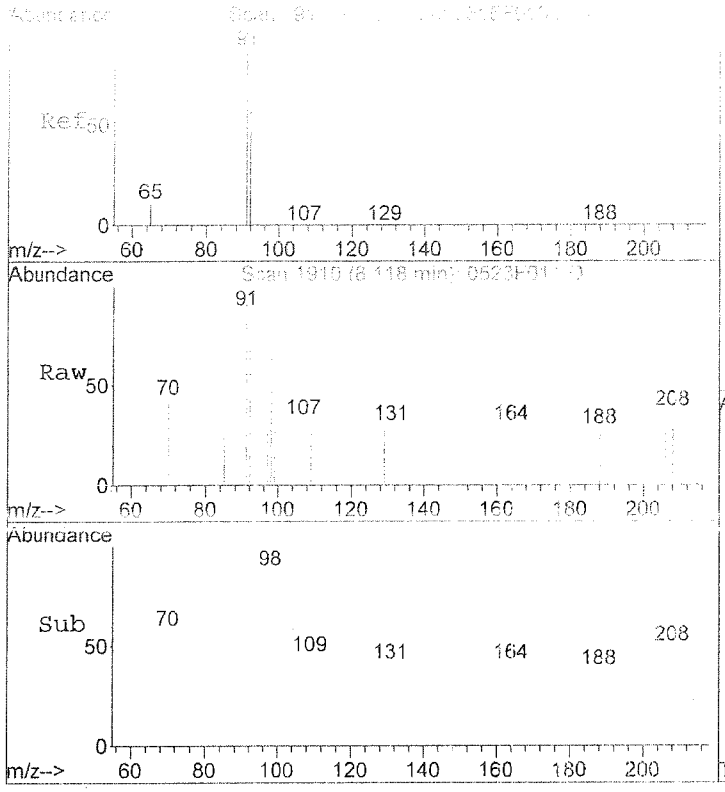


#18
1,2-Dibromoethane (EDB)
Concen: 3.49 ng/L
RT: 9.09 min Scan# 2037
Delta R.T. -0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion:107 Resp: 44

Ion	Ratio	Lower	Upper
107	100		
109	73.9	60.3	120.3
188	0.0	0.0	33.5

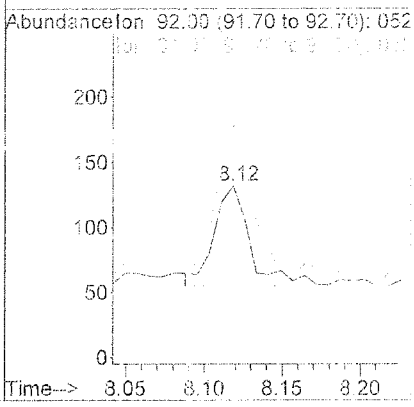


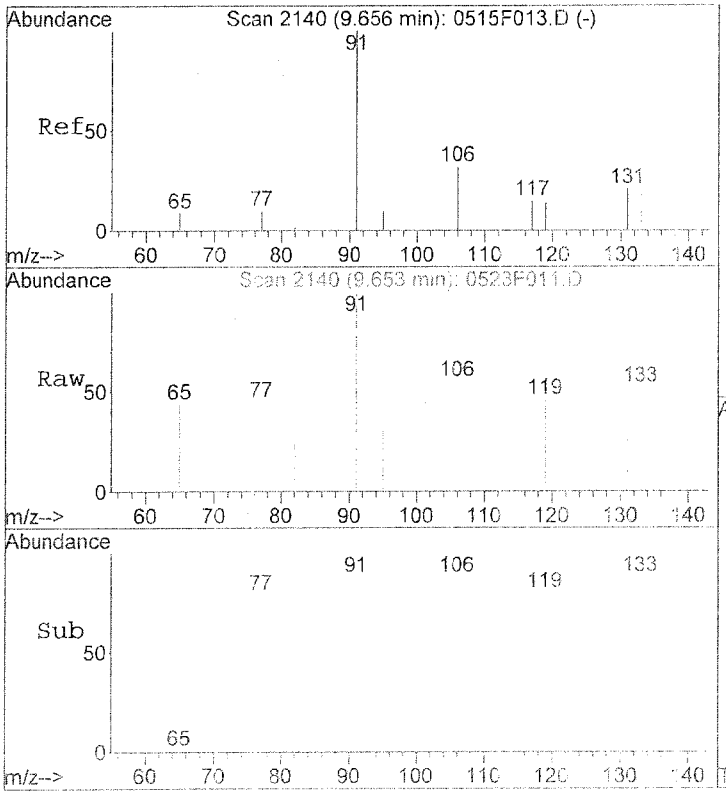


Concen: 4.10 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. -0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 92 Resp: 125

Ion	Ratio	Lower	Upper
92	100		
91	153.9	143.6	203.6
65	11.8	0.0	49.9

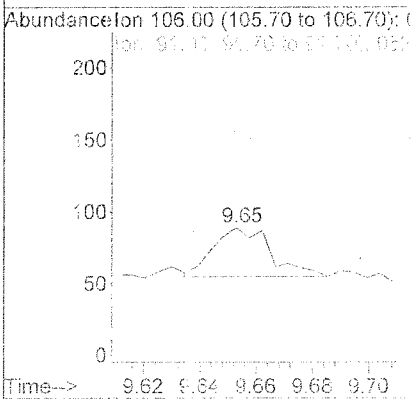


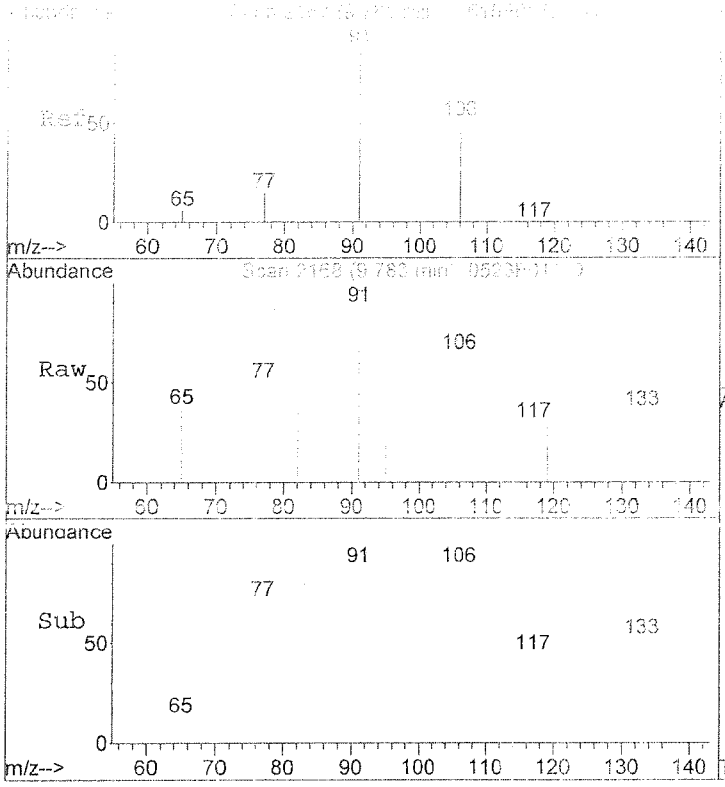


#21
Ethylbenzene
Concen: 3.50 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion:106 Resp: 48

Ion	Ratio	Lower	Upper
106	100		
91	273.5	285.7	345.7#
77	0.0	1.3	61.3#

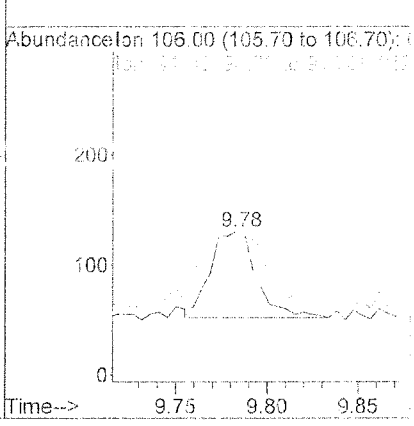


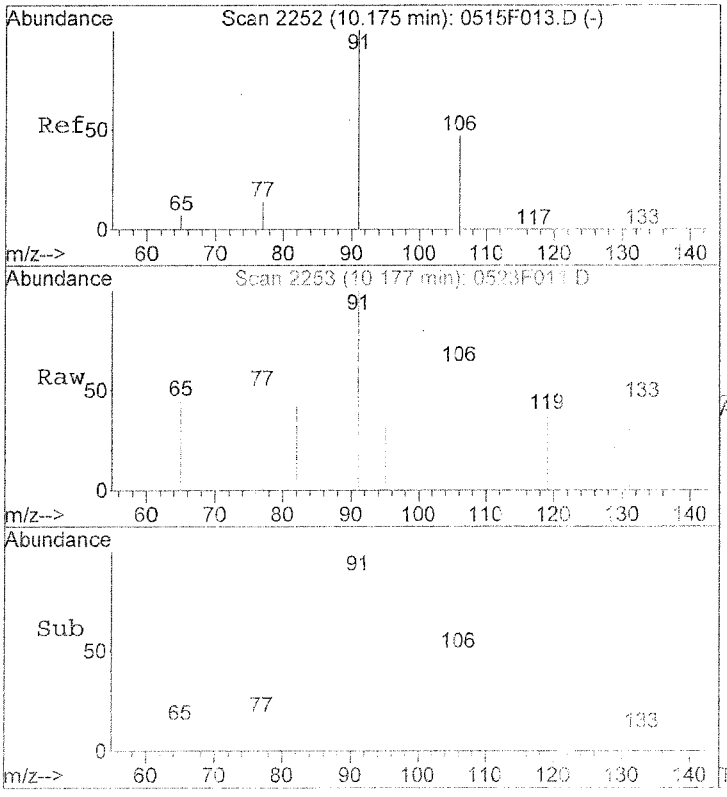


Conc: 8.40 ng/L
RT: 9.78 min Scan# 2168
Delta R.T. 0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion:106 Resp: 138

Ion	Ratio	Lower	Upper
106	100		
91	176.9	166.8	226.8
77	26.9	0.0	58.7

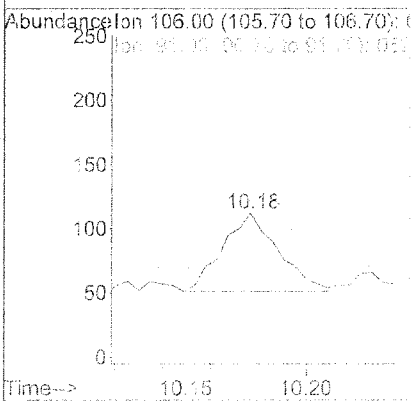


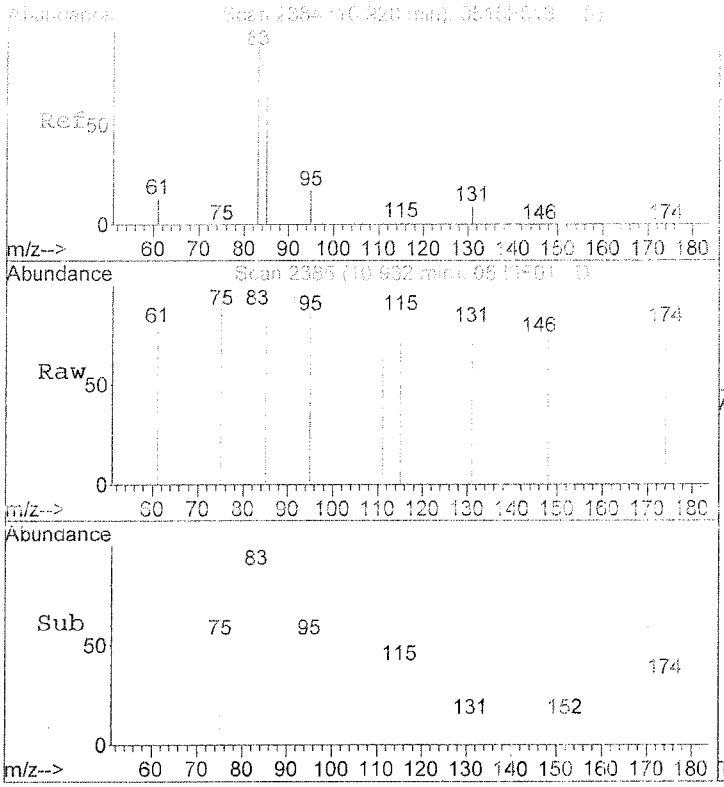


#24
o-Xylene
Concen: 6.12 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion:106 Resp: 98

Ion	Ratio	Lower	Upper
106	100		
91	190.2	184.3	244.3
65	31.1	0.0	44.6

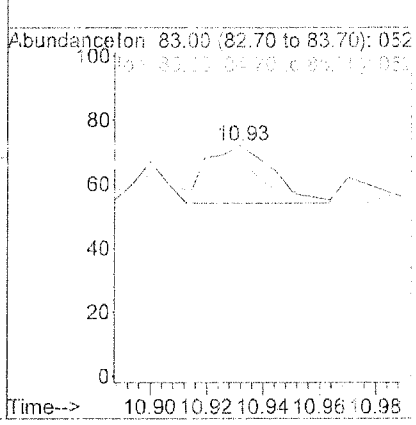


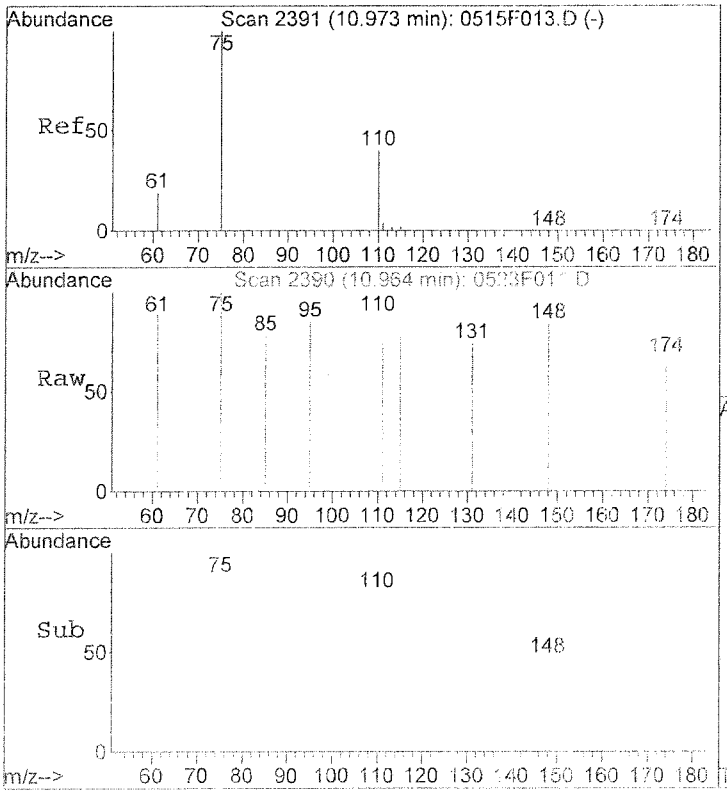


#27
1,2,3-Trichloropropane
Concen: 1.50 ng/L
RT: 10.93 min Scan# 2385
Delta R.T. 0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion: 83 Resp: 29

Ion	Ratio	Lower	Upper
83	100		
85	61.1	34.1	94.1
131	22.2	0.0	28.8

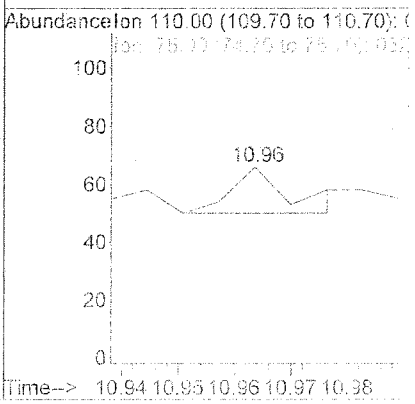


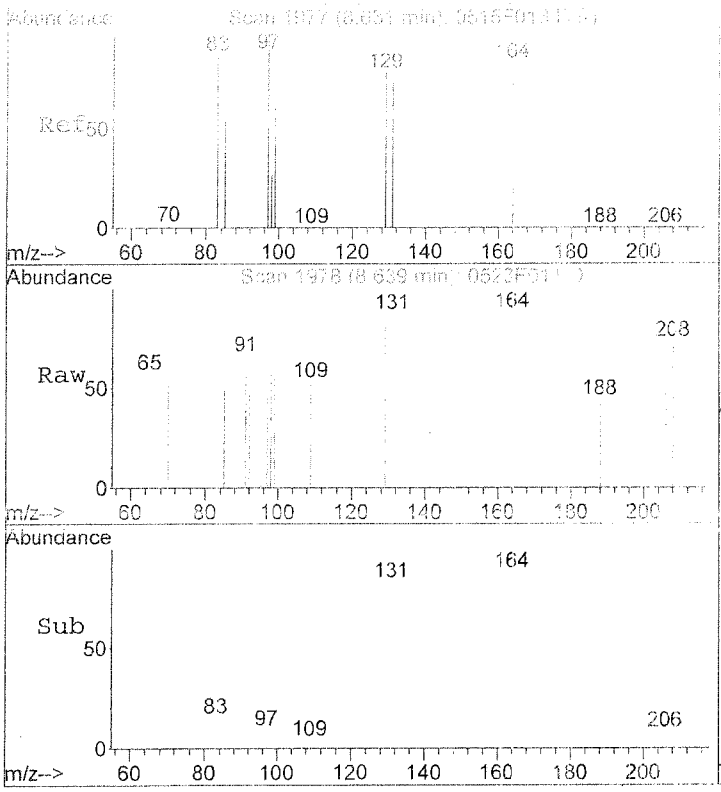


#27
1,2,3-Trichloropropane
Concen: 2.51 ng/L
RT: 10.96 min Scan# 2390
Delta R.T. -0.01 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion:110 Resp: 12

Ion	Ratio	Lower	Upper
110	100		
75	12.5	230.6	270.6#
61	43.8	40.1	80.1

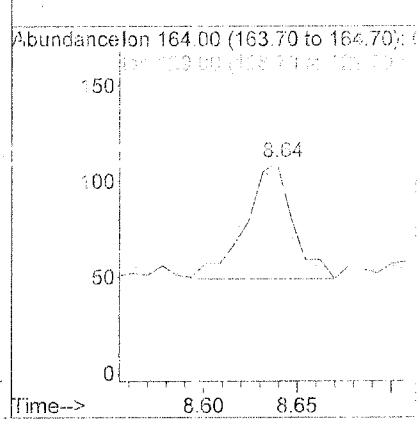


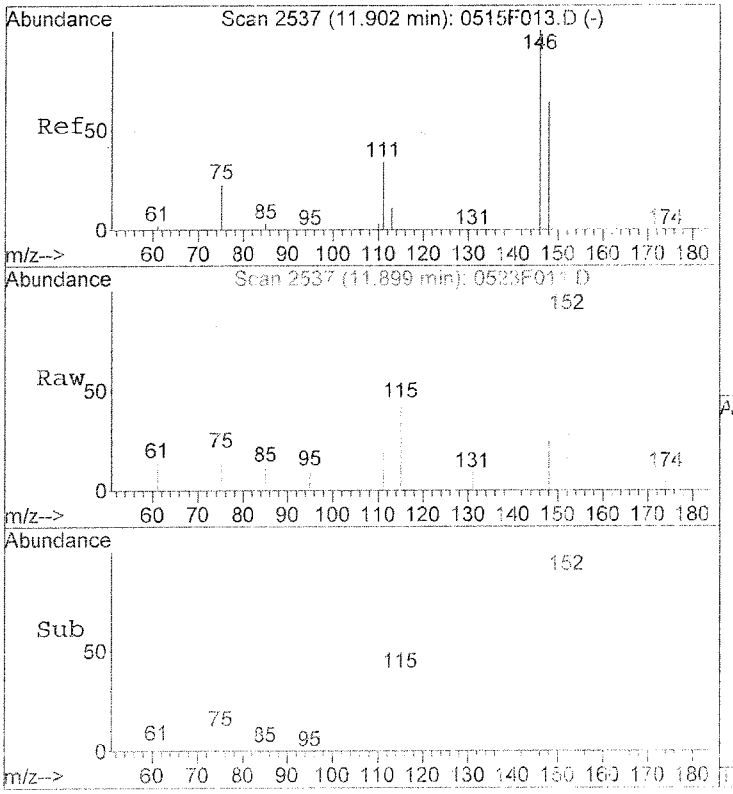


#30
Dichlorobenzene
Concen: 8.13 ng/L
RT: 8.64 min Scan# 1978
Delta R.T. -0.01 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion:164 Resp: 107

Ion	Ratio	Lower	Upper
164	100		
129	73.8	63.1	123.1
131	68.9	57.4	117.4

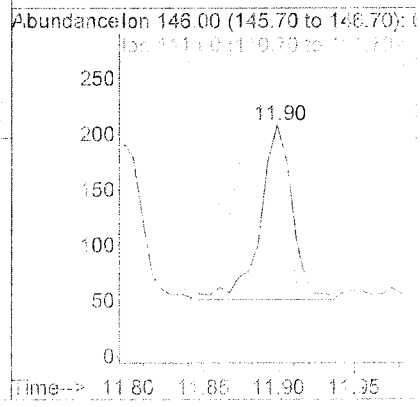




#30
1,4-Dichlorobenzene
Concen: 10.27 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0523F011.D
Acq: 23 May 2017 04:49 pm

Tgt Ion:146 Resp: 232

Ion	Ratio	Lower	Upper
146	100		
111	38.1	4.0	64.0
148	60.0	34.3	94.3



Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F024.D
Lab ID: KWG1704213-1 -- K1705066-007MS
RunType: MS
Matrix: WATER

Date Acquired: 05/23/2017 22:46
Date Quantitated: 05/24/2017 09:25
Batch ID: KWG1704209
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	MF
Continuing Calibration Recovery	Methylene Chloride	22.7	NA	20	
	Chloroform	21.8	NA	20	
	Carbon Tetrachloride	22.6	NA	20	

Primary Review: KWG

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F024.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 22:46	**Quant Date:**	05/24/2017 09:25	**Vial:**	17
Run Type:	MS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704213-1 -- K1705066-007MS			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/23/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605451	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:			
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D	**Quant based on Method**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	55371	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	39000	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	19574	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	20314	991.88	99	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	44992	1,019	102	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	14983	863.57	86	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25		0.00	50	55996	1,767	1770		
1	Vinyl Chloride	1.33		0.00	62	55772	1,811	1810		
1	1,1-Dichloroethene	2.43		0.00	96	31479	1,838	1840		
1	Methylene Chloride	3.08		0.00	84	43558	1,816	1820	J	
1	trans-1,2-Dichloroethene	3.37	0.01	0.00	96	35417	1,823	1820		
1	cis-1,2-Dichloroethene	4.96	0.01	0.00	96	33642	1,817	1820		
1	Chloroform	5.39		0.00	83	72874	1,830	1830		
1	Carbon Tetrachloride	5.67	0.01	0.00	117	50241	1,912	1910		
1	Benzene	5.97		0.00	78	131660	1,740	1740		
1	1,2-Dichloroethane	6.12		0.00	62	48805	1,729	1730		
1	Trichloroethene (TCE)	6.75	0.01	0.00	95	51657	2,775	2780		
1	Bromodichloromethane	7.36		0.00	83	46774	1,754	1750		
1	1,1,2-Trichloroethane	8.63		0.00	83	25582	1,714	1710		
1	Dibromochloromethane	8.98		0.00	129	31216	1,688	1690		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	25153	1,724	1720		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\052317_SIM\0523F024.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 22:46	**Quant Date:**	05/24/2017 09:25	**Vial:**	17
Run Type:	MS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704213-1 -- K1705066-007MS			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12	0.01	0.00	92	66266	1.936	1940		
2	Ethylbenzene	9.65	-0.01	0.00	106	27615	1.673	1670		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	34778	1.691	1690		
2	m,p-Xylenes	9.78		0.00	106	64606	3.419	3420		
2	o-Xylene	10.18		0.00	106	32577	1.690	1690		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	30987	1.687	1690		
2	1,2,3-Trichloropropane	10.97		0.00	110	9188	1.595	1600		
2	Tetrachloroethene (PCE)	8.63		0.00	164	27848	1.735	1740		
3	1,4-Dichlorobenzene	11.90		0.00	146	60098	1.701	1700		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Matrix Spike Summary Report

Matrix Spike Information ***ListJoinID :*** LJ18885

Data File:	J:\MS30\DATA\052317_SIM\0523F024.D	**Instrument:**	MS30
Lab ID:	KWG1704213-1	**Dilution:**	1.00
Client ID:	Matrix Spike	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/23/2017 22:46
Matrix:	WATER	**Quant Date:**	05/24/2017 09:25

Duplicate Matrix Spike Information

Data File:	J:\MS30\DATA\052317_SIM\0523F025.D	**Instrument:**	MS30
Lab ID:	KWG1704213-2	**Dilution:**	1.00
Client ID:	Duplicate Matrix Spike	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/23/2017 23:14
Matrix:	WATER	**Quant Date:**	05/24/2017 09:25

Sample Reference Information

Data File:	J:\MS30\DATA\052317_SIM\0523F021.D	**Instrument:**	MS30
Lab ID:	K1705066-007	**Dilution:**	1.00
Client ID:	OMS-28-GW06-11-S	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/23/2017 21:24
Matrix:	WATER	**Quant Date:**	05/24/2017 09:23

Parameter Name	Sample Result	Matrix Spike			Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Vinyl Chloride	ND	1810	2000	91	1650	2000	83	70-130	9	20
Dibromofluoromethane				99			99	77-123		
Toluene-d8				102			103	74-112		
4-Bromofluorobenzene				86			85	46-118		

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Data File : J:\MS30\DATA\052317_SIM\0523F024.D Vial: 17
Acq On : 23 May 2017 10:46 pm Operator: KR
Sample : K5066-007MS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 09:25:10 2017 Quant Results File: 051517MS30_8260SIM.RES

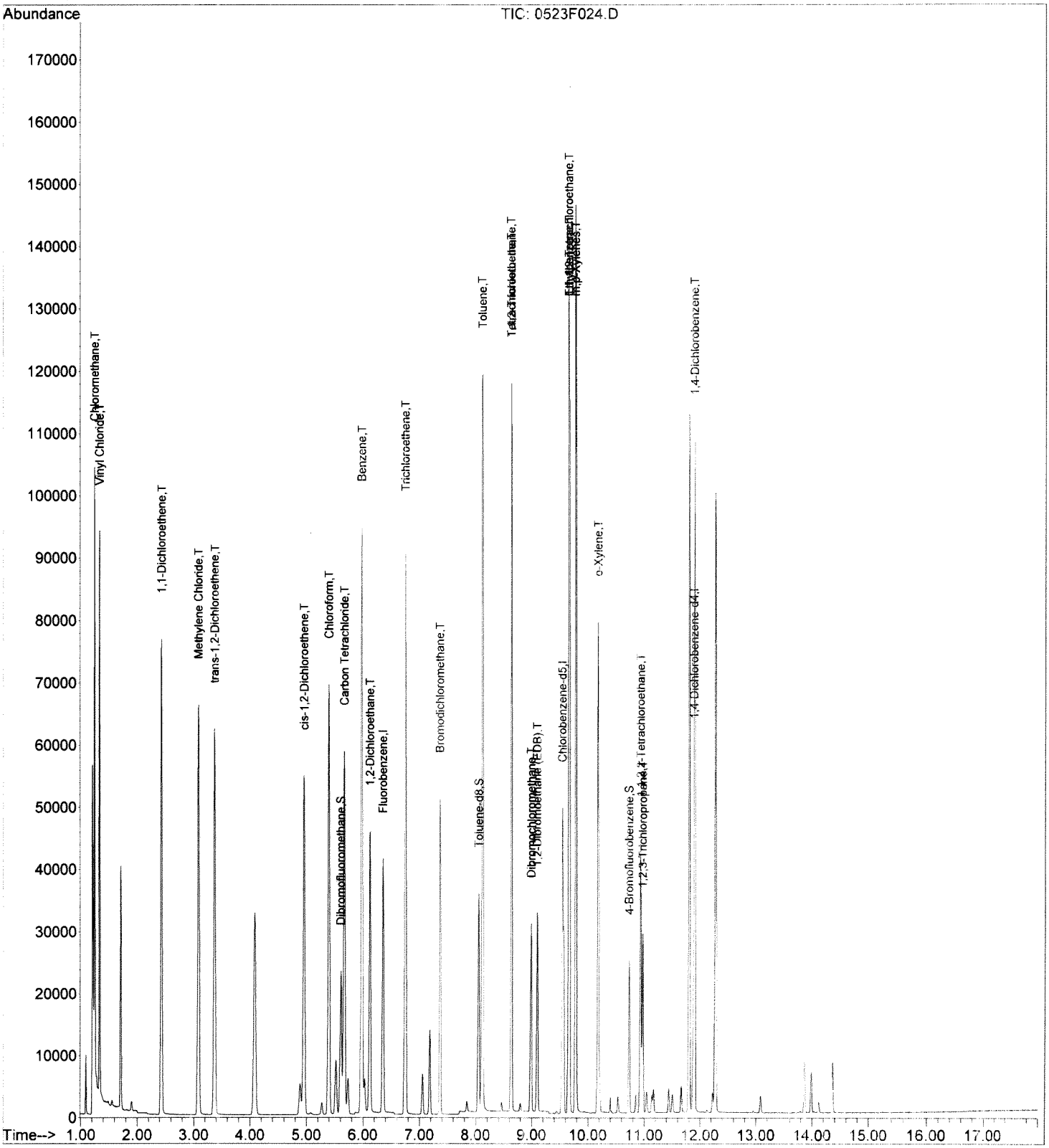
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	55371	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	39000	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	19574	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	20314	991.88	ng/L		0.00
Spiked Amount 1000.000			Recovery = 99.19%				
15) Toluene-d8	8.05	98	44992	1018.73	ng/L		0.00
Spiked Amount 1000.000			Recovery = 101.87%				
25) 4-Bromofluorobenzene	10.73	95	14983	863.57	ng/L		0.00
Spiked Amount 1000.000			Recovery = 86.36%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	55996	1766.82	ng/L		99
3) Vinyl Chloride	1.33	62	55772	1810.81	ng/L		97
4) 1,1-Dichloroethene	2.43	96	31479	1837.96	ng/L		98
5) Methylene Chloride	3.08	84	43558	1816.45	ng/L		98
6) trans-1,2-Dichloroethene	3.37	96	35417	1823.42	ng/L		98
7) cis-1,2-Dichloroethene	4.96	96	33642	1816.55	ng/L		99
8) Chloroform	5.39	83	72874	1830.16	ng/L		99
10) Carbon Tetrachloride	5.67	117	50241	1911.94	ng/L		99
11) Benzene	5.97	78	131660	1739.62	ng/L		99
12) 1,2-Dichloroethane	6.12	62	48805	1728.66	ng/L		99
13) Trichloroethene	6.75	95	51657	2775.21	ng/L		98
14) Bromodichloromethane	7.36	83	46774	1754.06	ng/L		99
16) 1,1,2-Trichloroethane	8.63	83	25582	1714.02	ng/L		99
17) Dibromochloromethane	8.98	129	31216	1687.85	ng/L		99
18) 1,2-Dibromoethane (EDB)	9.09	107	25153	1724.13	ng/L		97
20) Toluene	8.12	92	66266	1936.00	ng/L		100
21) Ethylbenzene	9.65	106	27615	1672.67	ng/L		96
22) 1,1,1,2-Tetrachloroethane	9.67	131	34778	1690.72	ng/L		99
23) m,p-Xylenes	9.78	106	64606	3418.59	ng/L		96
24) o-Xylene	10.18	106	32577	1690.12	ng/L		96
26) 1,1,2,2-Tetrachloroethane	10.93	83	30987	1687.07	ng/L		99
27) 1,2,3-Trichloropropane	10.97	110	9188	1595.44	ng/L	#	87
28) Tetrachloroethene	8.63	164	27848	1735.43	ng/L		98
30) 1,4-Dichlorobenzene	11.90	146	60098	1701.48	ng/L		97

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F024.D Vial: 17
Acq On : 23 May 2017 10:46 pm Operator: KR
Sample : K5066-007MS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:25 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Exception Report

Data File: J:\MS30\DATA\052317_SIM\0523F025.D
Lab ID: KWG1704213-2 -- K1705066-007DMS
RunType: DMS
Matrix: WATER

Date Acquired: 05/23/2017 23:14
Date Quantitated: 05/24/2017 09:25
Batch ID: KWG1704209
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	
Continuing Calibration Recovery	Methylene Chloride	22.7	NA	20	
	Chloroform	21.8	NA	20	
	Carbon Tetrachloride	22.6	NA	20	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\052317_SIM\0523F025.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 23:14	**Quant Date:**	05/24/2017 09:25	**Vial:**	17
Run Type:	DMS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704213-2 -- K1705066-007DMS			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/23/2017

Analysis Lot:	KWG1704209	**Prep Lot:**	KWG1704213	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1605452	**Prep Date:**	05/23/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D			**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\052317_SIM\0523F011.D			**Quant based on Method**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	57242	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	40926	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	20519	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	20953	989.64	99	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	46870	1,027	103	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	15549	854.02	85	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25		0.00	50	53301	1,627	1630		
1	Vinyl Chloride	1.33		0.00	62	52657	1,654	1650		
1	1,1-Dichloroethene	2.43		0.00	96	30394	1,717	1720		
1	Methylene Chloride	3.08		0.00	84	42893	1,730	1730	J	
1	trans-1,2-Dichloroethene	3.37	0.01	0.00	96	33793	1,683	1680		
1	cis-1,2-Dichloroethene	4.95		0.00	96	32535	1,699	1700		
1	Chloroform	5.39		0.00	83	70541	1,714	1710		
1	Carbon Tetrachloride	5.66		0.00	117	48163	1,773	1770		
1	Benzene	5.97		0.00	78	127236	1,626	1630		
1	1,2-Dichloroethane	6.12		0.00	62	47747	1,636	1640		
1	Trichloroethene (TCE)	6.75	0.01	0.00	95	49902	2,593	2590		
1	Bromodichloromethane	7.36		0.00	83	45773	1,660	1660		
1	1,1,2-Trichloroethane	8.63		0.00	83	25055	1,624	1620		
1	Dibromochloromethane	8.98		0.00	129	30268	1,583	1580		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	24530	1,626	1630		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\052317_SIM\0523F025.D			**Instrument:**	MS30
Acqu Date:	05/23/2017 23:14	**Quant Date:**	05/24/2017 09:25	**Vial:**	17
Run Type:	DMS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704213-2 -- K1705066-007DMS			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12	0.01	0.00	92	64179	1.787	1790		
2	Ethylbenzene	9.65	-0.01	0.00	106	26589	1.535	1530		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	33525	1.553	1550		
2	m,p-Xylenes	9.78		0.00	106	62040	3.128	3130		
2	o-Xylene	10.18		0.00	106	31159	1.540	1540		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	29776	1.545	1540		
2	1,2,3-Trichloropropane	10.97		0.00	110	9078	1.502	1500		
2	Tetrachloroethene (PCE)	8.63		0.00	164	26948	1.600	1600		
3	1,4-Dichlorobenzene	11.90		0.00	146	57369	1.549	1550		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F025.D Vial: 17
Acq On : 23 May 2017 11:14 pm Operator: KR
Sample : K5066-007DMS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 09:25:36 2017 Quant Results File: 051517MS30_8260SIM.RES

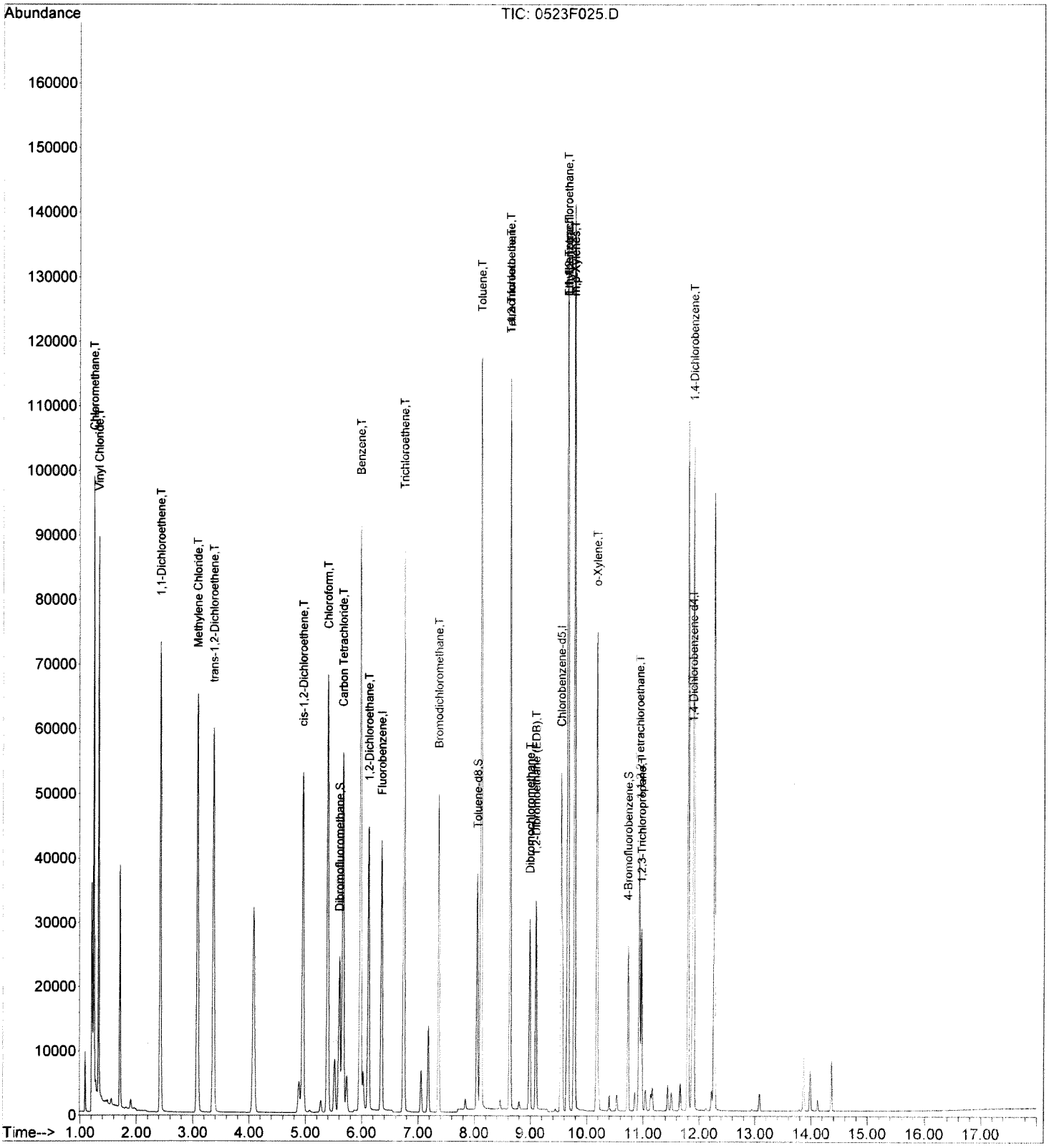
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	57242	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	40926	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	20519	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20953	989.64	ng/L	0.00
Spiked Amount 1000.000			Recovery = 98.96%			
15) Toluene-d8	8.05	98	46870	1026.56	ng/L	0.00
Spiked Amount 1000.000			Recovery = 102.66%			
25) 4-Bromofluorobenzene	10.73	95	15549	854.02	ng/L	0.00
Spiked Amount 1000.000			Recovery = 85.40%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	53301	1626.81	ng/L	99
3) Vinyl Chloride	1.33	62	52657	1653.79	ng/L	98
4) 1,1-Dichloroethene	2.43	96	30394	1716.61	ng/L	97
5) Methylene Chloride	3.08	84	42893	1730.26	ng/L	99
6) trans-1,2-Dichloroethene	3.37	96	33793	1682.94	ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	32535	1699.35	ng/L	97
8) Chloroform	5.39	83	70541	1713.66	ng/L	99
10) Carbon Tetrachloride	5.66	117	48163	1772.95	ng/L	99
11) Benzene	5.97	78	127236	1626.22	ng/L	99
12) 1,2-Dichloroethane	6.12	62	47747	1635.91	ng/L	98
13) Trichloroethene	6.75	95	49902	2593.30	ng/L	97
14) Bromodichloromethane	7.36	83	45773	1660.41	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	25055	1623.84	ng/L	99
17) Dibromochloromethane	8.98	129	30268	1583.10	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	24530	1626.47	ng/L	97
20) Toluene	8.12	92	64179	1786.79	ng/L	99
21) Ethylbenzene	9.65	106	26589	1534.73	ng/L	94
22) 1,1,1,2-Tetrachloroethane	9.67	131	33525	1553.10	ng/L	99
23) m,p-Xylenes	9.78	106	62040	3128.32	ng/L	98
24) o-Xylene	10.18	106	31159	1540.47	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	29776	1544.84	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	9078	1502.16	ng/L	93
28) Tetrachloroethene	8.63	164	26948	1600.31	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	57369	1549.41	ng/L	97

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\052317_SIM\0523F025.D Vial: 17
Acq On : 23 May 2017 11:14 pm Operator: KR
Sample : K5066-007DMS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 9:25 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File: J:\MS30\DATA\052317_SIM\0523F067.D
Lab ID: KWG1704213-3
RunType: LCS
Matrix: WATER

Date Acquired: 05/23/2017 15:43
Date Quantitated: 05/23/2017 15:59
Batch ID: KWG 704209
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NC
Continuing Calibration Recovery	Methylene Chloride	22.7	NA	20	J
	Chloroform	21.8	NA	20	J
	Carbon Tetrachloride	22.6	NA	20	CCV OK

Primary Review: [signature]

Secondary Review: [signature]

Data File:	J:\MS30\DATA\052317_SIM\0523F007.D			Instrument:	MS30
Acqu Date:	05/23/2017 15:30	Quant Date:	05/23/2017 15:31	Vial:	3
Run Type:	LCS	Method/Joint ID:	MJ1547	Dilution:	1.0
Lab ID:	KWG1704213-3			Soln Conc. Units:	ng/L

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8260C VOC SIM F	Collect Date:		Receive Date:	05/23/2017

Analysis Lot:	KWG1704209	Prep Lot:	KWG1704213	Report Group:	
Analysis Method:	8260C SIM	Prep Method:	EPA 5030B		
		Prep Date:	05/23/2017		
Prep Ref:	1605453				

Quant Method:	J:\MS27\METHODS\051517MS30_8			Calibration ID:	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D			Method ID:	MJ1547
MB Ref:				Quant based on	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	49185	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	35469	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.87	-0.01	152	18857	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	18691	1,027	103	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	40769	1,039	104	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	13886	880.02	88	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25		0.00	50	54998	1,954	1950		
1	Vinyl Chloride	1.33		0.00	62	53986	1,973	1970		
1	1,1-Dichloroethene	2.43		0.00	96	30316	1,993	1990		
1	Methylene Chloride	3.08		0.00	84	47632	2,236	2240		
1	trans-1,2-Dichloroethene	3.36		0.00	96	34645	2,008	2010		
1	cis-1,2-Dichloroethene	4.95		0.00	96	32430	1,971	1970		
1	Chloroform	5.39		0.00	83	78848	2,229	2230		
1	Carbon Tetrachloride	5.66		0.00	117	50278	2,154	2150		
1	Benzene	5.97		0.00	78	126797	1,886	1890		
1	1,2-Dichloroethane	6.12		0.00	62	49075	1,957	1960		
1	Trichloroethene (TCE)	6.74		0.00	95	32771	1,982	1980		
1	Bromodichloromethane	7.36		0.00	83	49078	2,072	2070		
1	1,1,2-Trichloroethane	8.63		0.00	83	25213	1,902	1900		
1	Dibromochloromethane	8.98		0.00	129	31975	1,946	1950		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	24679	1,904	1900		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
+: Insufficient ion ratio to confirm compound
e: Result > MRL, but MRL less than low point of ICAL
c: Check for co-elution

Data File:	J:\MS30\DATA\052317_SIM\0523F007.D			Dil Factor:	1.0
Acqu Date:	05/23/2017 15:10	Quant Date:	05/23/2017 15:31	Vial:	2
Run Type:	LCS	Method ID:	M11547	Dil Factor:	1.0
Lab ID:	KWG1704213-3			Final Conc Units:	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11		0.00	92	53195	1.709	1710		
2	Ethylbenzene	9.65	-0.01	0.00	106	26554	1.769	1770		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	36818	1.968	1970		
2	m,p-Xylenes	9.78		0.00	106	62419	3.632	3630		
2	o-Xylene	10.18		0.00	106	31642	1.805	1810		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	28479	1.705	1700		
2	1,2,3-Trichloropropane	10.97		0.00	110	8702	1.661	1660		
2	Tetrachloroethene (PCE)	8.63		0.00	164	27705	1.898	1900		
3	1,4-Dichlorobenzene	11.90		0.00	146	61865	1.818	1820		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
I: Insufficient ion formation to perform ratio acceptance
e: Result > MRL, but MRL less than low point of ICAL
c: check for co-elution

Lab Control Spike Information

Data File:	J:\MS30\DATA\052317_SIM\0523F007.D	Instrument:	MS30
Lab ID:	KWG1704213-3	Dilution:	1
Client ID:	Lab Control Sample	Units:	ng/L
Prod Code:	8260C VOC SIM F	Acqu Date:	05/23/2017 15:10
Matrix:	WATER	Quant Date:	05/23/2017 15:39

Duplicate Lab Control Spike Information

Data File:	J:\MS30\DATA\052317_SIM\0523F008.D	**Instrument:**	MS30
Lab ID:	KWG1704213-4	**Dilution:**	1
Client ID:	Duplicate Lab Control Sample	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/23/2017 15:38
Matrix:	WATER	**Quant Date:**	05/23/2017 16:00

	LCS			DLCS					
Parameter Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	1970	2000	99	1720	2000	86	70-136	14	20

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Lab Control Spike Information

Data File:	J:\MS30\DATA\052317_SIM\0523F007.D	Instrument:	MS30
Lab ID:	KWG1704213-3	Dilution:	1
Client ID:	Lab Control Sample	Units:	ng/L
Prod Code:	8260C VOC SIM F	Acqu Date:	05/23/2017 15:10
Matrix:	WATER	Quant Date:	05/23/2017 15:39

Duplicate Lab Control Spike Information

Data File:	J:\MS30\DATA\052317_SIM\0523F008.D	**Instrument:**	MS30
Lab ID:	KWG1704213-4	**Dilution:**	1
Client ID:	Duplicate Lab Control Sample	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/23/2017 15:38
Matrix:	WATER	**Quant Date:**	05/23/2017 16:00

	LCS			DLCS					
Parameter Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	1970	2000	99	1720	2000	86	70-136	14	20
1,1-Dichloroethene	1990	2000	100	1770	2000	89	75-133	12	20
Carbon Tetrachloride	2150	2000	108	1910	2000	96	71-141	12	20
Benzene	1890	2000	94	1700	2000	85	80-122	11	20
1,2-Dichloroethane	1960	2000	98	1830	2000	91	75-124	7	20
Trichloroethene (TCE)	1980	2000	99	1820	2000	91	75-124	9	20
Toluene	1710	2000	85	1580	2000	79	76-120	8	20
Tetrachloroethene (PCE)	1900	2000	95	1730	2000	86	74-131	9	20
1,2-Dibromoethane (EDB)	1900	2000	95	1830	2000	92	72-119	4	20
m,p-Xylenes	3630	4000	91	3320	4000	83	72-136	9	20
o-Xylene	1810	2000	90	1660	2000	83	72-135	8	20
1,1,2,2-Tetrachloroethane	1700	2000	85	1710	2000	86	70-128	0	20
1,2,3-Trichloropropane	1660	2000	83	1730	2000	86	70-130	4	20

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Data File : J:\MS30\DATA\052317_SIM\05 23 07.D
Acq On : 23 May 2017 03:10 pm
Sample : LCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 23 15:39:44 2017

Vial: 5
Operator: KR
Inst : MS30
Multiplier: 1.00
Quant Results File: 051517MS30_8260SIM.RES

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	49185	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	35469	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	18857	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	18691	1027.41	ng/L	0.00
Spiked Amount 1000.000			Recovery = 102.74%			
15) Toluene-d8	8.05	98	40769	1039.21	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.92%			
25) 4-Bromofluorobenzene	10.73	95	13886	880.02	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.00%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	54998	1953.58	ng/L	99
3) Vinyl Chloride	1.33	62	53986	1973.28	ng/L	99
4) 1,1-Dichloroethene	2.43	96	30316	1992.68	ng/L	100
5) Methylene Chloride	3.08	84	47632	2236.17	ng/L	97
6) trans-1,2-Dichloroethene	3.36	96	34645	2008.00	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	32430	1971.34	ng/L	98
8) Chloroform	5.39	83	78848	2229.24	ng/L	99
10) Carbon Tetrachloride	5.66	117	50278	2153.99	ng/L	100
11) Benzene	5.97	78	126797	1886.08	ng/L	98
12) 1,2-Dichloroethane	6.12	62	49075	1956.84	ng/L	98
13) Trichloroethene	6.74	95	32771	1982.01	ng/L	97
14) Bromodichloromethane	7.36	83	49078	2071.93	ng/L	98
16) 1,1,2-Trichloroethane	8.63	83	25213	1901.76	ng/L	96
17) Dibromochloromethane	8.98	129	31975	1946.34	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	24679	1904.40	ng/L	97
20) Toluene	8.11	92	53195	1708.84	ng/L	97
21) Ethylbenzene	9.65	106	26554	1768.52	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	36818	1968.08	ng/L	99
23) m,p-Xylenes	9.78	106	62419	3631.67	ng/L	98
24) o-Xylene	10.18	106	31642	1805.03	ng/L	95
26) 1,1,2,2-Tetrachloroethane	10.93	83	28479	1704.83	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	8702	1661.48	ng/L	92
28) Tetrachloroethene	8.63	164	27705	1898.40	ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	61865	1818.10	ng/L	98

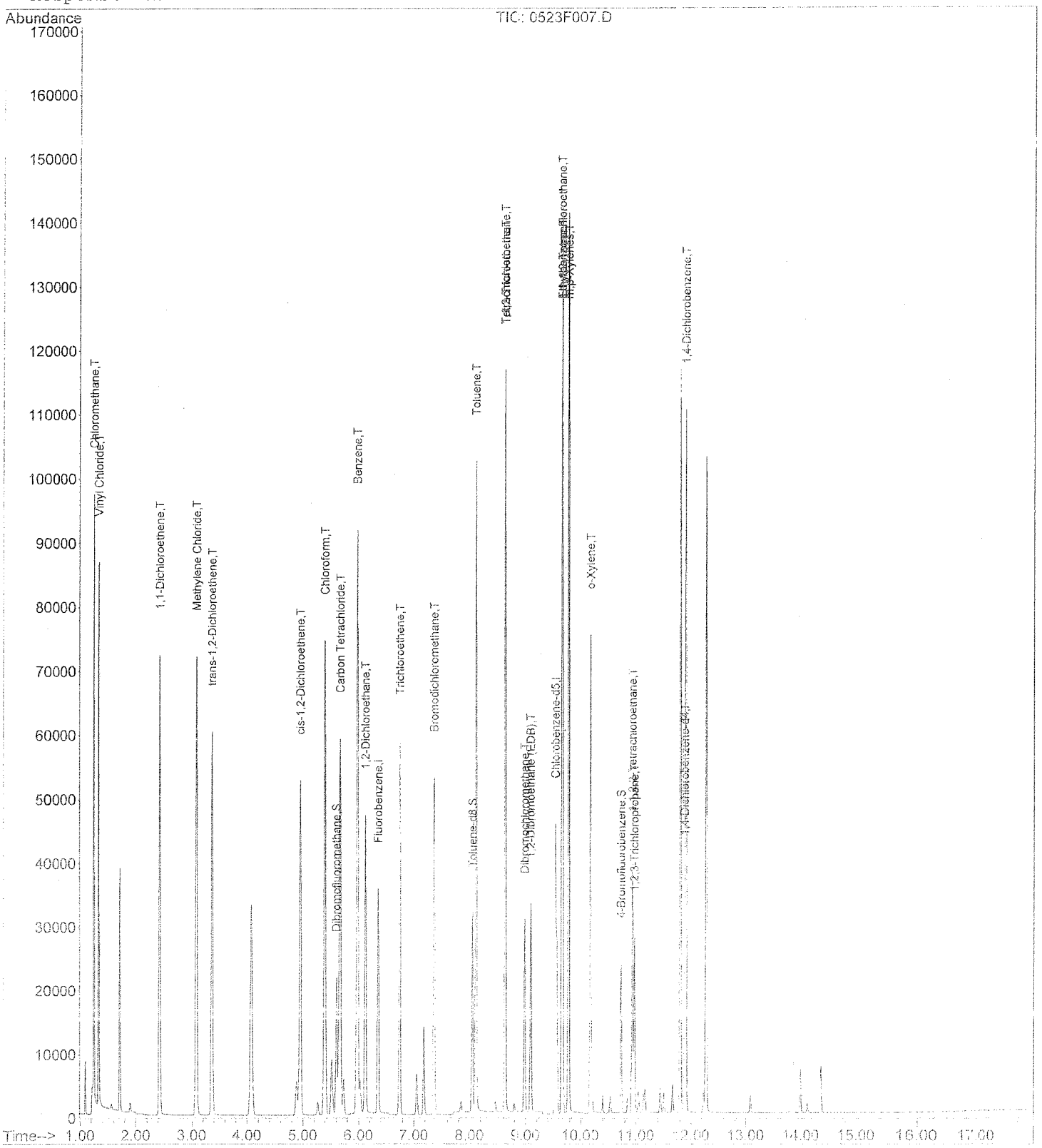
(#) = qualifier out of range (m) = manual integration
0523F007.D 051517MS30_8260SIM.M Tue May 23 15:40:04 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM_0523F007.D
Acq On : 23 May 2017 03:10 pm
Sample : LCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 23 15:39 2017

Operator: KR
Ins : MS30
Multiplr: 1.00

Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File: J:\MS30\DATA\052317_SIM\0523F008.D
Lab ID: KWG1704213-4
RunType: DLCS
Matrix: WATER

Date Acquired: 05/23/2017 15:58
Date Quantitated: 05/23/2017 16:03
Batch ID: KWG1704209
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NC
Continuing Calibration Recovery	Methylene Chloride	22.7	NA	20	
	Chloroform	21.8	NA	20	
	Carbon Tetrachloride	22.6	NA	20	CCV 9d

Primary Review: [signature]

Secondary Review: [signature]

Data File:	J:\MS30\DATA\052317_SIM\0523F008.D			Instrument:	MS30
Acqu Date:	05/23/2017 15:38	Quant Date:	05/23/2017 16:01	Vial:	2
Run Type:	DLCS	MethodJobID:	MJ1547	Dilution:	1.0
Lab ID:	KWG1704213-4			Soln Conc. Units:	ng/L

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8260C VOC SIM F	Collect Date:		Receive Date:	05/23/2017

Analysis Lot:	KWG1704209	Prep Lot:	KWG1704213	Report Group:	
Analysis Method:	8260C SIM	Prep Method:	EPA 5030B		
		Prep Date:	05/23/2017		
Prep Ref:	1605454				

Quant Method:	J:\MS27\METHODS\031517MS30_8	Calibration ID:	CAL15073
Title:			
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	Method ID:	MJ1547
MB Ref:		Quant based on	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	52837	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37197	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	18911	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19767	1,011	101	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	42746	1,014	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	14161	855.76	86	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25		0.00	50	51754	1,711	1710		
1	Vinyl Chloride	1.33		0.00	62	50407	1,715	1720		
1	1,1-Dichloroethene	2.43		0.00	96	28995	1,774	1770		
1	Methylene Chloride	3.08		0.00	84	46400	2,028	2030		
1	trans-1,2-Dichloroethene	3.37	0.01	0.00	96	33278	1,795	1800		
1	cis-1,2-Dichloroethene	4.95		0.00	96	31550	1,785	1790		
1	Chloroform	5.39		0.00	83	75456	1,986	1990		
1	Carbon Tetrachloride	5.66		0.00	117	47931	1,912	1910		
1	Benzene	5.97		0.00	78	122516	1,696	1700		
1	1,2-Dichloroethane	6.12		0.00	62	49297	1,830	1830		
1	Trichloroethene (TCE)	6.75	0.01	0.00	95	32286	1,818	1820		
1	Bromodichloromethane	7.36		0.00	83	47799	1,878	1880		
1	1,1,2-Trichloroethane	8.63		0.00	83	26217	1,843	1840		
1	Dibromochloromethane	8.98		0.00	129	32407	1,836	1840		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	25504	1,832	1830		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result > MRL, but MRL less than low point of ICAL
c: Checked for co-elution

Data File:	[illegible]			Test Type:	[illegible]
Acqu Date:	05/23/2017 15:38	Quant Date:	05/[illegible]	Vial:	3
Run Type:	DLCS	MethodJoinID:	MJ1547	Dilution:	1.0
Lab ID:	KWG17042[illegible]			Soln Conc Units:	ug/L

Target Compounds Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12	0.01	0.00	92	51555	1.579	1580		
2	Ethylbenzene	9.65	-0.01	0.00	106	25381	1.612	1610		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	35543	1.812	1810		
2	m,p-Xylenes	9.78		0.00	106	59869	3.321	3320		
2	o-Xylene	10.18		0.00	106	30555	1.662	1660		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	29972	1.711	1710		
2	1,2,3-Trichloropropane	10.97		0.00	110	9477	1.725	1730		
2	Tetrachloroethene (PCE)	8.63		0.00	164	26451	1.728	1730		
3	1,4-Dichlorobenzene	11.90		0.00	146	58453	1.713	1710		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
a: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
I: Insufficient ion ratio to establish confirmation
c: Result > MRL, but MRL less than low point of ICAL
c: close for concentration

Data File : J:\MS30\DATA\051517_SIM\0523F008.D Vial: 8
Acq On : 23 May 2017 03:38 pm Operator: RR
Sample : DLCS Inst : MS30
Misc : Multiplier: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 16:00:43 2017 Quant Results File: 051517MS30_8260SIM.RES

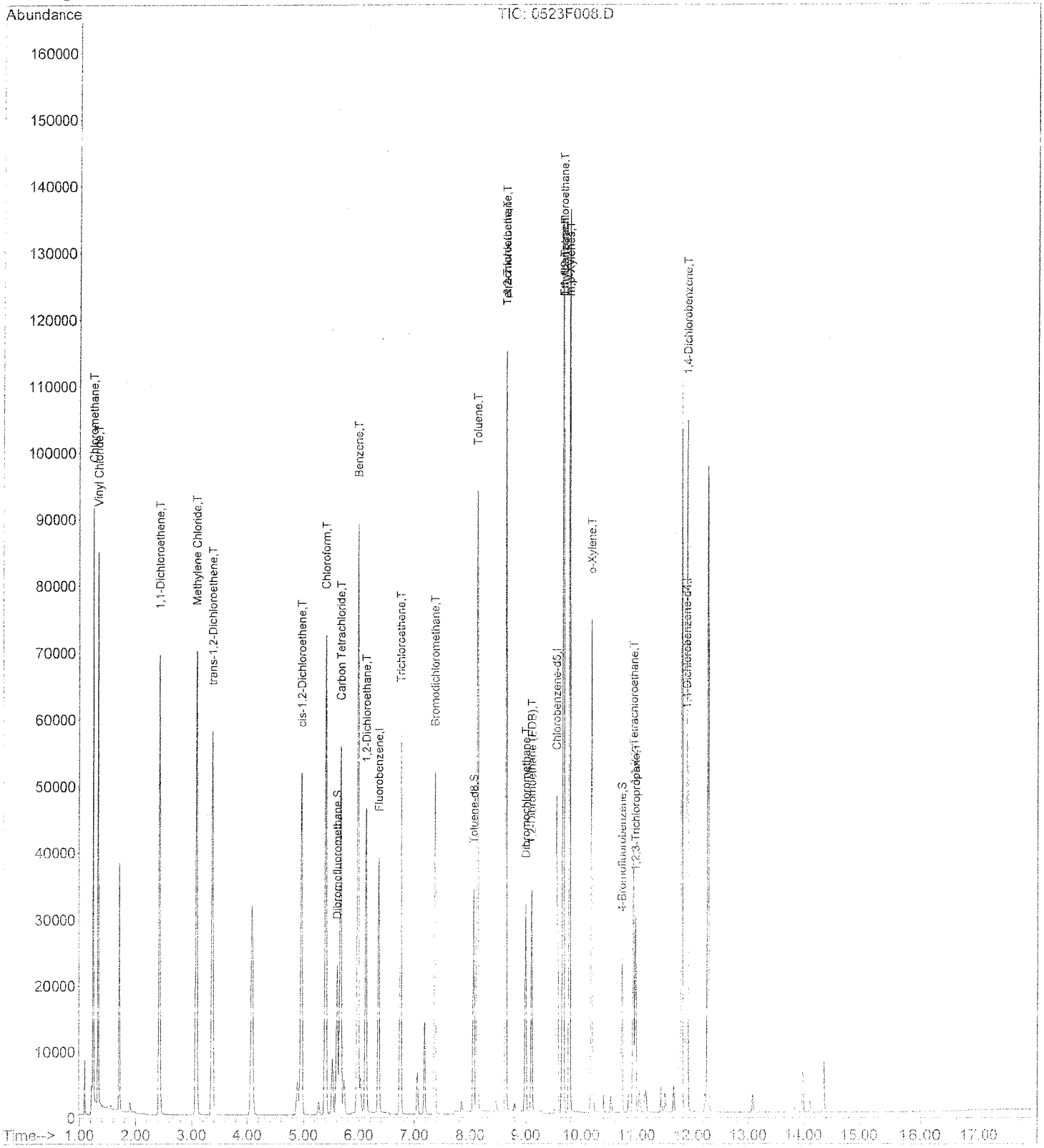
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	52837	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37197	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	18911	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19767	1011.46	ng/L	0.00
Spiked Amount 1000.000			Recovery = 101.15%			
15) Toluene-d8	8.05	98	42746	1014.29	ng/L	0.00
Spiked Amount 1000.000			Recovery = 101.43%			
25) 4-Bromofluorobenzene	10.73	95	14161	855.76	ng/L	0.00
Spiked Amount 1000.000			Recovery = 85.58%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	51754	1711.29	ng/L	100
3) Vinyl Chloride	1.33	62	50407	1715.11	ng/L	99
4) 1,1-Dichloroethene	2.43	96	28995	1774.12	ng/L	98
5) Methylene Chloride	3.08	84	46400	2027.77	ng/L	97
6) trans-1,2-Dichloroethene	3.37	96	33278	1795.46	ng/L	98
7) cis-1,2-Dichloroethene	4.95	96	31550	1785.29	ng/L	99
8) Chloroform	5.39	83	75456	1985.88	ng/L	99
10) Carbon Tetrachloride	5.66	117	47931	1911.51	ng/L	100
11) Benzene	5.97	78	122516	1696.44	ng/L	99
12) 1,2-Dichloroethane	6.12	62	49297	1829.82	ng/L	98
13) Trichloroethene	6.75	95	32286	1817.71	ng/L	97
14) Bromodichloromethane	7.36	83	47799	1878.46	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	26217	1840.81	ng/L	100
17) Dibromochloromethane	8.98	129	32407	1836.29	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	25504	1832.03	ng/L	97
20) Toluene	8.12	92	51555	1579.22	ng/L	99
21) Ethylbenzene	9.65	106	25381	1611.87	ng/L	94
22) 1,1,1,2-Tetrachloroethane	9.67	131	35543	1811.66	ng/L	99
23) m,p-Xylenes	9.78	106	59869	3321.48	ng/L	96
24) o-Xylene	10.18	106	30555	1662.05	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	29972	1710.90	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	9477	1725.39	ng/L	95
28) Tetrachloroethene	8.63	164	26451	1728.27	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	58453	1712.93	ng/L	98

(#) = qualifier out of range (m) = manual integration
0523F008.D 051517MS30_8260SIM.M Tue May 23 16:00:56 2017 Page 1

Data File : G:\MS30\DATA\051617_SIM 0523F008.D Vial: 8
Acq On : 23 May 2017 03:58 pm Operator: KR
Sample : DLCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 16:00 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Date: [illegible]

By: KE

IS/SS Std. ID: S6VOA-320 6/11

CCV Std ID: S6VOA 466 5/30

MS/DMS/LCS/ICV Std ID:

BFB Std. ID: E6VOA-330 6/11

ALS Environmental
Injection Log
MS30 - Agilent 5977B

Tune File: [illegible]

New Tune: NO

ICAL Date: S6VOA-Cal 15335

Second RV:

LIMS ID: K1704005/4213

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	[illegible]	524/8260.M	[illegible]		
2	Sim CCV	6	~~524/8260~~ Sim.m KE 6/12/17	2, 1 50ml		
3	LCS	7				
4	DLCS	8				
5	IB	9				← Not desorbed for file 10
6	MB	11				
7	K5157-1	12			✓	
8	2	13			✓	
9	3	14			✓	
10	K5066-1	15			✓	
11	2	16			✓	
12	3	17			✓	
13	4	18			✓	
14	5	19			✓	
15	6	20			✓	
16	7	21			✓	
17	K5157-1MS	22		1.82, 44ml	✓	
18	1DMS	23			✓	
19	K5066 7MS	24			✓	
20	7DMS	25			✓	
21	CCVA	26		2, 1 50ml		
22						
23						
24						
25						
26						
27						

Exception Report

Data File:	J:\MS30\DATA\052317_SIM\0523F005.D	Date Acquired:	05/23/2017 13:39
Lab ID:	KWQ1704209-1	Date Quantified:	
RunType:	BFB	**Batch ID:**	KWQ1704209
Matrix:	WATER	**Analysis Method:**	BFB
		LstJoinID:	LJ774

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review: [signature]

Secondary Review: [signature]

Data File:	J:\MS30\DATA\052317_SIM\0523F005.D			Instrument:	MS30
Acqu Date:	05/23/2017 13:39	Quant Date:		Vial:	
Run Type:	BFB	ListJoinID:	LJ774	Dilution:	1.0
Lab ID:	KWG1704209-1			Soln Conc. Units:	

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B	**Collect Date:**		**Receive Date:**	05/23/2017

Analysis Lot:	KWG1704209	**Prep Lot:**		**Report Group:**	
Analysis Method:	BFB	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517\MS30_8	**Calibration ID:**	CAL15575
Title:	GC/MS Tuning Evaluation	**Report List ID:**	LJ774
Tune Ref:		**Method ID:**	MJ159
MB Ref:		**Quant based on Report List**	

Tune Results

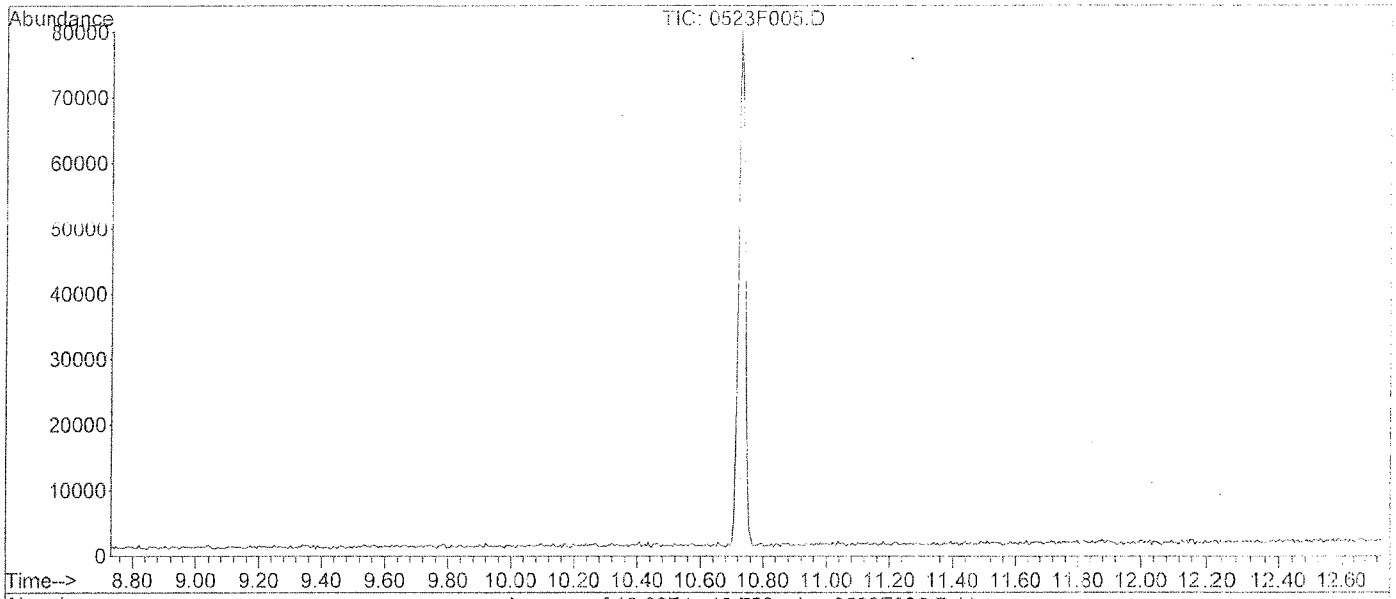
Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	19.5	947	Pass
75	95	30	60	48.5	2355	Pass
95	95	100	100	100.0	4852	Pass
96	95	5	9	6.1	298	Pass
173	174	0	2	1.6	75	Pass
174	95	50	120	96.4	4675	Pass
175	174	5	9	6.9	324	Pass
176	174	95	101	96.3	4501	Pass
177	176	5	9	7.0	316	Pass

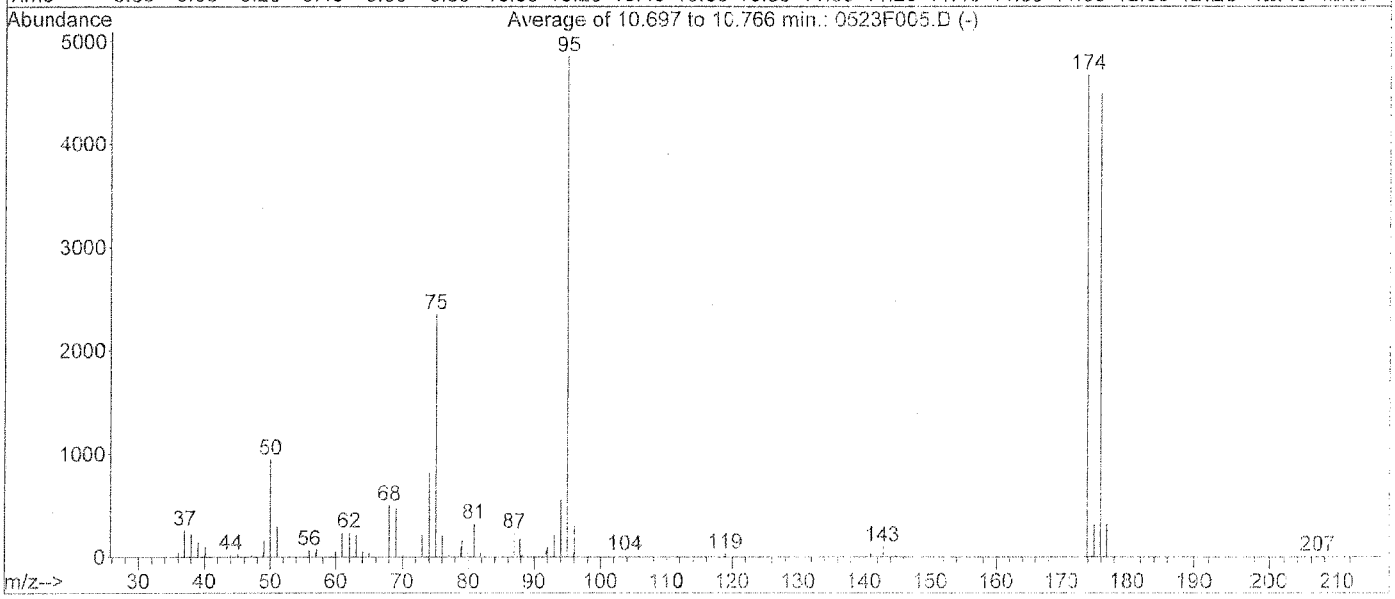
U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
!: Insufficient information to determine acceptance
e: Result > MRL but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\052317_SIM\0523F005.D Vial: 1
Acq On : 23 May 2017 01:30 pm Operator: TL
Sample : 50NG BFB Inst. : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM





Spectrum Information: Average of 10.697 to 10.766 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.5	947	PASS
75	95	30	60	48.5	2355	PASS
95	95	100	100	100.0	4852	PASS
96	95	5	9	6.1	298	PASS
173	174	0.00	2	1.6	75	PASS
174	95	50	120	96.4	4675	PASS
175	174	5	9	6.9	324	PASS
176	174	95	101	96.3	4501	PASS
177	176	5	9	7.0	316	PASS

Data File: J:\MS30\DATA\052317_SIM\0525F006.D
Lab ID: KWQ1704209-2
RunType: CCV
Matrix: WATER

Date Acquired: 05/25/2017 1:15
Date Quantified: 05/25/2017 1:45
Batch ID: KWQ1704209
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	

Primary Review:

Secondary Review:

Data File:	J:\MS30\DATA\052317_SIM\0523F006.D			Instrument:	MS30
Acqu Date:	05/23/2017 14:16	Quant Date:	05/23/2017 14:44	Vial:	2
Run Type:	CCV	MethodJoinID:	MJ1547	Dilution:	1.0
Lab ID:	KWG1704209-2			Soln Conc. Units:	ng/L

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8260B	Collect Date:		Receive Date:	05/23/2017

Analysis Lot:	KWG1704209	Prep Lot:		Report Group:	
Analysis Method:	8260C SIM	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	J:\MS27\METHODS\051517MS30_8			Calibration ID:	CAL15575
Title:					
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D			Method ID:	MJ1547
MB Ref:				Quant based on	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	47295	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34056	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	18697	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	18876	1.079		77-123	NA	
1	Toluene-d8	8.05			98	38827	1.029		74-112	NA	
2	4-Bromofluorobenzene	10.73			95	13601	897.72		46-118	NA	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25			50	58873	2.175			
1	Vinyl Chloride	1.33			62	58436	2.221			
1	1,1-Dichloroethene	2.43			96	32336	2.210			
1	Methylene Chloride	3.08			84	50271	2.454			
1	trans-1,2-Dichloroethene	3.36			96	36516	2.201			
1	cis-1,2-Dichloroethene	4.95			96	33427	2.113			
1	Chloroform	5.39			83	82860	2.436			
1	Carbon Tetrachloride	5.66			117	53021	2.451			
1	Benzene	5.97			78	130093	2.012			
1	1,2-Dichloroethane	6.12			62	51246	2.125			
1	Trichloroethene (TCE)	6.74			95	34454	2.167			
1	Bromodichloromethane	7.36			83	51663	2.268			
1	1,1,2-Trichloroethane	8.63			83	26542	2.082			
1	Dibromochloromethane	8.98			129	33485	2.120			
1	1,2-Dibromoethane (EDB)	9.09			107	26549	2.050			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: Check for coelu

Data File:	J:\MS30\DATA\052317_SIM\0523F006.D			Level:	1
Acqu Date:	05/23/2017 14:16	Quant Date:	05/23/2017 14:43	Vial:	2
Run Type:	CCV	MethodJobID:	MI1547	Dilution:	1.0
Lab ID:	KWG1704209-2			Sol. Conc. Units:	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11			92	54820	1.834			
2	Ethylbenzene	9.66			106	27586	1.913			
2	1,1,1,2-Tetrachloroethane	9.67			131	38737	2.157			
2	m,p-Xylenes	9.78			106	65472	3.967			
2	o-Xylene	10.18			106	32991	1.960			
2	1,1,2,2-Tetrachloroethane	10.93			83	29769	1.856			
2	1,2,3-Trichloropropane	10.97			110	9070	1.804			
2	Tetrachloroethene (PCE)	8.63			164	29581	2.111			
3	1,4-Dichlorobenzene	11.90			146	64442	1.910			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria are applicable
?: Insufficient information to determine acceptance
e: Result is MRL, but MRL less than low point of ICAL
c: check for co-e

Calibration Verification Report

Calibration ID: CAL15375
Method ID: MJ1547

DataFile: J:\MS30\DATA\052317_SIM\0523F006.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff		Soln Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	20	0.1	0.572	0.622	9				
Vinyl Chloride		MS	AverageRF	20	0.1	0.556	0.618	11				
1,1-Dichloroethene		MS	AverageRF	20	0.1	0.309	0.342	11				
Methylene Chloride		MS	AverageRF	20	0.1	0.433	0.531	23	*			
trans-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.351	0.386	10				
cis-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.334	0.353	6				
Chloroform		MS	AverageRF	20	0.2	0.719	0.876	22	*			
Dibromofluoromethane		SURR	AverageRF	20	0.01	0.370	0.399	8				
Carbon Tetrachloride		MS	AverageRF	20	0.1	0.475	0.582	23	*			
Benzene		MS	AverageRF	20	0.5	1.367	1.375	1				
1,2-Dichloroethane		MS	AverageRF	20	0.1	0.510	0.542	6				
Trichloroethene (TCE)		MS	AverageRF	20	0.2	0.336	0.364	8				
Bromodichloromethane		MS	AverageRF	20	0.2	0.482	0.546	13				
Toluene-d8		SURR	AverageRF	20	0.01	0.798	0.821	3				
Toluene		MS	AverageRF	20	0.4	0.878	0.805	-8				
1,1,2-Trichloroethane		MS	AverageRF	20	0.1	0.270	0.281	4				
Tetrachloroethene (PCE)		MS	AverageRF	20	0.2	0.411	0.434	6				
Dibromochloromethane		MS	AverageRF	20	0.1	0.334	0.354	6				
1,2-Dibromoethane (EDB)		MS	AverageRF	20	0.1	0.263	0.270	3				
Ethylbenzene		MS	AverageRF	20	0.1	0.423	0.405	-4				
1,1,1,2-Tetrachloroethane		MS	AverageRF	20	0.01	0.527	0.569	8				
m,p-Xylenes		MS	AverageRF	20	0.1	0.485	0.481	-1				
o-Xylene		MS	AverageRF	20	0.3	0.494	0.484	-2				
4-Bromofluorobenzene		SURR	AverageRF	20	0.01	0.445	0.399	-10				
1,1,2,2-Tetrachloroethane		MS	AverageRF	20	0.3	0.471	0.437	-7				
1,2,3-Trichloropropane		MS	AverageRF	20	0.1	0.148	0.133	-10				
1,4-Dichlorobenzene		MS	AverageRF	20	0.5	1.804	1.723	-4				

3 Compounds Failed CCV Criteria (11.11 Percent)

Data File:	J:\MS30\DATA\052317_SIM\0523F006.D			Instrument:	LIS30
Acqu Date:	05/23/2017 14:16	Quant Date:	05/23/2017 14:43	Vial:	2
Run Type:	CCV	MethodJoinID:	MJ1465	Dilution:	1.0
Lab ID:	KWG1704209-2			Soln Conc. Units:	ng/L

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8260B	Collect Date:		Receive Date:	05/23/2017

Analysis Lot:	KWG1704209	Prep Lot:		Report Group:	
Analysis Method:	8260C	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	J:\MS27\METHODS\051517MS30_8			Calibration ID:	CAL15575
Title:					
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D			Method ID:	MJ1465
MB Ref:				Quant based on	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	47295	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34056	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	18697	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	18876	1,079		80-119	NA	
1	Toluene-d8	8.05			98	38827	1,029		89-112	NA	
2	4-Bromofluorobenzene	10.73			95	13601	897.72		85-114	NA	

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25			50	58873	2.175			
1	Vinyl Chloride	1.33			62	58436	2.221			
1	1,1-Dichloroethene	2.43			96	32336	2.210			
1	Methylene Chloride	3.08			84	50271	2.454			
1	trans-1,2-Dichloroethene	3.36			96	36516	2.201			
1	cis-1,2-Dichloroethene	4.95			96	33427	2.113			
1	Chloroform	5.39			83	82860	2.436			
1	Carbon Tetrachloride	5.66			117	55021	2.451			
1	Benzene	5.97			78	130093	2.012			
1	1,2-Dichloroethane (EDC)	6.12			62	51246	2.125			
1	Trichloroethene (TCE)	6.74			95	34454	2.167			
1	Bromodichloromethane	7.36			83	51663	2.268			
1	1,1,2-Trichloroethane	8.63			83	26542	2.082			
1	Dibromochloromethane	8.98			129	33485	2.120			
1	1,2-Dibromoethane (EDB)	9.09			107	25549	2.050			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
a: Result > MRL, but MRL less than low point of ICAL
c: Value's for ...

Analysis Date:	05/23/2017 14:16	Quant Set:	[illegible]
Run Type:	CCV	Method/SubID:	MB1465
Lab ID:	KWG1704209-2		

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11			92	54820	1.834			
2	Ethylbenzene	9.66			106	27586	1.913			
2	1,1,1,2-Tetrachloroethane	9.67			131	38737	2.157			
2	m,p-Xylenes	9.78			106	65472	3.967			
2	o-Xylene	10.18			106	32991	1.960			
2	1,1,2,2-Tetrachloroethane	10.93			83	29769	1.856			
2	1,2,3-Trichloropropane	10.97			110	9070	1.804			
2	Tetrachloroethene (PCE)	8.63			164	29581	2.111			
3	1,4-Dichlorobenzene	11.90			146	64442	1.910			

U: Uncorrected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compd manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
+: Insufficient ion ratio to determine if compound is present
e: Result > MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration ID: CAL15375
Method ID: MJ1465

DataFile: J:\MS30\DATA\052317_SIM\0523F006.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff		Soln Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	20	0.100	0.572	0.622	9				
Vinyl Chloride		MS	AverageRF	20	0.100	0.556	0.618	11				
1,1-Dichloroethene		MS	AverageRF	20	.100	0.309	0.342	11				
Methylene Chloride		MS	AverageRF	20	0.100	0.433	0.531	23	*			
trans-1,2-Dichloroethene		MS	AverageRF	20	0.100	0.351	0.386	10				
cis-1,2-Dichloroethene		MS	AverageRF	20	0.100	0.334	0.353	6				
Chloroform		MS	AverageRF	20	0.200	0.719	0.876	22	*			
Dibromofluoromethane		SURR	AverageRF	20	0.01	0.370	0.399	8				
Carbon Tetrachloride		MS	AverageRF	20	0.100	0.475	0.582	23	*			
Benzene		MS	AverageRF	20	0.500	1.367	1.375	1				
1,2-Dichloroethane (EDC)		MS	AverageRF	20	0.100	0.510	0.542	6				
Trichloroethene (TCE)		MS	AverageRF	20	0.200	0.336	0.364	8				
Bromodichloromethane		MS	AverageRF	20	0.200	0.482	0.546	13				
Toluene-d8		SURR	AverageRF	20	0.01	0.798	0.821	3				
Toluene		MS	AverageRF	20	0.400	0.878	0.805	-8				
1,1,2-Trichloroethane		MS	AverageRF	20	.100	0.270	0.281	4				
Tetrachloroethene (PCE)		MS	AverageRF	20	0.200	0.411	0.434	6				
Dibromochloromethane		MS	AverageRF	20	0.100	0.334	0.354	6				
1,2-Dibromoethane (EDB)		MS	AverageRF	20	0.100	0.263	0.270	3				
Ethylbenzene		MS	AverageRF	20	0.100	0.423	0.405	-4				
1,1,1,2-Tetrachloroethane		MS	AverageRF	20	.01	0.527	0.569	8				
m,p-Xylenes		MS	AverageRF	20	0.100	0.485	0.481	-1				
o-Xylene		MS	AverageRF	20	0.300	0.494	0.484	-2				
4-Bromofluorobenzene		SURR	AverageRF	20	0.01	0.445	0.399	-10				
1,1,2,2-Tetrachloroethane		MS	AverageRF	20	.300	0.471	0.437	-7				
1,2,3-Trichloropropane		MS	AverageRF	20	0.01	0.148	0.133	-10				
1,4-Dichlorobenzene		MS	AverageRF	20	0.500	1.804	1.723	-4				

3 Compounds Failed CCV Criteria (11.11 Percent)

Data File : J:\MS30\DATA\051517_SIM.05 SR.05.D
Acq On : 23 May 2017 02:16 pm
Sample : CCV
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 23 14:46:40 2017

Operator: KR
Inst : MS30
Multiplier: 1.00

Quant Results File: 051517MS30_8260SIM.RES

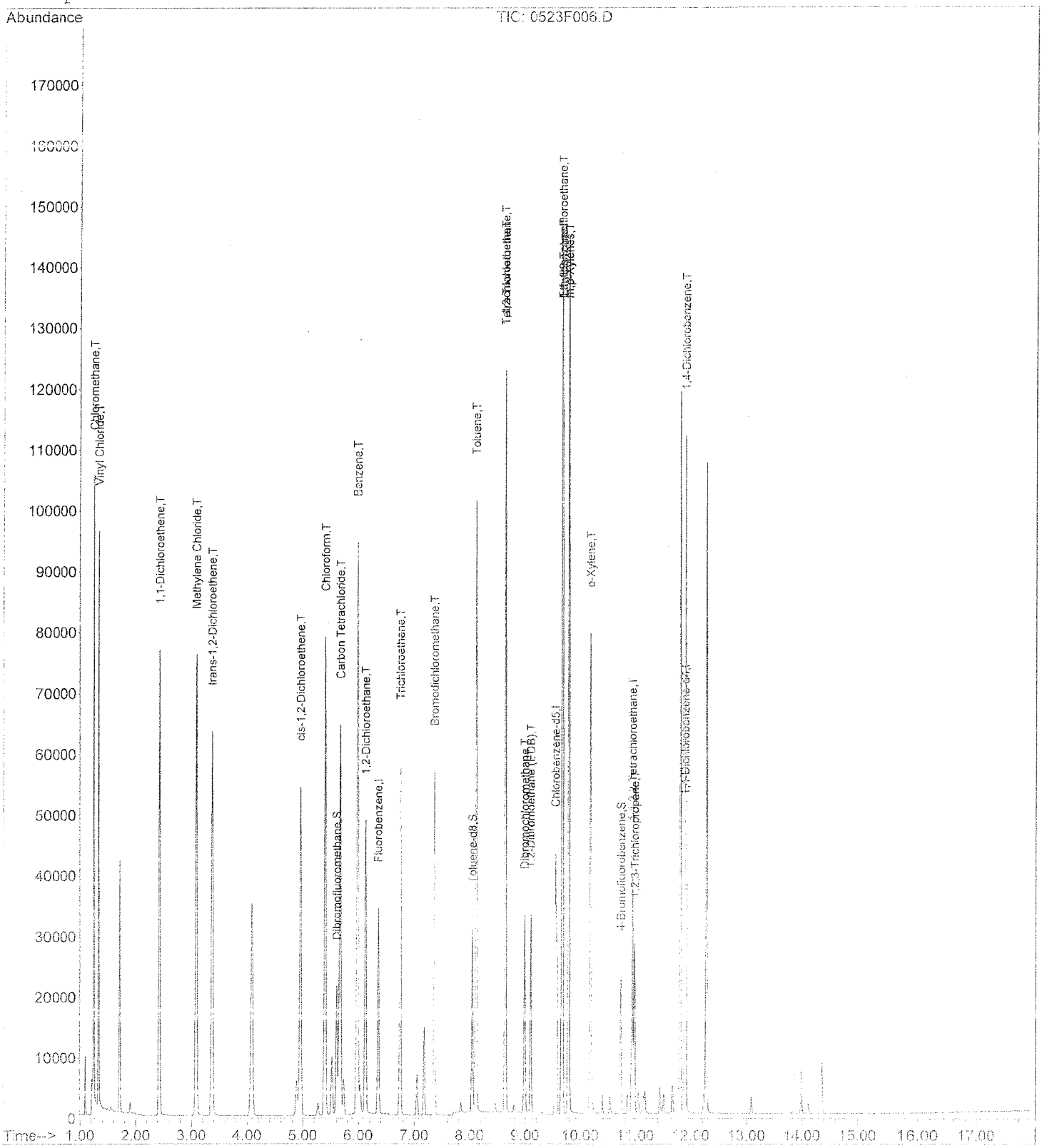
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	47295	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	34056	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	18697	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	18876	1079.05	ng/L	0.00
Spiked Amount 1000.000			Recovery = 107.91%			
15) Toluene-d8	8.05	98	38827	1029.26	ng/L	0.00
Spiked Amount 1000.000			Recovery = 102.93%			
25) 4-Bromofluorobenzene	10.73	95	13601	897.72	ng/L	0.00
Spiked Amount 1000.000			Recovery = 89.77%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	58873	2174.79	ng/L	99
3) Vinyl Chloride	1.33	62	58436	2221.29	ng/L	98
4) 1,1-Dichloroethene	2.43	96	32336	2210.39	ng/L	98
5) Methylene Chloride	3.08	84	50271	2454.38	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	36516	2201.02	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	33427	2113.15	ng/L	99
8) Chloroform	5.39	83	82860	2436.28	ng/L	99
10) Carbon Tetrachloride	5.66	117	55021	2451.39	ng/L	98
11) Benzene	5.97	78	130093	2012.43	ng/L	98
12) 1,2-Dichloroethane	6.12	62	51246	2125.06	ng/L	99
13) Trichloroethene	6.74	95	34454	2167.07	ng/L	98
14) Bromodichloromethane	7.36	83	51663	2268.23	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	26542	2082.01	ng/L	99
17) Dibromochloromethane	8.98	129	33485	2119.70	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	25549	2050.32	ng/L	99
20) Toluene	8.11	92	54820	1834.11	ng/L	97
21) Ethylbenzene	9.66	106	27586	1913.48	ng/L	99
22) 1,1,1,2-Tetrachloroethane	9.67	131	38737	2156.57	ng/L	99
23) m,p-Xylenes	9.78	106	65472	3967.35	ng/L	97
24) o-Xylene	10.18	106	32991	1960.07	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	29769	1856.04	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	9070	1803.59	ng/L	96
28) Tetrachloroethene	8.63	164	29581	2111.04	ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	64442	1910.04	ng/L	98

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\0523F\0523F006.D Vial: 1
Acq On : 23 May 2017 02:16 pm Operator: KR
Sample : CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 14:46 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File: J:\MS30\DATA\052317_SIM\0523F026.D
Lab ID: KWG1704209-3
RunType: CCV
Matrix: WATER

Date Acquired: 05/23/2017 23:41
Date Quantitated: 05/24/2017 08:25
Batch ID: KWG1704209
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NA

Primary Review: [signature] 5/24/17

Secondary Review: [signature]

Data File:	J:\MS30\DATA\052317_SIM\0523F026.D			Injn Number:	5453.x
Acqu Date:	05/23/2017 23:41	Quant Date:	05/24/2017 08:42	Vial:	8
Run Type:	CCV	Method/JobID:	MJ1547	Dilution:	1.0
Lab ID:	KWG1704209-3			Soln Conc. Units:	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B	**Collect Date:**		**Receive Date:**	05/23/2017

Analysis Lot:	KWG1704209	**Prep Lot:**		**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\05151/MS30_8	**Calibration ID:**	CAL15375
Title:			
Tune Ref:	J:\MS30\DATA\052317_SIM\0523F005.D	**Method ID:**	MJ1547
MB Ref:		**Quant based on Method**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	54778	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37195	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	17710	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	19672	970.93		77-123	NA	
1	Toluene-d8	8.05			98	44461	1.018		74-112	NA	
2	4-Bromofluorobenzene	10.73			95	14065	850.00		46-118	NA	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25			50	56105	1.789			
1	Vinyl Chloride	1.33			62	56242	1.846			
1	1,1-Dichloroethene	2.43			96	32877	1.940			
1	Methylene Chloride	3.08			84	51242	2.160			
1	trans-1,2-Dichloroethene	3.37			96	37455	1.949			
1	cis-1,2-Dichloroethene	4.95			96	36094	1.970			
1	Chloroform	5.39			83	83473	2.119			
1	Carbon Tetrachloride	5.67			117	51976	1.999			
1	Benzene	5.97			78	142042	1.897			
1	1,2-Dichloroethane	6.12			62	55705	1.994			
1	Trichloroethene (TCE)	6.75			95	38483	2.090			
1	Bromodichloromethane	7.36			83	52967	2.008			
1	1,1,2-Trichloroethane	8.63			83	29801	2.018			
1	Dibromochloromethane	8.98			129	35768	1.955			
1	1,2-Dibromoethane (EDB)	9.09			107	29287	2.029			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result > MRL, but MRL less than or equal to LOQ
c: Closest Eluting Peak

Data File:	[illegible]				
Acqu Date:	05/23/2017 23:41	Quant Date:	05/[illegible]/2017 [illegible]	Vial:	8
Run Type:	CCV	MethodJobID:	MJ1847	Dilution:	1.0
Lab ID:	ICWG170209-3			Std Conc Units:	ng/L

Target Compounds Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12			92	60858	1.864			
2	Ethylbenzene	9.65			106	30126	1.913			
2	1,1,1,2-Tetrachloroethane	9.67			131	38685	1.972			
2	m,p-Xylenes	9.78			106	70534	3.913			
2	o-Xylene	10.18			106	36033	1.960			
2	1,1,2,2-Tetrachloroethane	10.93			83	32600	1.861			
2	1,2,3-Trichloropropane	10.98			110	11008	2.004			
2	Tetrachloroethene (PCE)	8.63			164	29331	1.917			
3	1,4-Dichlorobenzene	11.90			146	67971	2.127			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this matrix

[illegible]: Results acceptance criteria
#: Acceptance criteria not applicable
[illegible]: Instrument response to determine [illegible] concentration
e: Result >= MRL, but MRL less than high point of ICAL
[illegible]: Value for [illegible]

Calibration ID: CAL15375
Method ID: MJ1347

DataFile: J:\MS30\DATA\052317_SIM\0523F026.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff	Soln Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	20	0.1	0.572	0.512	-11			
Vinyl Chloride		MS	AverageRF	20	0.1	0.556	0.513	-8			
1,1-Dichloroethene		MS	AverageRF	20	0.1	0.309	0.300	-3			
Methylene Chloride		MS	AverageRF	20	0.1	0.433	0.468	8			
trans-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.351	0.342	-3			
cis-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.334	0.329	-1			
Chloroform		MS	AverageRF	20	0.2	0.719	0.762	6			
Dibromofluoromethane		SURR	AverageRF	20	0.01	0.370	0.359	-3			
Carbon Tetrachloride		MS	AverageRF	20	0.1	0.475	0.474	0			
Benzene		MS	AverageRF	20	0.5	1.367	1.297	-5			
1,2-Dichloroethane		MS	AverageRF	20	0.1	0.510	0.508	0			
Trichloroethene (TCE)		MS	AverageRF	20	0.2	0.336	0.351	4			
Bromodichloromethane		MS	AverageRF	20	0.2	0.482	0.483	0			
Toluene-d8		SURR	AverageRF	20	0.01	0.798	0.812	2			
Toluene		MS	AverageRF	20	0.4	0.878	0.818	-7			
1,1,2-Trichloroethane		MS	AverageRF	20	0.1	0.270	0.272	1			
Tetrachloroethene (PCE)		MS	AverageRF	20	0.2	0.411	0.394	-4			
Dibromochloromethane		MS	AverageRF	20	0.1	0.334	0.326	-2			
1,2-Dibromoethane (EDB)		MS	AverageRF	20	0.1	0.263	0.267	1			
Ethylbenzene		MS	AverageRF	20	0.1	0.423	0.405	-4			
1,1,1,2-Tetrachloroethane		MS	AverageRF	20	0.01	0.527	0.520	-1			
m,p-Xylenes		MS	AverageRF	20	0.1	0.485	0.474	-2			
o-Xylene		MS	AverageRF	20	0.3	0.494	0.484	-2			
4-Bromofluorobenzene		SURR	AverageRF	20	0.01	0.445	0.378	-15			
1,1,2,2-Tetrachloroethane		MS	AverageRF	20	0.3	0.471	0.438	-7			
1,2,3-Trichloropropane		MS	AverageRF	20	0.1	0.148	0.148	0			
1,4-Dichlorobenzene		MS	AverageRF	20	0.5	1.804	1.919	6			

Data File : J:\MS30\DATA\052317_SIM\0523F026.D Vial: 26
Acq On : 23 May 2017 11:41 pm Operator: KR
Sample : CCVA Inst : MS30
Misc : Multip: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 24 08:25:47 2017 Quant Results File: 051517MS30_8260SIM.RES

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54778	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37195	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	17710	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19672	970.93	ng/L	0.00
Spiked Amount 1000.000			Recovery = 97.09%			
15) Toluene-d8	8.05	98	44461	1017.60	ng/L	0.00
Spiked Amount 1000.000			Recovery = 101.76%			
25) 4-Bromofluorobenzene	10.73	95	14065	850.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 85.00%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	56105	1789.42	ng/L	100
3) Vinyl Chloride	1.33	62	56242	1845.84	ng/L	99
4) 1,1-Dichloroethene	2.43	96	32877	1940.37	ng/L	95
5) Methylene Chloride	3.08	84	51242	2160.02	ng/L	99
6) trans-1,2-Dichloroethene	3.37	96	37455	1949.22	ng/L	98
7) cis-1,2-Dichloroethene	4.95	96	36094	1970.04	ng/L	99
8) Chloroform	5.39	83	83473	2119.03	ng/L	100
10) Carbon Tetrachloride	5.67	117	51976	1999.38	ng/L	99
11) Benzene	5.97	78	142042	1897.11	ng/L	99
12) 1,2-Dichloroethane	6.12	62	55705	1994.41	ng/L	98
13) Trichloroethene	6.75	95	38483	2089.83	ng/L	97
14) Bromodichloromethane	7.36	83	52967	2007.80	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	29801	2018.31	ng/L	99
17) Dibromochloromethane	8.98	129	35768	1954.92	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	29287	2029.23	ng/L	97
20) Toluene	8.12	92	60858	1864.29	ng/L	100
21) Ethylbenzene	9.65	106	30126	1913.32	ng/L	94
22) 1,1,1,2-Tetrachloroethane	9.67	131	38685	1971.92	ng/L	99
23) m,p-Xylenes	9.78	106	70534	3913.33	ng/L	96
24) o-Xylene	10.18	106	36033	1960.13	ng/L	97
26) 1,1,2,2-Tetrachloroethane	10.93	83	32600	1861.02	ng/L	100
27) 1,2,3-Trichloropropane	10.98	110	11008	2004.24	ng/L	93
28) Tetrachloroethene	8.63	164	29331	1916.55	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	67971	2126.92	ng/L	97

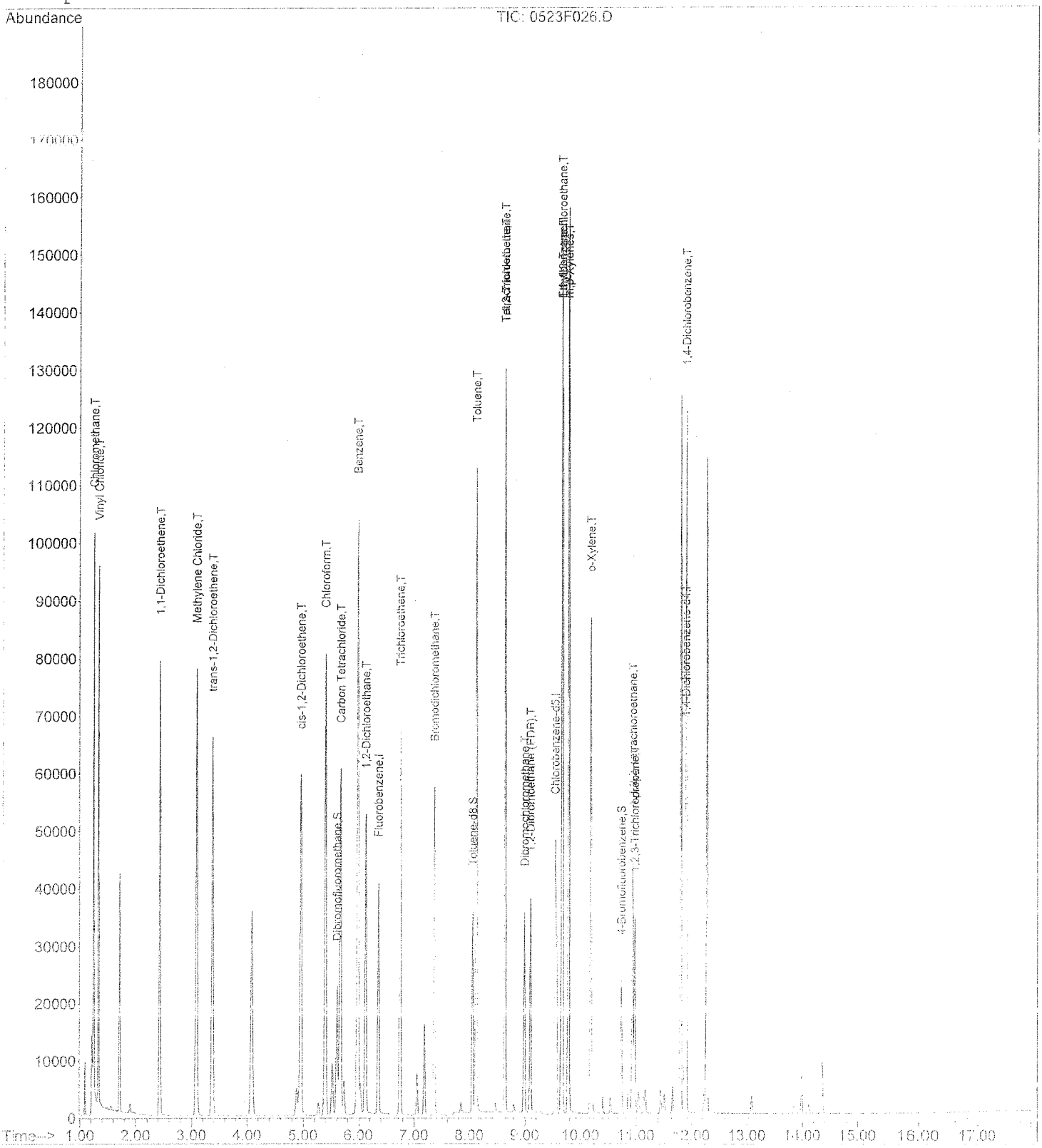
(#) = qualifier out of range (m) = manual integration
0523F026.D 051517MS30_8260SIM.M Wed May 24 09:26:14 2017 Page 1

Data File : J:\MS30\DATA\052317_SIM_051517MS30_0...
Acq On : 23 May 2017 11:41 pm
Sample : CCVA
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 24 8:25 2017

Operator: AA
Inst : MS30
Multiplier: 1.00

Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



0523F026.D 051517MS30_8260SIM.M Wed May 24 09:26:14 2017 Page 2

Date: 5/15/17

ALS Environmental
Injection Log
MS30 - Agilent 5977B

Tune File: BFB.sttune.u

By: AM

New Tune: No

IS/SS Std. ID: 8VOA.32E 6/10/17

CCV Std ID: —

ICAL Date: 5/15/17 Cal 15375

MS/DMS/LCS/ICV Std ID: see ICAL prep

Second RV: KL 5/17/17

BFB Std. ID: 8VOA.33D 6/11/17

LIMS ID:

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	0515F002	SIMTUNE.M ~~8260SIM.M~~	4.4µl→44ml		
2	IB	3	B260SIM.M			
3	IB	4				
4	IB	5				
5	SIM ICAL 5 PPT	6		see ICAL prep		
6	10	7				
7	20	8				
8	50	9				
9	100	10				
10	500	11				
11	1000	12				
12	2000	13				
13	5000	14				
14	7000	15				
15	10000	16				
16	IB	17				
17	IB	18				
18	IB	19				
19	ICV	20		see ICALprep 2		
20	ICV	21				NR not needed
21	BFB	0516F002	SIMTUNE.M	4.4µl→44ml		
22	Mix 6 only ICV	3	B260SIM.M	2µl/2.5µl→5ml		8VOA.37B/36E 5/22/17
23						
24						
25						
26						
27						

INTIAL CALIBRATION CURVE

Date 5/15/17 Analysis 8260 SIM H2O

Prepared By [illegible] Instrument MS30

Stock Solution #1 86VOA.36E 5/22/17 Analytes Surrogate Init. Concentration 20ppm

Stock Solution #2 86VOA.36D 5/22/17 Analytes 8260 mix Init. Concentration 50 ppm

Stock Solution #3 86VOA.37A 5/22/17 Analytes 8260 low mix Init. Concentration 0.5 ppm

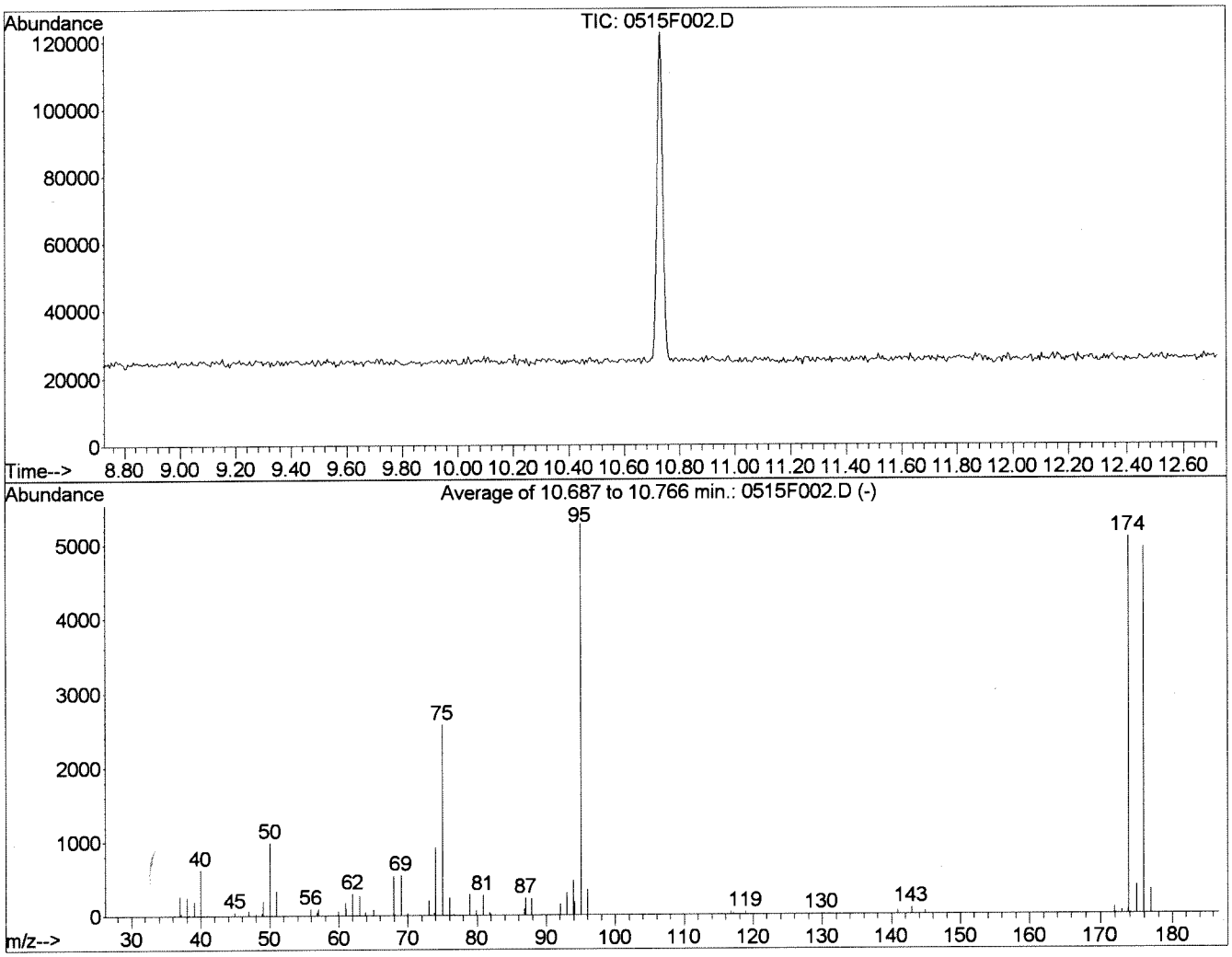
#	Aliquot of Stock Solution #1 (uL)	Final Conc. of #1 (ug/L)	Aliquot of Stock Solution #2 (uL)	Final Conc. of #2 (ug/L)	Aliquot of Stock Solution #3 (uL)	Final Conc. of #3 (ug/L)	Final Volume (mL)	Notes
1	-	-	-	-	0.5	0.005	50	
2	-	-	-	-	1.0	0.01	50	
3	-	-	-	-	2.0	0.02	50	
4	0.50	0.2	-	-	5.0	0.05	50	
5	1.0	0.4	-	-	10	0.1	50	
6	1.5	0.6	-	-	50	0.5	50	
7	2.0	0.8	1.0	1.0	-	-	50	
8 (CCV)	2.5	1.0	2.0	2.0	-	-	50	
9	5.0	2.0	5.0	5.0	-	-	50	
10	6.0	2.4	7.0	7.0	-	-	50	
11	10	4.0	10	10	-	-	50	

ICV : 2.5 µl of 20ppm Surr. (86VOA.36E 5/22/17) +
2µl of Crosscal ICV (86VOA.30A 5/16/17) to 50ml H2O

R:\VOA\Recipes\SIM\SIM_W_ICAL

Data File : J:\MS30\DATA\051517_SIM\0515F002.D
Acq On : 15 May 2017 03:21 pm
Sample : 50NG BFB
Misc :
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM

Vial: 2
Operator: GH
Inst : MS30
Multiplr: 1.00



Spectrum Information: Average of 10.687 to 10.766 min. whole peak - 1848

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	985	PASS
75	95	30	60	48.6	2569	PASS
95	95	100	100	100.0	5285	PASS
96	95	5	9	6.6	351	PASS
173	174	0.00	2	0.9	44	PASS
174	95	50	120	96.2	5082	PASS
175	174	5	9	7.5	380	PASS
176	174	95	101	97.2	4941	PASS
177	176	5	9	6.7	331	PASS

5/15/17

KR 5/17/17

J:\MS30\DATA\051517_SIM\0515F002.D 051517MS30_8260SIM.M Mon May 15 15:4

Data File : J:\MS30\DATA\051517_SIM\0515F005.D Vial: 5
Acq On : 15 May 2017 05:09 pm Operator: GH
Sample : IB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 07:59:54 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Mon May 15 08:39:31 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	53793	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	36088	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14292	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	416	22.01	ng/L		0.00
Spiked Amount 1000.000			Recovery =	2.20%			
15) Toluene-d8	8.05	98	1258	32.38	ng/L		0.00
Spiked Amount 1000.000			Recovery =	3.24%			
25) 4-Bromofluorobenzene	10.73	95	386	26.83	ng/L		0.00
Spiked Amount 1000.000			Recovery =	2.68%			
Target Compounds							Qvalue
2) Chloromethane	1.24	50	352	11.60	ng/L		85
5) Methylene Chloride	3.08	84	584	23.13	ng/L		97
8) Chloroform	5.39	83	88	2.24	ng/L		65
11) Benzene	5.97	78	940	13.50	ng/L		92
13) Trichloroethene	6.74	95	52	2.94	ng/L	#	80
20) Toluene	8.12	92	132	4.48	ng/L		76
23) m,p-Xylenes	9.78	106	150	8.80	ng/L	#	57
24) o-Xylene	10.17	106	148	8.57	ng/L		90
28) Tetrachloroethene	8.62	164	42	2.89	ng/L	#	69
30) 1,4-Dichlorobenzene	11.90	146	150	5.80	ng/L		87

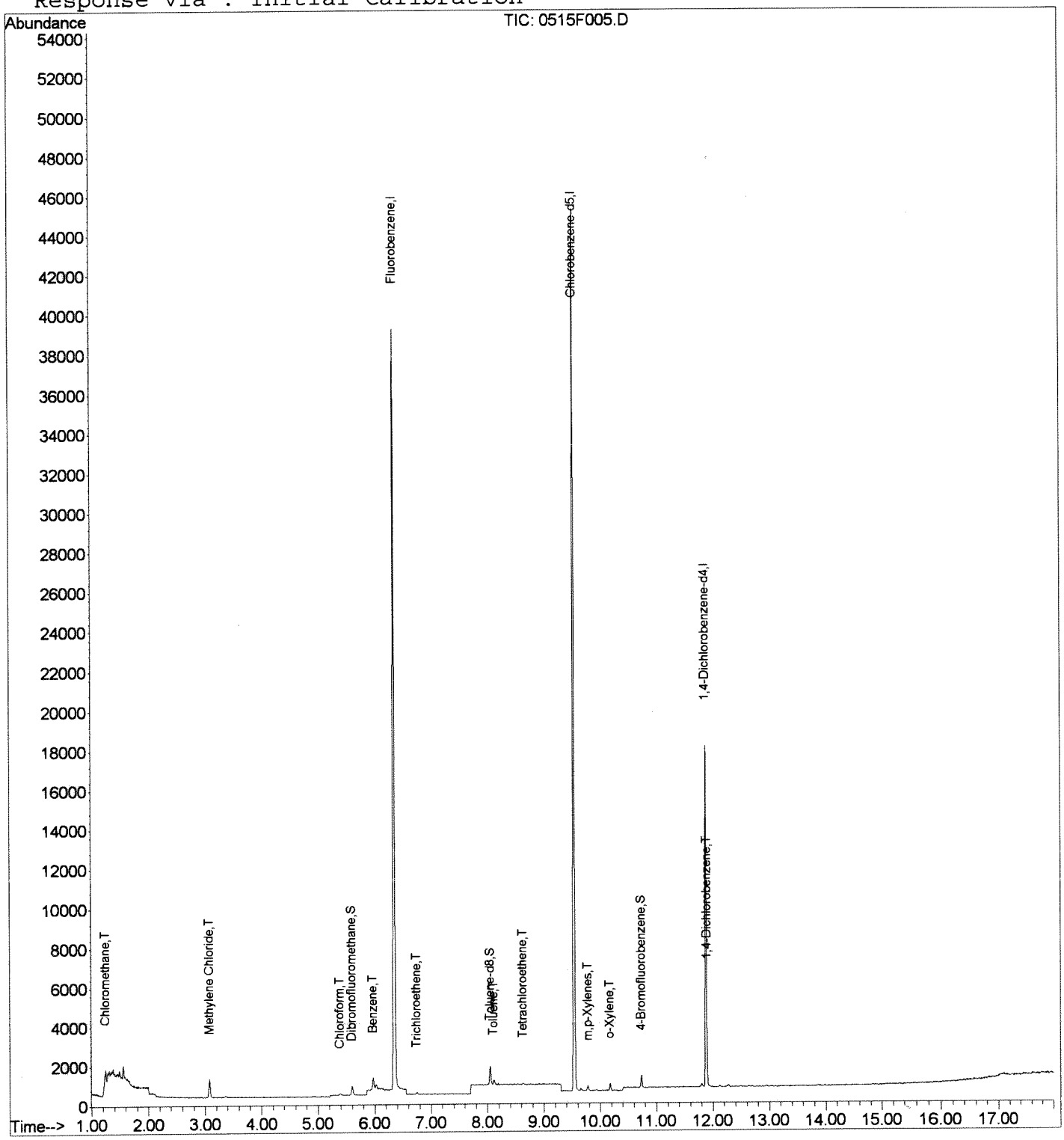
MM 5/17/17

KAB 5/17/17

(#) = qualifier out of range (m) = manual integration
0515F005.D 051517MS30_8260SIM.M Wed May 17 09:10:52 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F005.D Vial: 5
Acq On : 15 May 2017 05:09 pm Operator: GH
Sample : IB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 9:10 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:22 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

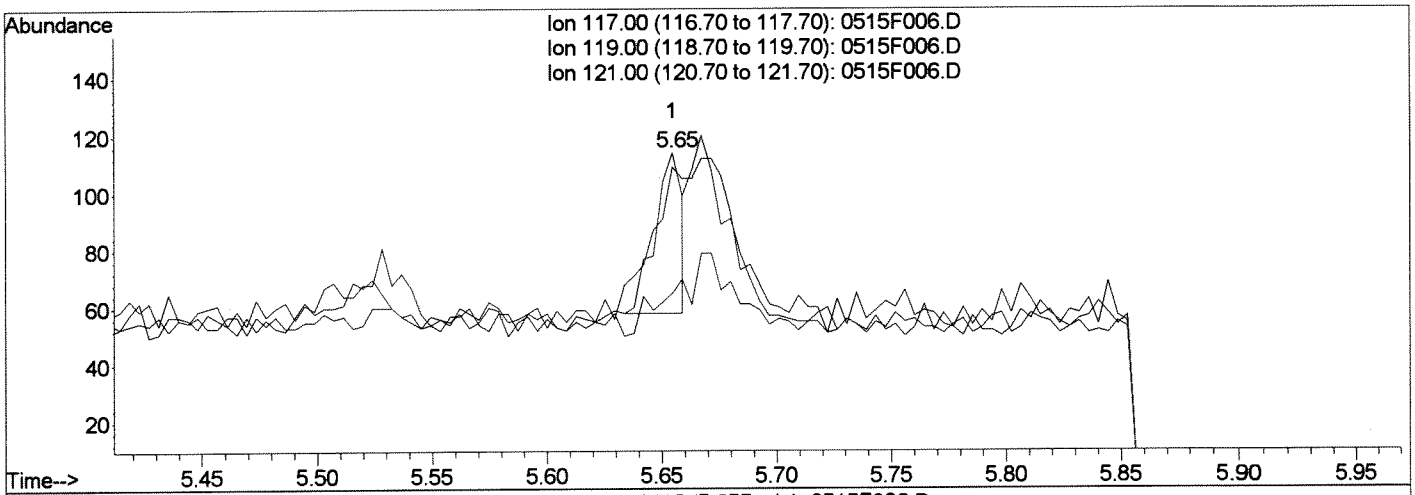
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54000	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	35910	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	14141	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	0.00	98	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	446	14.89	ng/L	98
3) Vinyl Chloride	1.33	62	186	6.44	ng/L	87
6) trans-1,2-Dichloroethene	3.36	96	161	8.91	ng/L #	71
7) cis-1,2-Dichloroethene	4.96	96	127	7.26	ng/L #	71
8) Chloroform	5.39	83	310	8.06	ng/L	96
10) Carbon Tetrachloride	5.67	117	120m	4.80	ng/L	
12) 1,2-Dichloroethane	6.12	62	162	5.99	ng/L #	58
13) Trichloroethene	6.74	95	155	8.99	ng/L	97
14) Bromodichloromethane	7.36	83	146	5.66	ng/L	92
16) 1,1,2-Trichloroethane	8.63	83	95	6.58	ng/L	91
17) Dibromochloromethane	8.98	129	109	6.10	ng/L	76
18) 1,2-Dibromoethane (EDB)	9.10	107	104	7.18	ng/L	95
20) Toluene	8.12	92	263	9.18	ng/L	94
21) Ethylbenzene	9.66	106	110	7.77	ng/L #	94
22) 1,1,1,2-Tetrachloroethane	9.67	131	117	6.29	ng/L #	74
23) m,p-Xylenes	9.77	106	277	16.61	ng/L #	81
24) o-Xylene	10.18	106	235	13.81	ng/L	90
26) 1,1,2,2-Tetrachloroethane	10.93	83	127	7.26	ng/L	95
28) Tetrachloroethene	8.63	164	130m	9.35	ng/L	
30) 1,4-Dichlorobenzene	11.90	146	273	10.90	ng/L	89

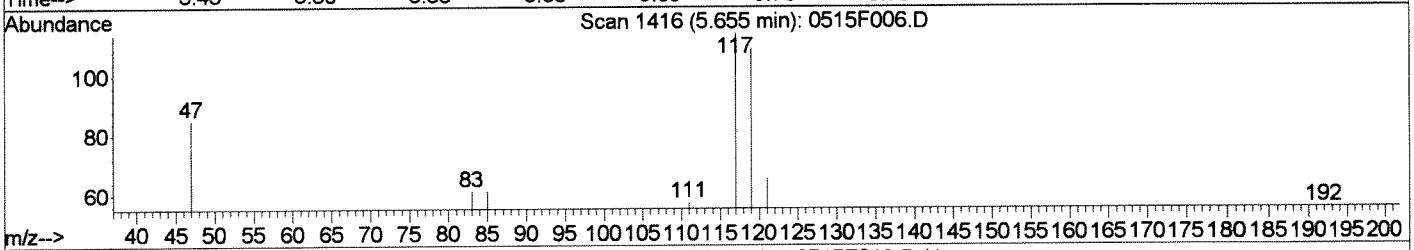
5/16/17

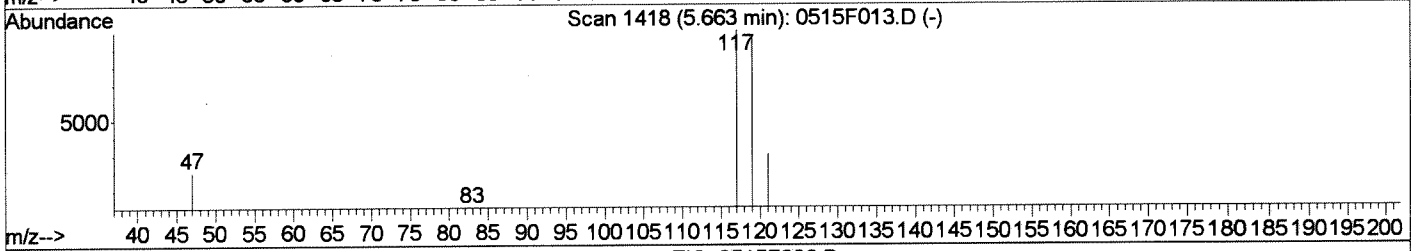
(#) = qualifier out of range (m) = manual integration
0515F006.D 051517MS30_8260SIM.M Tue May 16 11:28:37 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:25 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(10) Carbon Tetrachloride (T)

5.65min 1.88ng/L

response 47

Ion	Exp%	Act%
117.00	100	100
119.00	95.90	73.21
121.00	30.30	26.79
0.00	0.00	0.00

Manual Integration:

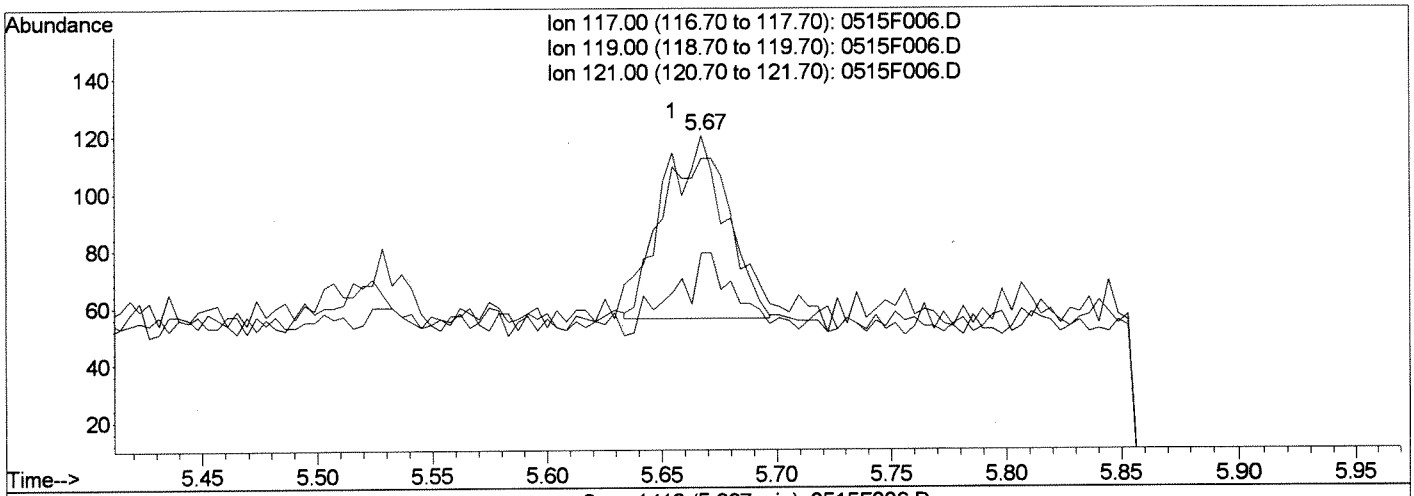
Before

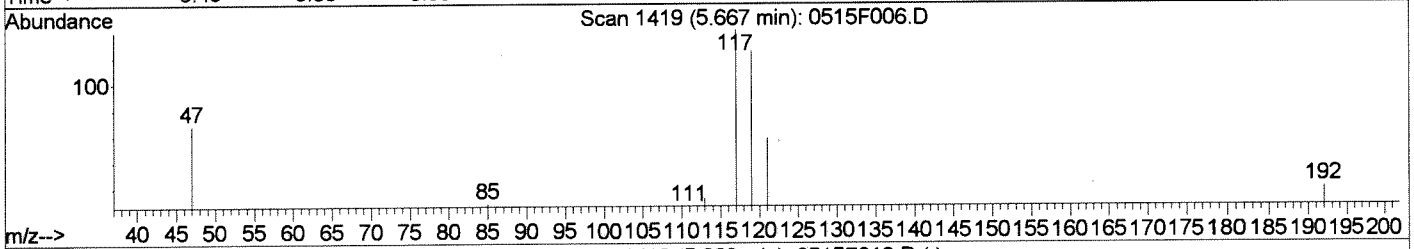
05/16/17

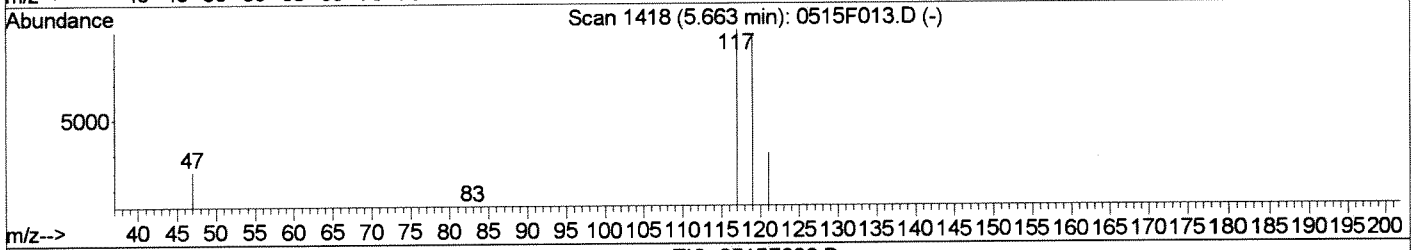
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:25:51 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:25 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(10) Carbon Tetrachloride (T)

5.67min 4.80ng/L m

response 120

Ion	Exp%	Act%
117.00	100	100
119.00	95.90	93.33
121.00	30.30	65.83#
0.00	0.00	0.00

Manual Integration:

After

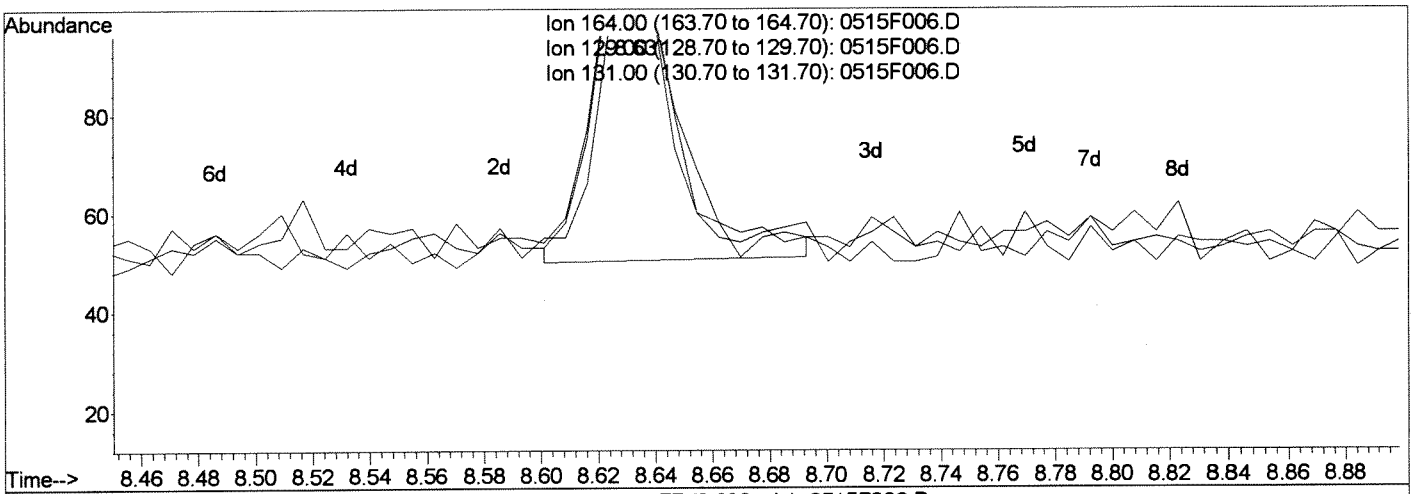
Split peak

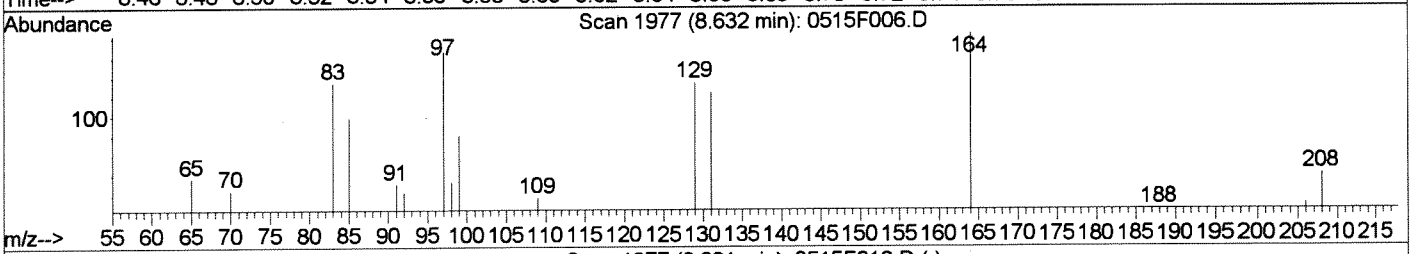
05/16/17

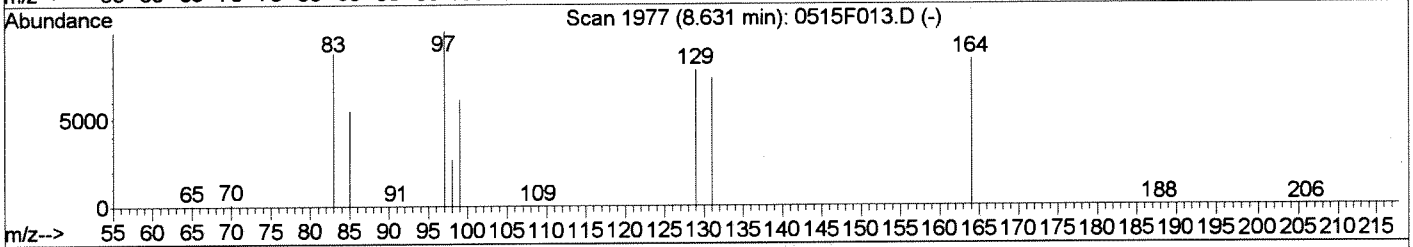
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:25:59 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:26 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(28) Tetrachloroethene (T)

8.63min 10.43ng/L

response 145

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	69.66
131.00	87.40	65.17
0.00	0.00	0.00

Manual Integration:

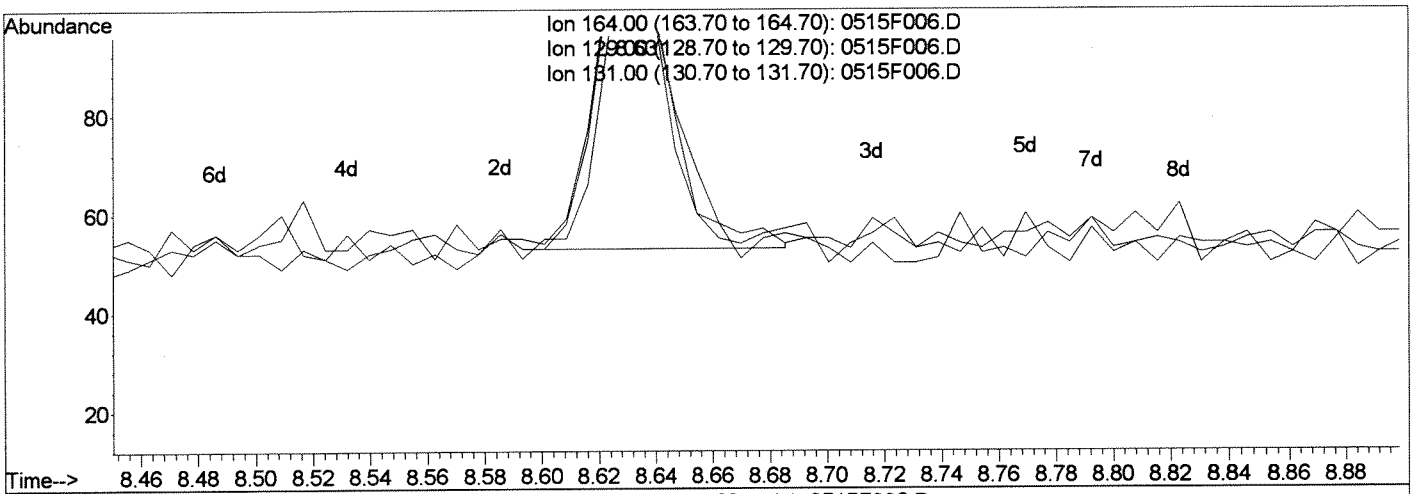
Before

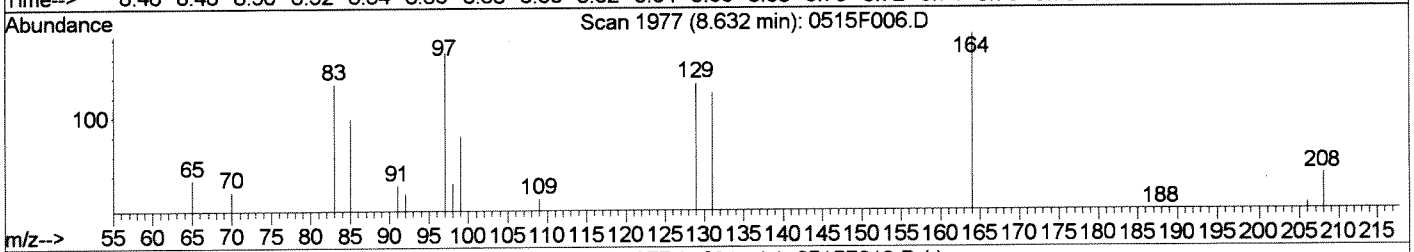
05/16/17

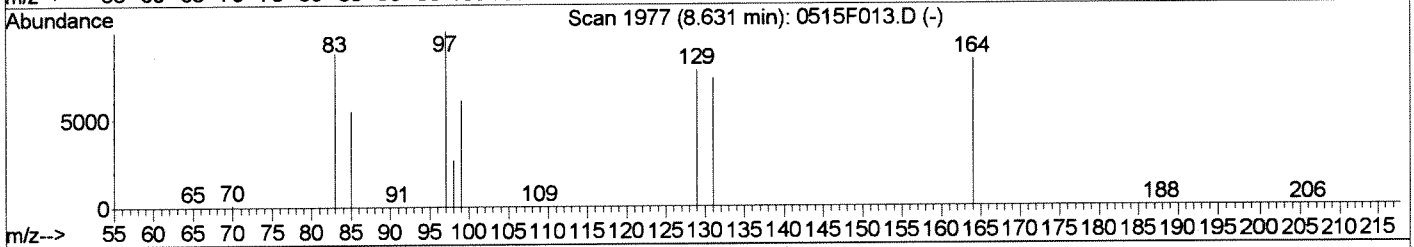
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:26:59 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:27 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(28) Tetrachloroethene (T)

8.63min 9.35ng/L m

response 130

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	82.39
131.00	87.40	78.87
0.00	0.00	0.00

Manual Integration:

After

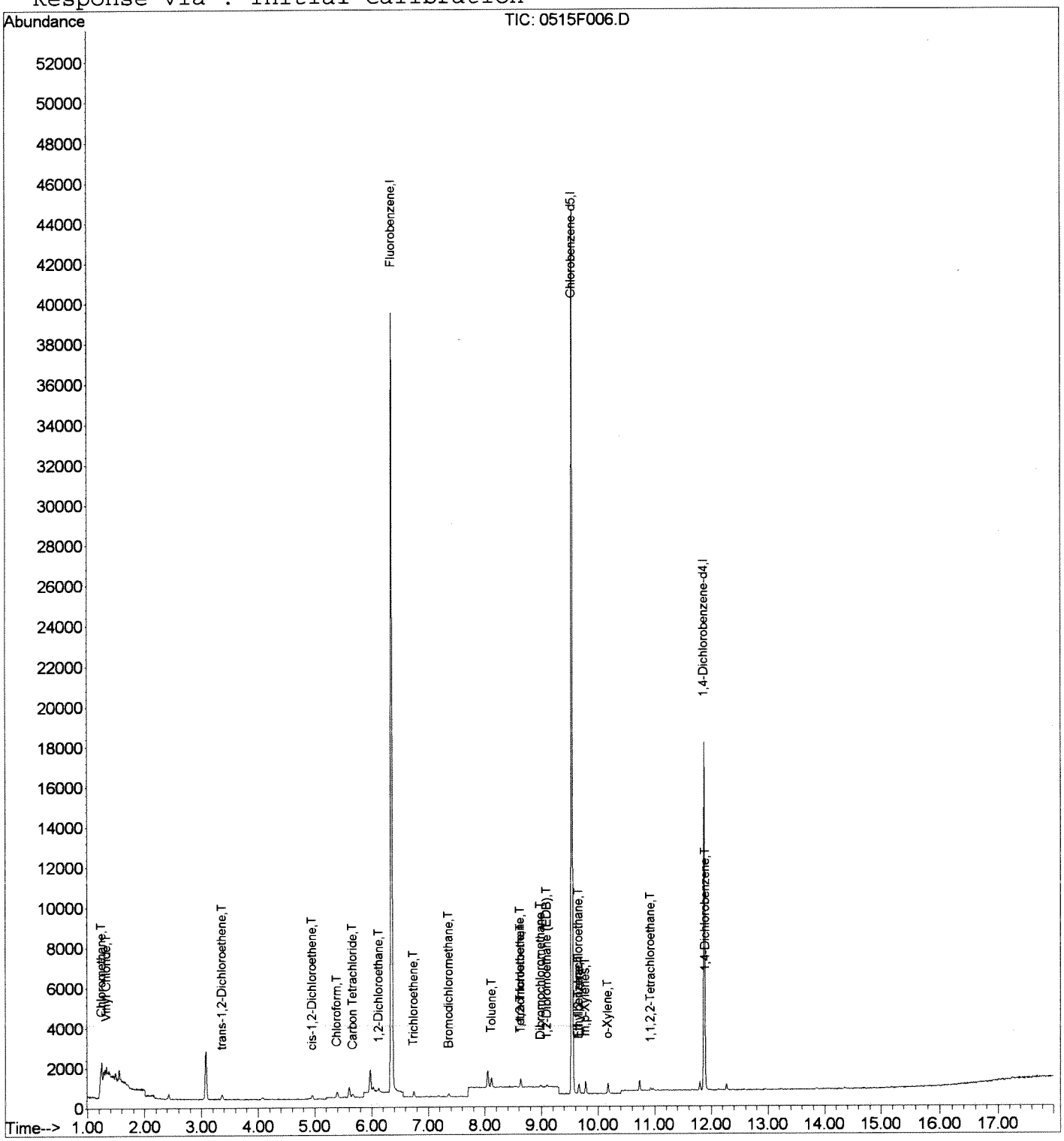
Baseline correction

05/16/17

0515F006.D 051517MS30_8260SIM.M Tue May 16 08:27:11 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:27 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F007.D Vial: 7
Acq On : 15 May 2017 06:04 pm Operator: GH
Sample : SIM ICAL 10 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:22 2017 Quant Results File: 051517MS30_8260

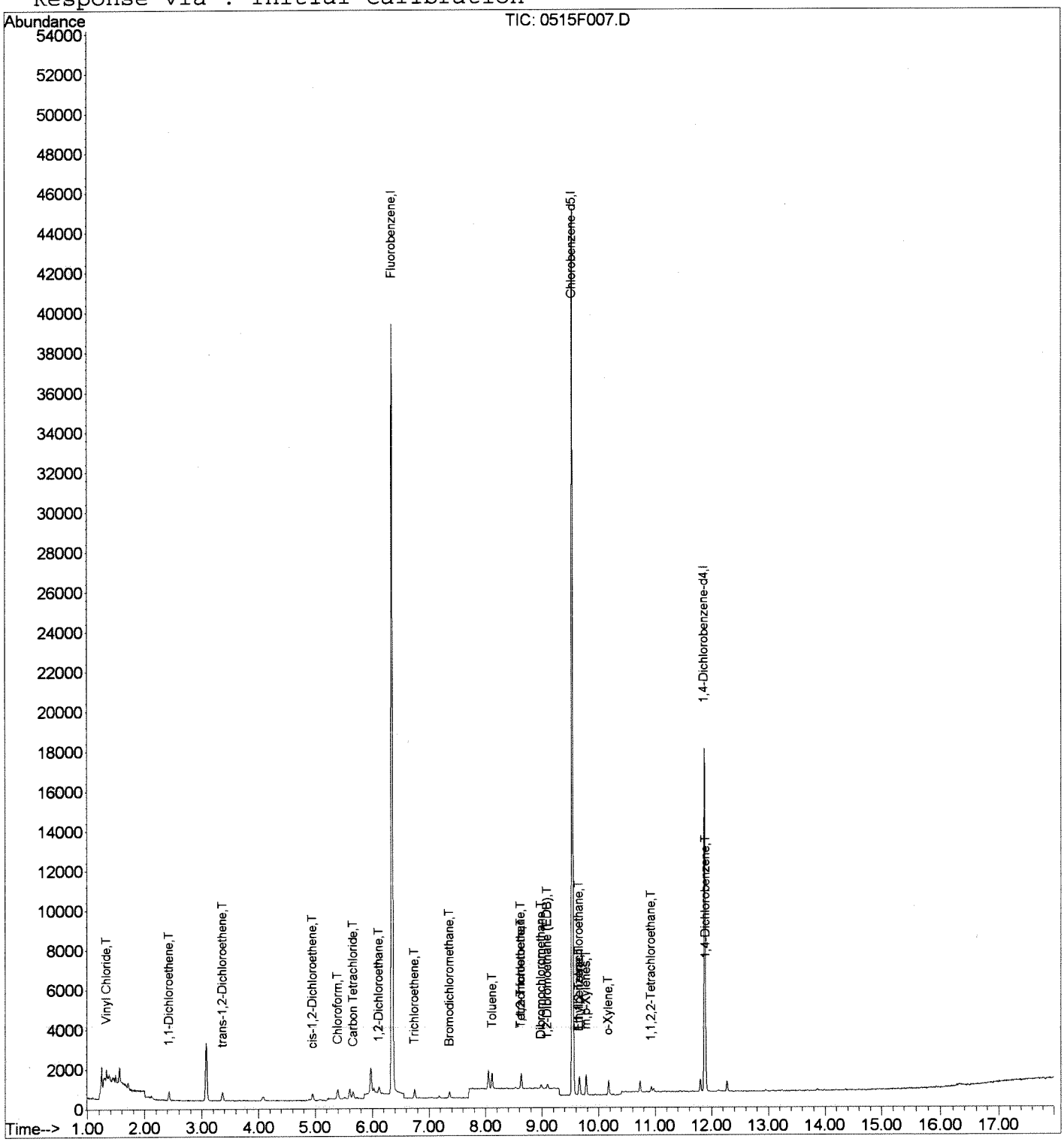
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	53866	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	36149	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14427	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L		
Spiked Amount 1000.000			Recovery =	0.00%			
15) Toluene-d8	0.00	98	0d	0.00	ng/L		
Spiked Amount 1000.000			Recovery =	0.00%			
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L		
Spiked Amount 1000.000			Recovery =	0.00%			
Target Compounds							Qvalue
3) Vinyl Chloride	1.33	62	358	12.43	ng/L		89
4) 1,1-Dichloroethene	2.42	96	185	11.76	ng/L		96
6) trans-1,2-Dichloroethene	3.36	96	249	13.82	ng/L		92
7) cis-1,2-Dichloroethene	4.96	96	196	11.24	ng/L		93
8) Chloroform	5.40	83	527	13.74	ng/L		90
10) Carbon Tetrachloride	5.66	117	285	11.42	ng/L		90
12) 1,2-Dichloroethane	6.12	62	337	12.49	ng/L		95
13) Trichloroethene	6.74	95	239	13.90	ng/L		90
14) Bromodichloromethane	7.36	83	299	11.62	ng/L		94
16) 1,1,2-Trichloroethane	8.63	83	186	12.91	ng/L		92
17) Dibromochloromethane	8.98	129	209	11.73	ng/L		96
18) 1,2-Dibromoethane (EDB)	9.10	107	183	12.67	ng/L		95
20) Toluene	8.11	92	446	15.47	ng/L		88
21) Ethylbenzene	9.65	106	175	12.27	ng/L		96
22) 1,1,1,2-Tetrachloroethane	9.67	131	239	12.77	ng/L		97
23) m,p-Xylenes	9.78	106	466	27.76	ng/L		98
24) o-Xylene	10.18	106	353	20.60	ng/L	#	72
26) 1,1,2,2-Tetrachloroethane	10.93	83	198	11.25	ng/L		94
28) Tetrachloroethene	8.63	164	212	15.14	ng/L		94
30) 1,4-Dichlorobenzene	11.90	146	408	15.96	ng/L		99

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\051517_SIM\0515F007.D Vial: 7
Acq On : 15 May 2017 06:04 pm Operator: GH
Sample : SIM ICAL 10 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:29 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F008.D Vial: 8
Acq On : 15 May 2017 06:32 pm Operator: GH
Sample : SIM ICAL 20 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:23 2017 Quant Results File: 051517MS30_8260

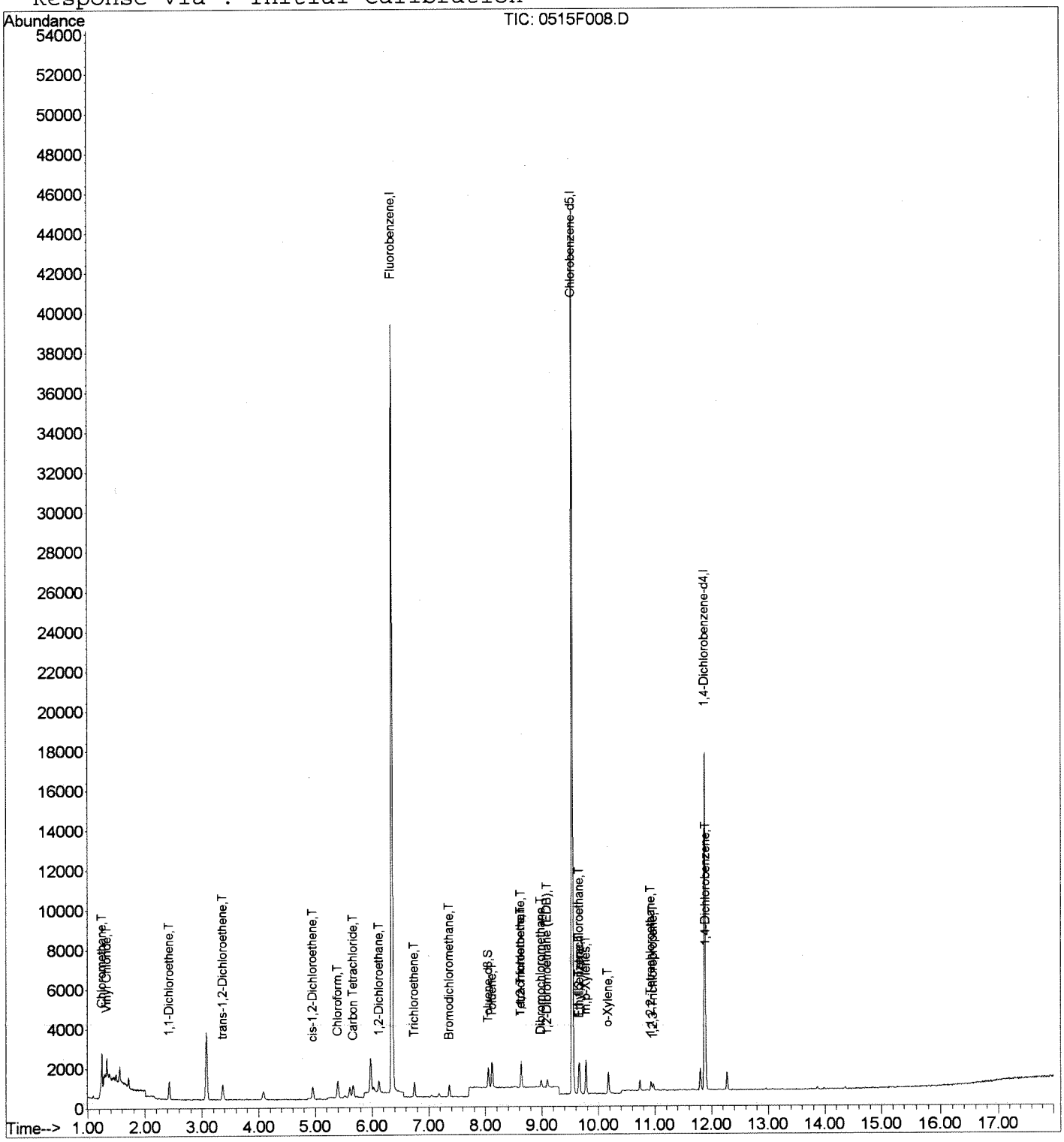
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53288	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36181	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14310	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	8.05	98	1174	28.38	ng/L	0.00
Spiked Amount 1000.000			Recovery =	2.84%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	977	33.05	ng/L	96
3) Vinyl Chloride	1.33	62	650	22.82	ng/L	98
4) 1,1-Dichloroethene	2.43	96	390	25.07	ng/L	93
6) trans-1,2-Dichloroethene	3.36	96	463	25.97	ng/L	88
7) cis-1,2-Dichloroethene	4.95	96	403	23.36	ng/L	91
8) Chloroform	5.40	83	886	23.34	ng/L	98
10) Carbon Tetrachloride	5.66	117	526	21.31	ng/L	98
12) 1,2-Dichloroethane	6.12	62	602	22.55	ng/L	93
13) Trichloroethene	6.74	95	436	25.63	ng/L	91
14) Bromodichloromethane	7.36	83	552	21.68	ng/L	97
16) 1,1,2-Trichloroethane	8.63	83	336	23.58	ng/L	98
17) Dibromochloromethane	8.98	129	400	22.70	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.09	107	303	21.20	ng/L	94
20) Toluene	8.12	92	767	26.58	ng/L	96
21) Ethylbenzene	9.66	106	301	21.09	ng/L #	82
22) 1,1,1,2-Tetrachloroethane	9.67	131	452	24.12	ng/L	96
23) m,p-Xylenes	9.78	106	761	45.29	ng/L	99
24) o-Xylene	10.18	106	462	26.94	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	335	19.01	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	140	26.54	ng/L #	82
28) Tetrachloroethene	8.63	164	350	24.98	ng/L	90
30) 1,4-Dichlorobenzene	11.90	146	605	23.87	ng/L	96

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\051517_SIM\0515F008.D Vial: 8
Acq On : 15 May 2017 06:32 pm Operator: GH
Sample : SIM ICAL 20 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:31 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F009.D Vial: 9
Acq On : 15 May 2017 06:59 pm Operator: GH
Sample : SIM ICAL 50 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:23 2017 Quant Results File: 051517MS30_8260

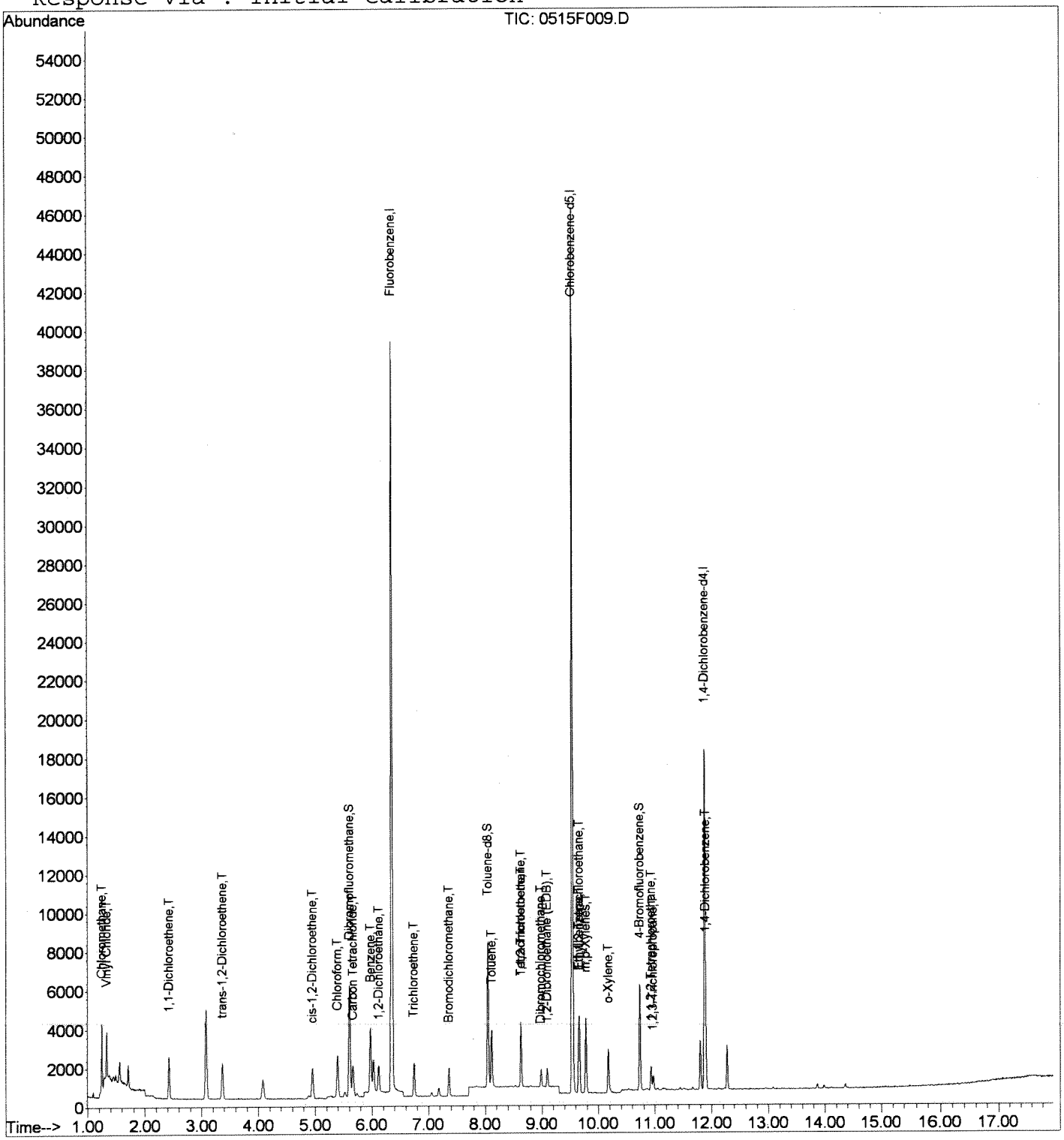
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53815	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36068	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14684	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	4998	257.68	ng/L	0.00
Spiked Amount 1000.000			Recovery =	25.77%		
15) Toluene-d8	8.05	98	9805	234.71	ng/L	0.00
Spiked Amount 1000.000			Recovery =	23.47%		
25) 4-Bromofluorobenzene	10.73	95	3404	229.62	ng/L	0.00
Spiked Amount 1000.000			Recovery =	22.96%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	2004	67.13	ng/L	94
3) Vinyl Chloride	1.33	62	1672	58.12	ng/L	90
4) 1,1-Dichloroethene	2.42	96	947	60.27	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	1083	60.16	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	966	55.45	ng/L	97
8) Chloroform	5.39	83	2192	57.19	ng/L	96
10) Carbon Tetrachloride	5.66	117	1354	54.31	ng/L	94
11) Benzene	5.97	78	4799	70.29	ng/L	97
12) 1,2-Dichloroethane	6.12	62	1452	53.86	ng/L	99
13) Trichloroethene	6.75	95	1007	58.62	ng/L	95
14) Bromodichloromethane	7.36	83	1369	53.24	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	776	53.92	ng/L	97
17) Dibromochloromethane	8.98	129	929	52.20	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.09	107	754	52.25	ng/L	94
20) Toluene	8.11	92	1648	57.29	ng/L	97
21) Ethylbenzene	9.65	106	753	52.92	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	1079	57.77	ng/L	97
23) m,p-Xylenes	9.78	106	1770	105.66	ng/L	94
24) o-Xylene	10.18	106	995	58.21	ng/L	97
26) 1,1,2,2-Tetrachloroethane	10.93	83	897	51.06	ng/L	93
27) 1,2,3-Trichloropropane	10.97	110	274	52.10	ng/L #	87
28) Tetrachloroethene	8.63	164	804	57.56	ng/L	95
30) 1,4-Dichlorobenzene	11.90	146	1400	53.82	ng/L	96

(#) = qualifier out of range (m) = manual integration
0515F009.D 051517MS30_8260SIM.M Tue May 16 11:28:40 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F009.D Vial: 9
Acq On : 15 May 2017 06:59 pm Operator: GH
Sample : SIM ICAL 50 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:31 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F010.D Vial: 10
Acq On : 15 May 2017 07:27 pm Operator: GH
Sample : SIM ICAL 100 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53624m	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	34959	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13492	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	8434	436.38	ng/L	0.00
Spiked Amount 1000.000			Recovery =	43.64%		
15) Toluene-d8	8.05	98	16399	393.96	ng/L	0.00
Spiked Amount 1000.000			Recovery =	39.40%		
25) 4-Bromofluorobenzene	10.73	95	5475	381.03	ng/L	0.00
Spiked Amount 1000.000			Recovery =	38.10%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	3551	119.38	ng/L	98
3) Vinyl Chloride	1.33	62	3238	112.96	ng/L	98
4) 1,1-Dichloroethene	2.42	96	1813	115.80	ng/L	98
5) Methylene Chloride	3.08	84	4275	176.20	ng/L	97
6) trans-1,2-Dichloroethene	3.37	96	2044	113.95	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	1845	106.28	ng/L	98
8) Chloroform	5.39	83	4147	108.58	ng/L	100
10) Carbon Tetrachloride	5.67	117	2769	111.46	ng/L	99
11) Benzene	5.97	78	8321	122.30	ng/L	97
12) 1,2-Dichloroethane	6.12	62	2775	103.31	ng/L	97
13) Trichloroethene	6.75	95	1894	110.64	ng/L	96
14) Bromodichloromethane	7.36	83	2647	103.31	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	1538	107.25	ng/L	95
17) Dibromochloromethane	8.98	129	1771	99.87	ng/L	98
18) 1,2-Dibromoethane (EDB)	9.09	107	1410	98.05	ng/L	96
20) Toluene	8.12	92	3154	113.13	ng/L	98
21) Ethylbenzene	9.65	106	1486	107.75	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	1951	107.76	ng/L	94
23) m,p-Xylenes	9.78	106	3341	205.77	ng/L	99
24) o-Xylene	10.18	106	1737	104.84	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	1751	102.84	ng/L	98
27) 1,2,3-Trichloropropane	10.98	110	507	99.47	ng/L #	84
28) Tetrachloroethene	8.63	164	1642	121.27	ng/L	95
30) 1,4-Dichlorobenzene	11.90	146	2594	108.53	ng/L	97

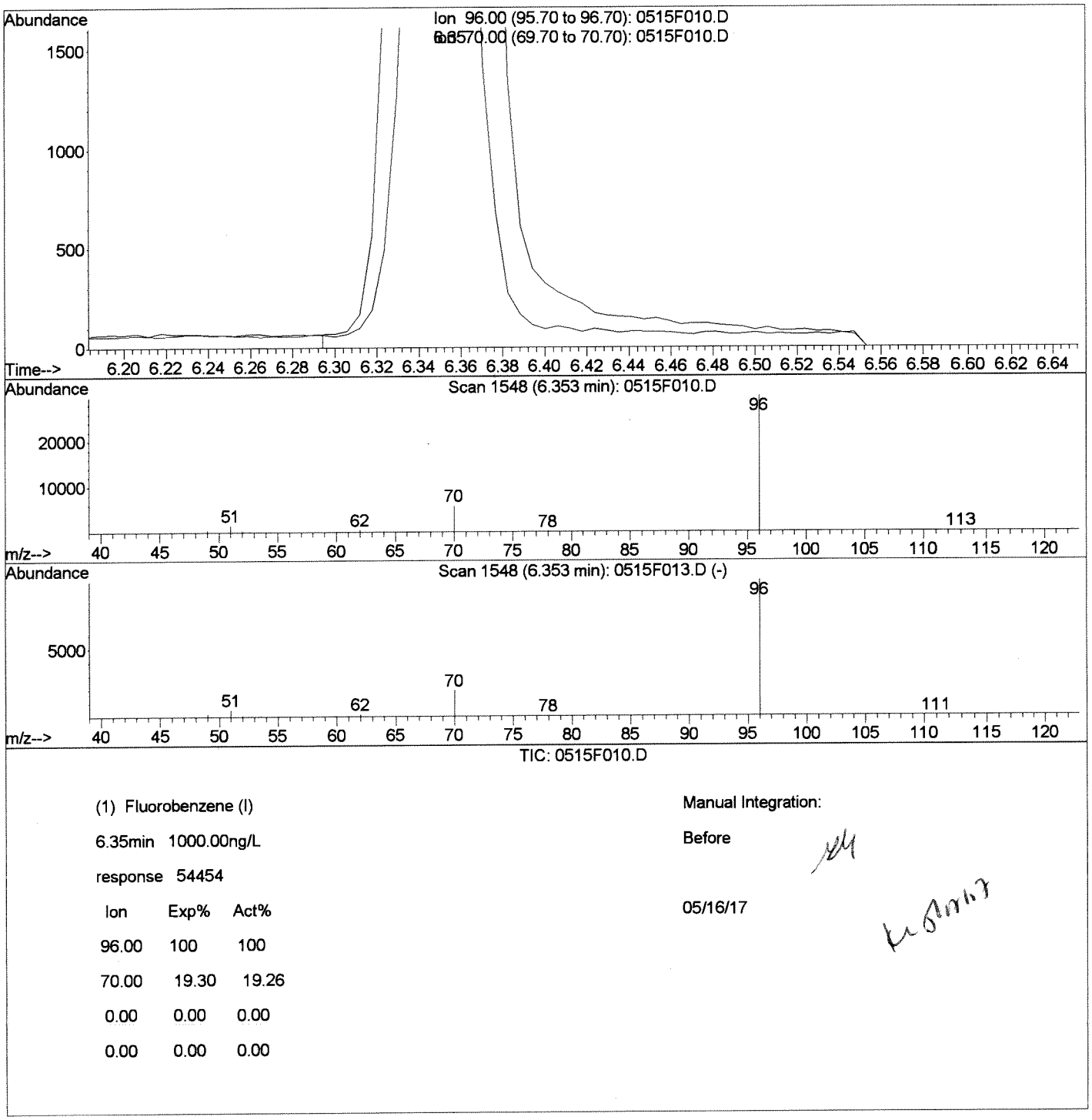
(#) = qualifier out of range (m) = manual integration
0515F010.D 051517MS30_8260SIM.M Tue May 16 11:28:40 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F010.D
Acq On : 15 May 2017 07:27 pm
Sample : SIM ICAL 100 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017

Vial: 10
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration



TIC: 0515F010.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L

response 54454

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.26
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

Before

05/16/17

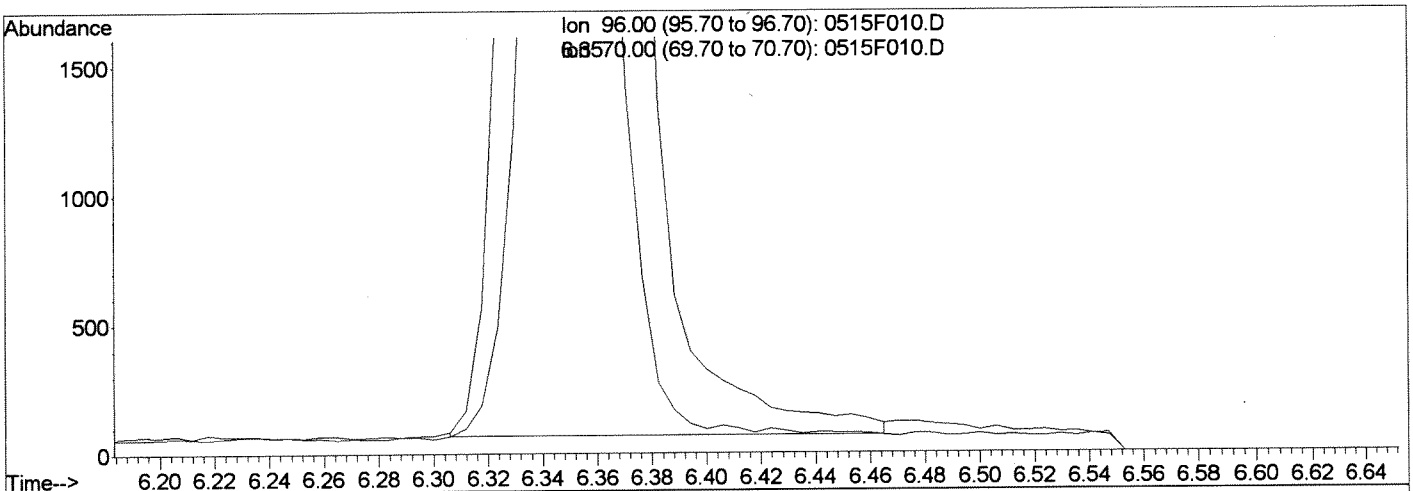
0515F010.D 051517MS30_8260SIM.M Tue May 16 08:32:32 2017

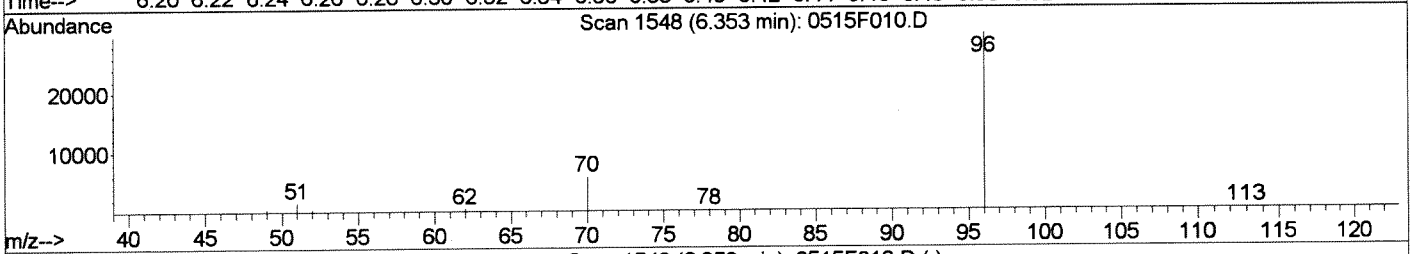
Data File : J:\MS30\DATA\051517_SIM\0515F010.D
Acq On : 15 May 2017 07:27 pm
Sample : SIM ICAL 100 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:32 2017

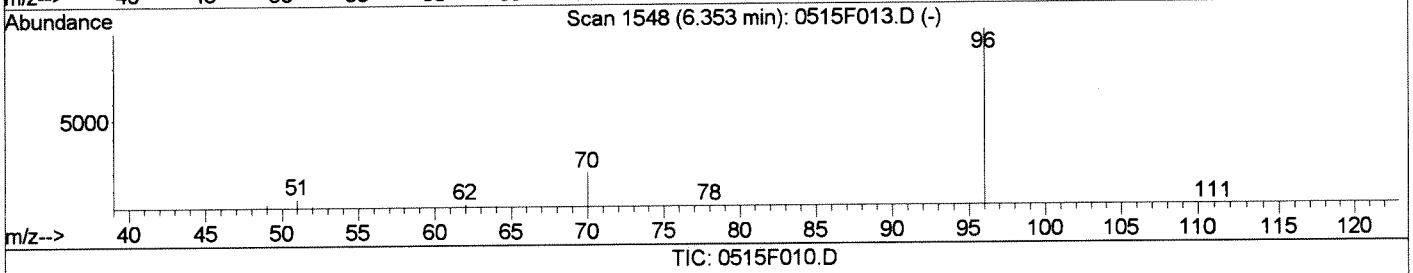
Vial: 10
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F010.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L m

response 53624

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.26
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

After

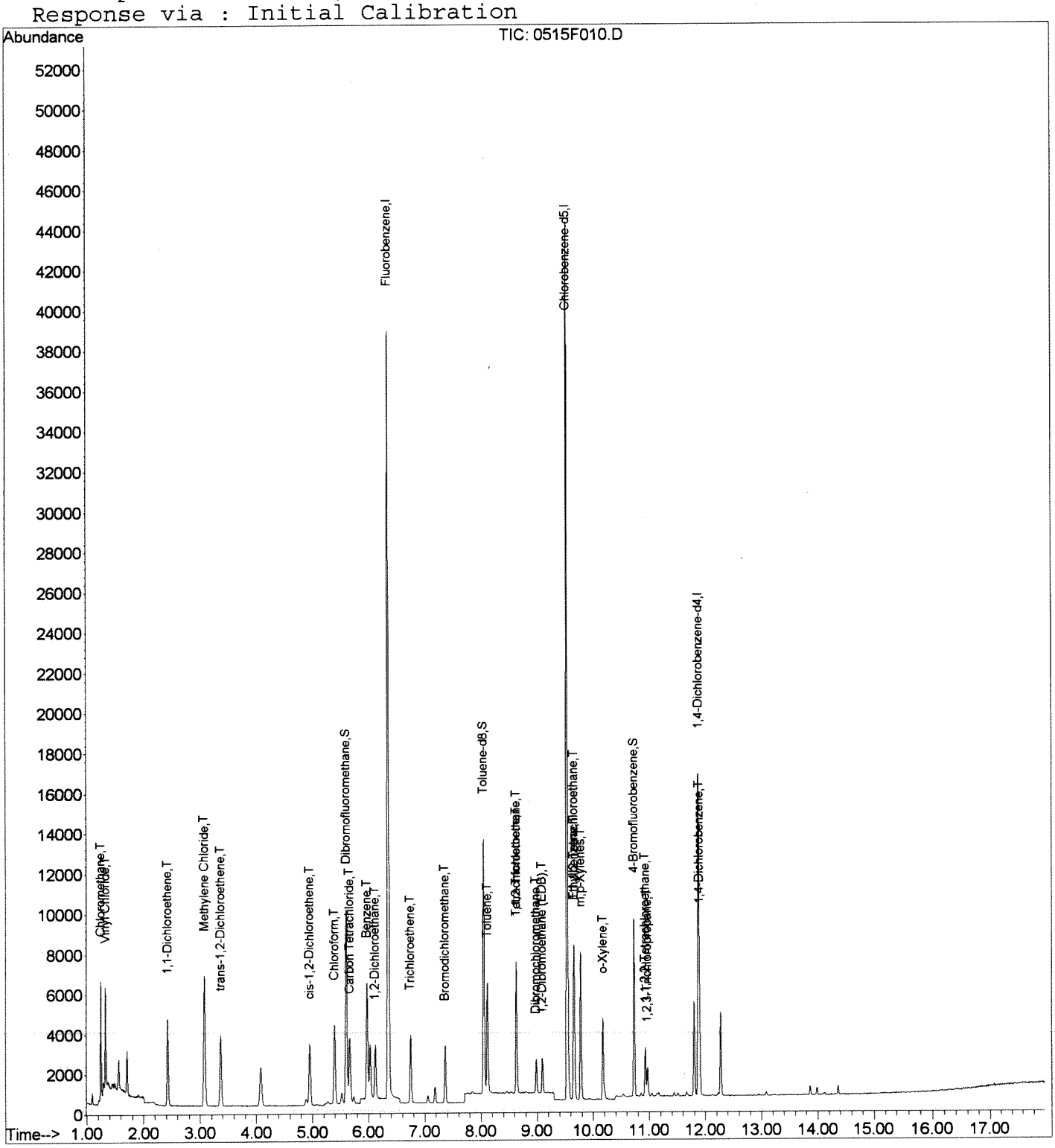
Baseline correction

05/16/17

0515F010.D 051517MS30_8260SIM.M Tue May 16 08:32:42 2017

Data File : J:\MS30\DATA\051517_SIM\0515F010.D Vial: 10
Acq On : 15 May 2017 07:27 pm Operator: GH
Sample : SIM ICAL 100 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:32 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F011.D Vial: 11
Acq On : 15 May 2017 07:54 pm Operator: GH
Sample : SIM ICAL 500 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

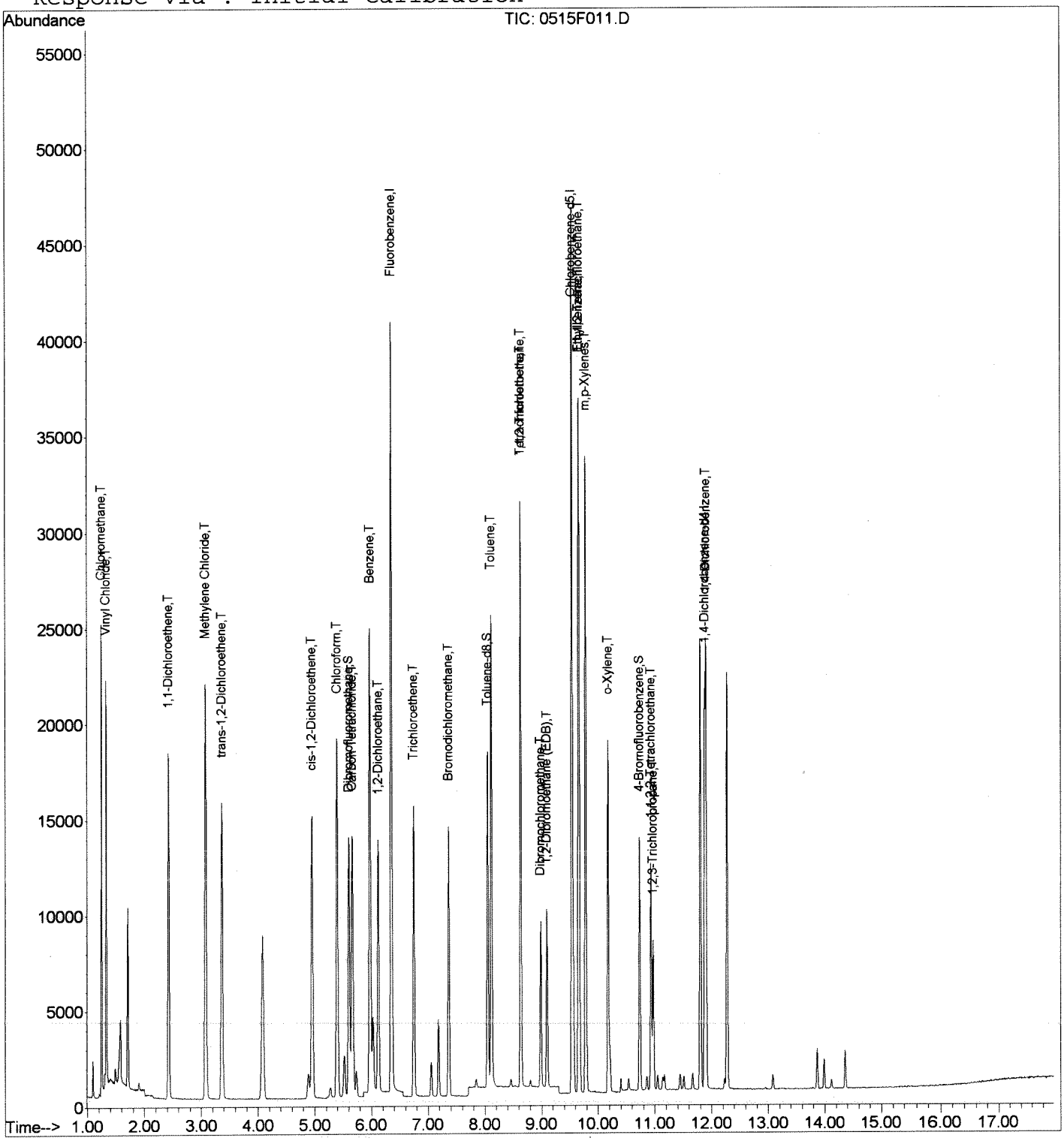
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55534	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37036	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	15685	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	11936	596.34	ng/L	0.00
Spiked Amount 1000.000			Recovery =	59.63%		
15) Toluene-d8	8.05	98	22426	520.22	ng/L	0.00
Spiked Amount 1000.000			Recovery =	52.02%		
25) 4-Bromofluorobenzene	10.73	95	8171	536.77	ng/L	0.00
Spiked Amount 1000.000			Recovery =	53.68%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	14515	471.20	ng/L	99
3) Vinyl Chloride	1.33	62	13266	446.89	ng/L	100
4) 1,1-Dichloroethene	2.42	96	7430	458.26	ng/L	98
5) Methylene Chloride	3.08	84	14375	572.10	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	8815	474.51	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	8819	490.54	ng/L	99
8) Chloroform	5.39	83	19444	491.59	ng/L	98
10) Carbon Tetrachloride	5.66	117	11582	450.16	ng/L	99
11) Benzene	5.97	78	34178	485.07	ng/L	99
12) 1,2-Dichloroethane	6.12	62	14038	504.63	ng/L	99
13) Trichloroethene	6.75	95	8395	473.54	ng/L	99
14) Bromodichloromethane	7.36	83	13224	498.39	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	7423	499.84	ng/L	97
17) Dibromochloromethane	8.98	129	9057	493.17	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	7132	478.92	ng/L	98
20) Toluene	8.12	92	13706	464.03	ng/L	99
21) Ethylbenzene	9.65	106	6617	452.91	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	9684	504.90	ng/L	97
23) m,p-Xylenes	9.78	106	15240	885.99	ng/L	97
24) o-Xylene	10.18	106	7801	444.44	ng/L	99
26) 1,1,2,2-Tetrachloroethane	10.93	83	8563	474.73	ng/L	100
27) 1,2,3-Trichloropropane	10.98	110	2468	457.03	ng/L	90
28) Tetrachloroethene	8.63	164	6654	463.88	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	13085	470.93	ng/L	97

KA 5/17

(#) = qualifier out of range (m) = manual integration
0515F011.D 051517MS30_8260SIM.M Tue May 16 11:28:41 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F011.D Vial: 11
Acq On : 15 May 2017 07:54 pm Operator: GH
Sample : SIM ICAL 500 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F012.D Vial: 12
Acq On : 15 May 2017 08:22 pm Operator: GH
Sample : SIM ICAL 1000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

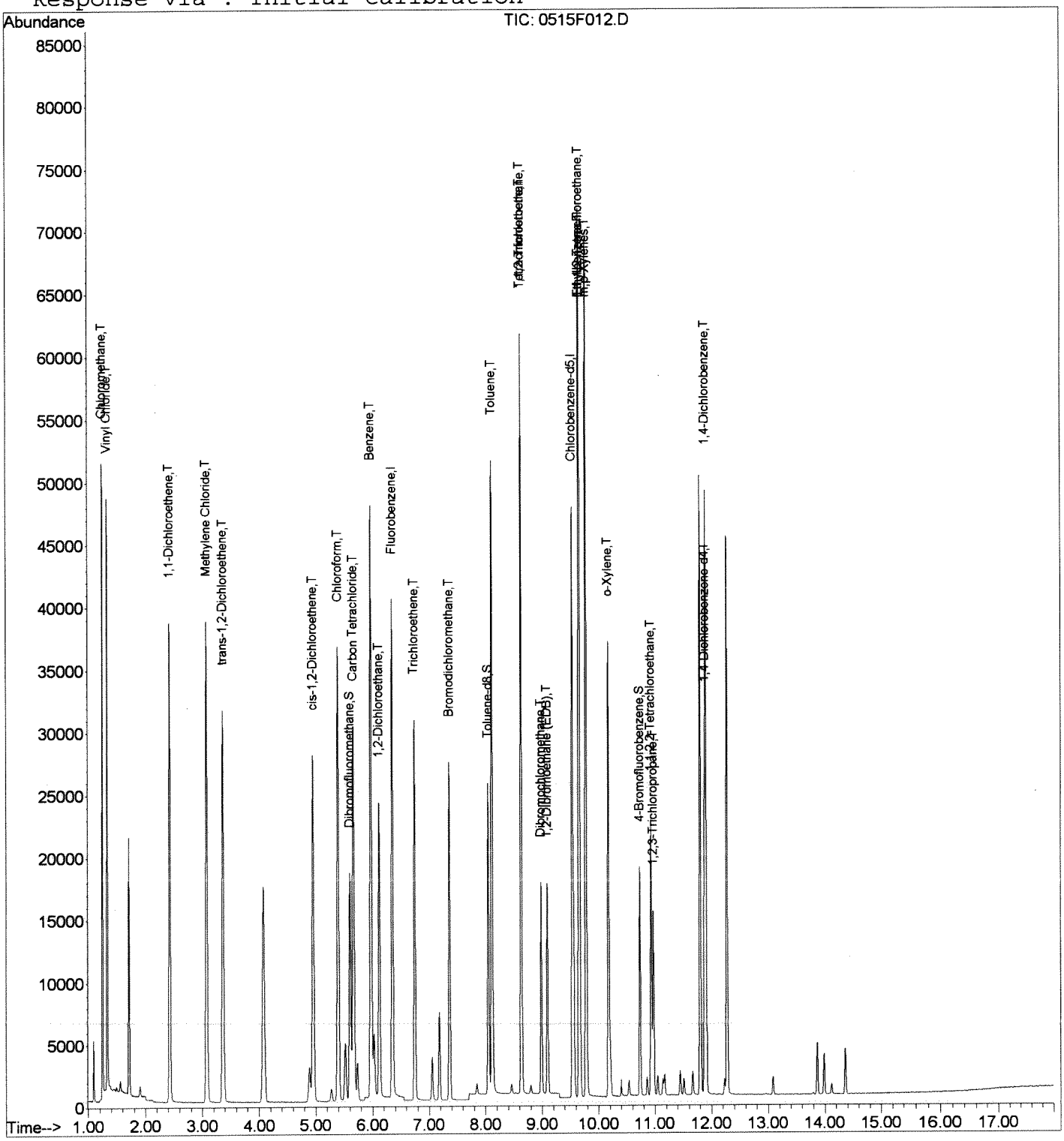
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55597	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37494	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	16911	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	15912	794.08	ng/L	0.00
Spiked Amount 1000.000			Recovery =	79.41%		
15) Toluene-d8	8.05	98	31433	728.33	ng/L	0.00
Spiked Amount 1000.000			Recovery =	72.83%		
25) 4-Bromofluorobenzene	10.73	95	11239	729.29	ng/L	0.00
Spiked Amount 1000.000			Recovery =	72.93%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	30227	980.15	ng/L	100
3) Vinyl Chloride	1.33	62	29539	993.95	ng/L	100
4) 1,1-Dichloroethene	2.43	96	16005	986.02	ng/L	96
5) Methylene Chloride	3.08	84	25180	1000.98	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	18045	970.25	ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	17026	945.97	ng/L	98
8) Chloroform	5.39	83	37861	956.12	ng/L	99
10) Carbon Tetrachloride	5.67	117	25728	998.85	ng/L	99
11) Benzene	5.97	78	66852	947.73	ng/L	99
12) 1,2-Dichloroethane	6.12	62	26005	933.75	ng/L	99
13) Trichloroethene	6.75	95	17240	971.35	ng/L	98
14) Bromodichloromethane	7.36	83	24928	938.43	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	13740	924.16	ng/L	98
17) Dibromochloromethane	8.98	129	16985	923.82	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	13316	893.16	ng/L	99
20) Toluene	8.12	92	28013	936.82	ng/L	99
21) Ethylbenzene	9.65	106	13641	922.27	ng/L	95
22) 1,1,1,2-Tetrachloroethane	9.67	131	18397	947.46	ng/L	100
23) m,p-Xylenes	9.78	106	31387	1802.42	ng/L	99
24) o-Xylene	10.18	106	15806	889.51	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	16171	885.56	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	4805	878.93	ng/L	90
28) Tetrachloroethene	8.63	164	14096	970.70	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	26890	897.61	ng/L	98

(#) = qualifier out of range (m) = manual integration
0515F012.D 051517MS30_8260SIM.M Tue May 16 11:28:42 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F012.D Vial: 12
Acq On : 15 May 2017 08:22 pm Operator: GH
Sample : SIM ICAL 1000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F013.D Vial: 13
Acq On : 15 May 2017 08:49 pm Operator: GH
Sample : SIM ICAL 2000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

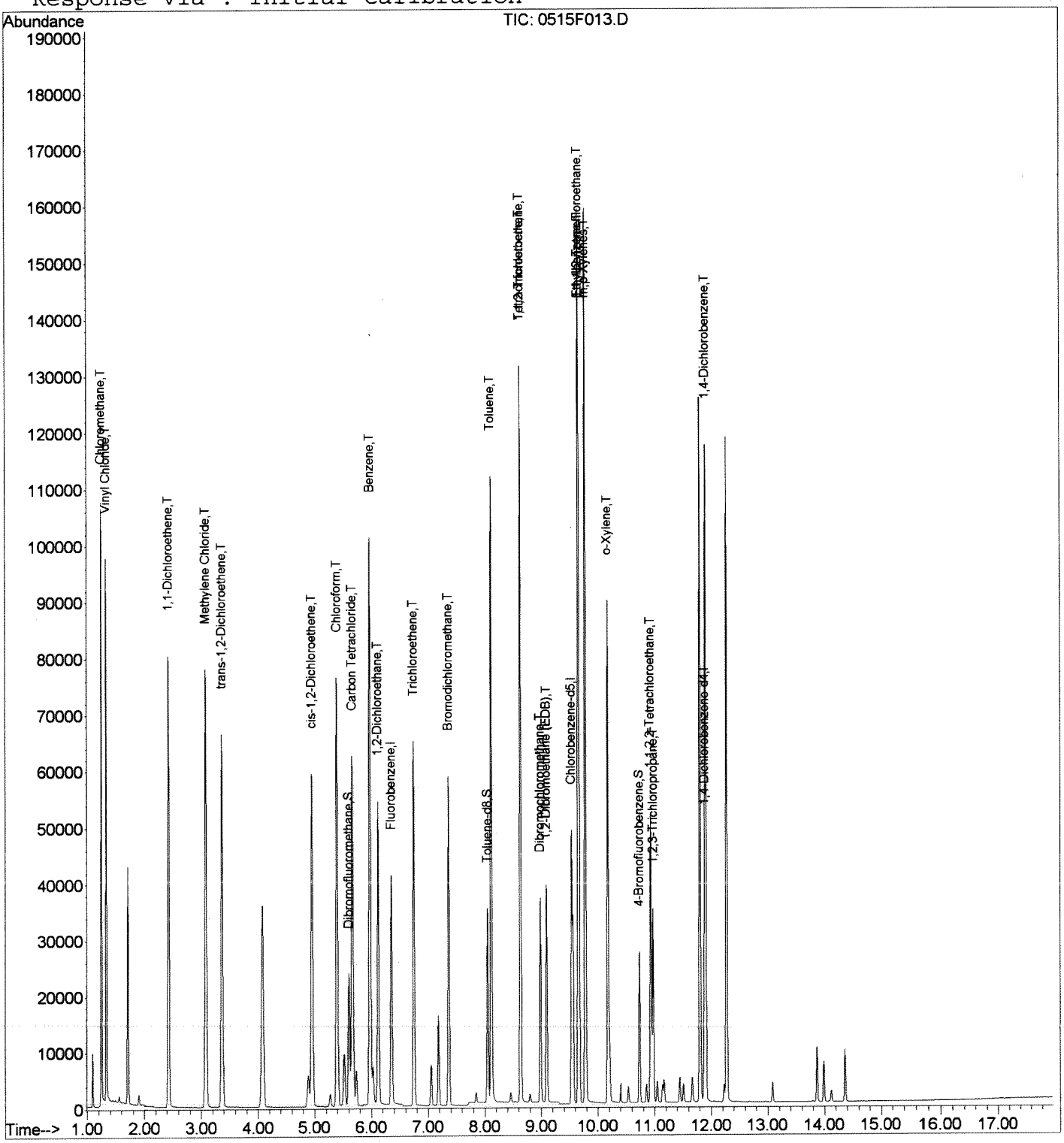
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	56584	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	38599	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	19339	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20394	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
15) Toluene-d8	8.05	98	43924	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
25) 4-Bromofluorobenzene	10.73	95	15865	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	62773	2000.00	ng/L	100
3) Vinyl Chloride	1.33	62	60493	2000.00	ng/L	100
4) 1,1-Dichloroethene	2.43	96	33040	2000.00	ng/L	100
5) Methylene Chloride	3.08	84	51204	2000.00	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	37857	2000.00	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	36636	2000.00	ng/L	100
8) Chloroform	5.39	83	80603	2000.00	ng/L	100
10) Carbon Tetrachloride	5.66	117	52430	2000.00	ng/L	100
11) Benzene	5.98	78	143583	2000.00	ng/L	100
12) 1,2-Dichloroethane	6.12	62	56689	2000.00	ng/L	100
13) Trichloroethene	6.75	95	36127	2000.00	ng/L	100
14) Bromodichloromethane	7.36	83	54070	2000.00	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	30263	2000.00	ng/L	100
17) Dibromochloromethane	8.98	129	37424	2000.00	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	30347	2000.00	ng/L	100
20) Toluene	8.12	92	61567	2000.00	ng/L	100
21) Ethylbenzene	9.66	106	30453	2000.00	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	39979	2000.00	ng/L	100
23) m,p-Xylenes	9.78	106	71708	4000.00	ng/L	100
24) o-Xylene	10.17	106	36586	2000.00	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	37598	2000.00	ng/L	100
27) 1,2,3-Trichloropropane	10.97	110	11256	2000.00	ng/L	100
28) Tetrachloroethene	8.63	164	29899	2000.00	ng/L	100
30) 1,4-Dichlorobenzene	11.90	146	68517	2000.00	ng/L	100

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F013.D 051517MS30_8260SIM.M Tue May 16 11:28:42 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F013.D Vial: 13
Acq On : 15 May 2017 08:49 pm Operator: GH
Sample : SIM ICAL 2000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F014.D Vial: 14
Acq On : 15 May 2017 09:16 pm Operator: GH
Sample : SIM ICAL 5000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

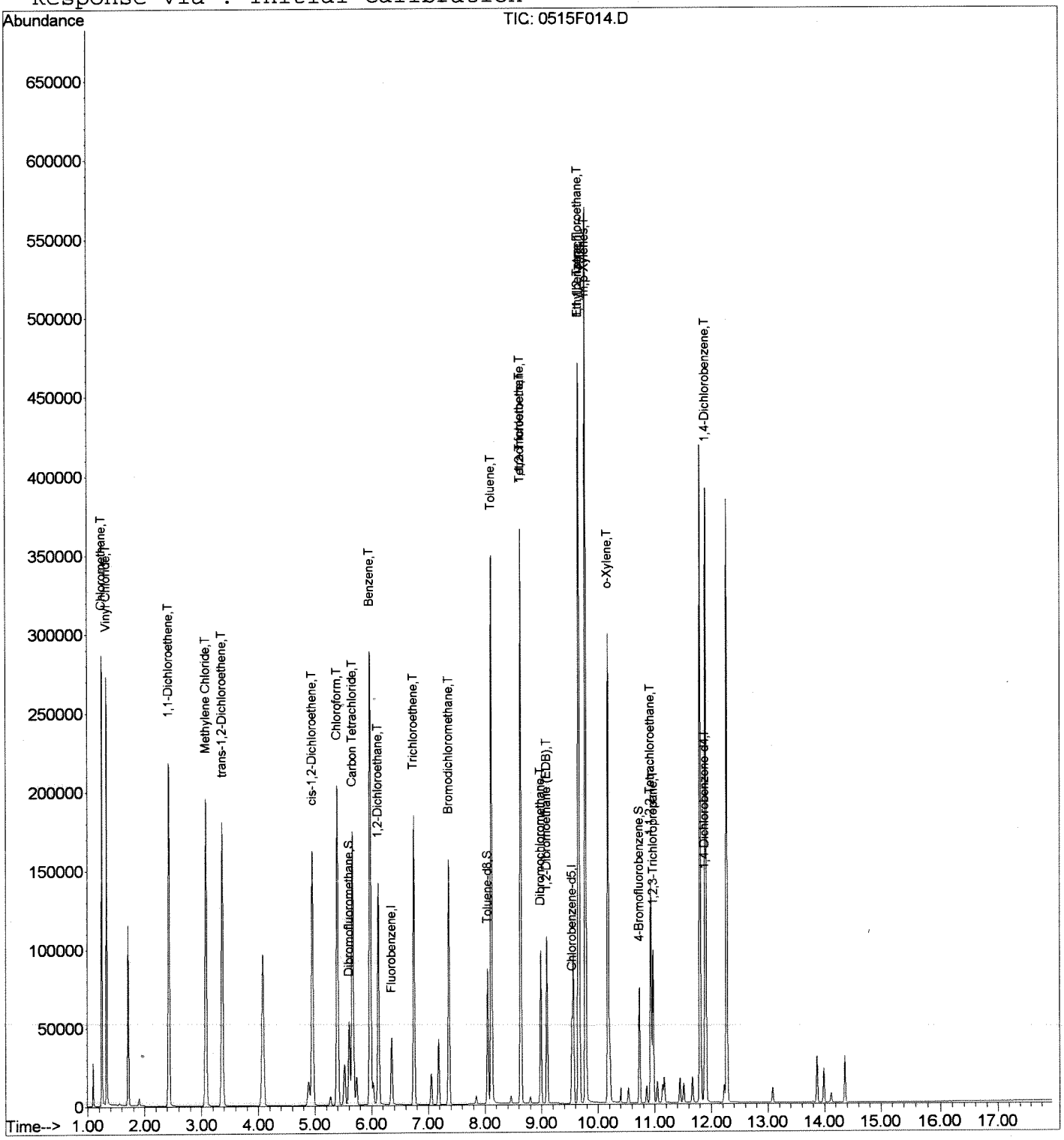
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	60512	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	41870	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	25034	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	45799	2099.93 ng/L	0.00
Spiked Amount 1000.000			Recovery = 209.99%		
15) Toluene-d8	8.05	98	109697	2335.31 ng/L	0.00
Spiked Amount 1000.000			Recovery = 233.53%		
25) 4-Bromofluorobenzene	10.73	95	44167	2566.44 ng/L	0.00
Spiked Amount 1000.000			Recovery = 256.64%		
Target Compounds					Qvalue
2) Chloromethane	1.25	50	170484	5079.17 ng/L	99
3) Vinyl Chloride	1.33	62	167624	5182.19 ng/L	100
4) 1,1-Dichloroethene	2.43	96	91872	5200.26 ng/L	99
5) Methylene Chloride	3.08	84	129131	4716.38 ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	103750	5125.36 ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	100373	5123.79 ng/L	98
8) Chloroform	5.39	83	213436	4952.20 ng/L	99
10) Carbon Tetrachloride	5.66	117	148990	5314.46 ng/L	100
11) Benzene	5.98	78	406583	5295.76 ng/L	100
12) 1,2-Dichloroethane	6.12	62	147871	4878.28 ng/L	100
13) Trichloroethene	6.75	95	102151	5288.02 ng/L	99
14) Bromodichloromethane	7.36	83	144084	4983.58 ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	80353	4965.61 ng/L	100
17) Dibromochloromethane	8.98	129	99829	4988.71 ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	81400	5016.38 ng/L	96
20) Toluene	8.12	92	190354	5700.55 ng/L	100
21) Ethylbenzene	9.66	106	97674	5913.60 ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	108103	4985.50 ng/L	100
23) m,p-Xylenes	9.78	106	252528	12985.99 ng/L	99
24) o-Xylene	10.18	106	125617	6330.48 ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	102034	5003.61 ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	31464	5153.86 ng/L	98
28) Tetrachloroethene	8.63	164	88054	5429.95 ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	230355	5194.37 ng/L	99

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F014.D 051517MS30_8260SIM.M Tue May 16 11:28:43 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F014.D Vial: 14
Acq On : 15 May 2017 09:16 pm Operator: GH
Sample : SIM ICAL 5000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F015.D Vial: 15
Acq On : 15 May 2017 09:44 pm Operator: GH
Sample : SIM ICAL 7000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

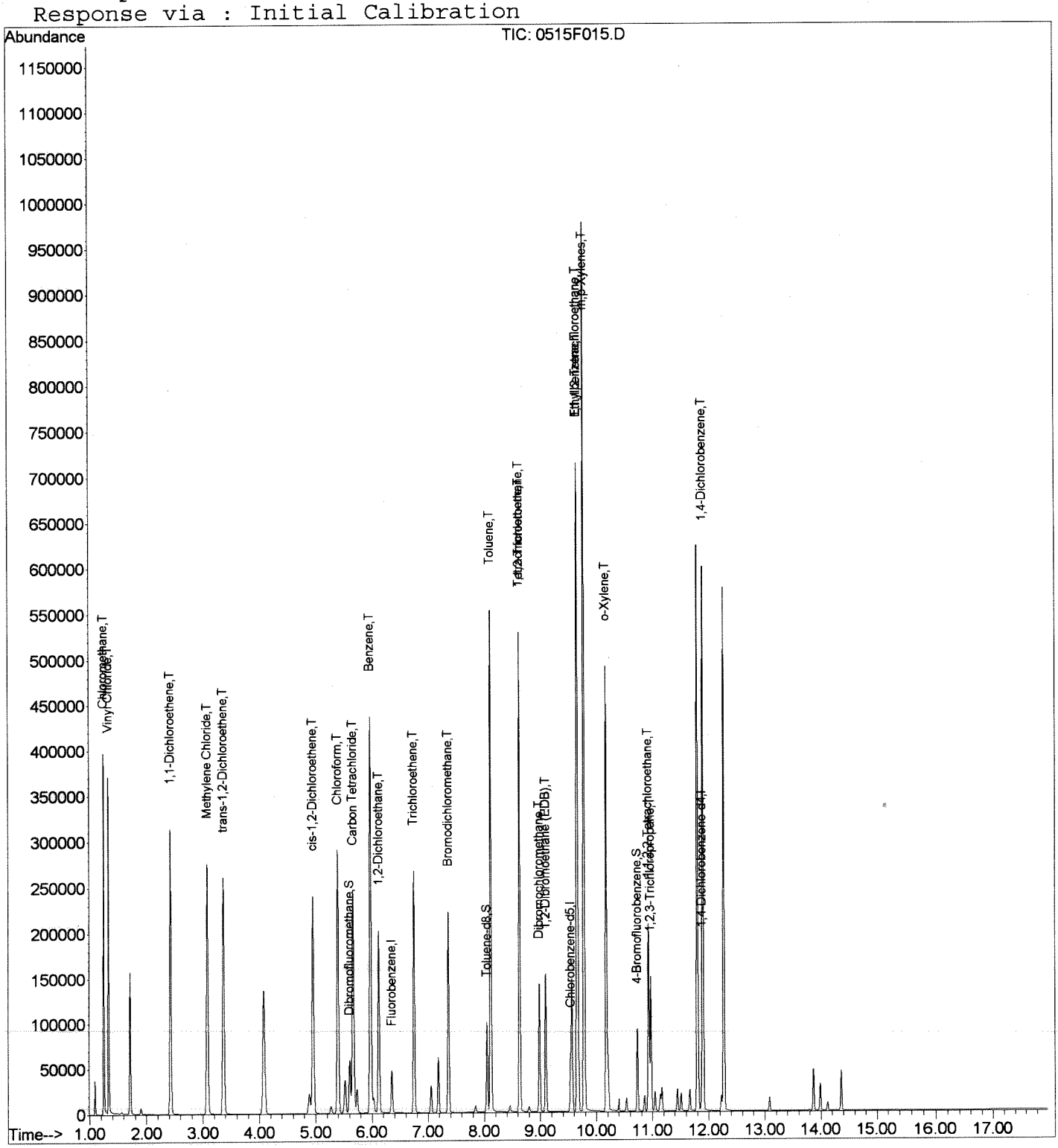
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	66029	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.53	117	45952	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	27571	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	51534	2165.46	ng/L	0.00
Spiked Amount 1000.000			Recovery = 216.55%			
15) Toluene-d8	8.05	98	122928	2398.32	ng/L	0.00
Spiked Amount 1000.000			Recovery = 239.83%			
25) 4-Bromofluorobenzene	10.73	95	54946	2909.16	ng/L	0.00
Spiked Amount 1000.000			Recovery = 290.92%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	240127	6556.27	ng/L	100
3) Vinyl Chloride	1.33	62	233426	6613.53	ng/L	100
4) 1,1-Dichloroethene	2.43	96	131429	6817.73	ng/L	99
5) Methylene Chloride	3.08	84	181435	6073.04	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	149069	6748.85	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	147769	6912.96	ng/L	98
8) Chloroform	5.39	83	302940	6441.61	ng/L	99
10) Carbon Tetrachloride	5.66	117	209920	6862.19	ng/L	100
11) Benzene	5.97	78	606848	7243.79	ng/L	99
12) 1,2-Dichloroethane	6.12	62	213596	6457.78	ng/L	99
13) Trichloroethene	6.75	95	147889	7016.05	ng/L	99
14) Bromodichloromethane	7.36	83	207061	6563.43	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	117283	6642.20	ng/L	99
17) Dibromochloromethane	8.98	129	145981	6685.52	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	121464	6859.95	ng/L	98
20) Toluene	8.12	92	294679	8040.87	ng/L	100
21) Ethylbenzene	9.66	106	155203	8561.93	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	154446	6490.02	ng/L	99
23) m,p-Xylenes	9.78	106	422544	19798.67	ng/L	99
24) o-Xylene	10.17	106	202681	9306.79	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	153008	6836.77	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	47406	7075.40	ng/L	98
28) Tetrachloroethene	8.63	164	127181	7146.07	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	346345	7091.24	ng/L	99

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F015.D 051517MS30_8260SIM.M Tue May 16 11:28:44 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F015.D Vial: 15
Acq On : 15 May 2017 09:44 pm Operator: GH
Sample : SIM ICAL 7000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F016.D Vial: 16
Acq On : 15 May 2017 10:12 pm Operator: GH
Sample : SIM ICAL 10000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:26 2017 Quant Results File: 051517MS30_8260

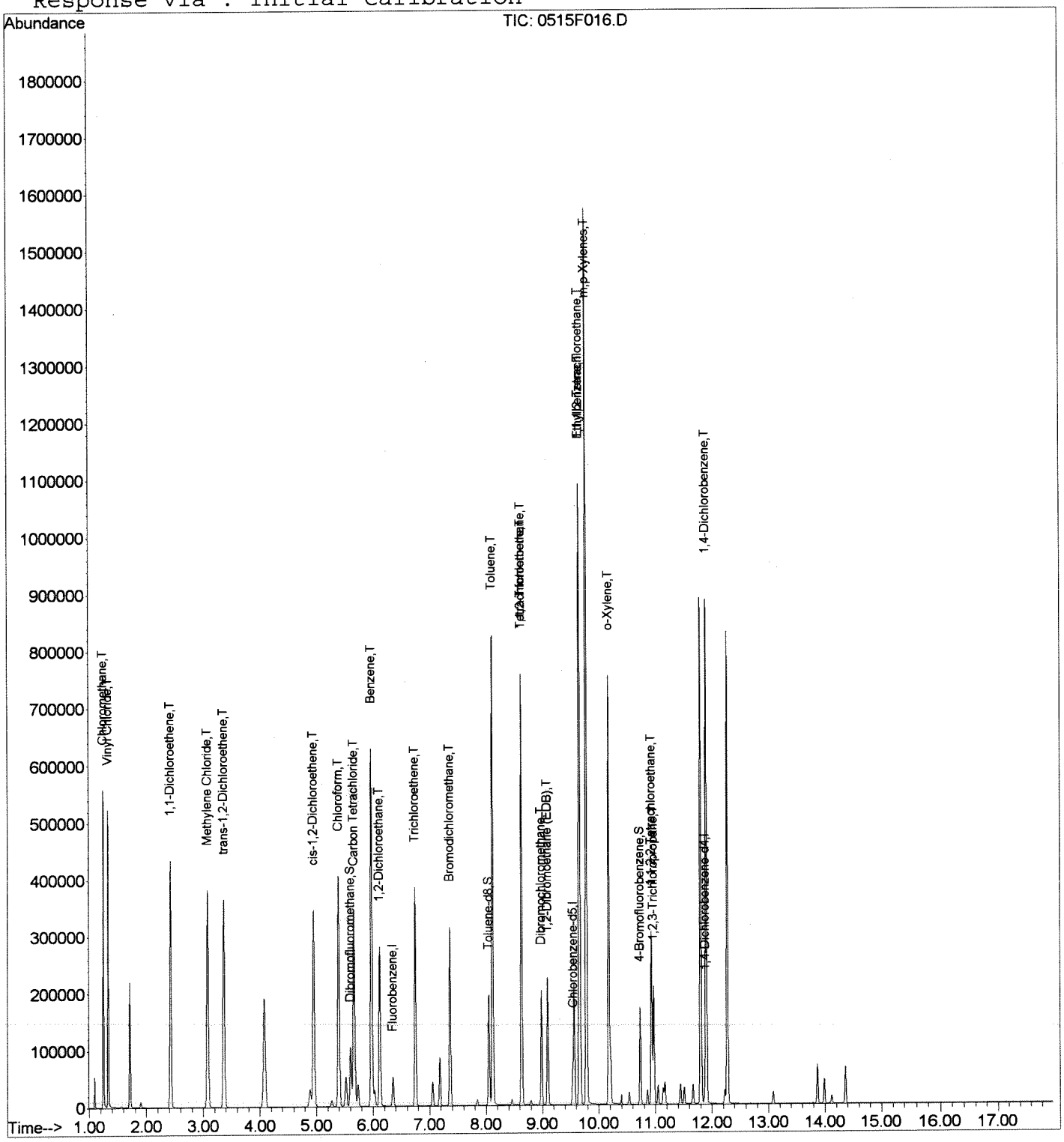
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	70658	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	49882	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	30847	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	90840	3567.03 ng/L	0.00
Spiked Amount 1000.000			Recovery = 356.70%		
15) Toluene-d8	8.05	98	245121	4469.01 ng/L	0.00
Spiked Amount 1000.000			Recovery = 446.90%		
25) 4-Bromofluorobenzene	10.73	95	103056	5026.50 ng/L	0.00
Spiked Amount 1000.000			Recovery = 502.65%		
Target Compounds					Qvalue
2) Chloromethane	1.25	50	330636	8436.06 ng/L	100
3) Vinyl Chloride	1.33	62	325025	8605.46 ng/L	100
4) 1,1-Dichloroethene	2.43	96	182523	8847.89 ng/L	99
5) Methylene Chloride	3.08	84	251569	7868.93 ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	209862	8878.71 ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	212375	9284.48 ng/L	98
8) Chloroform	5.39	83	422832	8401.93 ng/L	99
10) Carbon Tetrachloride	5.66	117	292333	8930.18 ng/L	100
11) Benzene	5.97	78	876596	9778.20 ng/L	99
12) 1,2-Dichloroethane	6.12	62	301120	8507.52 ng/L	99
13) Trichloroethene	6.75	95	211752	9387.67 ng/L	98
14) Bromodichloromethane	7.36	83	292438	8662.43 ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	165516	8759.72 ng/L	99
17) Dibromochloromethane	8.98	129	207103	8863.36 ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	174839	9227.52 ng/L	98
20) Toluene	8.12	92	455267	11444.07 ng/L	99
21) Ethylbenzene	9.65	106	242741	12336.03 ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	218417	8455.06 ng/L	100
23) m,p-Xylenes	9.78	106	678470	29285.67 ng/L	97
24) o-Xylene	10.18	106	312017	13198.53 ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	216291	8902.99 ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	66660	9165.23 ng/L	92
28) Tetrachloroethene	8.63	164	182229	9432.42 ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	503448	9213.13 ng/L	98

(#) = qualifier out of range (m) = manual integration
0515F016.D 051517MS30_8260SIM.M Tue May 16 11:28:44 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F016.D Vial: 16
Acq On : 15 May 2017 10:12 pm Operator: GH
Sample : SIM ICAL 10000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:45:36 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

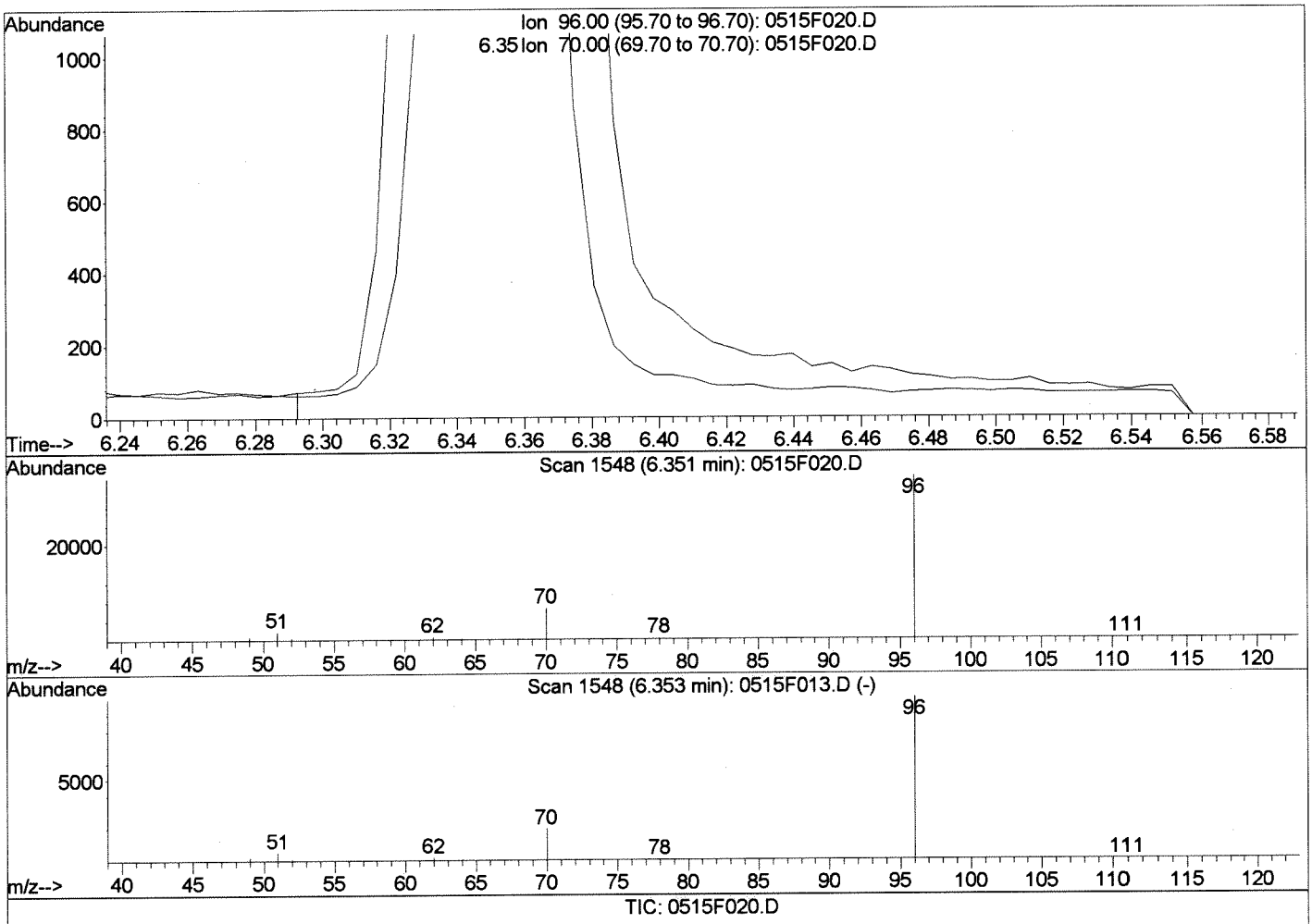
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	60011m	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	42478	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	20752	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20634	929.60	ng/L	0.00
Spiked Amount 1000.000			Recovery = 92.96%			
15) Toluene-d8	8.05	98	51260	1070.91	ng/L	0.00
Spiked Amount 1000.000			Recovery = 107.09%			
25) 4-Bromofluorobenzene	10.73	95	16790	888.49	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.85%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	53040	1544.15	ng/L	99
3) Vinyl Chloride	1.33	62	53703	1608.82	ng/L	99
4) 1,1-Dichloroethene	2.43	96	37588	2024.96	ng/L	98
5) Methylene Chloride	3.08	84	53605	2062.59	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	41221	1958.14	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	40390	2012.29	ng/L	98
8) Chloroform	5.39	83	87226	2021.22	ng/L	99
10) Carbon Tetrachloride	5.66	117	57968	2035.43	ng/L	99
11) Benzene	5.97	78	153889	1876.12	ng/L	100
12) 1,2-Dichloroethane	6.12	62	59693	1950.83	ng/L	99
13) Trichloroethene	6.75	95	40581	2011.60	ng/L	98
14) Bromodichloromethane	7.36	83	59078	2044.17	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	32272	1995.07	ng/L	98
17) Dibromochloromethane	8.98	129	38530	1922.24	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	31349	1982.70	ng/L	97
20) Toluene	8.12	92	72439	1943.07	ng/L	99
21) Ethylbenzene	9.65	106	36388	2023.60	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	41345	1845.40	ng/L	99
23) m,p-Xylenes	9.78	106	84779	4118.72	ng/L	97
24) o-Xylene	10.18	106	41872	1994.48	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	40199	2009.41	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	11537	1839.31	ng/L #	89
28) Tetrachloroethene	8.63	164	33789	1933.26	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	77205	2061.73	ng/L	97

(#) = qualifier out of range (m) = manual integration
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:31:11 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F020.D
Acq On : 16 May 2017 12:02 am
Sample : ICV
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:45 2017

Vial: 20
Operator: GH
Inst : MS30
Multiplr: 1.00
Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0515F020.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L

response 60778

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

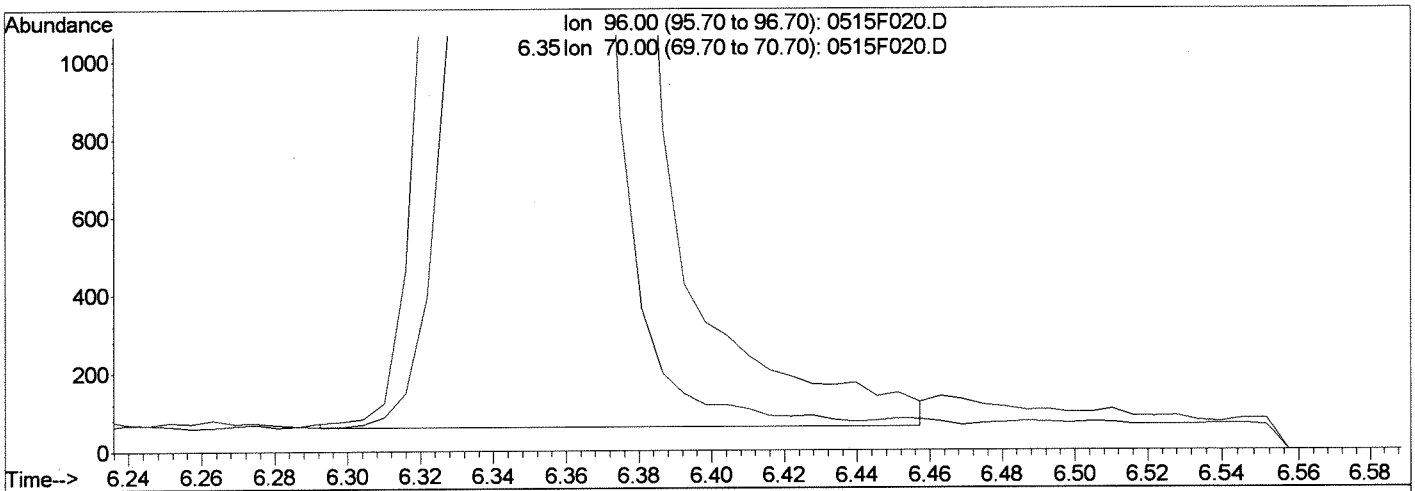
Before

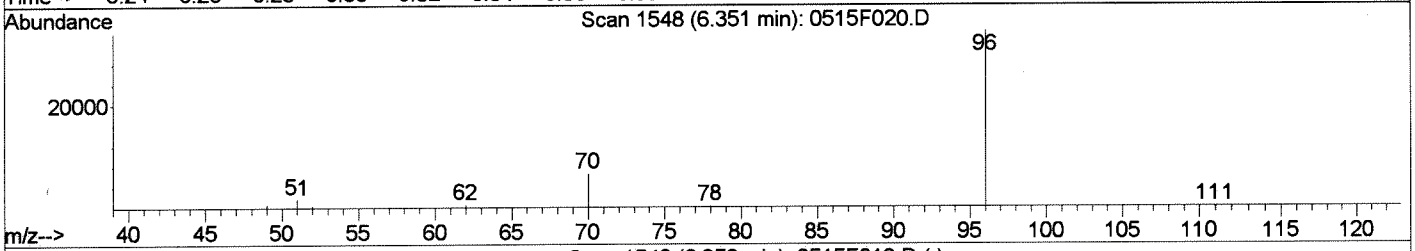
05/16/17

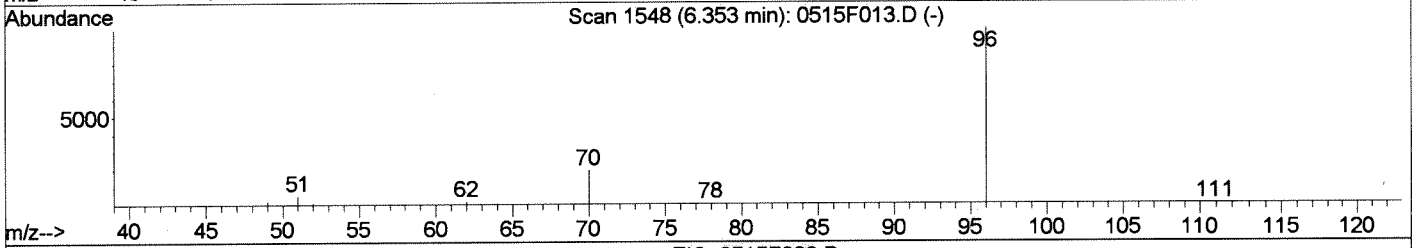
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:29:21 2017

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:29 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration







TIC: 0515F020.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L m

response 60011

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

After

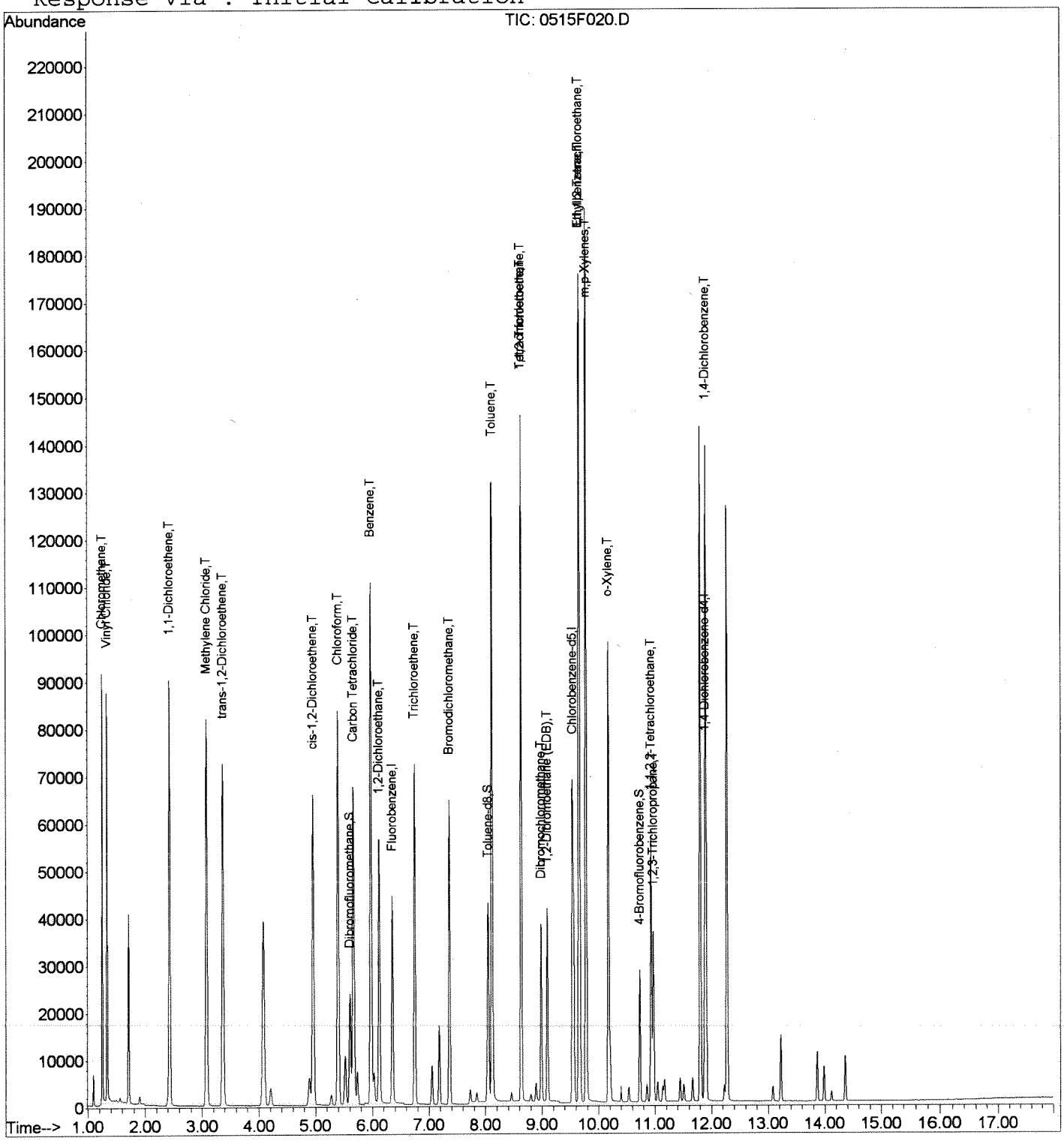
Baseline correction

05/16/17

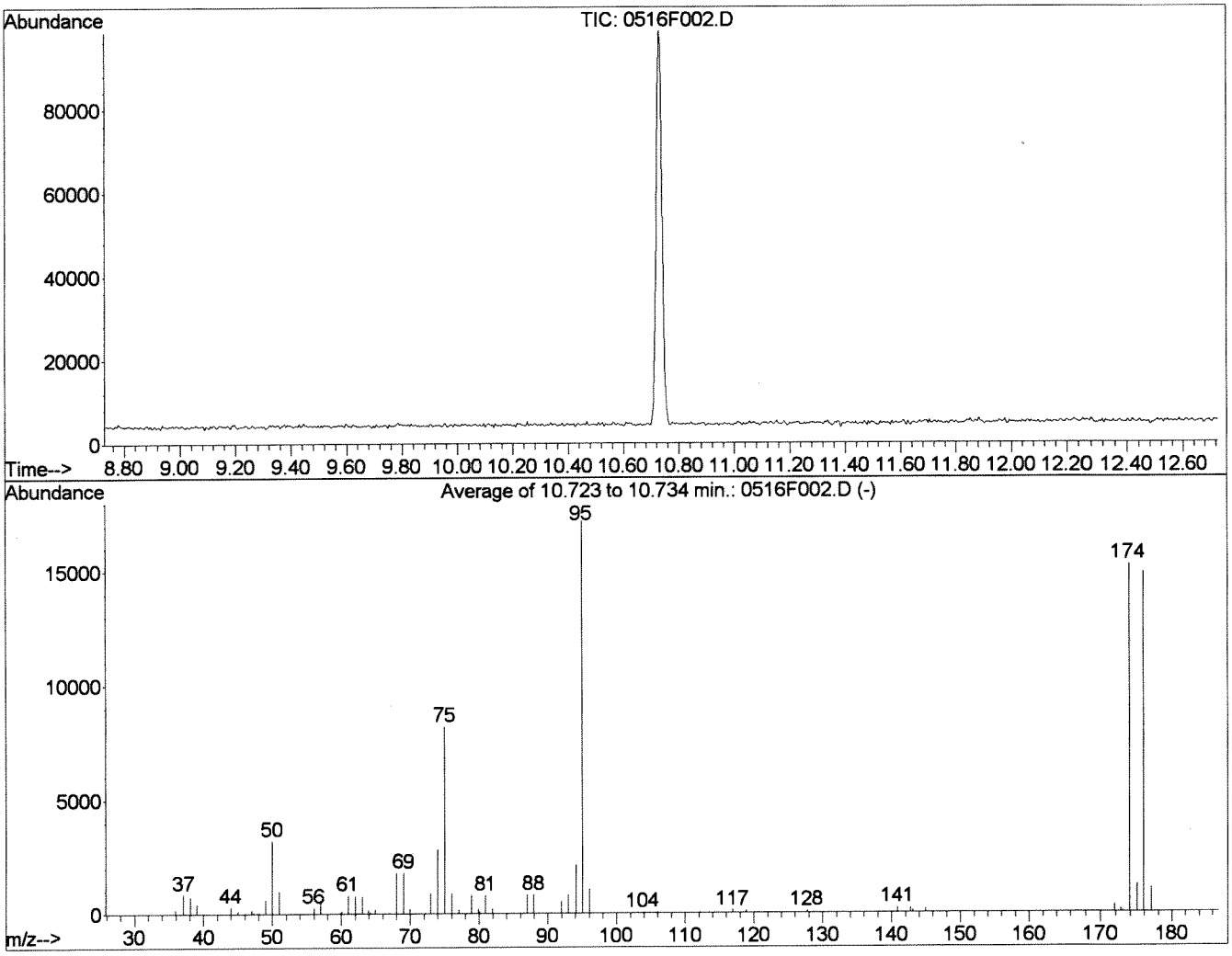
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:29:41 2017

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:29 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051617_SIM\0516F002.D Vial: 2
Acq On : 16 May 2017 09:55 am Operator: GH
Sample : 50NG BFB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM



AutoFind: Scans 1857, 1858, 1859; Background Corrected with Scan 1850

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.7	3221	PASS
75	95	30	60	47.6	8172	PASS
95	95	100	100	100.0	17186	PASS
96	95	5	9	6.2	1069	PASS
173	174	0.00	2	0.9	133	PASS
174	95	50	120	88.7	15241	PASS
175	174	5	9	8.0	1212	PASS
176	174	95	101	97.9	14914	PASS
177	176	5	9	7.1	1052	PASS

J:\MS30\DATA\051617_SIM\0516F002.D 051517MS30_8260SIM.M Tue May 16 11:2

Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051617_SIM\0516F003.D Vial: 3
Acq On : 16 May 2017 10:36 am Operator: GH
Sample : MIX 6 ONLY ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:57:48 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54623	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36181	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14352	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20829	1030.95	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.10%			
15) Toluene-d8	8.05	98	45229	1038.12	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.81%			
25) 4-Bromofluorobenzene	10.73	95	14176	880.72	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.07%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	64784	2072.09	ng/L	100
3) Vinyl Chloride	1.33	62	60947	2005.93	ng/L	99
30) 1,4-Dichlorobenzene	11.91	146	198	7.65	ng/L	95

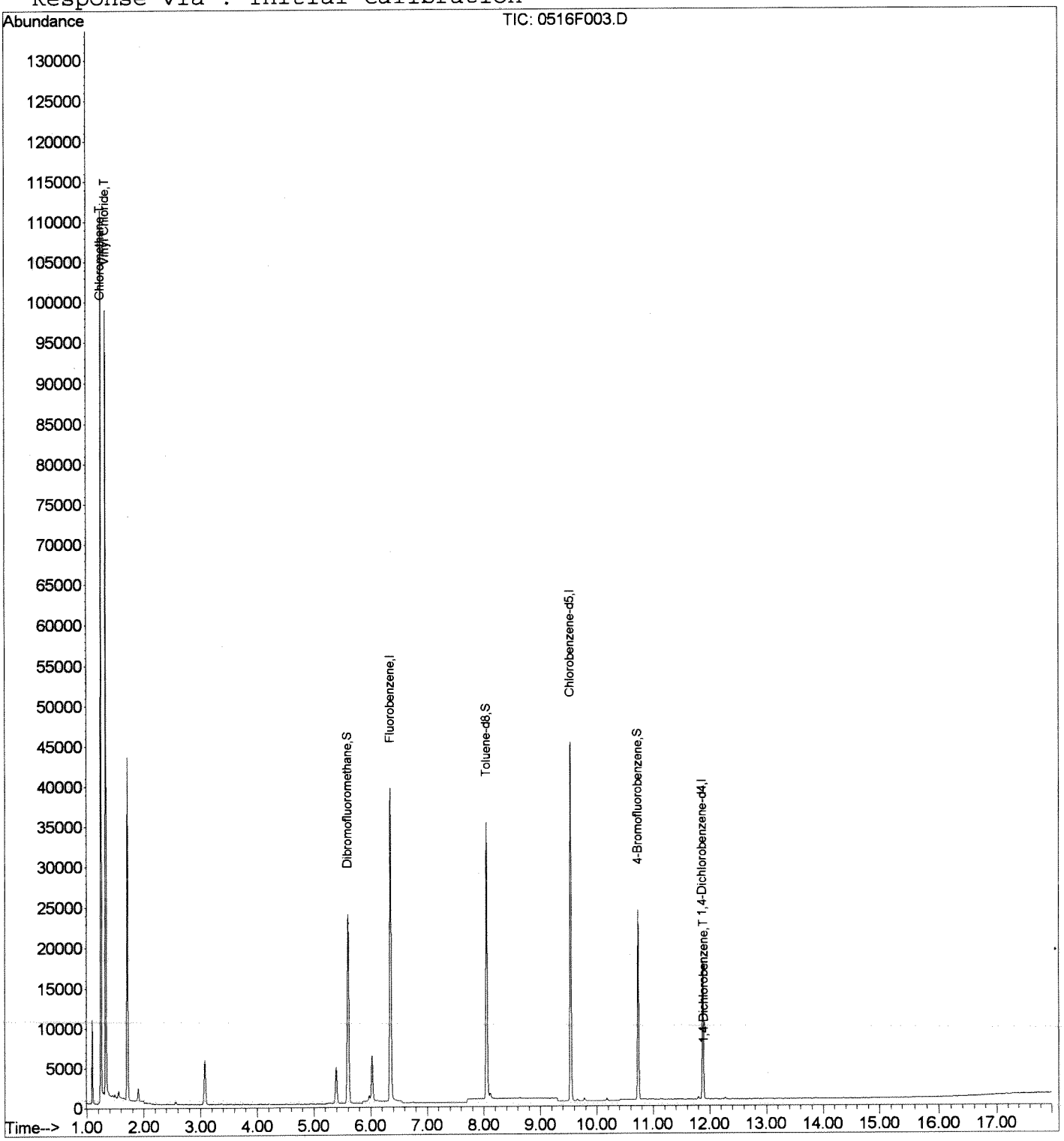
5/16/17

5/16/17

(#) = qualifier out of range (m) = manual integration
0516F003.D 051517MS30_8260SIM.M Tue May 16 11:28:45 2017 Page 1

Data File : J:\MS30\DATA\051617_SIM\0516F003.D Vial: 3
Acq On : 16 May 2017 10:36 am Operator: GH
Sample : MIX 6 ONLY ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:28 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Appendix B11
GCAL Report 217053113 dated June 8, 2017

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 06/08/2017

GCAL Report 217053113

Project ARNG OMS 28/ 60439687

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 217053113

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 217053113

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

See subcontract laboratory report case narrative.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21705311301	OMS-28-GW38-30-S	Water	05/11/2017 09:40	05/13/2017 12:00
21705311302	Trip Blank	Water	05/11/2017 00:01	05/13/2017 12:00
21705311303	OMS-28-GW41-20-S	Water	05/11/2017 15:30	05/13/2017 12:00
21705311304	OMS-28-GW57-16-S	Water	05/12/2017 11:45	05/13/2017 12:00
21705311305	OMS-28-GW57-16-S-a	Water	05/12/2017 11:45	05/13/2017 12:00

Client ID: 4838 - AECOM
SDG: 217053113
PM: AMK

AECOM

Chain of Custody and Analytical Requ

ect Name / Site Name: ARNG OMS 28 Mobile AL

nt Name: GCAL

ected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	VC (8260SIM)	Comments	Cooler ID
ms-28-GW38-30-S	5/11/17	0940	26.30	Split	WG	3	X		1
Trip Blank	5/11/17	—	—	TB	WQ	2	X		2
ms-28-GW41-20-S	5-11-17	1530	16.20	Split	WG	3	X		3
s-28-GW57-16-S	5-12-17	1145	12.16	Split	WG	3	X		4
ms28-GW57-16S-a	5-12-17	1145	12 16	Split	WG	3	X		5
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

uments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Randy Morgan	5-12-17	1400	Cody Cocaver	5/13/17	1200
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: ALS, Kelso
Lab Receipient:

Shipped: 5/13
Airbill #: 7991 6253
Location: Kelso WA
Date: Time:

ample Type (SA) Codes N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

atrix Codes GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

Project Number 60439687.23

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

SAMPLE RECEIVING CHECKLIST

217053113

SAMPLE DELIVERY GROUP 217053113	
Client PM AMK 4838 - AECOM	**Transport Method** OTHER
Profile Number 264814	**Received By** Reese, Sean M.
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 05/13/17

CHECKLIST	YES	NO	NA
Samples received with proper thermal and chemical preservation?	☐	☐	☑
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☐	☐	☑
When used, were custody seals intact?	☐	☐	☑
COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	☐	☐	☑
Short holds or RUSH samples received?	☐	☐	☑
All containers received in good condition and within hold time?	☐	☐	☑
All sample labels and containers received match the chain of custody?	☐	☐	☑
Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	☐	☐	☑
Preservative added to any containers?	☐	☐	☑
VOC water containers received with headspace < 6mm?	☐	☐	☑
Received filtered sample volume for dissolved analysis?	☐	☐	☑
Trip blank present in all coolers containing VOC waters?	☐	☐	☑
Samples collected in containers provided by GCAL?	☐	☐	☑

COOLERS

Airbill	Thermometer ID: NA	Temp(°C)
		NA

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES SUBOUTS ONLY

Revision 1.6

Page 1 of 1

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

May 31, 2017

Analytical Report for Service Request No: K1704857

Anna Kinchen
Gulf Coast Analytical Laboratories
7979 GSRI Avenue
Baton Rouge, LA 70820

RE: ARNG OMS 28 Mobile AL / 60439687.2.3

Dear Anna,

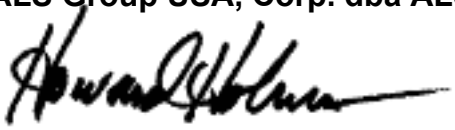
Enclosed are the results of the sample(s) submitted to our laboratory May 13, 2017
For your reference, these analyses have been assigned our service request number **K1704857.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Howard Holmes
Project Manager

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1317 South 13th Avenue
Kelso, WA 98626
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F : +1 360 636 1068
www.alsglobal.com

Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	Gulf Coast Analytical Labs GCAL	**Service Request No.:**	K1704857
Project:	ARNG OMS 28 Mobile AL/ 60439687.2.3	**Date Received:**	05/13/17
Sample Matrix:	Water		

Case Narrative

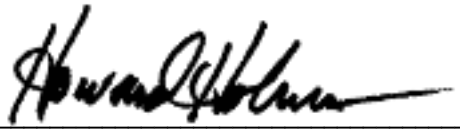
All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Five water samples were received for analysis at ALS Environmental on 05/13/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260-SIM

No anomalies associated with the analysis of these samples were observed.

Approved by 

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

K1704857

AECOM

Chain of Custody and Analytical Request

Laboratory: ALS Kelso

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Sample Analysis Requested: Number of containers	VC (8260SIM)	Comments	Cooler ID
OMS-28-GW38-30-S	5/11/17	0940	26-30	Split	WG	3	X		
Trip Blank	5/11/17	—	—	TB	WQ	2	X		
OMS-28-GW41-20-S	5-11-17	1530	16-20	Split	WG	3	X		
OMS-28-GW57-16-S	5-12-17	1145	12-16	Split	WG	3	X		
OMS28-GW57-16-S-a	5-12-17	1145	12-16	Split	WG	3	X		
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
Randy Morgan	5-12-17	1400	1 Cody Cocaves	5/13/17	1200
			2.		
			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: ALS, Kelso
Lab Receipient:

Shipped: X
Airbill #: 8731 2991 6295
Location: Kelso WA
Date: Time:

) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

Project Number 60439687.23

Purchase Order Number

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

PC HH

Cooler Receipt and Preservation Form

Client ~~Accom~~ / GCAL Service Request K17 04857

Received: 5/13/17 Opened: 5/13/17 By: CG Unloaded: 5/13/17 By: CG

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number NA	Filed
0.7	0.5	—	—	-0.2	375		8731 2991 6253	

4. Packing material: (*Inserts*) (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704857
Project: ARNG OMS 28 Mobile AL

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
OMS-28-GW38-30-S	K1704857-001	05/11/2017	05/13/2017
Trip Blank	K1704857-002	05/11/2017	05/13/2017
OMS-28-GW41-20-S	K1704857-003	05/11/2017	05/13/2017
OMS-28-GW57-16-S	K1704857-004	05/12/2017	05/13/2017
OMS-28-GW57-16-S-a	K1704857-005	05/12/2017	05/13/2017

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/11/2017
Sample Matrix:	Water	**Date Received:**	05/13/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW38-30-S	**Units:**	ng/L
Lab Code:	K1704857-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	106	77-123	05/16/17	Acceptable
Toluene-d8	102	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	77	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/11/2017
Sample Matrix:	Water	**Date Received:**	05/13/2017

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ng/L
Lab Code:	K1704857-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	103	77-123	05/16/17	Acceptable
Toluene-d8	101	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	78	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/11/2017
Sample Matrix:	Water	**Date Received:**	05/13/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW41-20-S	**Units:**	ng/L
Lab Code:	K1704857-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	**6.3**	J	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	105	77-123	05/16/17	Acceptable
Toluene-d8	102	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	78	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/12/2017
Sample Matrix:	Water	**Date Received:**	05/13/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW57-16-S	**Units:**	ng/L
Lab Code:	K1704857-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	105	77-123	05/16/17	Acceptable
Toluene-d8	101	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	77	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	05/12/2017
Sample Matrix:	Water	**Date Received:**	05/13/2017

Volatile Organic Compounds

Sample Name:	OMS-28-GW57-16-S-a	**Units:**	ng/L
Lab Code:	K1704857-005	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	106	77-123	05/16/17	Acceptable
Toluene-d8	102	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	79	46-118	05/16/17	Acceptable

Comments:

Analytical Results

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KWG1704141-3	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM		

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	20	15	4.6	1	05/16/17	05/16/17	KWG1704141	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	93	77-123	05/16/17	Acceptable
Toluene-d8	99	74-112	05/16/17	Acceptable
4-Bromofluorobenzene	75	46-118	05/16/17	Acceptable

Comments:

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704857
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B **Units:** Percent
Analysis Method: 8260C SIM **Level:** Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
OMS-28-GW38-30-S	K1704857-001	106	102	77
Trip Blank	K1704857-002	103	101	78
OMS-28-GW41-20-S	K1704857-003	105	102	78
OMS-28-GW57-16-S	K1704857-004	105	101	77
OMS-28-GW57-16-S-a	K1704857-005	106	102	79
Method Blank	KWG1704141-3	93	99	75
Lab Control Sample	KWG1704141-1	91	101	83
Duplicate Lab Control Sample	KWG1704141-2	90	101	86

Surrogate Recovery Control Limits (%)

Sur1	=	Dibromofluoromethane	77-123
Sur2	=	Toluene-d8	74-112
Sur3	=	4-Bromofluorobenzene	46-118

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704857
Date Analyzed: 05/16/2017
Time Analyzed: 14:07

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS30\DATA\051617_SIM\0516F009.D
Instrument ID: MS30
Analysis Method: 8260C SIM

Lab Code: KWG1703959-2
Analysis Lot: KWG1703959

		Fluorobenzene		Chlorobenzene-d5	
		Area	**RT**	**Area**	**RT**
	ICAL Result ==>	56,584	6.35	38,599	9.54
	Upper Limit ==>	113,168	6.52	77,198	9.71
	Lower Limit ==>	28,292	6.18	19,300	9.37
Associated Analyses					
Continuing Calibration VerificationCCV	KWG1703959-2	58,376	6.35	40,304	9.54
Lab Control Sample	KWG1704141-1	58,644	6.35	39,127	9.54
Duplicate Lab Control Sample	KWG1704141-2	59,220	6.35	40,747	9.54
Method Blank	KWG1704141-3	56,405	6.35	37,159	9.54
Trip Blank	K1704857-002	52,872	6.35	37,381	9.54
OMS-28-GW38-30-S	K1704857-001	50,431	6.35	34,012	9.54
OMS-28-GW41-20-S	K1704857-003	51,040	6.35	34,203	9.54
OMS-28-GW57-16-S	K1704857-004	51,441	6.35	34,679	9.54
OMS-28-GW57-16-S-a	K1704857-005	51,169	6.35	35,350	9.54

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	EPA 5030B	**Units:**	ng/L
Analysis Method:	8260C SIM	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1704141

	Lab Control Sample KWG1704141-1 Lab Control Spike			Duplicate Lab Control Sample KWG1704141-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	2020	2000	101	2030	2000	102	70-136	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017
		Time Analyzed:	16:08

Method Blank Summary
Volatile Organic Compounds

Sample Name:	Method Blank	**Instrument ID:**	MS30
Lab Code:	KWG1704141-3	**File ID:**	J:\MS30\DATA\051617_SIM\0516F013.D
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704141

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1704141-1	J:\MS30\DATA\051617_SIM\0516F010.D	05/16/17	14:43
Duplicate Lab Control Sample	KWG1704141-2	J:\MS30\DATA\051617_SIM\0516F011.D	05/16/17	15:13
Trip Blank	K1704857-002	J:\MS30\DATA\051617_SIM\0516F020.D	05/16/17	19:21
OMS-28-GW38-30-S	K1704857-001	J:\MS30\DATA\051617_SIM\0516F024.D	05/16/17	21:11
OMS-28-GW41-20-S	K1704857-003	J:\MS30\DATA\051617_SIM\0516F025.D	05/16/17	21:38
OMS-28-GW57-16-S	K1704857-004	J:\MS30\DATA\051617_SIM\0516F026.D	05/16/17	22:06
OMS-28-GW57-16-S-a	K1704857-005	J:\MS30\DATA\051617_SIM\0516F027.D	05/16/17	22:33

QA/QC Report

Client:	Gulf Coast Analytical Labs GCAL	**Service Request:**	K1704857
Project:	ARNG OMS 28 Mobile AL	**Date Extracted:**	05/16/2017
Sample Matrix:	Water	**Date Analyzed:**	05/16/2017
		Time Analyzed:	14:43

Lab Control Sample Summary
Volatile Organic Compounds

Sample Name:	Lab Control Sample	**Instrument ID:**	MS30
Lab Code:	KWG1704141-1	**File ID:**	J:\MS30\DATA\051617_SIM\0516F010.D
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C SIM	**Extraction Lot:**	KWG1704141

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1704141-3	J:\MS30\DATA\051617_SIM\0516F013.D	05/16/17	16:08
Trip Blank	K1704857-002	J:\MS30\DATA\051617_SIM\0516F020.D	05/16/17	19:21
OMS-28-GW38-30-S	K1704857-001	J:\MS30\DATA\051617_SIM\0516F024.D	05/16/17	21:11
OMS-28-GW41-20-S	K1704857-003	J:\MS30\DATA\051617_SIM\0516F025.D	05/16/17	21:38
OMS-28-GW57-16-S	K1704857-004	J:\MS30\DATA\051617_SIM\0516F026.D	05/16/17	22:06
OMS-28-GW57-16-S-a	K1704857-005	J:\MS30\DATA\051617_SIM\0516F027.D	05/16/17	22:33

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704857
Date Analyzed: 05/16/2017
Time Analyzed: 13:23

Tune Summary
Volatile Organic Compounds

File ID: J:\MS30\DATA\051617_SIM\0516F008.D
Instrument ID: MS30
Column:

Analysis Method: 8260C SIM
Analysis Lot: KWG1703959

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	18.9	3789	PASS
75	95	30	60	48.0	9597	PASS
95	95	100	100	100.0	20008	PASS
96	95	5	9	6.6	1323	PASS
173	174	0	2	0.0	0	PASS
174	95	50	120	84.4	16896	PASS
175	174	5	9	7.3	1228	PASS
176	174	95	101	97.2	16416	PASS
177	176	5	9	7.6	1245	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1703959-2	J:\MS30\DATA\051617_SIM\0516F009.D	05/16/2017	14:07	
Lab Control Sample	KWG1704141-1	J:\MS30\DATA\051617_SIM\0516F010.D	05/16/2017	14:43	
Duplicate Lab Control Sample	KWG1704141-2	J:\MS30\DATA\051617_SIM\0516F011.D	05/16/2017	15:13	
Method Blank	KWG1704141-3	J:\MS30\DATA\051617_SIM\0516F013.D	05/16/2017	16:08	
Trip Blank	K1704857-002	J:\MS30\DATA\051617_SIM\0516F020.D	05/16/2017	19:21	
OMS-28-GW38-30-S	K1704857-001	J:\MS30\DATA\051617_SIM\0516F024.D	05/16/2017	21:11	
OMS-28-GW41-20-S	K1704857-003	J:\MS30\DATA\051617_SIM\0516F025.D	05/16/2017	21:38	
OMS-28-GW57-16-S	K1704857-004	J:\MS30\DATA\051617_SIM\0516F026.D	05/16/2017	22:06	
OMS-28-GW57-16-S-a	K1704857-005	J:\MS30\DATA\051617_SIM\0516F027.D	05/16/2017	22:33	
Continuing Calibration Verification	KWG1703959-3	J:\MS30\DATA\051617_SIM\0516F028.D	05/16/2017	23:01	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704857
Project: ARNG OMS 28 Mobile AL **Calibration Date:** 05/15/2017

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL15375 **Column:** MS
Instrument ID: MS30

Level ID	File ID
A	J:\MS30\DATA\051517_SIM\0515F006.D
B	J:\MS30\DATA\051517_SIM\0515F007.D
C	J:\MS30\DATA\051517_SIM\0515F008.D
D	J:\MS30\DATA\051517_SIM\0515F009.D
E	J:\MS30\DATA\051517_SIM\0515F010.D
F	J:\MS30\DATA\051517_SIM\0515F011.D
G	J:\MS30\DATA\051517_SIM\0515F012.D
H	J:\MS30\DATA\051517_SIM\0515F013.D
I	J:\MS30\DATA\051517_SIM\0515F014.D
J	J:\MS30\DATA\051517_SIM\0515F015.D
K	J:\MS30\DATA\051517_SIM\0515F016.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Vinyl Chloride				B	10	0.665	C	20	0.610	D	50	0.621	E	100	0.604
	F	500	0.478	G	1000	0.531	H	2000	0.535	I	5000	0.554	J	7000	0.505
	K	10000	0.460												
Dibromofluoromethane										D	200	0.464	E	400	0.393
	F	600	0.358	G	800	0.358	H	1000	0.360	I	2000	0.378	J	2400	0.325
	K	4000	0.321												
Toluene-d8										D	200	0.911	E	400	0.765
	F	600	0.673	G	800	0.707	H	1000	0.776	I	2000	0.906	J	2400	0.776
	K	4000	0.867												
4-Bromofluorobenzene										D	200	0.472	E	400	0.392
	F	600	0.368	G	800	0.375	H	1000	0.411	I	2000	0.527	J	2400	0.498
	K	4000	0.516												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704857
Project: ARNG OMS 28 Mobile AL **Calibration Date:** 05/15/2017

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL15375 **Column:** MS
Instrument ID: MS30

		Calibration Evaluation					RRF Evaluation		
Analyte Name	Compound Type	Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Vinyl Chloride	MS	AverageRF	% RSD	12.0		≤ 15	0.556		0.1
Dibromofluoromethane	SURR	AverageRF	% RSD	12.2		≤ 15	0.370		0.01
Toluene-d8	SURR	AverageRF	% RSD	11.1		≤ 15	0.798		0.01
4-Bromofluorobenzene	SURR	AverageRF	% RSD	14.8		≤ 15	0.445		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704857
Calibration Date: 05/15/2017
Date Analyzed: 05/16/2017

Second Source Calibration Verification
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration ID: CAL15375
Units: ng/L

File ID: J:\MS30\DATA\051517_SIM\0515F020.D
J:\MS30\DATA\051617_SIM\0516F003.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	2000	0.556	0.558	0	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704857
Date Analyzed: 05/16/2017

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration Date: 05/15/2017
Calibration ID: CAL15375
Analysis Lot: KWG1703959
Units: ng/L

File ID: J:\MS30\DATA\051617_SIM\0516F009.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	1800	0.1	0.556	0.495	-11	NA	± 20	AverageRF
Dibromofluoromethane	1000	900	0.01	0.370	0.334	-10	NA	± 20	AverageRF
Toluene-d8	1000	1000	0.01	0.798	0.797	0	NA	± 20	AverageRF
4-Bromofluorobenzene	1000	820	0.01	0.445	0.363	-18	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL

Service Request: K1704857
Date Analyzed: 05/16/2017

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C SIM

Calibration Date: 05/15/2017
Calibration ID: CAL15375
Analysis Lot: KWG1703959
Units: ng/L

File ID: I:\MS30\DATA\051617_SIM\0516F028.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Vinyl Chloride	2000	2100	0.1	0.556	0.577	4	NA	± 50 %	AverageRF
Dibromofluoromethane	1000	980	0.01	0.370	0.362	-2	NA	± 50 %	AverageRF
Toluene-d8	1000	1000	0.01	0.798	0.802	1	NA	± 50 %	AverageRF
4-Bromofluorobenzene	1000	890	0.01	0.445	0.396	-11	NA	± 50 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Gulf Coast Analytical Labs GCAL **Service Request:** K1704857
Project: ARNG OMS 28 Mobile AL

Analysis Run Log
Volatile Organic Compounds

Analysis Method: 8260C SIM **Analysis Lot:** KWG1703959
Instrument ID: MS30

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0516F008.D	GC/MS Tuning - Bromofluorobenzene	KWG1703959-1	5/16/2017	13:23		5/16/2017	13:40
0516F009.D	Continuing Calibration Verification	KWG1703959-2	5/16/2017	14:07		5/16/2017	14:25
0516F010.D	Lab Control Sample	KWG1704141-1	5/16/2017	14:43		5/16/2017	15:00
0516F011.D	Duplicate Lab Control Sample	KWG1704141-2	5/16/2017	15:13		5/16/2017	15:30
0516F013.D	Method Blank	KWG1704141-3	5/16/2017	16:08		5/16/2017	16:25
0516F014.D	ZZZZZZ	ZZZZZZ	5/16/2017	16:36		5/16/2017	16:53
0516F015.D	ZZZZZZ	ZZZZZZ	5/16/2017	17:03		5/16/2017	17:20
0516F016.D	ZZZZZZ	ZZZZZZ	5/16/2017	17:31		5/16/2017	17:48
0516F017.D	ZZZZZZ	ZZZZZZ	5/16/2017	17:58		5/16/2017	18:15
0516F018.D	ZZZZZZ	ZZZZZZ	5/16/2017	18:26		5/16/2017	18:43
0516F019.D	ZZZZZZ	ZZZZZZ	5/16/2017	18:53		5/16/2017	19:10
0516F020.D	Trip Blank	K1704857-002	5/16/2017	19:21		5/16/2017	19:38
0516F021.D	ZZZZZZ	ZZZZZZ	5/16/2017	19:48		5/16/2017	20:05
0516F022.D	ZZZZZZ	ZZZZZZ	5/16/2017	20:16		5/16/2017	20:34
0516F023.D	ZZZZZZ	ZZZZZZ	5/16/2017	20:43		5/16/2017	21:00
0516F024.D	OMS-28-GW38-30-S	K1704857-001	5/16/2017	21:11		5/16/2017	21:29
0516F025.D	OMS-28-GW41-20-S	K1704857-003	5/16/2017	21:38		5/16/2017	21:56
0516F026.D	OMS-28-GW57-16-S	K1704857-004	5/16/2017	22:06		5/16/2017	22:24
0516F027.D	OMS-28-GW57-16-S-a	K1704857-005	5/16/2017	22:33		5/16/2017	22:51
0516F028.D	Continuing Calibration Verification	KWG1703959-3	5/16/2017	23:01		5/16/2017	23:18

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Gulf Coast Analytical Labs GCAL
Project: ARNG OMS 28 Mobile AL
Sample Matrix: Water

Service Request: K1704857
Date Extracted: 05/16/2017

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C SIM

Extraction Lot: KWG1704141
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
OMS-28-GW38-30-S	K1704857-001	05/11/17	05/13/17	10ml	10ml	NA	
Trip Blank	K1704857-002	05/11/17	05/13/17	10ml	10ml	NA	
OMS-28-GW41-20-S	K1704857-003	05/11/17	05/13/17	10ml	10ml	NA	
OMS-28-GW57-16-S	K1704857-004	05/12/17	05/13/17	10ml	10ml	NA	
OMS-28-GW57-16-S-a	K1704857-005	05/12/17	05/13/17	10ml	10ml	NA	
Method Blank	KWG1704141-3	NA	NA	10ml	10ml	NA	
Lab Control Sample	KWG1704141-1	NA	NA	10ml	10ml	NA	
Duplicate Lab Control Sample	KWG1704141-2	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F024.D
Lab ID: K1704857-001
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 21:11
Date Quantitated: 05/22/2017 12:12
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KSmith

Secondary Review: M

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F024.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 21:11	**Quant Date:**	05/22/2017 12:12	**Vial:**	22
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704857-001			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/11/2017	**Receive Date:**	05/13/20`7

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704857
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604849	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	50431	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34012	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19786	1,061	106	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	41159	1,023	102	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11689	772.52	77	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	45	1.60	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F024.D Vial: 22
Acq On : 16 May 2017 09:11 pm Operator: GH
Sample : K4857-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:59:00 2017 Quant Results File: 051517MS30_8260SIM.RES

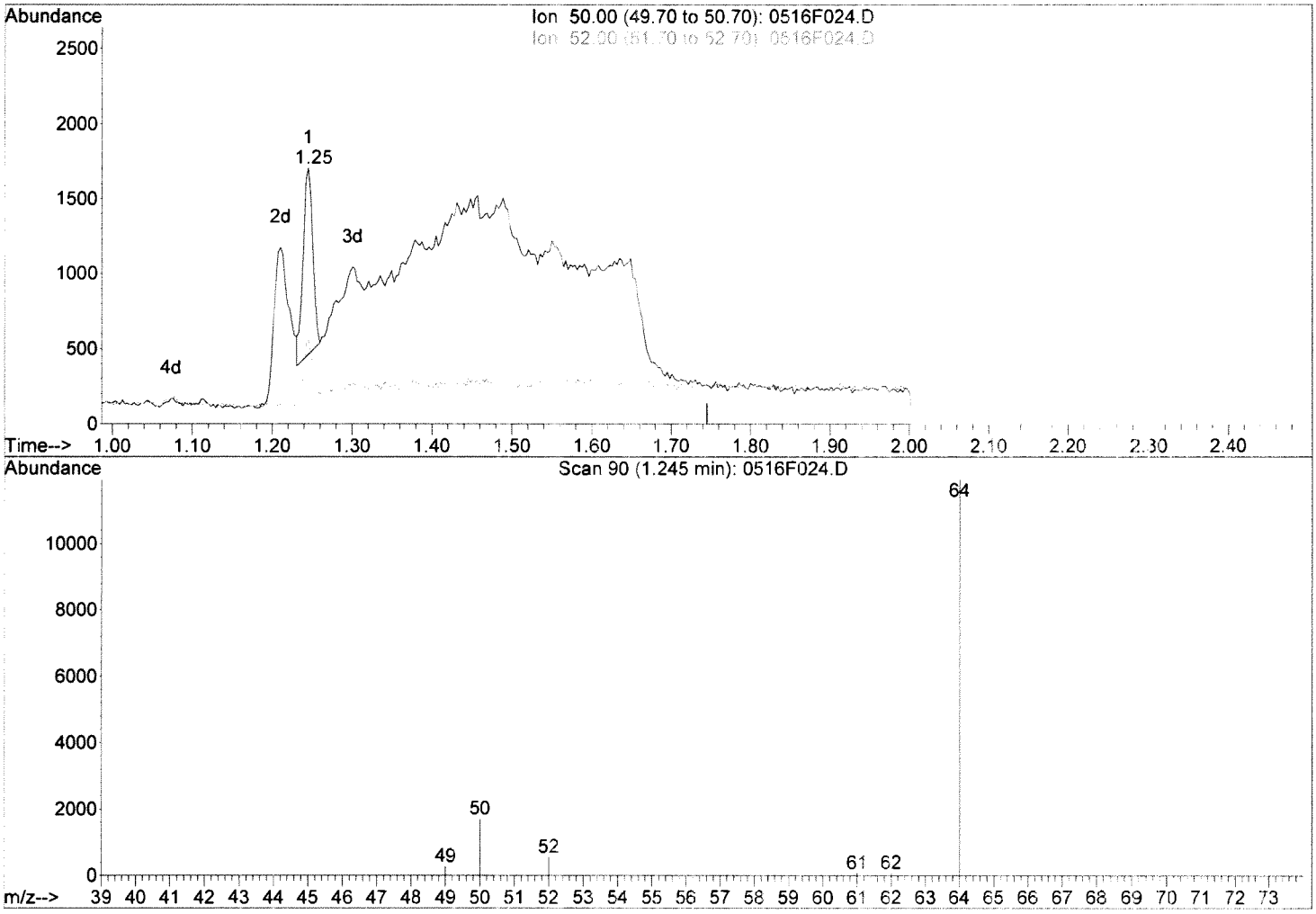
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	50431	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	34012	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13323	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19786	1060.73	ng/L		0.00
Spiked Amount 1000.000			Recovery = 106.07%				
15) Toluene-d8	8.05	98	41159	1023.23	ng/L		0.00
Spiked Amount 1000.000			Recovery = 102.32%				
25) 4-Bromofluorobenzene	10.73	95	11689	772.52	ng/L		0.00
Spiked Amount 1000.000			Recovery = 77.25%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	949m	32.88	ng/L		
3) Vinyl Chloride	1.33	62	45	1.60	ng/L	#	1
5) Methylene Chloride	3.08	84	271	12.41	ng/L		98
7) cis-1,2-Dichloroethene	4.95	96	114	6.76	ng/L		92
8) Chloroform	5.40	83	53	1.46	ng/L		73
11) Benzene	5.97	78	1549	22.47	ng/L		95
12) 1,2-Dichloroethane	6.12	62	97	3.77	ng/L		92
13) Trichloroethene	6.75	95	407	24.01	ng/L		83
17) Dibromochloromethane	8.63	129	349	20.72	ng/L		93
20) Toluene	8.12	92	16871	565.18	ng/L		99
21) Ethylbenzene	9.65	106	97	6.74	ng/L	#	77
23) m,p-Xylenes	9.78	106	506	30.70	ng/L		92
24) o-Xylene	10.18	106	298	17.73	ng/L		92
26) 1,1,2,2-Tetrachloroethane	10.93	83	9	0.56	ng/L	#	70
27) 1,2,3-Trichloropropane	10.98	110	5	1.00	ng/L	#	1
28) Tetrachloroethene	8.63	164	401	28.65	ng/L		91
30) 1,4-Dichlorobenzene	11.90	146	119	4.95	ng/L		72

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F024.D Vial: 22
Acq On : 16 May 2017 09:11 pm Operator: GH
Sample : K4857-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:59 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F024.D

(2) Chloromethane (T)

1.25min 36.31ng/L

response 1048

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	34.88
49.00	10.30	10.80
0.00	0.00	0.00

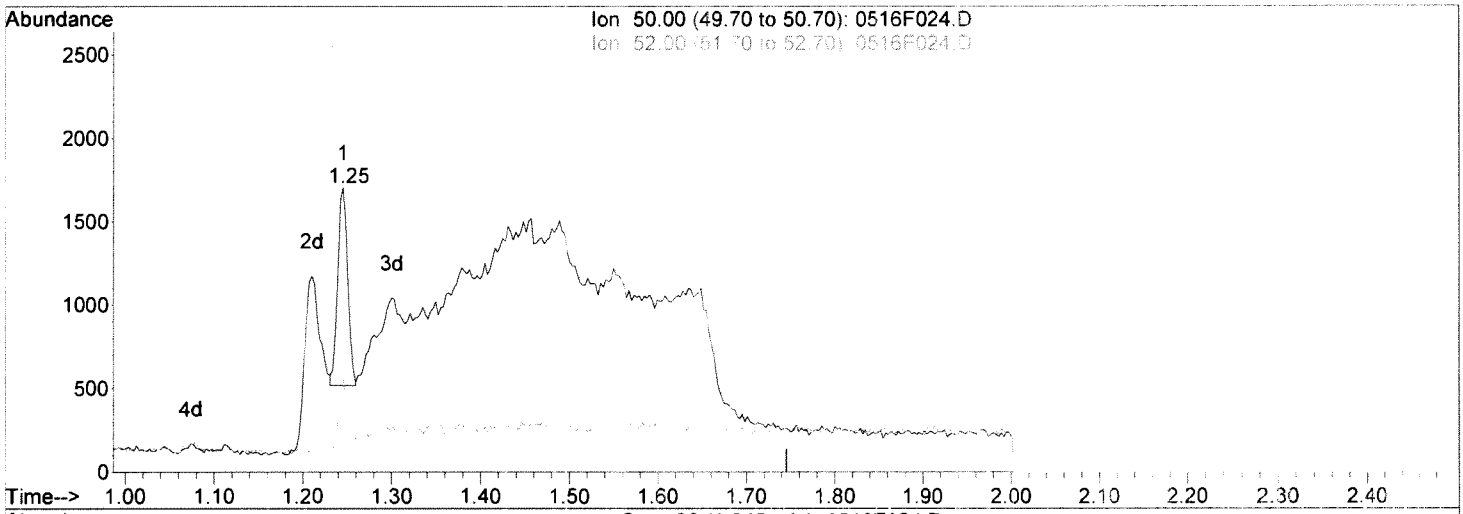
Manual Integration:

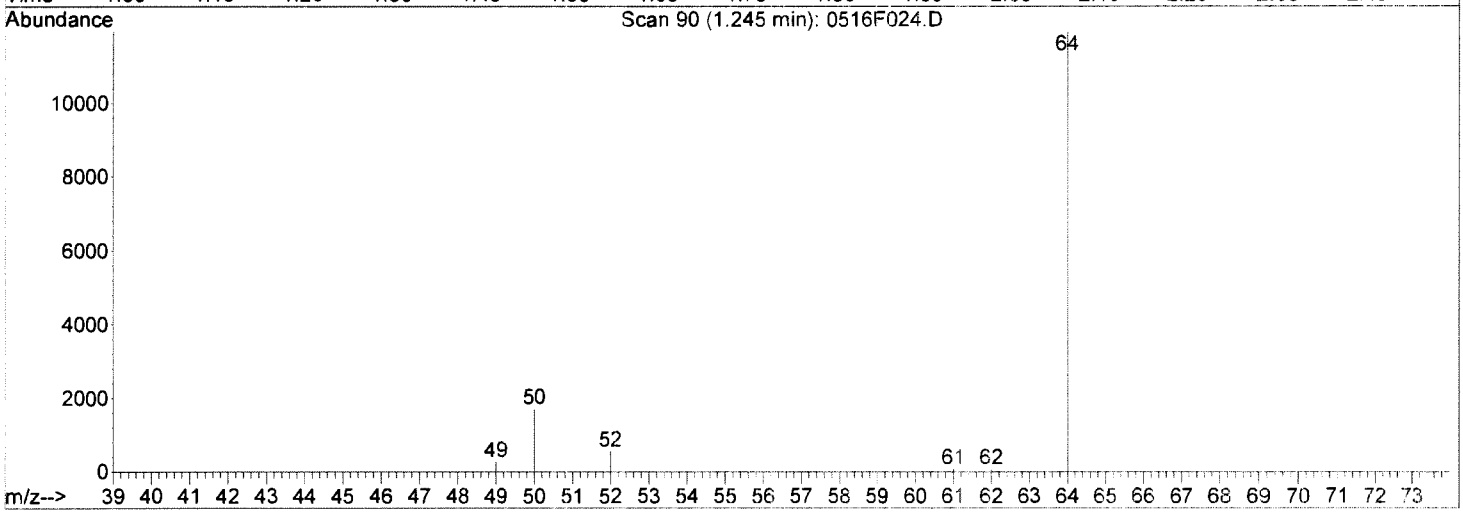
Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F024.D Vial: 22
Acq On : 16 May 2017 09:11 pm Operator: GH
Sample : K4857-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:11 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F024.D

(2) Chloromethane (T)

1.25min 32.88ng/L m

response 949

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	32.61
49.00	10.30	15.60
0.00	0.00	0.00

Manual Integration:

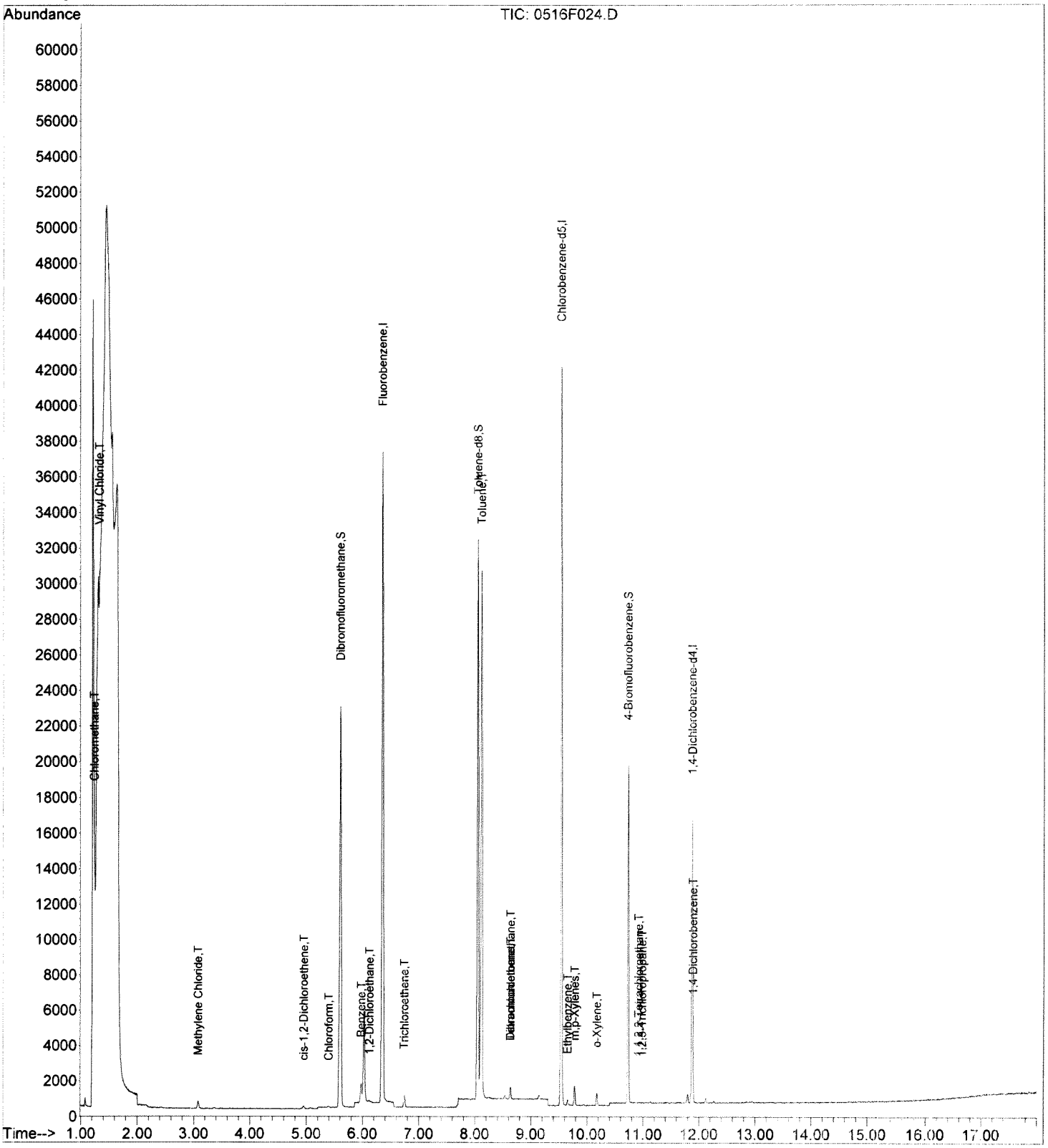
After

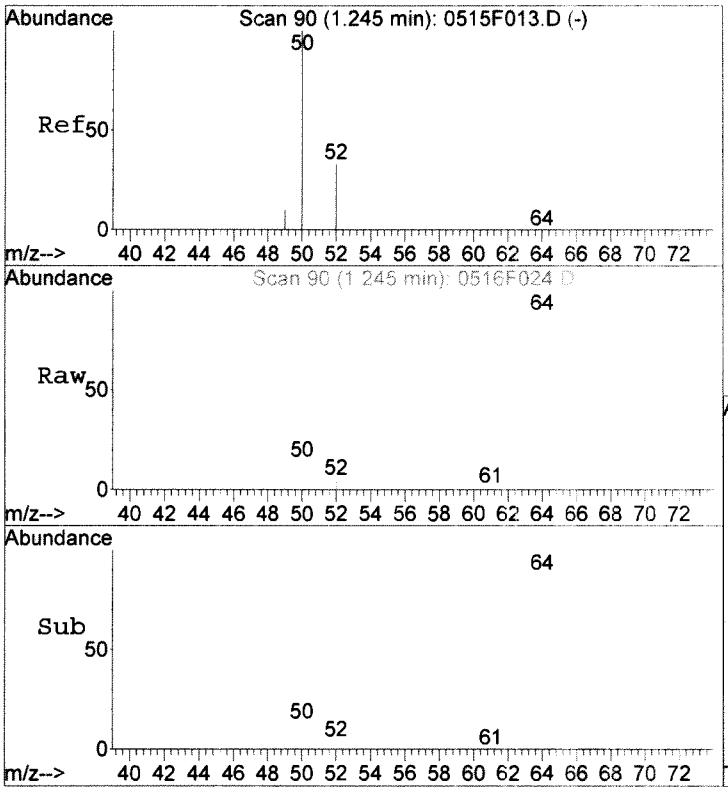
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F024.D Vial: 22
Acq On : 16 May 2017 09:11 pm Operator: GH
Sample : K4857-001 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:12 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

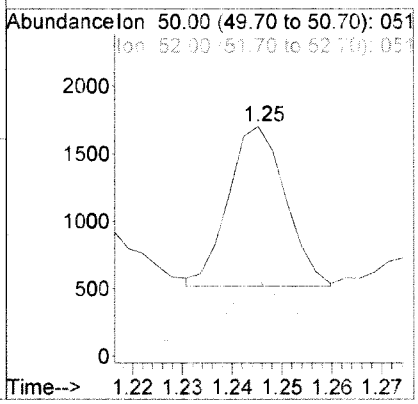


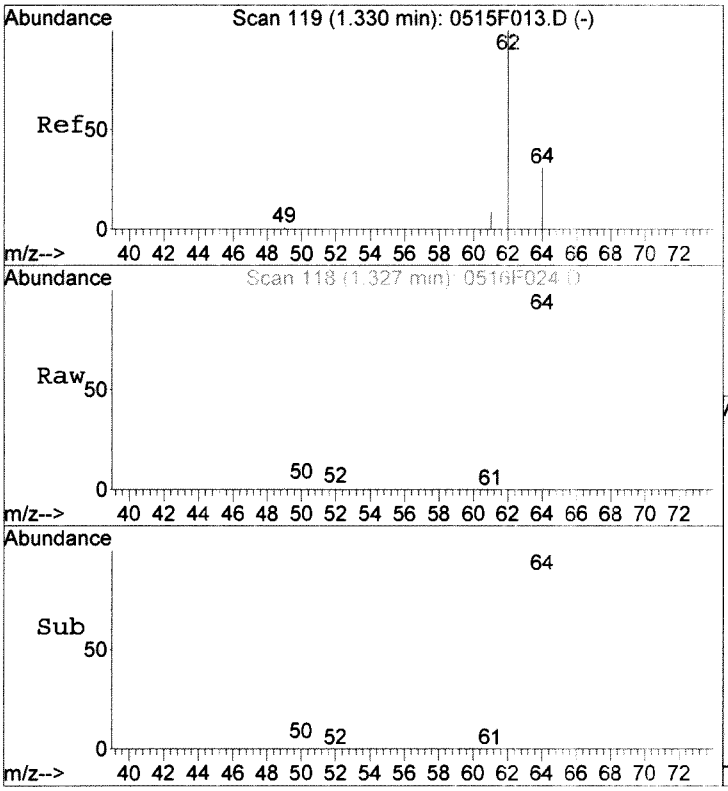


#2
Chloromethane
Concen: 32.88 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 50 Resp: 949

Ion	Ratio	Lower	Upper
50	100		
52	32.6	2.5	62.5
49	15.6	0.0	40.3

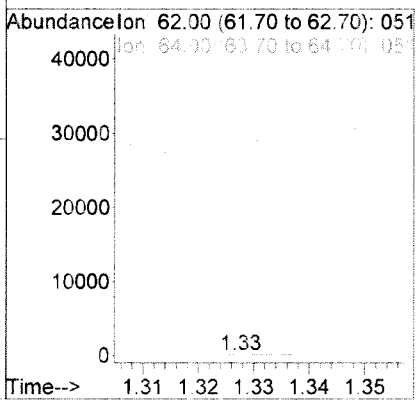


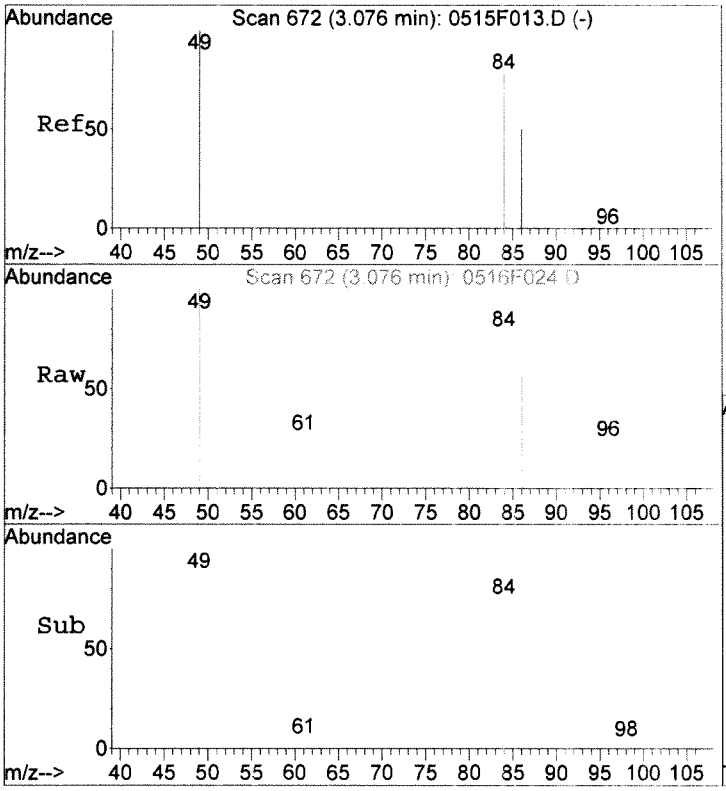


#3
Vinyl Chloride
Concen: 1.60 ng/L
RT: 1.33 min Scan# 118
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 62 Resp: 45

Ion	Ratio	Lower	Upper
62	100		
64	3229.6	1.5	61.5#
61	29.6	0.0	38.6

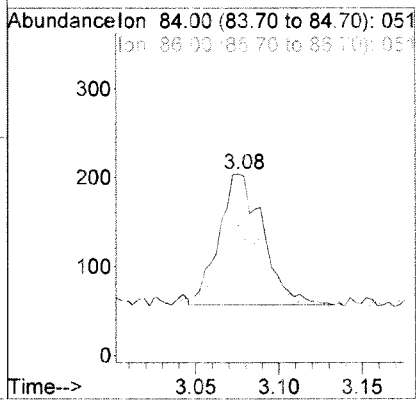


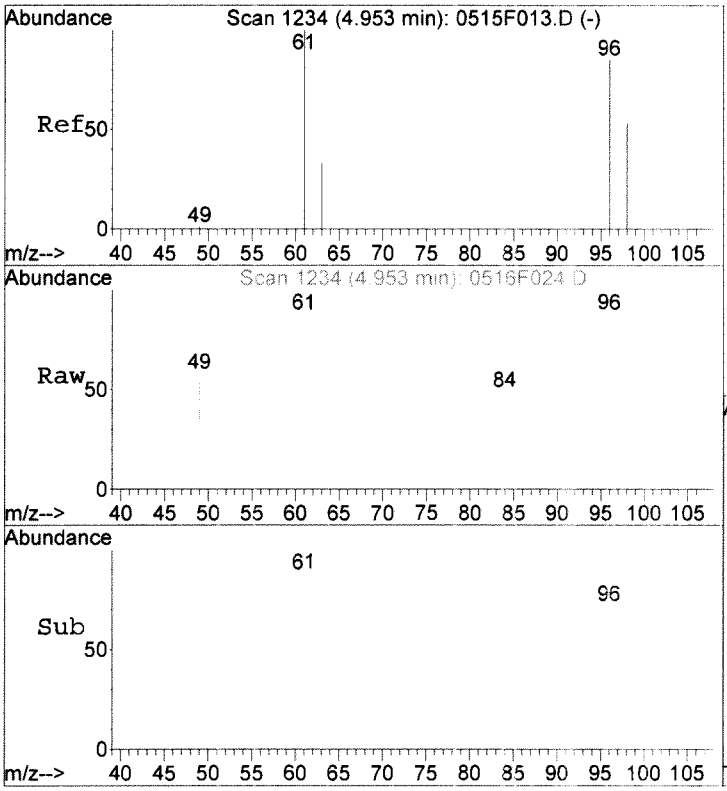


#5
Methylene Chloride
Concen: 12.41 ng/L
RT: 3.08 min Scan# 672
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 84 Resp: 271

Ion	Ratio	Lower	Upper
84	100		
86	61.9	34.0	94.0
49	130.6	98.8	158.8

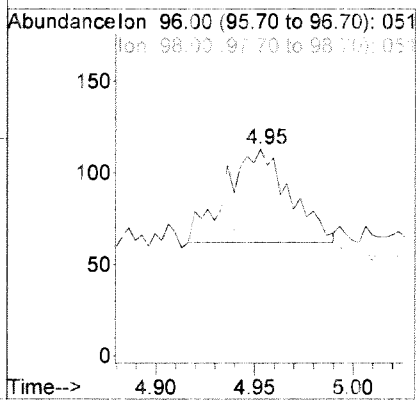


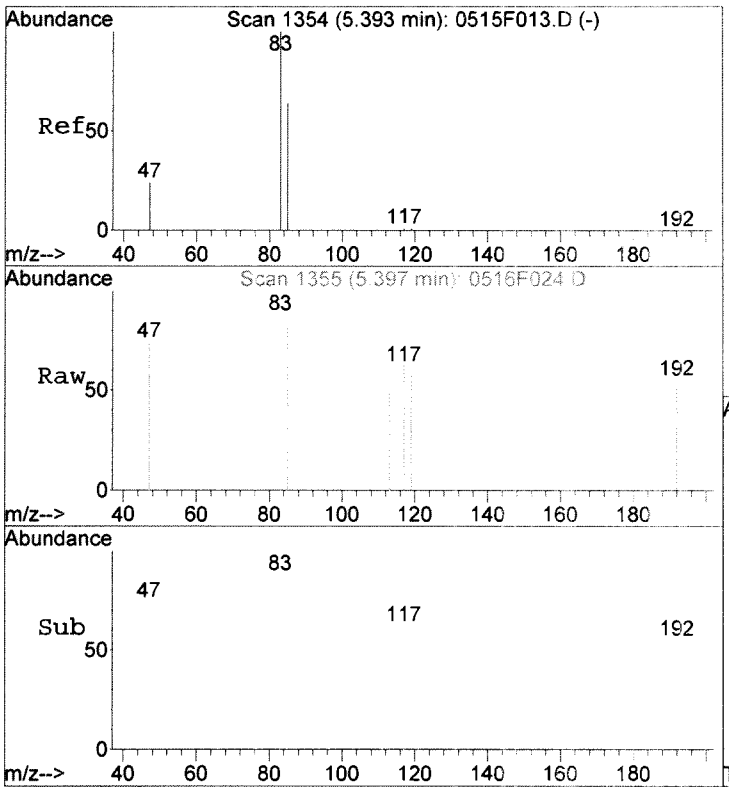


#7
cis-1,2-Dichloroethene
Concen: 6.76 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 96 Resp: 114

Ion	Ratio	Lower	Upper
96	100		
98	54.9	32.7	92.7
61	117.6	95.4	155.4

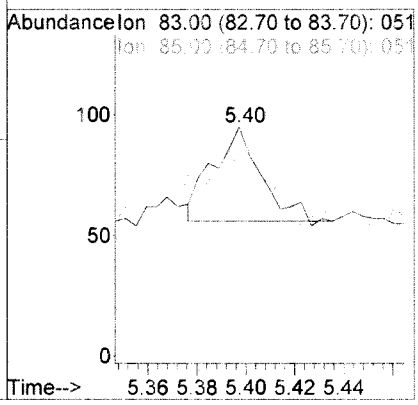


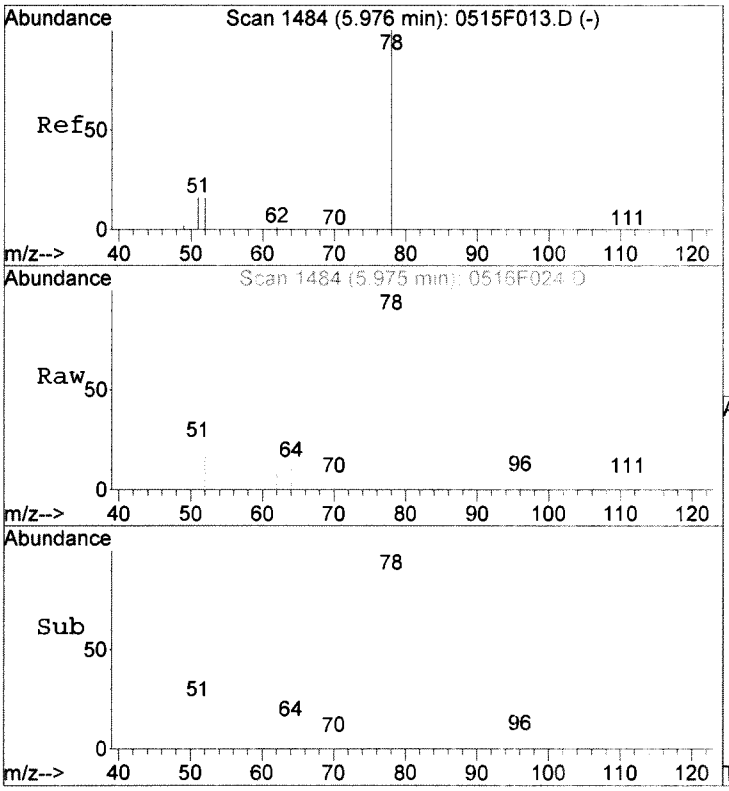


#8
Chloroform
Concen: 1.46 ng/L
RT: 5.40 min Scan# 1355
Delta R.T. 0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 83 Resp: 53

Ion	Ratio	Lower	Upper
83	100		
85	41.0	34.0	94.0
47	33.3	0.0	53.5

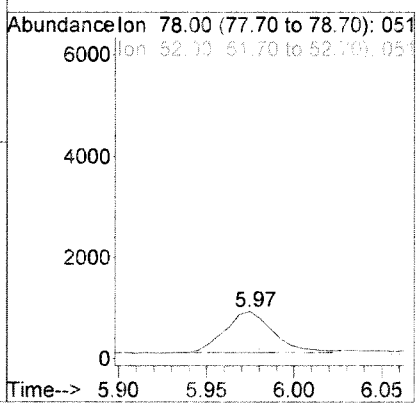


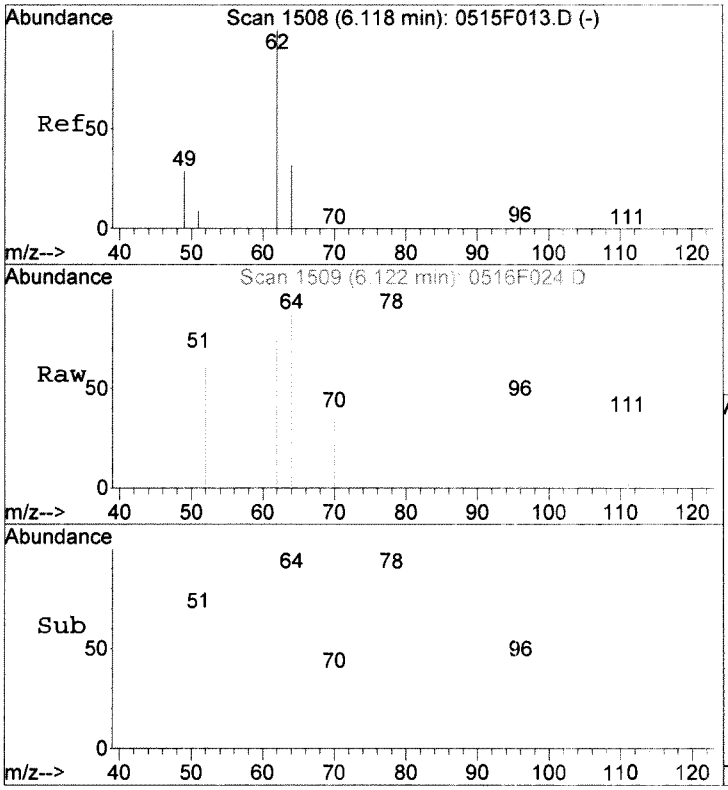


#11
Benzene
Concen: 22.47 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 78 Resp: 1549

Ion	Ratio	Lower	Upper
78	100		
52	11.6	0.0	45.8
51	17.0	0.0	46.5

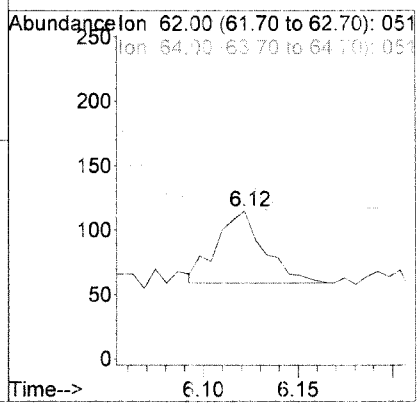


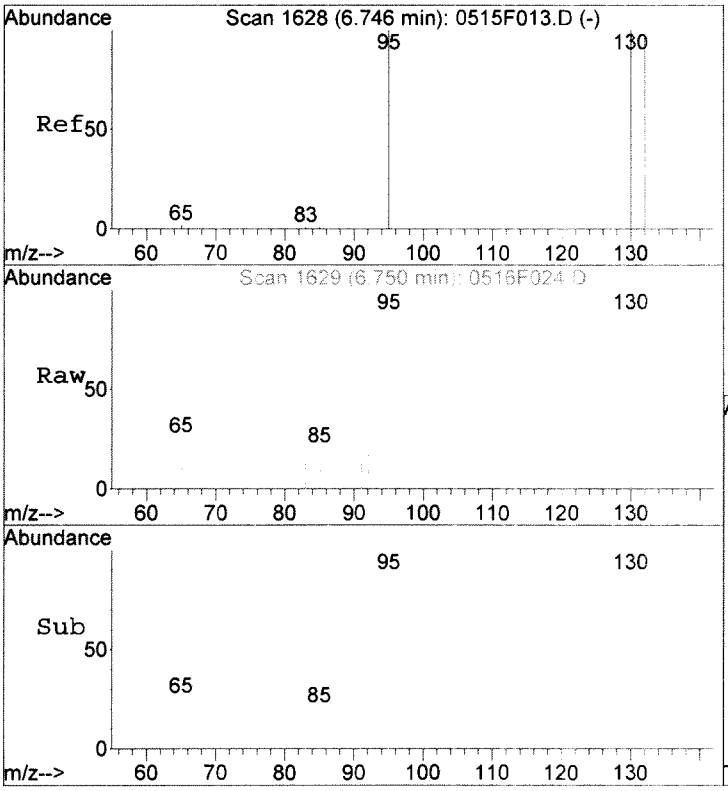


#12
1,2-Dichloroethane
Concen: 3.77 ng/L
RT: 6.12 min Scan# 1509
Delta R.T. 0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 62 Resp: 97

Ion	Ratio	Lower	Upper
62	100		
64	28.6	2.1	62.1
49	23.2	0.0	58.7

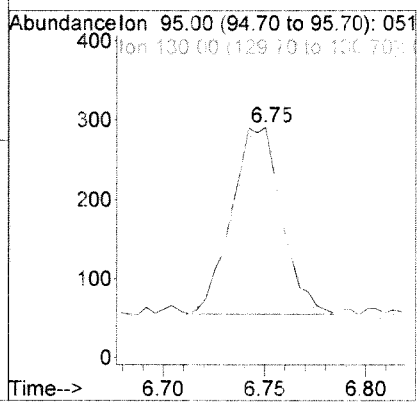


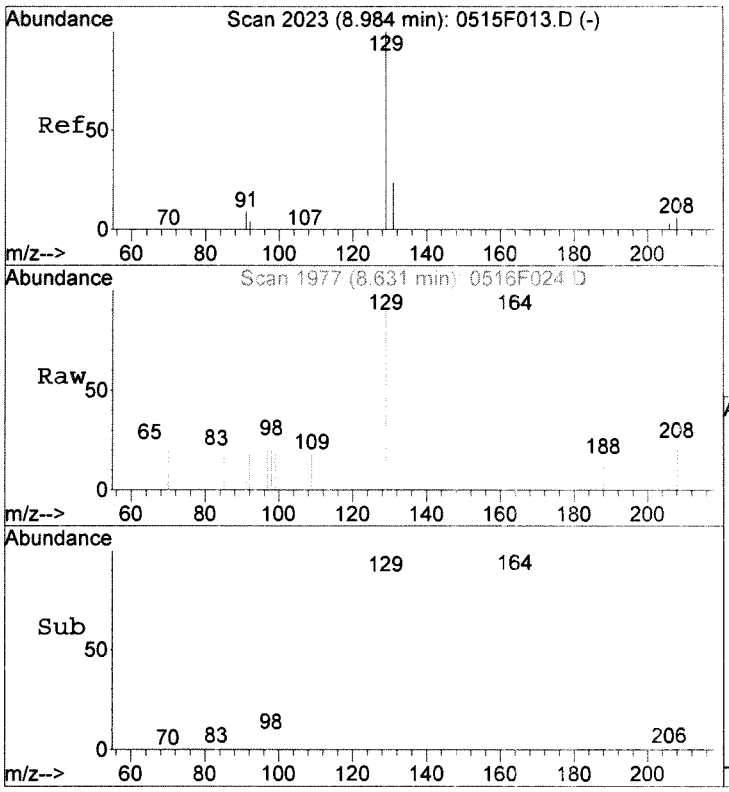


#13
Trichloroethene
Concen: 24.01 ng/L
RT: 6.75 min Scan# 1629
Delta R.T. 0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 95 Resp: 407

Ion	Ratio	Lower	Upper
95	100		
130	88.6	69.5	129.5
132	75.0	67.2	127.2

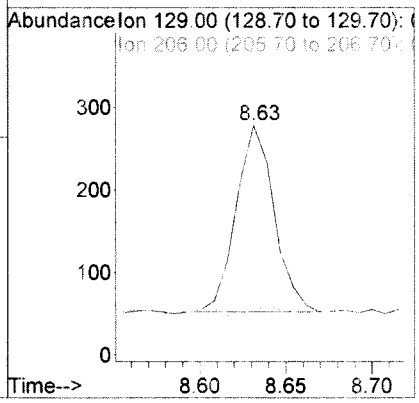


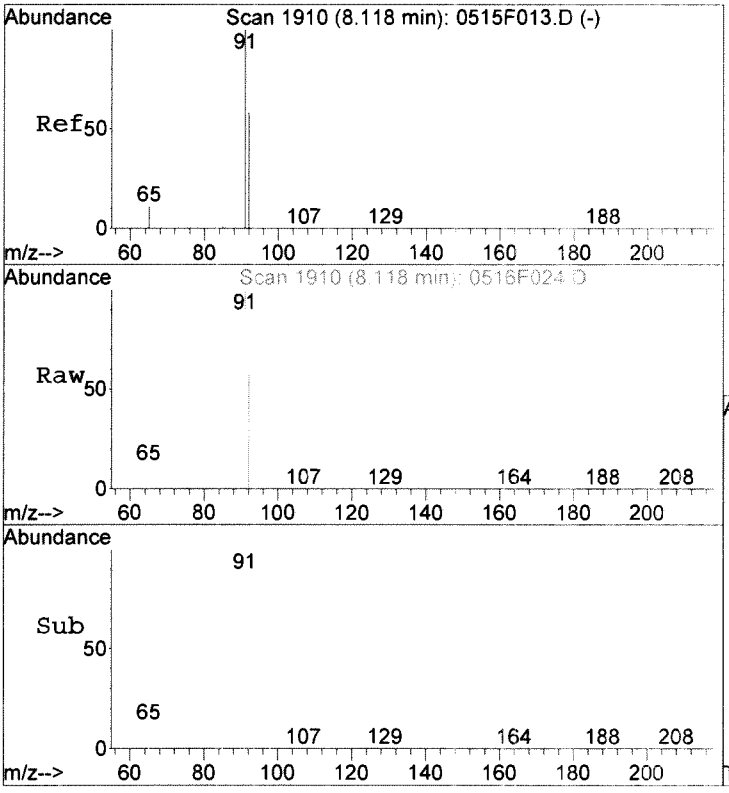


#17
Dibromochloromethane
Concen: 20.72 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.35 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion:129 Resp: 349

Ion	Ratio	Lower	Upper
129	100		
206	1.3	0.0	32.8
208	3.1	0.0	35.9

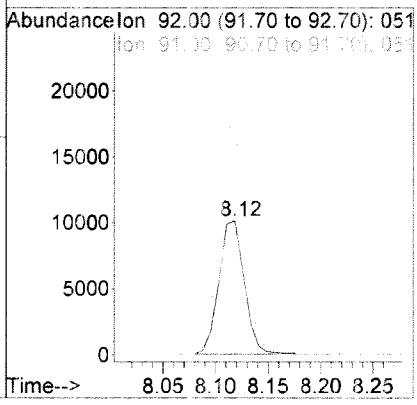


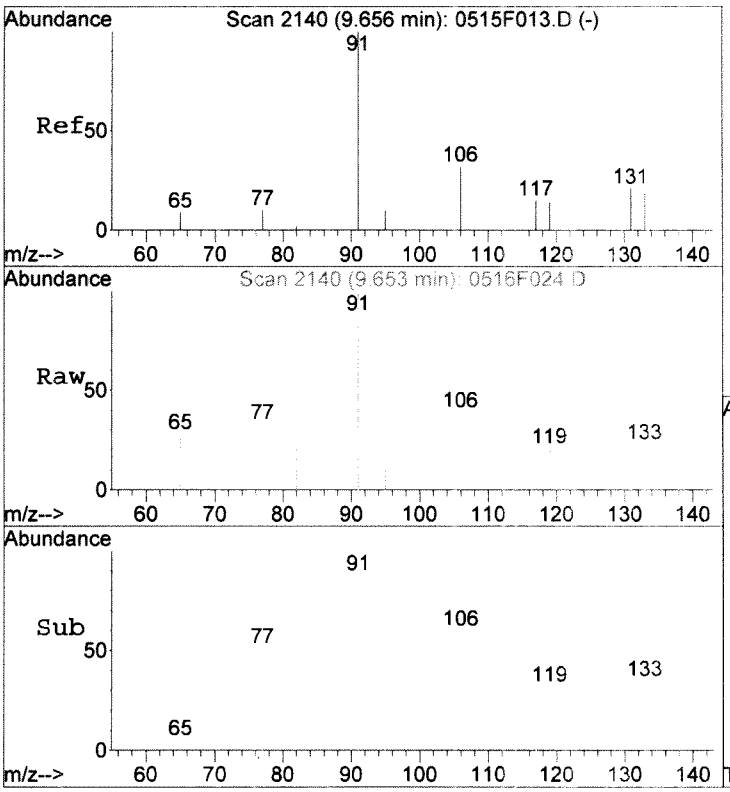


#20
Toluene
Concen: 565.18 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 92 Resp: 16871

Ion	Ratio	Lower	Upper
92	100		
91	172.7	143.6	203.6
65	20.3	0.0	49.9

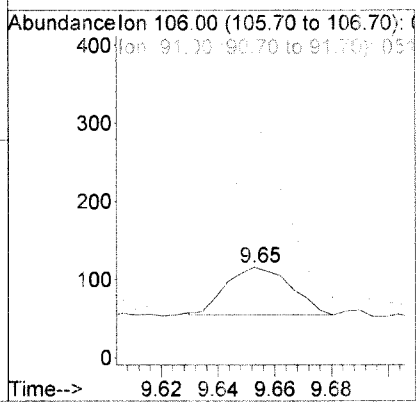


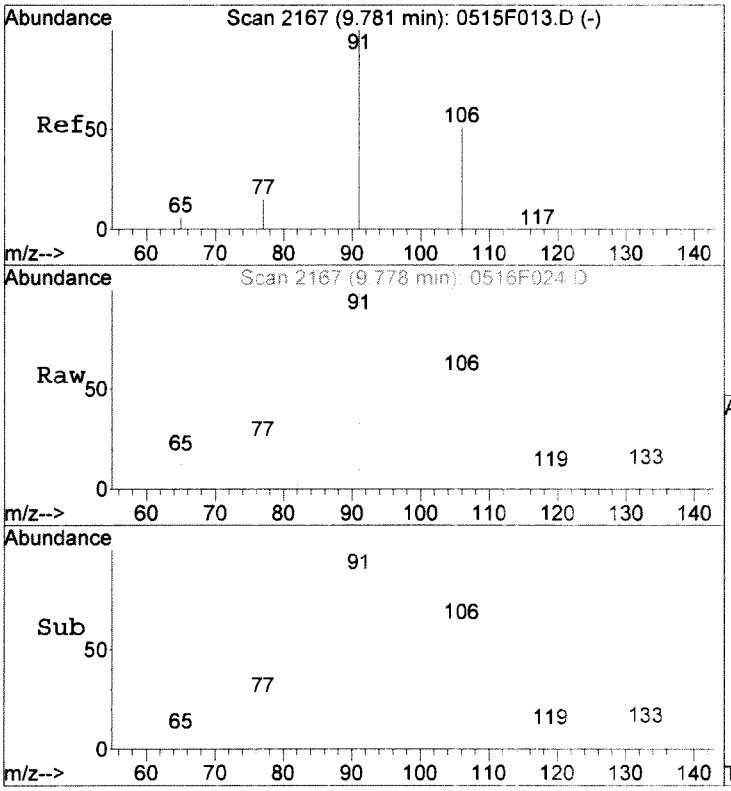


#21
Ethylbenzene
Concen: 6.74 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion:106 Resp: 97

Ion	Ratio	Lower	Upper
106	100		
91	367.2	285.7	345.7#
77	32.8	1.3	61.3

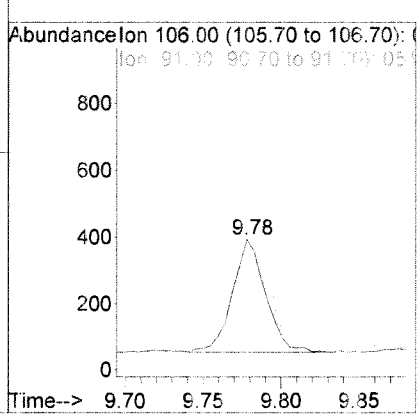


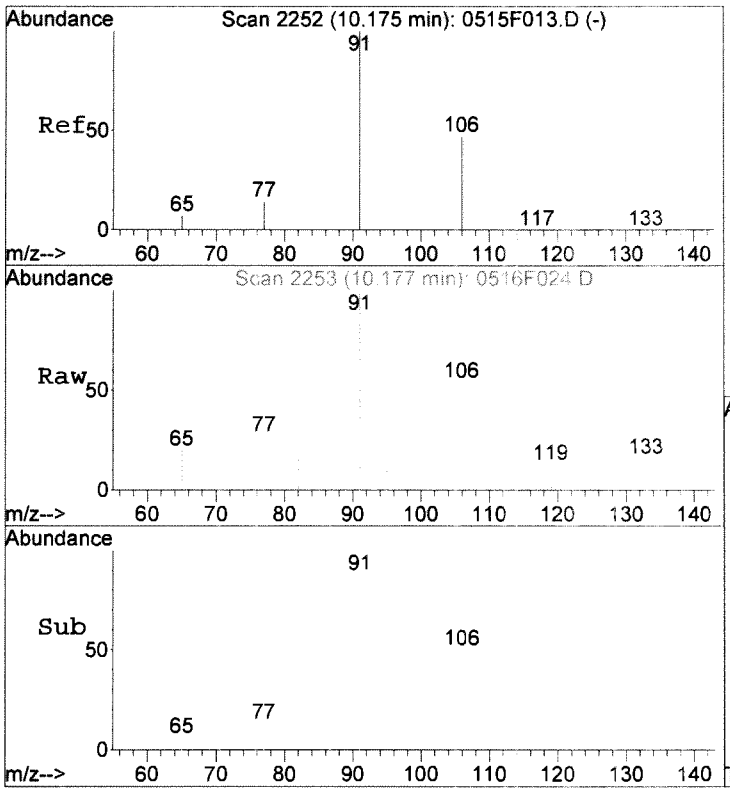


#23
m,p-Xylenes
Concen: 30.70 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion:106 Resp: 506

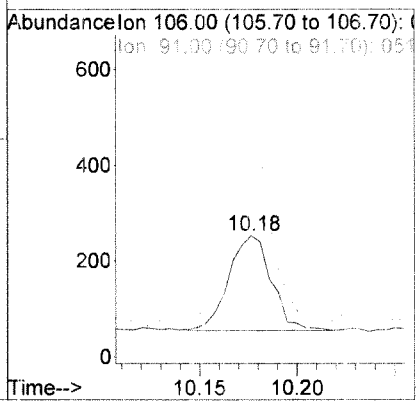
Ion	Ratio	Lower	Upper
106	100		
91	184.4	166.8	226.8
77	26.2	0.0	58.7

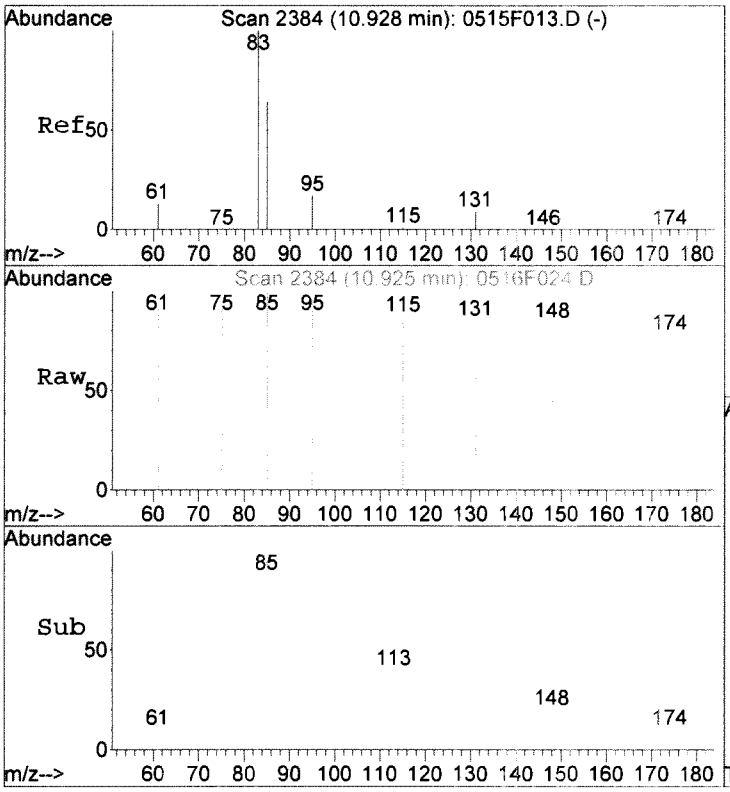




#24
o-Xylene
Concen: 17.73 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

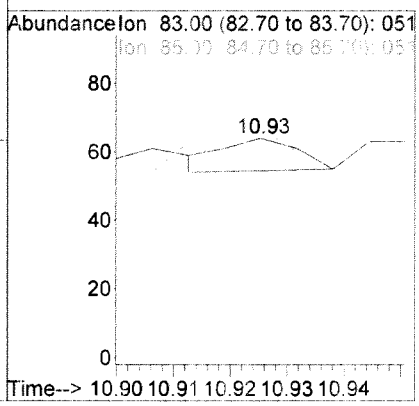
Tgt Ion:106	Resp:	298	
Ion	Ratio	Lower	Upper
106	100		
91	201.0	184.3	244.3
65	12.7	0.0	44.6

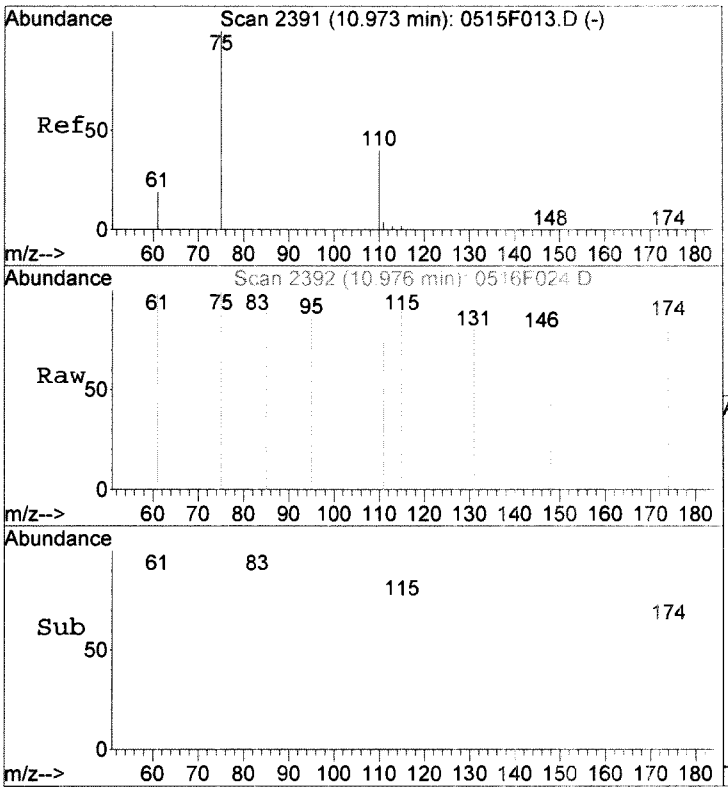




#26
1,1,2,2-Tetrachloroethane
Concen: 0.56 ng/L
RT: 10.93 min Scan# 2384
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion: 83	Resp:	9	
Ion	Ratio	Lower	Upper
83	100		
85	44.4	34.1	94.1
131	33.3	0.0	28.8#

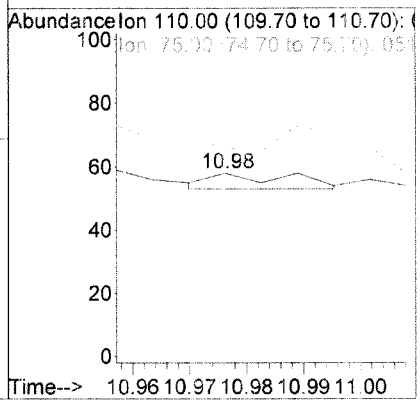


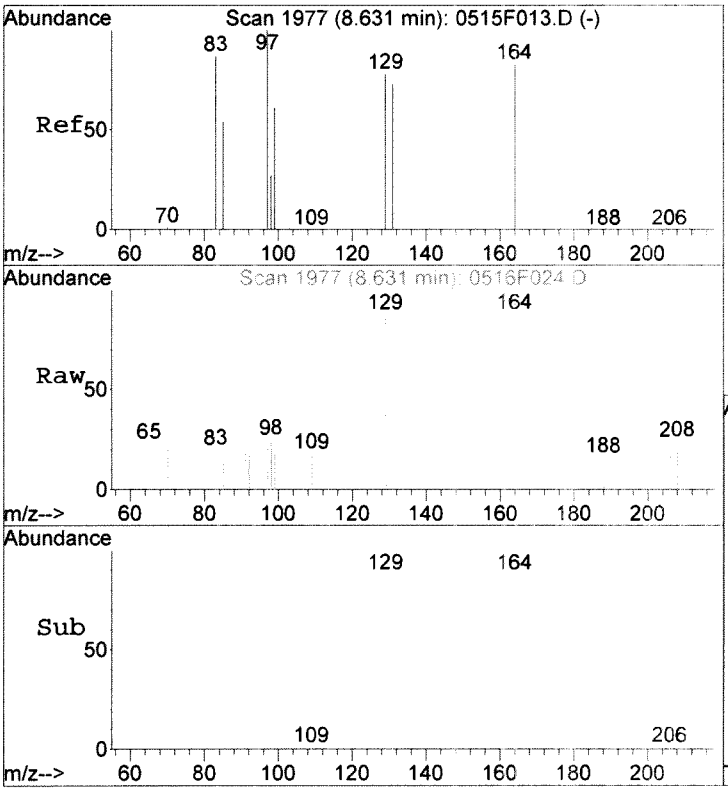


#27
1,2,3-Trichloropropane
Concen: 1.00 ng/L
RT: 10.98 min Scan# 2392
Delta R.T. 0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion:110 Resp: 5

Ion	Ratio	Lower	Upper
110	100		
75	0.0	230.6	270.6#
61	150.0	40.1	80.1#

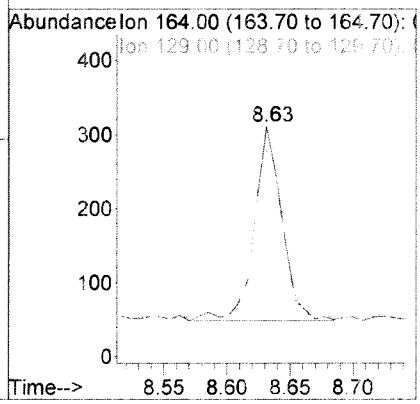


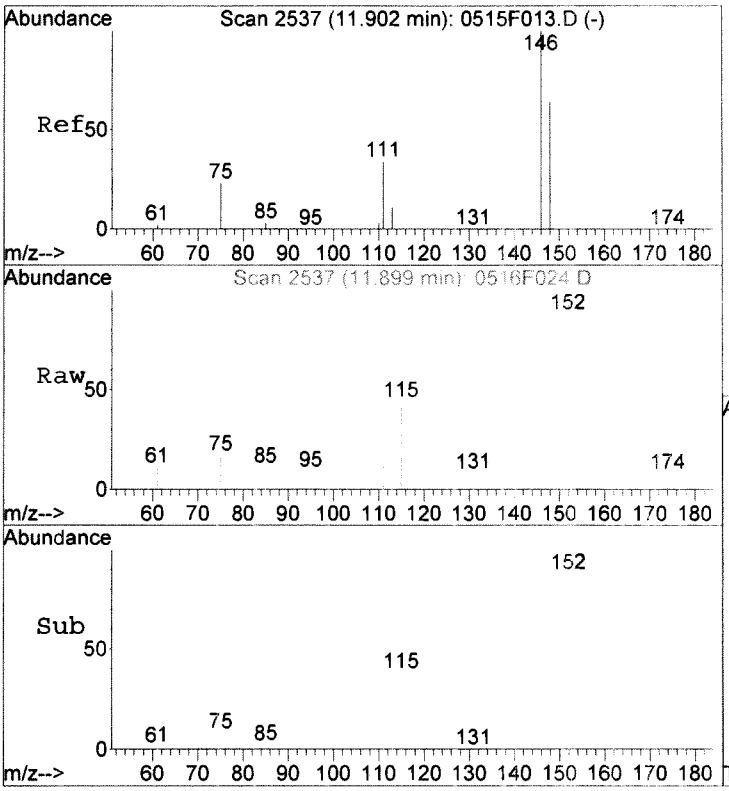


#28
Tetrachloroethene
Concen: 28.65 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion:164 Resp: 401

Ion	Ratio	Lower	Upper
164	100		
129	85.9	63.1	123.1
131	78.2	57.4	117.4

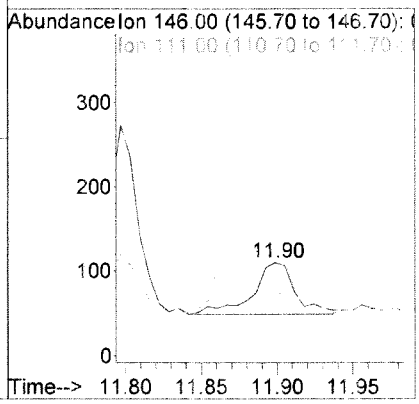




#30
1,4-Dichlorobenzene
Concen: 4.95 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F024.D
Acq: 16 May 2017 09:11 pm

Tgt Ion:146 Resp: 119

Ion	Ratio	Lower	Upper
146	100		
111	44.3	4.0	64.0
148	90.2	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F020.D
Lab ID: K1704857-002
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 19:21
Date Quantitated: 05/22/2017 12:06
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KA 5/22/17

Secondary Review: NF

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F020.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 19:21	**Quant Date:**	05/22/2017 12:06	**Vial:**	18
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704857-002			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/11/2017	**Receive Date:**	05/13/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704857
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604850	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	52872	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37381	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	20208	1,033	103	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	42710	1,013	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12955	779.02	78	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.32	-0.01	0.00	62	13	0.4400	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F020.D Vial: 18
Acq On : 16 May 2017 07:21 pm Operator: GH
Sample : K4857-002TB 041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:57:59 2017 Quant Results File: 051517MS30_8260SIM.RES

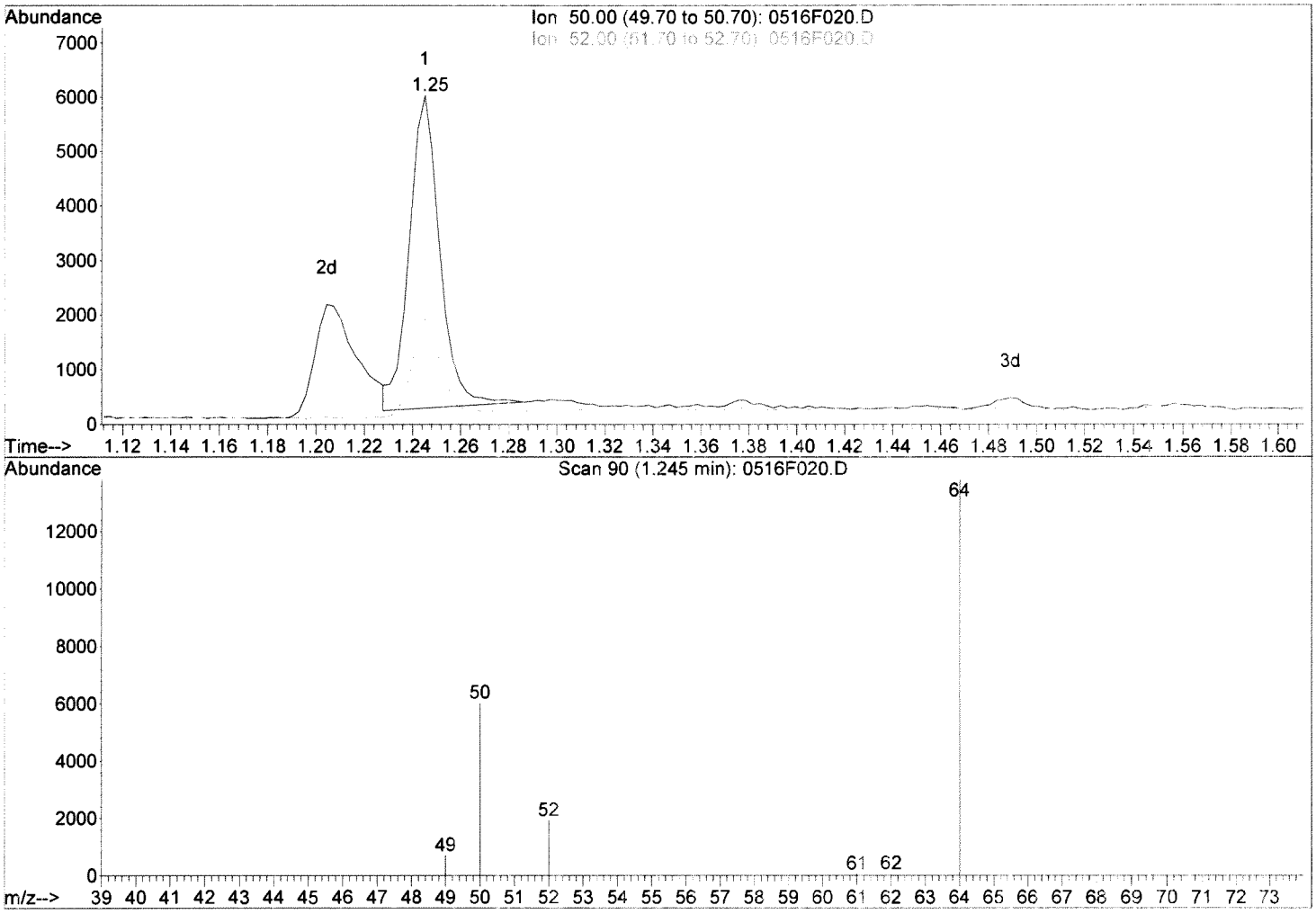
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	52872	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	37381	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	15379	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	20208	1033.34	ng/L		0.00
Spiked Amount 1000.000			Recovery = 103.33%				
15) Toluene-d8	8.05	98	42710	1012.76	ng/L		0.00
Spiked Amount 1000.000			Recovery = 101.28%				
25) 4-Bromofluorobenzene	10.73	95	12955	779.02	ng/L		0.00
Spiked Amount 1000.000			Recovery = 77.90%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	4725m	156.13	ng/L		
3) Vinyl Chloride	1.32	62	13	0.44	ng/L	#	1
5) Methylene Chloride	3.08	84	9529	416.16	ng/L		99
6) trans-1,2-Dichloroethene	3.37	96	59	3.18	ng/L	#	21
8) Chloroform	5.40	83	135	3.55	ng/L		84
11) Benzene	5.97	78	1553	21.49	ng/L		96
13) Trichloroethene	6.75	95	895	50.36	ng/L		96
14) Bromodichloromethane	7.36	83	14	0.55	ng/L		76
17) Dibromochloromethane	8.63	129	287	16.25	ng/L		94
20) Toluene	8.12	92	122799	3743.03	ng/L		99
21) Ethylbenzene	9.65	106	83	5.25	ng/L	#	82
22) 1,1,1,2-Tetrachloroethane	9.67	131	20	1.01	ng/L	#	36
23) m,p-Xylenes	9.78	106	380	20.98	ng/L		86
24) o-Xylene	10.18	106	258	13.96	ng/L		84
26) 1,1,2,2-Tetrachloroethane	10.93	83	9	0.51	ng/L	#	25
27) 1,2,3-Trichloropropane	10.96	110	14	2.54	ng/L	#	30
28) Tetrachloroethene	8.63	164	346	22.50	ng/L		93
30) 1,4-Dichlorobenzene	11.90	146	150	5.41	ng/L		93

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F020.D Vial: 18
Acq On : 16 May 2017 07:21 pm Operator: GH
Sample : K4857-002TB 041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:58 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F020.D

(2) Chloromethane (T)

1.25min 167.73ng/L

response 5076

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	31.94
49.00	10.30	10.30
0.00	0.00	0.00

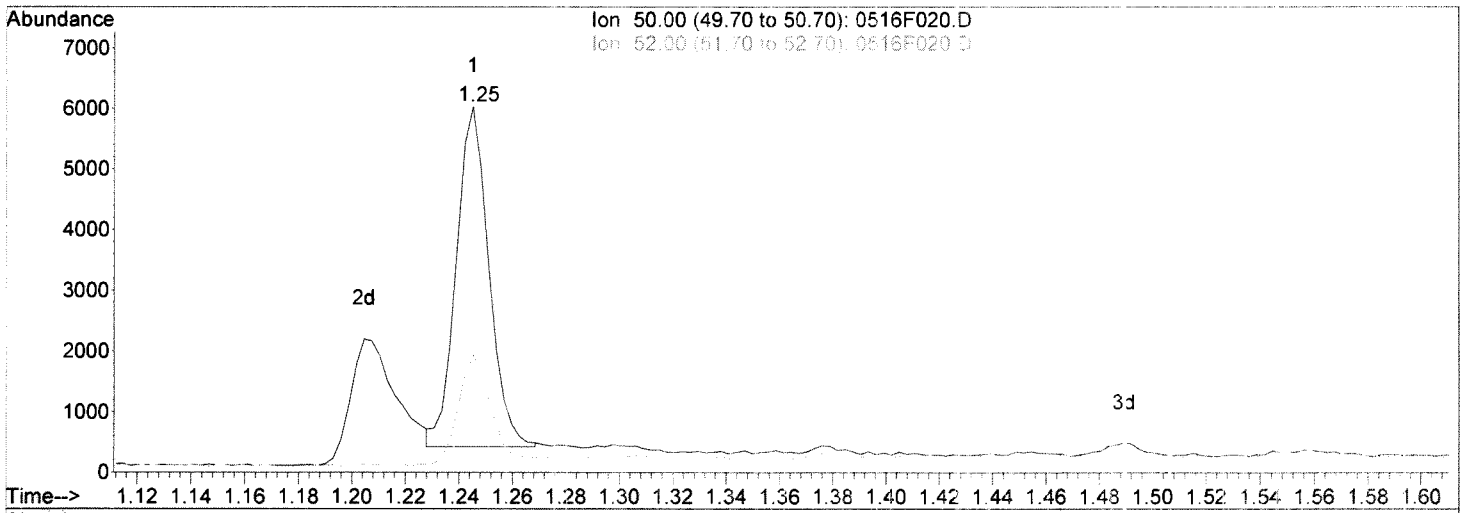
Manual Integration:

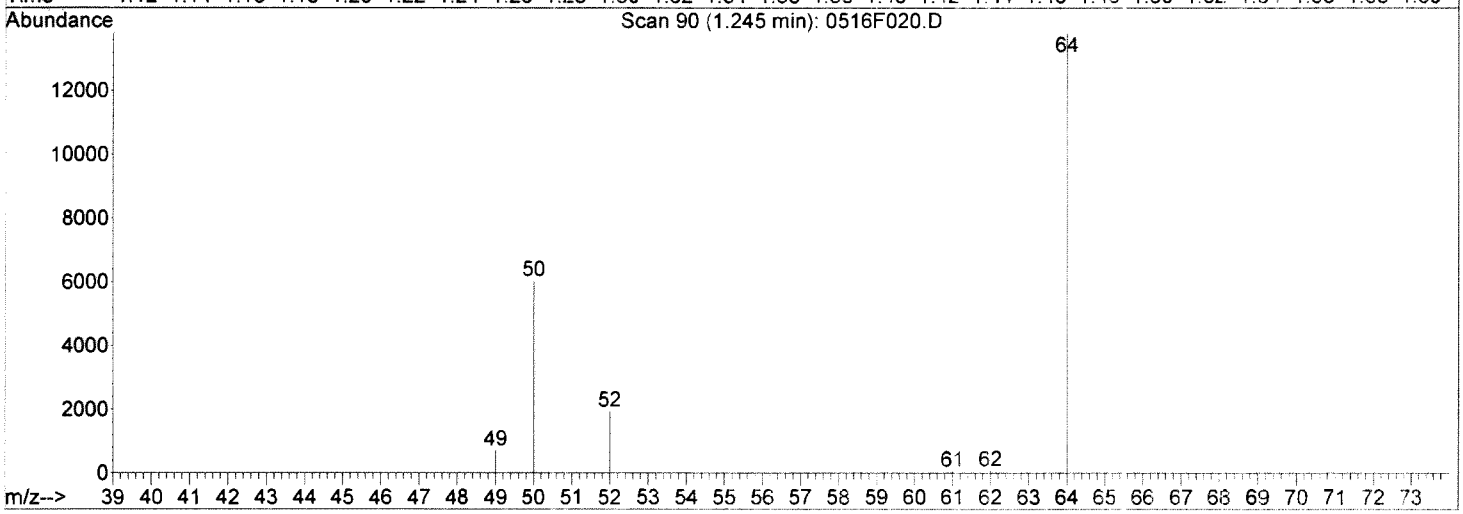
Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F020.D Vial: 18
Acq On : 16 May 2017 07:21 pm Operator: GH
Sample : K4857-002TB 041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:06 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F020.D

(2) Chloromethane (T)

1.25min 156.13ng/L m

response 4725

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	31.95
49.00	10.30	11.65
0.00	0.00	0.00

Manual Integration:

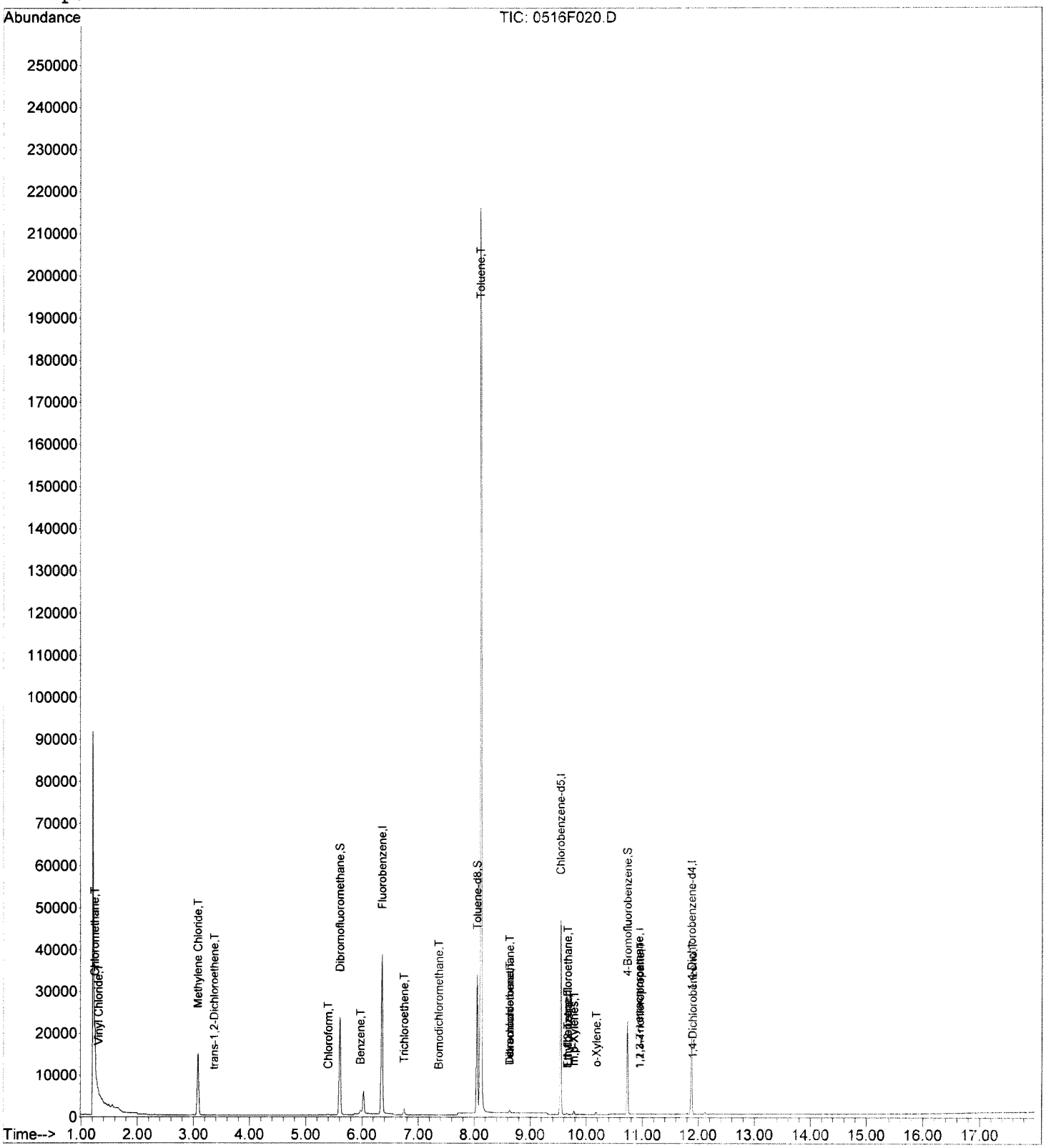
After

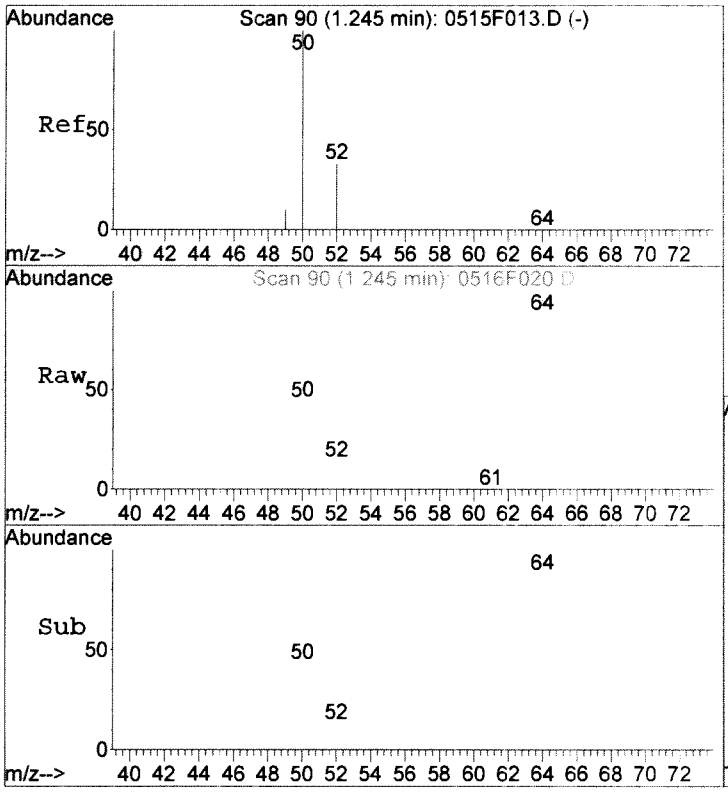
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F020.D Vial: 18
Acq On : 16 May 2017 07:21 pm Operator: GH
Sample : K4857-002TB 041117 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:06 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

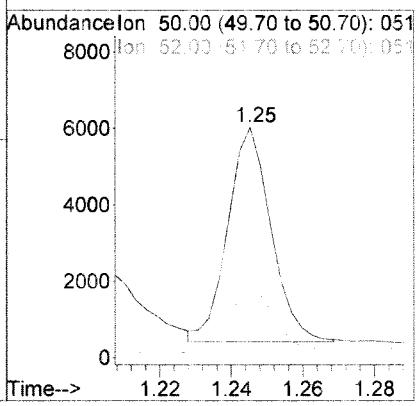


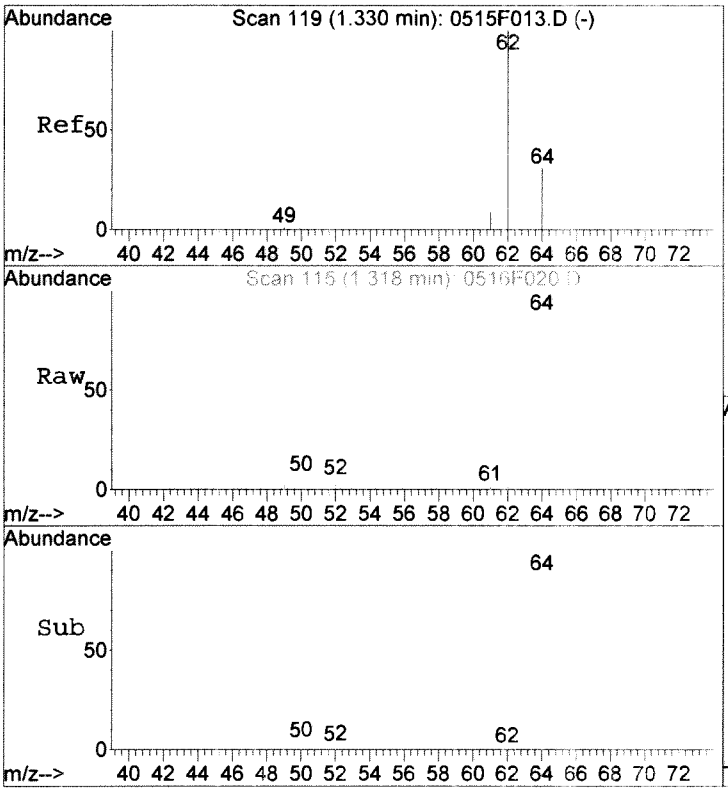


#2
Chloromethane
Concen: 156.13 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. -0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 50 Resp: 4725

Ion	Ratio	Lower	Upper
50	100		
52	31.9	2.5	62.5
49	11.6	0.0	40.3

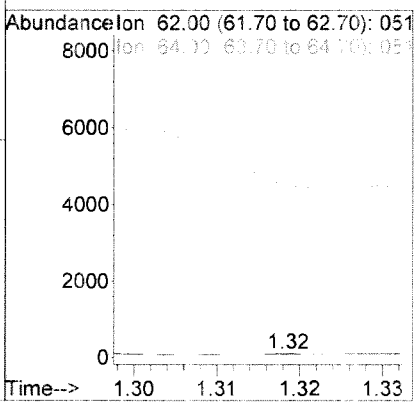


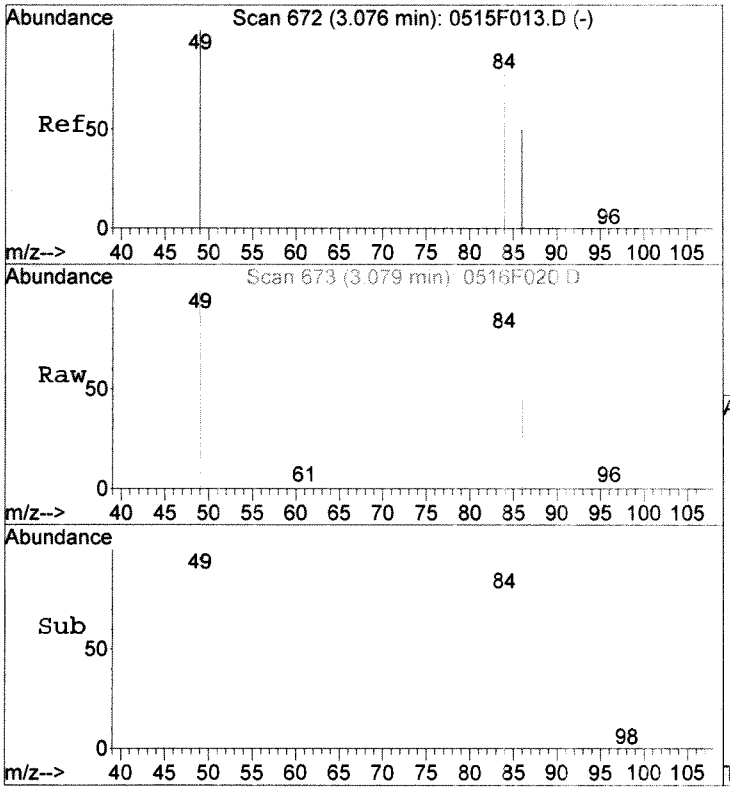


#3
Vinyl Chloride
Concen: 0.44 ng/L
RT: 1.32 min Scan# 115
Delta R.T. -0.01 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 62 Resp: 13

Ion	Ratio	Lower	Upper
62	100		
64	145.8	1.5	61.5#
61	0.0	0.0	38.6

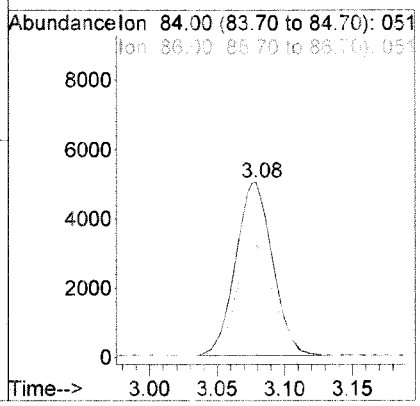


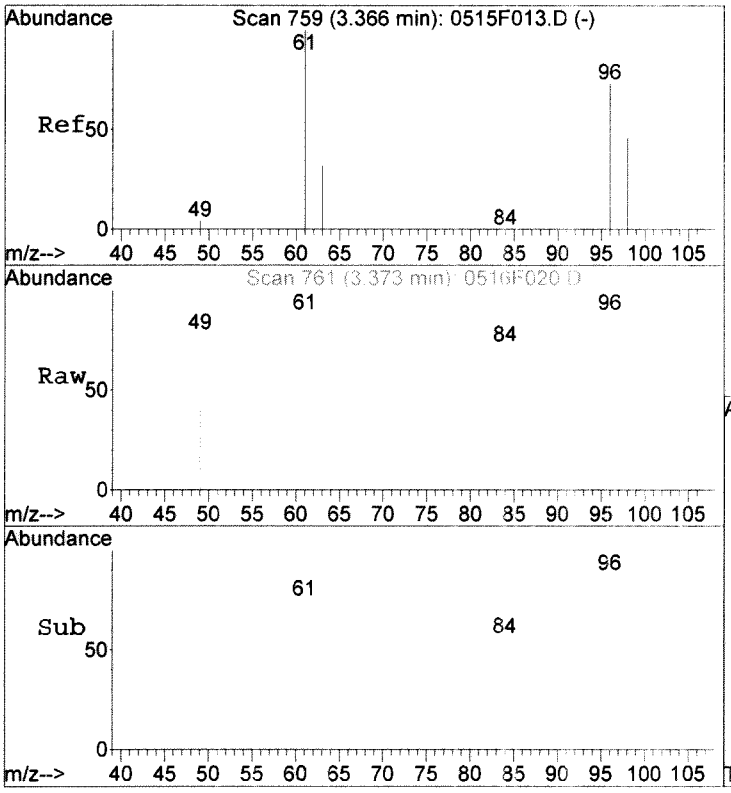


#5
Methylene Chloride
Concen: 416.16 ng/L
RT: 3.08 min Scan# 673
Delta R.T. 0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 84 Resp: 9529

Ion	Ratio	Lower	Upper
84	100		
86	63.7	34.0	94.0
49	127.4	98.8	158.8

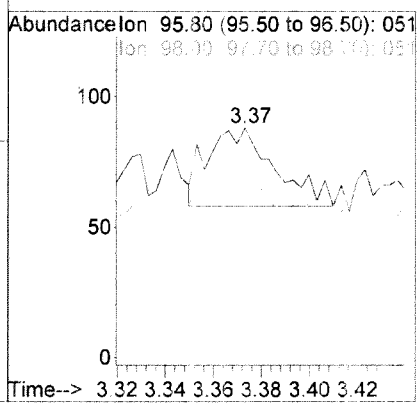


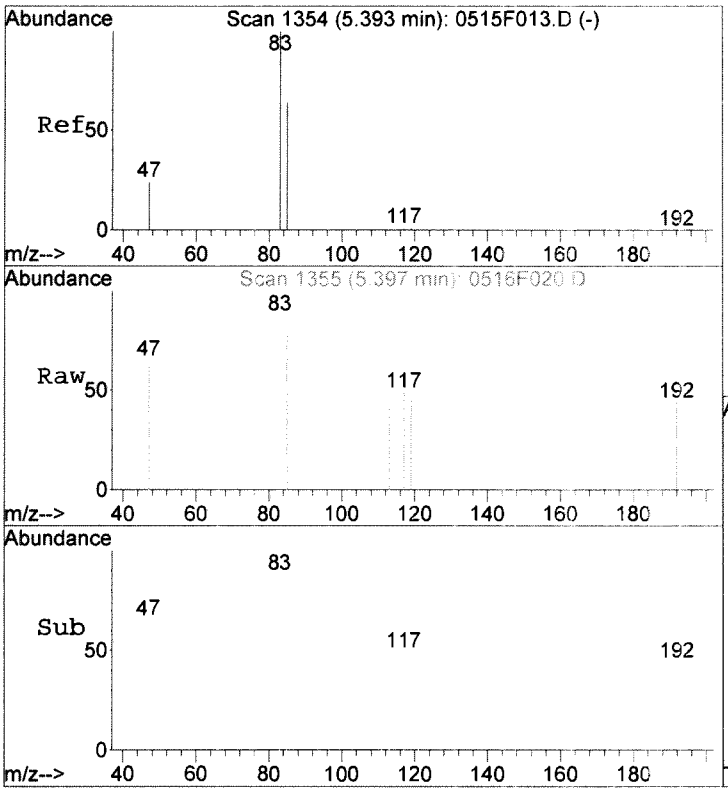


#6
trans-1,2-Dichloroethene
Concen: 3.18 ng/L
RT: 3.37 min Scan# 761
Delta R.T. 0.01 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 96 Resp: 59

Ion	Ratio	Lower	Upper
96	100		
98	10.0	32.9	92.9#
61	36.7	107.3	167.3#

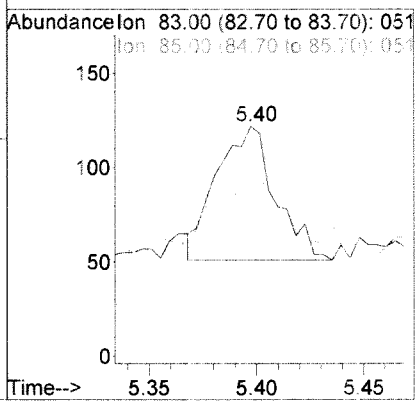


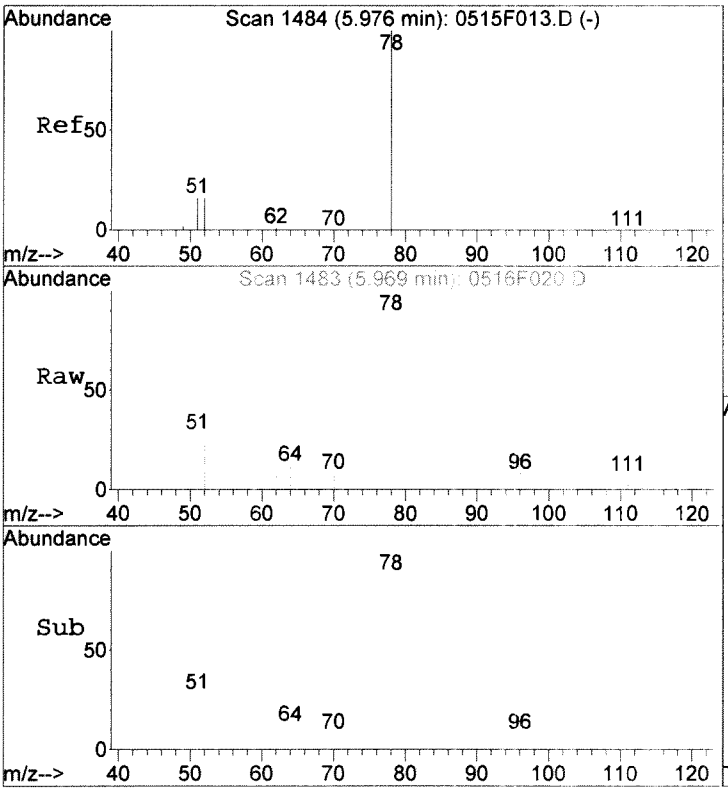


#8
Chloroform
Concen: 3.55 ng/L
RT: 5.40 min Scan# 1355
Delta R.T. 0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 83 Resp: 135

Ion	Ratio	Lower	Upper
83	100		
85	49.3	34.0	94.0
47	26.8	0.0	53.5

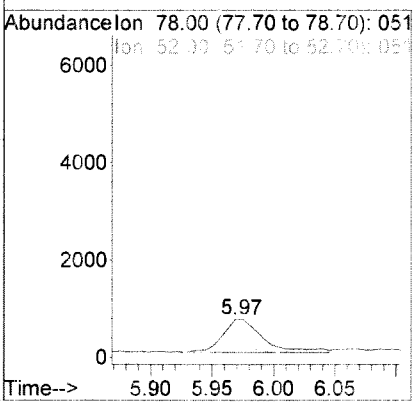


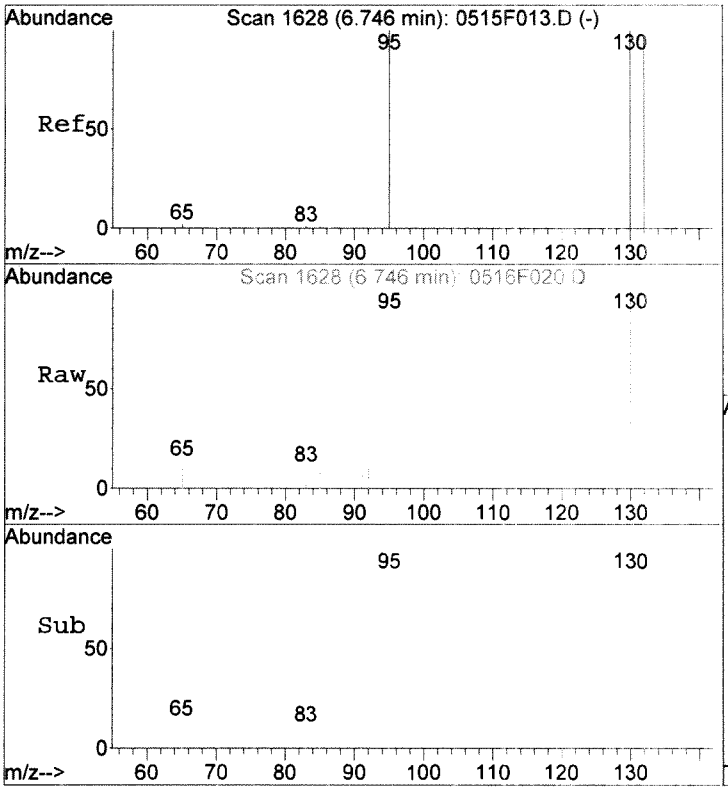


#11
Benzene
Concen: 21.49 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 78 Resp: 1553

Ion	Ratio	Lower	Upper
78	100		
52	13.2	0.0	45.8
51	17.3	0.0	46.5

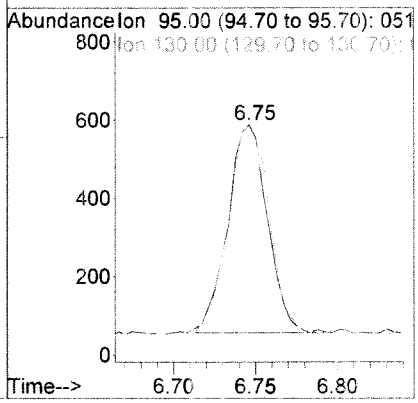


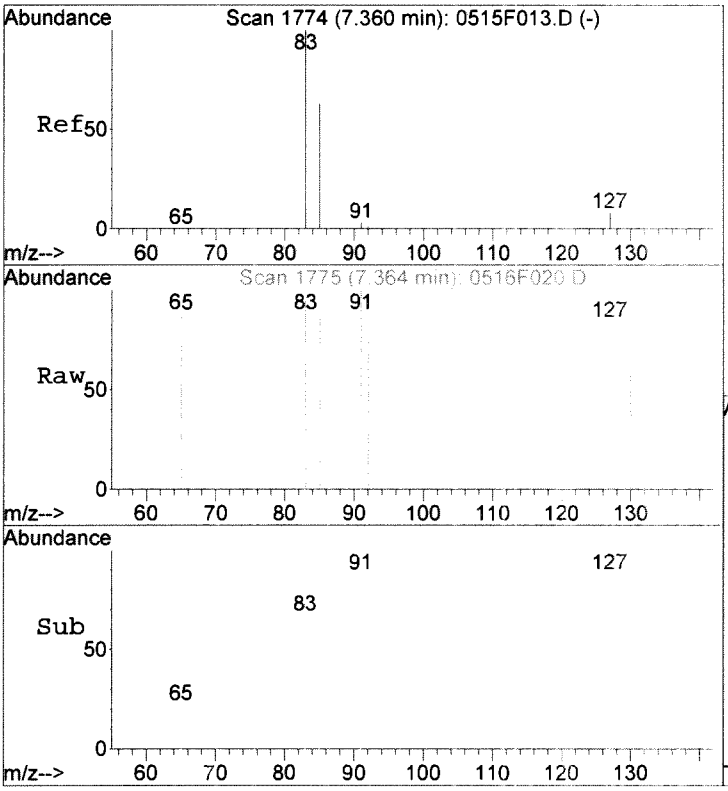


#13
Trichloroethene
Concen: 50.36 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. -0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 95 Resp: 895

Ion	Ratio	Lower	Upper
95	100		
130	100.6	69.5	129.5
132	91.0	67.2	127.2

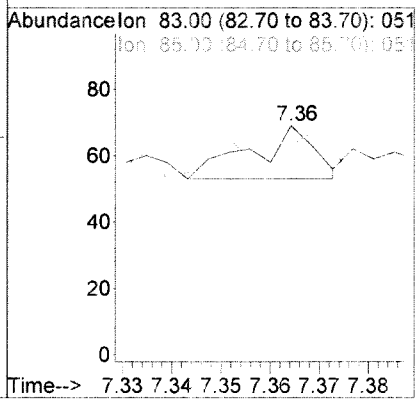


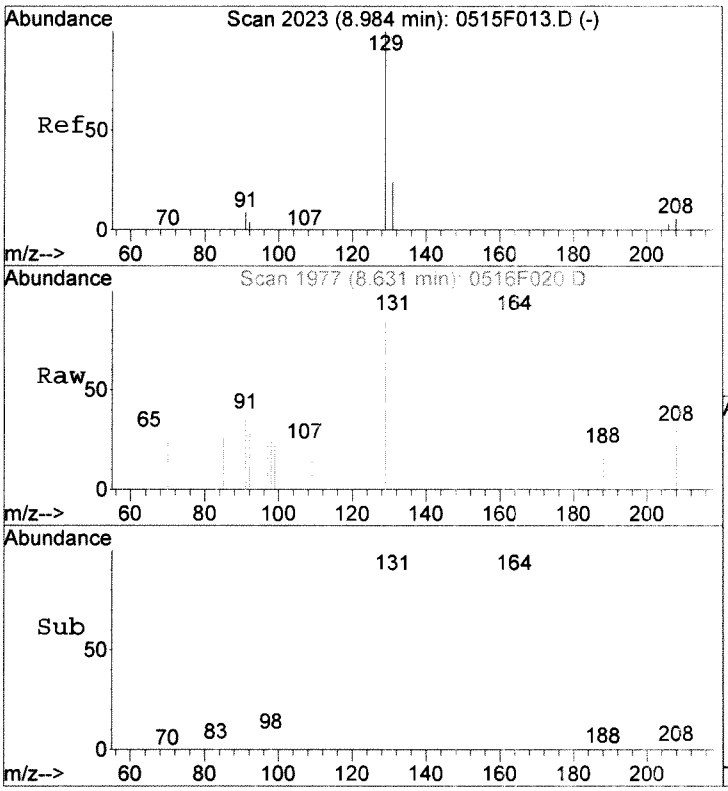


#14
Bromodichloromethane
Concen: 0.55 ng/L
RT: 7.36 min Scan# 1775
Delta R.T. 0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 83 Resp: 14

Ion	Ratio	Lower	Upper
83	100		
85	50.0	33.1	93.1
127	37.5	0.0	38.1

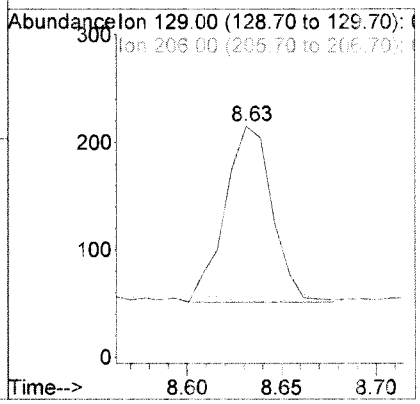


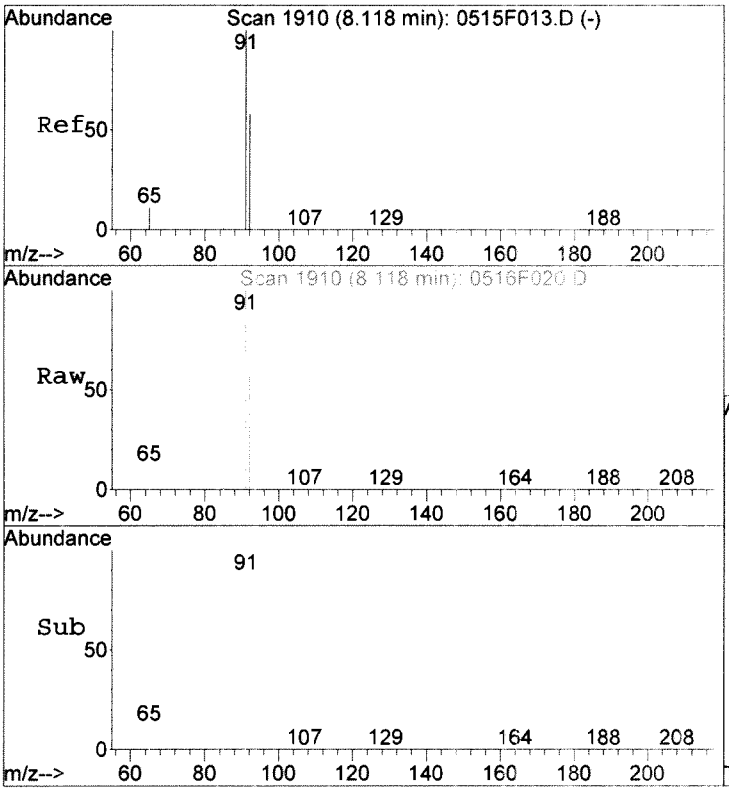


#17
Dibromochloromethane
Concen: 16.25 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.35 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion:129 Resp: 287

Ion	Ratio	Lower	Upper
129	100		
206	0.0	0.0	32.8
208	4.3	0.0	35.9

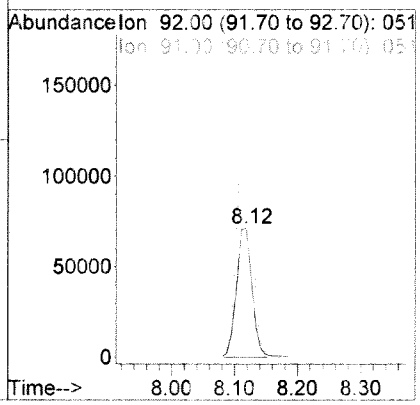


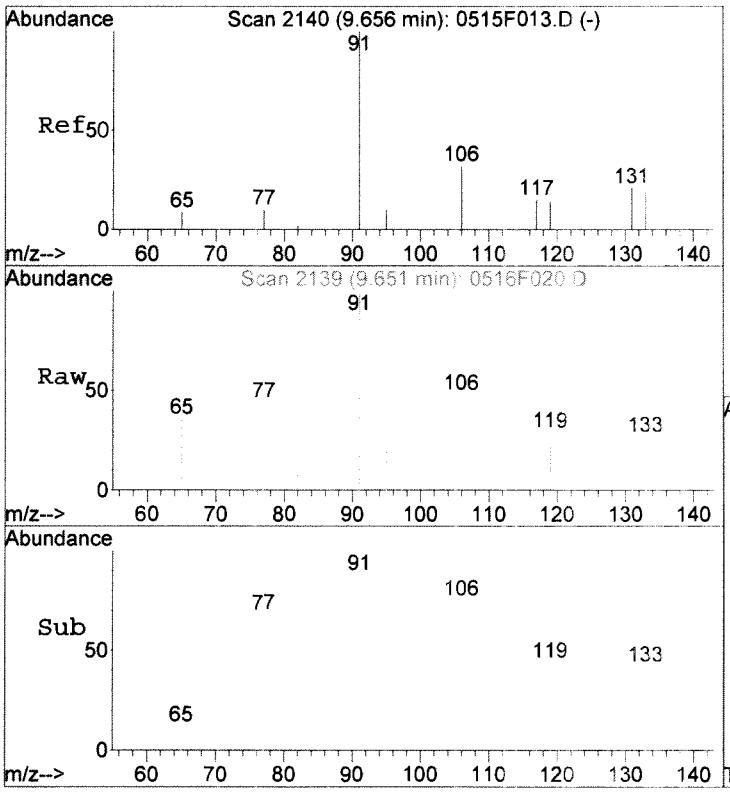


#20
Toluene
Concen: 3743.03 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. -0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 92 Resp: 122799

Ion	Ratio	Lower	Upper
92	100		
91	175.6	143.6	203.6
65	20.7	0.0	49.9

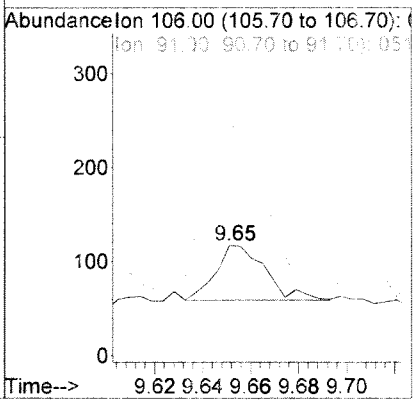


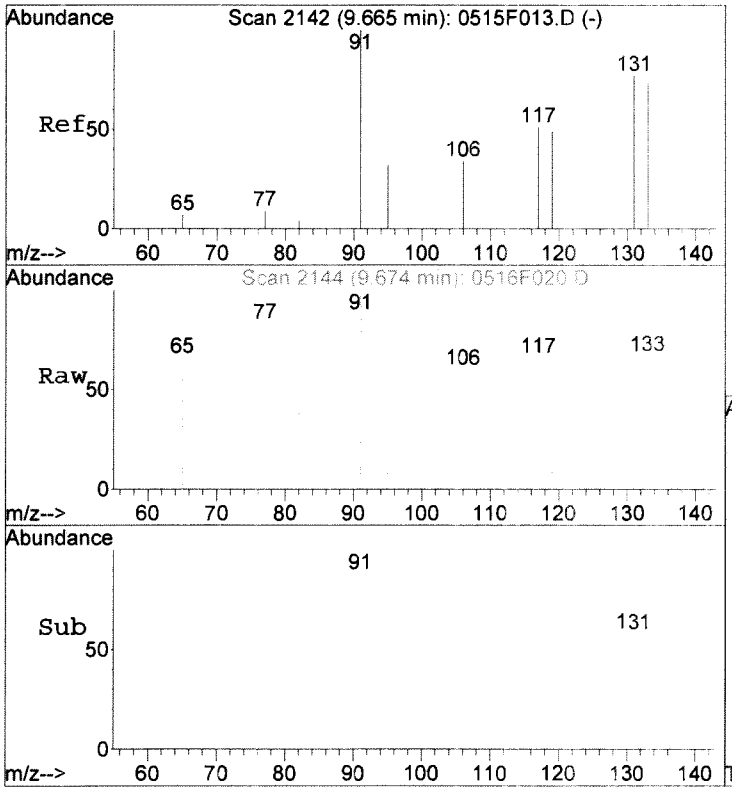


#21
Ethylbenzene
Concen: 5.25 ng/L
RT: 9.65 min Scan# 2139
Delta R.T. -0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion:106 Resp: 83

Ion	Ratio	Lower	Upper
106	100		
91	275.9	285.7	345.7#
77	31.0	1.3	61.3

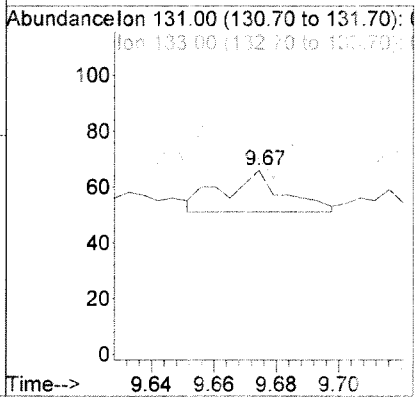


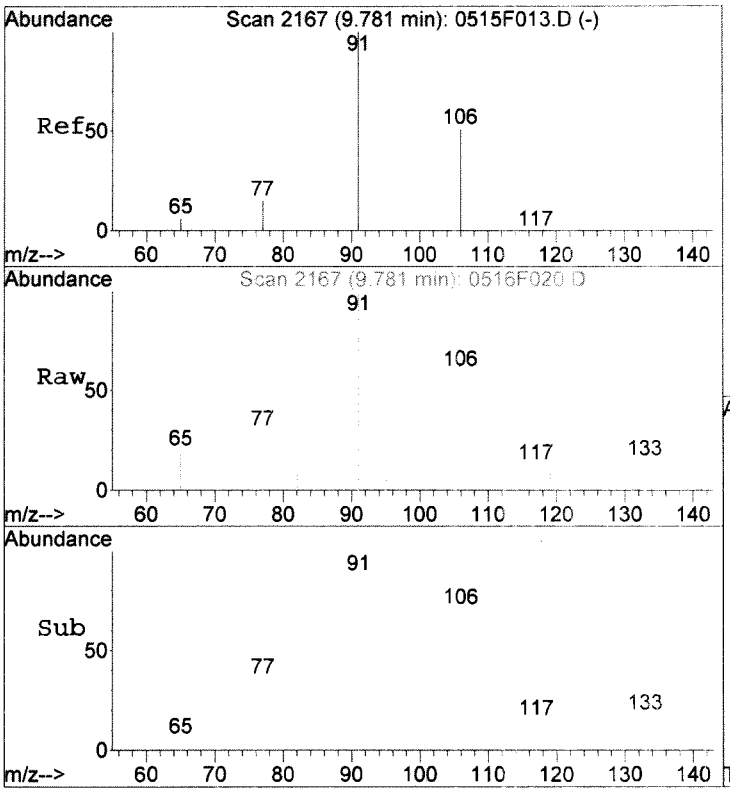


#22
1,1,1,2-Tetrachloroethane
Concen: 1.01 ng/L
RT: 9.67 min Scan# 2144
Delta R.T. 0.01 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion:131 Resp: 20

Ion	Ratio	Lower	Upper
131	100		
133	30.8	74.4	114.4#
119	15.4	43.9	83.9#

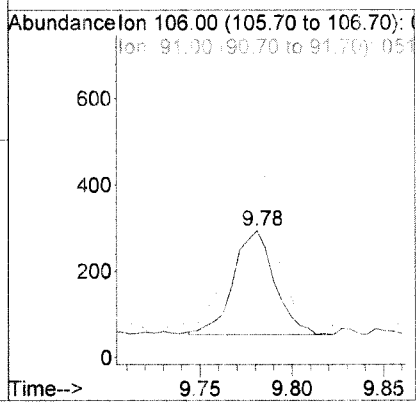


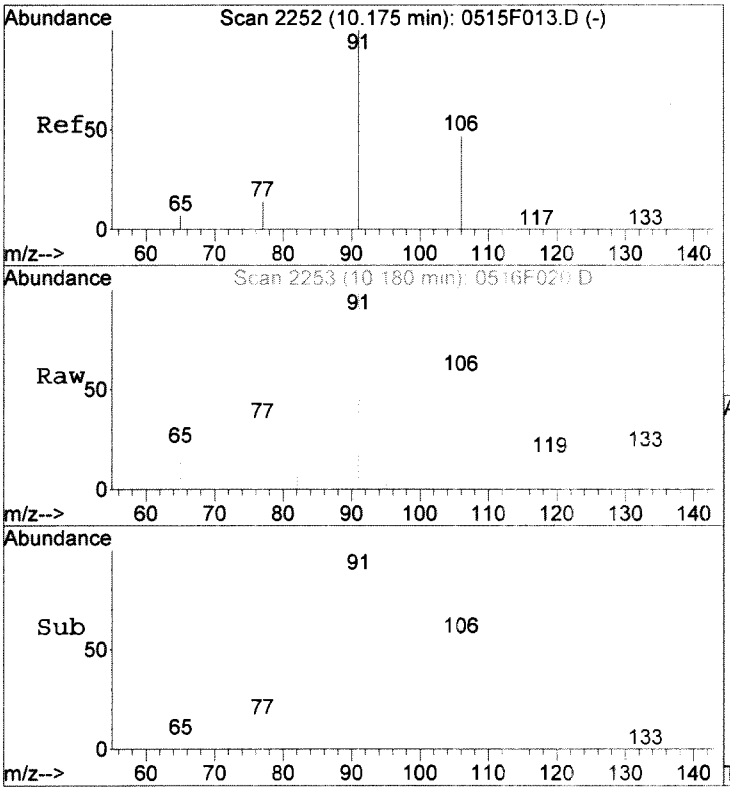


#23
m,p-Xylenes
Concen: 20.98 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. 0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion:106 Resp: 380

Ion	Ratio	Lower	Upper
106	100		
91	173.6	166.8	226.8
77	24.8	0.0	58.7

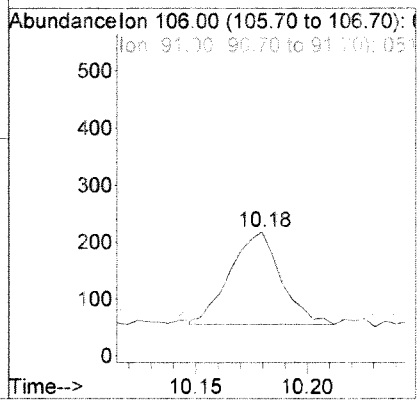


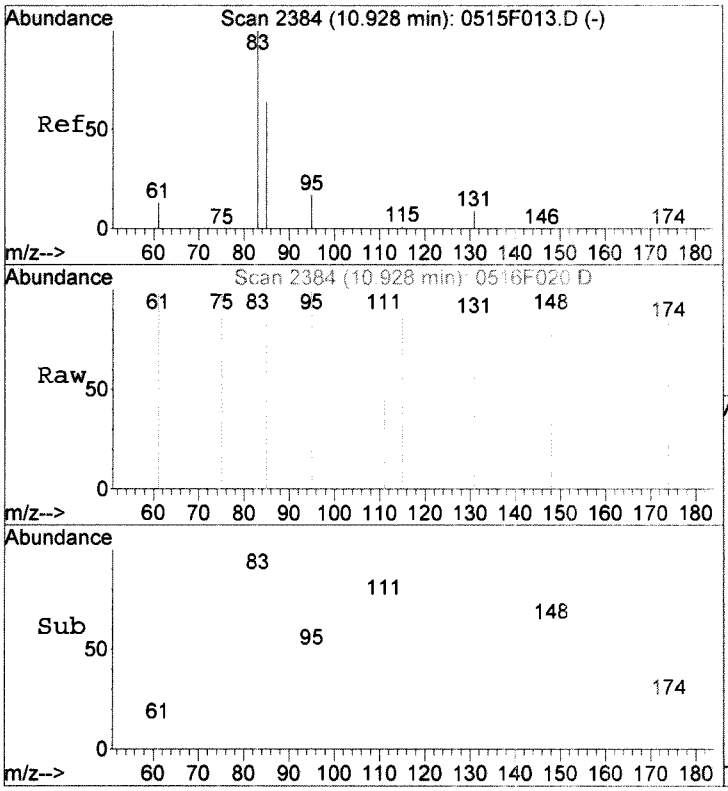


#24
o-Xylene
Concen: 13.96 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.01 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion:106 Resp: 258

Ion	Ratio	Lower	Upper
106	100		
91	187.1	184.3	244.3
65	12.3	0.0	44.6

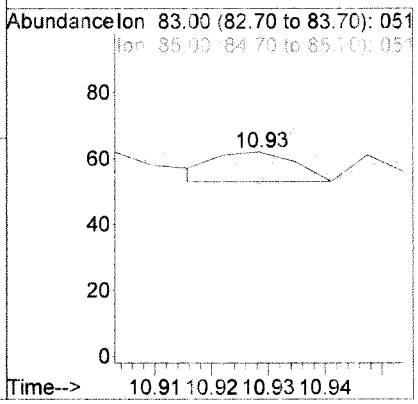


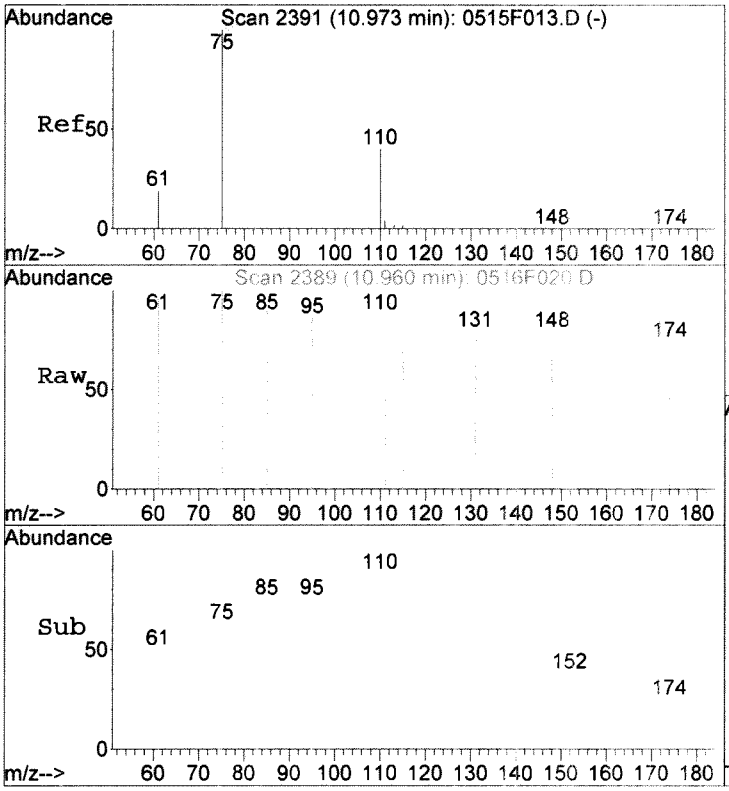


#26
1,1,2,2-Tetrachloroethane
Concen: 0.51 ng/L
RT: 10.93 min Scan# 2384
Delta R.T. -0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion: 83 Resp: 9

Ion	Ratio	Lower	Upper
83	100		
85	0.0	34.1	94.1#
131	0.0	0.0	28.8

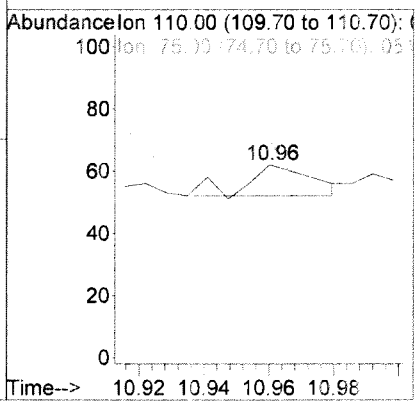


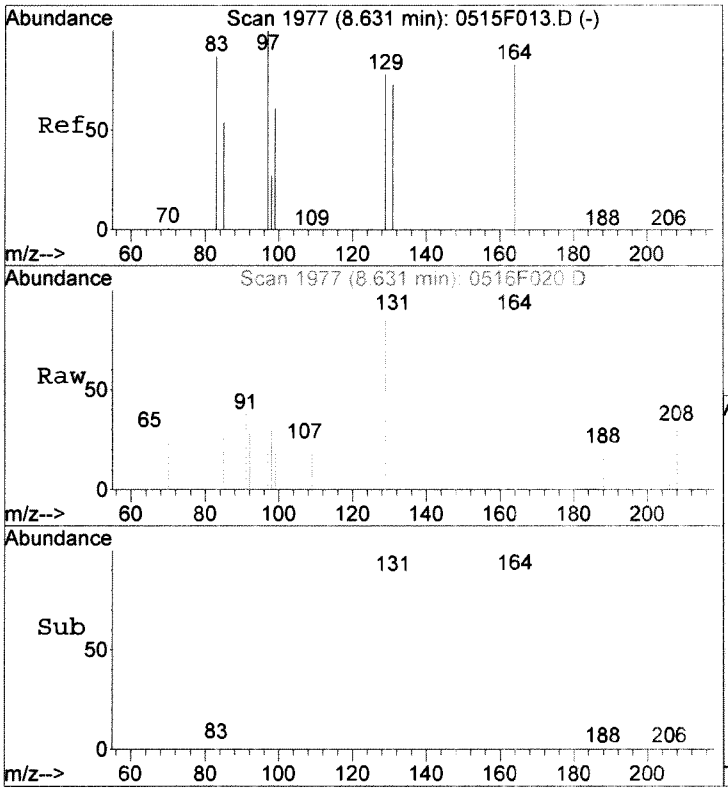


#27
1,2,3-Trichloropropane
Concen: 2.54 ng/L
RT: 10.96 min Scan# 2389
Delta R.T. -0.01 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion:110 Resp: 14

Ion	Ratio	Lower	Upper
110	100		
75	110.0	230.6	270.6#
61	40.0	40.1	80.1#

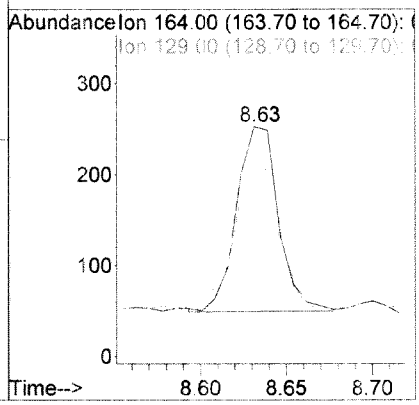


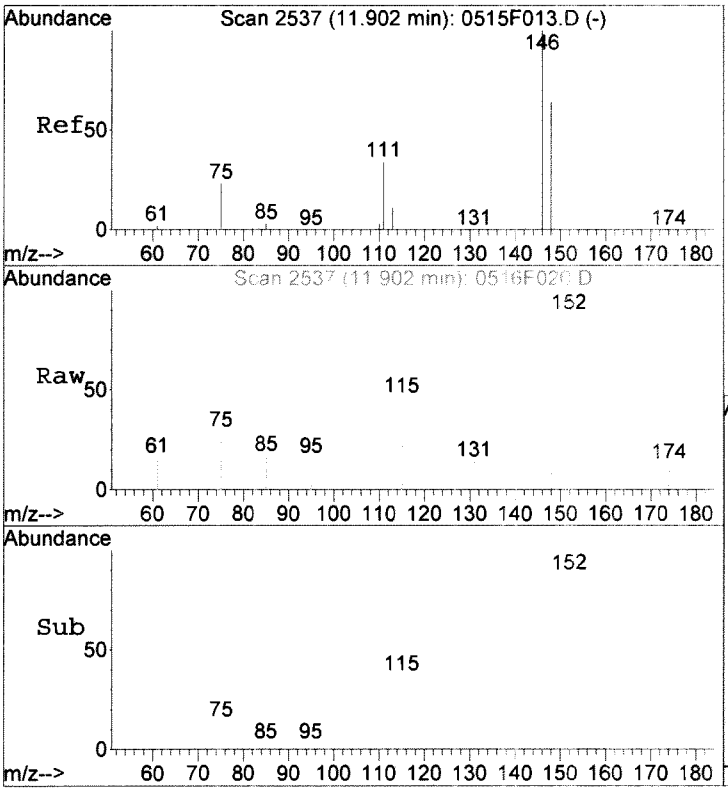


#28
Tetrachloroethene
Concen: 22.50 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion:164 Resp: 346

Ion	Ratio	Lower	Upper
164	100		
129	80.6	63.1	123.1
131	88.1	57.4	117.4

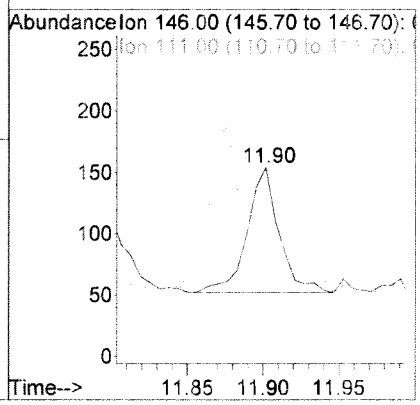




#30
1,4-Dichlorobenzene
Concen: 5.41 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F020.D
Acq: 16 May 2017 07:21 pm

Tgt Ion:146 Resp: 150

Ion	Ratio	Lower	Upper
146	100		
111	33.3	4.0	64.0
148	72.5	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F025.D
Lab ID: K1704857-003
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 21:38
Date Quantitated: 05/22/2017 12:14
Batch ID: KWG 703959
Analysis Method: 8260C SIM
ListJoinID: LJ18835

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KWG 5/22/17

Secondary Review: [signature]

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F025.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 21:38	**Quant Date:**	05/22/2017 12:14	**Vial:**	23
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704857-003			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/11/2017	**Receive Date:**	05/13/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704857
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604851	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	51040	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34203	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19775	1,047	105	77-123 OK	
1	Toluene-d8	8.05	0.00	0.00	98	41402	1,017	102	74-112 OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11937	784.50	78	46-118 OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	178	6.27	6.3	J	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F025.D Vial: 23
Acq On : 16 May 2017 09:38 pm Operator: GH
Sample : K4857-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:59:10 2017 Quant Results File: 051517MS30_8260SIM.RES

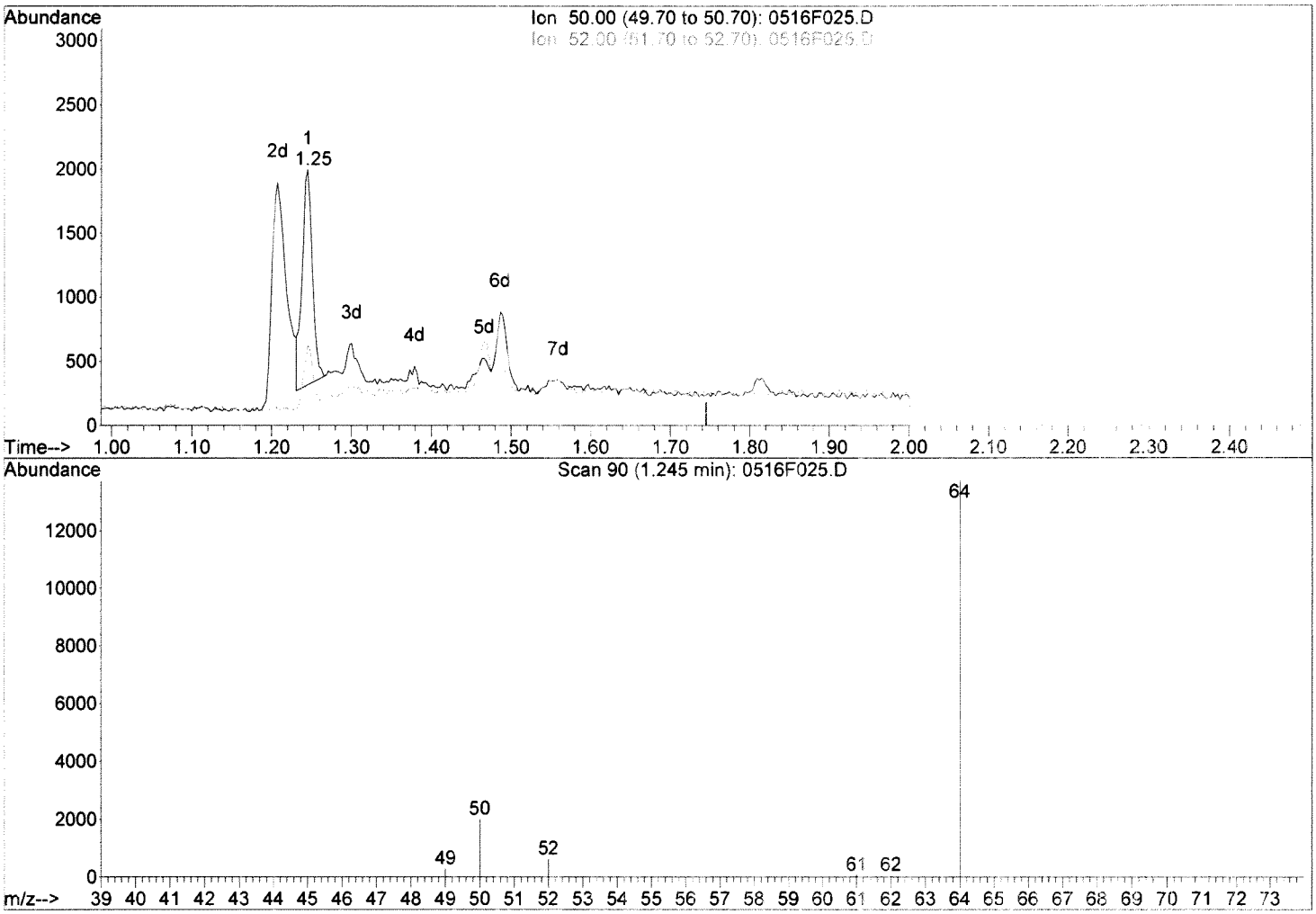
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	51040	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	34203	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13159	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19775	1047.49	ng/L		0.00
Spiked Amount 1000.000			Recovery = 104.75%				
15) Toluene-d8	8.05	98	41402	1016.99	ng/L		0.00
Spiked Amount 1000.000			Recovery = 101.70%				
25) 4-Bromofluorobenzene	10.73	95	11937	784.50	ng/L		0.00
Spiked Amount 1000.000			Recovery = 78.45%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	1386m	47.44	ng/L		
3) Vinyl Chloride	1.33	62	178	6.27	ng/L	#	1
5) Methylene Chloride	3.08	84	1647	74.51	ng/L		99
7) cis-1,2-Dichloroethene	4.95	96	1478	86.58	ng/L		96
8) Chloroform	5.40	83	309	8.42	ng/L		93
11) Benzene	5.97	78	5808	83.25	ng/L		98
12) 1,2-Dichloroethane	5.97	62	66	2.54	ng/L	#	1
13) Trichloroethene	6.75	95	1551	90.40	ng/L		94
16) 1,1,2-Trichloroethane	8.63	83	127	9.23	ng/L	#	52
18) 1,2-Dibromoethane (EDB)	9.09	107	42	3.12	ng/L		75
20) Toluene	8.12	92	16913	563.42	ng/L		99
21) Ethylbenzene	9.66	106	311	21.48	ng/L		99
23) m,p-Xylenes	9.78	106	839	50.62	ng/L		95
24) o-Xylene	10.18	106	657	38.87	ng/L		94
26) 1,1,2,2-Tetrachloroethane	10.93	83	38	2.36	ng/L	#	47
27) 1,2,3-Trichloropropane	10.96	110	25	4.95	ng/L	#	22
28) Tetrachloroethene	8.63	164	2660	189.01	ng/L		99
30) 1,4-Dichlorobenzene	11.90	146	99	4.17	ng/L		86

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F025.D Vial: 23
Acq On : 16 May 2017 09:38 pm Operator: GH
Sample : K4857-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:59 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F025.D

(2) Chloromethane (T)

1.25min 51.86ng/L

response 1515

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	31.05
49.00	10.30	9.83
0.00	0.00	0.00

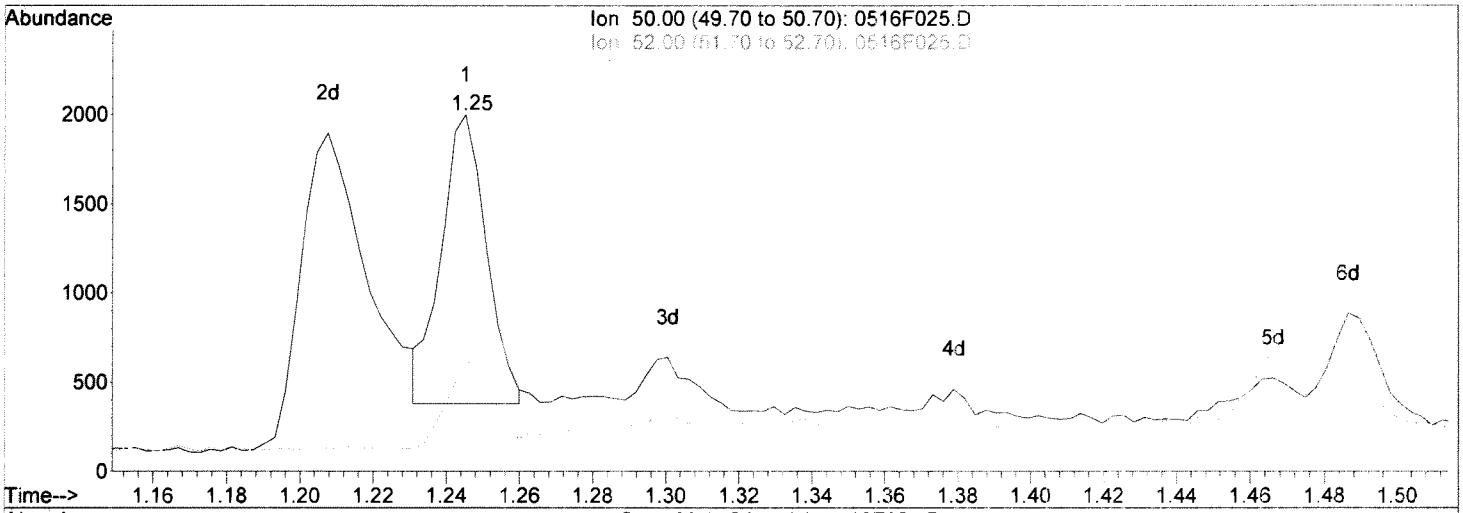
Manual Integration:

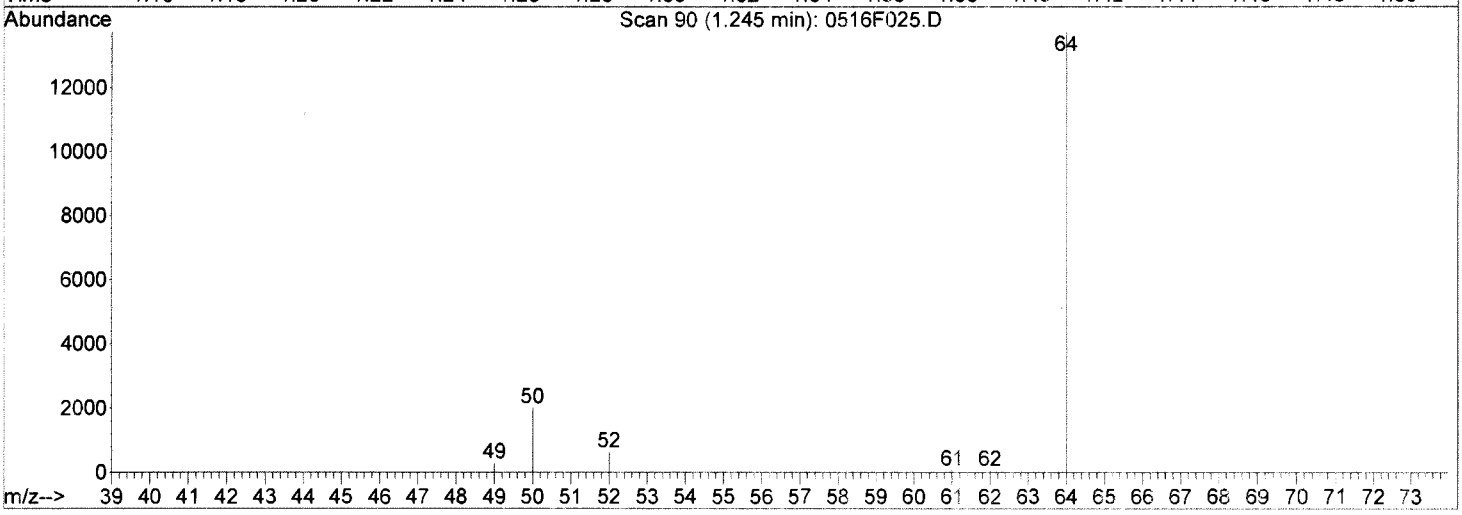
Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F025.D Vial: 23
Acq On : 16 May 2017 09:38 pm Operator: GH
Sample : K4857-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:13 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F025.D

(2) Chloromethane (T)

1.25min 47.44ng/L m

response 1386

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	31.25
49.00	10.30	14.22
0.00	0.00	0.00

Manual Integration:

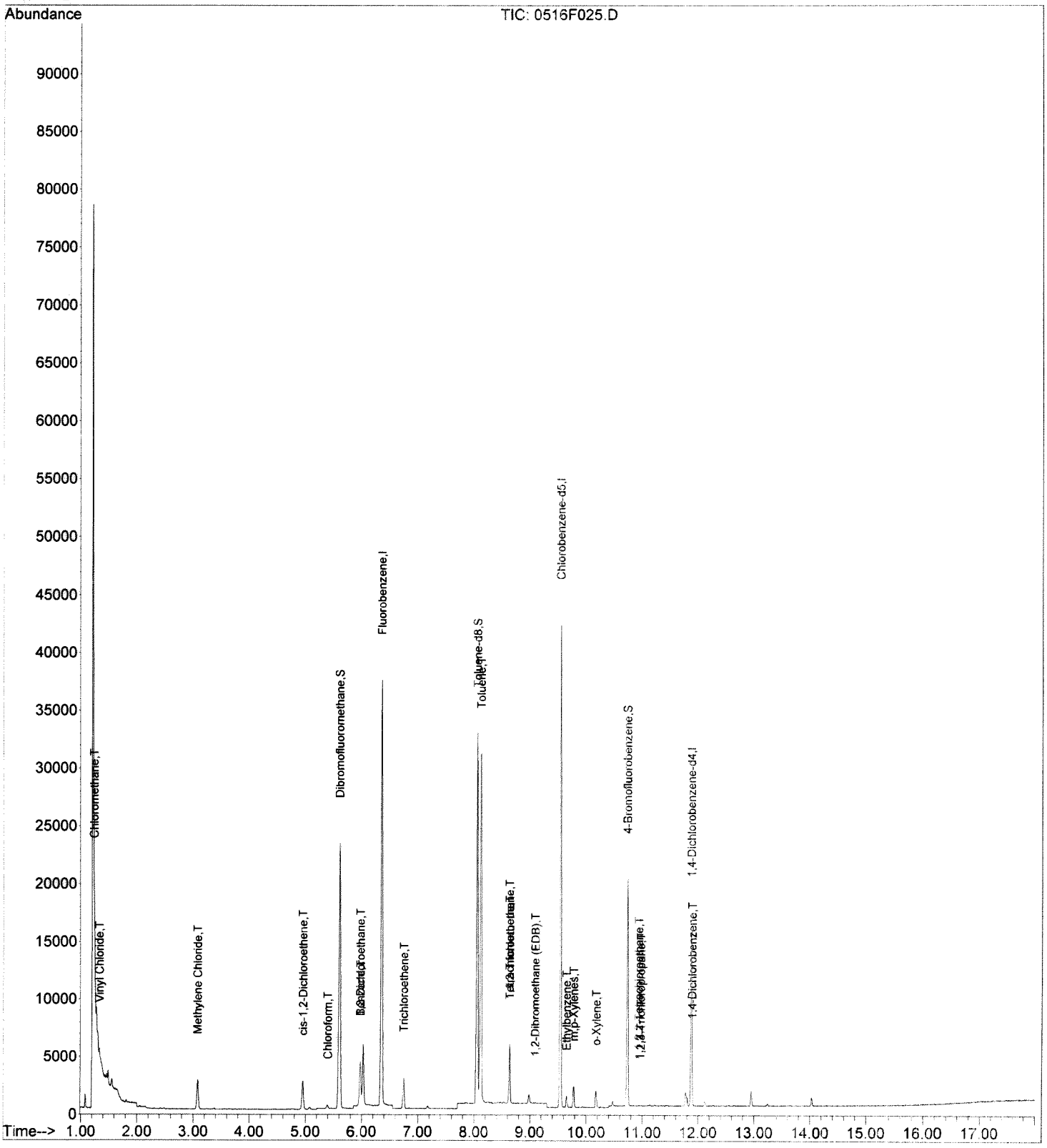
After

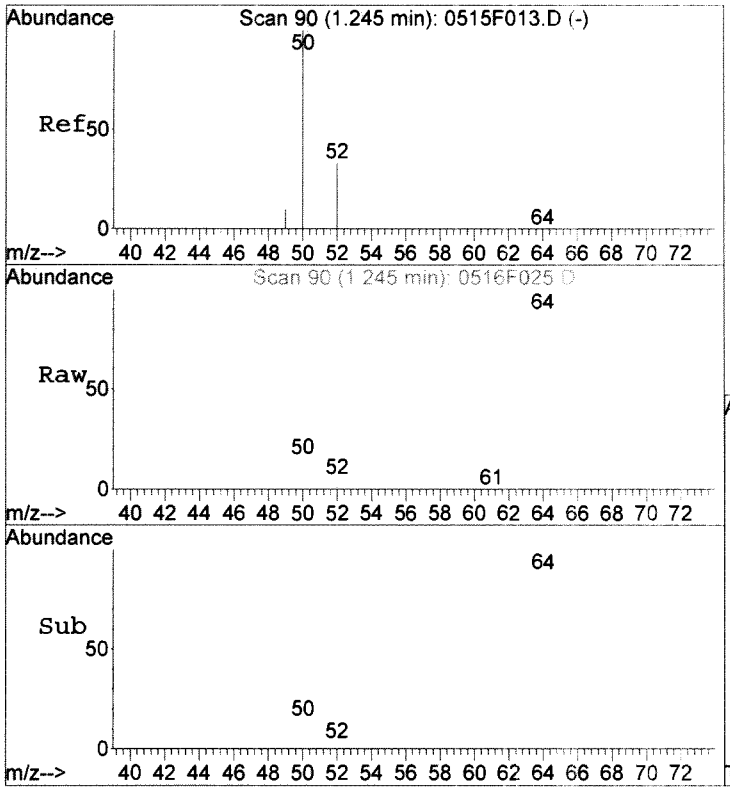
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F025.D Vial: 23
Acq On : 16 May 2017 09:38 pm Operator: GH
Sample : K4857-003 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:14 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

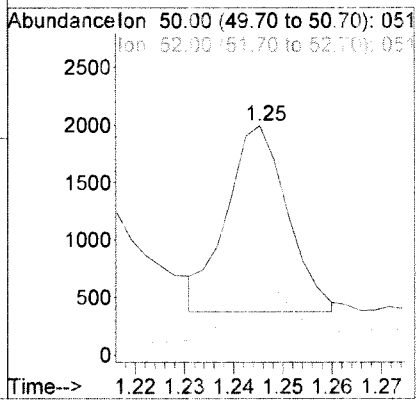


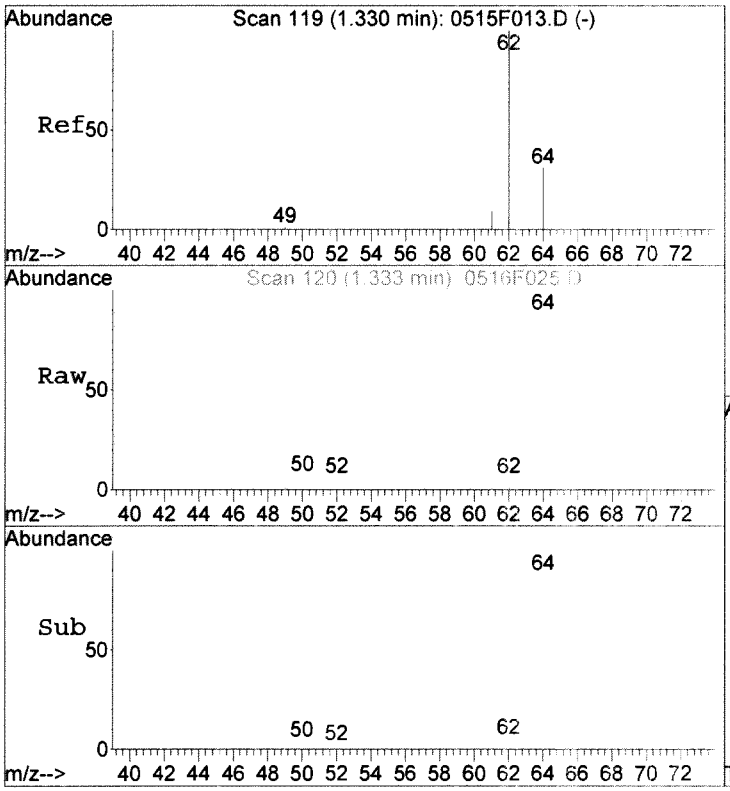


#2
Chloromethane
Concen: 47.44 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 50 Resp: 1386

Ion	Ratio	Lower	Upper
50	100		
52	31.2	2.5	62.5
49	14.2	0.0	40.3

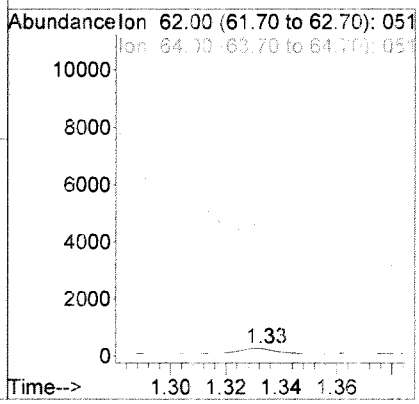


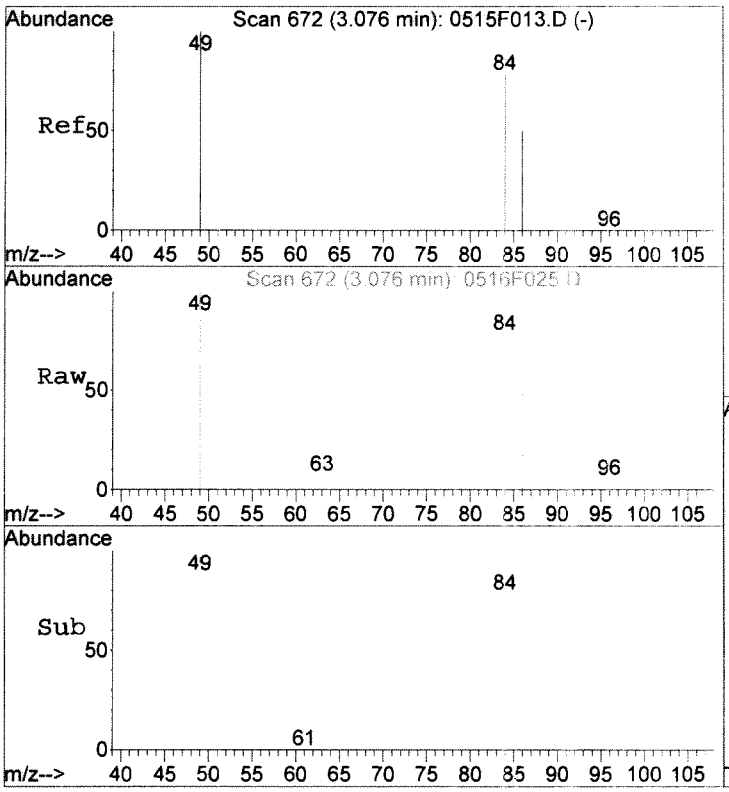


#3
Vinyl Chloride
Concen: 6.27 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 62 Resp: 178

Ion	Ratio	Lower	Upper
62	100		
64	468.0	1.5	61.5#
61	8.8	0.0	38.6

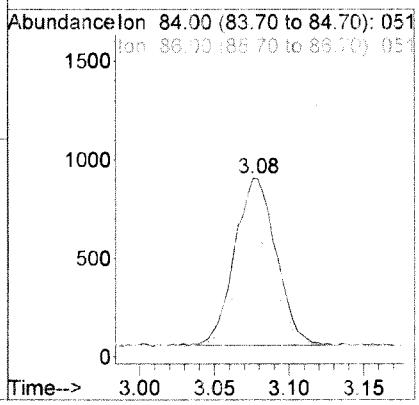


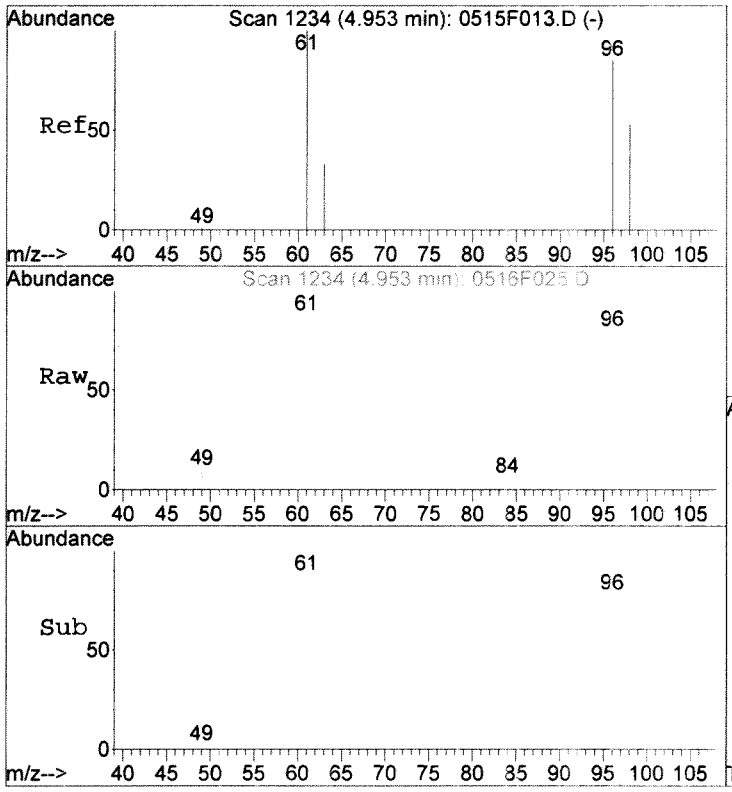


#5
Methylene Chloride
Concen: 74.51 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 84 Resp: 1647

Ion	Ratio	Lower	Upper
84	100		
86	66.3	34.0	94.0
49	129.2	98.8	158.8

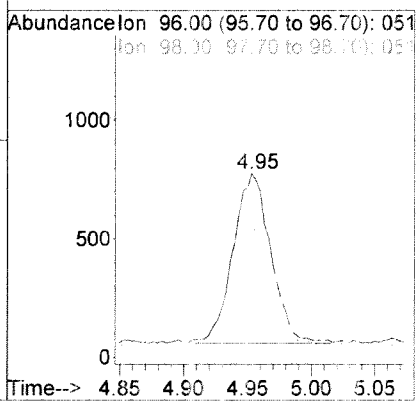


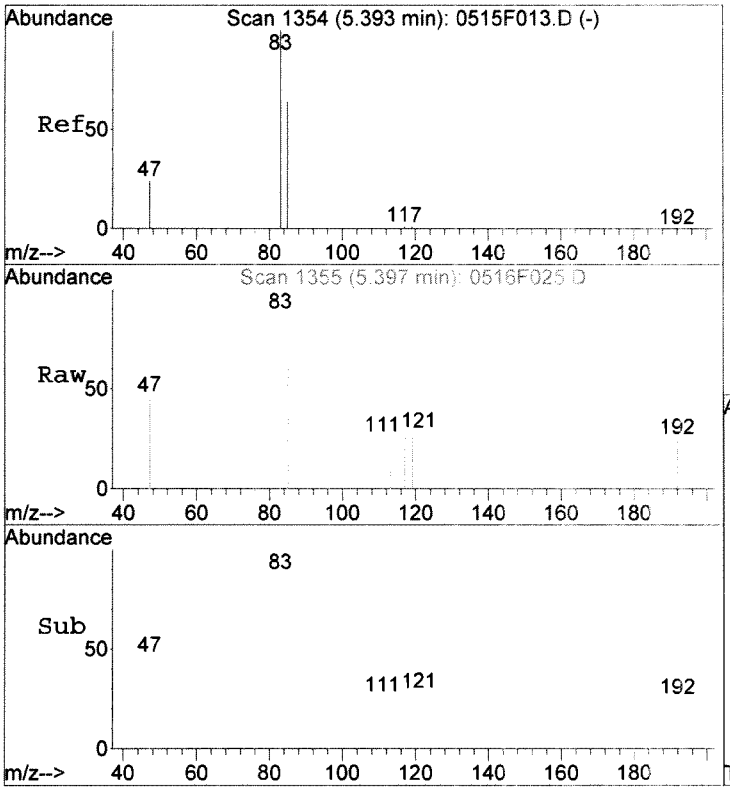


#7
cis-1,2-Dichloroethene
Concen: 86.58 ng/L
RT: 4.95 min Scan# 1234
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 96 Resp: 1478

Ion	Ratio	Lower	Upper
96	100		
98	68.7	32.7	92.7
61	127.1	95.4	155.4

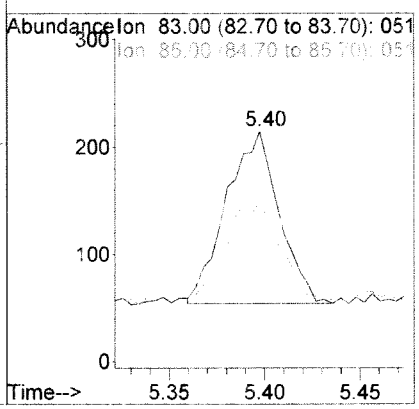


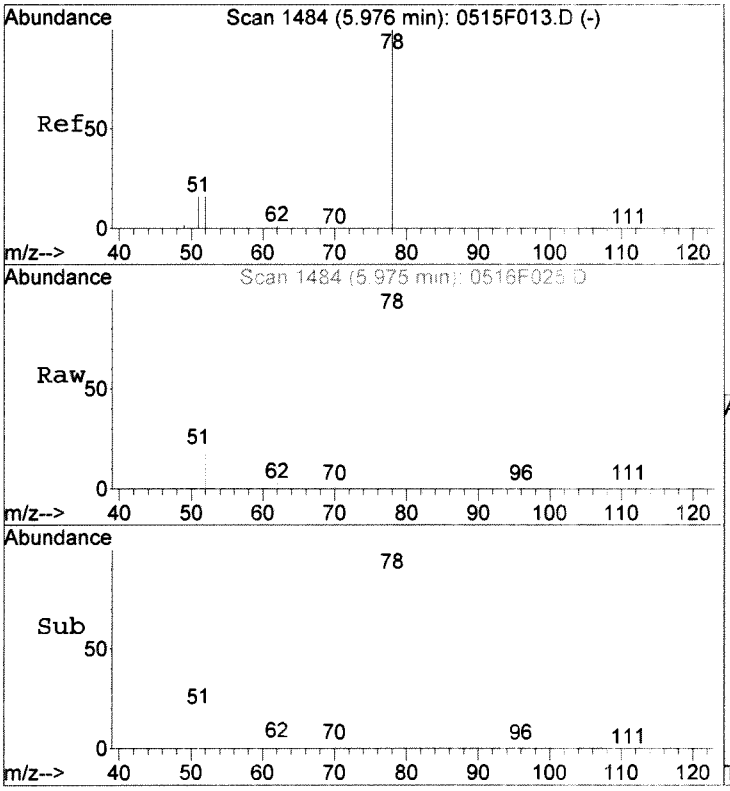


#8
Chloroform
Concen: 8.42 ng/L
RT: 5.40 min Scan# 1355
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 83 Resp: 309

Ion	Ratio	Lower	Upper
83	100		
85	57.1	34.0	94.0
47	22.4	0.0	53.5

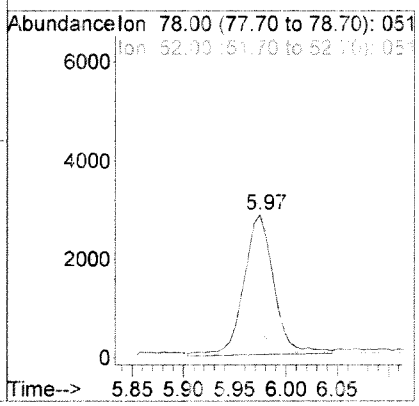


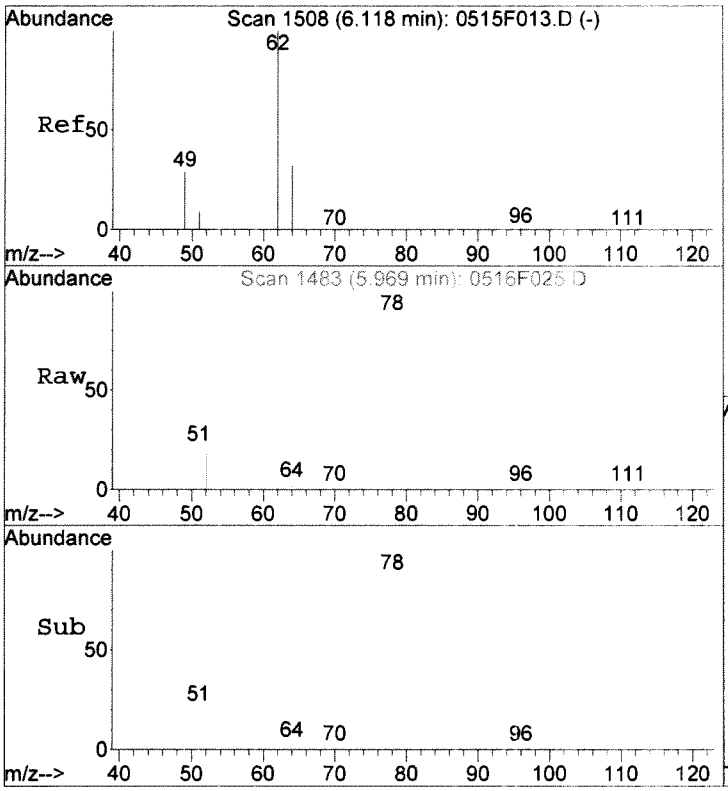


#11
Benzene
Concen: 83.25 ng/L
RT: 5.97 min Scan# 1484
Delta R.T. -0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 78 Resp: 5808

Ion	Ratio	Lower	Upper
78	100		
52	15.9	0.0	45.8
51	18.3	0.0	46.5

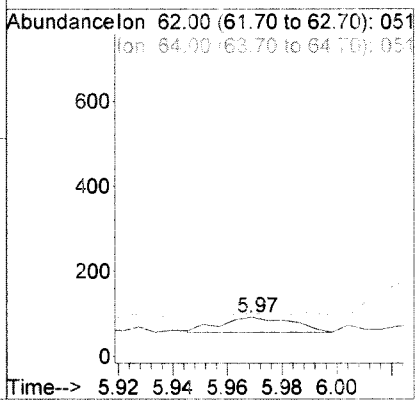


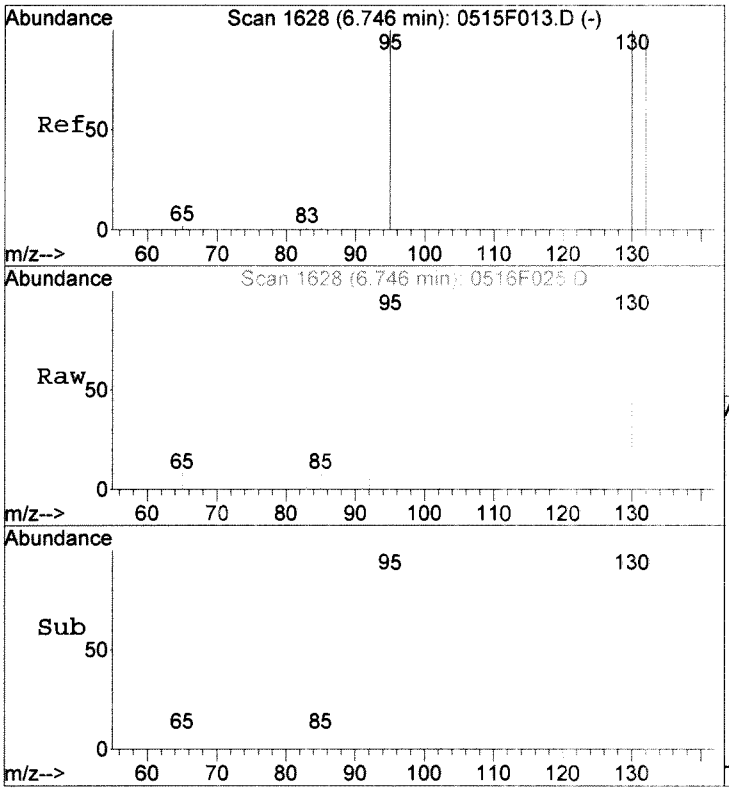


#12
1,2-Dichloroethane
Concen: 2.54 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.15 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 62 Resp: 66

Ion	Ratio	Lower	Upper
62	100		
64	55.6	2.1	62.1
49	188.9	0.0	58.7#

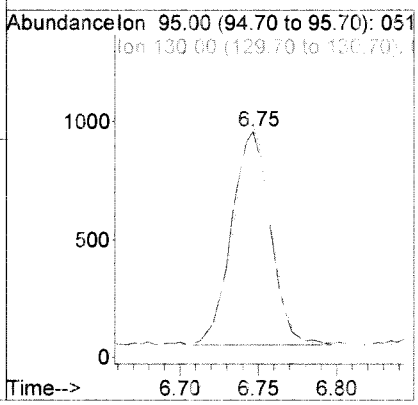


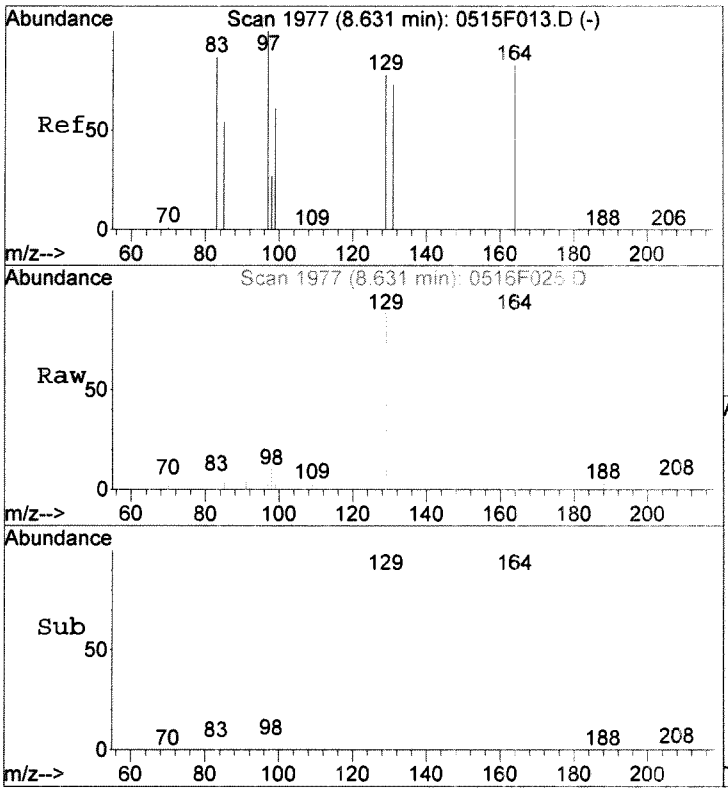


#13
Trichloroethene
Concen: 90.40 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 95 Resp: 1551

Ion	Ratio	Lower	Upper
95	100		
130	102.2	69.5	129.5
132	87.4	67.2	127.2

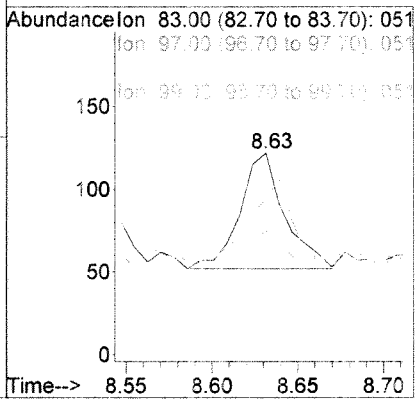


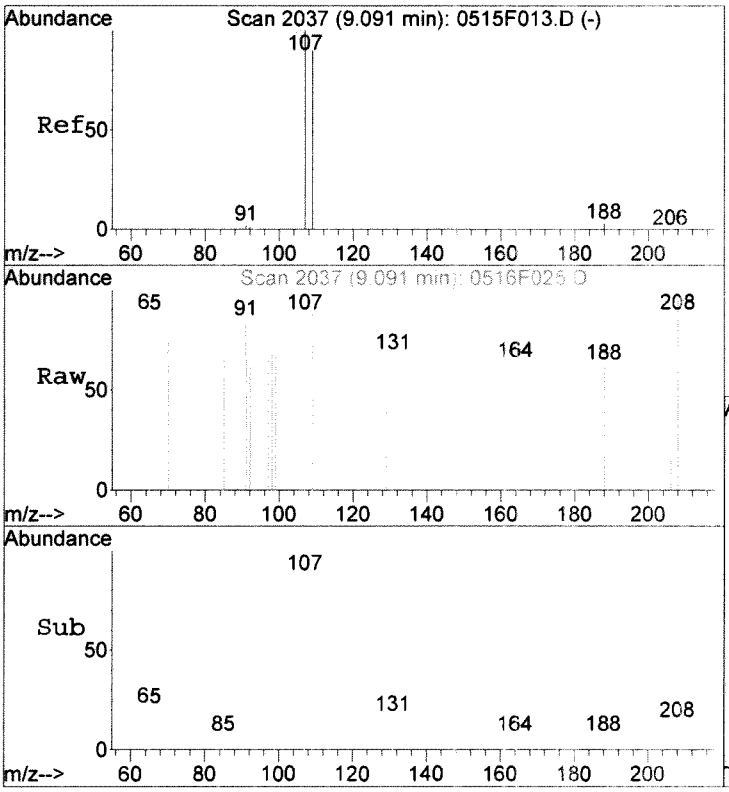


#16
1,1,2-Trichloroethane
Concen: 9.23 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 83 Resp: 127

Ion	Ratio	Lower	Upper
83	100		
97	52.9	84.4	144.4#
85	40.0	32.3	92.3
99	28.6	39.4	99.4#

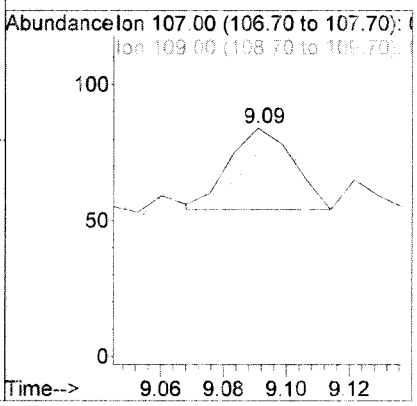


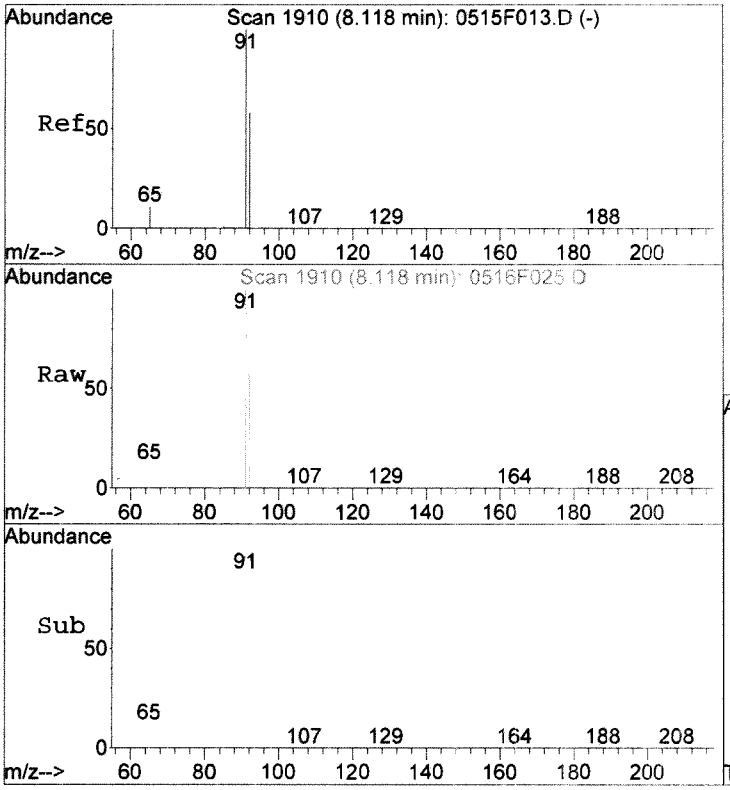


#18
1,2-Dibromoethane (EDB)
Concen: 3.12 ng/L
RT: 9.09 min Scan# 2037
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion:107 Resp: 42

Ion	Ratio	Lower	Upper
107	100		
109	66.7	60.3	120.3
188	10.0	0.0	33.5

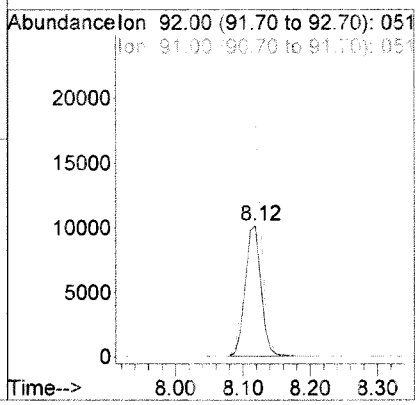


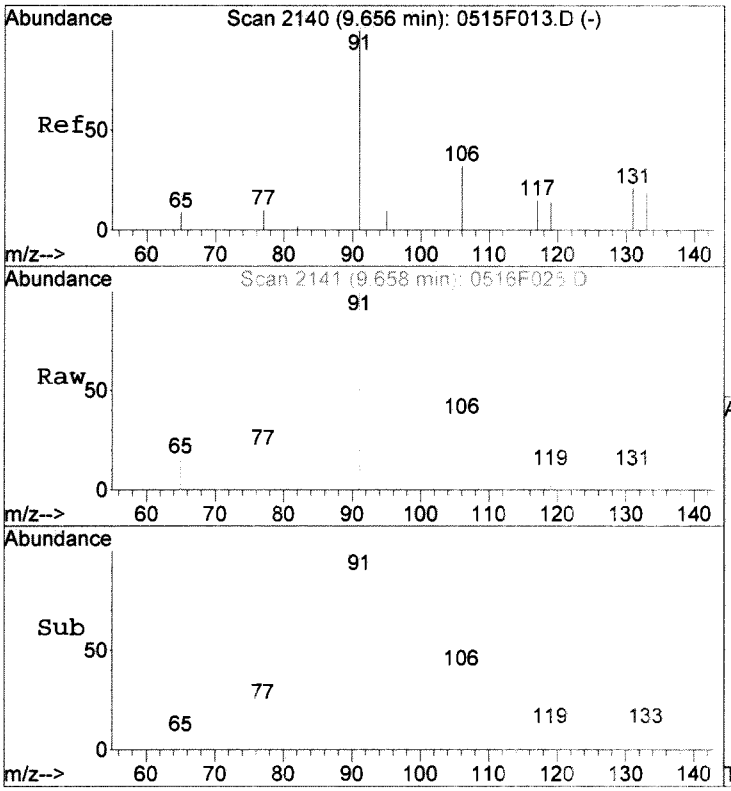


#20
Toluene
Concen: 563.42 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 92 Resp: 16913

Ion	Ratio	Lower	Upper
92	100		
91	174.8	143.6	203.6
65	20.3	0.0	49.9

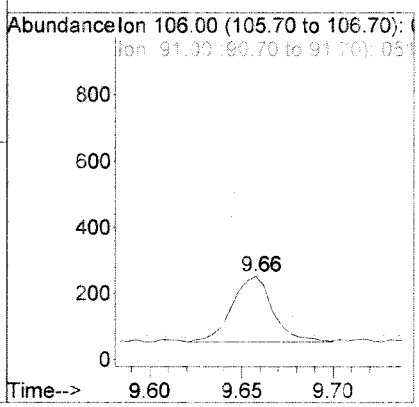


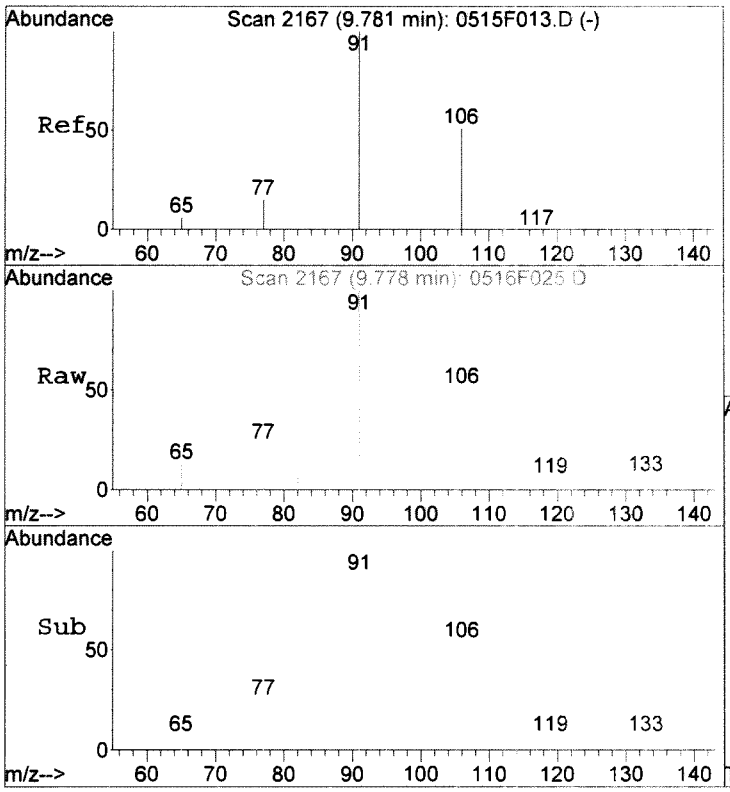


#21
Ethylbenzene
Concen: 21.48 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion:106 Resp: 311

Ion	Ratio	Lower	Upper
106	100		
91	315.0	285.7	345.7
77	29.0	1.3	61.3

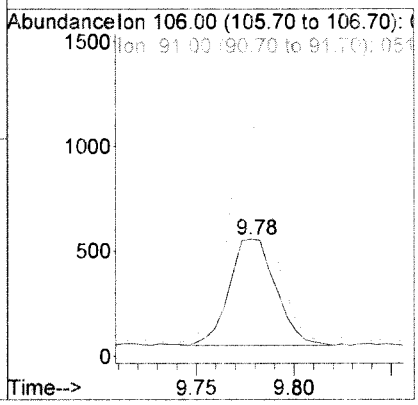


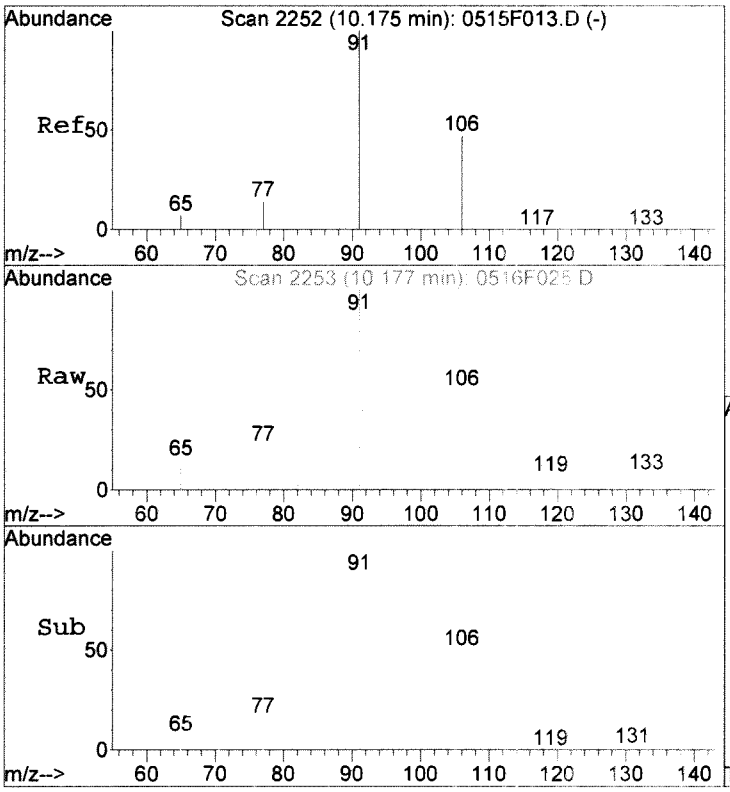


#23
m,p-Xylenes
Concen: 50.62 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion:106 Resp: 839

Ion	Ratio	Lower	Upper
106	100		
91	203.0	166.8	226.8
77	34.3	0.0	58.7

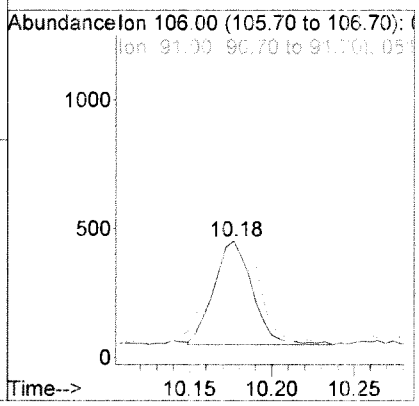


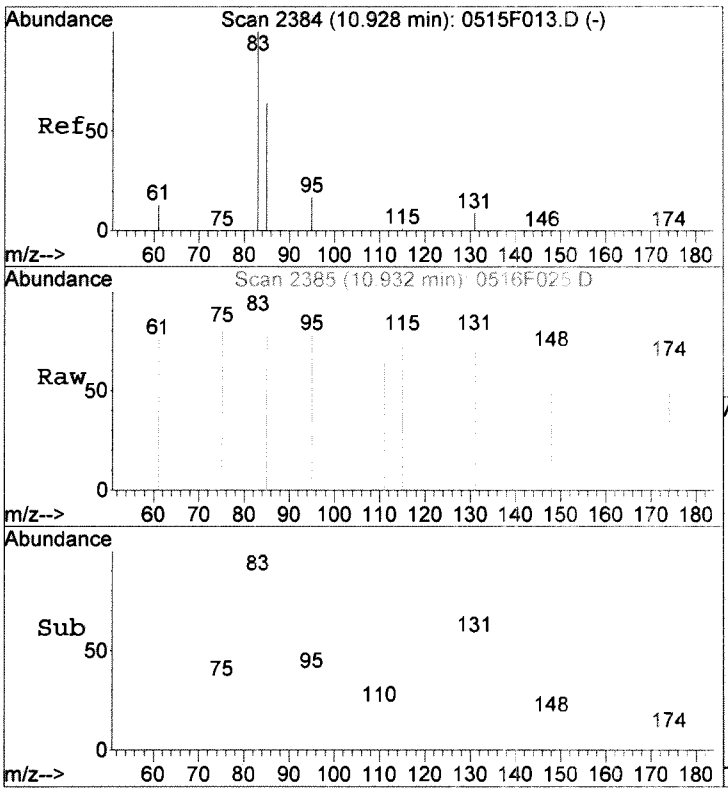


#24
o-Xylene
Concen: 38.87 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion:106 Resp: 657

Ion	Ratio	Lower	Upper
106	100		
91	204.2	184.3	244.3
65	16.7	0.0	44.6

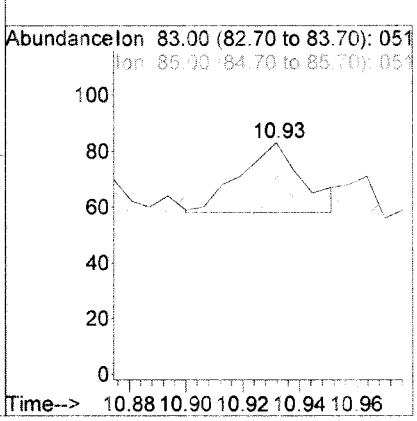


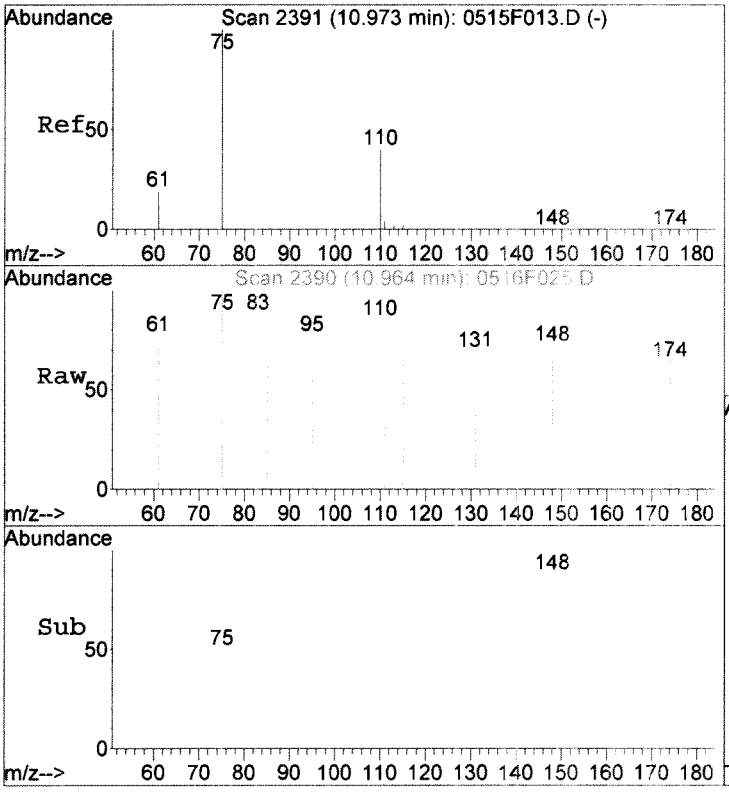


#26
1,1,2,2-Tetrachloroethane
Concen: 2.36 ng/L
RT: 10.93 min Scan# 2385
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion: 83 Resp: 38

Ion	Ratio	Lower	Upper
83	100		
85	29.2	34.1	94.1#
131	50.0	0.0	28.8#

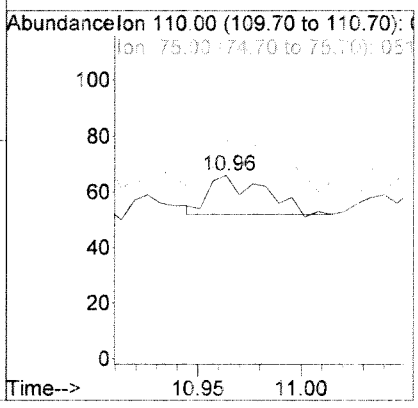


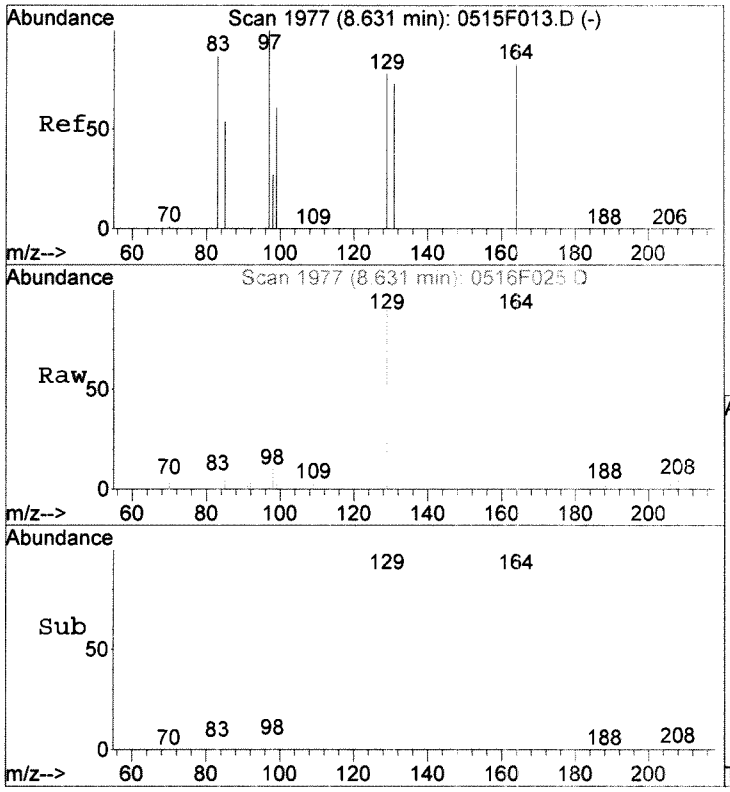


#27
1,2,3-Trichloropropane
Concen: 4.95 ng/L
RT: 10.96 min Scan# 2390
Delta R.T. -0.01 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion:110 Resp: 25

Ion	Ratio	Lower	Upper
110	100		
75	114.3	230.6	270.6#
61	0.0	40.1	80.1#

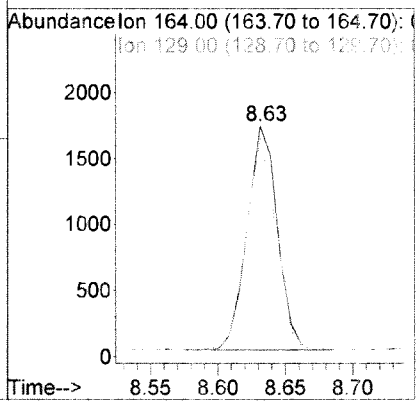


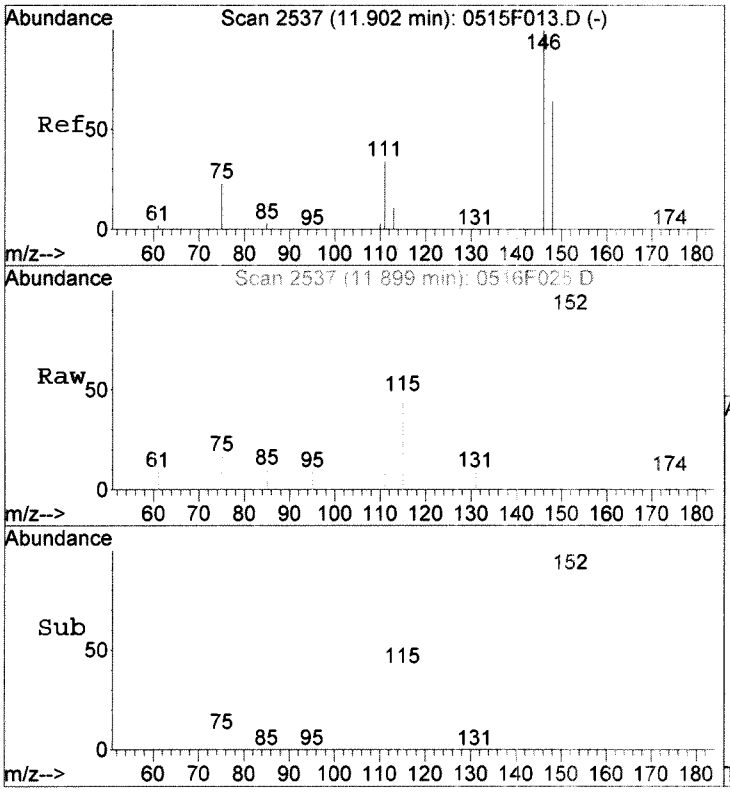


#28
Tetrachloroethene
Concen: 189.01 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion:164 Resp: 2660

Ion	Ratio	Lower	Upper
164	100		
129	94.6	63.1	123.1
131	87.3	57.4	117.4

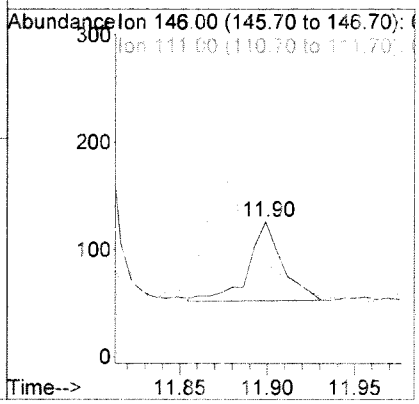




#30
1,4-Dichlorobenzene
Concen: 4.17 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F025.D
Acq: 16 May 2017 09:38 pm

Tgt Ion:146 Resp: 99

Ion	Ratio	Lower	Upper
146	100		
111	45.2	4.0	64.0
148	72.6	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F026.D
Lab ID: K1704857-004
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 22:06
Date Quantitated: 05/22/2017 12:16
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18835

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: KT 5/22/17

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F026.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 22:06	**Quant Date:**	05/22/2017 12:16	**Vial:**	24
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704857-004			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/12/2017	**Receive Date:**	05/13/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704857
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604852	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	51441	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	34679	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19955	1,049	105	77-123	OK
1	Toluene-d8	8.05	0.00	0.00	98	41576	1,013	101	74-112	OK
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	11803	765.05	77	46-118	OK

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	41	1.43	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F026.D Vial: 24
Acq On : 16 May 2017 10:06 pm Operator: GH
Sample : K4857-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:59:20 2017 Quant Results File: 051517MS30_8260SIM.RES

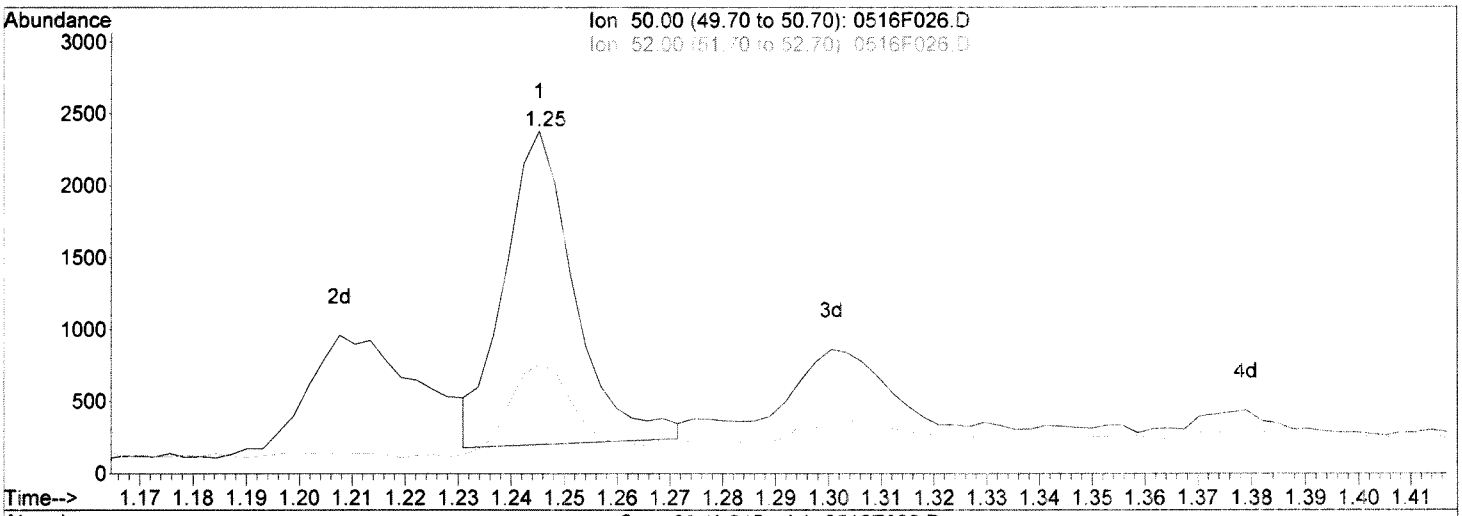
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

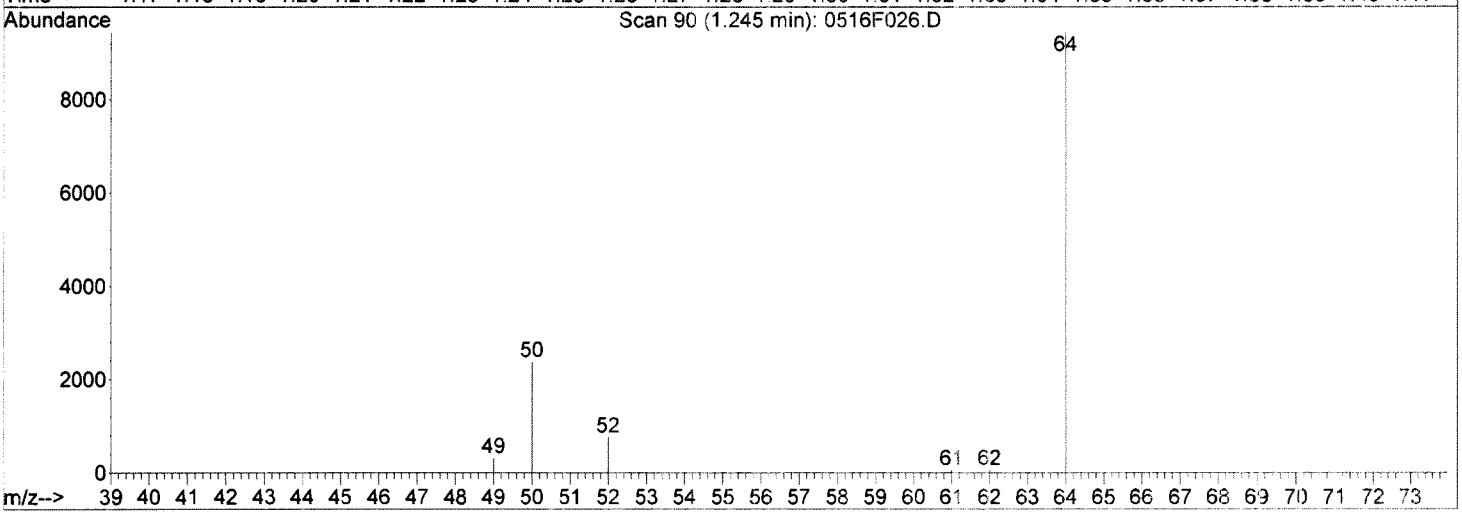
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	51441	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	34679	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13596	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19955	1048.79	ng/L		0.00
Spiked Amount 1000.000			Recovery = 104.88%				
15) Toluene-d8	8.05	98	41576	1013.30	ng/L		0.00
Spiked Amount 1000.000			Recovery = 101.33%				
25) 4-Bromofluorobenzene	10.73	95	11803	765.05	ng/L		0.00
Spiked Amount 1000.000			Recovery = 76.50%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	1668m	56.65	ng/L		
3) Vinyl Chloride	1.33	62	41	1.43	ng/L	#	1
5) Methylene Chloride	3.07	84	286	12.84	ng/L		89
8) Chloroform	5.40	83	216	5.84	ng/L		99
11) Benzene	5.97	78	1841	26.18	ng/L		94
13) Trichloroethene	6.75	95	472	27.29	ng/L		94
16) 1,1,2-Trichloroethane	8.62	83	17	1.23	ng/L	#	35
20) Toluene	8.12	92	10391	341.41	ng/L		99
21) Ethylbenzene	9.66	106	96	6.54	ng/L	#	64
22) 1,1,1,2-Tetrachloroethane	9.61	131	6	0.33	ng/L		95
23) m,p-Xylenes	9.78	106	293	17.44	ng/L		90
24) o-Xylene	10.18	106	226	13.19	ng/L		82
26) 1,1,2,2-Tetrachloroethane	10.93	83	12	0.73	ng/L	#	45
27) 1,2,3-Trichloropropane	10.99	110	15	2.93	ng/L	#	1
28) Tetrachloroethene	8.63	164	85	5.96	ng/L		89
30) 1,4-Dichlorobenzene	11.90	146	89	3.63	ng/L		85

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F026.D Vial: 24
Acq On : 16 May 2017 10:06 pm Operator: GH
Sample : K4857-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:59 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F026.D

(2) Chloromethane (T)

1.25min 67.96ng/L

response 2001

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	31.27
49.00	10.30	9.34
0.00	0.00	0.00

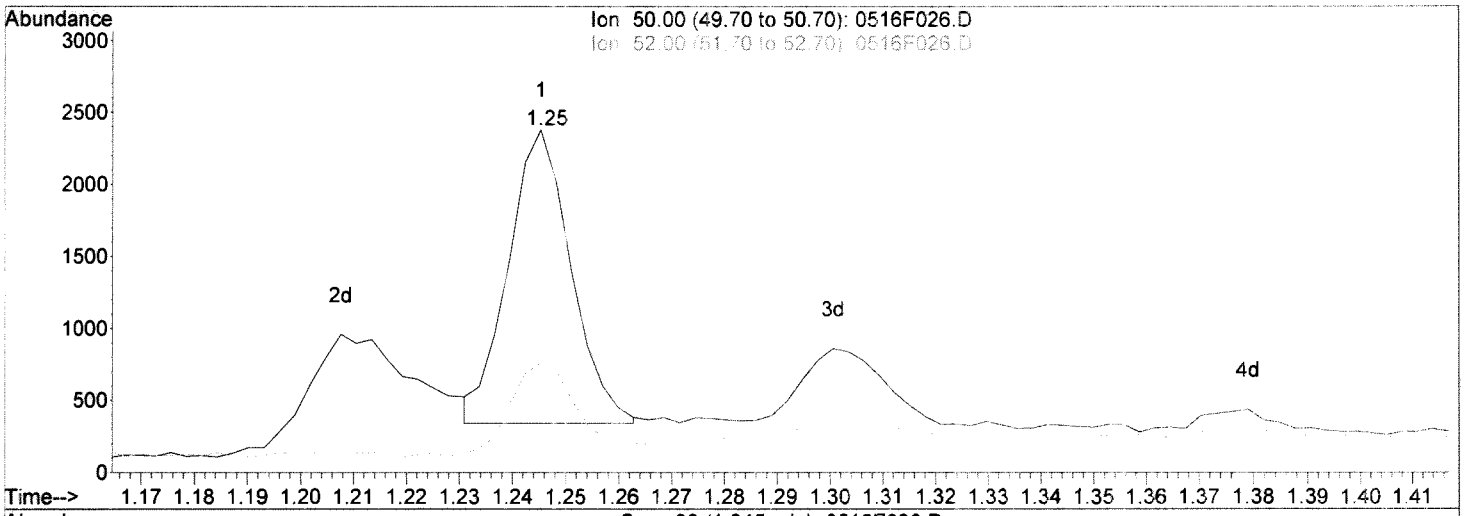
Manual Integration:

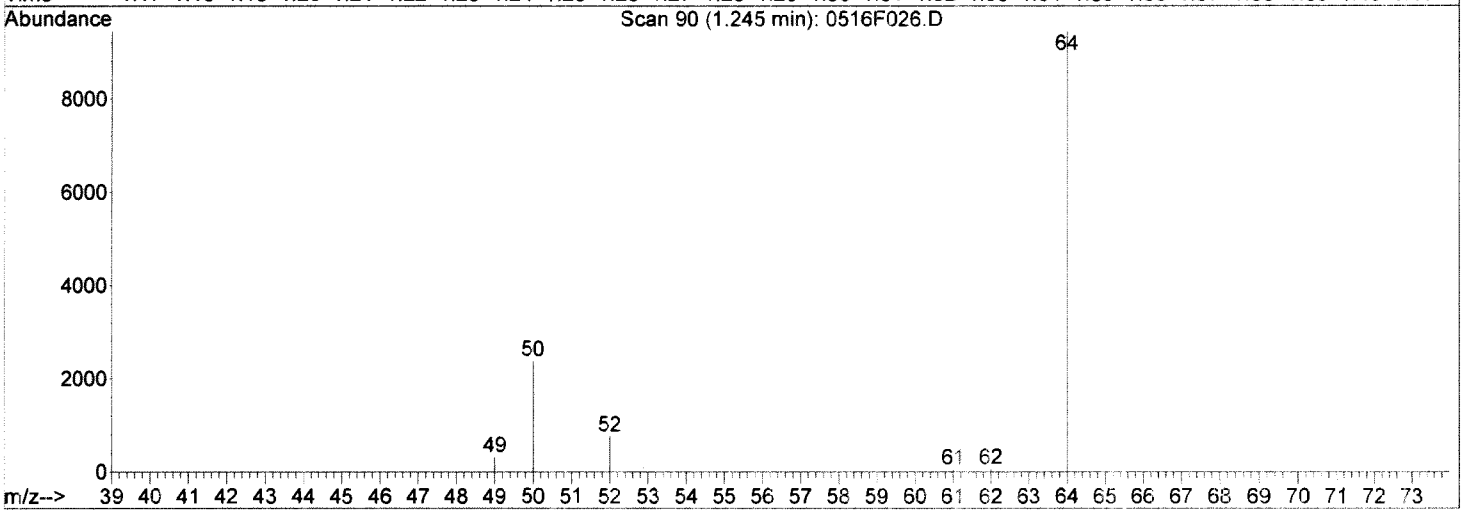
Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F026.D Vial: 24
Acq On : 16 May 2017 10:06 pm Operator: GH
Sample : K4857-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:15 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration





TIC: 0516F026.D

(2) Chloromethane (T)

1.25min 56.65ng/L m

response 1668

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	32.02
49.00	10.30	13.40
0.00	0.00	0.00

Manual Integration:

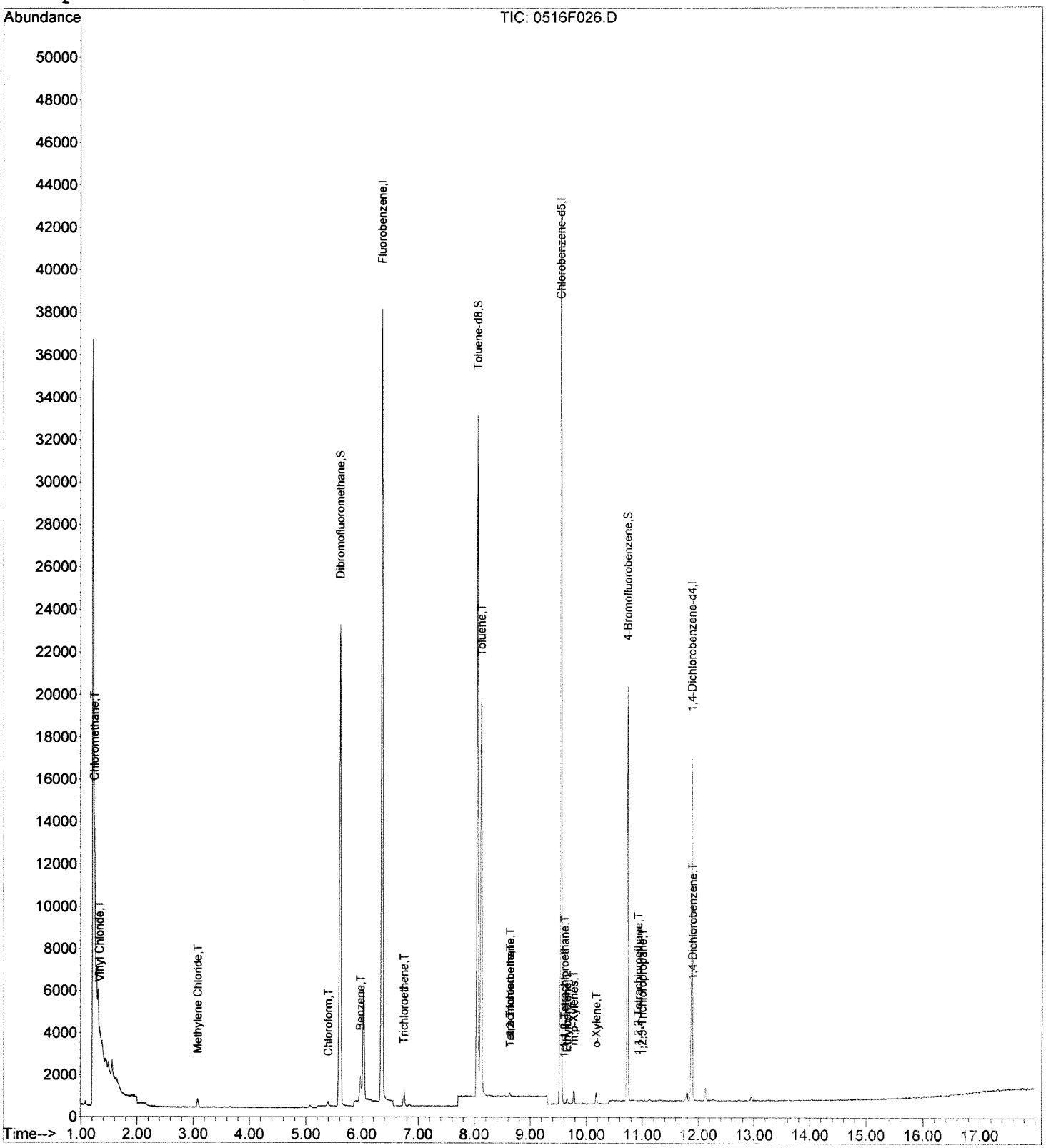
After

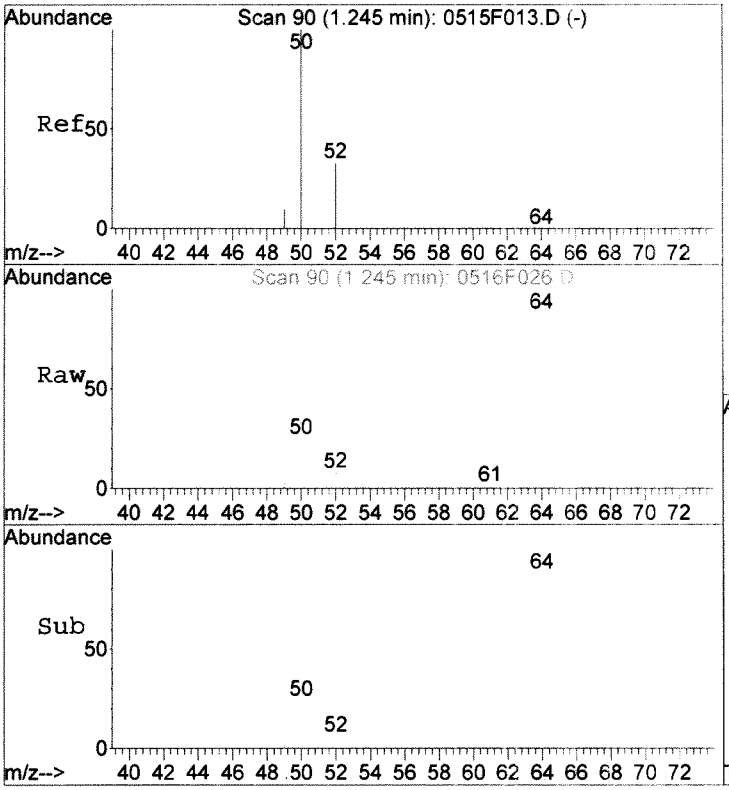
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F026.D Vial: 24
Acq On : 16 May 2017 10:06 pm Operator: GH
Sample : K4857-004 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:16 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

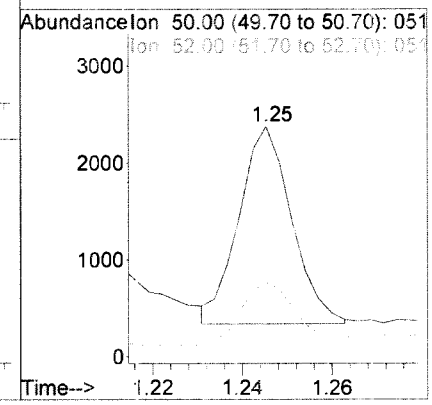


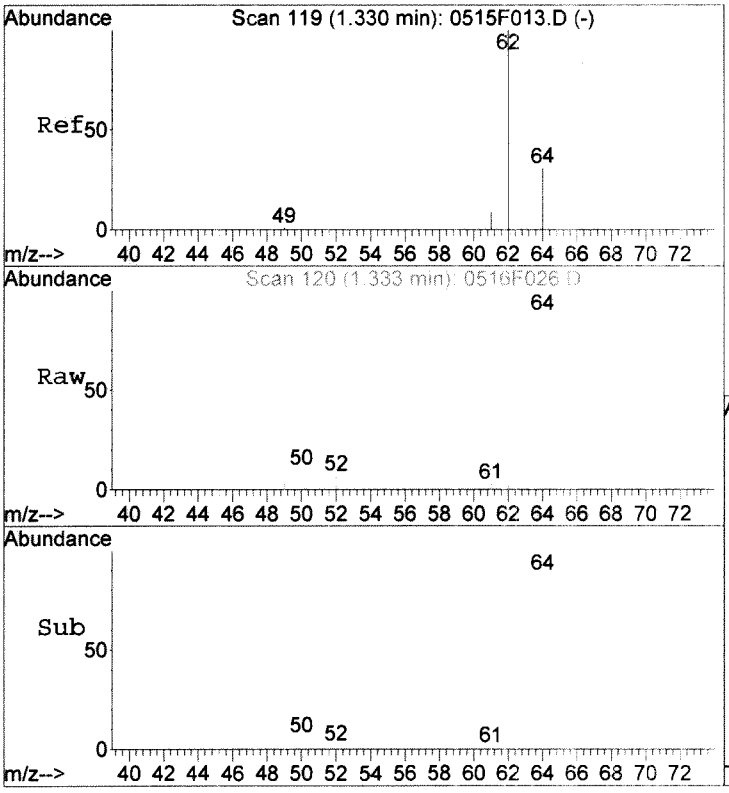


#2
Chloromethane
Concen: 56.65 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 50 Resp: 1668

Ion	Ratio	Lower	Upper
50	100		
52	32.0	2.5	62.5
49	13.4	0.0	40.3

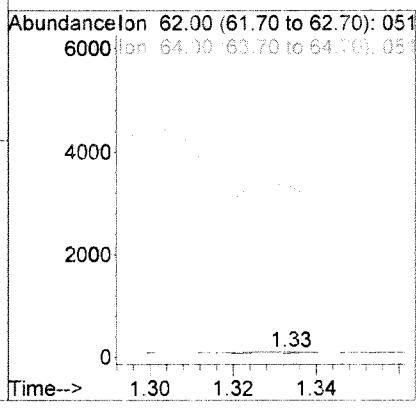


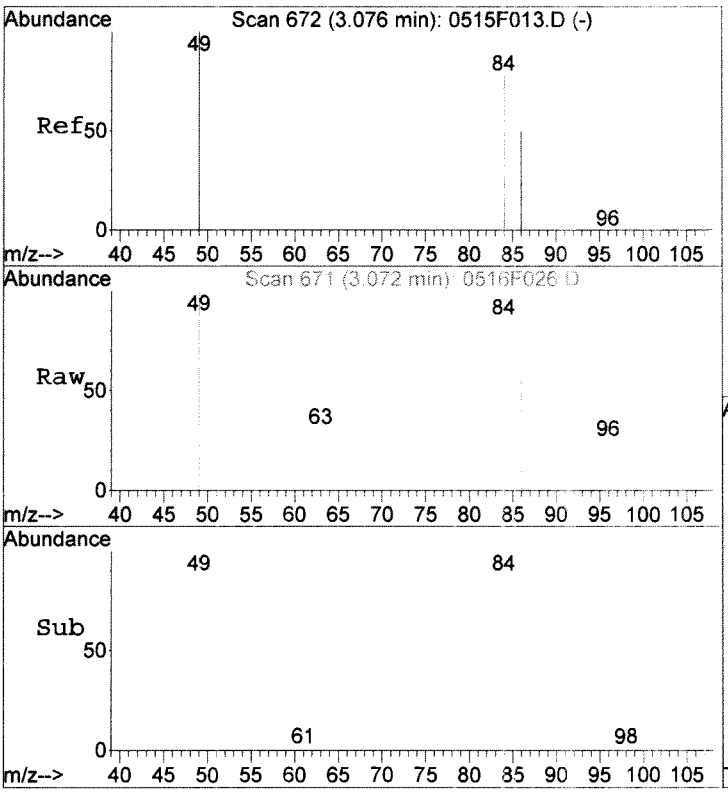


#3
Vinyl Chloride
Concen: 1.43 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 62 Resp: 41

Ion	Ratio	Lower	Upper
62	100		
64	1353.3	1.5	61.5#
61	40.0	0.0	38.6#

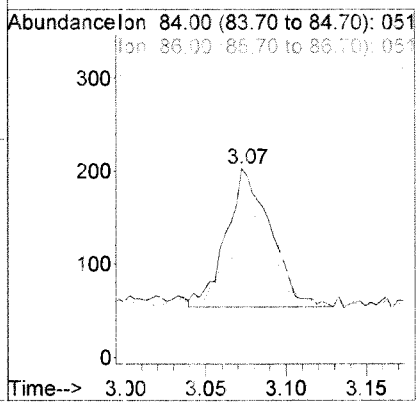


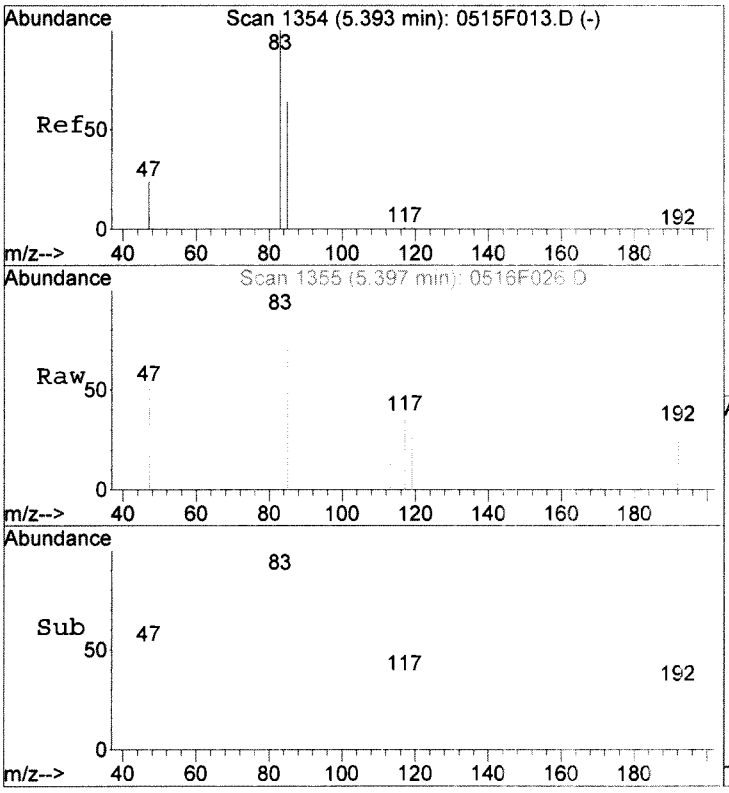


#5
Methylene Chloride
Concen: 12.84 ng/L
RT: 3.07 min Scan# 671
Delta R.T. -0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 84 Resp: 286

Ion	Ratio	Lower	Upper
84	100		
86	58.4	34.0	94.0
49	113.4	98.8	158.8

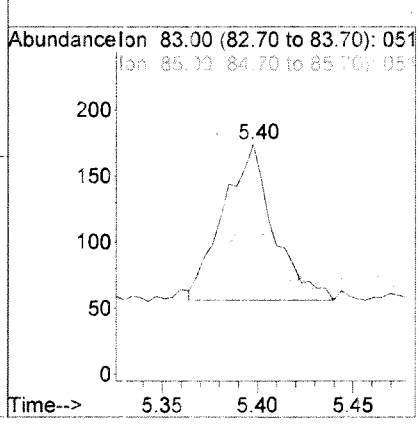


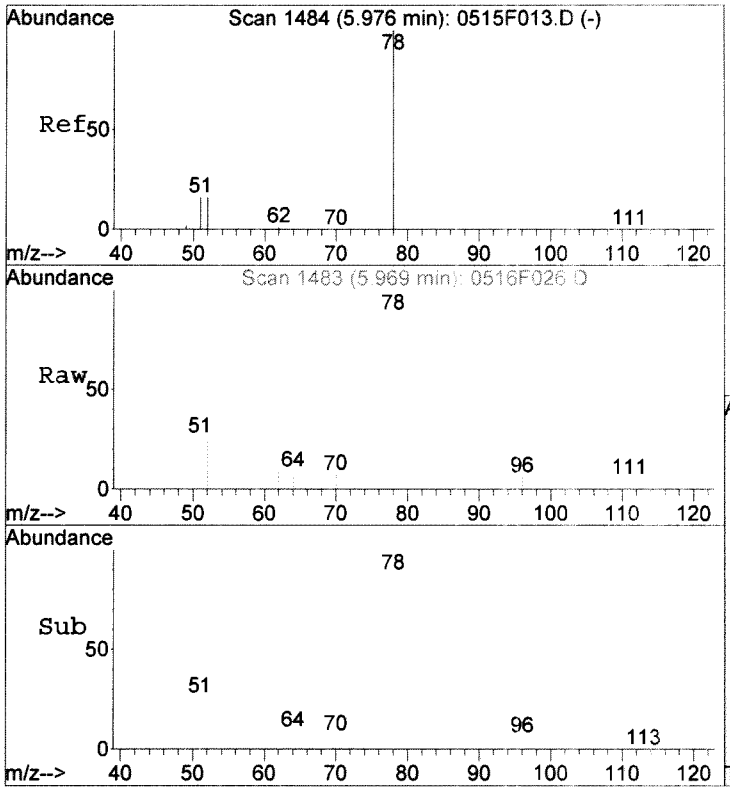


#8
Chloroform
Concen: 5.84 ng/L
RT: 5.40 min Scan# 1355
Delta R.T. 0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 83 Resp: 216

Ion	Ratio	Lower	Upper
83	100		
85	64.4	34.0	94.0
47	22.0	0.0	53.5

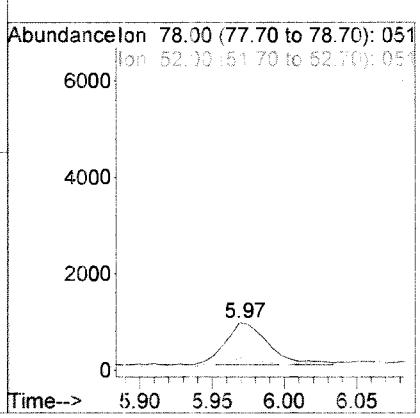


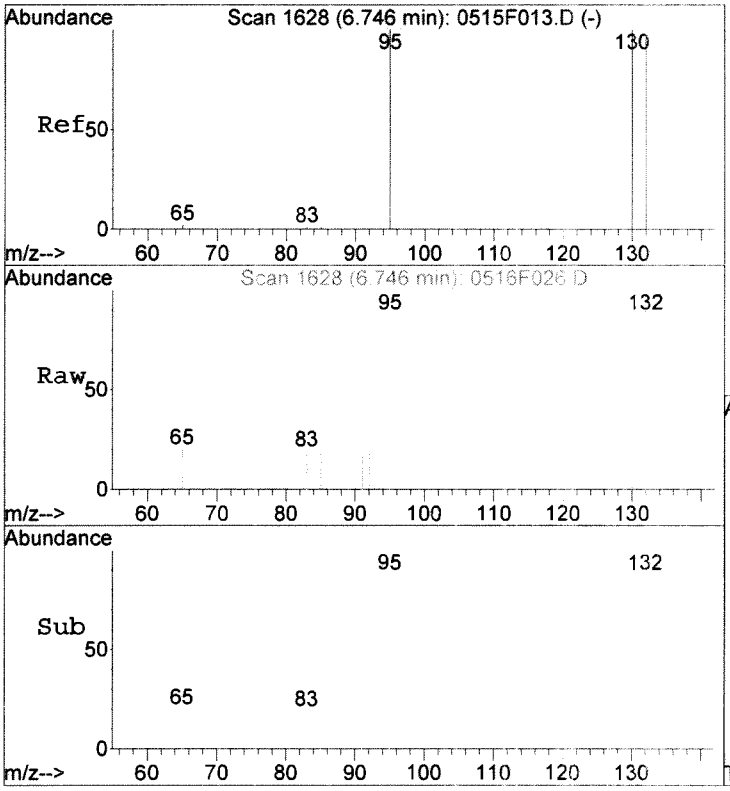


#11
Benzene
Concen: 26.18 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 78 Resp: 1841

Ion	Ratio	Lower	Upper
78	100		
52	17.6	0.0	45.8
51	19.8	0.0	46.5

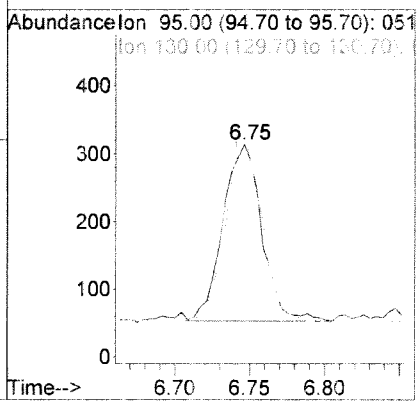


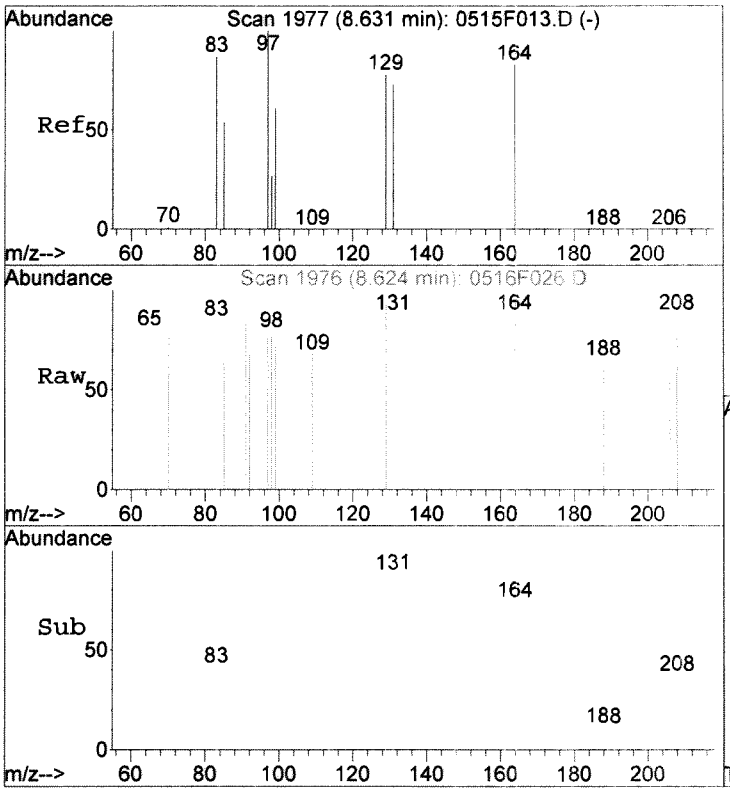


#13
Trichloroethene
Concen: 27.29 ng/L
RT: 6.75 min Scan# 1628
Delta R.T. 0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 95 Resp: 472

Ion	Ratio	Lower	Upper
95	100		
130	103.1	69.5	129.5
132	104.6	67.2	127.2

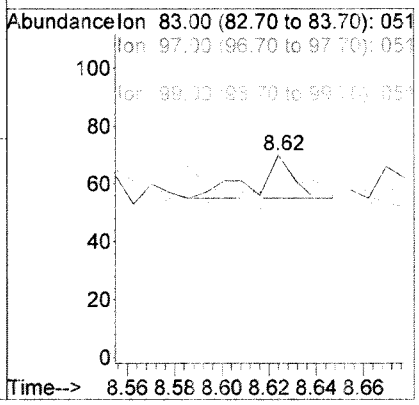


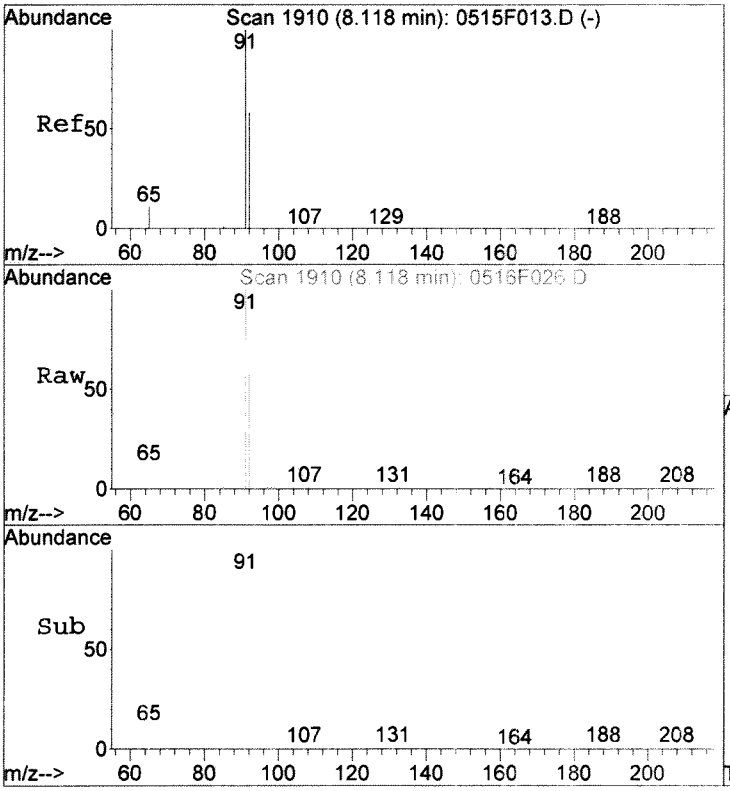


#16
1,1,2-Trichloroethane
Concen: 1.23 ng/L
RT: 8.62 min Scan# 1976
Delta R.T. -0.01 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 83 Resp: 17

Ion	Ratio	Lower	Upper
83	100		
97	40.0	84.4	144.4#
85	0.0	32.3	92.3#
99	33.3	39.4	99.4#

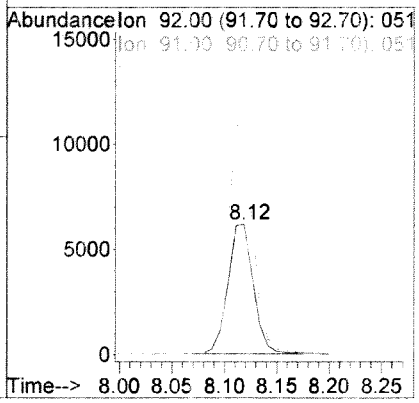


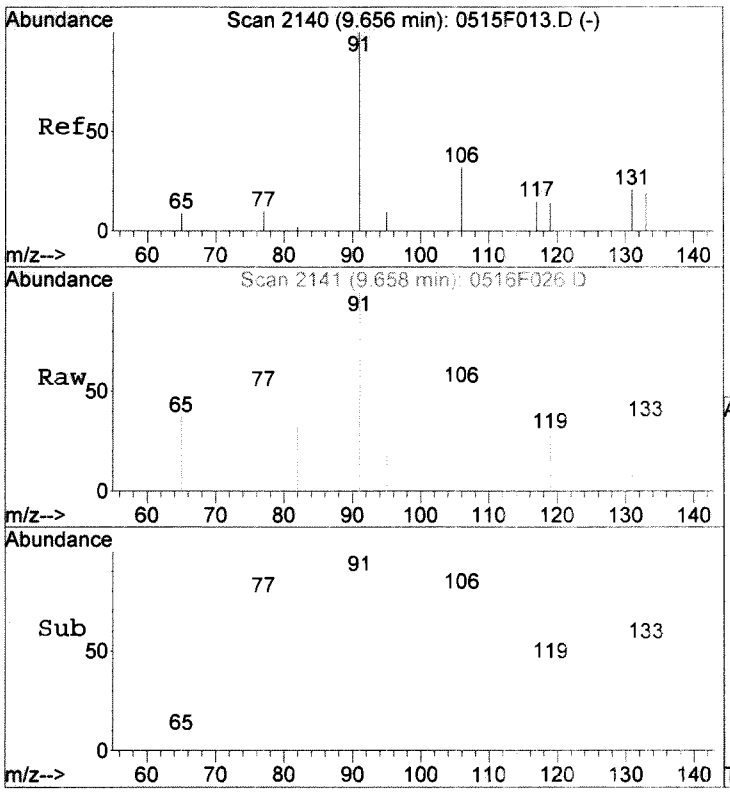


#20
Toluene
Concen: 341.41 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 92 Resp: 10391

Ion	Ratio	Lower	Upper
92	100		
91	172.8	143.6	203.6
65	20.2	0.0	49.9

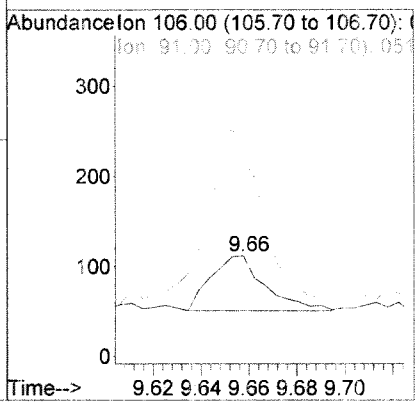


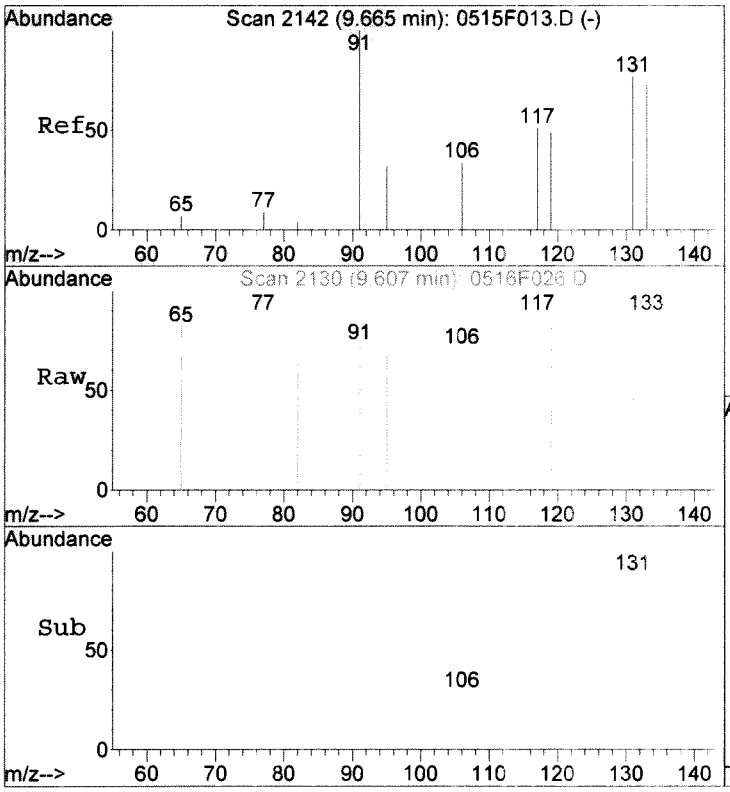


#21
Ethylbenzene
Concen: 6.54 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion:106 Resp: 96

Ion	Ratio	Lower	Upper
106	100		
91	245.9	285.7	345.7#
77	57.4	1.3	61.3

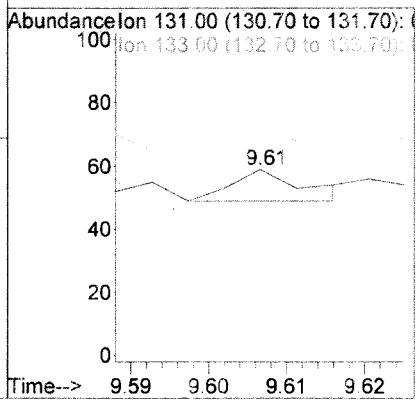


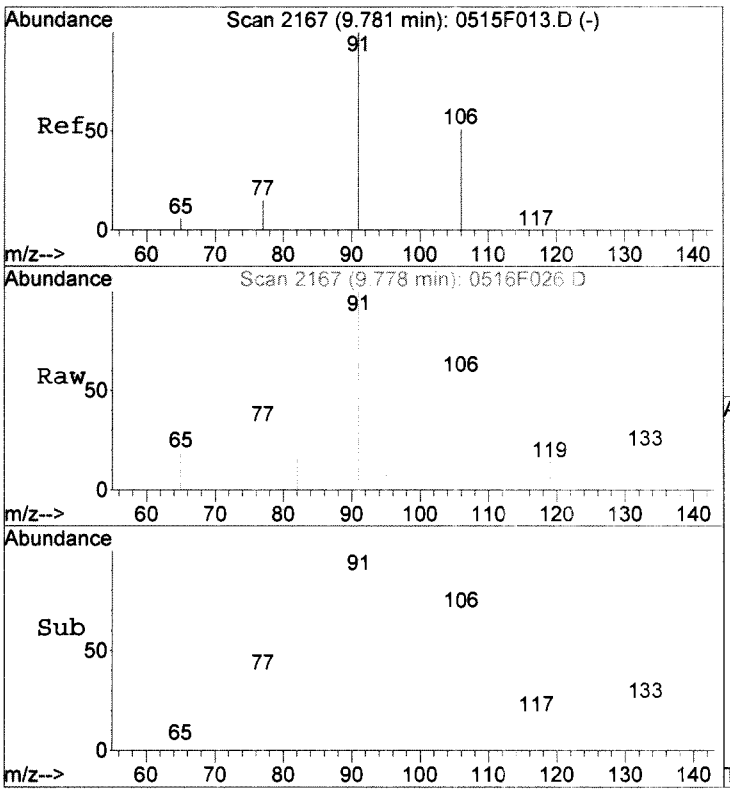


#22
1,1,1,2-Tetrachloroethane
Concen: 0.33 ng/L
RT: 9.61 min Scan# 2130
Delta R.T. -0.06 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion:131 Resp: 6

Ion	Ratio	Lower	Upper
131	100		
133	100.0	74.4	114.4
119	60.0	43.9	83.9

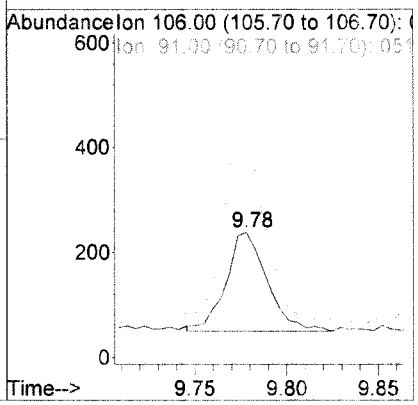


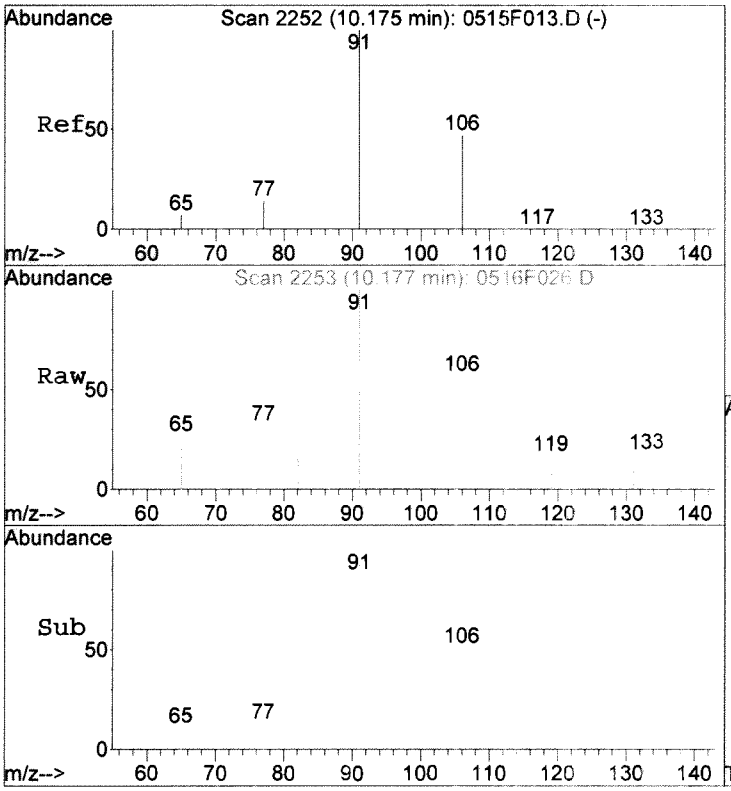


#23
m,p-Xylenes
Concen: 17.44 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion:106 Resp: 293

Ion	Ratio	Lower	Upper
106	100		
91	180.3	166.8	226.8
77	27.1	0.0	58.7

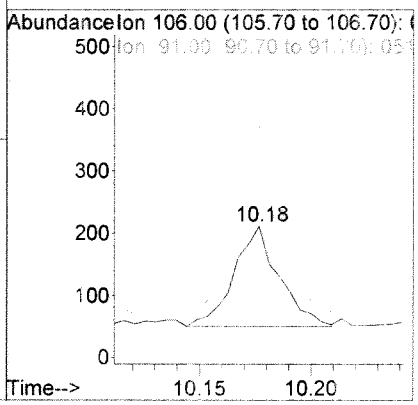


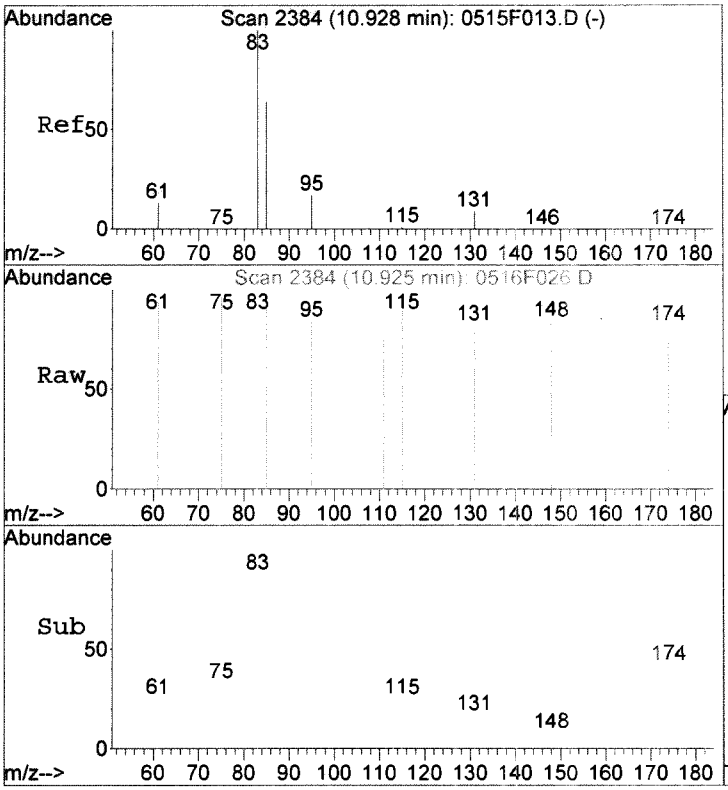


#24
o-Xylene
Concen: 13.19 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion:106 Resp: 226

Ion	Ratio	Lower	Upper
106	100		
91	185.1	184.3	244.3
65	22.4	0.0	44.6

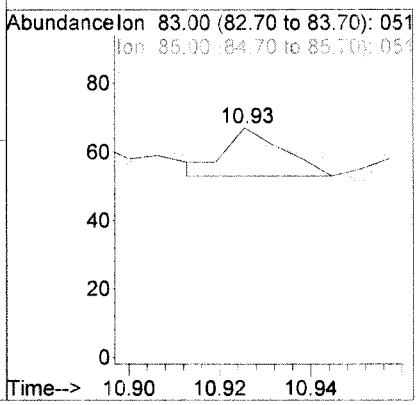


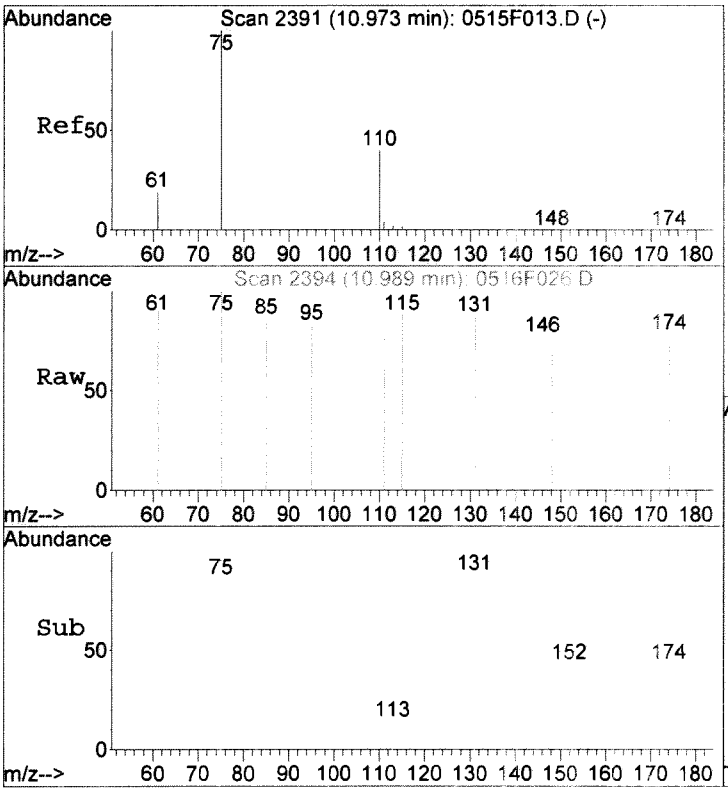


#26
1,1,2,2-Tetrachloroethane
Concen: 0.73 ng/L
RT: 10.93 min Scan# 2384
Delta R.T. -0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion: 83 Resp: 12

Ion	Ratio	Lower	Upper
83	100		
85	21.4	34.1	94.1#
131	28.6	0.0	28.8

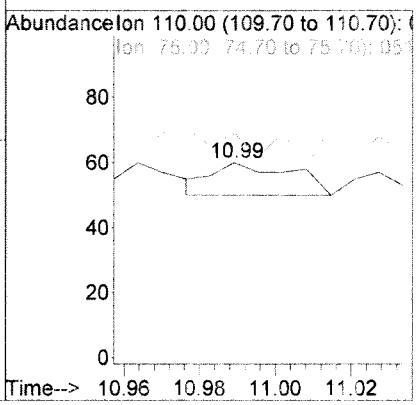


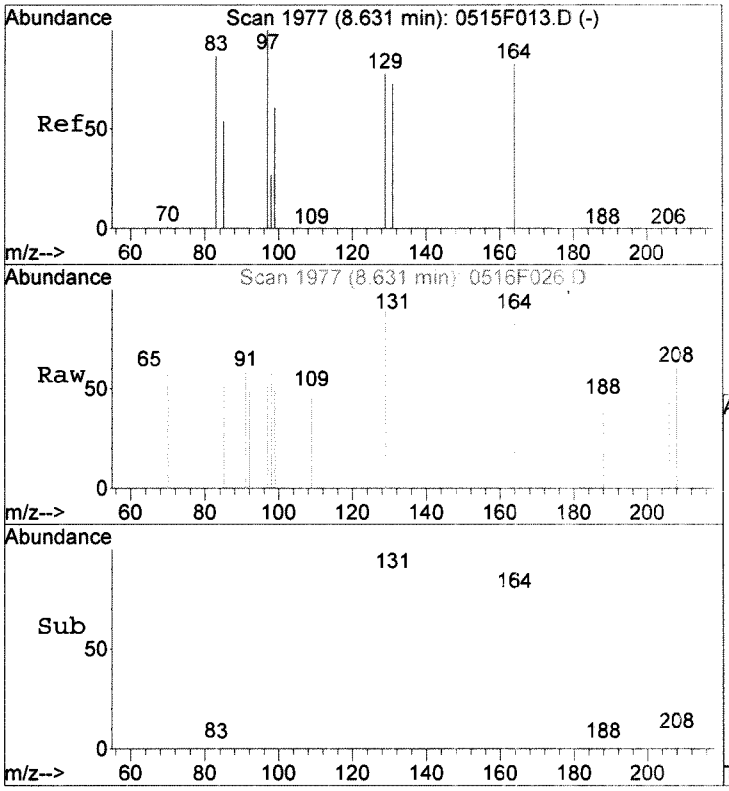


#27
1,2,3-Trichloropropane
Concen: 2.93 ng/L
RT: 10.99 min Scan# 2394
Delta R.T. 0.02 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion:110 Resp: 15

Ion	Ratio	Lower	Upper
110	100		
75	0.0	230.6	270.6#
61	0.0	40.1	80.1#

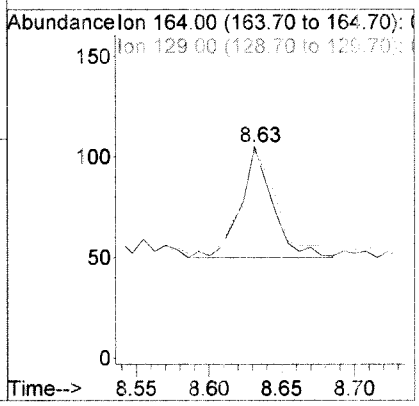


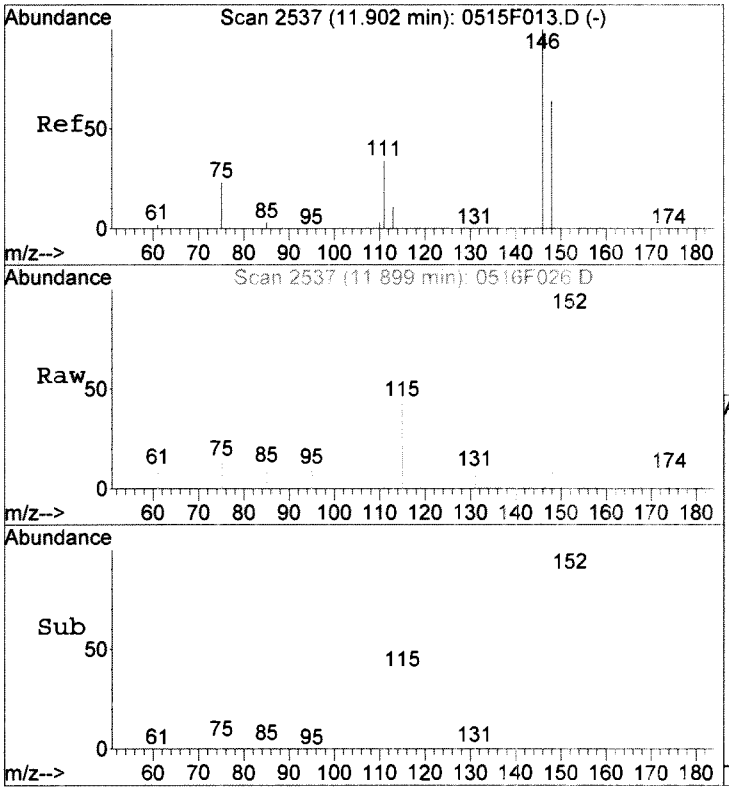


#28
Tetrachloroethene
Concen: 5.96 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion:164 Resp: 85

Ion	Ratio	Lower	Upper
164	100		
129	92.7	63.1	123.1
131	107.3	57.4	117.4

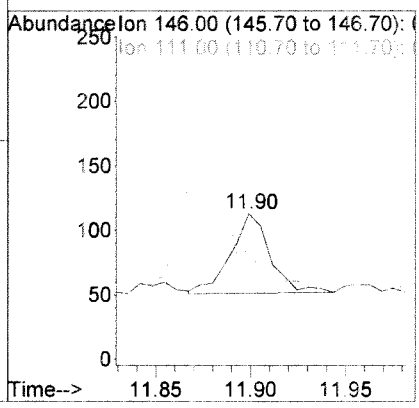




#30
1,4-Dichlorobenzene
Concen: 3.63 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F026.D
Acq: 16 May 2017 10:06 pm

Tgt Ion:146 Resp: 89

Ion	Ratio	Lower	Upper
146	100		
111	44.3	4.0	64.0
148	75.4	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F027.D
Lab ID: K1704857-005
RunType: SMPL
Matrix: WATER

Date Acquired: 05/16/2017 22:33
Date Quantitated: 05/22/2017 12:17
Batch ID: KWG1703959
Analysis Method: 8260C SIM
ListJoinID: LJ18885

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F027.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 22:33	**Quant Date:**	05/22/2017 12:17	**Vial:**	25
Run Type:	SMPL	**ListJoinID:**	LJ18885	**Dilution:**	1.0
Lab ID:	K1704857-005			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**	IV	**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**	05/12/2017	**Receive Date:**	05/13/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	K1704857
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604853	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:	Volatile Organic Compounds	**Report List ID:**	LJ18885
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Report List**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	51169	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	35350	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	20002	1,057	106	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	41495	1,017	102	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12492	794.34	79	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Vinyl Chloride	1.33		0.00	62	39	1.37	4.6	U	

Prep Amount:	10 ml	**Dilution:**	1.0
Prep Final Vol:	10 ml	**Unit Factor:**	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F027.D Vial: 25
Acq On : 16 May 2017 10:33 pm Operator: GH
Sample : K4857-005 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:59:30 2017 Quant Results File: 051517MS30_8260SIM.RES

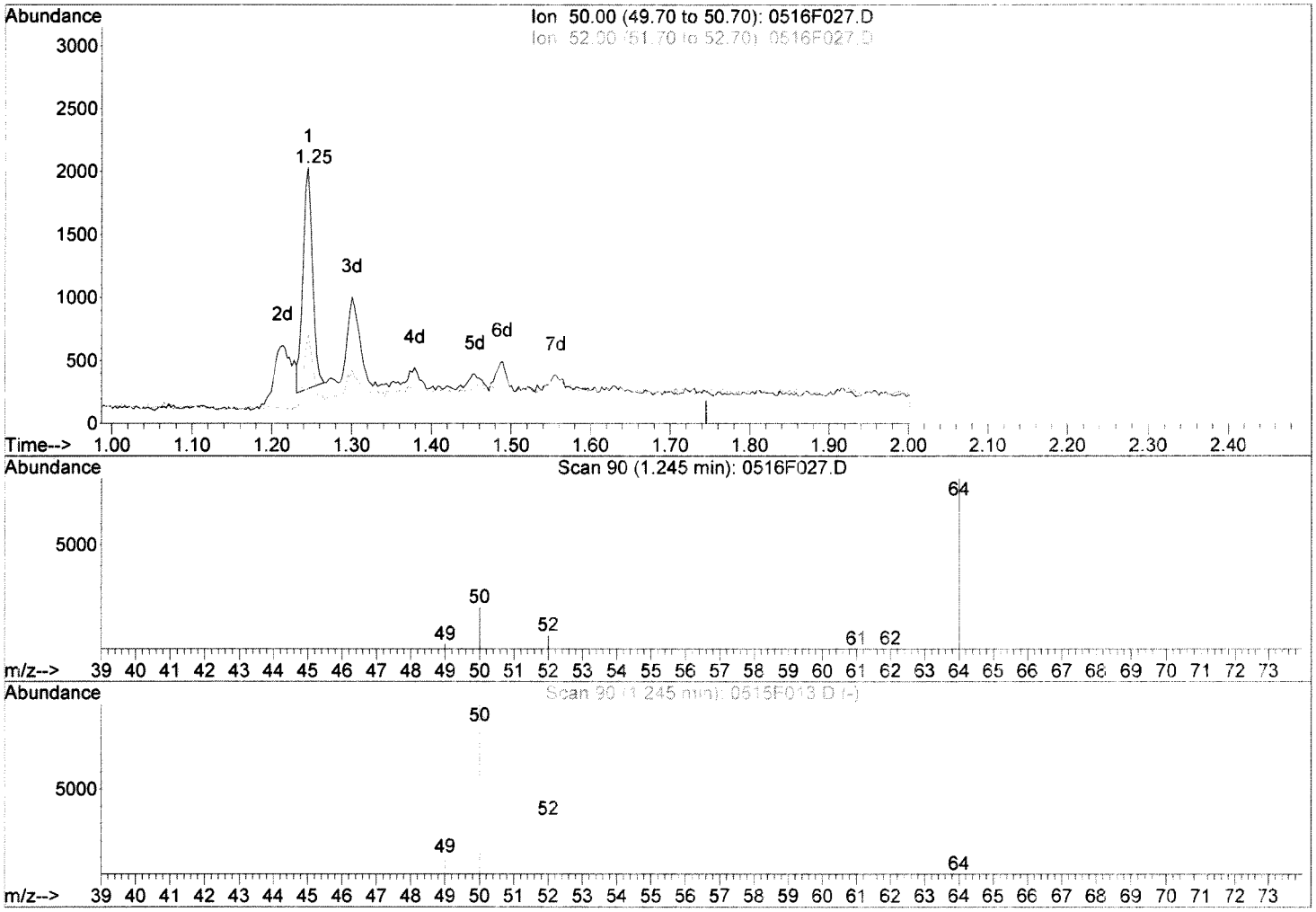
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	51169	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	35350	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14773	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	20002	1056.85 ng/L	0.00
Spiked Amount 1000.000			Recovery = 105.68%		
15) Toluene-d8	8.05	98	41495	1016.70 ng/L	0.00
Spiked Amount 1000.000			Recovery = 101.67%		
25) 4-Bromofluorobenzene	10.73	95	12492	794.34 ng/L	0.00
Spiked Amount 1000.000			Recovery = 79.43%		
Target Compounds					Qvalue
2) Chloromethane	1.25	50	1378m	47.05 ng/L	
3) Vinyl Chloride	1.33	62	39	1.37 ng/L #	1
5) Methylene Chloride	3.08	84	301	13.58 ng/L	92
6) trans-1,2-Dichloroethene	3.36	96	24	1.34 ng/L #	28
8) Chloroform	5.39	83	187	5.08 ng/L	86
11) Benzene	5.98	78	1899	27.15 ng/L	97
13) Trichloroethene	6.74	95	413	24.01 ng/L	87
14) Bromodichloromethane	7.35	83	15	0.61 ng/L	73
17) Dibromochloromethane	8.63	129	74	4.33 ng/L	30
20) Toluene	8.12	92	14950	481.87 ng/L	98
21) Ethylbenzene	9.65	106	98	6.55 ng/L #	66
22) 1,1,1,2-Tetrachloroethane	9.66	131	4	0.21 ng/L #	1
23) m,p-Xylenes	9.78	106	304	17.75 ng/L	85
24) o-Xylene	10.17	106	243	13.91 ng/L	91
26) 1,1,2,2-Tetrachloroethane	10.92	83	5	0.30 ng/L #	80
27) 1,2,3-Trichloropropane	10.98	110	9	1.72 ng/L #	1
28) Tetrachloroethene	8.63	164	108	7.43 ng/L	77
30) 1,4-Dichlorobenzene	11.90	146	139	5.21 ng/L	89

(#) = qualifier out of range (m) = manual integration

Data File : I:\MS30\DATA\051617_SIM\0516F027.D Vial: 25
Acq On : 16 May 2017 10:33 pm Operator: GH
Sample : K4857-005 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:59 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F027.D

(2) Chloromethane (T)

1.25min 49.99ng/L

response 1464

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	34.15
49.00	10.30	10.66
0.00	0.00	0.00

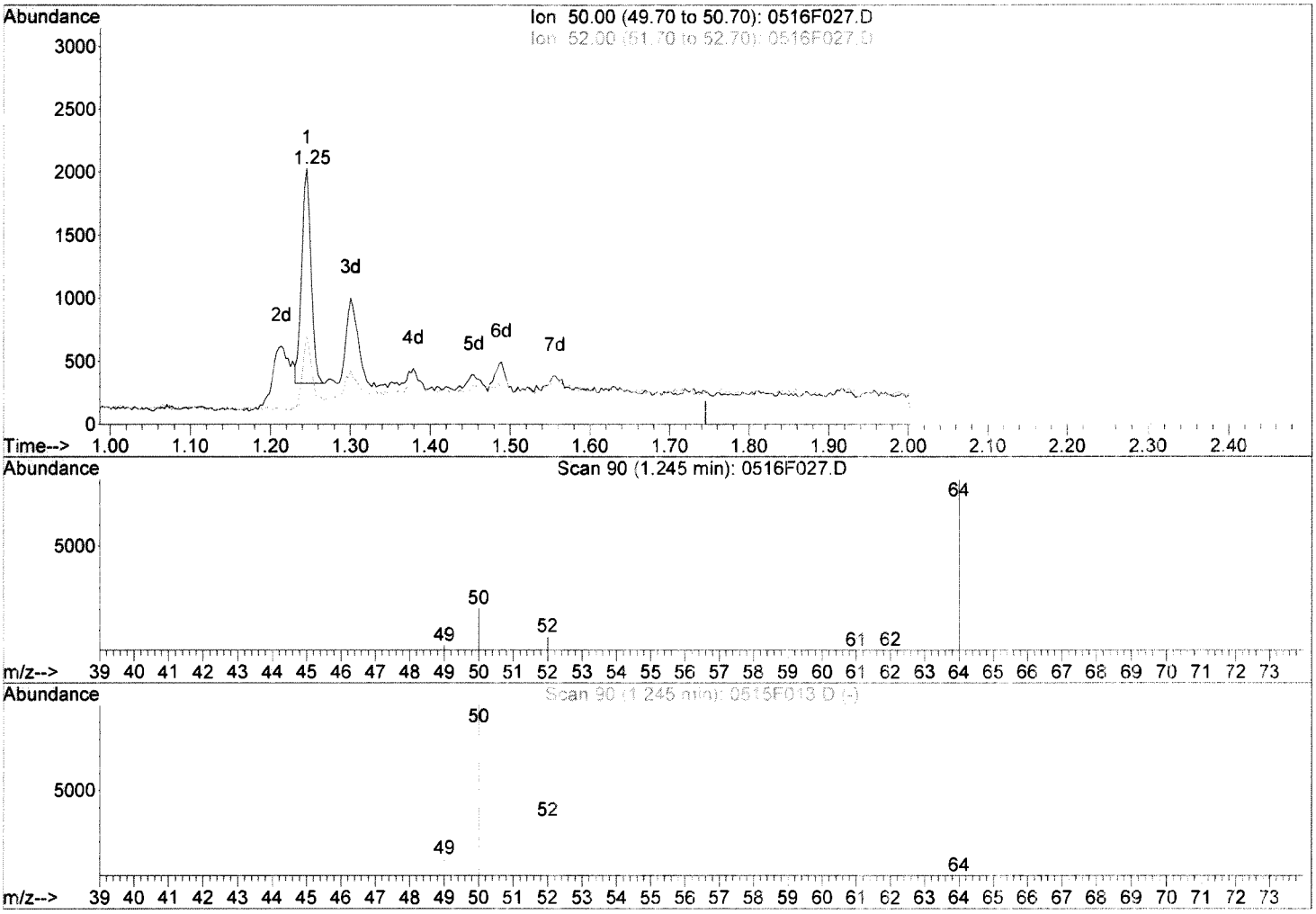
Manual Integration:

Before

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F027.D Vial: 25
Acq On : 16 May 2017 10:33 pm Operator: GH
Sample : K4857-005 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:16 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0516F027.D

(2) Chloromethane (T)

1.25min 47.05ng/L m

response 1378

Ion	Exp%	Act%
50.00	100	100
52.00	32.50	34.65
49.00	10.30	14.07
0.00	0.00	0.00

Manual Integration:

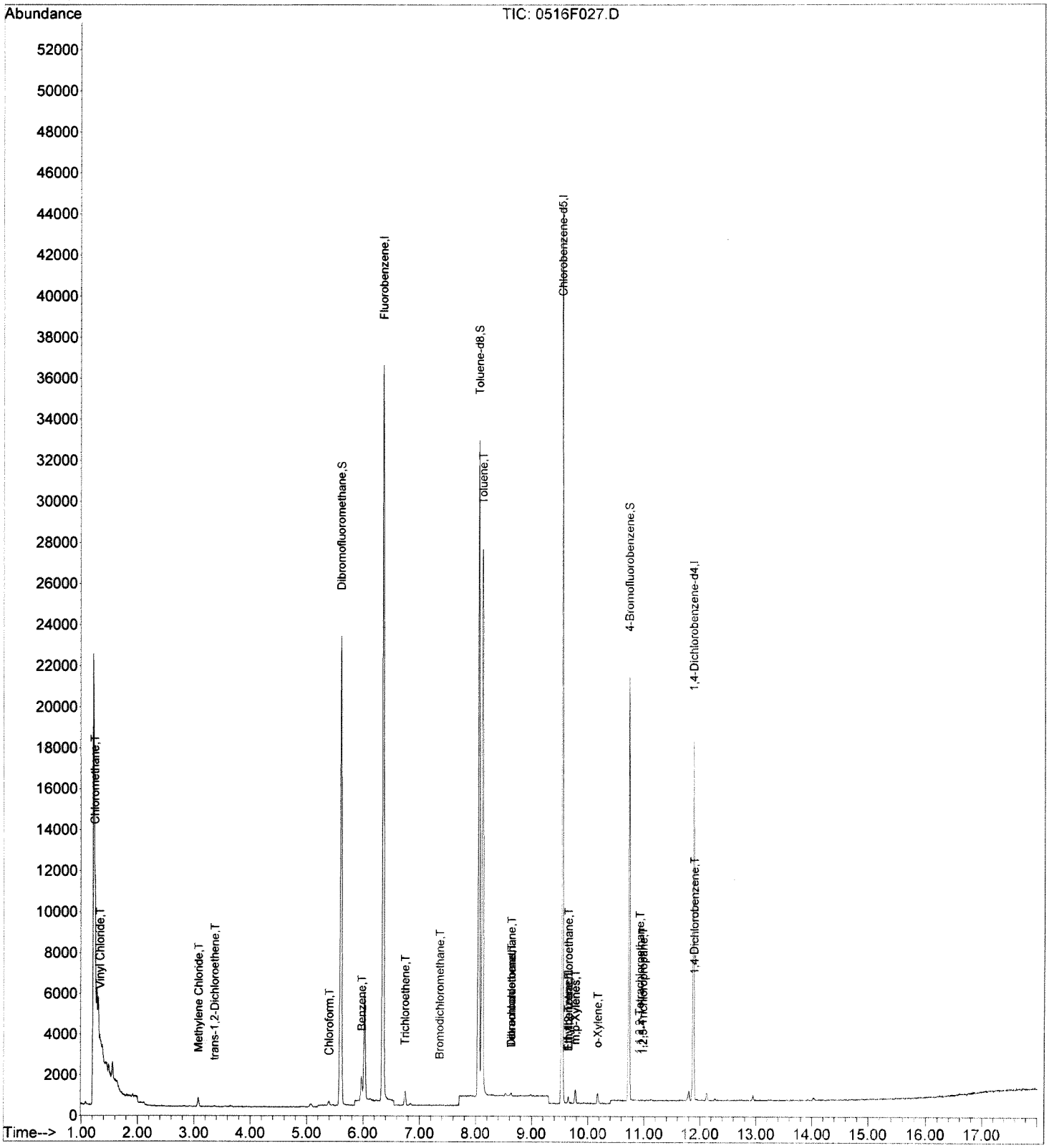
After

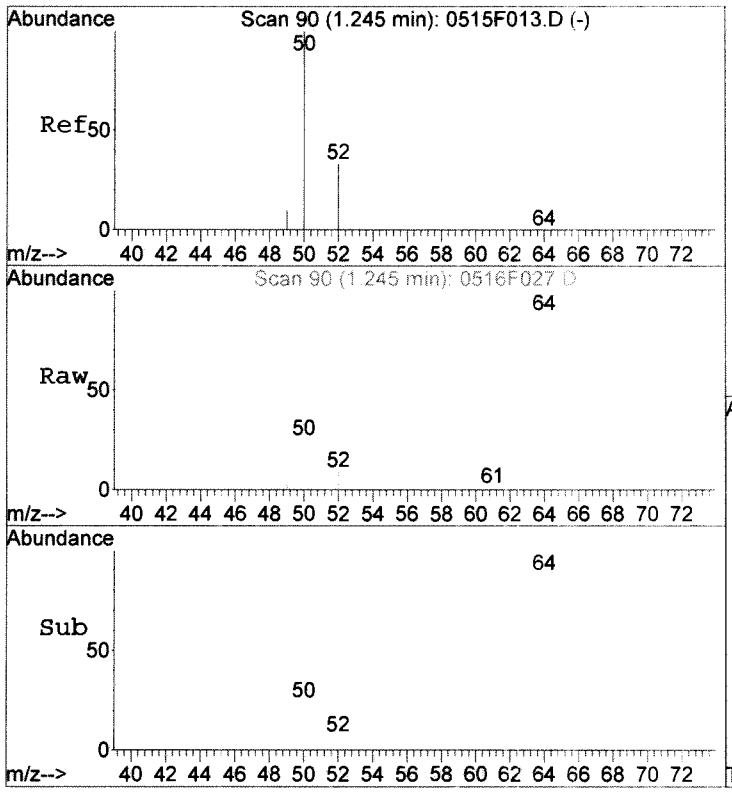
Baseline correction

05/22/17

Data File : I:\MS30\DATA\051617_SIM\0516F027.D Vial: 25
Acq On : 16 May 2017 10:33 pm Operator: GH
Sample : K4857-005 Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 12:17 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration

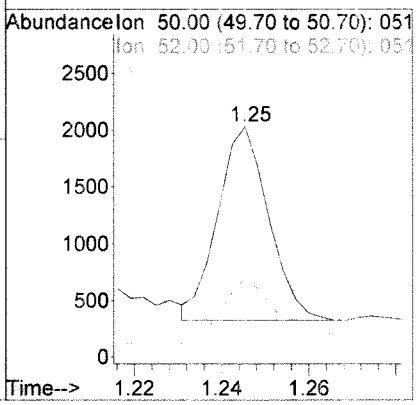


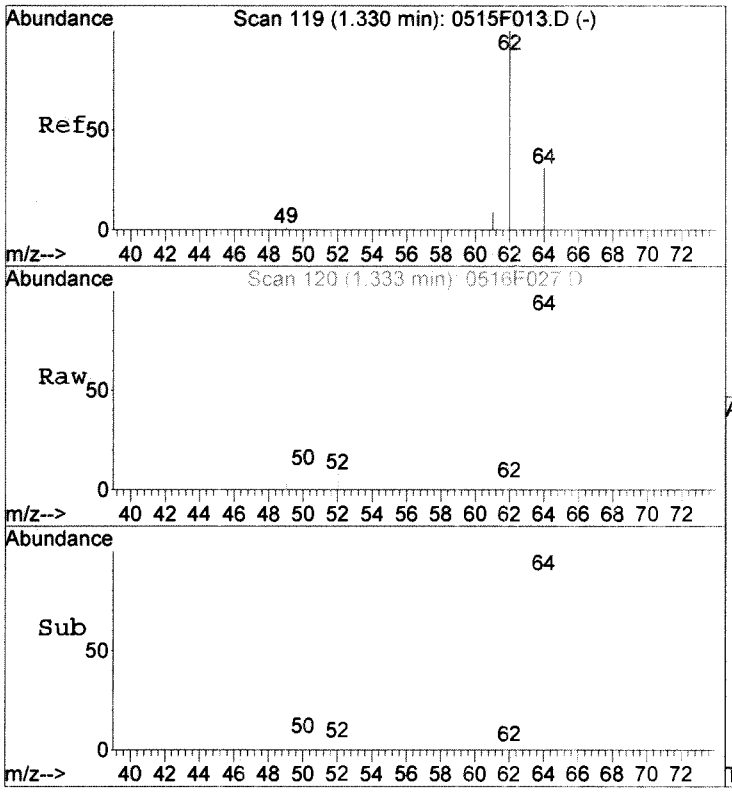


#2
Chloromethane
Concen: 47.05 ng/L m
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 50 Resp: 1378

Ion	Ratio	Lower	Upper
50	100		
52	34.6	2.5	62.5
49	14.1	0.0	40.3

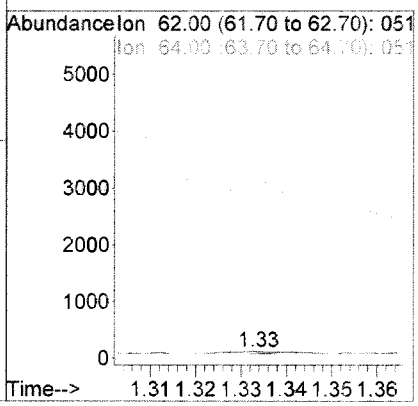


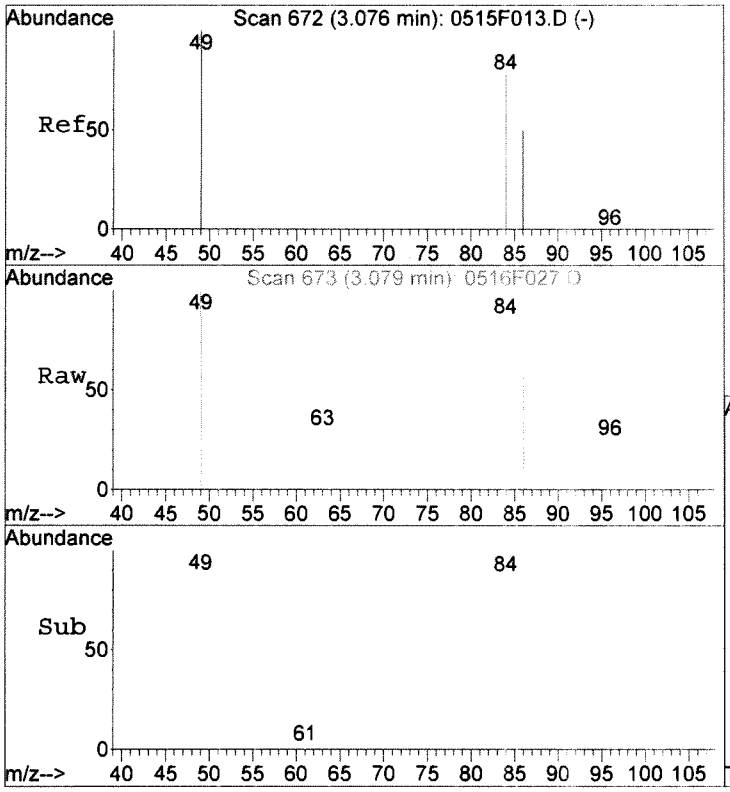


#3
Vinyl Chloride
Concen: 1.37 ng/L
RT: 1.33 min Scan# 120
Delta R.T. 0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 62 Resp: 39

Ion	Ratio	Lower	Upper
62	100		
64	954.3	1.5	61.5#
61	5.7	0.0	38.6

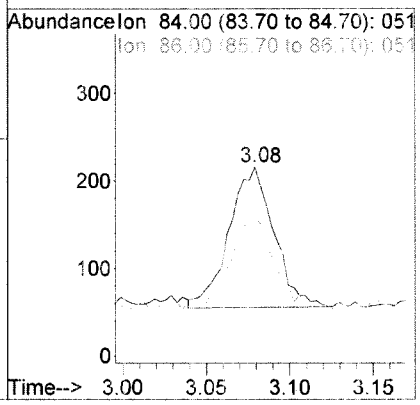


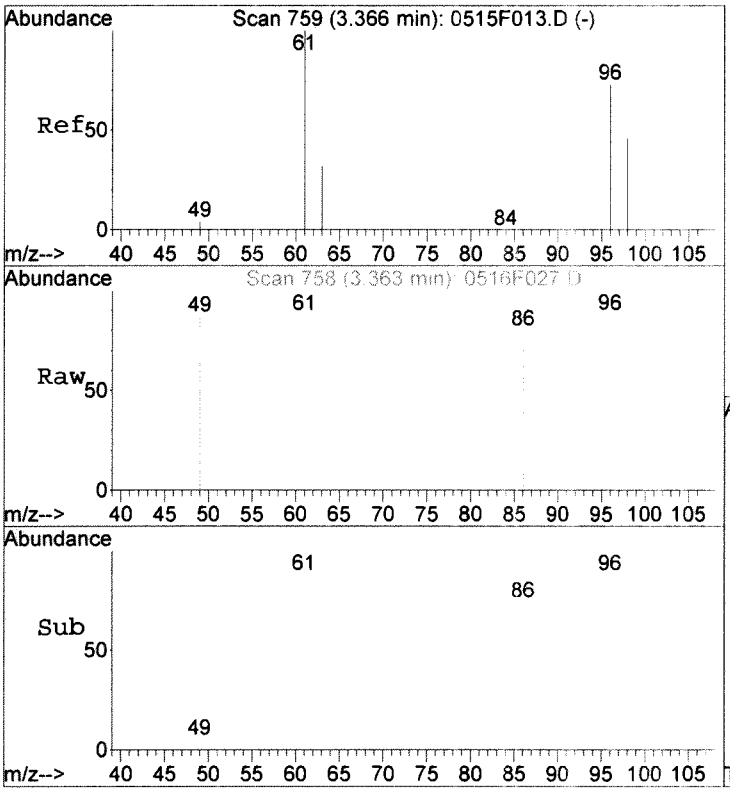


#5
Methylene Chloride
Concen: 13.58 ng/L
RT: 3.08 min Scan# 673
Delta R.T. 0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 84 Resp: 301

Ion	Ratio	Lower	Upper
84	100		
86	65.6	34.0	94.0
49	116.3	98.8	158.8

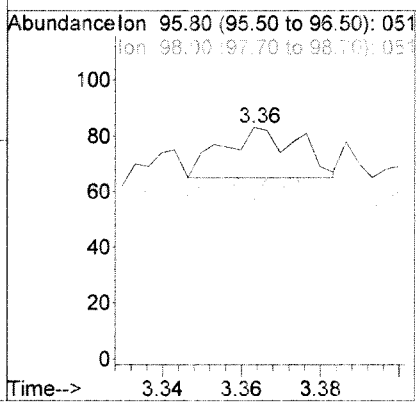


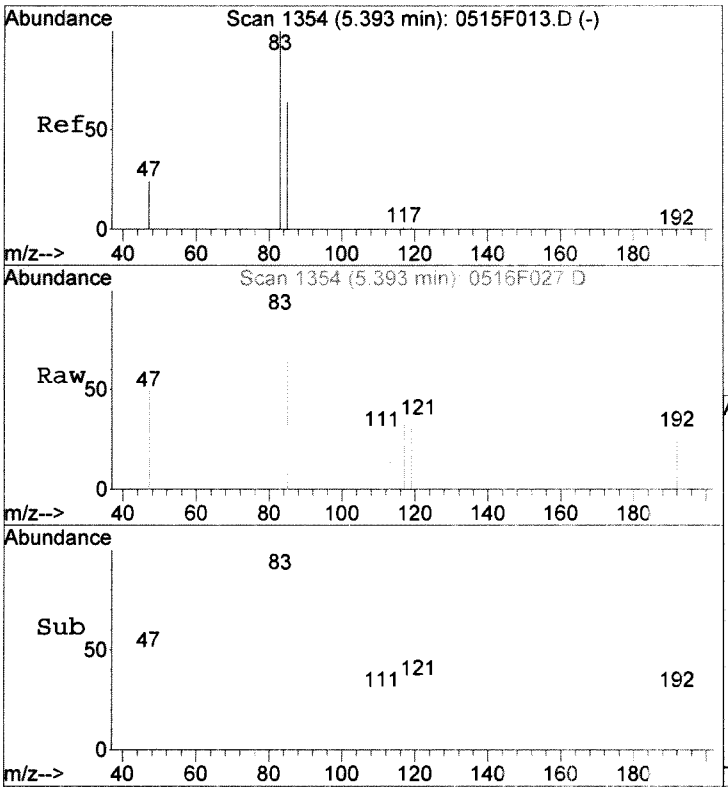


#6
trans-1,2-Dichloroethene
Concen: 1.34 ng/L
RT: 3.36 min Scan# 758
Delta R.T. -0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 96 Resp: 24

Ion	Ratio	Lower	Upper
96	100		
98	0.0	32.9	92.9#
61	55.6	107.3	167.3#

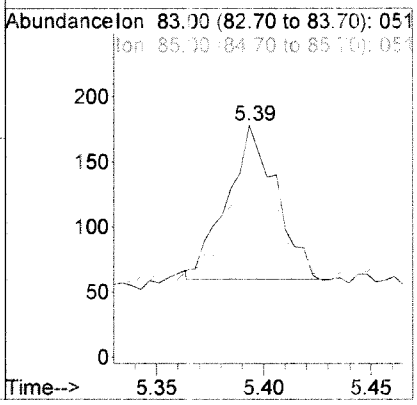


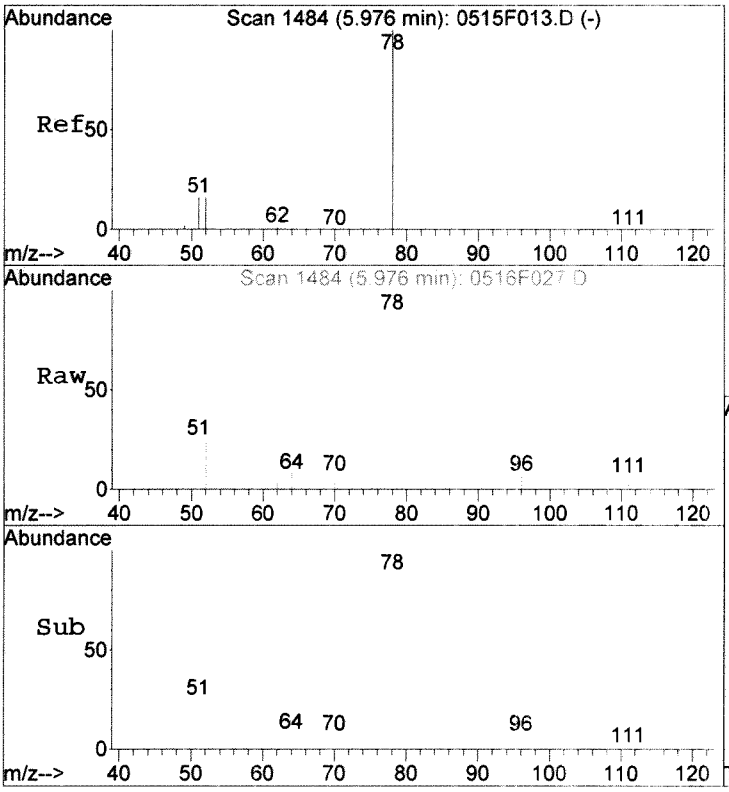


#8
Chloroform
Concen: 5.08 ng/L
RT: 5.39 min Scan# 1354
Delta R.T. 0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 83 Resp: 187

Ion	Ratio	Lower	Upper
83	100		
85	50.0	34.0	94.0
47	22.0	0.0	53.5

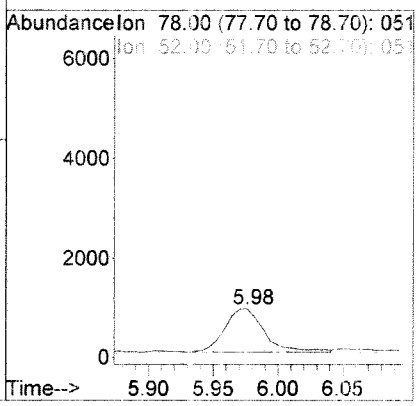


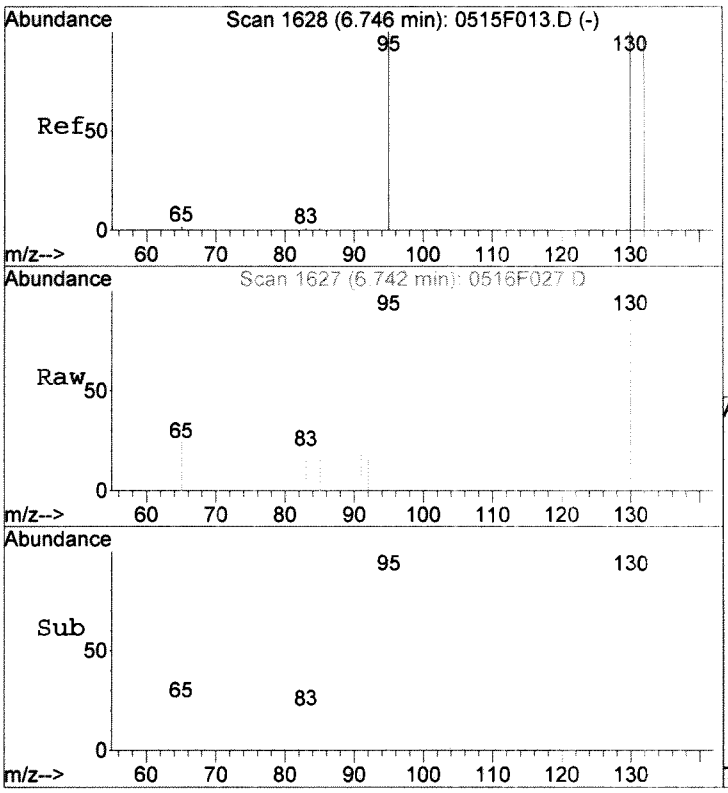


#11
Benzene
Concen: 27.15 ng/L
RT: 5.98 min Scan# 1484
Delta R.T. 0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 78 Resp: 1899

Ion	Ratio	Lower	Upper
78	100		
52	16.2	0.0	45.8
51	18.2	0.0	46.5

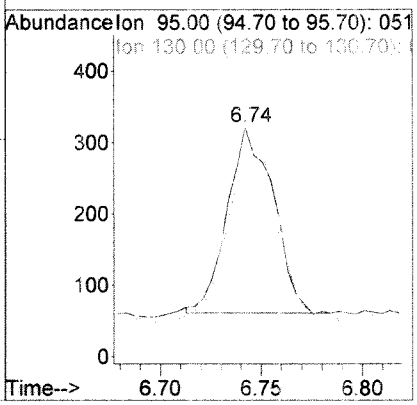


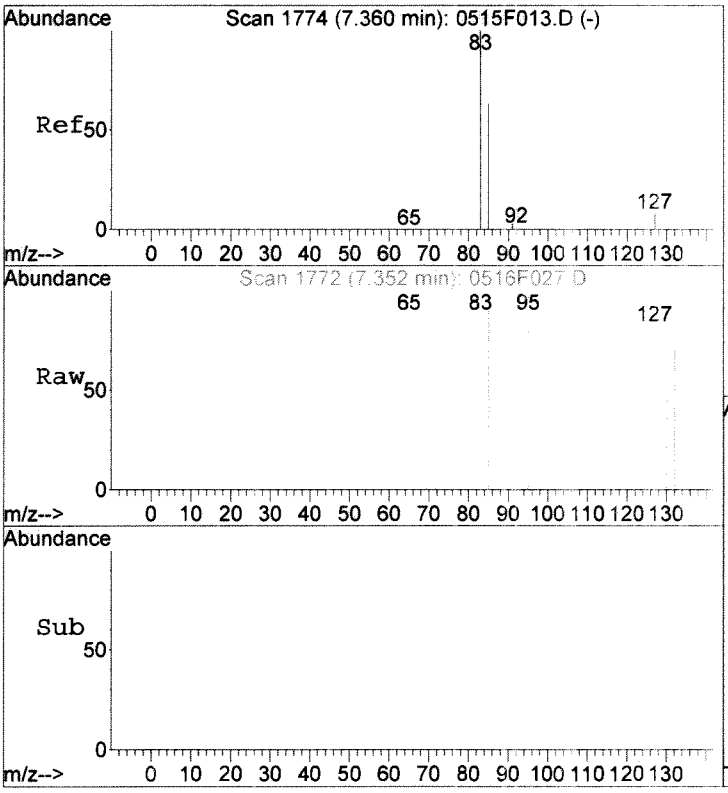


#13
Trichloroethene
Concen: 24.01 ng/L
RT: 6.74 min Scan# 1627
Delta R.T. -0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 95 Resp: 413

Ion	Ratio	Lower	Upper
95	100		
130	88.5	69.5	129.5
132	82.4	67.2	127.2

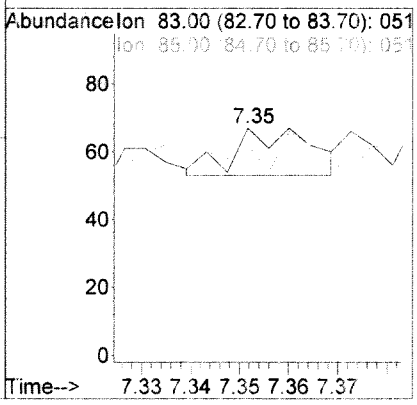


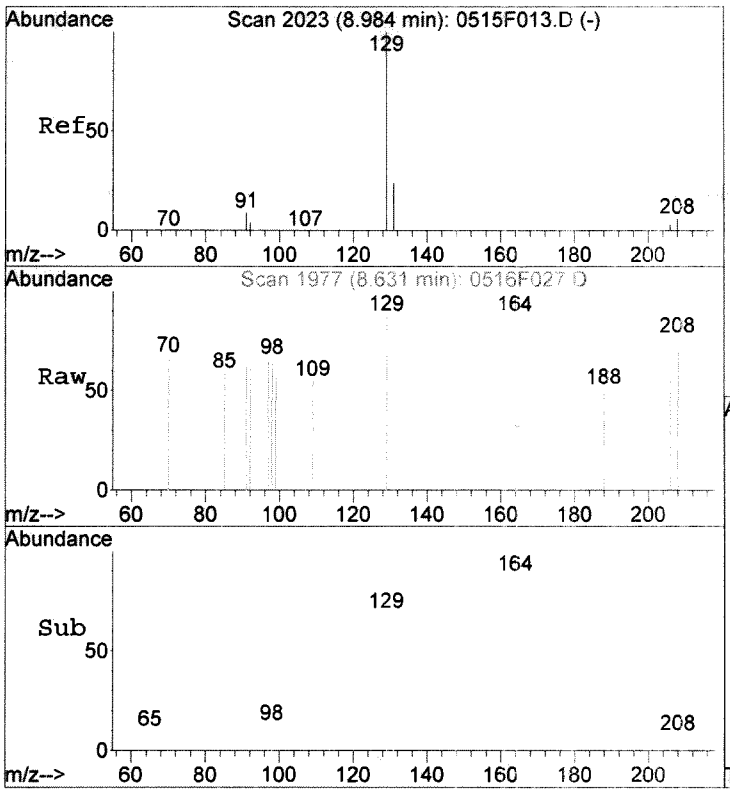


#14
Bromodichloromethane
Concen: 0.61 ng/L
RT: 7.35 min Scan# 1772
Delta R.T. -0.01 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 83 Resp: 15

Ion	Ratio	Lower	Upper
83	100		
85	41.7	33.1	93.1
127	0.0	0.0	38.1

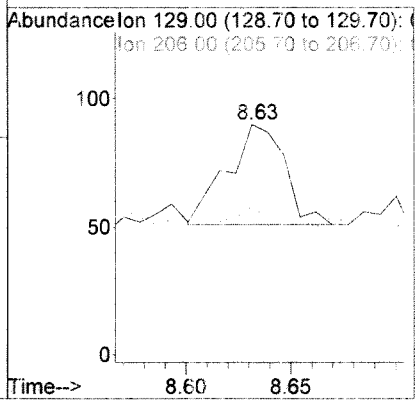


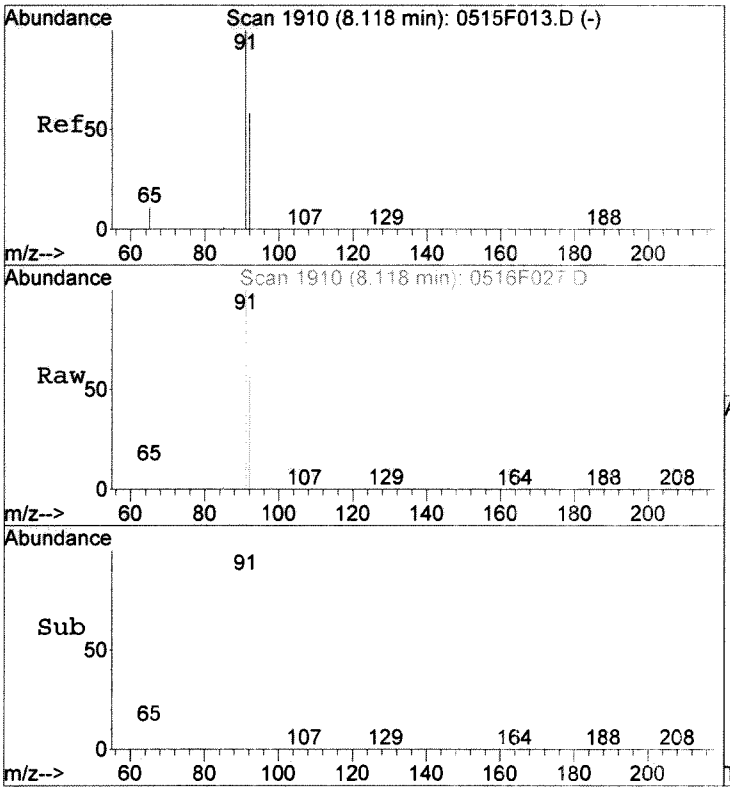


#17
Dibromochloromethane
Concen: 4.33 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.35 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion:129 Resp: 74

Ion	Ratio	Lower	Upper
129	100		
206	12.8	0.0	32.8
208	35.9	0.0	35.9

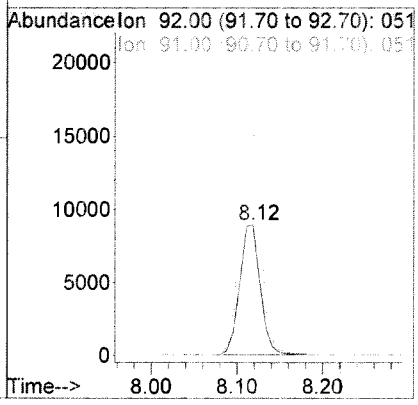


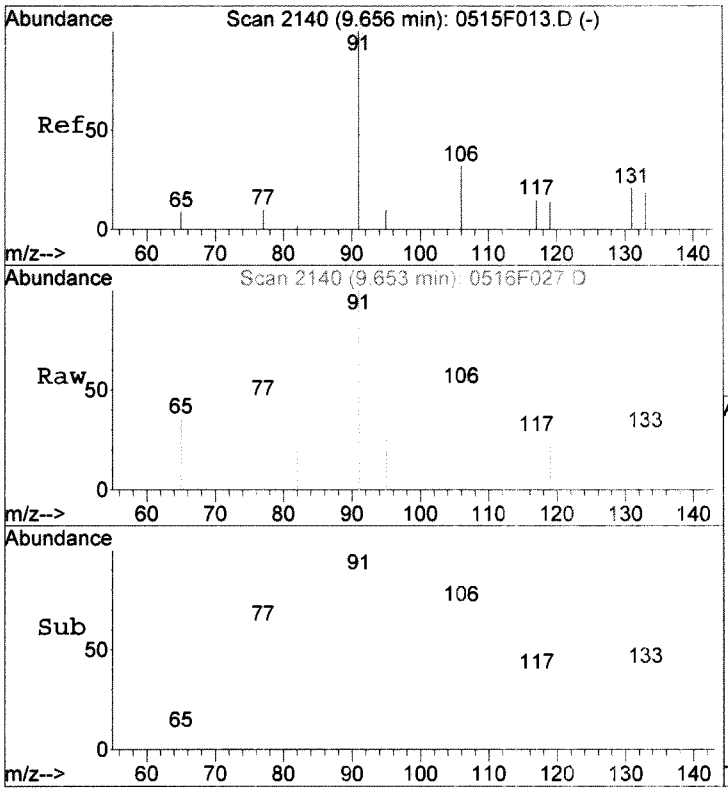


#20
Toluene
Concen: 481.87 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 92 Resp: 14950

Ion	Ratio	Lower	Upper
92	100		
91	176.4	143.6	203.6
65	20.9	0.0	49.9

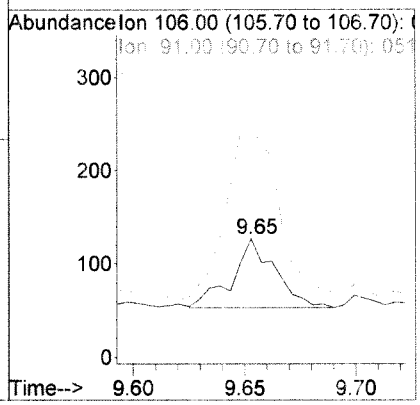


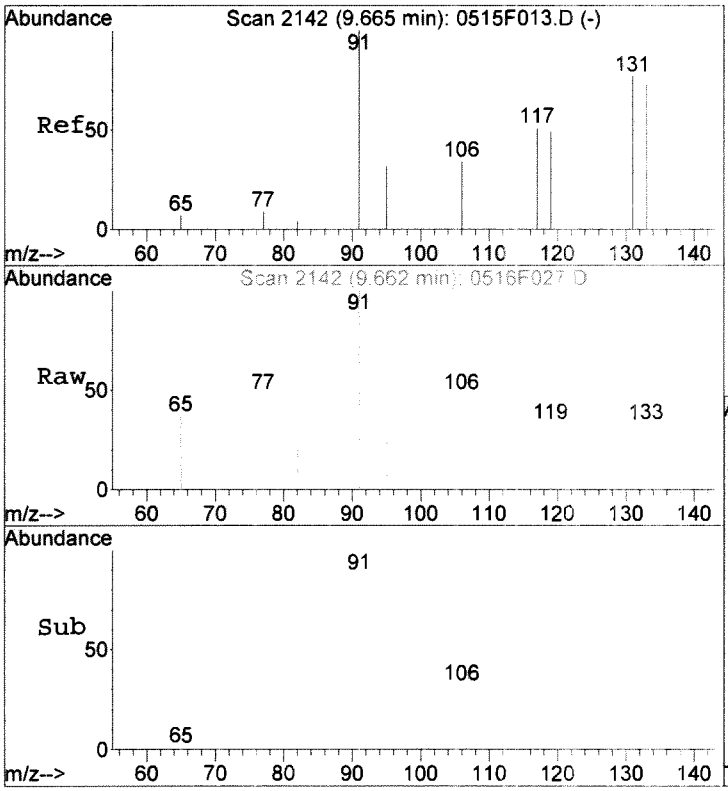


#21
Ethylbenzene
Concen: 6.55 ng/L
RT: 9.65 min Scan# 2140
Delta R.T. -0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion:106 Resp: 98

Ion	Ratio	Lower	Upper
106	100		
91	245.9	285.7	345.7#
77	45.9	1.3	61.3

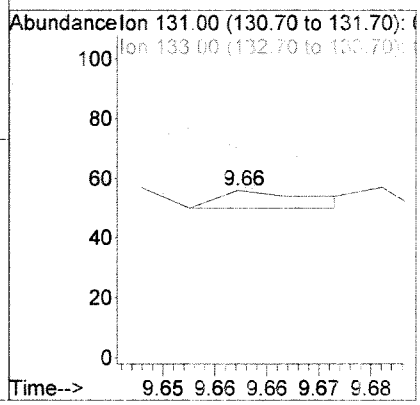


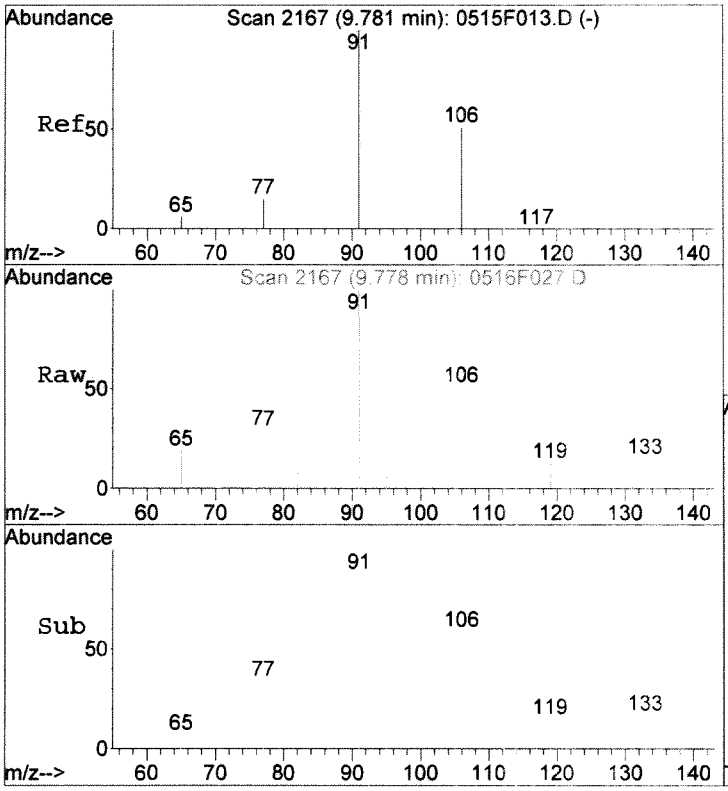


#22
1,1,1,2-Tetrachloroethane
Concen: 0.21 ng/L
RT: 9.66 min Scan# 2142
Delta R.T. -0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion:131 Resp: 4

Ion	Ratio	Lower	Upper
131	100		
133	16.7	74.4	114.4#
119	183.3	43.9	83.9#

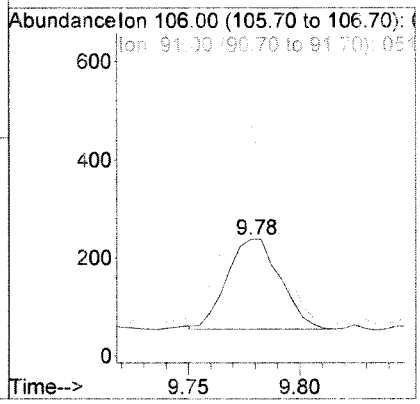


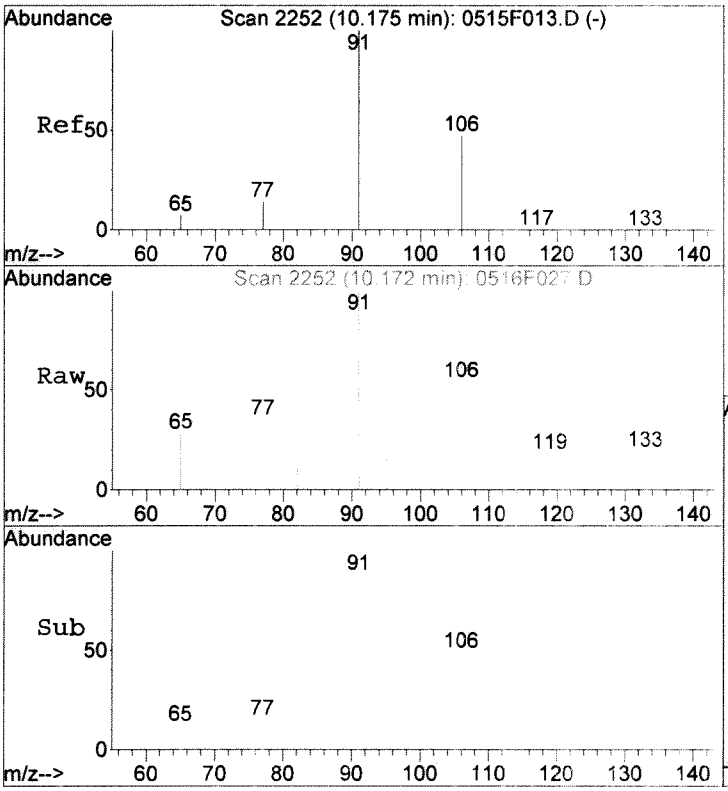


#23
m,p-Xylenes
Concen: 17.75 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion:106 Resp: 304

Ion	Ratio	Lower	Upper
106	100		
91	221.9	166.8	226.8
77	31.1	0.0	58.7

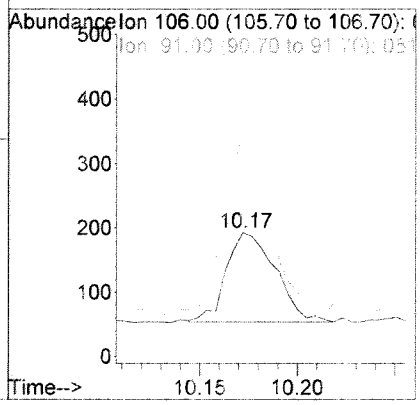


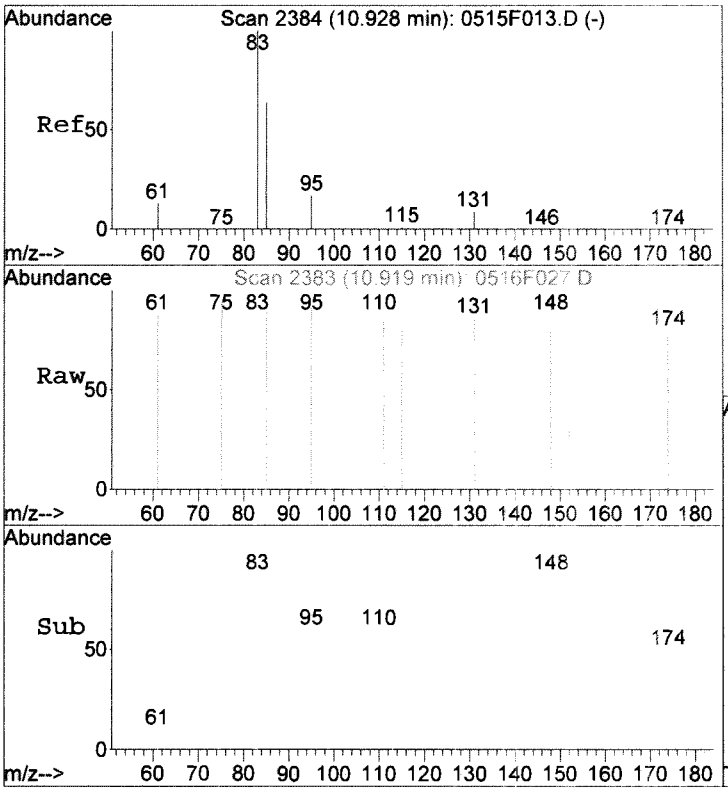


#24
o-Xylene
Concen: 13.91 ng/L
RT: 10.17 min Scan# 2252
Delta R.T. -0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion:106 Resp: 243

Ion	Ratio	Lower	Upper
106	100		
91	202.9	184.3	244.3
65	26.6	0.0	44.6

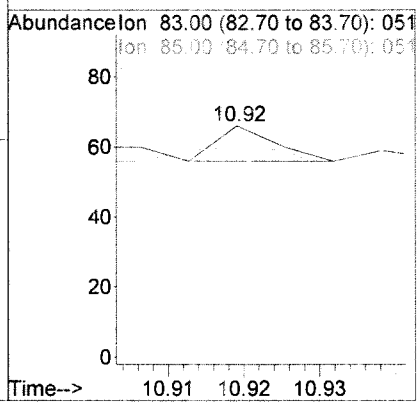


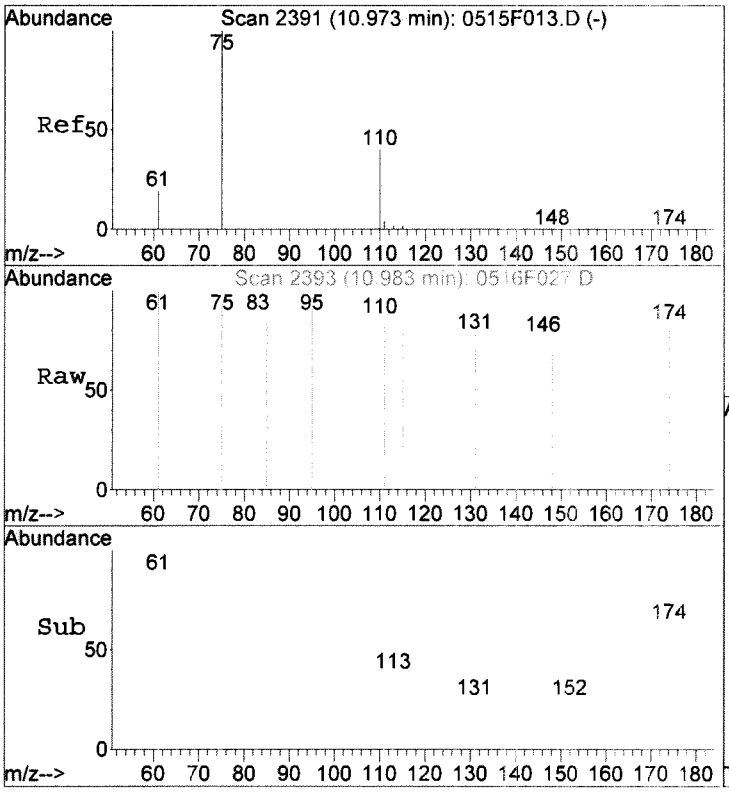


#26
1,1,2,2-Tetrachloroethane
Concen: 0.30 ng/L
RT: 10.92 min Scan# 2383
Delta R.T. -0.01 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion: 83 Resp: 5

Ion	Ratio	Lower	Upper
83	100		
85	70.0	34.1	94.1
131	50.0	0.0	28.8#

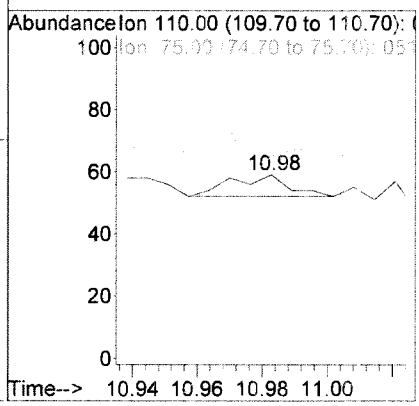


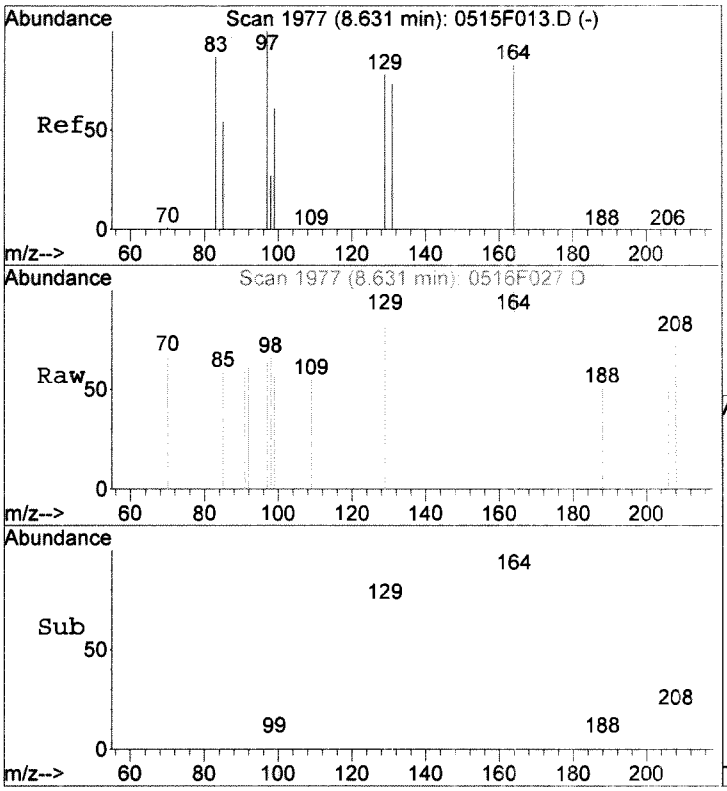


#27
1,2,3-Trichloropropane
Concen: 1.72 ng/L
RT: 10.98 min Scan# 2393
Delta R.T. 0.01 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion:110 Resp: 9

Ion	Ratio	Lower	Upper
110	100		
75	14.3	230.6	270.6#
61	157.1	40.1	80.1#

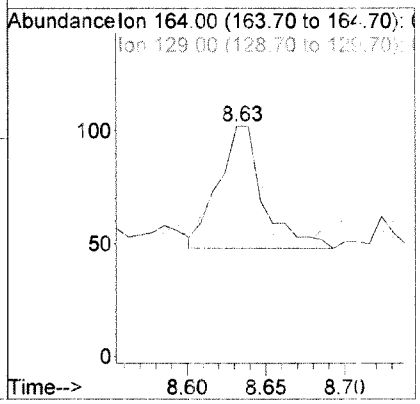


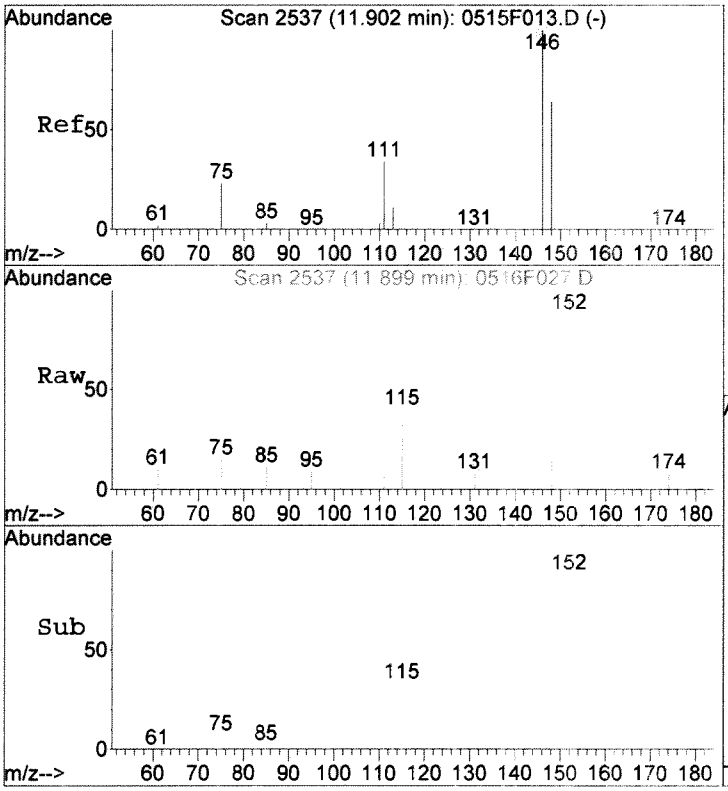


#28
Tetrachloroethene
Concen: 7.43 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion:164 Resp: 108

Ion	Ratio	Lower	Upper
164	100		
129	70.4	63.1	123.1
131	66.7	57.4	117.4

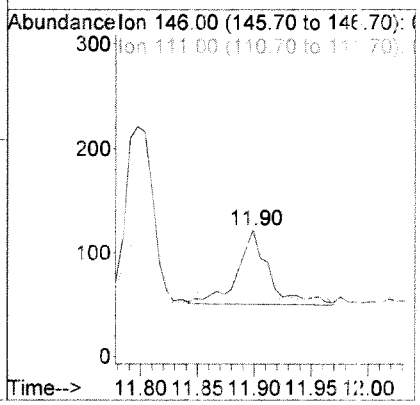




#30
1,4-Dichlorobenzene
Concen: 5.21 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F027.D
Acq: 16 May 2017 10:33 pm

Tgt Ion:146 Resp: 139

Ion	Ratio	Lower	Upper
146	100		
111	44.3	4.0	64.0
148	58.6	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F013.D
Lab ID: KWG1704141-3
RunType: MB
Matrix: WATER

Date Acquired: 05/16/2017 16:08
Date Quantitated: 05/22/2017 11:50
Batch ID: KWG1702959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NT
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: KS 5/22/17

Secondary Review: MJ

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F013.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 16:08	**Quant Date:**	05/22/2017 11:50	**Vial:**	13
Run Type:	MB	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-3			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604864	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:				**Quant based on**	Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	56405	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37159	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	14478	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19441	931.85	93	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	44603	991.40	99	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	12387	749.32	75	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	267	8.27	8.27	J	
1	Vinyl Chloride	1.33		0.00	62	59	1.88	4.6	U	
1	1,1-Dichloroethene	2.42		0.00	96	17	0.9700	5.9	U	
1	Methylene Chloride	3.08	0.01	0.00	84	2259	92.48	92.5	J	
1	trans-1,2-Dichloroethene	3.36		0.00	96	42	2.12	3.5	U	
1	cis-1,2-Dichloroethene				96	0		6.5	U	
1	Chloroform	5.39		0.00	83	4804	118.44	118		
1	Carbon Tetrachloride	5.38	-0.28	-0.04	117	26	0.9700	7.2	U	
1	Benzene	5.97		0.00	78	1513	19.62	19.6	J	
1	1,2-Dichloroethane	6.35	0.23	0.04	62	914	31.78	31.8		
1	Trichloroethene (TCE)	6.74		0.00	95	71	3.74	3.9	U	
1	Bromodichloromethane	7.36		0.00	83	31	1.14	3.4	U	
1	1,1,2-Trichloroethane	8.63		0.00	83	23	1.51	9.0	U	
1	Dibromochloromethane	8.63	-0.35	-0.06	129	74	3.93	8.8	U	
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	34	2.29	4.5	U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\05 6F013.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 16:08	**Quant Date:**	05/22/2017 11:50	**Vial:**	13
Run Type:	MB	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-3			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12	0.01	0.00	92	366	11.22	11.2	J	
2	Ethylbenzene	9.66	0.01	0.00	106	50	3.18	5.6	U	
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	20	1.02	3.9	U	
2	m,p-Xylenes	9.78		0.00	106	162	9.00	9.5	U	
2	o-Xylene	10.18		0.00	106	132	7.19	7.19	J	
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	38	2.17	8.7	U	
2	1,2,3-Trichloropropane	10.97		0.00	110	19	3.46	11	U	
2	Tetrachloroethene (PCE)	8.62	-0.01	0.00	164	85	5.56	5.9	U	
3	1,4-Dichlorobenzene	11.90		0.00	146	180	6.89	7.1	U	

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F013.D Vial: 11
Acq On : 16 May 2017 04:08 pm Operator: GH
Sample : MB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:50:39 2017 Quant Results File: 051517MS30_8260SIM.RES

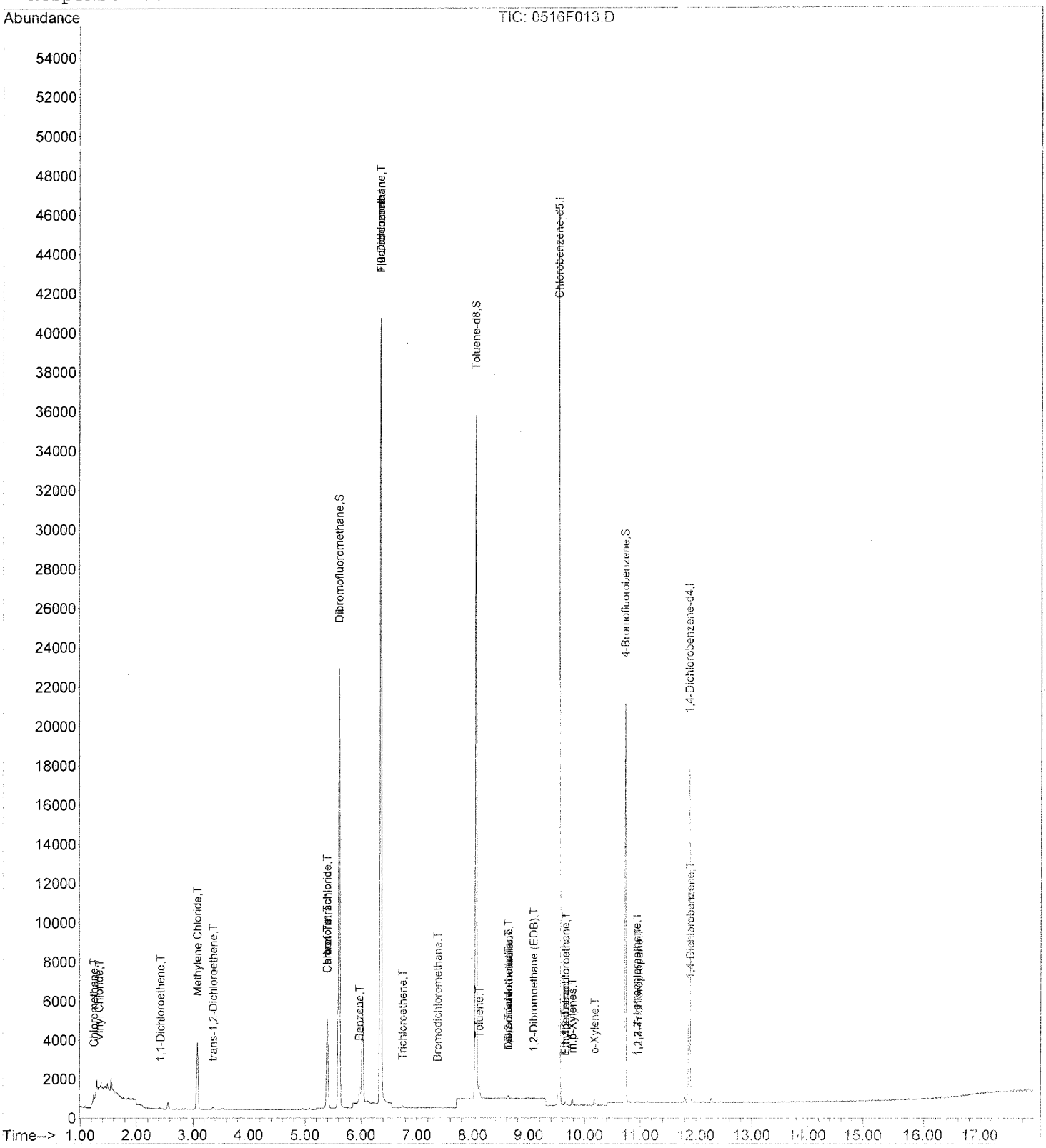
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Fluorobenzene	6.35	96	56405	1000.00 ng/L		0.00
19) Chlorobenzene-d5	9.54	117	37159	1000.00 ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14478	1000.00 ng/L		0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19441	931.85 ng/L		0.00
Spiked Amount 1000.000			Recovery = 93.19%			
15) Toluene-d8	8.05	98	44603	991.40 ng/L		0.00
Spiked Amount 1000.000			Recovery = 99.14%			
25) 4-Bromofluorobenzene	10.73	95	12387	749.32 ng/L		0.00
Spiked Amount 1000.000			Recovery = 74.93%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	267	8.27 ng/L		91
3) Vinyl Chloride	1.33	62	59	1.88 ng/L	#	42
4) 1,1-Dichloroethene	2.42	96	17	0.97 ng/L	#	14
5) Methylene Chloride	3.08	84	2259	92.48 ng/L		95
6) trans-1,2-Dichloroethene	3.36	96	42	2.12 ng/L	#	56
8) Chloroform	5.39	83	4804	118.44 ng/L		98
10) Carbon Tetrachloride	5.38	117	26	0.97 ng/L	#	37
11) Benzene	5.97	78	1513	19.62 ng/L		94
12) 1,2-Dichloroethane	6.35	62	914	31.78 ng/L	#	8
13) Trichloroethene	6.74	95	71	3.74 ng/L	#	65
14) Bromodichloromethane	7.36	83	31	1.14 ng/L		74
16) 1,1,2-Trichloroethane	8.63	83	23	1.51 ng/L	#	78
17) Dibromochloromethane	8.63	129	74	3.93 ng/L		92
18) 1,2-Dibromoethane (EDB)	9.09	107	34	2.29 ng/L	#	27
20) Toluene	8.12	92	366	11.22 ng/L		92
21) Ethylbenzene	9.66	106	50	3.18 ng/L	#	74
22) 1,1,1,2-Tetrachloroethane	9.67	131	20	1.02 ng/L	#	29
23) m,p-Xylenes	9.78	106	162	9.00 ng/L		90
24) o-Xylene	10.18	106	132	7.19 ng/L	#	74
26) 1,1,2,2-Tetrachloroethane	10.93	83	38	2.17 ng/L	#	66
27) 1,2,3-Trichloropropane	10.97	110	19	3.46 ng/L	#	27
28) Tetrachloroethene	8.62	164	85	5.56 ng/L	#	68
30) 1,4-Dichlorobenzene	11.90	146	180	6.89 ng/L		81

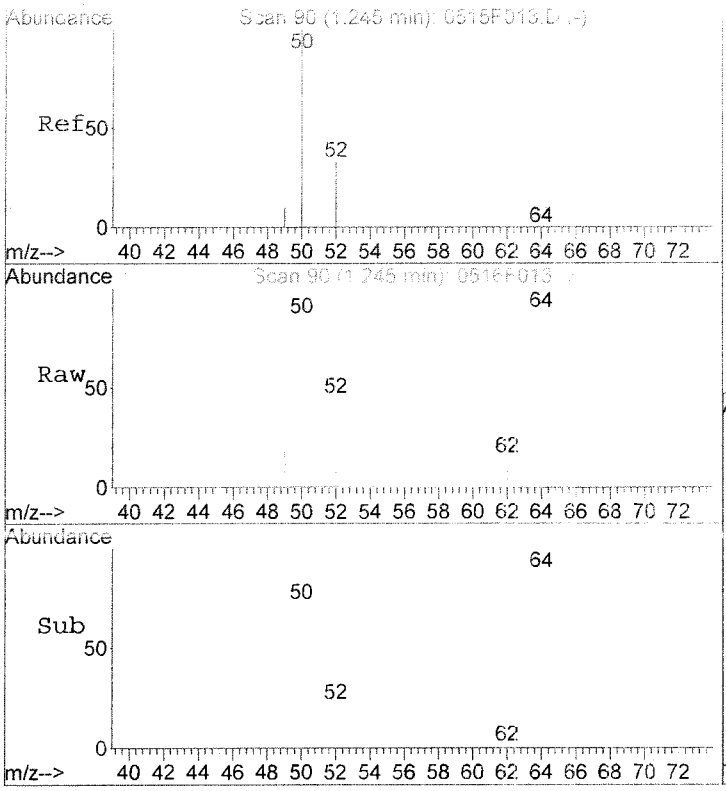
(#) = qualifier out of range (m) = manual integration
0516F013.D 051517MS30_8260SIM.M Mon May 22 11:50:40 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F013.D Vial: 11
Acq On : 16 May 2017 04:08 pm Operator: GH
Sample : MB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 22 11:50 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



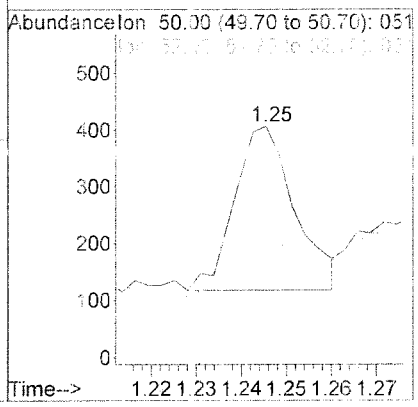
0516F013.D 051517MS30_8260SIM.M Mon May 22 11:50:41 2017 Page 2

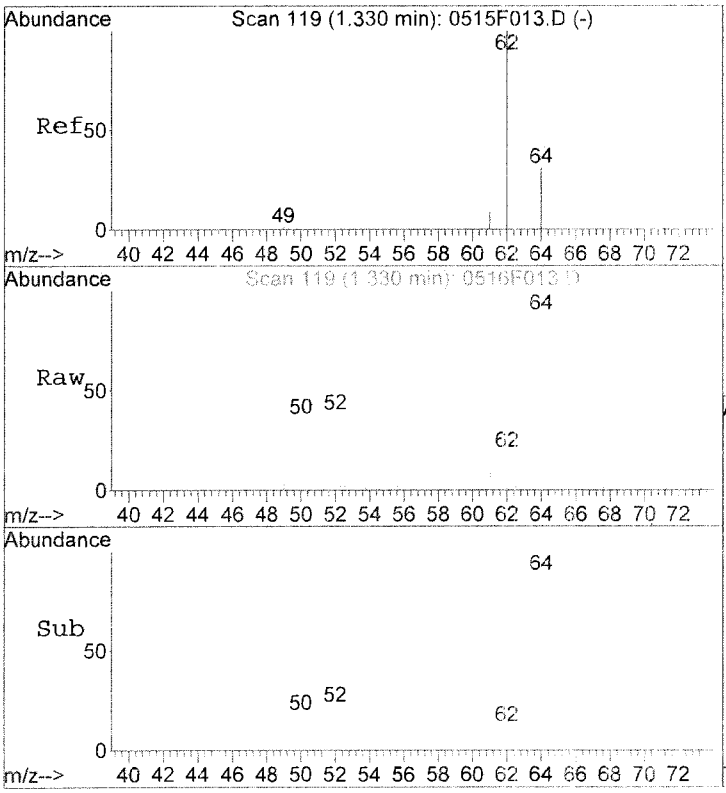


#2
Chloroethane
Concen: 8.27 ng/L
RT: 1.25 min Scan# 90
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 50 Resp: 267

Ion	Ratio	Lower	Upper
50	100		
52	38.9	2.5	62.5
49	10.8	0.0	40.3

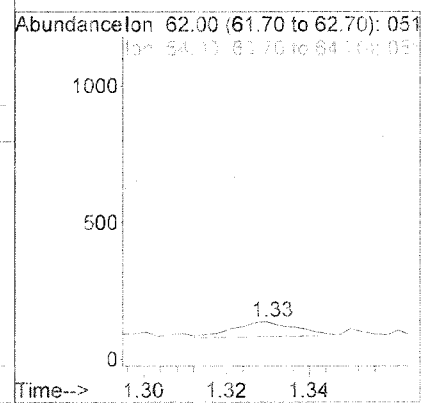


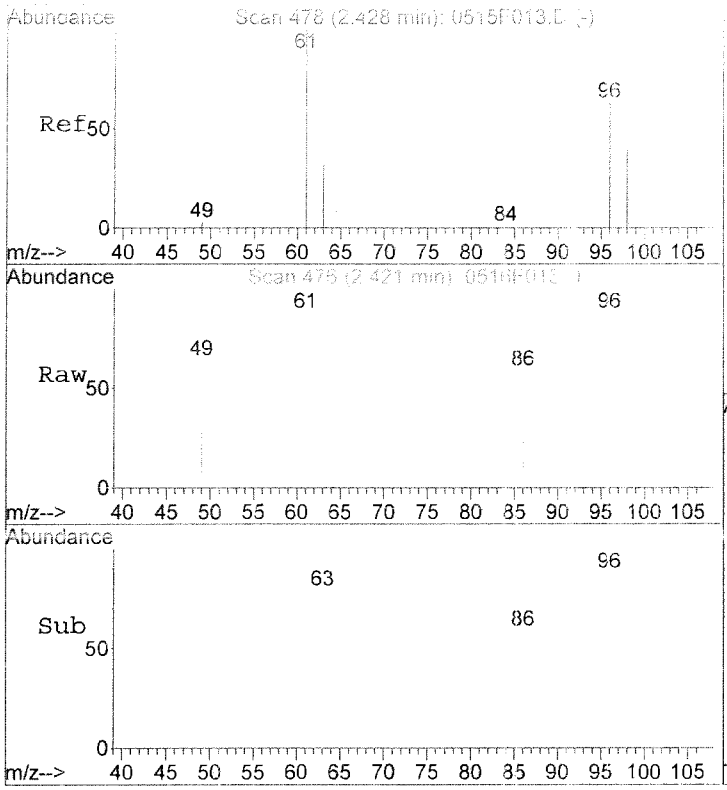


#3
Vinyl Chloride
Concen: 1.88 ng/L
RT: 1.33 min Scan# 119
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 62 Resp: 59

Ion	Ratio	Lower	Upper
62	100		
64	0.0	1.5	61.5#
61	30.8	0.0	38.6

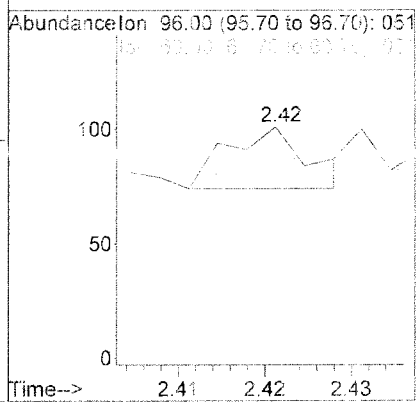


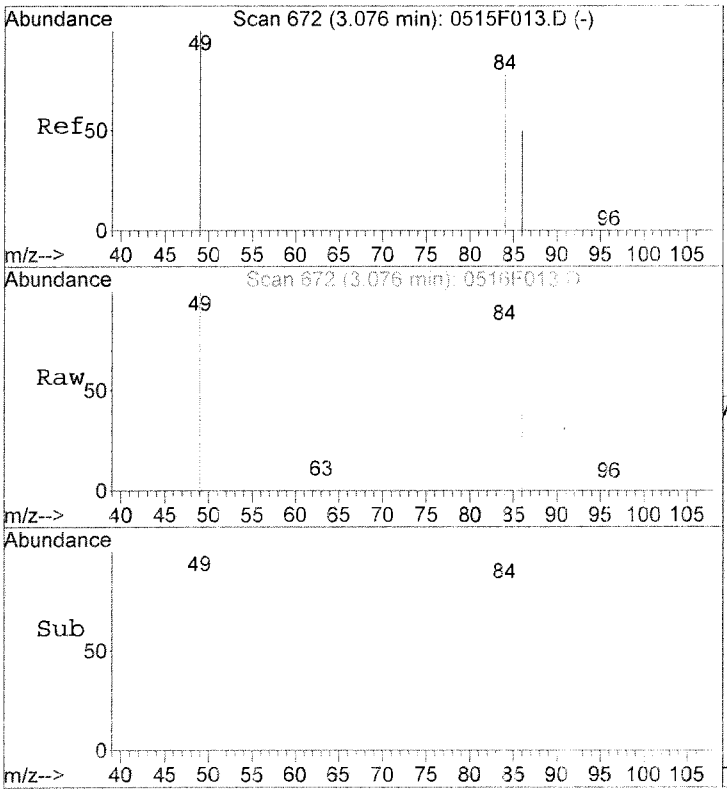


#4
1,1-Dichloroethene
Concen: 0.57 ng/L
RT: 2.42 min Scan# 476
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 96 Resp: 17

Ion	Ratio	Lower	Upper
96	100		
63	0.0	21.4	81.4#
61	40.7	129.1	189.1#

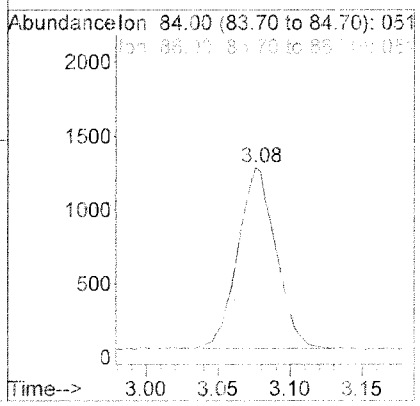


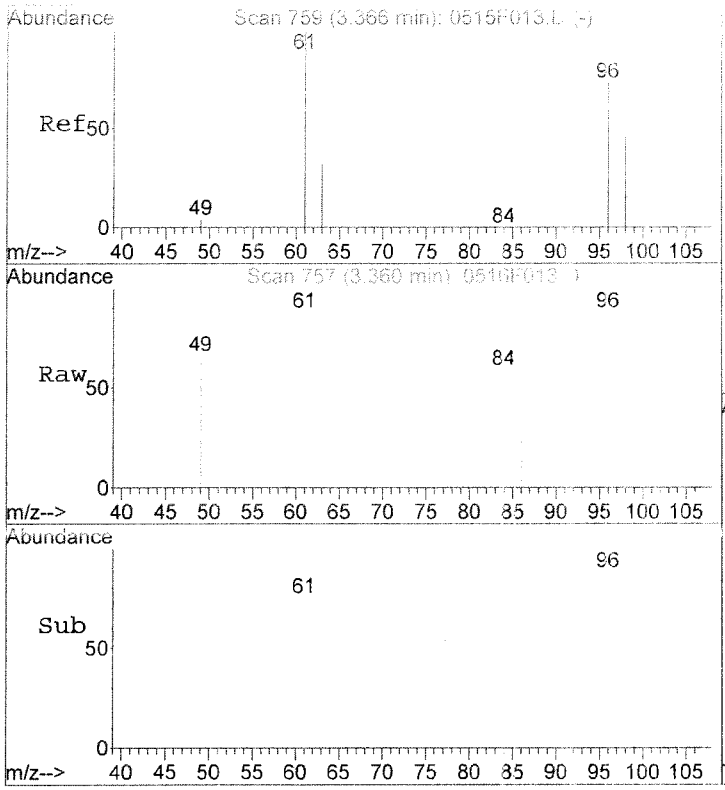


#5
Methylene Chloride
Concen: 92.48 ng/L
RT: 3.08 min Scan# 672
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 84 Resp: 2259

Ion	Ratio	Lower	Upper
84	100		
86	61.6	34.0	94.0
49	121.1	98.8	158.8

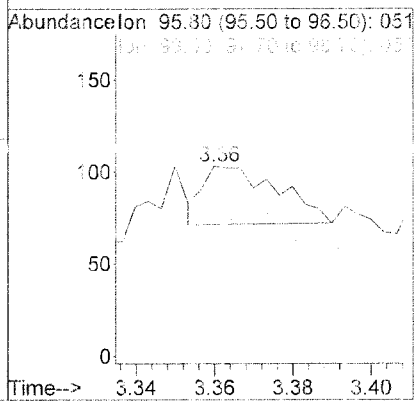


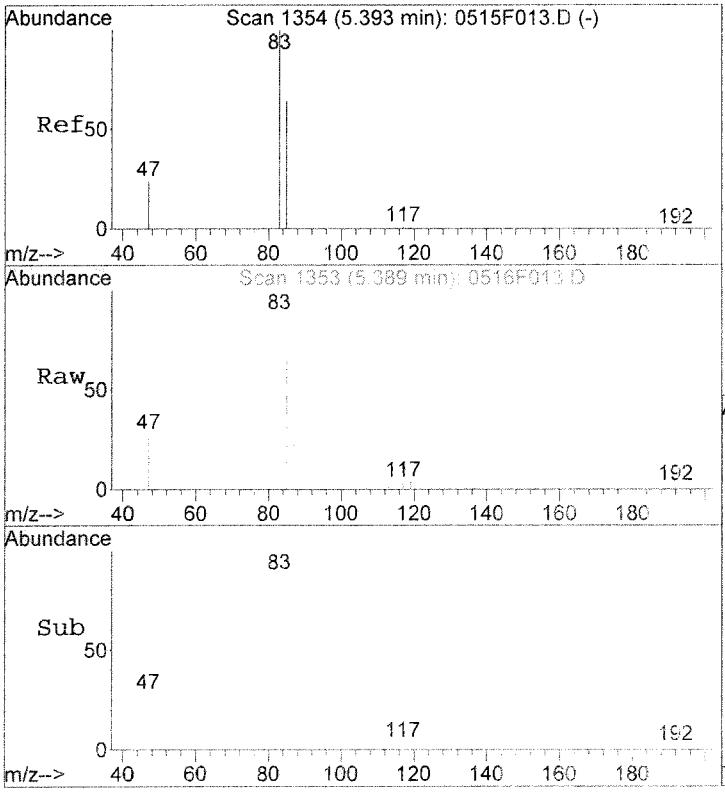


#6
trans-1,2-Dichloroethene
Concen: 2.12 ng/L
RT: 3.36 min Scan# 757
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 96 Resp: 42

Ion	Ratio	Lower	Upper
96	100		
98	38.7	32.9	92.9
61	77.4	107.3	167.3#

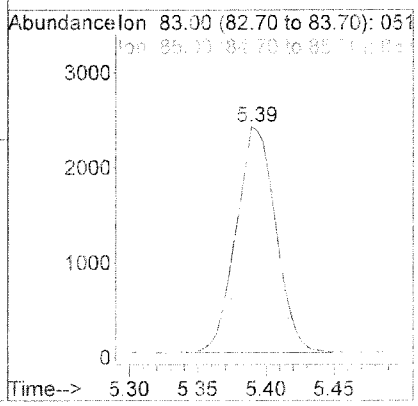


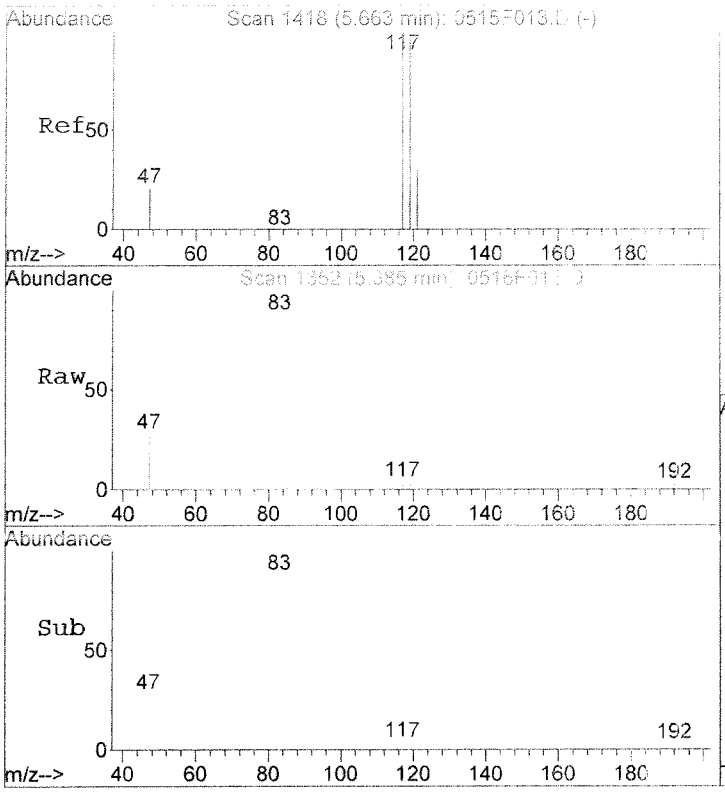


#8
Chloroform
Concen: 118.44 ng/L
RT: 5.39 min Scan# 1353
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 4804

Ion	Ratio	Lower	Upper
83	100		
85	63.3	34.0	94.0
47	25.6	0.0	53.5

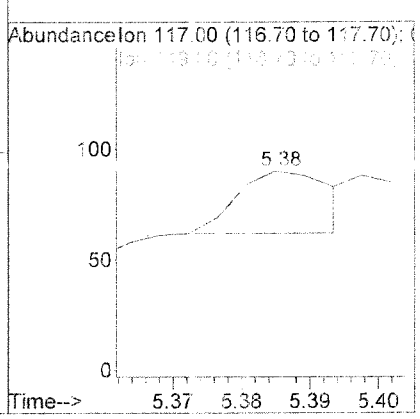


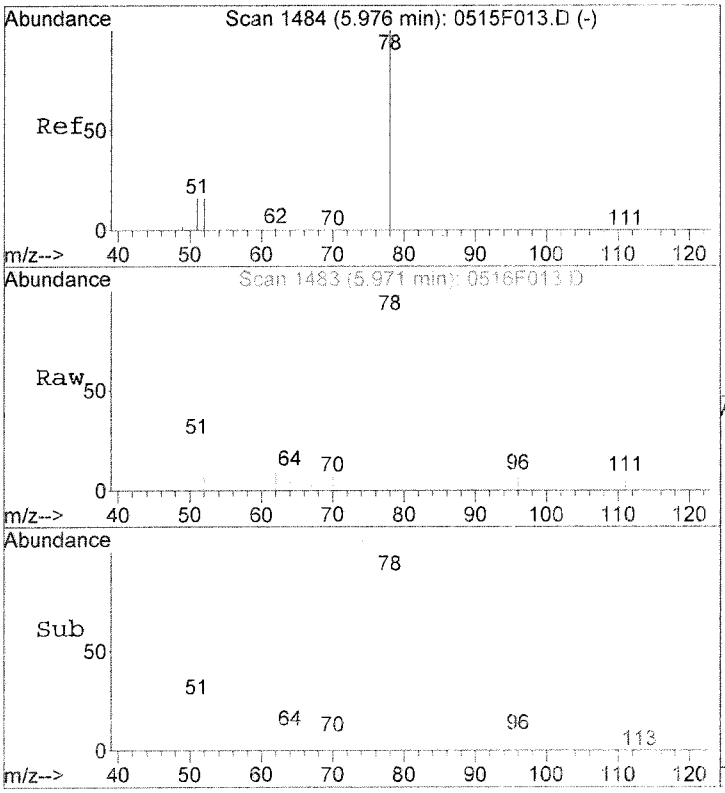


#3
Carbon Tetrachloride
Concen: 0.97 ng/L
RT: 5.38 min Scan# 1352
Delta R.T. -0.28 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:117 Resp: 26

Ion	Ratio	Lower	Upper
117	100		
119	32.1	65.9	125.9#
121	0.0	0.3	60.3#

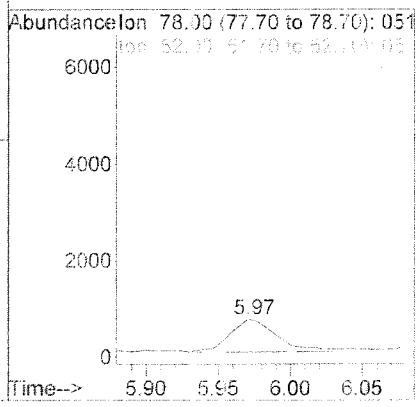


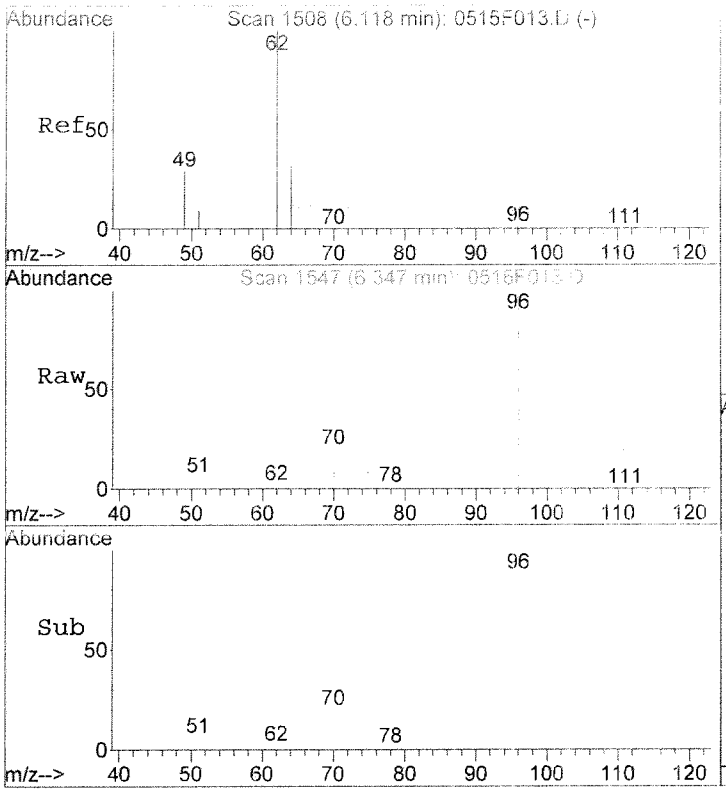


#11
Benzene
Concen: 19.62 ng/L
RT: 5.97 min Scan# 1483
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 78 Resp: 1513

Ion	Ratio	Lower	Upper
78	100		
52	11.6	0.0	45.8
51	17.1	0.0	46.5

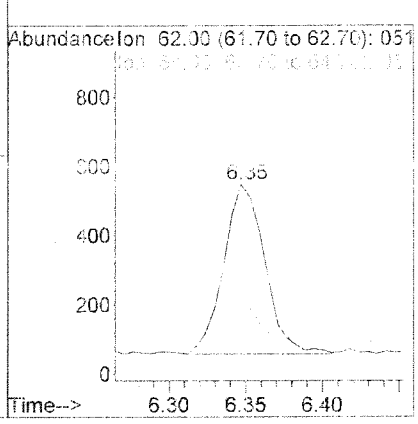


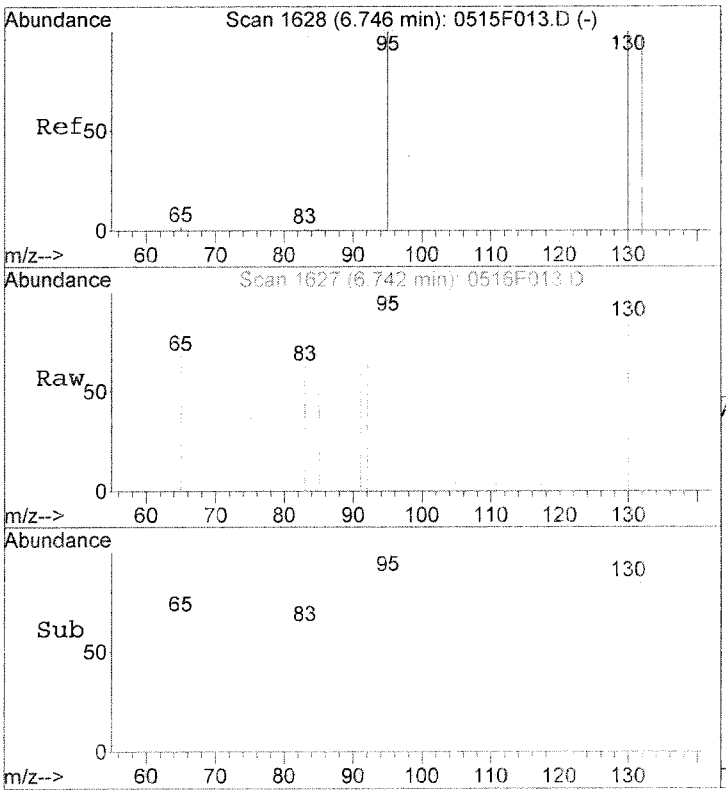


#12
1,2-Dichloroethane
Concen: [illegible] ng/L
RT: 6.35 min Scan# 1547
Delta R.T. 0.23 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 62 Resp: 914

Ion	Ratio	Lower	Upper
62	100		
64	22.2	2.1	62.1
49	121.8	0.0	58.7#

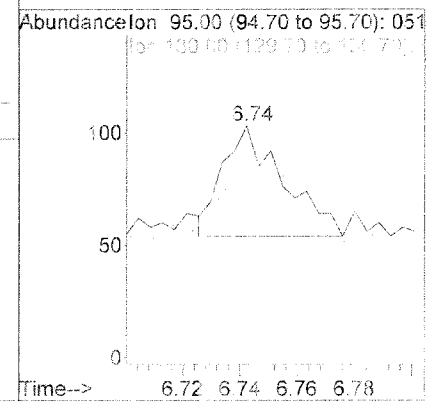


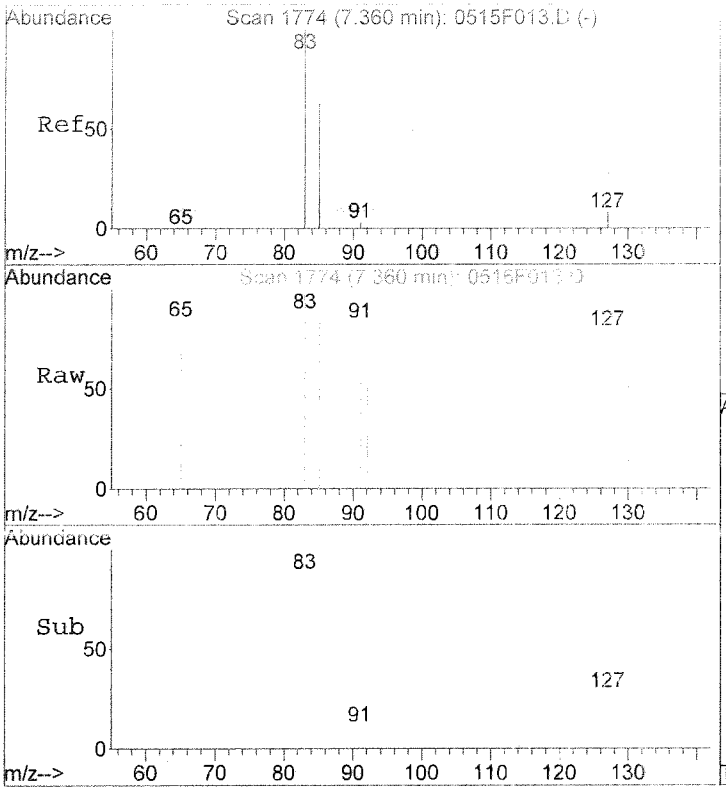


#13
Trichloroethene
Concen: 3.74 ng/L
RT: 6.74 min Scan# 1627
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 95 Resp: 71

Ion	Ratio	Lower	Upper
95	100		
130	75.5	69.5	129.5
132	51.0	67.2	127.2#

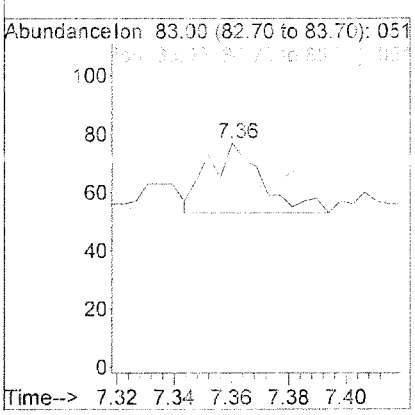


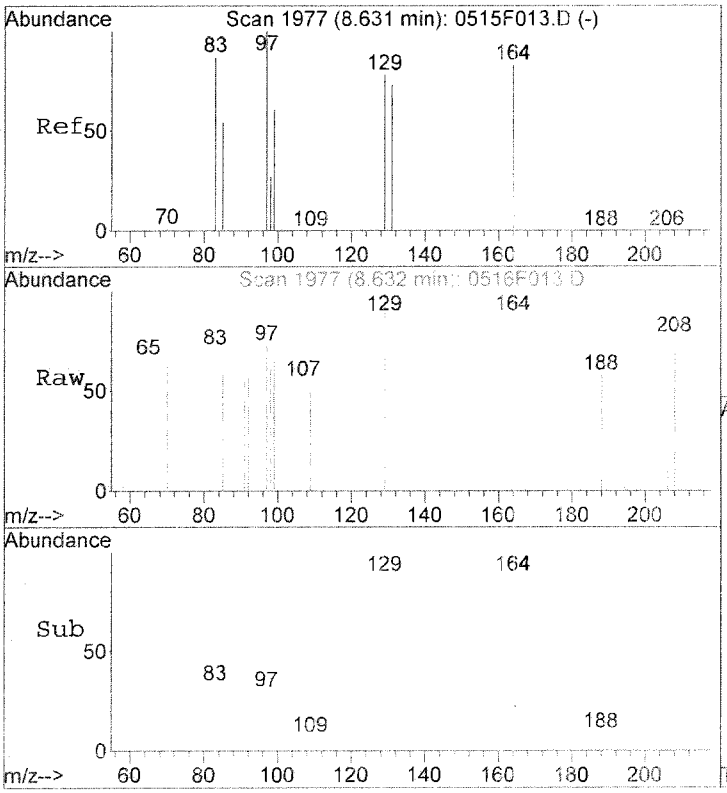


#14
Bromodichloromethane
Concen: 1.14 ng/L
RT: 7.36 min Scan# 1774
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 31

Ion	Ratio	Lower	Upper
83	100		
85	45.8	33.1	93.1
127	29.2	0.0	38.1

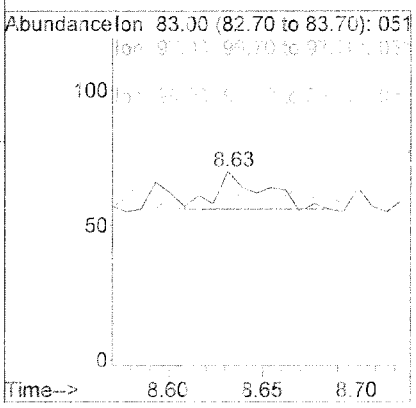


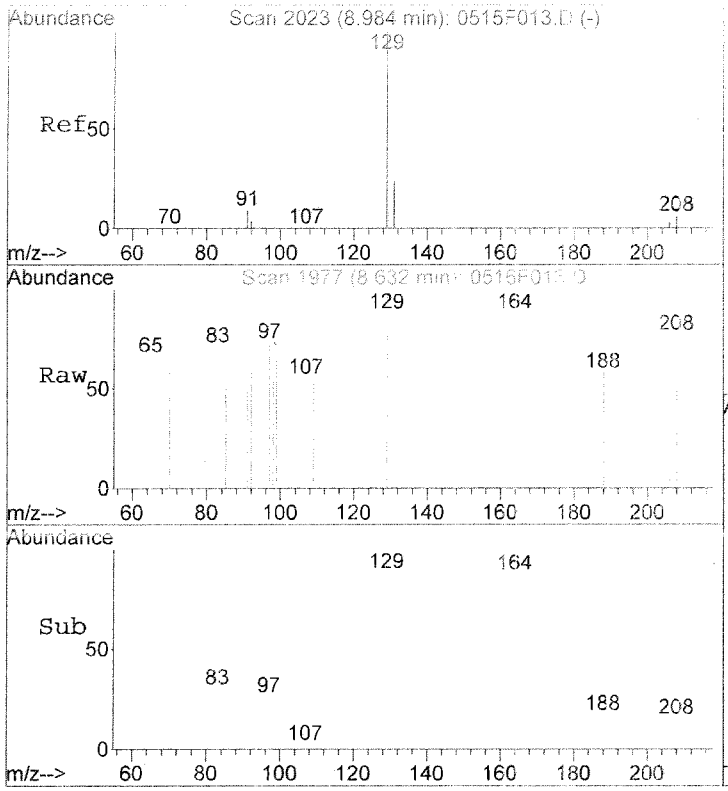


#16
1,1,2-Trichloroethane
Concen: 1.51 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 23

Ion	Ratio	Lower	Upper
83	100		
97	135.7	84.4	144.4
85	28.6	32.3	92.3#
99	64.3	39.4	99.4

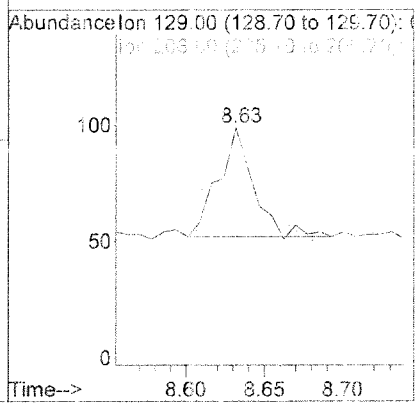


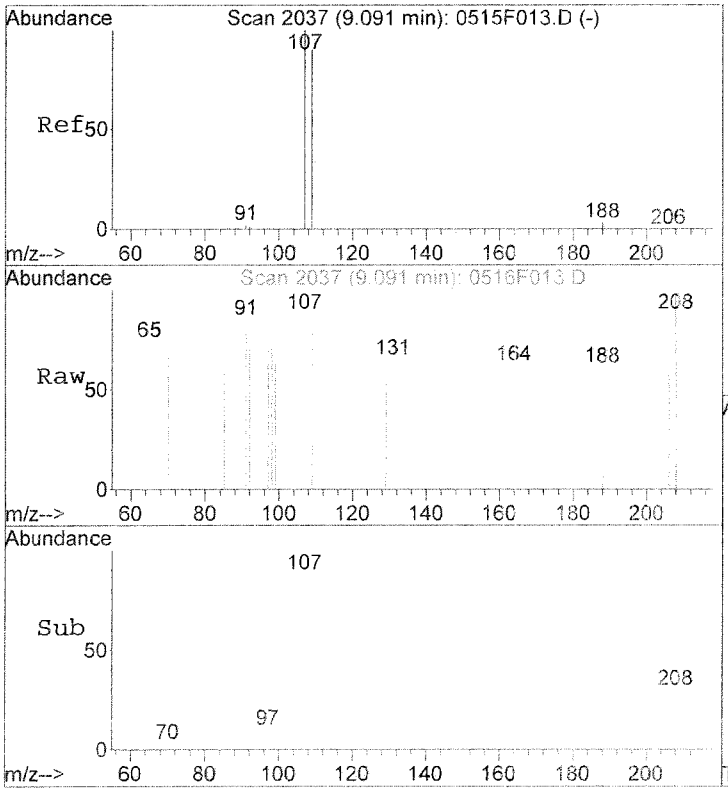


#17
Dibromochloromethane
Concen: 3.93 ng/L
RT: 8.63 min Scan# 1977
Delta R.T. -0.35 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:129 Resp: 74

Ion	Ratio	Lower	Upper
129	100		
206	0.0	0.0	32.8
208	8.5	0.0	35.9

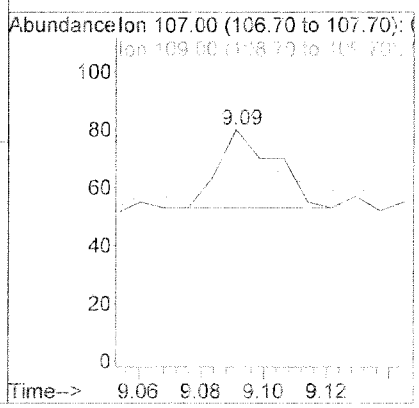


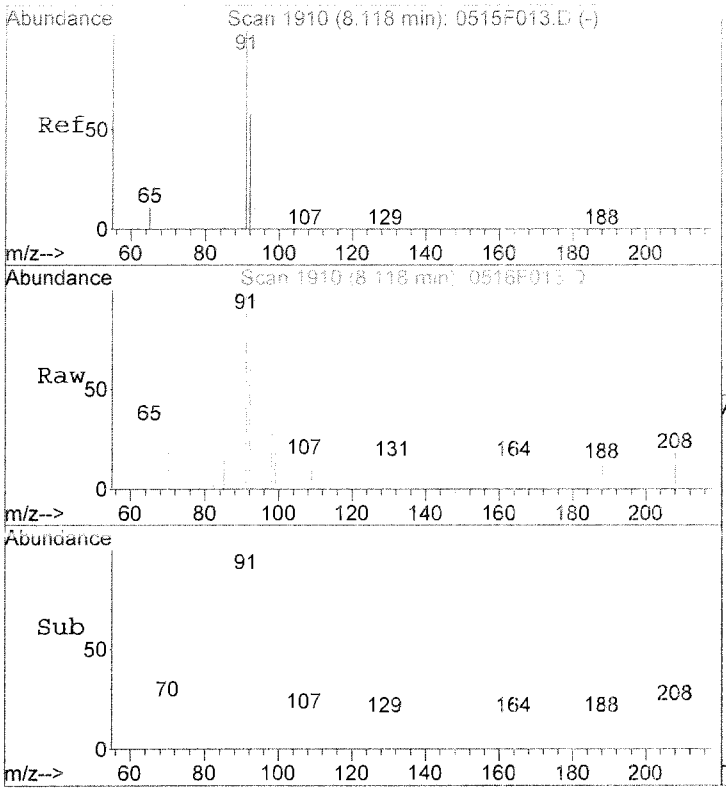


#18
1,2-Dibromoethane (EDB)
Concen: 2.29 ng/L
RT: 9.09 min Scan# 2037
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:107 Resp: 34

Ion	Ratio	Lower	Upper
107	100		
109	18.5	60.3	120.3#
188	3.7	0.0	33.5

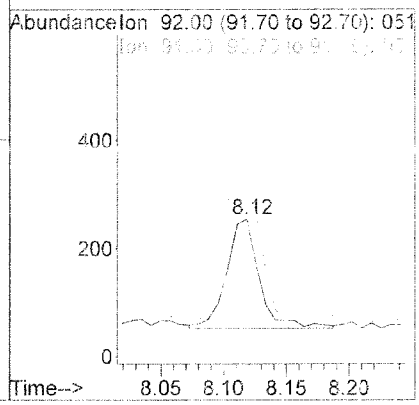


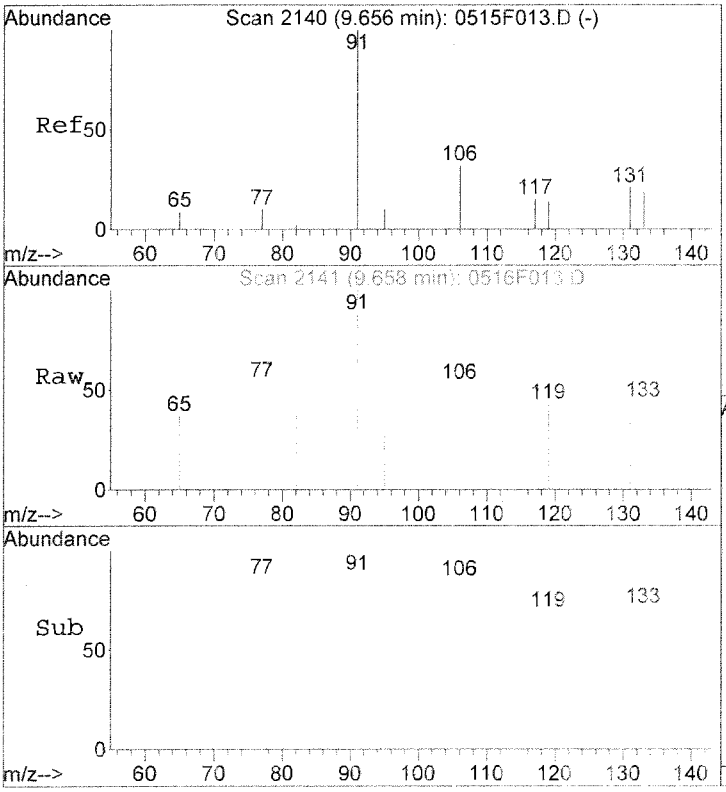


#20
Toluene
Concen: 1.22 ng/L
RT: 8.12 min Scan# 1910
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 92 Resp: 366

Ion	Ratio	Lower	Upper
92	100		
91	163.6	143.6	203.6
65	28.3	0.0	49.9

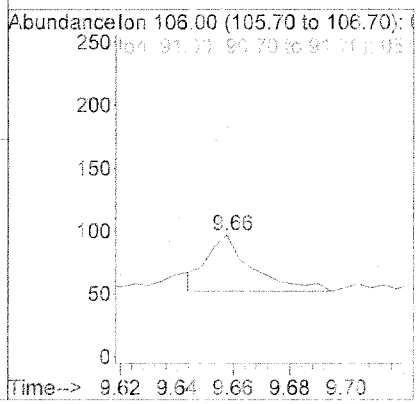


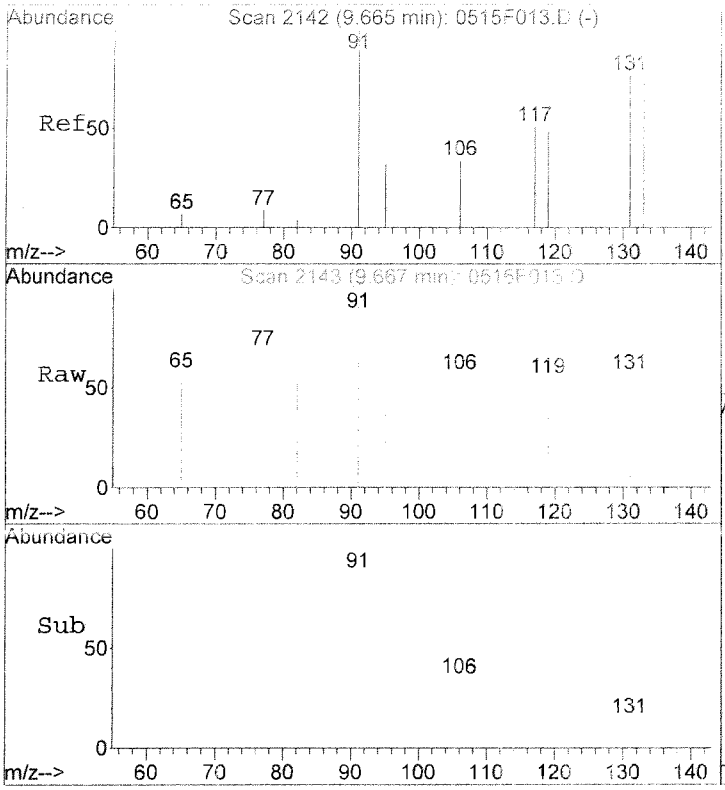


#21
Ethylbenzene
Concen: 3.18 ng/L
RT: 9.66 min Scan# 2141
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 50

Ion	Ratio	Lower	Upper
106	100		
91	264.4	285.7	345.7#
77	46.7	1.3	61.3

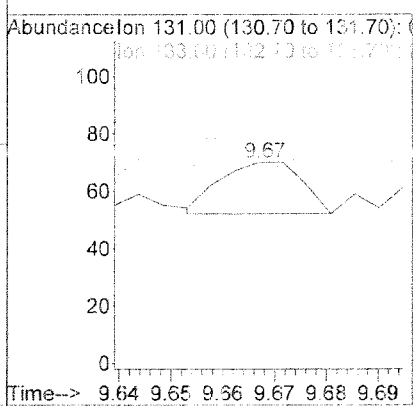


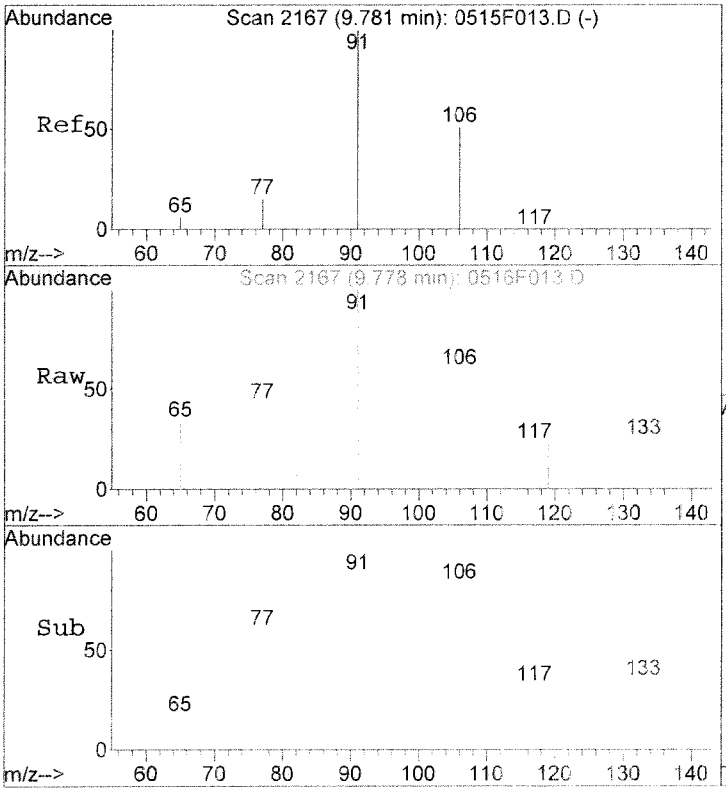


#22
1,1,1,2-Tetrachloroethane
Concen: 1.02 ng/L
RT: 9.67 min Scan# 2143
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:131 Resp: 20

Ion	Ratio	Lower	Upper
131	100		
133	33.3	74.4	114.4#
119	0.0	43.9	83.9#

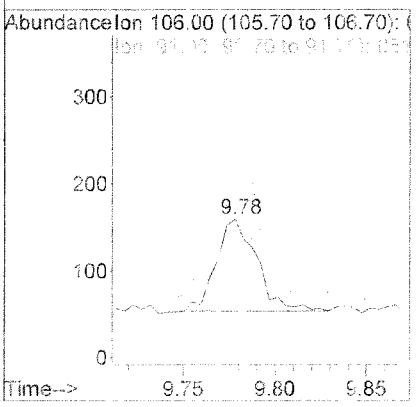


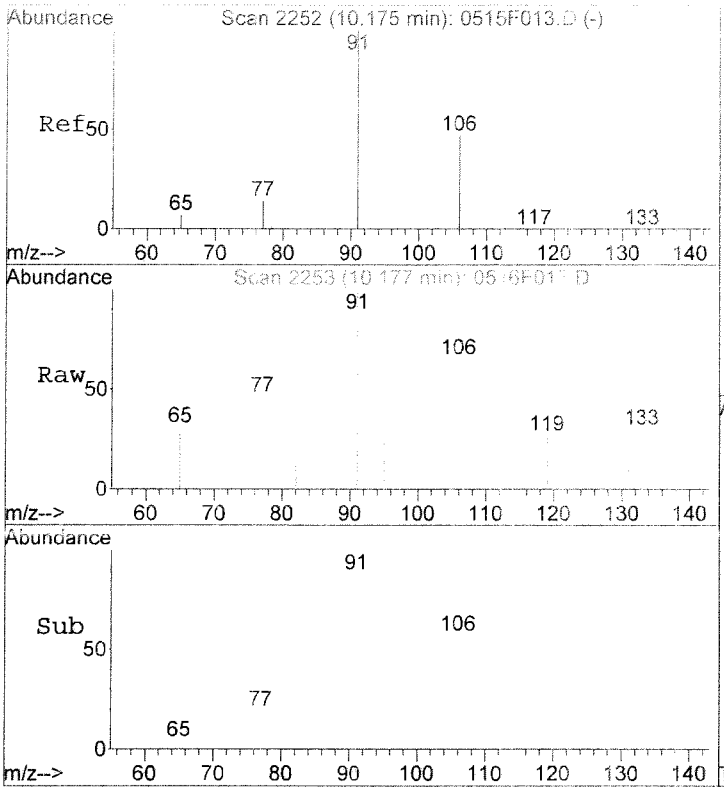


#23
m,p-Xylenes
Concen: 9.00 ng/L
RT: 9.78 min Scan# 2167
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 162

Ion	Ratio	Lower	Upper
106	100		
91	184.0	166.8	226.8
77	38.7	0.0	58.7

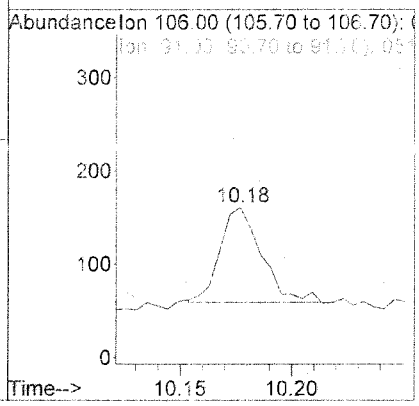


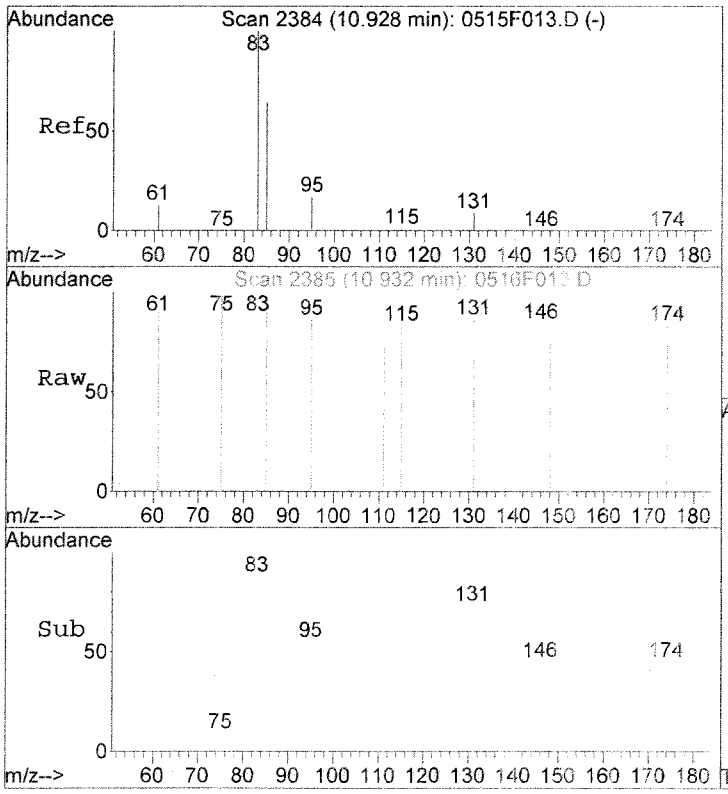


#24
o-Xylene
Concen: 7.19 ng/L
RT: 10.18 min Scan# 2253
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:106 Resp: 132

Ion	Ratio	Lower	Upper
106	100		
91	171.6	184.3	244.3#
65	11.8	0.0	44.6

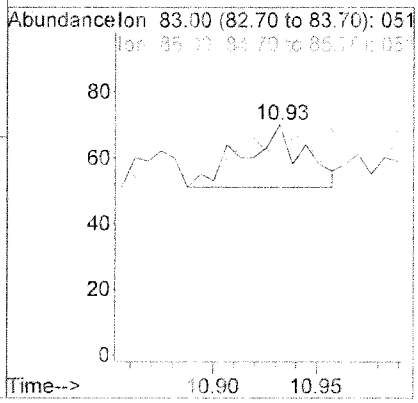


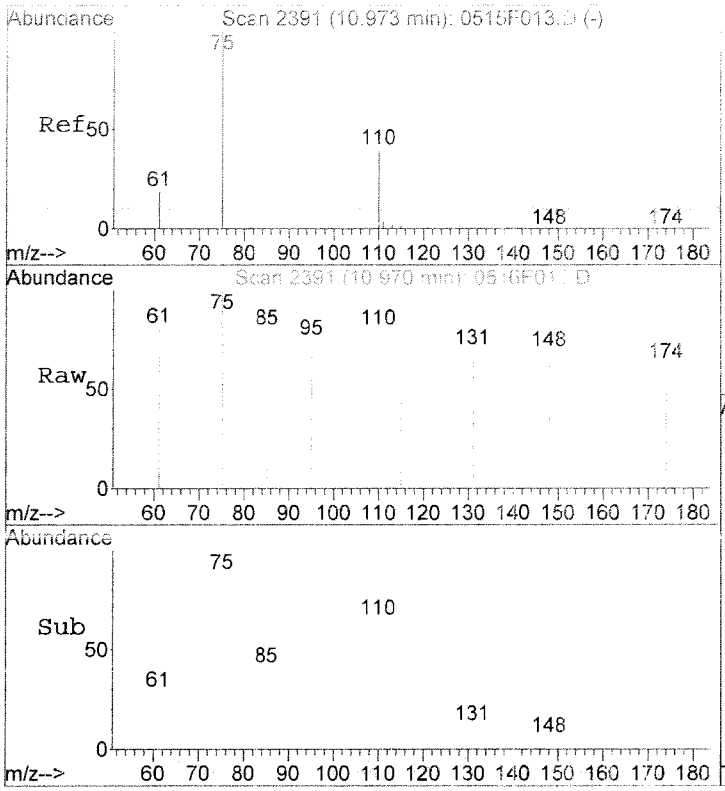


#26
1,1,2,2-Tetrachloroethane
Concen: 2.17 ng/L
RT: 10.93 min Scan# 2385
Delta R.T. 0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion: 83 Resp: 38

Ion	Ratio	Lower	Upper
83	100		
85	42.1	34.1	94.1
131	36.8	0.0	28.8#

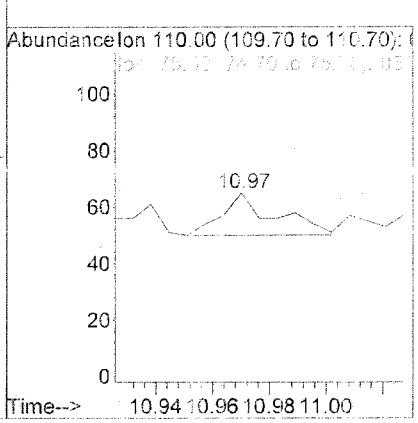


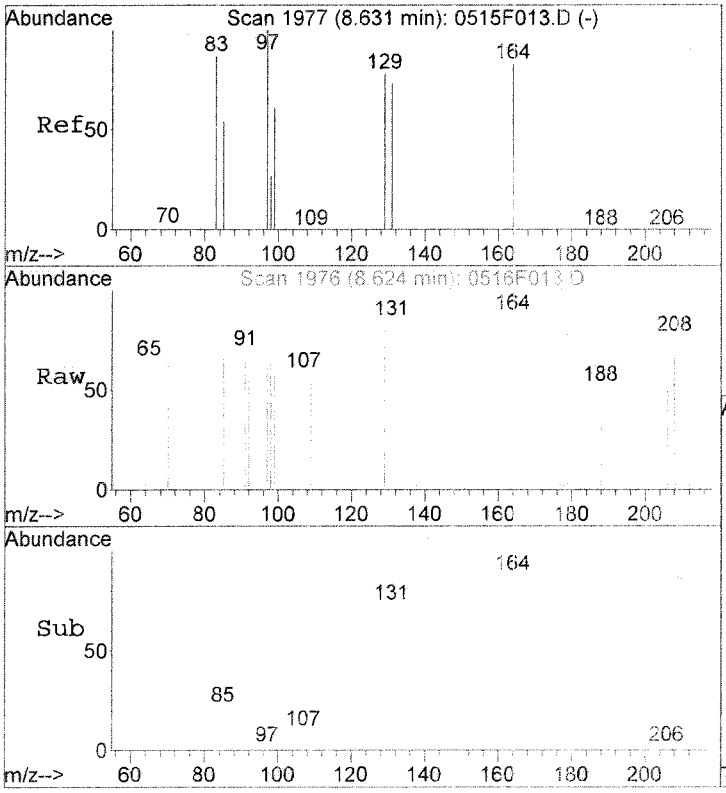


#27
1,2,3-Trichloropropane
Concen: 3.46 ng/L
RT: 10.97 min Scan# 2391
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:110 Resp: 19

Ion	Ratio	Lower	Upper
110	100		
75	126.7	230.6	270.6#
61	0.0	40.1	80.1#

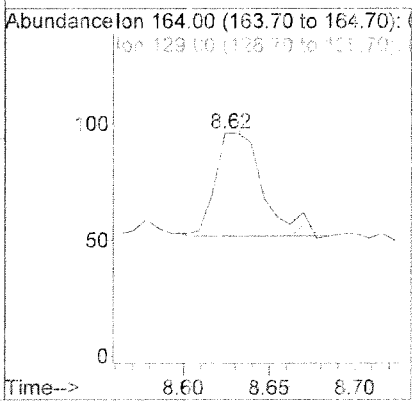


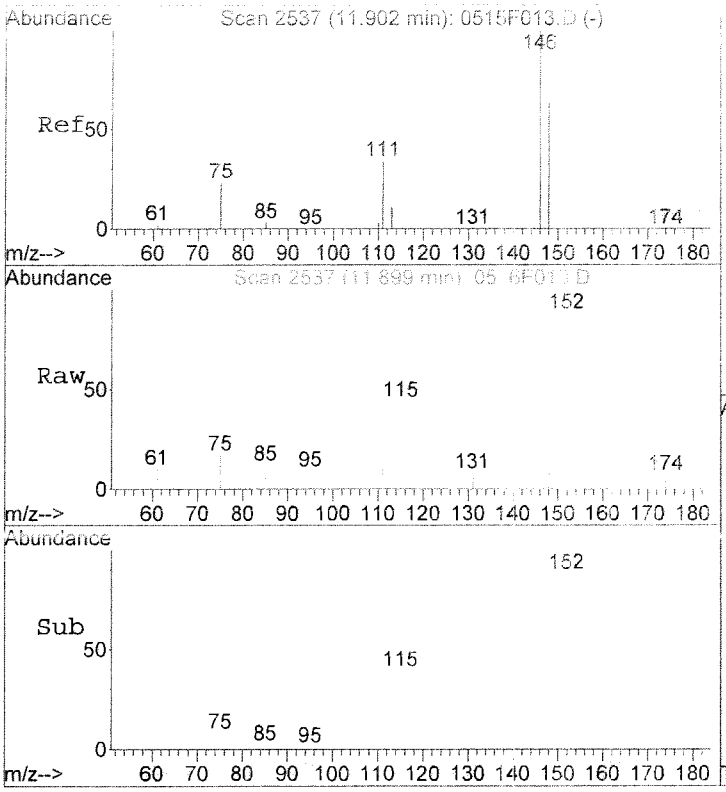


#28
Tetrachloroethene
Concen: 5.56 ng/L
RT: 8.62 min Scan# 1976
Delta R.T. -0.01 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:164 Resp: 85

Ion	Ratio	Lower	Upper
164	100		
129	56.8	63.1	123.1#
131	63.6	57.4	117.4

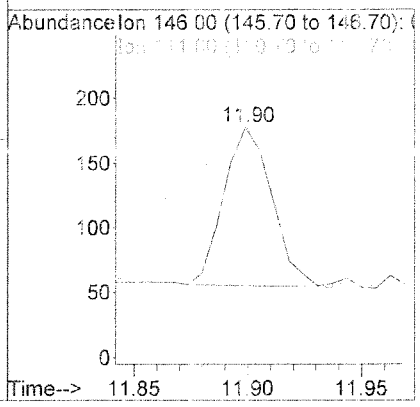




#30
1,4-Dichlorobenzene
Concen: 6.89 ng/L
RT: 11.90 min Scan# 2537
Delta R.T. -0.00 min
Lab File: 0516F013.D
Acq: 16 May 2017 04:08 pm

Tgt Ion:146 Resp: 180

Ion	Ratio	Lower	Upper
146	100		
111	36.1	4.0	64.0
148	86.1	34.3	94.3



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F010.D
Lab ID: KWG1704141-1
RunType: LCS
Matrix: WATER

Date Acquired: 05/16/2017 14:43
Date Quantitated: 05/16/2017 15:13
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NC
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: Ko Shelley

Secondary Review:

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F010.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:43	**Quant Date:**	05/16/2017 15:10	**Vial:**	8
Run Type:	LCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-1			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604862	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:			
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Method**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	58644	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	39127	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	18416	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19719	909.09	91	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	47162	1,008	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	14476	831.64	83	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	66304	1,975	1980		
1	Vinyl Chloride	1.33		0.00	62	65973	2,022	2020		
1	1,1-Dichloroethene	2.43	0.01	0.00	96	36052	1,987	1990		
1	Methylene Chloride	3.08	0.01	0.00	84	51307	2,020	2020		
1	trans-1,2-Dichloroethene	3.36		0.00	96	40499	1,969	1970		
1	cis-1,2-Dichloroethene	4.95		0.00	96	38412	1,958	1960		
1	Chloroform	5.39		0.00	83	85949	2,038	2040		
1	Carbon Tetrachloride	5.66		0.00	117	56845	2,043	2040		
1	Benzene	5.97		0.00	78	151781	1,894	1890		
1	1,2-Dichloroethane	6.12		0.00	62	55698	1,863	1860		
1	Trichloroethene (TCE)	6.74		0.00	95	40211	2,040	2040		
1	Bromodichloromethane	7.36		0.00	83	52915	1,874	1870		
1	1,1,2-Trichloroethane	8.63		0.00	83	29227	1,849	1850		
1	Dibromochloromethane	8.98		0.00	129	35099	1,792	1790		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	29187	1,889	1890		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F010.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:43	**Quant Date:**	05/16/2017 15:13	**Vial:**	8
Run Type:	LCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-1			**Soln Conc. Units:**	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11		0.00	92	67393	1.963	1960		
2	Ethylbenzene	9.65		0.00	106	32989	1.992	1990		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	39185	1.899	1900		
2	m,p-Xylenes	9.78		0.00	106	78163	4.123	4120		
2	o-Xylene	10.18		0.00	106	39126	2.023	2020		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	32750	1.777	1780		
2	1,2,3-Trichloropropane	10.97		0.00	110	10584	1.832	1830		
2	Tetrachloroethene (PCE)	8.63		0.00	164	32099	1.994	1990		
3	1,4-Dichlorobenzene	11.90		0.00	146	70690	2.127	2130		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Lab Control Spike Summary Report

Lab Control Spike Information — ListJoinID : LI18885

Data File:	I:\MS30\DATA\051617_SIM\0516F010.D	**Instrument:**	MS30
Lab ID:	KWG1704141-1	**Dilution:**	1
Client ID:	Lab Control Sample	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/16/2017 14:43
Matrix:	WATER	**Quant Date:**	05/16/2017 15:10

Duplicate Lab Control Spike Information

Data File:	I:\MS30\DATA\051617_SIM\0516F011.D	**Instrument:**	MS30
Lab ID:	KWG1704141-2	**Dilution:**	1
Client ID:	Duplicate Lab Control Sample	**Units:**	ng/L
Prod Code:	8260C VOC SIM F	**Acqu Date:**	05/16/2017 15:13
Matrix:	WATER	**Quant Date:**	05/16/2017 16:09

	LCS			DLCS					
Parameter Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	2020	2000	101	2030	2000	102	70-136	1	20

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Data File : I:\MS30\DATA\051617_SIM\0516F010.D Vial: 8
Acq On : 16 May 2017 02:43 pm Operator: GH
Sample : SIM LCS Inst : MS30
Misc : Multipir: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 15:10:15 2017 Quant Results File: 051517MS30_8260SIM.RES

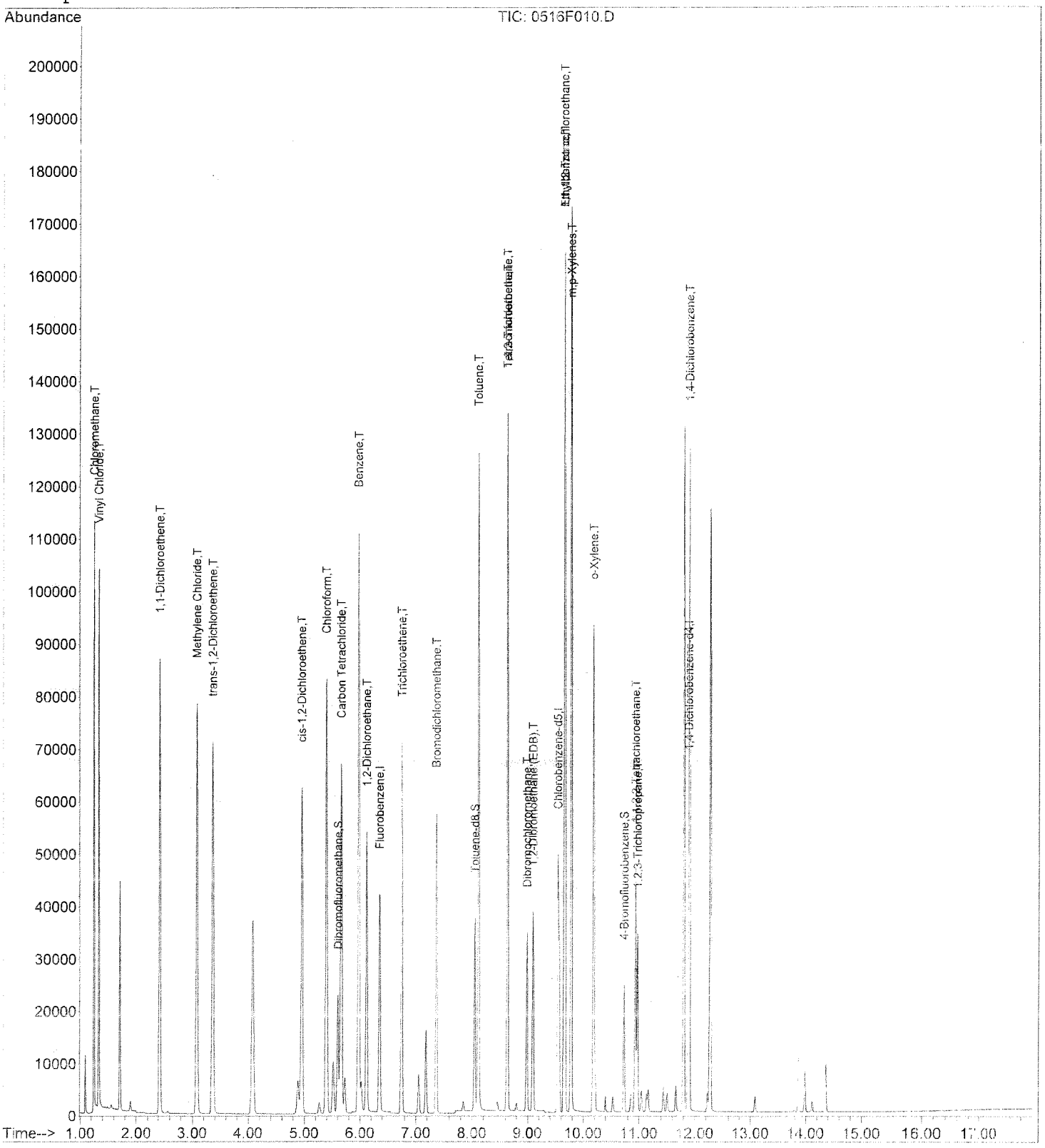
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	58644	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	39127	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	18416	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	19719	909.09 ng/L	0.00
Spiked Amount 1000.000			Recovery = 90.91%		
15) Toluene-d8	8.05	98	47162	1003.26 ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.83%		
25) 4-Bromofluorobenzene	10.73	95	14476	831.64 ng/L	0.00
Spiked Amount 1000.000			Recovery = 83.16%		
Target Compounds					Qvalue
2) Chloromethane	1.25	50	66304	1975.30 ng/L	99
3) Vinyl Chloride	1.33	62	65973	2022.47 ng/L	99
4) 1,1-Dichloroethene	2.43	96	36052	1987.48 ng/L	100
5) Methylene Chloride	3.08	84	51307	2020.19 ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	40499	1968.69 ng/L	98
7) cis-1,2-Dichloroethene	4.95	96	38412	1958.35 ng/L	97
8) Chloroform	5.39	83	85949	2038.05 ng/L	99
10) Carbon Tetrachloride	5.66	117	56845	2042.52 ng/L	100
11) Benzene	5.97	78	151781	1893.55 ng/L	99
12) 1,2-Dichloroethane	6.12	62	55698	1862.70 ng/L	99
13) Trichloroethene	6.74	95	40211	2039.72 ng/L	99
14) Bromodichloromethane	7.36	83	52915	1873.60 ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	29227	1848.95 ng/L	98
17) Dibromochloromethane	8.98	129	35099	1791.89 ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	29187	1888.99 ng/L	98
20) Toluene	8.11	92	67393	1962.54 ng/L	98
21) Ethylbenzene	9.65	106	32989	1991.69 ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	39185	1898.78 ng/L	99
23) m,p-Xylenes	9.78	106	78163	4122.52 ng/L	96
24) o-Xylene	10.18	106	39126	2023.29 ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	32750	1777.26 ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	10584	1831.89 ng/L	91
28) Tetrachloroethene	8.63	164	32099	1993.85 ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	70690	2127.20 ng/L	97

(#) = qualifier out of range (m) = manual integration
0516F010.D 051517MS30_8260SIM.M Mon May 22 11:48:16 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F010.D Vial: 8
Acq On : 16 May 2017 02:43 pm Operator: GH
Sample : SIM LCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 15:10 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F011.D
Lab ID: KWG1704141-2
RunType: DLCS
Matrix: WATER

Date Acquired: 05/16/2017 15:13
Date Quantitated: 05/16/2017 16:09
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	
Continuing Calibration Recovery	1,1,2-Trichloroethane	-21.8	NA	20	
	Dibromochloromethane	-20.9	NA	20	
	1,2-Dibromoethane (EDB)	-21.0	NA	20	
	1,1,2,2-Tetrachloroethane	-26.8	NA	20	
	1,2,3-Trichloropropane	-29.0	NA	20	

Primary Review: KS 5/19/17

Secondary Review: NJ

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F011.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 15:13	**Quant Date:**	05/16/2017 16:07	**Vial:**	9
Run Type:	DLCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-2			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260C VOC SIM F	**Collect Date:**		**Receive Date:**	05/22/2017

Analysis Lot:	KWG1703959	**Prep Lot:**	KWG1704141	**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**	EPA 5030B		
Prep Ref:	1604863	**Prep Date:**	05/22/2017		

Quant Method:	J:\MS27\METHODS\051517MS30_8	**Calibration ID:**	CAL15375
Title:			
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D	**Method ID:**	MJ1547
MB Ref:	J:\MS30\DATA\051617_SIM\0516F013.D	**Quant based on Method**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	59220	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	40747	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	21076	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60	0.00	0.00	113	19751	901.71	90	77-123	OK	
1	Toluene-d8	8.05	0.00	0.00	98	47658	1,009	101	74-112	OK	
2	4-Bromofluorobenzene	10.73	0.00	0.00	95	15527	856.56	86	46-118	OK	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25	0.01	0.00	50	68318	2.016	2020		
1	Vinyl Chloride	1.33		0.00	62	67020	2.035	2030		
1	1,1-Dichloroethene	2.43	0.01	0.00	96	36658	2.001	2000		
1	Methylene Chloride	3.08	0.01	0.00	84	55174	2.151	2150		
1	trans-1,2-Dichloroethene	3.36		0.00	96	41995	2.022	2020		
1	cis-1,2-Dichloroethene	4.95		0.00	96	40427	2.041	2040		
1	Chloroform	5.39		0.00	83	90174	2.117	2120		
1	Carbon Tetrachloride	5.66		0.00	117	57417	2.043	2040		
1	Benzene	5.97		0.00	78	159999	1.977	1980		
1	1,2-Dichloroethane	6.12		0.00	62	57995	1.921	1920		
1	Trichloroethene (TCE)	6.75	0.01	0.00	95	40926	2.056	2060		
1	Bromodichloromethane	7.36		0.00	83	56116	1.968	1970		
1	1,1,2-Trichloroethane	8.63		0.00	83	30187	1.891	1890		
1	Dibromochloromethane	8.98		0.00	129	37213	1.881	1880		
1	1,2-Dibromoethane (EDB)	9.09		0.00	107	30199	1.935	1940		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

* Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F011.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 15:13	**Quant Date:**	05/16/2017 16:09	**Vial:**	9
Run Type:	DLCS	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1704141-2			**Soln Conc. Units:**	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11		0.00	92	71530	2.000	2000		
2	Ethylbenzene	9.66	0.01	0.00	106	35239	2.043	2040		
2	1,1,1,2-Tetrachloroethane	9.67		0.00	131	41745	1.942	1940		
2	m,p-Xylenes	9.78		0.00	106	83552	4.232	4230		
2	o-Xylene	10.18		0.00	106	42330	2.102	2100		
2	1,1,2,2-Tetrachloroethane	10.93		0.00	83	34256	1.785	1790		
2	1,2,3-Trichloropropane	10.97		0.00	110	10726	1.783	1780		
2	Tetrachloroethene (PCE)	8.63		0.00	164	33932	2.024	2020		
3	1,4-Dichlorobenzene	11.90		0.00	146	77228	2.031	2030		

Prep Amount: 10 ml **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: check for co-elution

Data File : I:\MS30\DATA\051617_SIM\0516F011.D Vial: 9
Acq On : 16 May 2017 03:13 pm Operator: GH
Sample : SIM DLCS Inst : MS30
Misc : Multipl: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 16:09:44 2017 Quant Results File: 051517MS30_8260SIM.RES

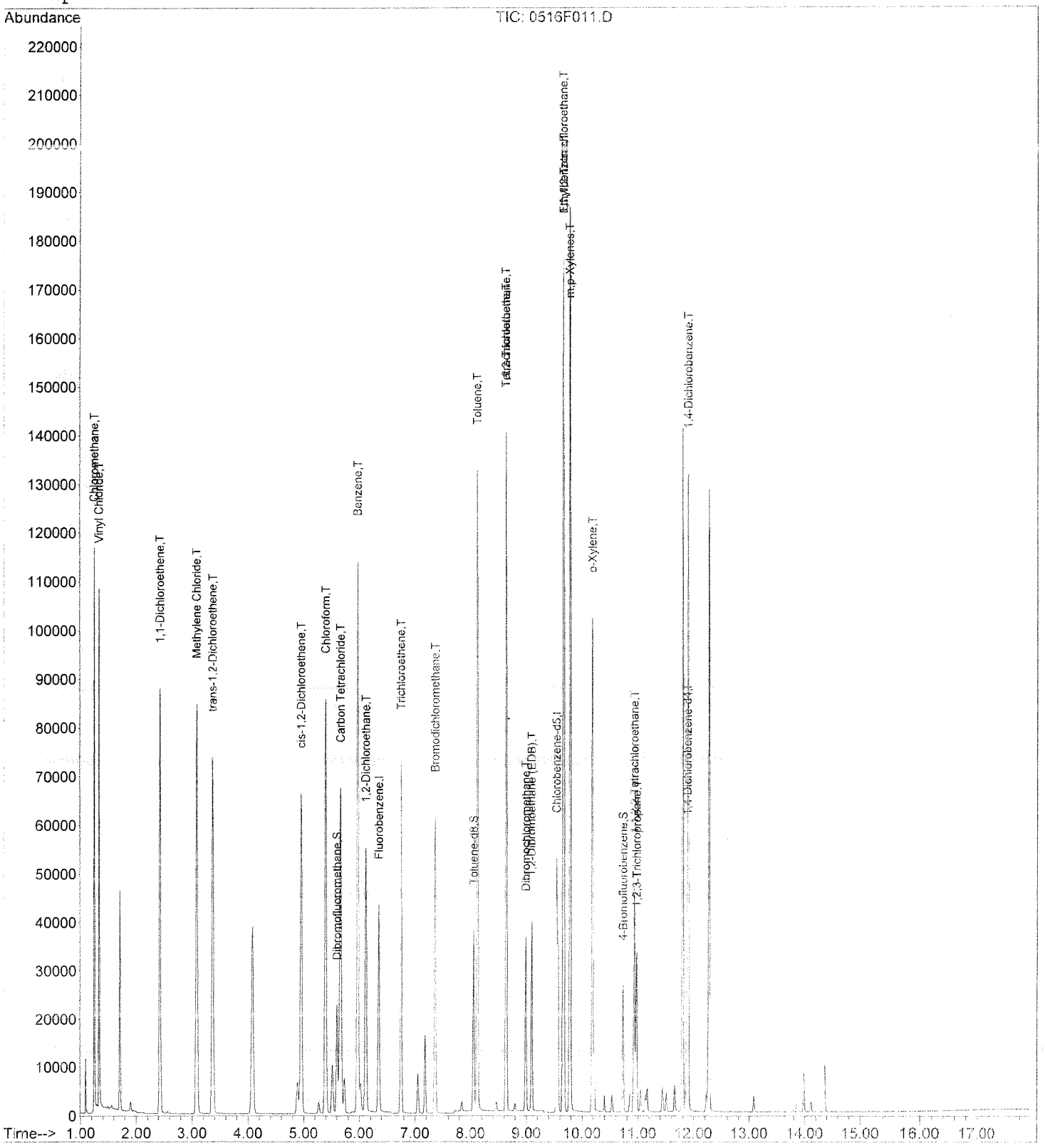
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	59220	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	40747	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	21076	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19751	901.71	ng/L	0.00
Spiked Amount 1000.000			Recovery = 90.17%			
15) Toluene-d8	8.05	98	47658	1008.96	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.90%			
25) 4-Bromofluorobenzene	10.73	95	15527	856.56	ng/L	0.00
Spiked Amount 1000.000			Recovery = 85.66%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	68318	2015.50	ng/L	99
3) Vinyl Chloride	1.33	62	67020	2034.58	ng/L	99
4) 1,1-Dichloroethene	2.43	96	36658	2001.24	ng/L	99
5) Methylene Chloride	3.08	84	55174	2151.32	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	41995	2021.56	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	40427	2041.03	ng/L	97
8) Chloroform	5.39	83	90174	2117.44	ng/L	99
10) Carbon Tetrachloride	5.66	117	57417	2043.01	ng/L	100
11) Benzene	5.97	78	159999	1976.65	ng/L	100
12) 1,2-Dichloroethane	6.12	62	57995	1920.65	ng/L	99
13) Trichloroethene	6.75	95	40926	2055.79	ng/L	98
14) Bromodichloromethane	7.36	83	56116	1967.61	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	30187	1891.10	ng/L	99
17) Dibromochloromethane	8.98	129	37213	1881.34	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	30199	1935.47	ng/L	99
20) Toluene	8.11	92	71530	2000.19	ng/L	97
21) Ethylbenzene	9.66	106	35239	2042.95	ng/L	99
22) 1,1,1,2-Tetrachloroethane	9.67	131	41745	1942.41	ng/L	98
23) m,p-Xylenes	9.78	106	83552	4231.55	ng/L	100
24) o-Xylene	10.18	106	42330	2101.95	ng/L	99
26) 1,1,2,2-Tetrachloroethane	10.93	83	34256	1785.08	ng/L	100
27) 1,2,3-Trichloropropane	10.97	110	10726	1782.65	ng/L	98
28) Tetrachloroethene	8.63	164	33932	2023.91	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	77228	2030.64	ng/L	100

(#) = qualifier out of range (m) = manual integration
0516F011.D 051517MS30_8260SIM.M Mon May 22 11:48:50 2017 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F011.D Vial: 9
Acq On : 16 May 2017 03:13 pm Operator: GH
Sample : SIM DLCS Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 16:09 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



0516F011.D 051517MS30_8260SIM.M Mon May 22 11:48:51 2017 Page 2

545356

Date: 5/16/17

By: JM

ALS Environmental
Injection Log
MS30 - Agilent 5977B

Tune File: 35B.sfune.u

New Tune: No

IS/SS Std. ID: 86VOA 536 6/11/17

CCV Std ID: 86VOA·36D 5/22/17

MS/DMS/LCS/ICV Std ID: I

BFB Std. ID: 86VOA·33D 6/11/17

ICAL Date: 5/15/17 Cal 15375

Second RV: JM

LIMS ID: KWG1703159(A) / 4141

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	051617B09	SIMTUNE.M	4 µL→40 mL		
2	SIM CCV	9	8260SIM.M	2 µL→50 mL		
3	LCS	10				
4	DLCS	11				
5	LB	12				
6	MB	13				
7	4569-5TB	14				041117
8	1	15				
9	2	16				
10	3	17				transfered due to soil
11	4	18				
12	4732-2TB	19				033017
13	4857-2TB	20				041117
14	4732-1	21				
15	3	22				transfered due to soil
16	4	23				
17	4857-1	24				
18	3	25				transfered due to soil
19	4	26				
20	5	27				
21	SIM CCV	28		2 µL→50 mL		
22						
23						
24						
25						
26						
27						

Exception Report

Data File: J:\MS30\DATA\051617_SIM\0516F008.D
Lab ID: KWG1703959-1
RunType: TUNE
Matrix: WATER

Date Acquired: 05/16/2017 15:23
Date Quantitated:
Batch ID: KWG1703959
Analysis Method: BFB
ListJoinID: LJ774

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review: KS 5/22/17

Secondary Review: JW

Data File:	J:\MS30\DATA\051617_SIM\0516F008.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 13:23	**Quant Date:**		**Vial:**	6
Run Type:	TUNE	**ListJoinID:**	LJ774	**Dilution:**	1.0
Lab ID:	KWG1703959-1			**Soln Conc. Units:**	

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	BFB	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:	GC/MS Tuning Evaluation			**Report List ID:**	LJ774
Tune Ref:				**Method ID:**	MJ159
MB Ref:				**Quant based on Report List**	

Tune Results

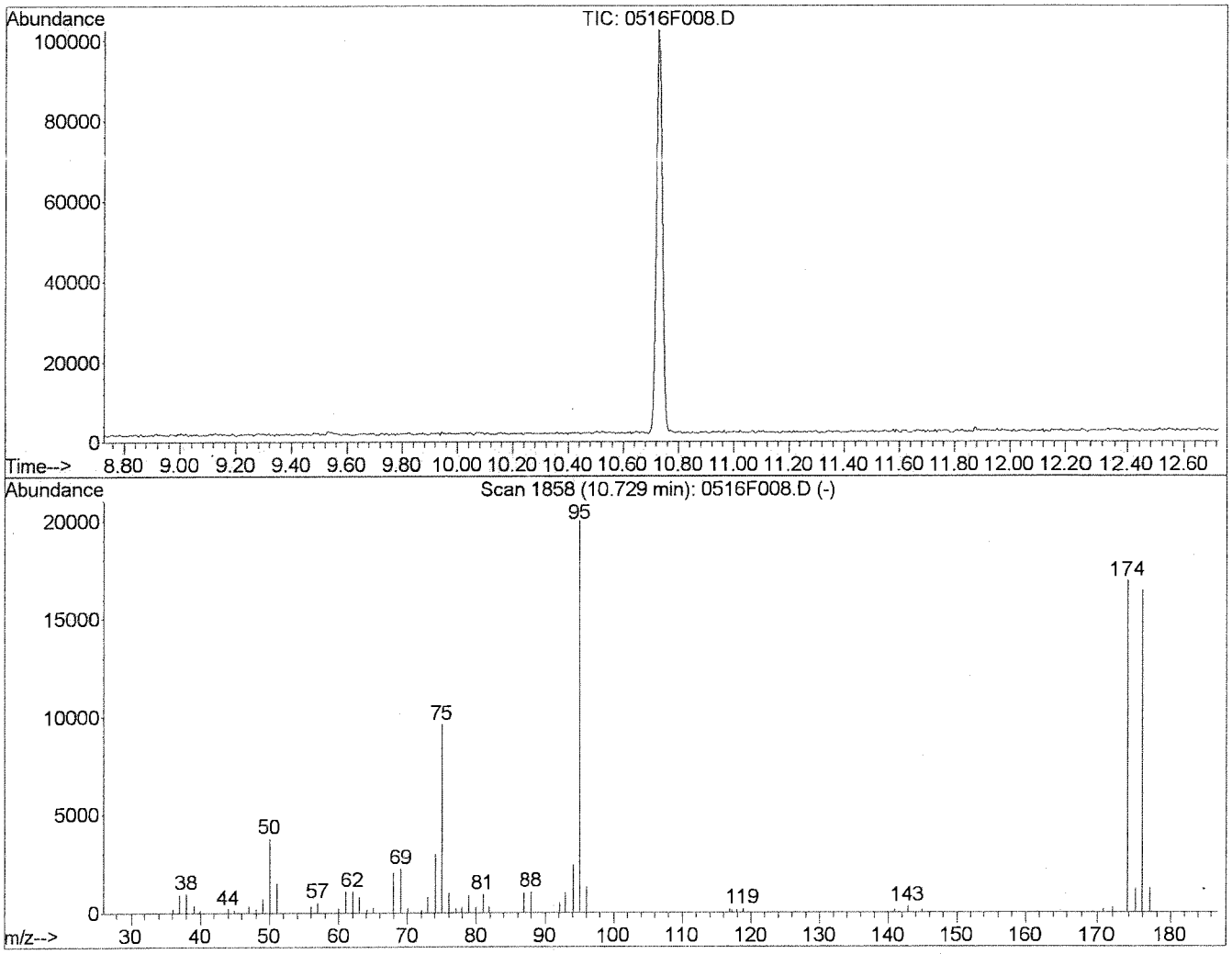
Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	18.9	3789	Pass
75	95	30	60	48.0	9597	Pass
95	95	100	100	100.0	20008	Pass
96	95	5	9	6.6	1323	Pass
173	174	0	2	0.0	0	Pass
174	95	50	120	84.4	16896	Pass
175	174	5	9	7.3	1228	Pass
176	174	95	101	97.2	16416	Pass
177	176	5	9	7.6	1245	Pass

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS30\DATA\051617_SIM\0516F008.D Vial: 6
Acq On : 16 May 2017 01:23 pm Operator: GH
Sample : 50NG BFB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM



Spectrum Information: Scan 1858 Apex - 1849 JM 5/16/17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	3789	PASS
75	95	30	60	48.0	9597	PASS
95	95	100	100	100.0	20008	PASS
96	95	5	9	6.6	1323	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	84.4	16896	PASS
175	174	5	9	7.3	1228	PASS
176	174	95	101	97.2	16416	PASS
177	176	5	9	7.6	1245	PASS

J:\MS30\DATA\051617_SIM\0516F008.D 051517MS30_8260SIM.M Tue May 16 13:4

Exception Report

Data File: J:\MS30\DATA\051617_SIM\0516F009.D
Lab ID: KWG1703959-2
RunType: CCV
Matrix: WATER

Date Acquired: 05/16/2017 14:07
Date Quantitated: 05/16/2017 14:33
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	M

Primary Review: KA 5/22/17

Secondary Review: N

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F009.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:07	**Quant Date:**	05/16/2017 14:33	**Vial:**	7
Run Type:	CCV	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-2			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15573
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:				**Quant based on**	**Method**

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	58376	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	40304	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	20058	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	19504	903.31		77-123	NA	
1	Toluene-d8	8.05			98	46545	999.64		74-112	NA	
2	4-Bromofluorobenzene	10.73			95	14647	816.89		46-118	NA	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.24			50	58402	1.748			
1	Vinyl Chloride	1.33			62	57794	1.780			
1	1,1-Dichloroethene	2.42			96	31225	1.729			
1	Methylene Chloride	3.07			84	46679	1.846			
1	trans-1,2-Dichloroethene	3.36			96	35404	1.729			
1	cis-1,2-Dichloroethene	4.95			96	33819	1.732			
1	Chloroform	5.39			83	77039	1.835			
1	Carbon Tetrachloride	5.66			117	49874	1.800			
1	Benzene	5.97			78	133379	1.672			
1	1,2-Dichloroethane	6.12			62	47849	1.608			
1	Trichloroethene (TCE)	6.74			95	34090	1.737			
1	Bromodichloromethane	7.36			83	46946	1.670			
1	1,1,2-Trichloroethane	8.63			83	24603	1.564			
1	Dibromochloromethane	8.98			129	30833	1.581			
1	1,2-Dibromoethane (EDB)	9.09			107	24287	1.579			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F009.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 14:07	**Quant Date:**	05/16/2017 14:33	**Vial:**	7
Run Type:	CCV	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-2			**Soln Conc. Units:**	ng/L

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.11			92	58545	1.655			
2	Ethylbenzene	9.65			106	29072	1.704			
2	1,1,1,2-Tetrachloroethane	9.67			131	34951	1.644			
2	m,p-Xylenes	9.78			106	68053	3.484			
2	o-Xylene	10.18			106	34152	1.715			
2	1,1,2,2-Tetrachloroethane	10.93			83	27775	1.463			
2	1,2,3-Trichloropropane	10.97			110	8449	1.420			
2	Tetrachloroethene (PCE)	8.63			164	28619	1.726			
3	1,4-Dichlorobenzene	11.90			146	61924	1.711			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL but MRL less than low point of ICAL
c: check for co-elution

Calibration ID: CAL15375
Method ID: MJ1547

DataFile: J:\MS30\DATA\051617_SIM\0516F009.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff		Sol'n Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	20	0.1	0.572	0.500	-13				
Vinyl Chloride		MS	AverageRF	20	0.1	0.556	0.495	-11				
1,1-Dichloroethene		MS	AverageRF	20	0.1	0.309	0.267	-14				
Methylene Chloride		MS	AverageRF	20	0.1	0.433	0.400	-8				
trans-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.351	0.303	-14				
cis-1,2-Dichloroethene		MS	AverageRF	20	0.1	0.334	0.290	-13				
Chloroform		MS	AverageRF	20	0.2	0.719	0.660	-8				
Dibromofluoromethane		SURR	AverageRF	20	0.01	0.370	0.334	-10				
Carbon Tetrachloride		MS	AverageRF	20	0.1	0.475	0.427	-10				
Benzene		MS	AverageRF	20	0.5	1.367	1.142	-16				
1,2-Dichloroethane		MS	AverageRF	20	0.1	0.510	0.410	-20				
Trichloroethene (TCE)		MS	AverageRF	20	0.2	0.336	0.292	-13				
Bromodichloromethane		MS	AverageRF	20	0.2	0.482	0.402	-17				
Toluene-d8		SURR	AverageRF	20	0.01	0.798	0.797	0				
Toluene		MS	AverageRF	20	0.4	0.878	0.726	-17				
1,1,2-Trichloroethane		MS	AverageRF	20	0.1	0.270	0.211	-22	*			
Tetrachloroethene (PCE)		MS	AverageRF	20	0.2	0.411	0.355	-14				
Dibromochloromethane		MS	AverageRF	20	0.1	0.334	0.264	-21	*			
1,2-Dibromoethane (EDB)		MS	AverageRF	20	0.1	0.263	0.208	-21	*			
Ethylbenzene		MS	AverageRF	20	0.1	0.423	0.361	-15				
1,1,1,2-Tetrachloroethane		MS	AverageRF	20	0.01	0.527	0.434	-18				
m,p-Xylenes		MS	AverageRF	20	0.1	0.485	0.422	-13				
o-Xylene		MS	AverageRF	20	0.3	0.494	0.424	-14				
4-Bromofluorobenzene		SURR	AverageRF	20	0.01	0.445	0.363	-18				
1,1,2,2-Tetrachloroethane		MS	AverageRF	20	0.3	0.471	0.345	-27	*			
1,2,3-Trichloropropane		MS	AverageRF	20	0.1	0.148	0.105	-29	*			
1,4-Dichlorobenzene		MS	AverageRF	20	0.5	1.804	1.544	-14				

5 Compounds Failed CCV Criteria (18.52 Percent)

Data File : J:\MS30\DATA\051617_SIM\0516F009.D Vial: 7
Acq On : 16 May 2017 02:07 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 14:33:40 2017 Quant Results File: 051517MS30_8260SIM.RES

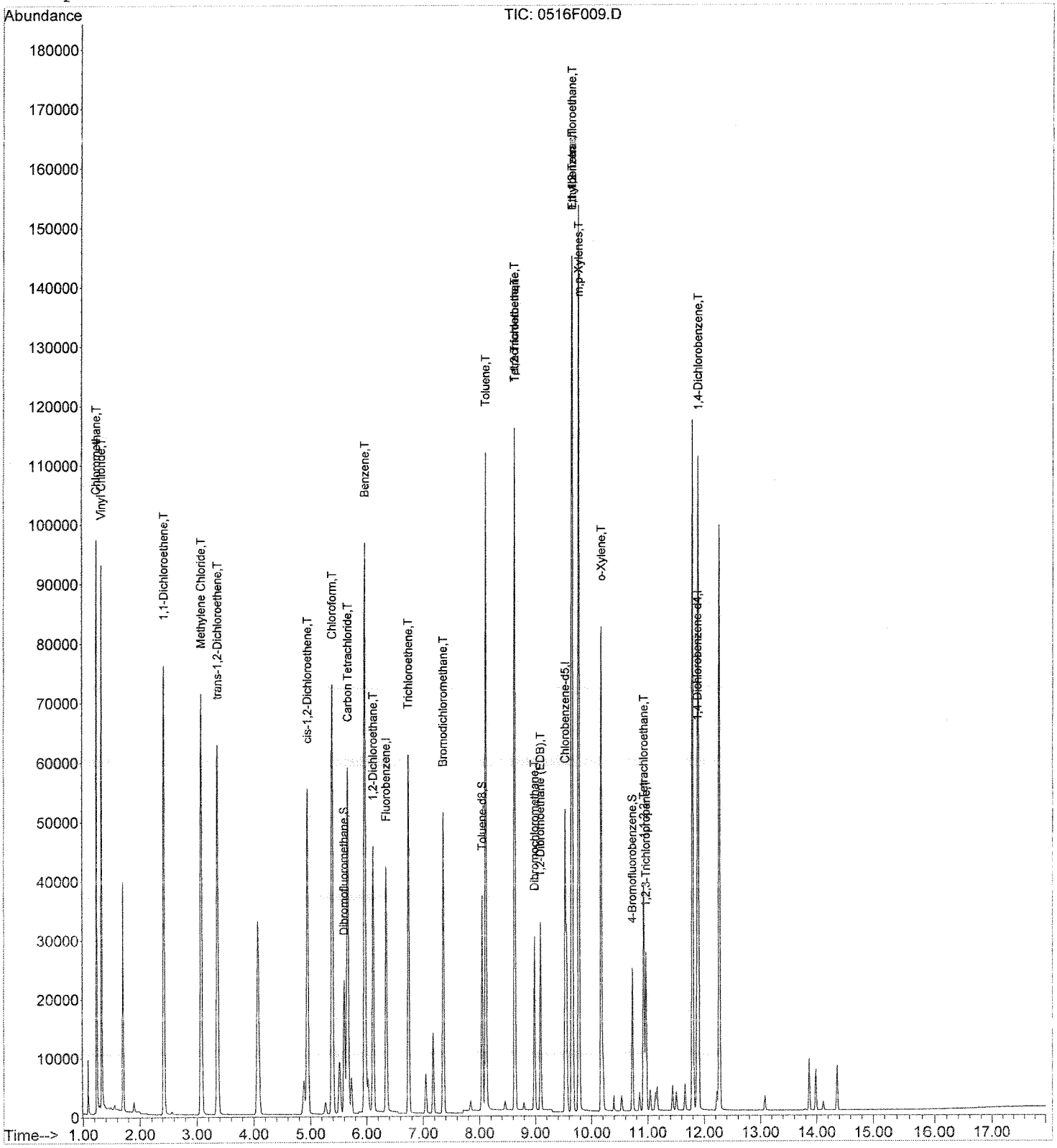
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	58376	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	40304	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	20058	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	19504	903.31	ng/L	0.00
Spiked Amount 1000.000			Recovery = 90.33%			
15) Toluene-d8	8.05	98	46545	999.64	ng/L	0.00
Spiked Amount 1000.000			Recovery = 99.96%			
25) 4-Bromofluorobenzene	10.73	95	14647	816.89	ng/L	0.00
Spiked Amount 1000.000			Recovery = 81.69%			
Target Compounds						Qvalue
2) Chloromethane	1.24	50	58402	1747.87	ng/L	99
3) Vinyl Chloride	1.33	62	57794	1779.87	ng/L	100
4) 1,1-Dichloroethene	2.42	96	31225	1729.28	ng/L	95
5) Methylene Chloride	3.07	84	46679	1846.40	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	35404	1728.92	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	33819	1732.10	ng/L	98
8) Chloroform	5.39	83	77039	1835.16	ng/L	99
10) Carbon Tetrachloride	5.66	117	49874	1800.27	ng/L	99
11) Benzene	5.97	78	133379	1671.61	ng/L	98
12) 1,2-Dichloroethane	6.12	62	47849	1607.55	ng/L	99
13) Trichloroethene	6.74	95	34090	1737.17	ng/L	99
14) Bromodichloromethane	7.36	83	46946	1669.88	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	24603	1563.57	ng/L	97
17) Dibromochloromethane	8.98	129	30833	1581.33	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	24287	1579.08	ng/L	97
20) Toluene	8.11	92	58545	1655.09	ng/L	98
21) Ethylbenzene	9.65	106	29072	1703.95	ng/L	98
22) 1,1,1,2-Tetrachloroethane	9.67	131	34951	1644.15	ng/L	99
23) m,p-Xylenes	9.78	106	68053	3484.47	ng/L	98
24) o-Xylene	10.18	106	34152	1714.50	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	27775	1463.27	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	8449	1419.65	ng/L	92
28) Tetrachloroethene	8.63	164	28619	1725.78	ng/L	98
30) 1,4-Dichlorobenzene	11.90	146	61924	1710.87	ng/L	98

(#) = qualifier out of range (m) = manual integration
0516F009.D 051517MS30_8260SIM.M Tue May 16 14:35:12 2017 Page 1

Data File : J:\MS30\DATA\051617_SIM\0516F009.D Vial: 7
Acq On : 16 May 2017 02:07 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 14:33 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Exception Report

Data File: I:\MS30\DATA\051617_SIM\0516F028.D
Lab ID: KWG1703959-3
RunType: CCVA
Matrix: WATER

Date Acquired: 05/16/2017 23:01
Date Quantitated: 05/17/2017 07:59
Batch ID: KWG1703959
Analysis Method: 8260C SIM
MethodJoinID: MJ1547

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA		x
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
ICAL Analyte Recovery	Chloromethane	15.5	NA	15	NT

Primary Review: KA 5/19/17

Secondary Review: MM

Quantitation Report

Data File:	J:\MS30\DATA\051617_SIM\0516F028.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 23:01	**Quant Date:**	05/17/2017 07:59	**Vial:**	26
Run Type:	CCVA	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-3			**Soln Conc. Units:**	ng/L

Bottle ID:		**Tier:**		**Matrix:**	WATER
Prod Code:	8260B VOC_SIM_F	**Collect Date:**		**Receive Date:**	05/16/2017

Analysis Lot:	KWG1703959	**Prep Lot:**		**Report Group:**	
Analysis Method:	8260C SIM	**Prep Method:**			
Prep Ref:		**Prep Date:**			

Quant Method:	J:\MS27\METHODS\051517MS30_8			**Calibration ID:**	CAL15375
Title:					
Tune Ref:	J:\MS30\DATA\051617_SIM\0516F008.D			**Method ID:**	MJ1547
MB Ref:				**Quant based on Method**	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Fluorobenzene	6.35	0.00	96	53531	1,000.00	OK
2	Chlorobenzene-d5	9.54	0.00	117	37155	1,000.00	OK
3	1,4-Dichlorobenzene-d4	11.88	0.00	152	19884	1,000.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits		Rpt?
1	Dibromofluoromethane	5.60			113	19399	979.76		77-123	NA	
1	Toluene-d8	8.05			98	42955	1.006		74-112	NA	
2	4-Bromofluorobenzene	10.73			95	14703	889.51		46-118	NA	

Target Compounds

Final Conc. Units: ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Chloromethane	1.25			50	64215	2.096			
1	Vinyl Chloride	1.33			62	61816	2.076			
1	1,1-Dichloroethene	2.43			96	34327	2.073			
1	Methylene Chloride	3.08			84	53073	2.289			
1	trans-1,2-Dichloroethene	3.37			96	38041	2.026			
1	cis-1,2-Dichloroethene	4.95			96	36025	2.012			
1	Chloroform	5.39			83	86050	2.235			
1	Carbon Tetrachloride	5.66			117	54071	2.128			
1	Benzene	5.98			78	140684	1.923			
1	1,2-Dichloroethane	6.12			62	56307	2.063			
1	Trichloroethene (TCE)	6.75			95	36798	2.045			
1	Bromodichloromethane	7.36			83	53481	2.075			
1	1,1,2-Trichloroethane	8.63			83	29700	2.058			
1	Dibromochloromethane	8.98			129	36460	2.039			
1	1,2-Dibromoethane (EDB)	9.09			107	29255	2.074			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS30\DATA\051617_SIM\0516F028.D			**Instrument:**	MS30
Acqu Date:	05/16/2017 23:01	**Quant Date:**	05/17/2017 07:59	**Vial:**	26
Run Type:	CCVA	**MethodJoinID:**	MJ1547	**Dilution:**	1.0
Lab ID:	KWG1703959-3			**Soln Conc. Units:**	ng/L

Target Compounds **Final Conc. Units:** ng/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Toluene	8.12			92	60822	1.865			
2	Ethylbenzene	9.65			106	30067	1.912			
2	1,1,1,2-Tetrachloroethane	9.67			131	39515	2.016			
2	m,p-Xylenes	9.78			106	71108	3.949			
2	o-Xylene	10.18			106	36115	1.967			
2	1,1,2,2-Tetrachloroethane	10.93			83	35930	2.053			
2	1,2,3-Trichloropropane	10.97			110	10951	1.996			
2	Tetrachloroethene (PCE)	8.63			164	29961	1.960			
3	1,4-Dichlorobenzene	11.90			146	67634	1.885			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15375
Method ID: MJ1547
DataFile: I:\MS30\DATA\051617_SIM\0516F028.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff	Soln Conc.	True Value	% Drift
Chloromethane		MS	AverageRF	50	0.1	0.572	0.600	5			
Vinyl Chloride		MS	AverageRF	50	0.1	0.556	0.577	4			
1,1-Dichloroethene		MS	AverageRF	50	0.1	0.309	0.321	4			
Methylene Chloride		MS	AverageRF	50	0.1	0.433	0.496	14			
trans-1,2-Dichloroethene		MS	AverageRF	50	0.1	0.351	0.355	1			
cis-1,2-Dichloroethene		MS	AverageRF	50	0.1	0.334	0.336	1			
Chloroform		MS	AverageRF	50	0.2	0.719	0.804	12			
Dibromofluoromethane		SURR	AverageRF	50	0.01	0.370	0.362	-2			
Carbon Tetrachloride		MS	AverageRF	50	0.1	0.475	0.505	6			
Benzene		MS	AverageRF	50	0.5	1.367	1.314	-4			
1,2-Dichloroethane		MS	AverageRF	50	0.1	0.510	0.526	3			
Trichloroethene (TCE)		MS	AverageRF	50	0.2	0.336	0.344	2			
Bromodichloromethane		MS	AverageRF	50	0.2	0.482	0.500	4			
Toluene-d8		SURR	AverageRF	50	0.01	0.798	0.802	1			
Toluene		MS	AverageRF	50	0.4	0.878	0.818	-7			
1,1,2-Trichloroethane		MS	AverageRF	50	0.1	0.270	0.277	3			
Tetrachloroethene (PCE)		MS	AverageRF	50	0.2	0.411	0.403	-2			
Dibromochloromethane		MS	AverageRF	50	0.1	0.334	0.341	2			
1,2-Dibromoethane (EDB)		MS	AverageRF	50	0.1	0.263	0.273	4			
Ethylbenzene		MS	AverageRF	50	0.1	0.423	0.405	-4			
1,1,1,2-Tetrachloroethane		MS	AverageRF	50	0.01	0.527	0.532	1			
m,p-Xylenes		MS	AverageRF	50	0.1	0.485	0.478	-1			
o-Xylene		MS	AverageRF	50	0.3	0.494	0.486	-2			
4-Bromofluorobenzene		SURR	AverageRF	50	0.01	0.445	0.396	-11			
1,1,2,2-Tetrachloroethane		MS	AverageRF	50	0.3	0.471	0.484	3			
1,2,3-Trichloropropane		MS	AverageRF	50	0.1	0.148	0.147	0			
1,4-Dichlorobenzene		MS	AverageRF	50	0.5	1.804	1.701	-6			

Data File : I:\MS30\DATA\051617_SIM\0516F028.D Vial: 26
Acq On : 16 May 2017 11:01 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 07:59:44 2017 Quant Results File: 051517MS30_8260SIM.RES

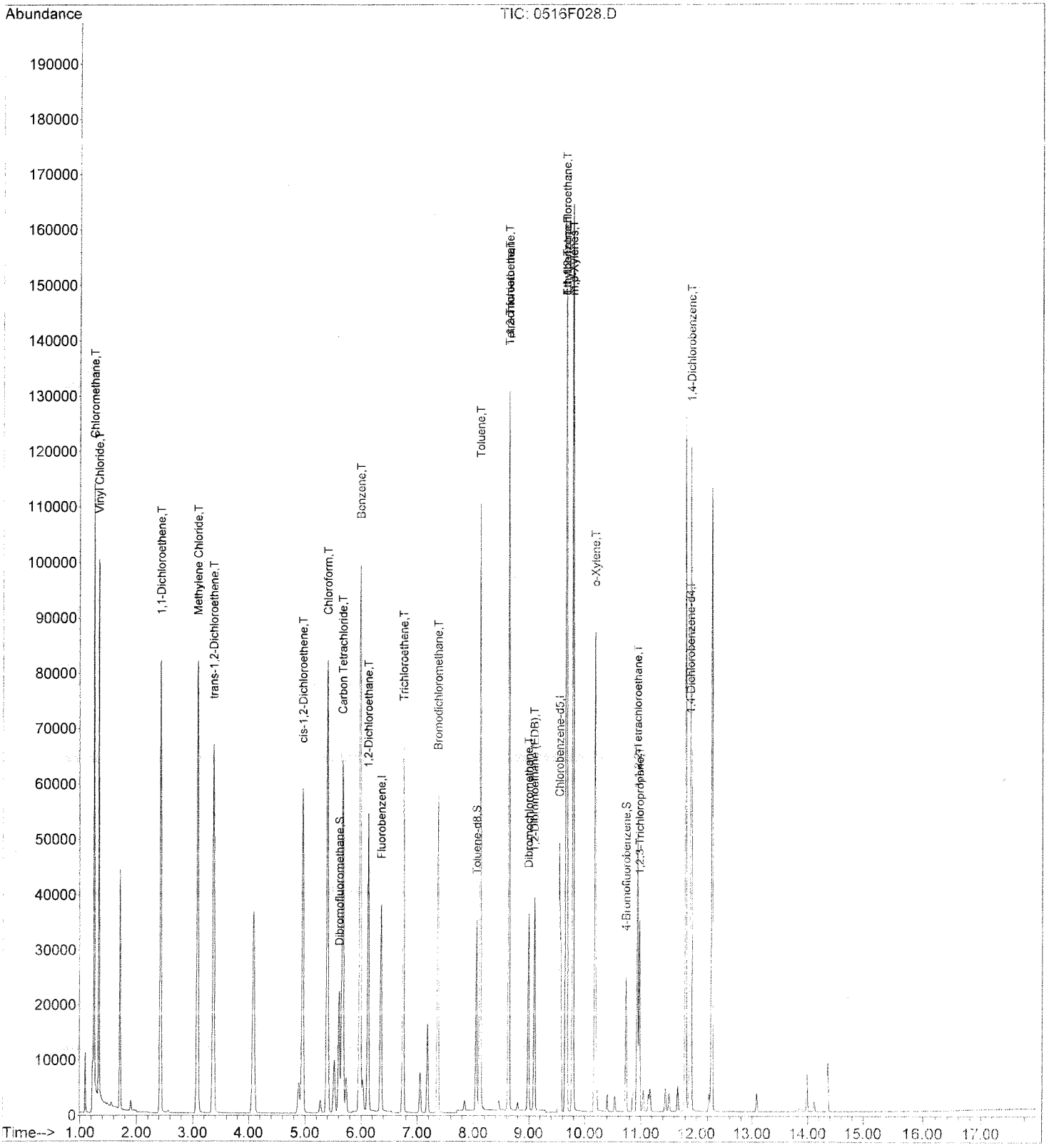
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	53531	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	37155	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	19884	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	19399	979.76	ng/L		0.00
Spiked Amount 1000.000			Recovery = 97.98%				
15) Toluene-d8	8.05	98	42955	1006.03	ng/L		0.00
Spiked Amount 1000.000			Recovery = 100.60%				
25) 4-Bromofluorobenzene	10.73	95	14703	889.51	ng/L		0.00
Spiked Amount 1000.000			Recovery = 88.95%				
Target Compounds							Qvalue
2) Chloromethane	1.25	50	64215	2095.79	ng/L		100
3) Vinyl Chloride	1.33	62	61816	2076.04	ng/L		99
4) 1,1-Dichloroethene	2.43	96	34327	2073.14	ng/L		99
5) Methylene Chloride	3.08	84	53073	2289.32	ng/L		98
6) trans-1,2-Dichloroethene	3.37	96	38041	2025.83	ng/L		100
7) cis-1,2-Dichloroethene	4.95	96	36025	2012.08	ng/L		98
8) Chloroform	5.39	83	86050	2235.34	ng/L		100
10) Carbon Tetrachloride	5.66	117	54071	2128.42	ng/L		99
11) Benzene	5.98	78	140684	1922.75	ng/L		100
12) 1,2-Dichloroethane	6.12	62	56307	2062.93	ng/L		99
13) Trichloroethene	6.75	95	36798	2044.88	ng/L		97
14) Bromodichloromethane	7.36	83	53481	2074.51	ng/L		99
16) 1,1,2-Trichloroethane	8.63	83	29700	2058.33	ng/L		99
17) Dibromochloromethane	8.98	129	36460	2039.16	ng/L		100
18) 1,2-Dibromoethane (EDB)	9.09	107	29255	2074.24	ng/L		98
20) Toluene	8.12	92	60822	1865.19	ng/L		100
21) Ethylbenzene	9.65	106	30067	1911.62	ng/L		97
22) 1,1,1,2-Tetrachloroethane	9.67	131	39515	2016.40	ng/L		99
23) m,p-Xylenes	9.78	106	71108	3949.47	ng/L		96
24) o-Xylene	10.18	106	36115	1966.71	ng/L		97
26) 1,1,2,2-Tetrachloroethane	10.93	83	35930	2053.32	ng/L		99
27) 1,2,3-Trichloropropane	10.97	110	10951	1996.00	ng/L	#	87
28) Tetrachloroethene	8.63	164	29961	1959.82	ng/L		99
30) 1,4-Dichlorobenzene	11.90	146	67634	1884.98	ng/L		99

(#) = qualifier out of range (m) = manual integration
0516F028.D 051517MS30_8260SIM.M Mon May 22 12:18:27 2017 217053113 Page 157 of 198 Page 1

Data File : I:\MS30\DATA\051617_SIM\0516F028.D Vial: 26
Acq On : 16 May 2017 11:01 pm Operator: GH
Sample : SIM CCV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 7:59 2017 Quant Results File: 051517MS30_8260SIM.RES

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Date: 5/15/17

ALS Environmental
Injection Log
MS30 - Agilent 5977B

Tune File: BFB.sttune.u

New Tune: No

By: AM

IS/SS Std. ID: 8VOA.32E 6/10/17

CCV Std ID: —

ICAL Date: 5/15/17 Cal 15375

MS/DMS/LCS/ICV Std ID: see ICAL prep

Second RV: KL 5/17/17

BFB Std. ID: 8VOA.33D 6/11/17

LIMS ID:

	Sample Name	File Name	Method	Dilution	pH<2	Comments
1	BFB	0515F002	SIMTUNE.M ~~8260SIM.M~~	4.4µl→44ml		
2	IB	3	B260SIM.M			
3	IB	4				
4	IB	5				
5	SIM ICAL 5 PPT	6		see ICAL prep		
6	10	7				
7	20	8				
8	50	9				
9	100	10				
10	500	11				
11	1000	12				
12	2000	13				
13	5000	14				
14	7000	15				
15	10000	16				
16	IB	17				
17	IB	18				
18	IB	19				
19	ICV	20		see ICALprep 2		
20	ICV	21				NR not needed
21	BFB	0516F002	SIMTUNE.M	4.4µl→44ml		
22	Mix 6 only ICV	3	B260SIM.M	2µl/2.5µl→5ml		8VOA.37B/36E 5/22/17
23						
24						
25						
26						
27						

INTIAL CALIBRATION CURVE

Date 5/15/17 Analysis 8260 SIM H2O

Prepared By [illegible] Instrument MS30

Stock Solution #1 86VOA.36E 5/22/17 Analytes Surrogate Init. Concentration 20ppm

Stock Solution #2 86VOA.36D 5/22/17 Analytes 8260 mix Init. Concentration 50 ppm

Stock Solution #3 86VOA.37A 5/22/17 Analytes 8260 low mix Init. Concentration 0.5 ppm

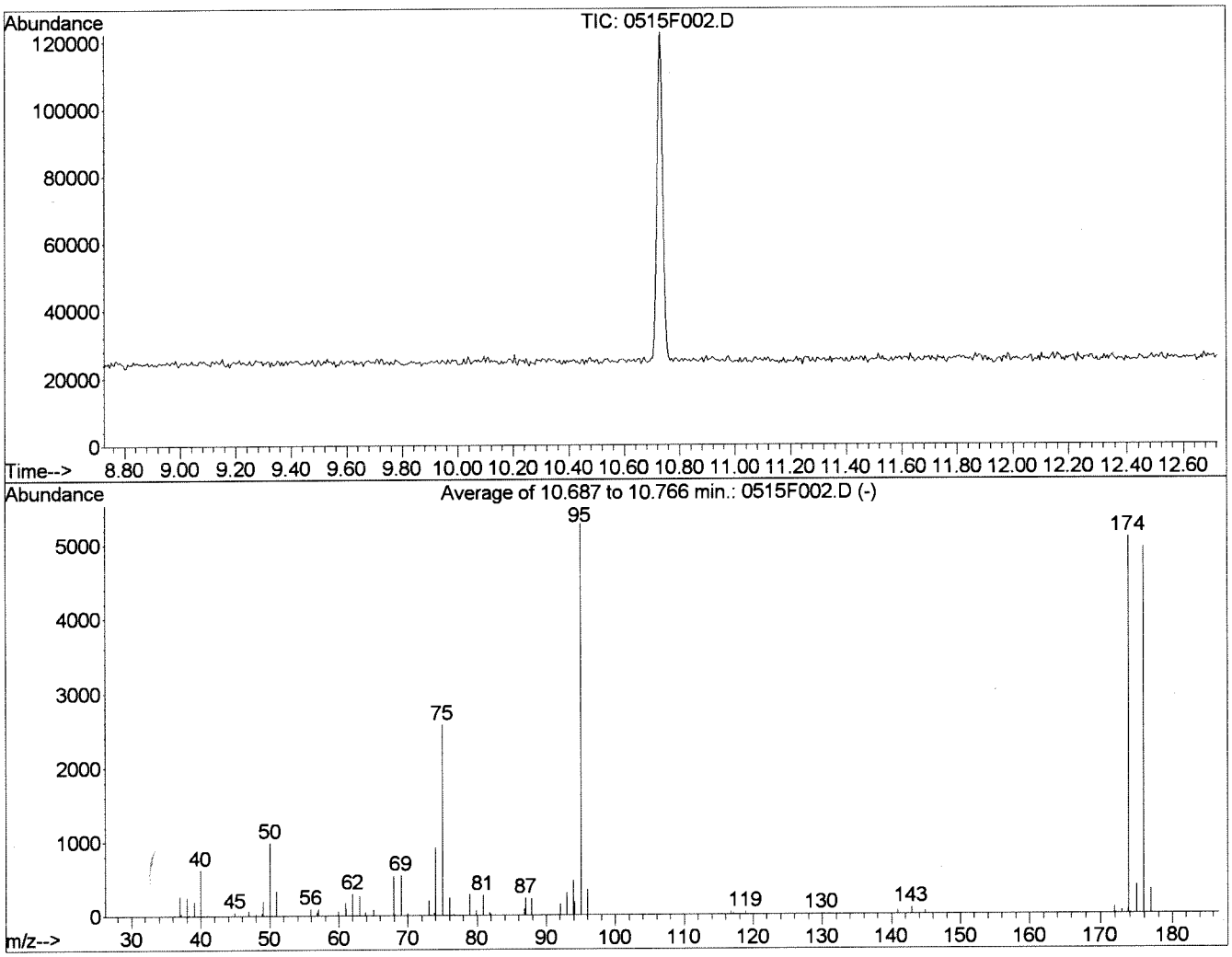
#	Aliquot of Stock Solution #1 (uL)	Final Conc. of #1 (ug/L)	Aliquot of Stock Solution #2 (uL)	Final Conc. of #2 (ug/L)	Aliquot of Stock Solution #3 (uL)	Final Conc. of #3 (ug/L)	Final Volume (mL)	Notes
1	-	-	-	-	0.5	0.005	50	
2	-	-	-	-	1.0	0.01	50	
3	-	-	-	-	2.0	0.02	50	
4	0.50	0.2	-	-	5.0	0.05	50	
5	1.0	0.4	-	-	10	0.1	50	
6	1.5	0.6	-	-	50	0.5	50	
7	2.0	0.8	1.0	1.0	-	-	50	
8 (CCV)	2.5	1.0	2.0	2.0	-	-	50	
9	5.0	2.0	5.0	5.0	-	-	50	
10	6.0	2.4	7.0	7.0	-	-	50	
11	10	4.0	10	10	-	-	50	

ICV: 2.5 µl of 20ppm Surr. (86VOA.36E 5/22/17) + 2µl of Crosscut ICV (86VOA.30A 5/16/17) to 50ml H_2O

R:\VOA\Recipes\SIM\SIM_W_ICAL

Data File : J:\MS30\DATA\051517_SIM\0515F002.D
Acq On : 15 May 2017 03:21 pm
Sample : 50NG BFB
Misc :
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM

Vial: 2
Operator: GH
Inst : MS30
Multiplr: 1.00



Spectrum Information: Average of 10.687 to 10.766 min. whole peak - 1849

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	985	PASS
75	95	30	60	48.6	2569	PASS
95	95	100	100	100.0	5285	PASS
96	95	5	9	6.6	351	PASS
173	174	0.00	2	0.9	44	PASS
174	95	50	120	96.2	5082	PASS
175	174	5	9	7.5	380	PASS
176	174	95	101	97.2	4941	PASS
177	176	5	9	6.7	331	PASS

5/15/17

KR 5/17/17

J:\MS30\DATA\051517_SIM\0515F002.D 051517MS30_8260SIM.M Mon May 15 15:4

Data File : J:\MS30\DATA\051517_SIM\0515F005.D Vial: 5
Acq On : 15 May 2017 05:09 pm Operator: GH
Sample : IB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 07:59:54 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Mon May 15 08:39:31 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	6.35	96	53793	1000.00	ng/L		0.00
19) Chlorobenzene-d5	9.54	117	36088	1000.00	ng/L		0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14292	1000.00	ng/L		0.00
System Monitoring Compounds							
9) Dibromofluoromethane	5.60	113	416	22.01	ng/L		0.00
Spiked Amount 1000.000			Recovery =	2.20%			
15) Toluene-d8	8.05	98	1258	32.38	ng/L		0.00
Spiked Amount 1000.000			Recovery =	3.24%			
25) 4-Bromofluorobenzene	10.73	95	386	26.83	ng/L		0.00
Spiked Amount 1000.000			Recovery =	2.68%			
Target Compounds							Qvalue
2) Chloromethane	1.24	50	352	11.60	ng/L		85
5) Methylene Chloride	3.08	84	584	23.13	ng/L		97
8) Chloroform	5.39	83	88	2.24	ng/L		65
11) Benzene	5.97	78	940	13.50	ng/L		92
13) Trichloroethene	6.74	95	52	2.94	ng/L	#	80
20) Toluene	8.12	92	132	4.48	ng/L		76
23) m,p-Xylenes	9.78	106	150	8.80	ng/L	#	57
24) o-Xylene	10.17	106	148	8.57	ng/L		90
28) Tetrachloroethene	8.62	164	42	2.89	ng/L	#	69
30) 1,4-Dichlorobenzene	11.90	146	150	5.80	ng/L		87

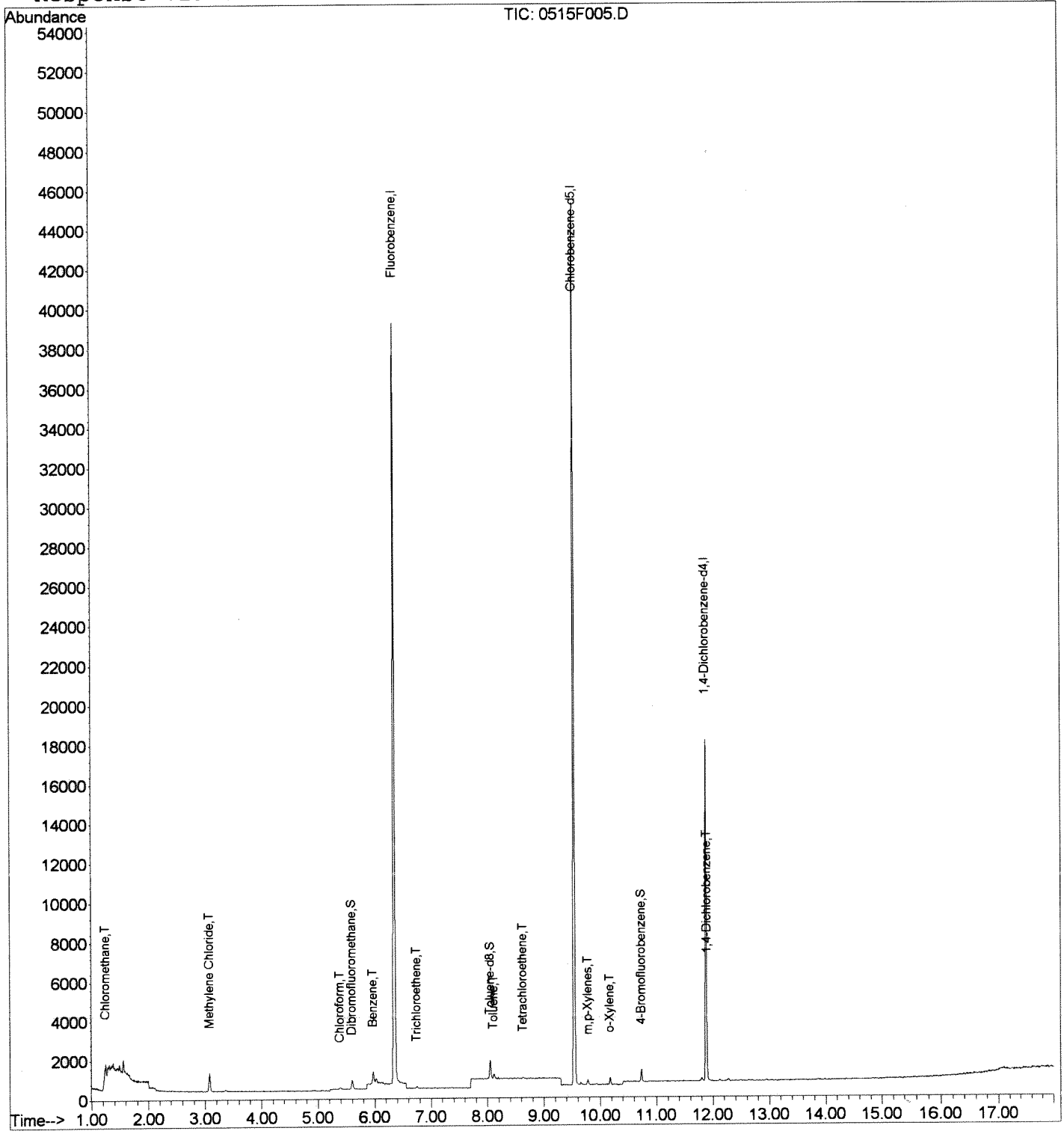
MM 5/17/17

KAB 5/17/17

(#) = qualifier out of range (m) = manual integration
0515F005.D 051517MS30_8260SIM.M Wed May 17 09:10:52 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F005.D Vial: 5
Acq On : 15 May 2017 05:09 pm Operator: GH
Sample : IB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 9:10 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:22 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

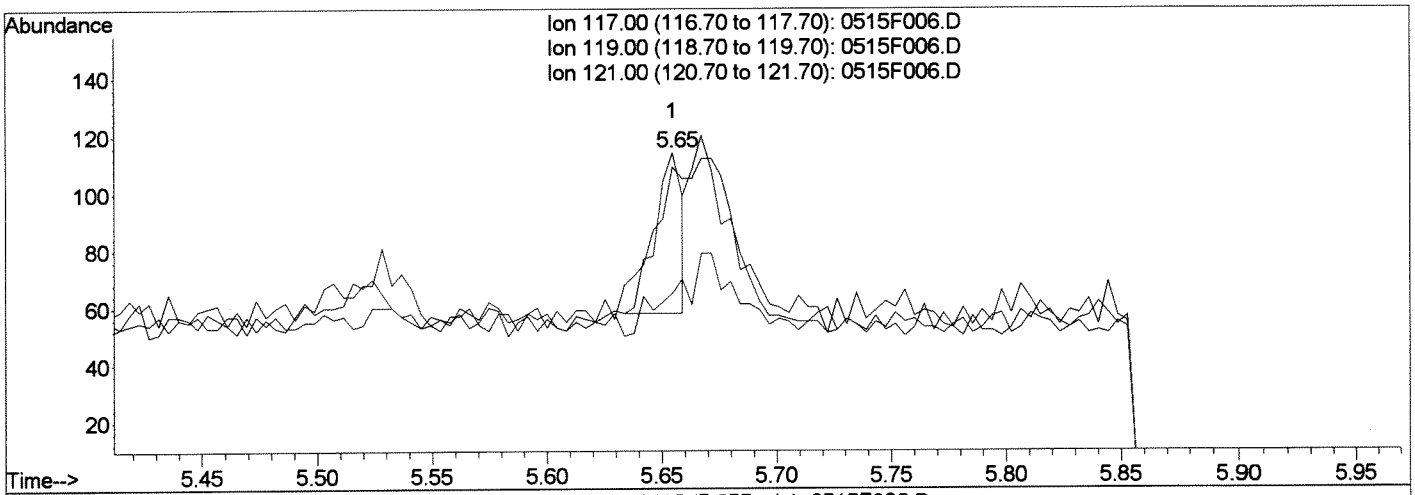
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54000	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	35910	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	14141	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	0.00	98	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	446	14.89	ng/L	98
3) Vinyl Chloride	1.33	62	186	6.44	ng/L	87
6) trans-1,2-Dichloroethene	3.36	96	161	8.91	ng/L #	71
7) cis-1,2-Dichloroethene	4.96	96	127	7.26	ng/L #	71
8) Chloroform	5.39	83	310	8.06	ng/L	96
10) Carbon Tetrachloride	5.67	117	120m	4.80	ng/L	
12) 1,2-Dichloroethane	6.12	62	162	5.99	ng/L #	58
13) Trichloroethene	6.74	95	155	8.99	ng/L	97
14) Bromodichloromethane	7.36	83	146	5.66	ng/L	92
16) 1,1,2-Trichloroethane	8.63	83	95	6.58	ng/L	91
17) Dibromochloromethane	8.98	129	109	6.10	ng/L	76
18) 1,2-Dibromoethane (EDB)	9.10	107	104	7.18	ng/L	95
20) Toluene	8.12	92	263	9.18	ng/L	94
21) Ethylbenzene	9.66	106	110	7.77	ng/L #	94
22) 1,1,1,2-Tetrachloroethane	9.67	131	117	6.29	ng/L #	74
23) m,p-Xylenes	9.77	106	277	16.61	ng/L #	81
24) o-Xylene	10.18	106	235	13.81	ng/L	90
26) 1,1,2,2-Tetrachloroethane	10.93	83	127	7.26	ng/L	95
28) Tetrachloroethene	8.63	164	130m	9.35	ng/L	
30) 1,4-Dichlorobenzene	11.90	146	273	10.90	ng/L	89

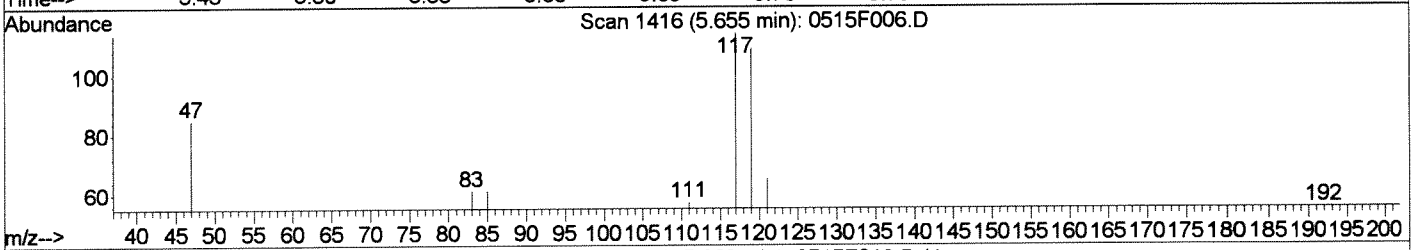
5/16/17

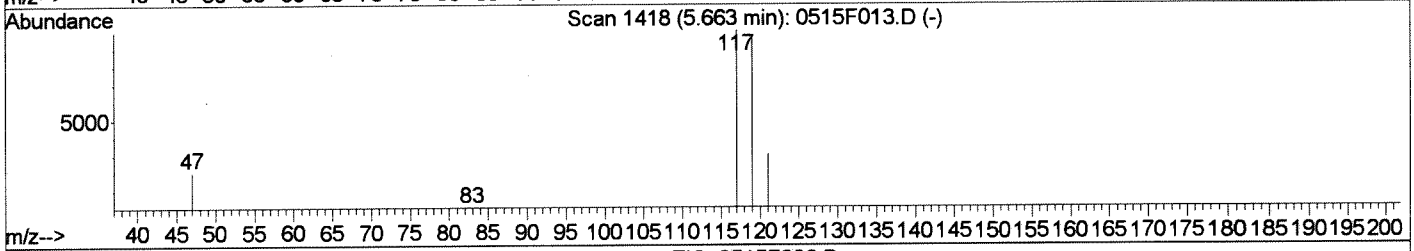
(#) = qualifier out of range (m) = manual integration
0515F006.D 051517MS30_8260SIM.M Tue May 16 11:28:37 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:25 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(10) Carbon Tetrachloride (T)

5.65min 1.88ng/L

response 47

Ion	Exp%	Act%
117.00	100	100
119.00	95.90	73.21
121.00	30.30	26.79
0.00	0.00	0.00

Manual Integration:

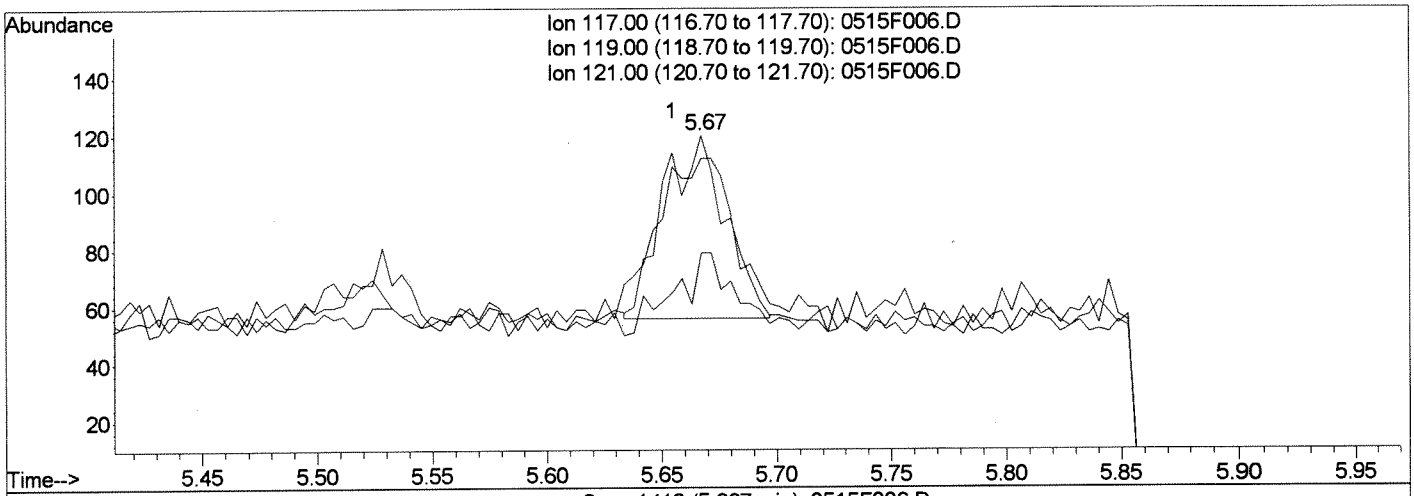
Before

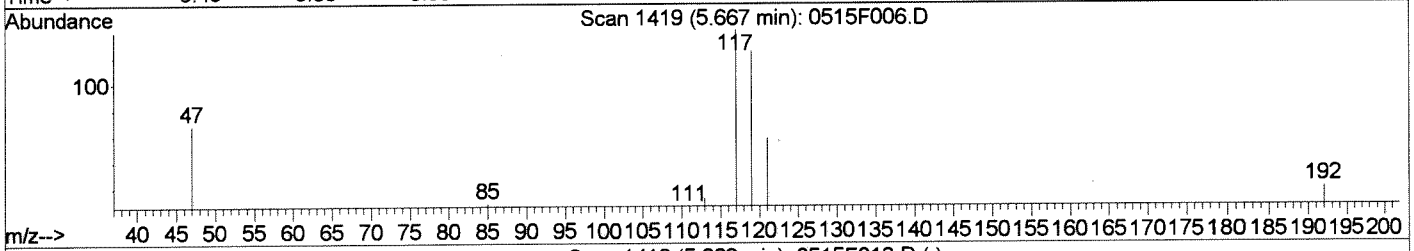
05/16/17

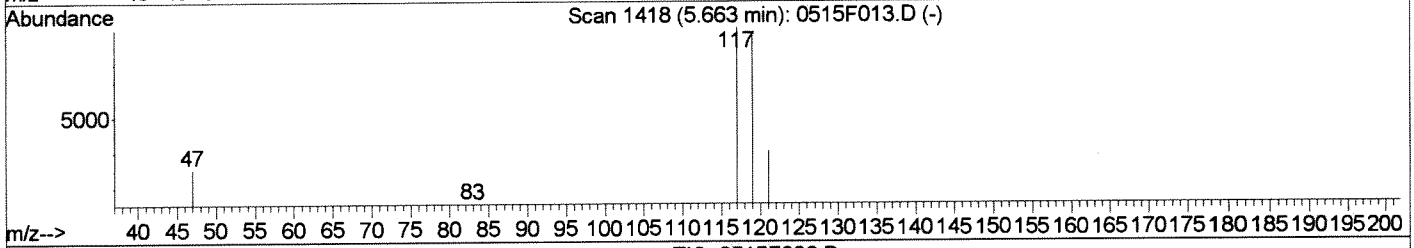
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:25:51 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:25 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(10) Carbon Tetrachloride (T)

5.67min 4.80ng/L m

response 120

Ion	Exp%	Act%
117.00	100	100
119.00	95.90	93.33
121.00	30.30	65.83#
0.00	0.00	0.00

Manual Integration:

After

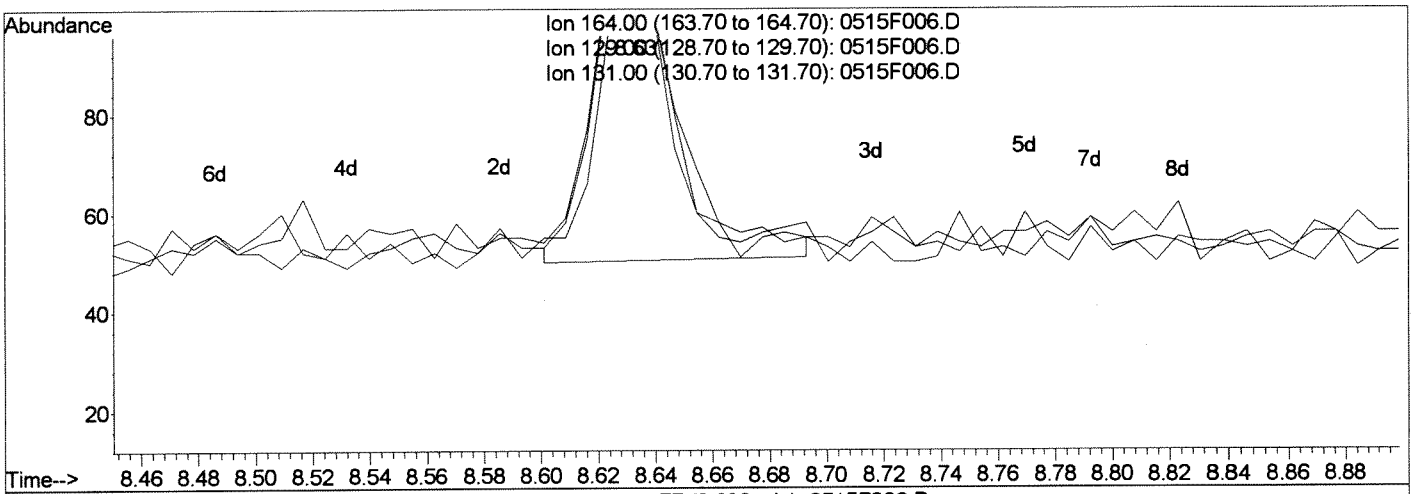
Split peak

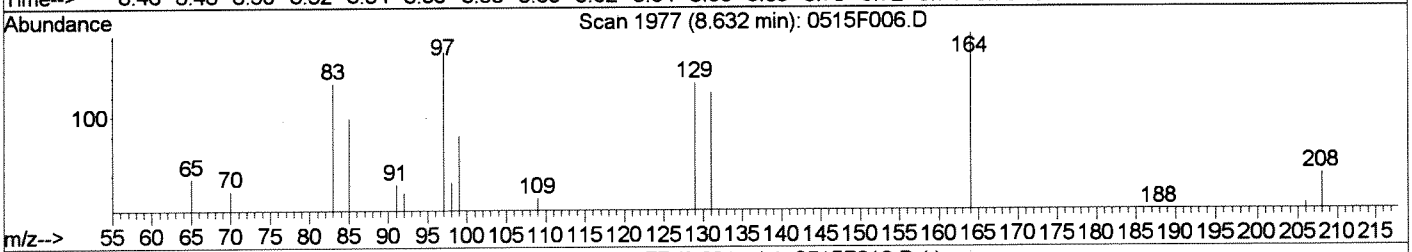
05/16/17

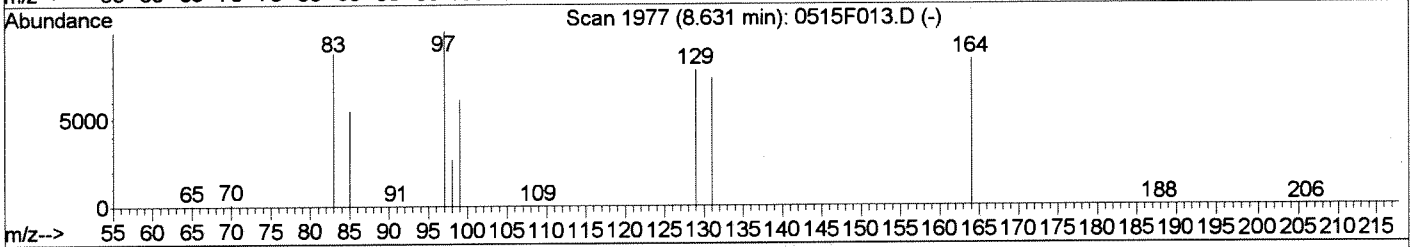
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:25:59 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:26 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(28) Tetrachloroethene (T)

8.63min 10.43ng/L

response 145

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	69.66
131.00	87.40	65.17
0.00	0.00	0.00

Manual Integration:

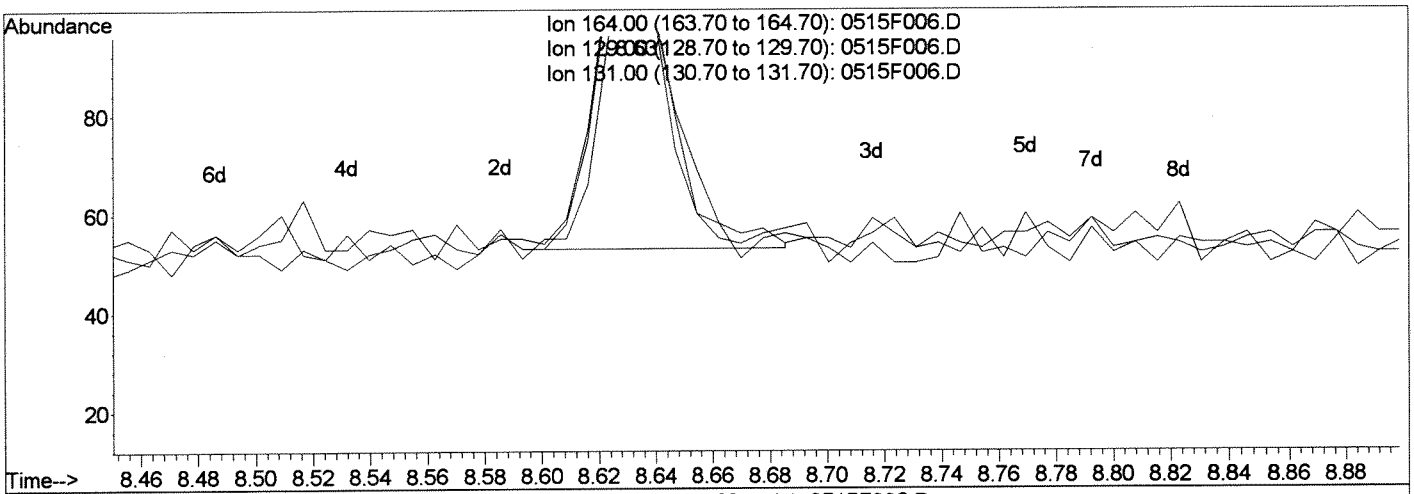
Before

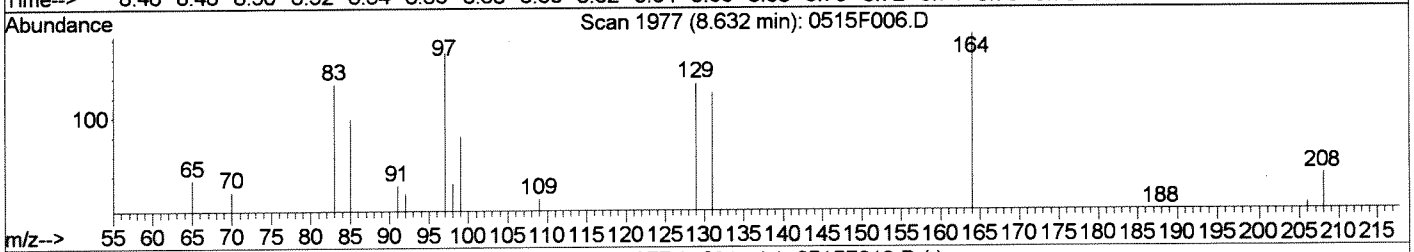
05/16/17

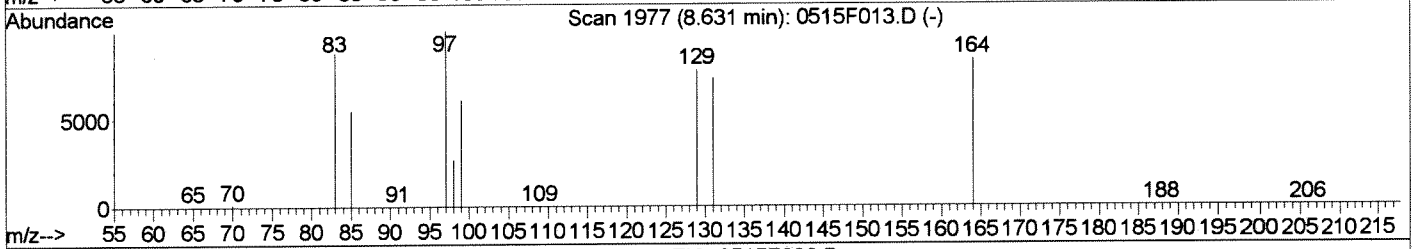
0515F006.D 051517MS30_8260SIM.M Tue May 16 08:26:59 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:27 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F006.D

(28) Tetrachloroethene (T)

8.63min 9.35ng/L m

response 130

Ion	Exp%	Act%
164.00	100	100
129.00	93.10	82.39
131.00	87.40	78.87
0.00	0.00	0.00

Manual Integration:

After

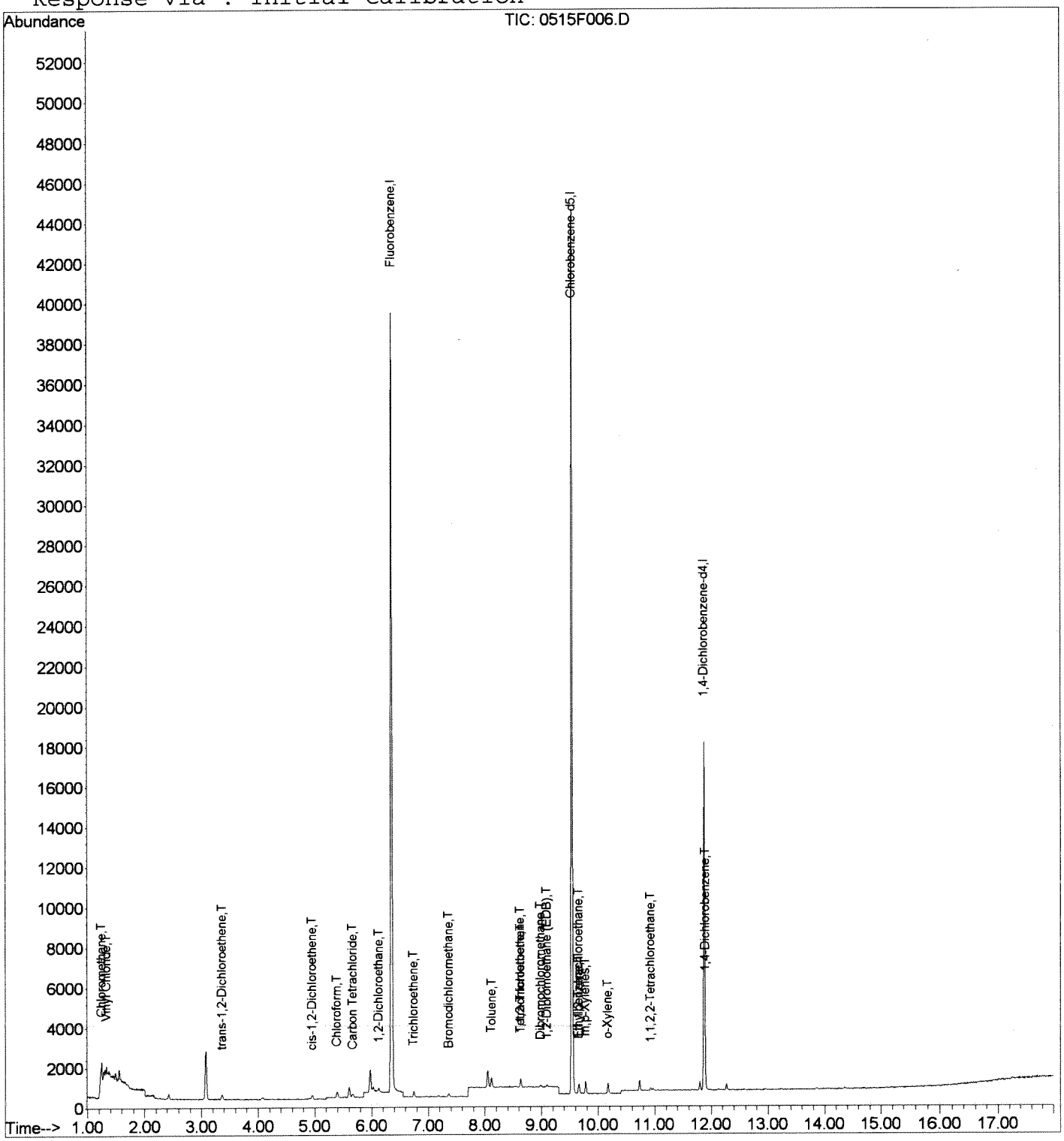
Baseline correction

05/16/17

0515F006.D 051517MS30_8260SIM.M Tue May 16 08:27:11 2017

Data File : J:\MS30\DATA\051517_SIM\0515F006.D Vial: 6
Acq On : 15 May 2017 05:37 pm Operator: GH
Sample : SIM ICAL 5 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:27 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F007.D Vial: 7
Acq On : 15 May 2017 06:04 pm Operator: GH
Sample : SIM ICAL 10 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:22 2017 Quant Results File: 051517MS30_8260

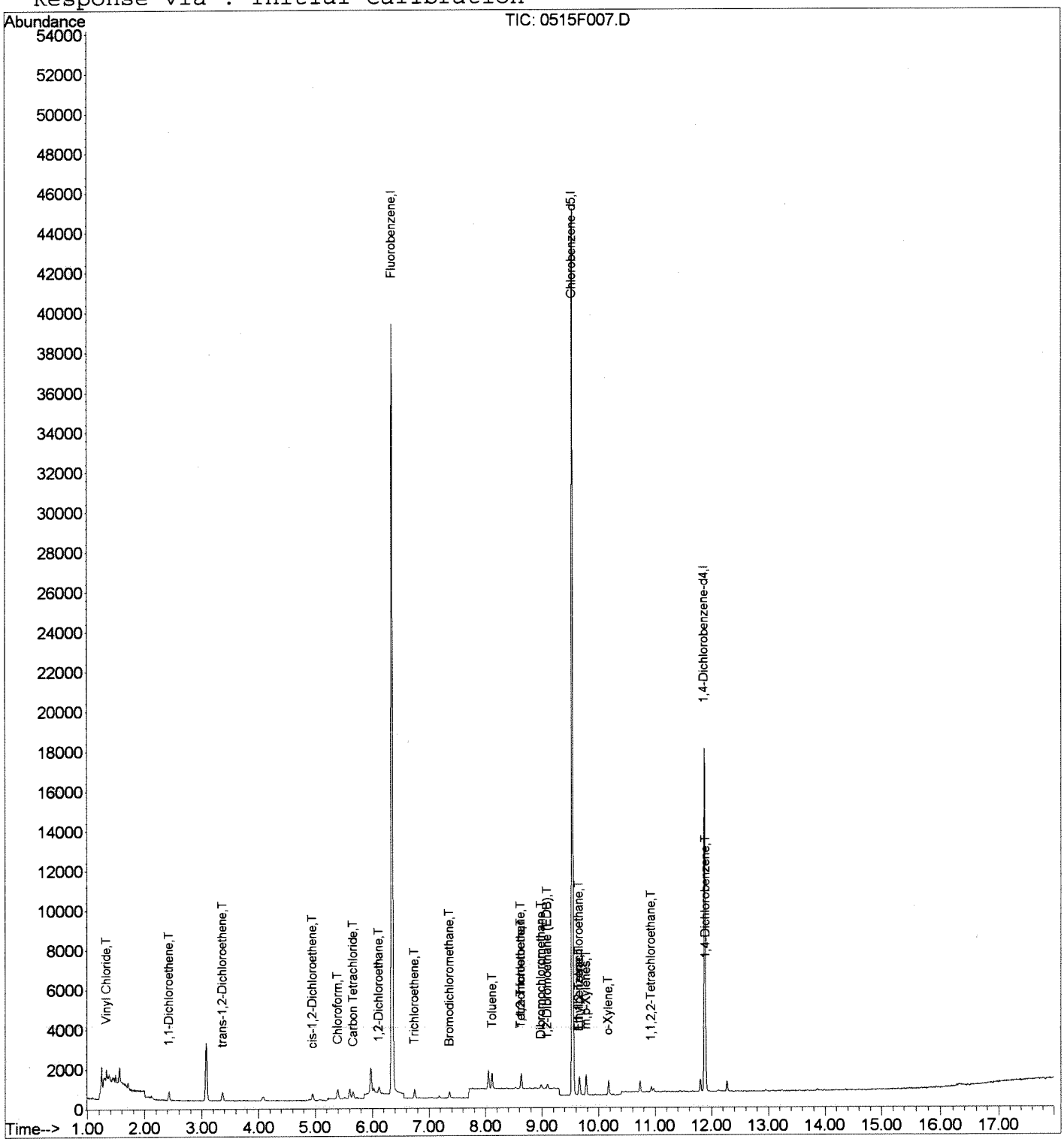
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53866	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36149	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14427	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	0.00	98	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
3) Vinyl Chloride	1.33	62	358	12.43	ng/L	89
4) 1,1-Dichloroethene	2.42	96	185	11.76	ng/L	96
6) trans-1,2-Dichloroethene	3.36	96	249	13.82	ng/L	92
7) cis-1,2-Dichloroethene	4.96	96	196	11.24	ng/L	93
8) Chloroform	5.40	83	527	13.74	ng/L	90
10) Carbon Tetrachloride	5.66	117	285	11.42	ng/L	90
12) 1,2-Dichloroethane	6.12	62	337	12.49	ng/L	95
13) Trichloroethene	6.74	95	239	13.90	ng/L	90
14) Bromodichloromethane	7.36	83	299	11.62	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	186	12.91	ng/L	92
17) Dibromochloromethane	8.98	129	209	11.73	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.10	107	183	12.67	ng/L	95
20) Toluene	8.11	92	446	15.47	ng/L	88
21) Ethylbenzene	9.65	106	175	12.27	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	239	12.77	ng/L	97
23) m,p-Xylenes	9.78	106	466	27.76	ng/L	98
24) o-Xylene	10.18	106	353	20.60	ng/L #	72
26) 1,1,2,2-Tetrachloroethane	10.93	83	198	11.25	ng/L	94
28) Tetrachloroethene	8.63	164	212	15.14	ng/L	94
30) 1,4-Dichlorobenzene	11.90	146	408	15.96	ng/L	99

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\051517_SIM\0515F007.D Vial: 7
Acq On : 15 May 2017 06:04 pm Operator: GH
Sample : SIM ICAL 10 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:29 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F008.D Vial: 8
Acq On : 15 May 2017 06:32 pm Operator: GH
Sample : SIM ICAL 20 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:23 2017 Quant Results File: 051517MS30_8260

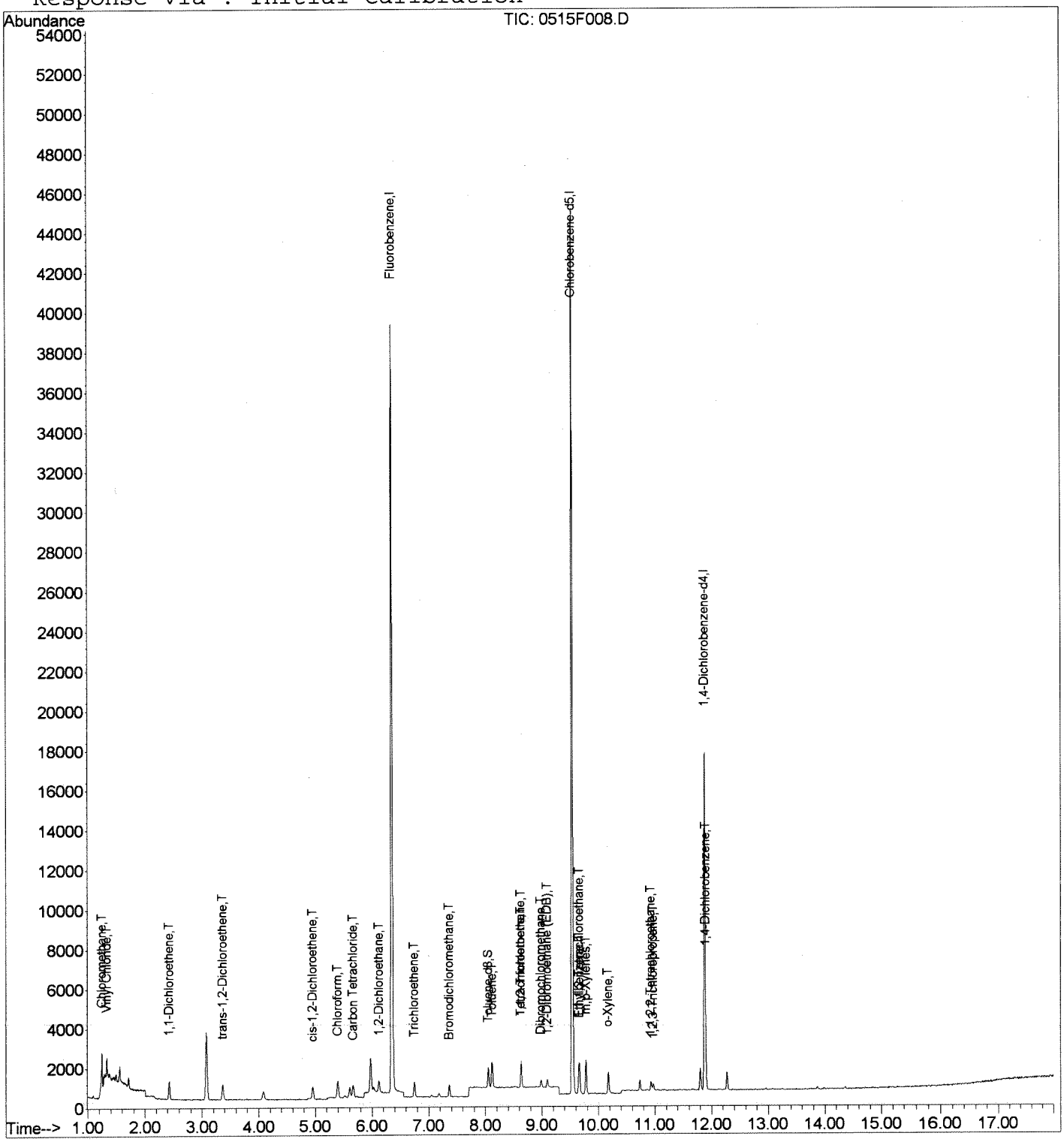
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53288	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36181	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14310	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	0.00	113	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
15) Toluene-d8	8.05	98	1174	28.38	ng/L	0.00
Spiked Amount 1000.000			Recovery =	2.84%		
25) 4-Bromofluorobenzene	0.00	95	0d	0.00	ng/L	
Spiked Amount 1000.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	977	33.05	ng/L	96
3) Vinyl Chloride	1.33	62	650	22.82	ng/L	98
4) 1,1-Dichloroethene	2.43	96	390	25.07	ng/L	93
6) trans-1,2-Dichloroethene	3.36	96	463	25.97	ng/L	88
7) cis-1,2-Dichloroethene	4.95	96	403	23.36	ng/L	91
8) Chloroform	5.40	83	886	23.34	ng/L	98
10) Carbon Tetrachloride	5.66	117	526	21.31	ng/L	98
12) 1,2-Dichloroethane	6.12	62	602	22.55	ng/L	93
13) Trichloroethene	6.74	95	436	25.63	ng/L	91
14) Bromodichloromethane	7.36	83	552	21.68	ng/L	97
16) 1,1,2-Trichloroethane	8.63	83	336	23.58	ng/L	98
17) Dibromochloromethane	8.98	129	400	22.70	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.09	107	303	21.20	ng/L	94
20) Toluene	8.12	92	767	26.58	ng/L	96
21) Ethylbenzene	9.66	106	301	21.09	ng/L #	82
22) 1,1,1,2-Tetrachloroethane	9.67	131	452	24.12	ng/L	96
23) m,p-Xylenes	9.78	106	761	45.29	ng/L	99
24) o-Xylene	10.18	106	462	26.94	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	335	19.01	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	140	26.54	ng/L #	82
28) Tetrachloroethene	8.63	164	350	24.98	ng/L	90
30) 1,4-Dichlorobenzene	11.90	146	605	23.87	ng/L	96

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS30\DATA\051517_SIM\0515F008.D Vial: 8
Acq On : 15 May 2017 06:32 pm Operator: GH
Sample : SIM ICAL 20 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:31 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F009.D Vial: 9
Acq On : 15 May 2017 06:59 pm Operator: GH
Sample : SIM ICAL 50 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:23 2017 Quant Results File: 051517MS30_8260

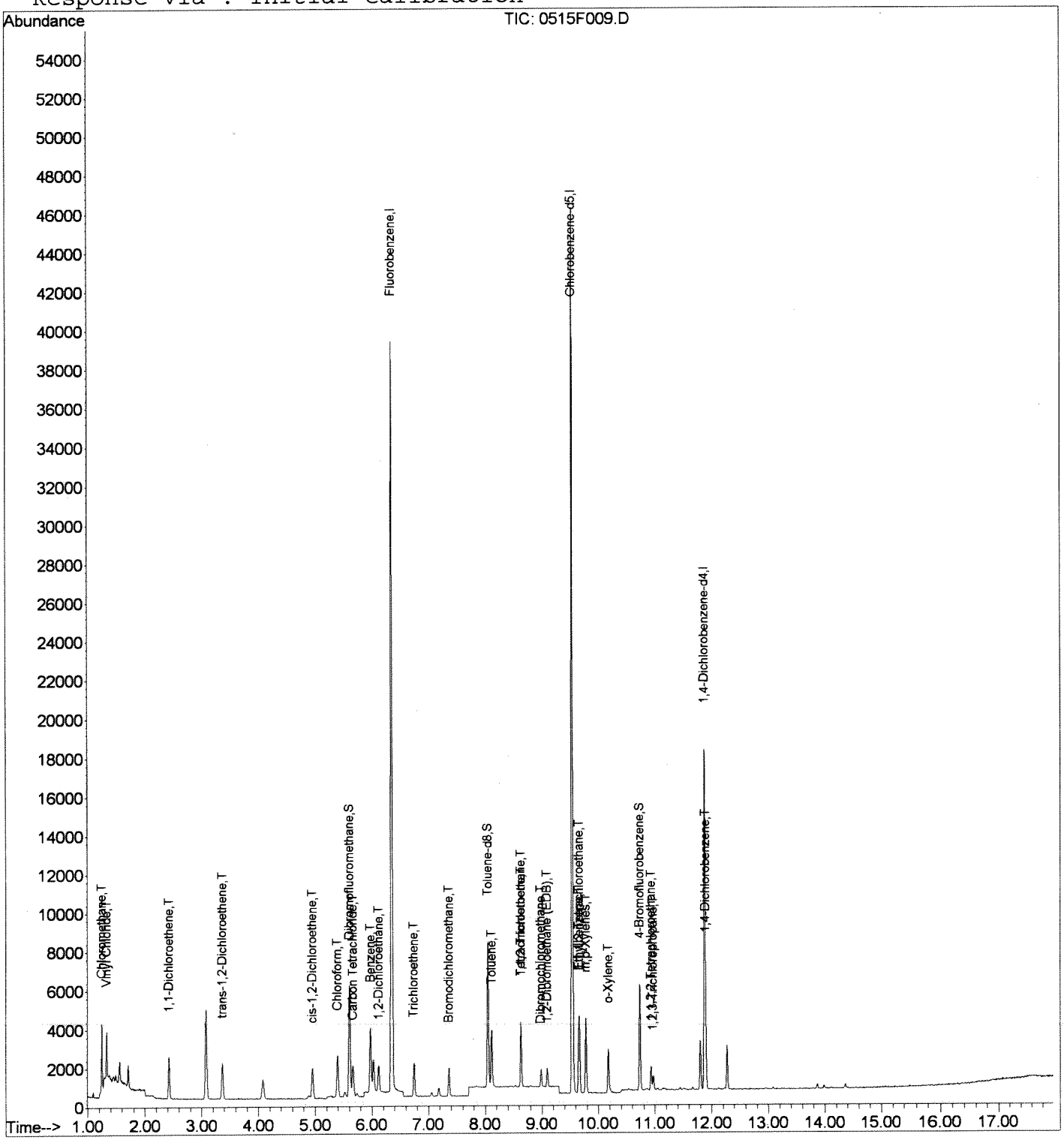
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53815	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36068	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14684	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	4998	257.68	ng/L	0.00
Spiked Amount 1000.000			Recovery =	25.77%		
15) Toluene-d8	8.05	98	9805	234.71	ng/L	0.00
Spiked Amount 1000.000			Recovery =	23.47%		
25) 4-Bromofluorobenzene	10.73	95	3404	229.62	ng/L	0.00
Spiked Amount 1000.000			Recovery =	22.96%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	2004	67.13	ng/L	94
3) Vinyl Chloride	1.33	62	1672	58.12	ng/L	90
4) 1,1-Dichloroethene	2.42	96	947	60.27	ng/L	99
6) trans-1,2-Dichloroethene	3.36	96	1083	60.16	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	966	55.45	ng/L	97
8) Chloroform	5.39	83	2192	57.19	ng/L	96
10) Carbon Tetrachloride	5.66	117	1354	54.31	ng/L	94
11) Benzene	5.97	78	4799	70.29	ng/L	97
12) 1,2-Dichloroethane	6.12	62	1452	53.86	ng/L	99
13) Trichloroethene	6.75	95	1007	58.62	ng/L	95
14) Bromodichloromethane	7.36	83	1369	53.24	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	776	53.92	ng/L	97
17) Dibromochloromethane	8.98	129	929	52.20	ng/L	96
18) 1,2-Dibromoethane (EDB)	9.09	107	754	52.25	ng/L	94
20) Toluene	8.11	92	1648	57.29	ng/L	97
21) Ethylbenzene	9.65	106	753	52.92	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	1079	57.77	ng/L	97
23) m,p-Xylenes	9.78	106	1770	105.66	ng/L	94
24) o-Xylene	10.18	106	995	58.21	ng/L	97
26) 1,1,2,2-Tetrachloroethane	10.93	83	897	51.06	ng/L	93
27) 1,2,3-Trichloropropane	10.97	110	274	52.10	ng/L #	87
28) Tetrachloroethene	8.63	164	804	57.56	ng/L	95
30) 1,4-Dichlorobenzene	11.90	146	1400	53.82	ng/L	96

(#) = qualifier out of range (m) = manual integration
0515F009.D 051517MS30_8260SIM.M Tue May 16 11:28:40 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F009.D Vial: 9
Acq On : 15 May 2017 06:59 pm Operator: GH
Sample : SIM ICAL 50 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:31 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F010.D Vial: 10
Acq On : 15 May 2017 07:27 pm Operator: GH
Sample : SIM ICAL 100 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	53624m	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	34959	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	13492	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	8434	436.38	ng/L	0.00
Spiked Amount 1000.000			Recovery =	43.64%		
15) Toluene-d8	8.05	98	16399	393.96	ng/L	0.00
Spiked Amount 1000.000			Recovery =	39.40%		
25) 4-Bromofluorobenzene	10.73	95	5475	381.03	ng/L	0.00
Spiked Amount 1000.000			Recovery =	38.10%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	3551	119.38	ng/L	98
3) Vinyl Chloride	1.33	62	3238	112.96	ng/L	98
4) 1,1-Dichloroethene	2.42	96	1813	115.80	ng/L	98
5) Methylene Chloride	3.08	84	4275	176.20	ng/L	97
6) trans-1,2-Dichloroethene	3.37	96	2044	113.95	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	1845	106.28	ng/L	98
8) Chloroform	5.39	83	4147	108.58	ng/L	100
10) Carbon Tetrachloride	5.67	117	2769	111.46	ng/L	99
11) Benzene	5.97	78	8321	122.30	ng/L	97
12) 1,2-Dichloroethane	6.12	62	2775	103.31	ng/L	97
13) Trichloroethene	6.75	95	1894	110.64	ng/L	96
14) Bromodichloromethane	7.36	83	2647	103.31	ng/L	94
16) 1,1,2-Trichloroethane	8.63	83	1538	107.25	ng/L	95
17) Dibromochloromethane	8.98	129	1771	99.87	ng/L	98
18) 1,2-Dibromoethane (EDB)	9.09	107	1410	98.05	ng/L	96
20) Toluene	8.12	92	3154	113.13	ng/L	98
21) Ethylbenzene	9.65	106	1486	107.75	ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	1951	107.76	ng/L	94
23) m,p-Xylenes	9.78	106	3341	205.77	ng/L	99
24) o-Xylene	10.18	106	1737	104.84	ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	1751	102.84	ng/L	98
27) 1,2,3-Trichloropropane	10.98	110	507	99.47	ng/L #	84
28) Tetrachloroethene	8.63	164	1642	121.27	ng/L	95
30) 1,4-Dichlorobenzene	11.90	146	2594	108.53	ng/L	97

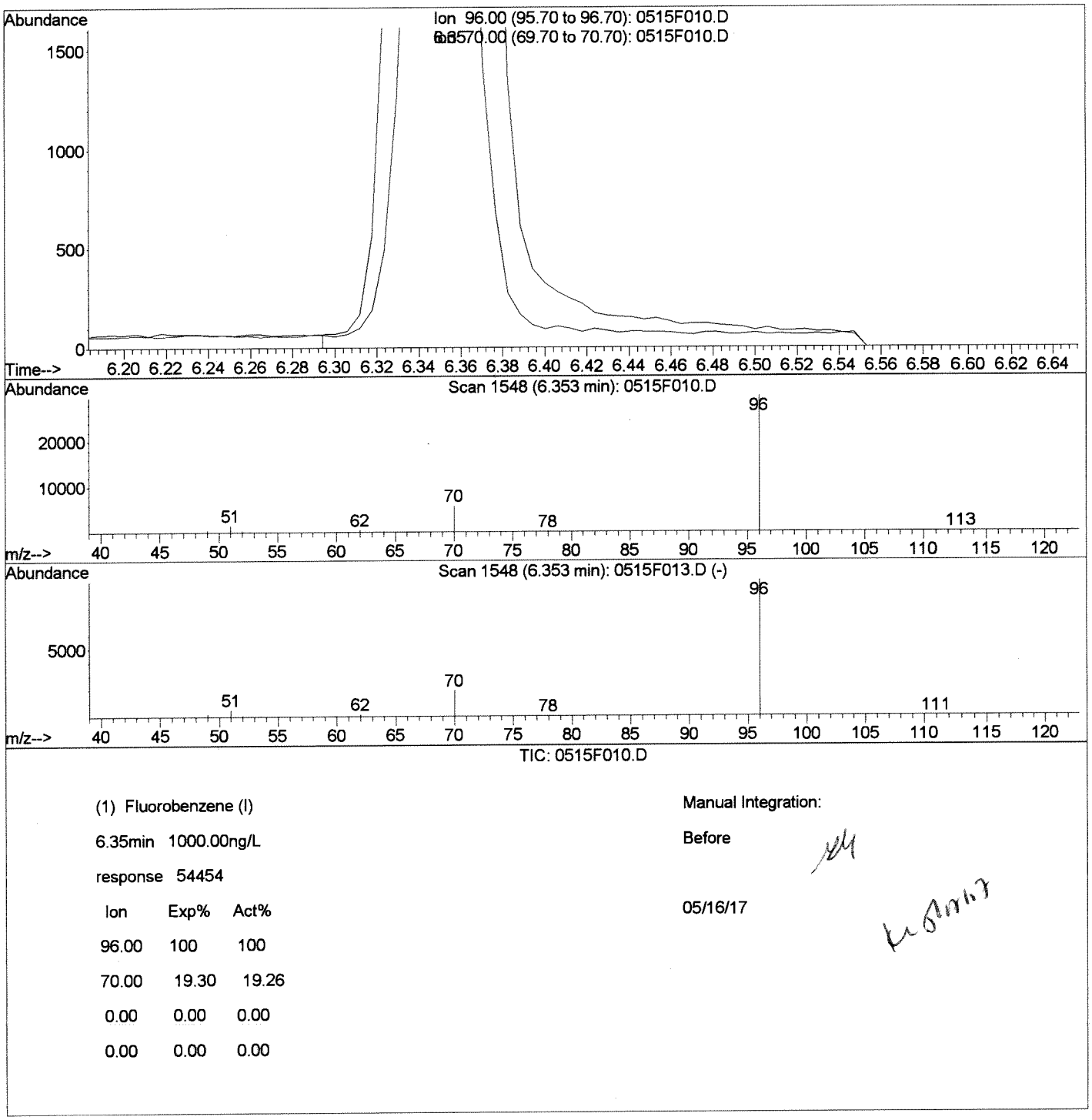
(#) = qualifier out of range (m) = manual integration
0515F010.D 051517MS30_8260SIM.M Tue May 16 11:28:40 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F010.D
Acq On : 15 May 2017 07:27 pm
Sample : SIM ICAL 100 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017

Vial: 10
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration



TIC: 0515F010.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L

response 54454

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.26
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

Before

05/16/17

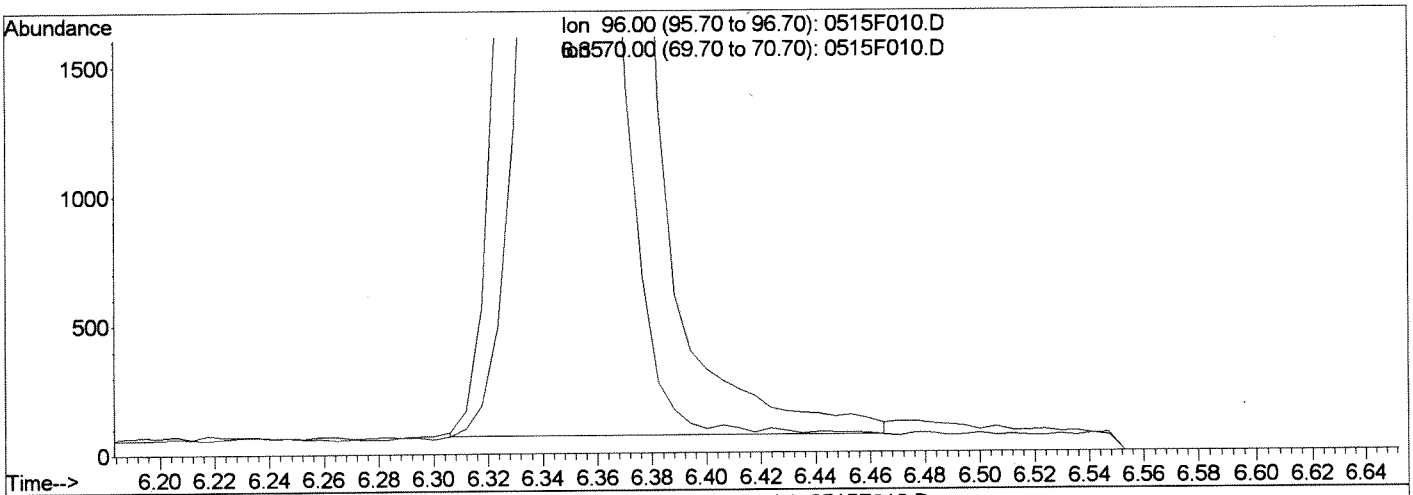
0515F010.D 051517MS30_8260SIM.M Tue May 16 08:32:32 2017

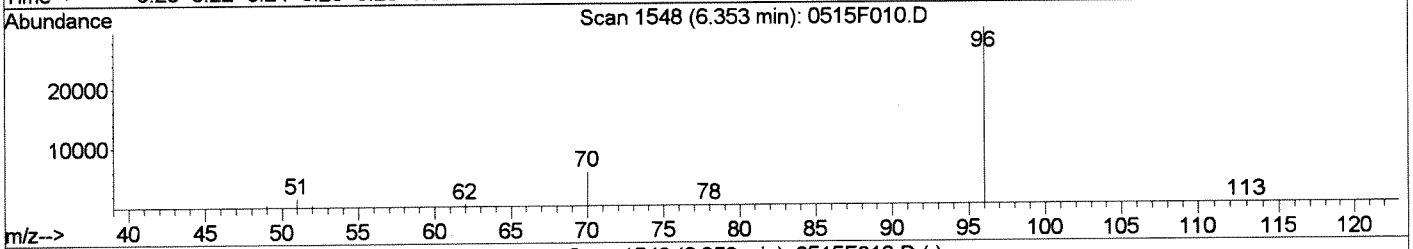
Data File : J:\MS30\DATA\051517_SIM\0515F010.D
Acq On : 15 May 2017 07:27 pm
Sample : SIM ICAL 100 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:32 2017

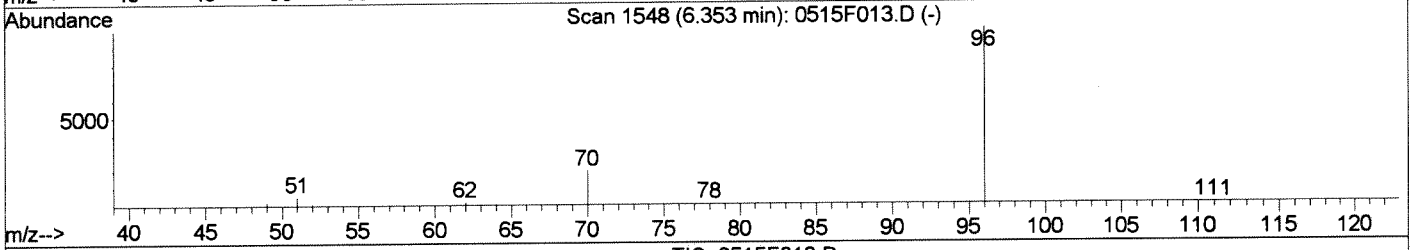
Vial: 10
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Multiple Level Calibration







TIC: 0515F010.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L m

response 53624

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.26
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

After

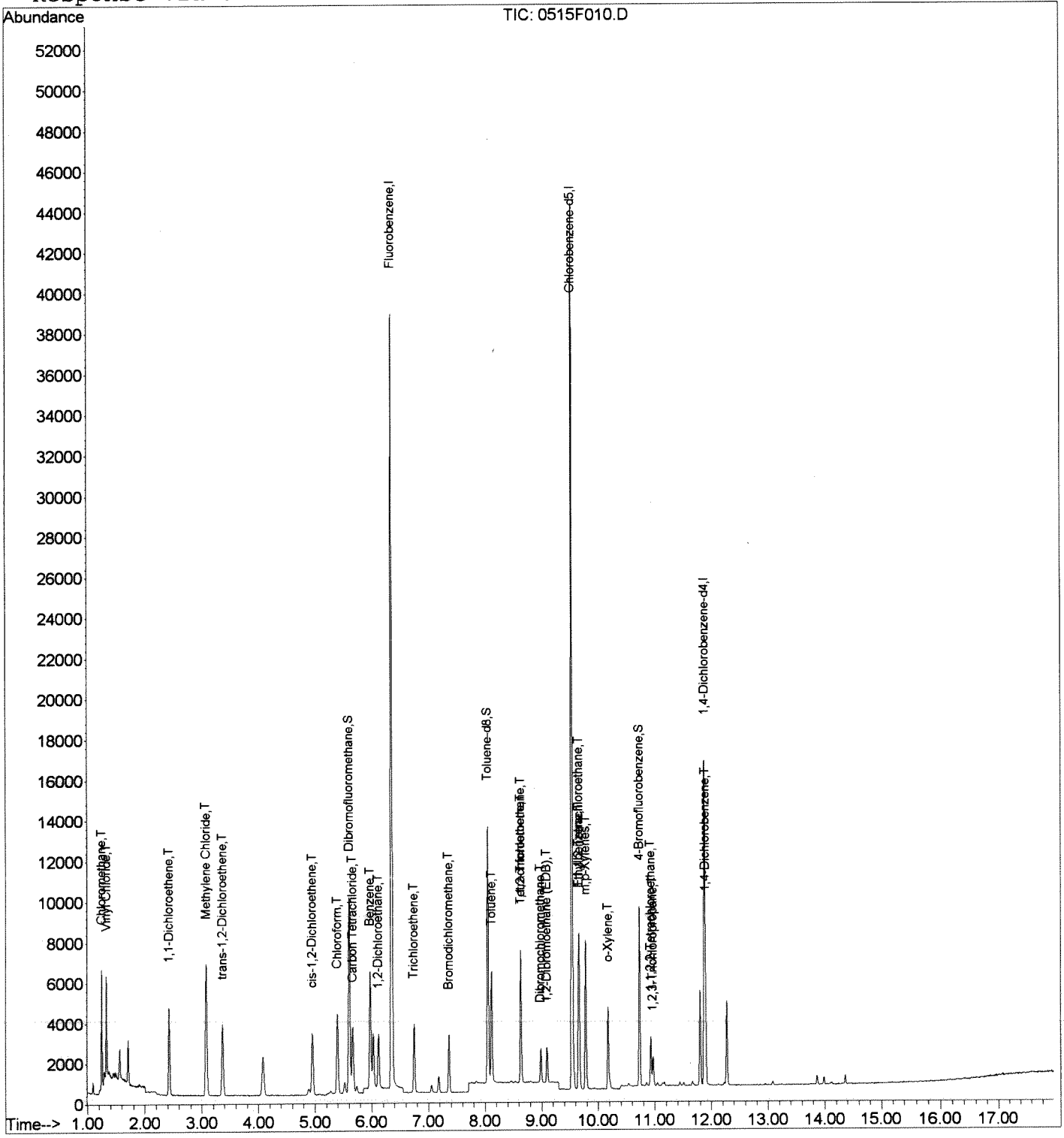
Baseline correction

05/16/17

0515F010.D 051517MS30_8260SIM.M Tue May 16 08:32:42 2017

Data File : J:\MS30\DATA\051517_SIM\0515F010.D Vial: 10
Acq On : 15 May 2017 07:27 pm Operator: GH
Sample : SIM ICAL 100 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:32 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F011.D Vial: 11
Acq On : 15 May 2017 07:54 pm Operator: GH
Sample : SIM ICAL 500 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

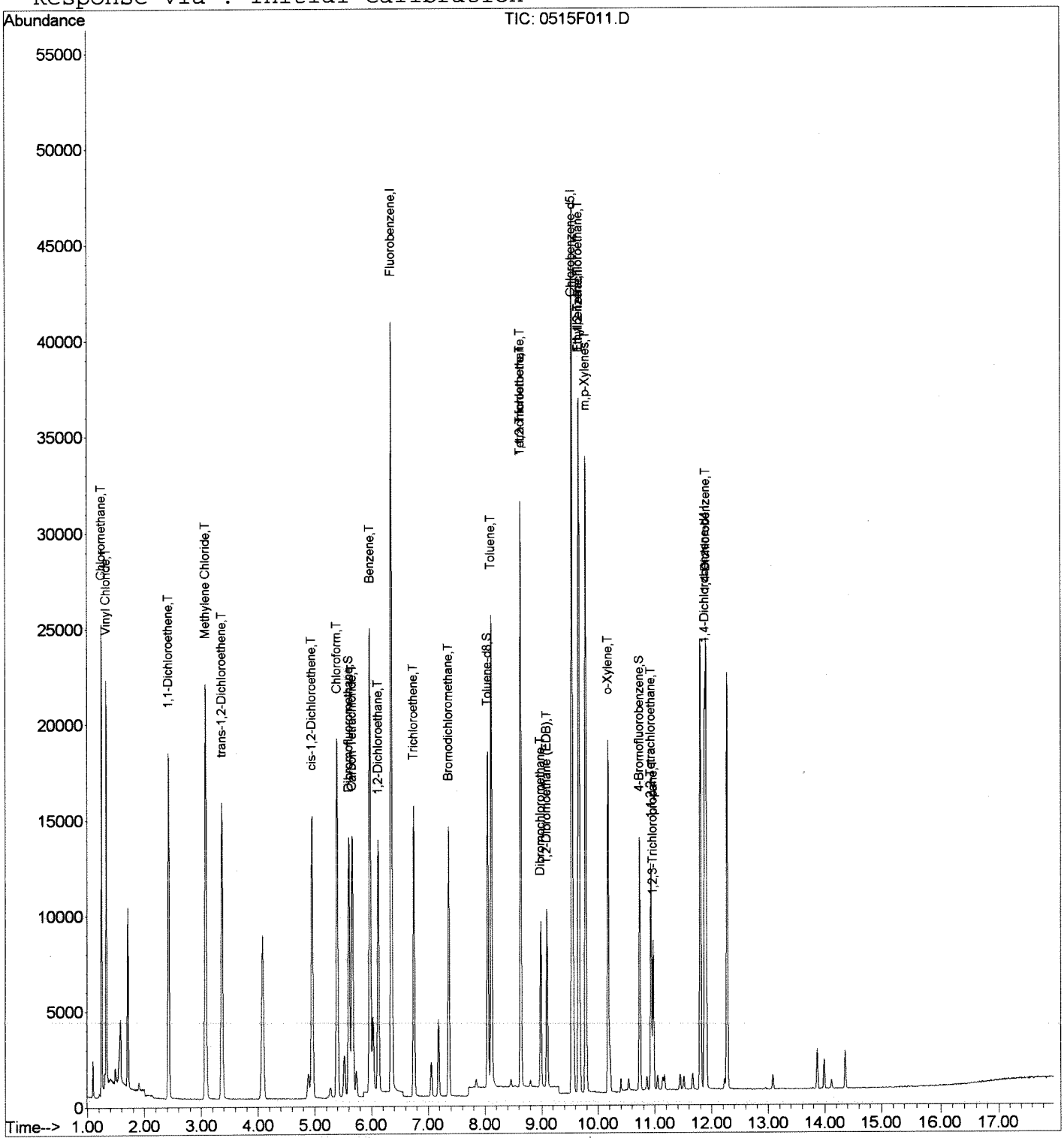
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55534	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37036	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	15685	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	11936	596.34	ng/L	0.00
Spiked Amount 1000.000			Recovery = 59.63%			
15) Toluene-d8	8.05	98	22426	520.22	ng/L	0.00
Spiked Amount 1000.000			Recovery = 52.02%			
25) 4-Bromofluorobenzene	10.73	95	8171	536.77	ng/L	0.00
Spiked Amount 1000.000			Recovery = 53.68%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	14515	471.20	ng/L	99
3) Vinyl Chloride	1.33	62	13266	446.89	ng/L	100
4) 1,1-Dichloroethene	2.42	96	7430	458.26	ng/L	98
5) Methylene Chloride	3.08	84	14375	572.10	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	8815	474.51	ng/L	96
7) cis-1,2-Dichloroethene	4.95	96	8819	490.54	ng/L	99
8) Chloroform	5.39	83	19444	491.59	ng/L	98
10) Carbon Tetrachloride	5.66	117	11582	450.16	ng/L	99
11) Benzene	5.97	78	34178	485.07	ng/L	99
12) 1,2-Dichloroethane	6.12	62	14038	504.63	ng/L	99
13) Trichloroethene	6.75	95	8395	473.54	ng/L	99
14) Bromodichloromethane	7.36	83	13224	498.39	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	7423	499.84	ng/L	97
17) Dibromochloromethane	8.98	129	9057	493.17	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	7132	478.92	ng/L	98
20) Toluene	8.12	92	13706	464.03	ng/L	99
21) Ethylbenzene	9.65	106	6617	452.91	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	9684	504.90	ng/L	97
23) m,p-Xylenes	9.78	106	15240	885.99	ng/L	97
24) o-Xylene	10.18	106	7801	444.44	ng/L	99
26) 1,1,2,2-Tetrachloroethane	10.93	83	8563	474.73	ng/L	100
27) 1,2,3-Trichloropropane	10.98	110	2468	457.03	ng/L	90
28) Tetrachloroethene	8.63	164	6654	463.88	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	13085	470.93	ng/L	97

KA 5/17

(#) = qualifier out of range (m) = manual integration
0515F011.D 051517MS30_8260SIM.M Tue May 16 11:28:41 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F011.D Vial: 11
Acq On : 15 May 2017 07:54 pm Operator: GH
Sample : SIM ICAL 500 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051517_SIM\0515F012.D Vial: 12
Acq On : 15 May 2017 08:22 pm Operator: GH
Sample : SIM ICAL 1000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:24 2017 Quant Results File: 051517MS30_8260

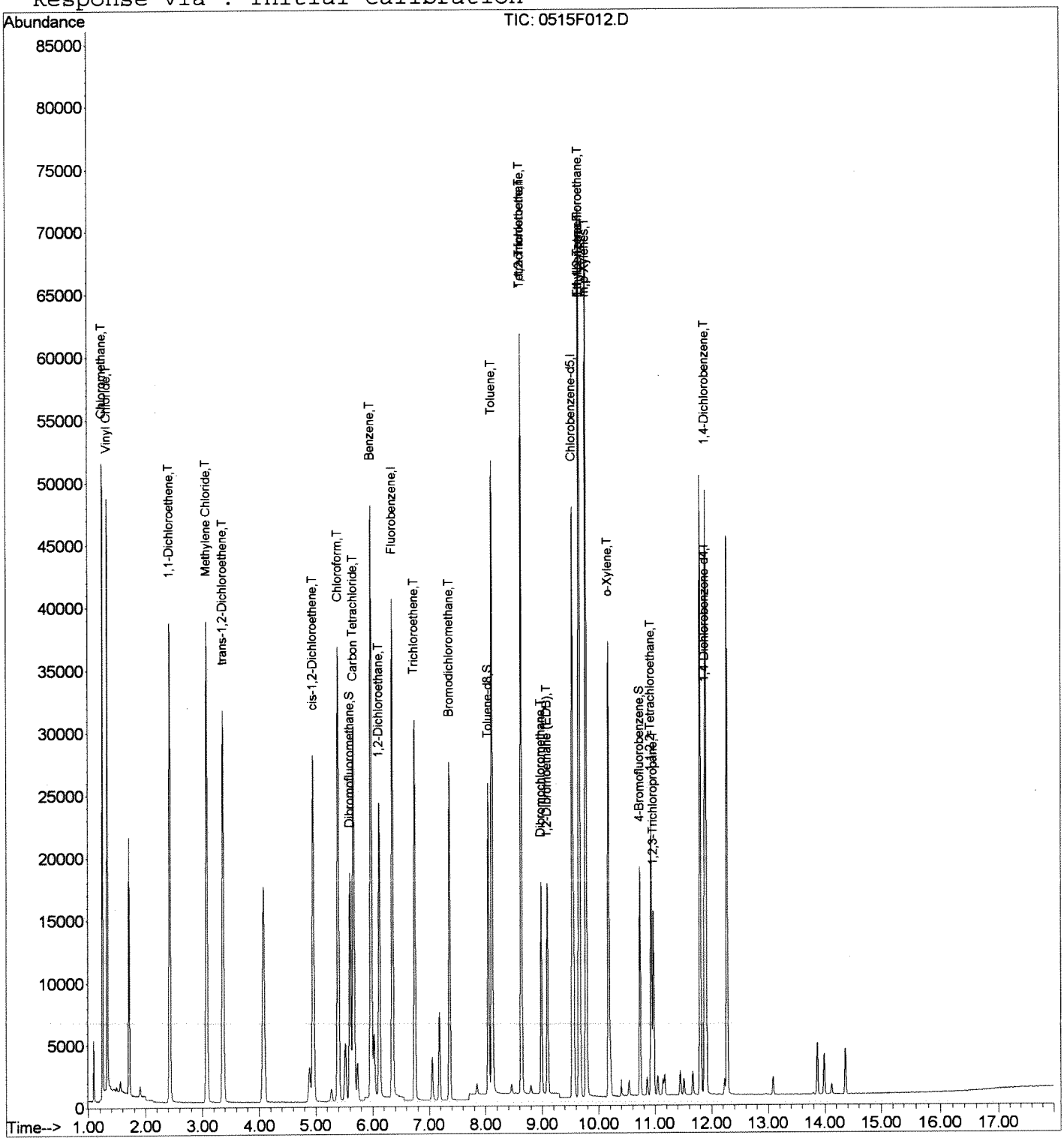
Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	55597	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	37494	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	16911	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	15912	794.08	ng/L	0.00
Spiked Amount 1000.000			Recovery =	79.41%		
15) Toluene-d8	8.05	98	31433	728.33	ng/L	0.00
Spiked Amount 1000.000			Recovery =	72.83%		
25) 4-Bromofluorobenzene	10.73	95	11239	729.29	ng/L	0.00
Spiked Amount 1000.000			Recovery =	72.93%		
Target Compounds						Qvalue
2) Chloromethane	1.25	50	30227	980.15	ng/L	100
3) Vinyl Chloride	1.33	62	29539	993.95	ng/L	100
4) 1,1-Dichloroethene	2.43	96	16005	986.02	ng/L	96
5) Methylene Chloride	3.08	84	25180	1000.98	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	18045	970.25	ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	17026	945.97	ng/L	98
8) Chloroform	5.39	83	37861	956.12	ng/L	99
10) Carbon Tetrachloride	5.67	117	25728	998.85	ng/L	99
11) Benzene	5.97	78	66852	947.73	ng/L	99
12) 1,2-Dichloroethane	6.12	62	26005	933.75	ng/L	99
13) Trichloroethene	6.75	95	17240	971.35	ng/L	98
14) Bromodichloromethane	7.36	83	24928	938.43	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	13740	924.16	ng/L	98
17) Dibromochloromethane	8.98	129	16985	923.82	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	13316	893.16	ng/L	99
20) Toluene	8.12	92	28013	936.82	ng/L	99
21) Ethylbenzene	9.65	106	13641	922.27	ng/L	95
22) 1,1,1,2-Tetrachloroethane	9.67	131	18397	947.46	ng/L	100
23) m,p-Xylenes	9.78	106	31387	1802.42	ng/L	99
24) o-Xylene	10.18	106	15806	889.51	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	16171	885.56	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	4805	878.93	ng/L	90
28) Tetrachloroethene	8.63	164	14096	970.70	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	26890	897.61	ng/L	98

(#) = qualifier out of range (m) = manual integration
0515F012.D 051517MS30_8260SIM.M Tue May 16 11:28:42 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F012.D Vial: 12
Acq On : 15 May 2017 08:22 pm Operator: GH
Sample : SIM ICAL 1000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F013.D Vial: 13
Acq On : 15 May 2017 08:49 pm Operator: GH
Sample : SIM ICAL 2000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

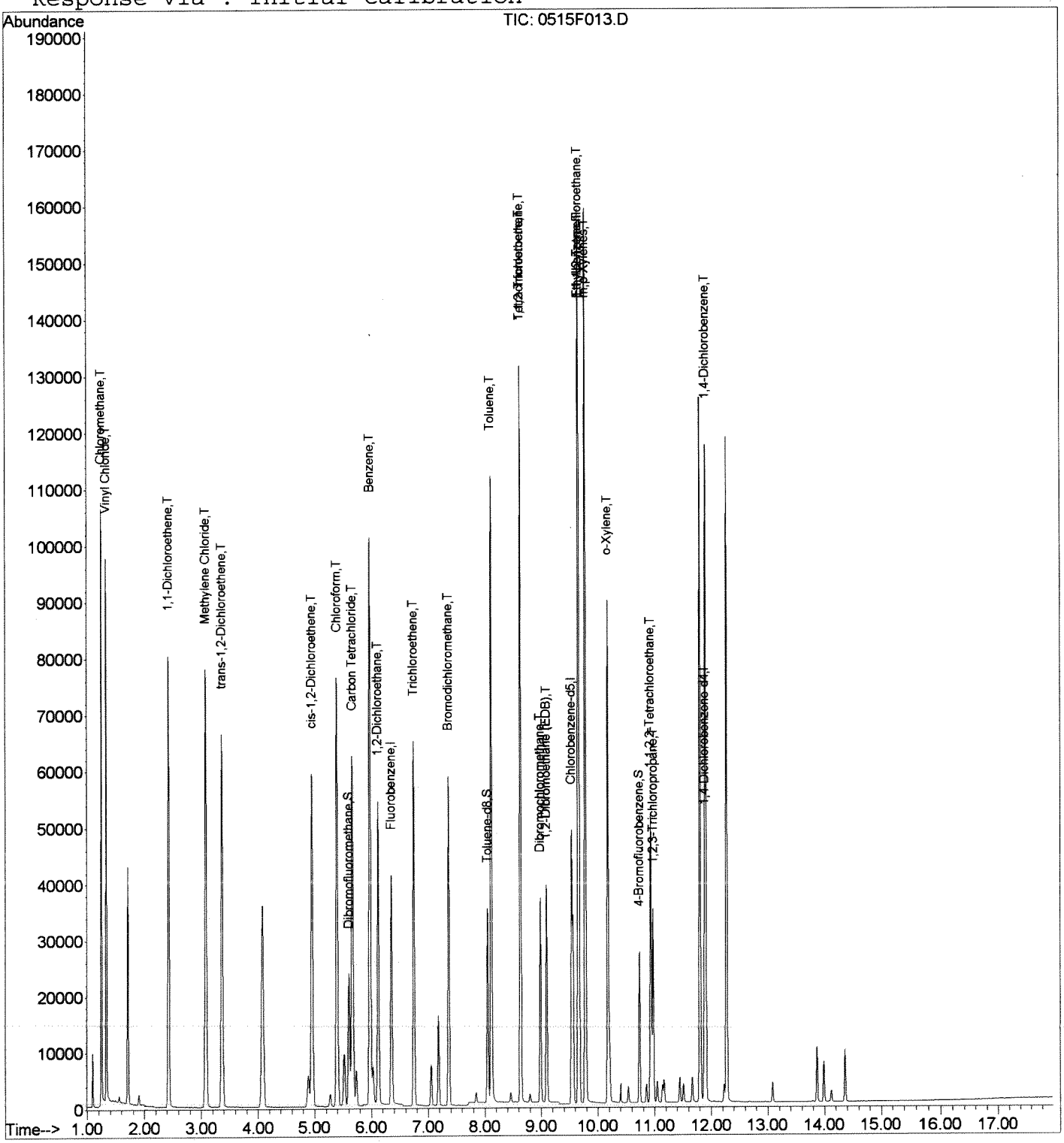
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	56584	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	38599	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	19339	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20394	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
15) Toluene-d8	8.05	98	43924	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
25) 4-Bromofluorobenzene	10.73	95	15865	1000.00	ng/L	0.00
Spiked Amount 1000.000			Recovery = 100.00%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	62773	2000.00	ng/L	100
3) Vinyl Chloride	1.33	62	60493	2000.00	ng/L	100
4) 1,1-Dichloroethene	2.43	96	33040	2000.00	ng/L	100
5) Methylene Chloride	3.08	84	51204	2000.00	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	37857	2000.00	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	36636	2000.00	ng/L	100
8) Chloroform	5.39	83	80603	2000.00	ng/L	100
10) Carbon Tetrachloride	5.66	117	52430	2000.00	ng/L	100
11) Benzene	5.98	78	143583	2000.00	ng/L	100
12) 1,2-Dichloroethane	6.12	62	56689	2000.00	ng/L	100
13) Trichloroethene	6.75	95	36127	2000.00	ng/L	100
14) Bromodichloromethane	7.36	83	54070	2000.00	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	30263	2000.00	ng/L	100
17) Dibromochloromethane	8.98	129	37424	2000.00	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	30347	2000.00	ng/L	100
20) Toluene	8.12	92	61567	2000.00	ng/L	100
21) Ethylbenzene	9.66	106	30453	2000.00	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	39979	2000.00	ng/L	100
23) m,p-Xylenes	9.78	106	71708	4000.00	ng/L	100
24) o-Xylene	10.17	106	36586	2000.00	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	37598	2000.00	ng/L	100
27) 1,2,3-Trichloropropane	10.97	110	11256	2000.00	ng/L	100
28) Tetrachloroethene	8.63	164	29899	2000.00	ng/L	100
30) 1,4-Dichlorobenzene	11.90	146	68517	2000.00	ng/L	100

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F013.D 051517MS30_8260SIM.M Tue May 16 11:28:42 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F013.D Vial: 13
Acq On : 15 May 2017 08:49 pm Operator: GH
Sample : SIM ICAL 2000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F014.D Vial: 14
Acq On : 15 May 2017 09:16 pm Operator: GH
Sample : SIM ICAL 5000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

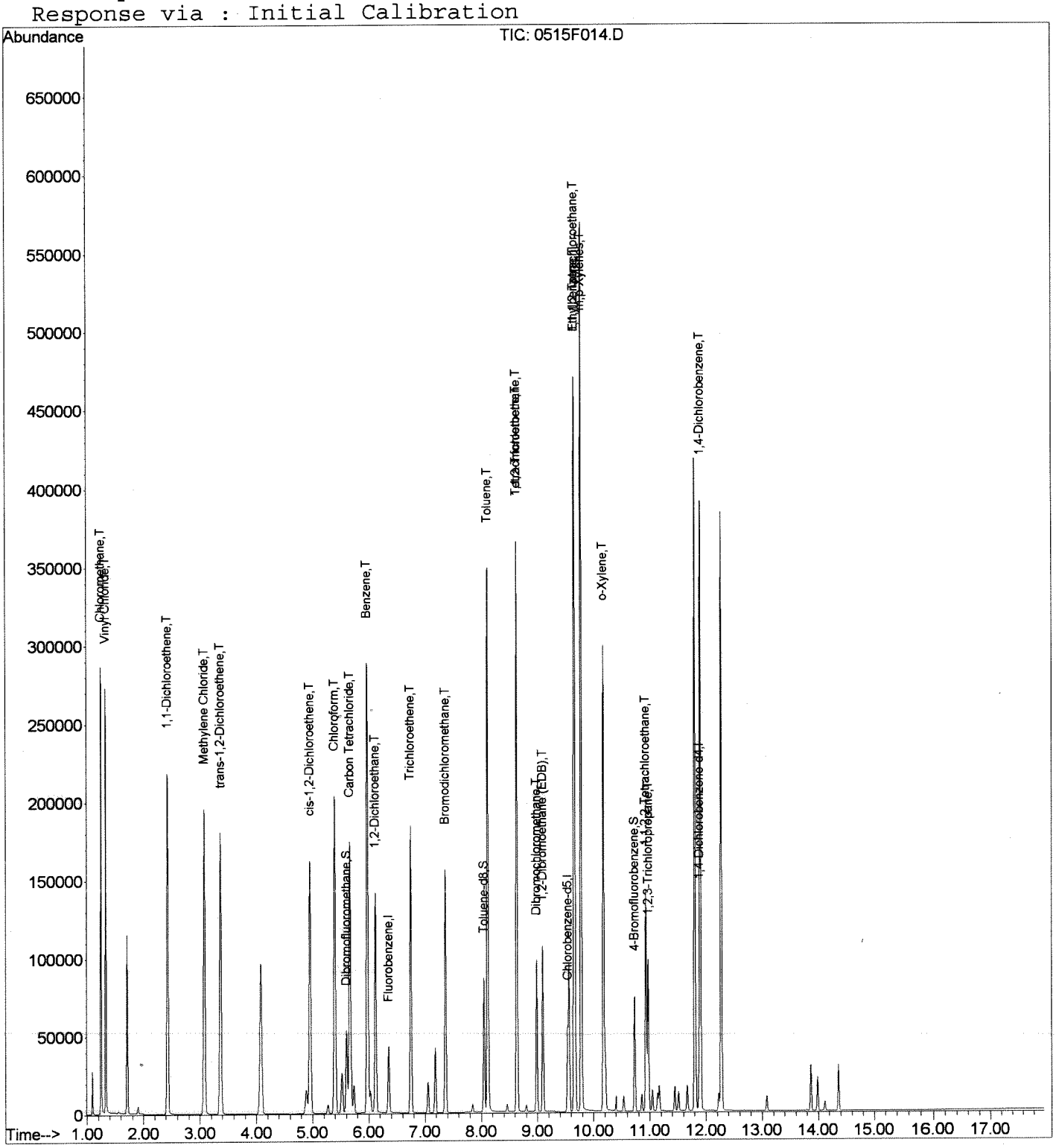
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	60512	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	41870	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	25034	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	45799	2099.93	ng/L	0.00
Spiked Amount 1000.000			Recovery = 209.99%			
15) Toluene-d8	8.05	98	109697	2335.31	ng/L	0.00
Spiked Amount 1000.000			Recovery = 233.53%			
25) 4-Bromofluorobenzene	10.73	95	44167	2566.44	ng/L	0.00
Spiked Amount 1000.000			Recovery = 256.64%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	170484	5079.17	ng/L	99
3) Vinyl Chloride	1.33	62	167624	5182.19	ng/L	100
4) 1,1-Dichloroethene	2.43	96	91872	5200.26	ng/L	99
5) Methylene Chloride	3.08	84	129131	4716.38	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	103750	5125.36	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	100373	5123.79	ng/L	98
8) Chloroform	5.39	83	213436	4952.20	ng/L	99
10) Carbon Tetrachloride	5.66	117	148990	5314.46	ng/L	100
11) Benzene	5.98	78	406583	5295.76	ng/L	100
12) 1,2-Dichloroethane	6.12	62	147871	4878.28	ng/L	100
13) Trichloroethene	6.75	95	102151	5288.02	ng/L	99
14) Bromodichloromethane	7.36	83	144084	4983.58	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	80353	4965.61	ng/L	100
17) Dibromochloromethane	8.98	129	99829	4988.71	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	81400	5016.38	ng/L	96
20) Toluene	8.12	92	190354	5700.55	ng/L	100
21) Ethylbenzene	9.66	106	97674	5913.60	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	108103	4985.50	ng/L	100
23) m,p-Xylenes	9.78	106	252528	12985.99	ng/L	99
24) o-Xylene	10.18	106	125617	6330.48	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	102034	5003.61	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	31464	5153.86	ng/L	98
28) Tetrachloroethene	8.63	164	88054	5429.95	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	230355	5194.37	ng/L	99

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F014.D 051517MS30_8260SIM.M Tue May 16 11:28:43 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F014.D Vial: 14
Acq On : 15 May 2017 09:16 pm Operator: GH
Sample : SIM ICAL 5000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F015.D Vial: 15
Acq On : 15 May 2017 09:44 pm Operator: GH
Sample : SIM ICAL 7000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:25 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

5/16/17

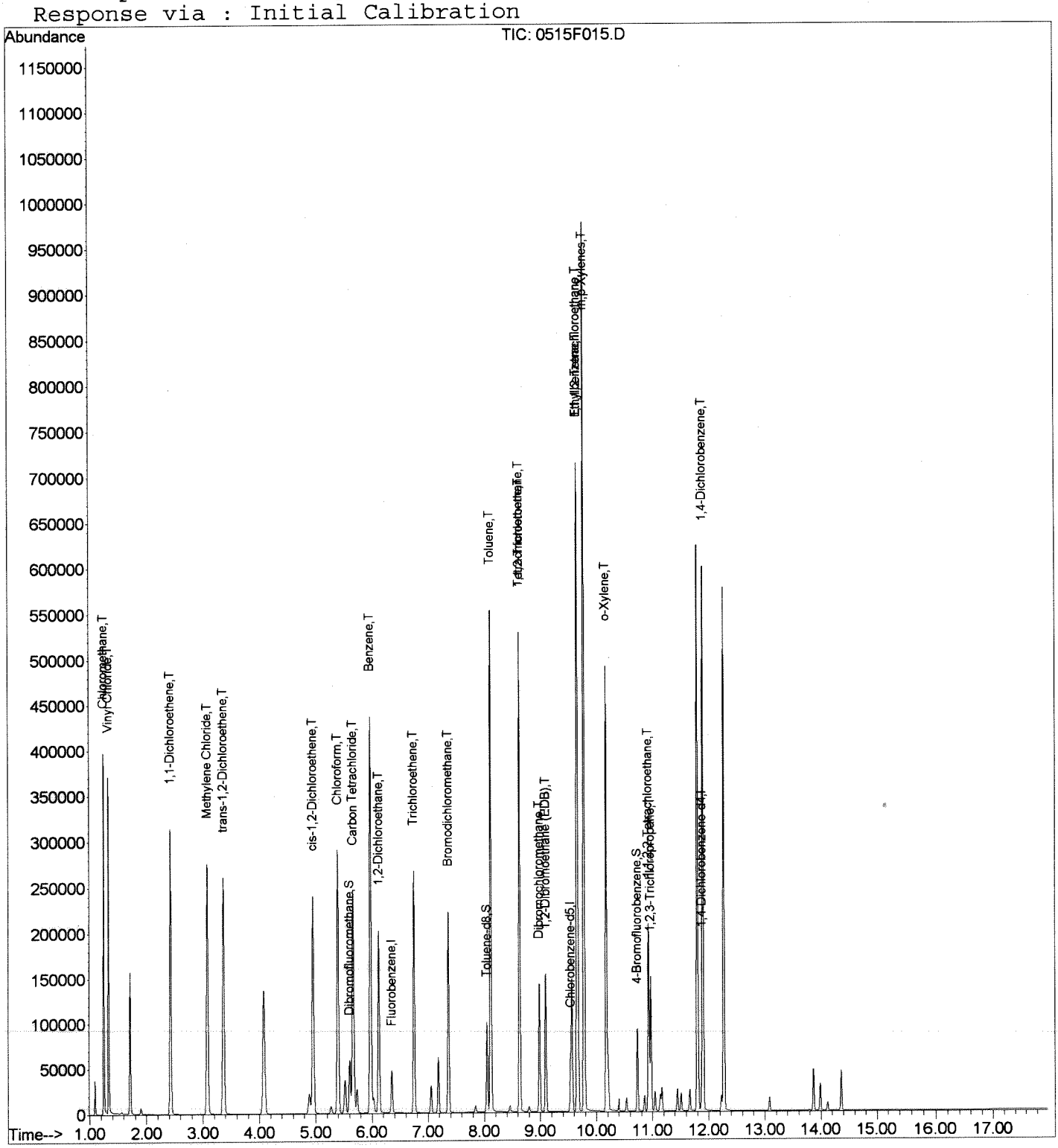
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	66029	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.53	117	45952	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	27571	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	51534	2165.46	ng/L	0.00
Spiked Amount 1000.000			Recovery = 216.55%			
15) Toluene-d8	8.05	98	122928	2398.32	ng/L	0.00
Spiked Amount 1000.000			Recovery = 239.83%			
25) 4-Bromofluorobenzene	10.73	95	54946	2909.16	ng/L	0.00
Spiked Amount 1000.000			Recovery = 290.92%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	240127	6556.27	ng/L	100
3) Vinyl Chloride	1.33	62	233426	6613.53	ng/L	100
4) 1,1-Dichloroethene	2.43	96	131429	6817.73	ng/L	99
5) Methylene Chloride	3.08	84	181435	6073.04	ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	149069	6748.85	ng/L	100
7) cis-1,2-Dichloroethene	4.95	96	147769	6912.96	ng/L	98
8) Chloroform	5.39	83	302940	6441.61	ng/L	99
10) Carbon Tetrachloride	5.66	117	209920	6862.19	ng/L	100
11) Benzene	5.97	78	606848	7243.79	ng/L	99
12) 1,2-Dichloroethane	6.12	62	213596	6457.78	ng/L	99
13) Trichloroethene	6.75	95	147889	7016.05	ng/L	99
14) Bromodichloromethane	7.36	83	207061	6563.43	ng/L	100
16) 1,1,2-Trichloroethane	8.63	83	117283	6642.20	ng/L	99
17) Dibromochloromethane	8.98	129	145981	6685.52	ng/L	100
18) 1,2-Dibromoethane (EDB)	9.09	107	121464	6859.95	ng/L	98
20) Toluene	8.12	92	294679	8040.87	ng/L	100
21) Ethylbenzene	9.66	106	155203	8561.93	ng/L	100
22) 1,1,1,2-Tetrachloroethane	9.67	131	154446	6490.02	ng/L	99
23) m,p-Xylenes	9.78	106	422544	19798.67	ng/L	99
24) o-Xylene	10.17	106	202681	9306.79	ng/L	100
26) 1,1,2,2-Tetrachloroethane	10.93	83	153008	6836.77	ng/L	98
27) 1,2,3-Trichloropropane	10.97	110	47406	7075.40	ng/L	98
28) Tetrachloroethene	8.63	164	127181	7146.07	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	346345	7091.24	ng/L	99

5/17/17

(#) = qualifier out of range (m) = manual integration
0515F015.D 051517MS30_8260SIM.M Tue May 16 11:28:44 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F015.D Vial: 15
Acq On : 15 May 2017 09:44 pm Operator: GH
Sample : SIM ICAL 7000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F016.D Vial: 16
Acq On : 15 May 2017 10:12 pm Operator: GH
Sample : SIM ICAL 10000 PPT Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:02:26 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:02:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	6.35	96	70658	1000.00 ng/L	0.00
19) Chlorobenzene-d5	9.54	117	49882	1000.00 ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.87	152	30847	1000.00 ng/L	0.00
System Monitoring Compounds					
9) Dibromofluoromethane	5.60	113	90840	3567.03 ng/L	0.00
Spiked Amount 1000.000			Recovery = 356.70%		
15) Toluene-d8	8.05	98	245121	4469.01 ng/L	0.00
Spiked Amount 1000.000			Recovery = 446.90%		
25) 4-Bromofluorobenzene	10.73	95	103056	5026.50 ng/L	0.00
Spiked Amount 1000.000			Recovery = 502.65%		
Target Compounds					Qvalue
2) Chloromethane	1.25	50	330636	8436.06 ng/L	100
3) Vinyl Chloride	1.33	62	325025	8605.46 ng/L	100
4) 1,1-Dichloroethene	2.43	96	182523	8847.89 ng/L	99
5) Methylene Chloride	3.08	84	251569	7868.93 ng/L	100
6) trans-1,2-Dichloroethene	3.37	96	209862	8878.71 ng/L	99
7) cis-1,2-Dichloroethene	4.95	96	212375	9284.48 ng/L	98
8) Chloroform	5.39	83	422832	8401.93 ng/L	99
10) Carbon Tetrachloride	5.66	117	292333	8930.18 ng/L	100
11) Benzene	5.97	78	876596	9778.20 ng/L	99
12) 1,2-Dichloroethane	6.12	62	301120	8507.52 ng/L	99
13) Trichloroethene	6.75	95	211752	9387.67 ng/L	98
14) Bromodichloromethane	7.36	83	292438	8662.43 ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	165516	8759.72 ng/L	99
17) Dibromochloromethane	8.98	129	207103	8863.36 ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	174839	9227.52 ng/L	98
20) Toluene	8.12	92	455267	11444.07 ng/L	99
21) Ethylbenzene	9.65	106	242741	12336.03 ng/L	97
22) 1,1,1,2-Tetrachloroethane	9.67	131	218417	8455.06 ng/L	100
23) m,p-Xylenes	9.78	106	678470	29285.67 ng/L	97
24) o-Xylene	10.18	106	312017	13198.53 ng/L	98
26) 1,1,2,2-Tetrachloroethane	10.93	83	216291	8902.99 ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	66660	9165.23 ng/L	92
28) Tetrachloroethene	8.63	164	182229	9432.42 ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	503448	9213.13 ng/L	98

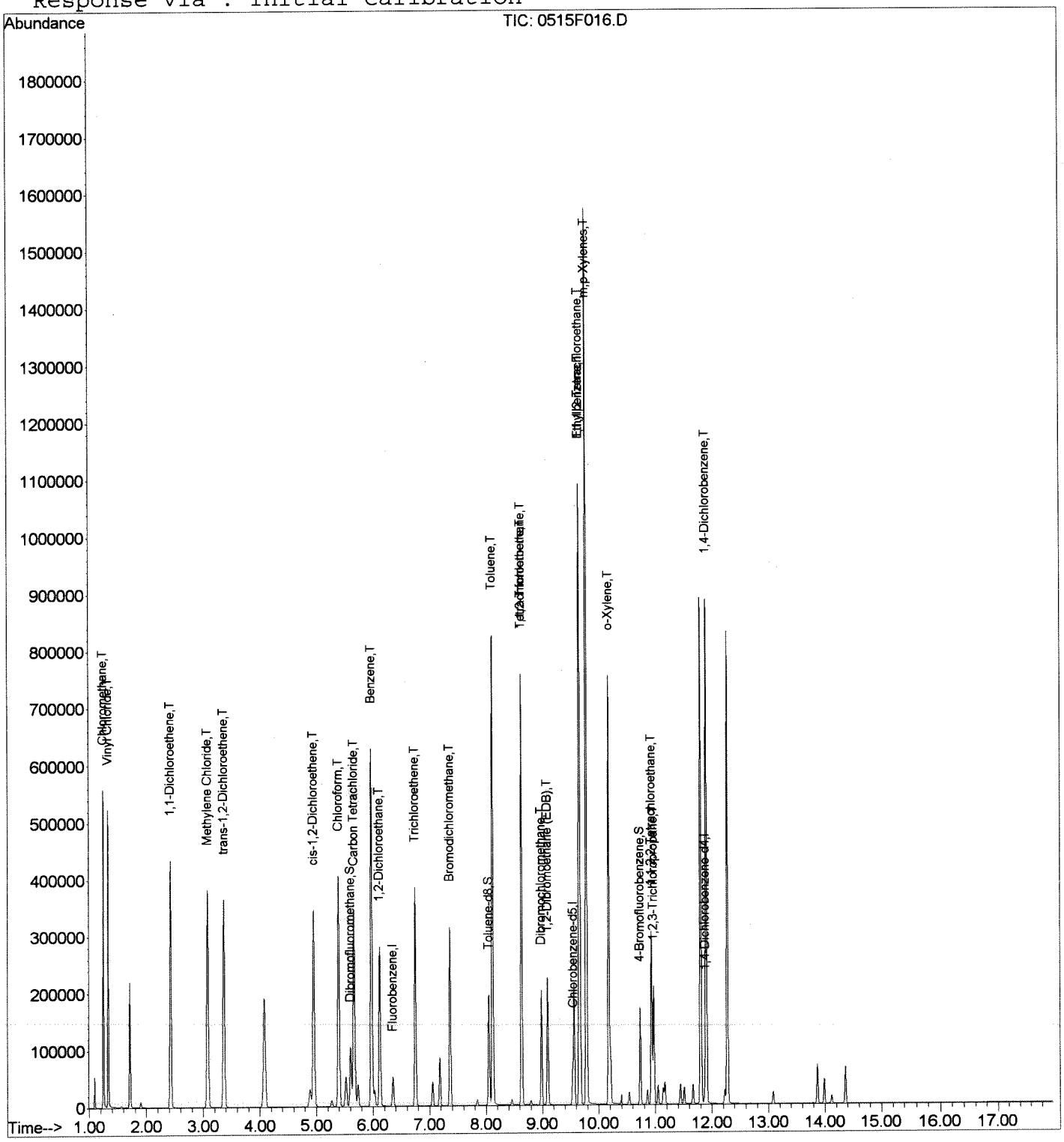
(#) = qualifier out of range (m) = manual integration
0515F016.D 051517MS30_8260SIM.M Tue May 16 11:28:44 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F016.D
Acq On : 15 May 2017 10:12 pm
Sample : SIM ICAL 10000 PPT
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:02 2017

Vial: 16
Operator: GH
Inst : MS30
Multiplr: 1.00

Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 08:45:36 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

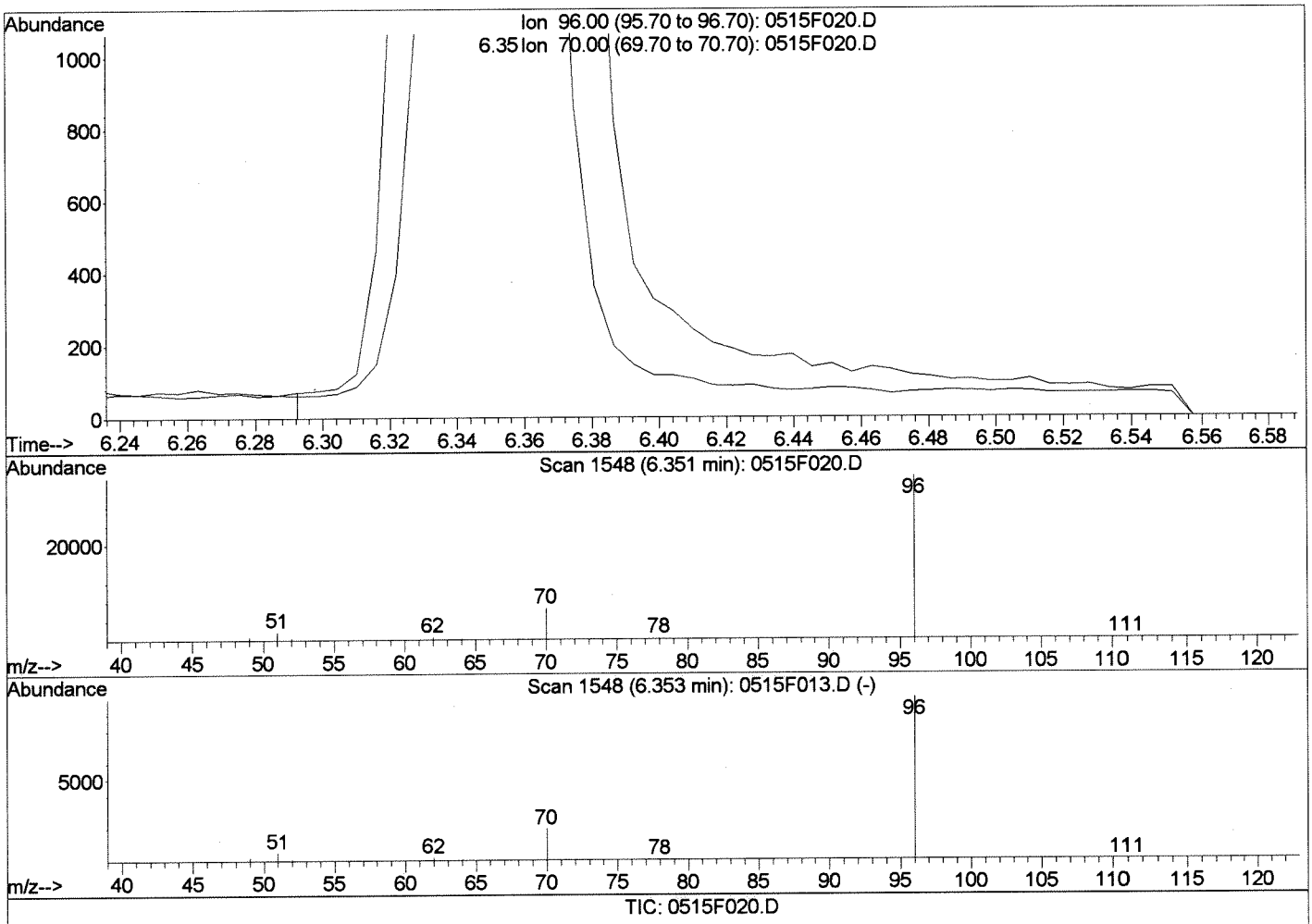
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	60011m	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	42478	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	20752	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20634	929.60	ng/L	0.00
Spiked Amount 1000.000			Recovery = 92.96%			
15) Toluene-d8	8.05	98	51260	1070.91	ng/L	0.00
Spiked Amount 1000.000			Recovery = 107.09%			
25) 4-Bromofluorobenzene	10.73	95	16790	888.49	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.85%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	53040	1544.15	ng/L	99
3) Vinyl Chloride	1.33	62	53703	1608.82	ng/L	99
4) 1,1-Dichloroethene	2.43	96	37588	2024.96	ng/L	98
5) Methylene Chloride	3.08	84	53605	2062.59	ng/L	98
6) trans-1,2-Dichloroethene	3.36	96	41221	1958.14	ng/L	97
7) cis-1,2-Dichloroethene	4.95	96	40390	2012.29	ng/L	98
8) Chloroform	5.39	83	87226	2021.22	ng/L	99
10) Carbon Tetrachloride	5.66	117	57968	2035.43	ng/L	99
11) Benzene	5.97	78	153889	1876.12	ng/L	100
12) 1,2-Dichloroethane	6.12	62	59693	1950.83	ng/L	99
13) Trichloroethene	6.75	95	40581	2011.60	ng/L	98
14) Bromodichloromethane	7.36	83	59078	2044.17	ng/L	99
16) 1,1,2-Trichloroethane	8.63	83	32272	1995.07	ng/L	98
17) Dibromochloromethane	8.98	129	38530	1922.24	ng/L	99
18) 1,2-Dibromoethane (EDB)	9.09	107	31349	1982.70	ng/L	97
20) Toluene	8.12	92	72439	1943.07	ng/L	99
21) Ethylbenzene	9.65	106	36388	2023.60	ng/L	96
22) 1,1,1,2-Tetrachloroethane	9.67	131	41345	1845.40	ng/L	99
23) m,p-Xylenes	9.78	106	84779	4118.72	ng/L	97
24) o-Xylene	10.18	106	41872	1994.48	ng/L	96
26) 1,1,2,2-Tetrachloroethane	10.93	83	40199	2009.41	ng/L	99
27) 1,2,3-Trichloropropane	10.97	110	11537	1839.31	ng/L #	89
28) Tetrachloroethene	8.63	164	33789	1933.26	ng/L	99
30) 1,4-Dichlorobenzene	11.90	146	77205	2061.73	ng/L	97

(#) = qualifier out of range (m) = manual integration
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:31:11 2017 Page 1

Data File : J:\MS30\DATA\051517_SIM\0515F020.D
Acq On : 16 May 2017 12:02 am
Sample : ICV
Misc :
MS Integration Params: RTEINT.P
Quant Time: May 16 8:45 2017

Vial: 20
Operator: GH
Inst : MS30
Multiplr: 1.00
Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration



TIC: 0515F020.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L

response 60778

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

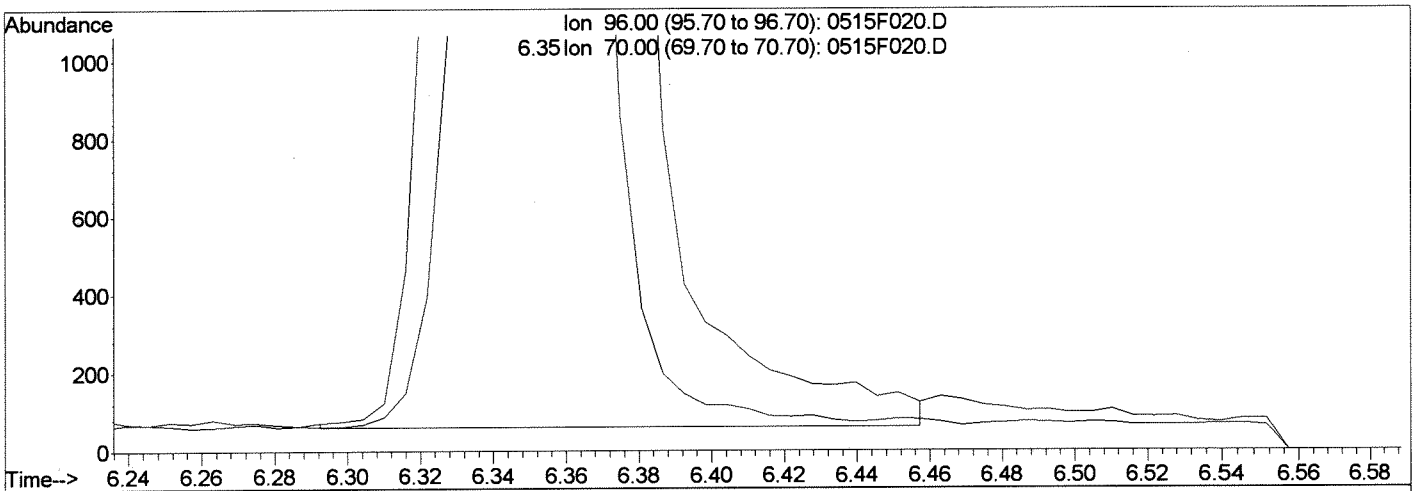
Before

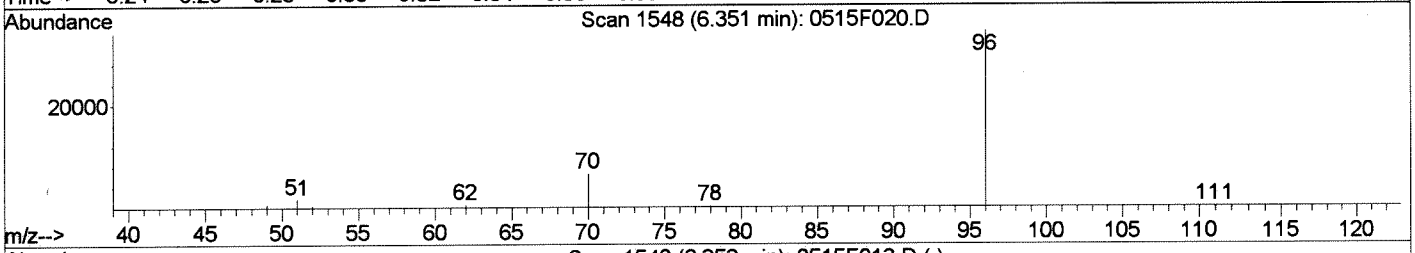
05/16/17

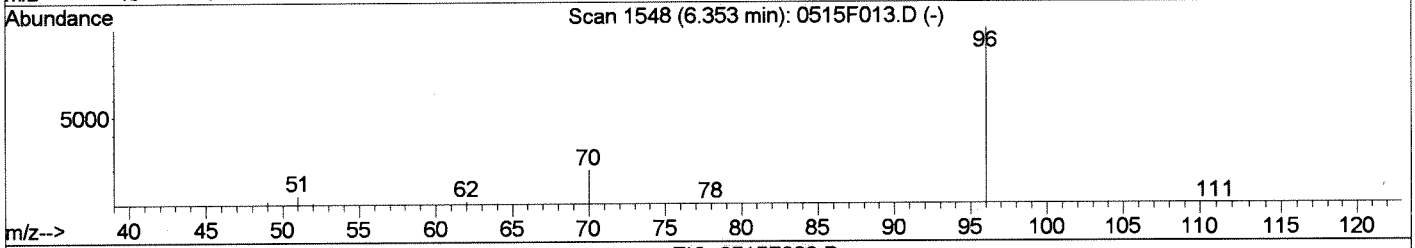
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:29:21 2017

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:29 2017 Quant Results File: temp.res

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Multiple Level Calibration







TIC: 0515F020.D

(1) Fluorobenzene (I)

6.35min 1000.00ng/L m

response 60011

Ion	Exp%	Act%
96.00	100	100
70.00	19.30	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

After

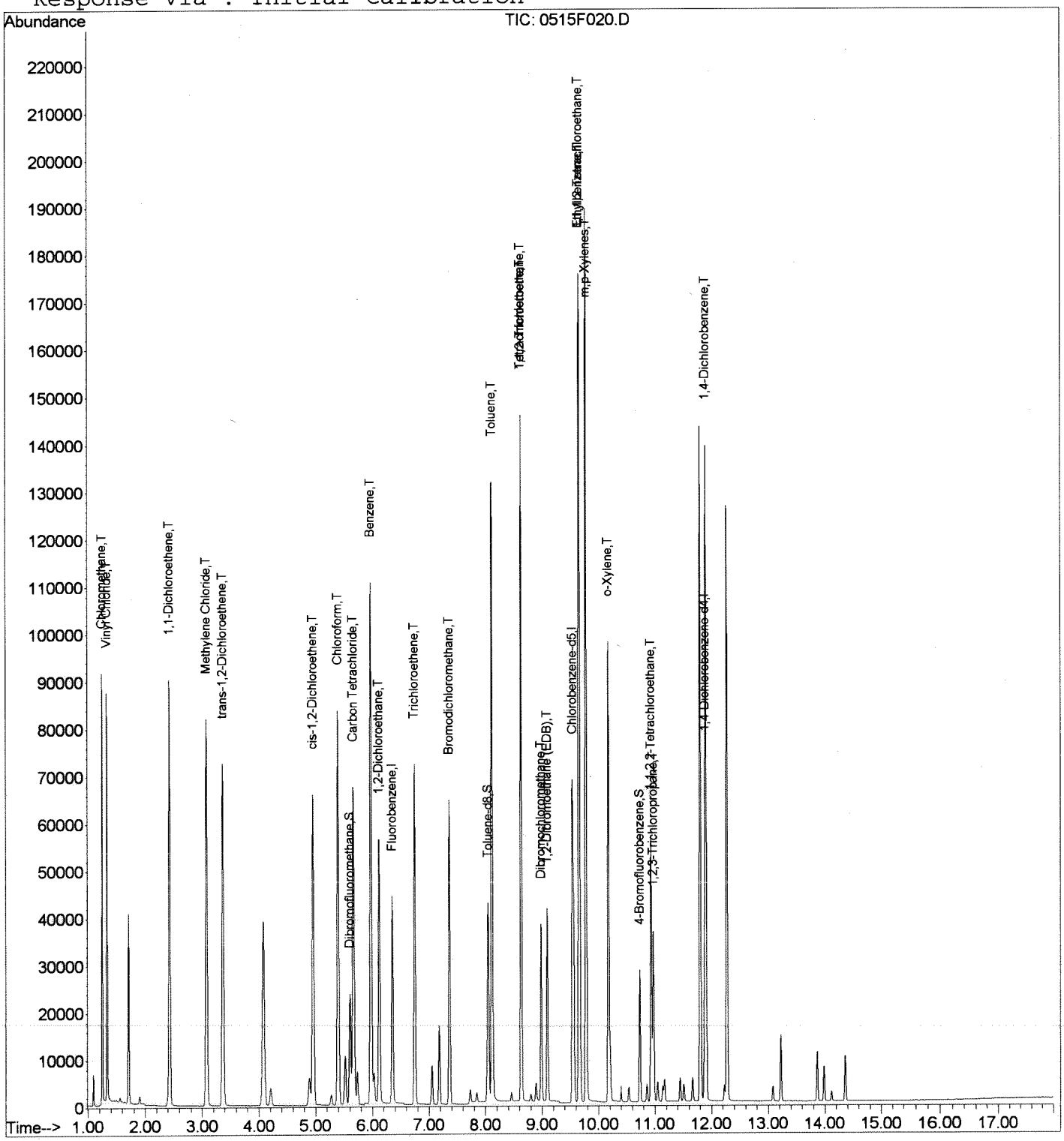
Baseline correction

05/16/17

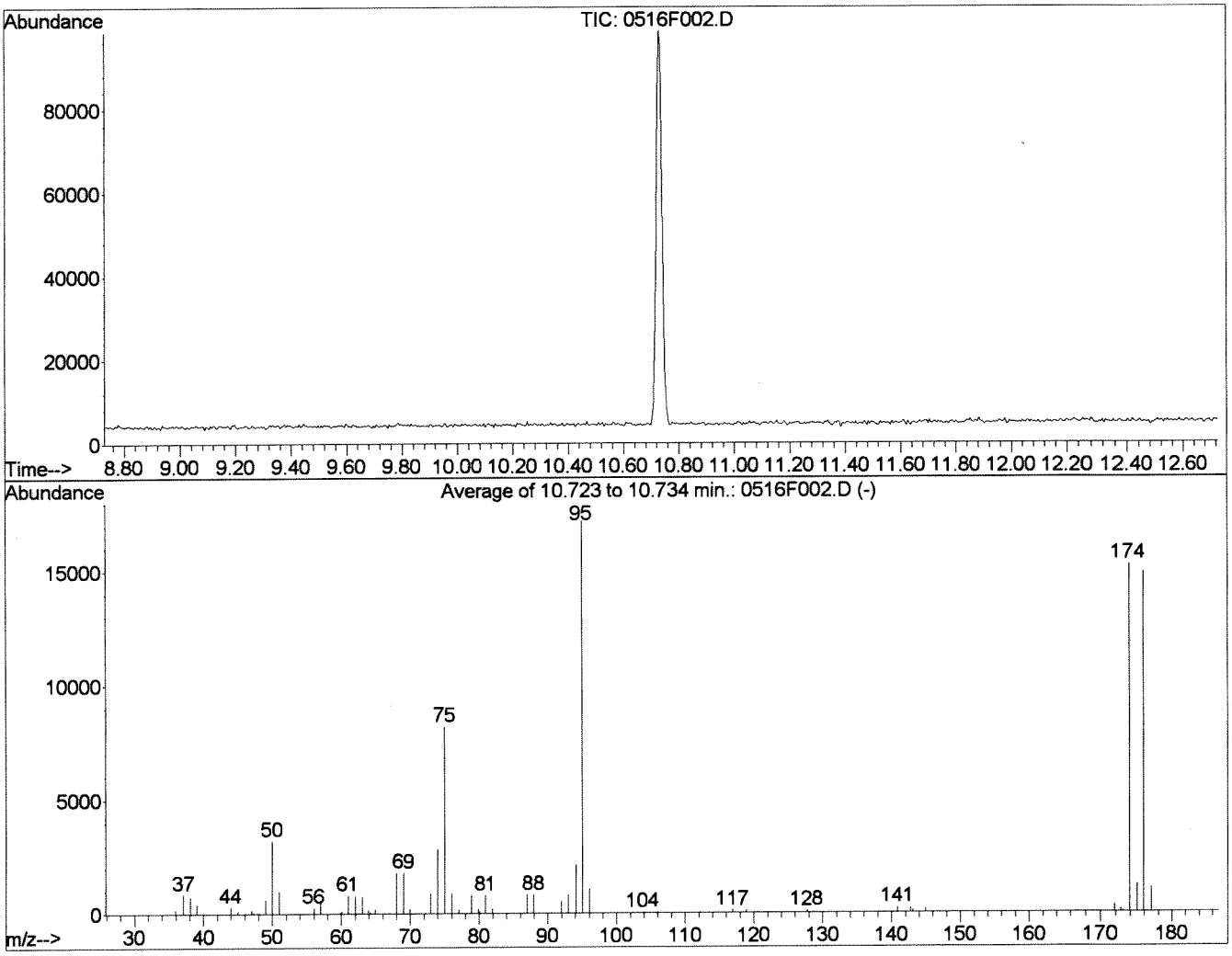
0515F020.D 051517MS30_8260SIM.M Tue May 16 11:29:41 2017

Data File : J:\MS30\DATA\051517_SIM\0515F020.D Vial: 20
Acq On : 16 May 2017 12:02 am Operator: GH
Sample : ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:29 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Data File : J:\MS30\DATA\051617_SIM\0516F002.D Vial: 2
Acq On : 16 May 2017 09:55 am Operator: GH
Sample : 50NG BFB Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM



AutoFind: Scans 1857, 1858, 1859; Background Corrected with Scan 1850

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.7	3221	PASS
75	95	30	60	47.6	8172	PASS
95	95	100	100	100.0	17186	PASS
96	95	5	9	6.2	1069	PASS
173	174	0.00	2	0.9	133	PASS
174	95	50	120	88.7	15241	PASS
175	174	5	9	8.0	1212	PASS
176	174	95	101	97.9	14914	PASS
177	176	5	9	7.1	1052	PASS

5/16/17

5/17/17

J:\MS30\DATA\051617_SIM\0516F002.D 051517MS30_8260SIM.M Tue May 16 11:2

Quantitation Report (QT Reviewed)

Data File : J:\MS30\DATA\051617_SIM\0516F003.D Vial: 3
Acq On : 16 May 2017 10:36 am Operator: GH
Sample : MIX 6 ONLY ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:57:48 2017 Quant Results File: 051517MS30_8260

Quant Method : J:\MS27\M...\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration
DataAcq Meth : 8260SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	6.35	96	54623	1000.00	ng/L	0.00
19) Chlorobenzene-d5	9.54	117	36181	1000.00	ng/L	0.00
29) 1,4-Dichlorobenzene-d4	11.88	152	14352	1000.00	ng/L	0.00
System Monitoring Compounds						
9) Dibromofluoromethane	5.60	113	20829	1030.95	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.10%			
15) Toluene-d8	8.05	98	45229	1038.12	ng/L	0.00
Spiked Amount 1000.000			Recovery = 103.81%			
25) 4-Bromofluorobenzene	10.73	95	14176	880.72	ng/L	0.00
Spiked Amount 1000.000			Recovery = 88.07%			
Target Compounds						Qvalue
2) Chloromethane	1.25	50	64784	2072.09	ng/L	100
3) Vinyl Chloride	1.33	62	60947	2005.93	ng/L	99
30) 1,4-Dichlorobenzene	11.91	146	198	7.65	ng/L	95

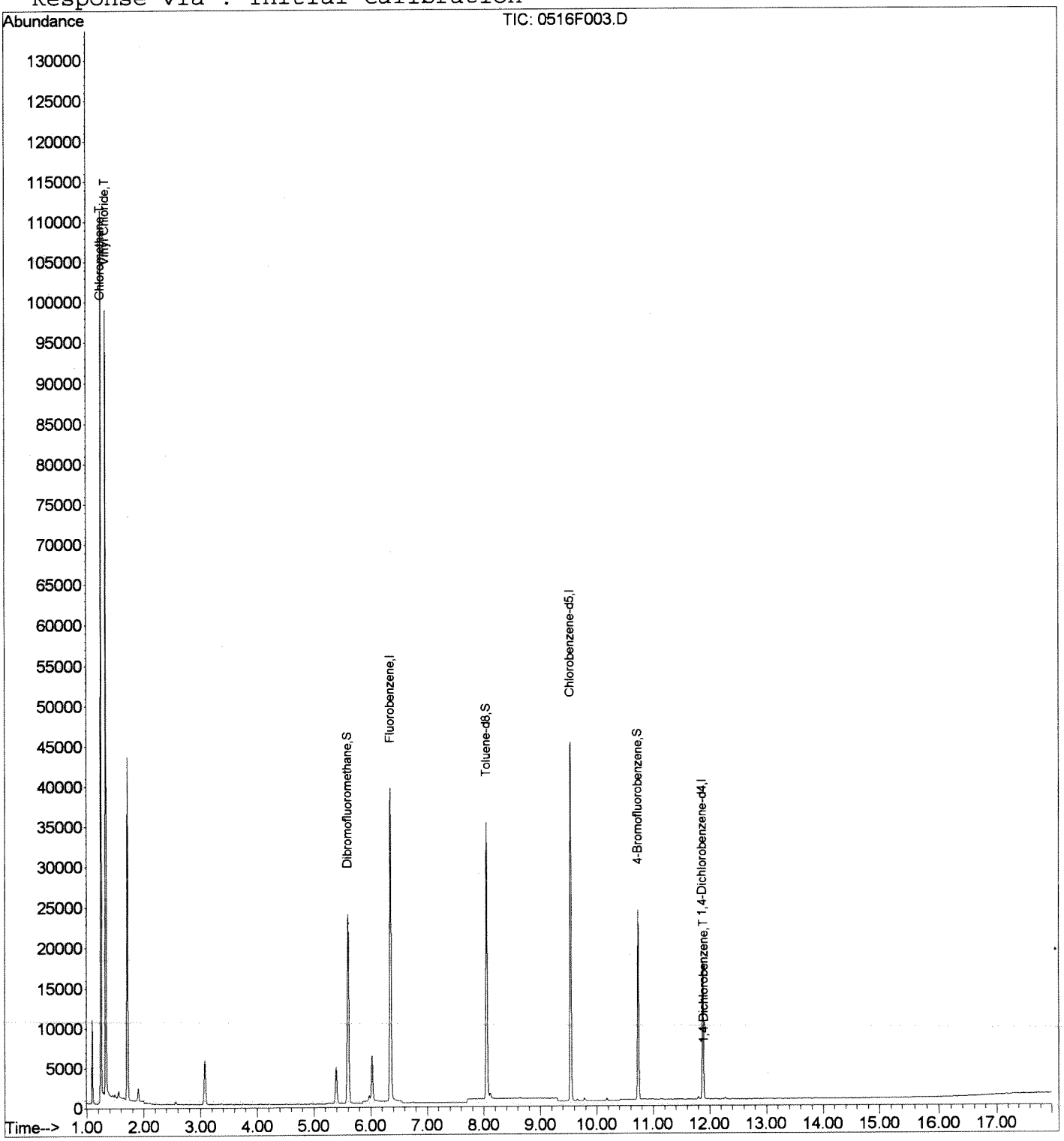
5/16/17

5/16/17

(#) = qualifier out of range (m) = manual integration
0516F003.D 051517MS30_8260SIM.M Tue May 16 11:28:45 2017 Page 1

Data File : J:\MS30\DATA\051617_SIM\0516F003.D Vial: 3
Acq On : 16 May 2017 10:36 am Operator: GH
Sample : MIX 6 ONLY ICV Inst : MS30
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 11:28 2017 Quant Results File: 051517MS30_8

Method : J:\MS27\METHODS\051517MS30_8260SIM.M (RTE Integrator)
Title : VOA MS27 EPA8260C SIM
Last Update : Tue May 16 08:45:12 2017
Response via : Initial Calibration



Appendix B12
GCAL Report 218013015 dated February 6, 2018

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/06/2018

GCAL Report 218013015

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218013015

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218013015

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21801301501	OMS-28-GW73-16	Water	01/29/2018 15:15	01/30/2018 09:40
21801301502	OMS-28-GW73-16-c	Water	01/29/2018 00:01	01/30/2018 09:40
21801301503	OMS-28-GW73-33	Water	01/29/2018 16:00	01/30/2018 09:40

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21801301501	OMS-28-GW73-16	W	EPA 8260B DOD Water
21801301502	OMS-28-GW73-16-c	W	EPA 8260B DOD Water
21801301503	OMS-28-GW73-33	W	EPA 8260B DOD Water

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.

Summary of Compounds Detected

No analytes were detected for analyses performed by GCAL.

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Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013015			Client Sample ID:	OMS-28-GW73-16
Collect Date:	01/29/18	Time:	1515	GCAL Sample ID:	21801301501
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180201/e4280
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18	Time:	1232	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013015			Client Sample ID:	OMS-28-GW73-16-c
Collect Date:	01/29/18	Time:	0001	GCAL Sample ID:	21801301502
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180201/e4281
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18	Time:	1254	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013015			Client Sample ID:	OMS-28-GW73-33
Collect Date:	01/29/18	Time:	1600	GCAL Sample ID:	21801301503
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180201/e4282
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18	Time:	1316	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013015			Client Sample ID:	MB1769807
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1769807
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180201/e4274
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18	Time:	1018	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 218013015 Analytical Method: EPA 8260B

	Client Sample ID	GCAL Sample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1 .	OMS-28-GW73-16	21801301501	102		96		105		106		0
2 .	OMS-28-GW73-16-c	21801301502	103		97		104		107		0
3 .	OMS-28-GW73-33	21801301503	104		95		106		106		0
4 .	MB1769807	1769807	101		95		104		106		0
5 .	LCS1769808	1769808	99		102		99		100		0
6 .	LCSD1769809	1769809	99		101		99		100		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 218013015

Analytical Method: EPA 8260B

Analytical Batch: 628147

GCAL QC ID: 1769808

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
Tetrachloroethene	ug/L	50	0	51.3	103		74 - 129
Trichloroethene	ug/L	50	0	51.3	103		79 - 123
cis-1,2-Dichloroethene	ug/L	50	0	53.8	108		78 - 123

GCAL QC ID: 1769809

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
Tetrachloroethene	ug/L	50	50.9	102		.8		74 - 129	0 - 20
Trichloroethene	ug/L	50	50.9	102		.8		79 - 123	0 - 20
cis-1,2-Dichloroethene	ug/L	50	54.2	108		.7		78 - 123	0 - 20

RPD : 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	218013015	Method Blank ID:	1769807
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180201/e4274
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 1018	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1769808	1769808	2180201/e4270L	02/01/18	0849
2 .	LCSD1769809	1769809	2180201/e4271	02/01/18	0911
3 .	OMS-28-GW73-16	21801301501	2180201/e4280	02/01/18	1232
4 .	OMS-28-GW73-16-c	21801301502	2180201/e4281	02/01/18	1254
5 .	OMS-28-GW73-33	21801301503	2180201/e4282	02/01/18	1316

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218013015	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4235D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1021	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	17.72	(	)	
75	30.0 - 60.0% of mass 95	46.53	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.39	(	)	
173	Less than 2.0% of mass 174	.98	(1.02	)	1
174	50.0 - 120.0% of mass 95	96.35	(	)	
175	5.0 - 9.0% of mass 174	7.19	(7.47	)	1
176	95.0 - 101.0% of mass 174	93.63	(97.18	)	1
177	5.0 - 9.0% of mass 176	5.94	(6.35	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2180131/e4238D	01/31/18	1155
2 .	V13STD005	1204	2180131/e4240D	01/31/18	1240
3 .	V13STD010	1205	2180131/e4241D	01/31/18	1302
4 .	V13STD020	1206	2180131/e4242D	01/31/18	1324
5 .	V13STD050	1207	2180131/e4243D	01/31/18	1346
6 .	V13STD100	1208	2180131/e4244D	01/31/18	1409
7 .	V13STD200	1209	2180131/e4245D	01/31/18	1431
8 .	ICV050	1600	2180131/e4248D	01/31/18	1538

FORM V VOA

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218013015	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4268bfb
Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 0748	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	18.03	(	)	
75	30.0 - 60.0% of mass 95	47.08	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.55	(	)	
173	Less than 2.0% of mass 174	.83	(.87	)	1
174	50.0 - 120.0% of mass 95	95.65	(	)	
175	5.0 - 9.0% of mass 174	6.6	(6.91	)	1
176	95.0 - 101.0% of mass 174	93.3	(97.55	)	1
177	5.0 - 9.0% of mass 176	6.33	(6.79	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2180201/e4270	02/01/18	0849
2 .	LCS1769808	1769808	2180201/e4270L	02/01/18	0849
3 .	LCSD1769809	1769809	2180201/e4271	02/01/18	0911
4 .	MB1769807	1769807	2180201/e4274	02/01/18	1018
5 .	OMS-28-GW73-16	21801301501	2180201/e4280	02/01/18	1232
6 .	OMS-28-GW73-16-c	21801301502	2180201/e4281	02/01/18	1254
7 .	OMS-28-GW73-33	21801301503	2180201/e4282	02/01/18	1316
8 .	V13STD050	1440	2180201/e4295	02/01/18	1806

FORM V VOA

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013015			Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1:	1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2:	1431	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.582	0.613	0.564	0.550	0.563	0.546	0.517	0.562			5.320	A
1,1,1-Trichloroethane			0.321	0.363	0.341	0.336	0.347	0.337	0.330	0.339			3.900	A
1,1,2,2-Tetrachloroethane			1.015	0.947	0.854	0.829	0.828	0.814	0.775	0.866			9.750	A
1,1,2-Trichloroethane			0.600	0.586	0.535	0.535	0.549	0.539	0.536	0.554			4.912	A
1,1-Dichloroethane			0.462	0.458	0.426	0.421	0.437	0.423	0.413	0.435			4.400	A
1,1-Dichloroethene			0.182	0.179	0.163	0.158	0.164	0.156	0.154	0.165			6.625	A
1,1-Dichloropropene			0.206	0.235	0.248	0.265	0.301	0.302	0.303	0.266			14.43	A
1,2,3-Trichlorobenzene (RSP)			477	5824	13716	35889	117256	253980	511192	0.831	0.026		0.995	W
1,2,3-Trichlorobenzene			0.225	0.458	0.524	0.641	0.792	0.837	0.840					
1,2,3-Trichloropropane			0.962	0.991	0.950	0.917	0.962	0.947	0.909	0.948			2.935	A
1,2,4-Trichlorobenzene (RSP)			575	5354	11975	31052	105242	247400	511416	0.855	0.090		0.998	L
1,2,4-Trichlorobenzene			0.271	0.421	0.458	0.555	0.710	0.815	0.841					
1,2,4-Trimethylbenzene (RSP)			2638	19970	46899	111022	318399	641277	1185541	2.032	0.010		0.997	W
1,2,4-Trimethylbenzene			1.242	1.572	1.792	1.983	2.149	2.113	1.949					
1,2-Dibromo-3-chloropropane			0.153	0.176	0.161	0.177	0.195	0.203	0.212	0.182			12.04	A
1,2-Dibromoethane			0.531	0.507	0.471	0.492	0.539	0.540	0.545	0.518			5.481	A
1,2-Dichlorobenzene			1.263	1.276	1.242	1.218	1.304	1.286	1.243	1.262			2.341	A
1,2-Dichloroethane			0.414	0.377	0.354	0.347	0.356	0.342	0.332	0.360			7.652	A
1,2-Dichloroethane-d4			0.169	0.167	0.165	0.166	0.165	0.162	0.160	0.165			1.738	A
1,2-Dichloroethene (total)			0.281	0.296	0.294	0.299	0.321	0.318	0.317	0.304			5.017	A
1,2-Dichloropropane			0.230	0.235	0.229	0.234	0.245	0.245	0.241	0.237			2.857	A
1,3,5-Trimethylbenzene			1.426	1.740	1.849	1.999	2.153	2.052	1.855	1.868			12.83	A
1,3-Dichlorobenzene			1.276	1.297	1.319	1.286	1.315	1.303	1.234	1.290			2.247	A
1,3-Dichloropropane			0.805	0.860	0.812	0.838	0.938	0.936	0.939	0.875			6.961	A
1,3-Dichloropropylene (RSP)			2542	16787	35541	81949	252531	533058	1103114	0.370	0.033		0.997	W

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013015		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,3-Dichloropropylene			0.209	0.261	0.277	0.309	0.366	0.372	0.373					
1,4-Dichlorobenzene			1.478	1.399	1.315	1.281	1.305	1.288	1.217	1.326			6.490	A
1-Bromo-2-Chloroethane			0.356	0.344	0.339	0.356	0.376	0.375	0.372	0.360			4.174	A
1-Chlorohexane (RSP)			1107	5416	12067	28084	90902	225775	457695	0.743	0.090		0.997	L
1-Chlorohexane			0.452	0.399	0.426	0.473	0.590	0.720	0.729					
2,2-Dichloropropane			0.267	0.303	0.287	0.293	0.300	0.306	0.303	0.294			4.580	A
2-Butanone (RSP)			803	5143	9977	23549	68871	144310	295627	0.200	0.012		0.998	W
2-Butanone			0.132	0.160	0.156	0.178	0.199	0.201	0.200					
2-Chloroethylvinyl ether (RSP)			366	2120	4679	11625	35122	77376	179733	0.115	0.024		0.990	W
2-Chloroethylvinyl ether			0.060	0.066	0.073	0.088	0.102	0.108	0.122					
2-Chlorotoluene			1.920	1.913	1.876	1.944	2.037	1.992	1.869	1.936			3.139	A
2-Hexanone (RSP)				4394	8678	21172	74100	173057	376361	0.588	0.080		0.992	W
2-Hexanone				0.324	0.306	0.357	0.481	0.552	0.599					
4-Bromofluorobenzene			0.767	0.787	0.781	0.773	0.790	0.806	0.828	0.790			2.623	A
4-Chlorotoluene			1.424	1.609	1.692	1.736	1.861	1.845	1.744	1.701			8.818	A
4-Isopropyltoluene (RSP)			2465	18779	45009	107177	314072	638401	1196201	2.031	0.012		0.997	W
4-Isopropyltoluene			1.161	1.478	1.720	1.914	2.120	2.104	1.966					
4-Methyl-2-pentanone (RSP)				6202	13383	32149	101375	222197	460940	0.731	0.058		0.997	W
4-Methyl-2-pentanone				0.457	0.472	0.542	0.658	0.709	0.734					
Acetone			0.183	0.197	0.183	0.192	0.192	0.183	0.176	0.187			3.929	A
Acrolein (RSP)				993	2486	4717	16141	33528	72265	0.010	0.239		0.997	W
Acrolein				0.006	0.008	0.007	0.009	0.009	0.010					
Acrylonitrile			0.090	0.093	0.106	0.111	0.117	0.107	0.112	0.105			9.463	A
Benzene			0.833	0.899	0.878	0.925	0.986	0.954	0.917	0.913			5.459	A
Bromobenzene			1.311	1.257	1.192	1.167	1.212	1.169	1.133	1.206			5.032	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013015		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Bromochloromethane			0.131	0.143	0.139	0.135	0.137	0.129	0.113	0.133			7.468	A
Bromodichloromethane			0.335	0.355	0.339	0.339	0.343	0.332	0.323	0.338			3.001	A
Bromoform			0.504	0.572	0.512	0.502	0.528	0.525	0.499	0.520			4.840	A
Bromomethane (RSP)			1087	5140	9147	17056	42570	85055	182023	0.122	-0.014		0.998	W
Bromomethane			0.179	0.160	0.143	0.129	0.123	0.119	0.123					
Carbon disulfide			0.645	0.613	0.578	0.565	0.572	0.541	0.522	0.577			7.248	A
Carbon tetrachloride			0.296	0.319	0.309	0.309	0.320	0.305	0.300	0.308			2.916	A
Chlorobenzene			1.806	1.735	1.598	1.572	1.598	1.522	1.439	1.610			7.726	A
Chloroethane			0.154	0.155	0.147	0.135	0.127	0.120	0.102	0.134			14.32	A
Chloroform			0.445	0.467	0.440	0.423	0.426	0.405	0.389	0.428			6.104	A
Chloromethane			0.325	0.311	0.297	0.280	0.268	0.258	0.251	0.284			9.730	A
Cyclohexane (RSP)			1260	8799	18824	43237	133879	271848	553105	0.377	0.015		0.998	W
Cyclohexane			0.207	0.274	0.294	0.327	0.388	0.379	0.374					
Dibromochloromethane			0.651	0.683	0.609	0.602	0.646	0.641	0.649	0.640			4.272	A
Dibromofluoromethane			0.283	0.278	0.276	0.271	0.263	0.261	0.256	0.270			3.656	A
Dibromomethane			0.124	0.164	0.156	0.152	0.157	0.153	0.150	0.151			8.379	A
Dichlorodifluoromethane			0.268	0.275	0.268	0.253	0.264	0.245	0.242	0.259			4.953	A
Ethylbenzene			0.728	0.792	0.787	0.788	0.824	0.803	0.758	0.783			3.977	A
Hexachlorobutadiene			0.456	0.438	0.424	0.404	0.417	0.426	0.416	0.426			3.973	A
Isopropylbenzene (Cumene) (			3501	24195	52574	126195	373920	763962	1443275	2.353	0.013		0.997	W
Isopropylbenzene (Cumene)			1.429	1.785	1.856	2.126	2.426	2.437	2.297					
Methyl Acetate			0.235	0.236	0.216	0.230	0.242	0.237	0.227	0.232			3.736	A
Methyl iodide (RSP)				2508	6103	15770	57090	131600	275600	5.263	0.104	-0.061	0.999	Q
Methyl iodide				0.078	0.095	0.119	0.165	0.183	0.186					
Methylcyclohexane			0.249	0.294	0.298	0.309	0.356	0.354	0.349	0.316			12.63	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013015			Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1:	1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2:	1431	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Methylene chloride			0.292	0.301	0.270	0.288	0.282	0.259	0.265	0.280			5.549	A
Naphthalene (RSP)				7131	18037	55774	248352	614835	1295606	2.134	0.115		0.990	W
Naphthalene				0.561	0.689	0.996	1.677	2.026	2.130					
Styrene (RSP)			2129	15824	36057	87567	255692	514927	987479	1.605	0.014		0.998	W
Styrene			0.869	1.167	1.273	1.475	1.659	1.642	1.572					
Tetrachloroethene			0.512	0.529	0.494	0.484	0.508	0.506	0.507	0.506			2.780	A
Toluene			2.494	2.496	2.297	2.300	2.364	2.333	2.249	2.362			4.127	A
Toluene-d8			2.371	2.279	2.219	2.246	2.227	2.270	2.332	2.278			2.451	A
Trichloroethene			0.262	0.276	0.268	0.270	0.282	0.263	0.250	0.267			3.874	A
Trichlorofluoromethane			0.317	0.307	0.289	0.276	0.279	0.261	0.257	0.284			7.888	A
Trichlorotrifluoroethane			0.161	0.177	0.176	0.166	0.162	0.155	0.150	0.164			6.227	A
Vinyl acetate (RSP)			848	4570	10724	24623	71333	159827	369833	0.237	0.021		0.991	W
Vinyl acetate			0.139	0.142	0.167	0.186	0.207	0.223	0.250					
Vinyl chloride			0.273	0.278	0.260	0.256	0.272	0.263	0.260	0.266			3.086	A
Xylene (total) (RSP)			4749	33290	70315	160471	460524	920641	1745097	0.951	0.026		0.998	W
Xylene (total)			0.646	0.818	0.827	0.901	0.996	0.979	0.926					
cis-1,2-Dichloroethene			0.258	0.283	0.280	0.292	0.325	0.324	0.322	0.298			8.738	A
cis-1,3-Dichloropropene (RSP)			1367	8661	18146	42900	133479	279970	581372	0.390	0.017		0.997	W
cis-1,3-Dichloropropene			0.225	0.269	0.283	0.324	0.387	0.390	0.393					
m,p-Xylene (RSP)			3361	23770	50062	113426	312699	613620	1131824	0.943	0.009		0.997	W
m,p-Xylene			0.686	0.877	0.883	0.956	1.014	0.979	0.901					
n-Butylbenzene (RSP)			2487	15865	35072	85648	253755	533009	1022170	1.703	0.013		0.997	W
n-Butylbenzene			1.171	1.249	1.340	1.530	1.713	1.756	1.680					
n-Hexane			0.221	0.243	0.237	0.253	0.286	0.293	0.300	0.262			11.83	A
n-Propylbenzene			2.743	2.695	2.699	2.753	2.894	2.811	2.566	2.737			3.742	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013015		Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
o-Xylene (RSP)			1388	9520	20253	47045	147825	307021	613273	0.971	0.016		0.997	W
o-Xylene			0.566	0.702	0.715	0.793	0.959	0.979	0.976					
sec-Butylbenzene			1.618	2.013	2.208	2.316	2.462	2.423	2.209	2.178			13.28	A
tert-Butyl methyl ether (MTBE)			0.507	0.563	0.552	0.594	0.656	0.652	0.651	0.596			9.852	A
tert-Butylbenzene			0.817	0.906	0.954	1.016	1.124	1.123	1.080	1.003			11.64	A
trans-1,2-Dichloroethene			0.303	0.309	0.307	0.305	0.317	0.313	0.312	0.309			1.596	A
trans-1,3-Dichloropropene (RS			1175	8126	17395	39049	119052	253088	521742	0.351	0.016		0.997	W
trans-1,3-Dichloropropene			0.193	0.253	0.271	0.295	0.345	0.353	0.353					
trans-1,4-Dichloro-2-butene			0.135	0.164	0.172	0.176	0.188	0.196	0.199	0.176			12.53	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

Form 6I

ICAL Verifications

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	218013015	Instrument ID:	MSV13
Analysis Date:	01/31/18 1538	Lab File ID:	2180131/e4248D
Analysis Method:	EPA 8260B	Analytical Batch:	628122

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
cis-1,2-Dichloroethene	ug/L	50.0	50.5	101	80	120	
Tetrachloroethene	ug/L	50.0	47.1	94	80	120	
Trichloroethene	ug/L	50.0	47.6	95	80	120	

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218013015	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4270
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 0849	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.575	.01	2.21	20	A	
1,1,1-Trichloroethane	0.339	0.348	.01	2.63	20	A	
1,1,2,2-Tetrachloroethane	0.866	0.852	.3	-1.62	20	A	
1,1,2-Trichloroethane	0.554	0.564	.01	1.75	20	A	
1,1-Dichloroethane	0.435	0.434	.1	-.1	20	A	
1,1-Dichloroethene	0.165	0.161	.01	-2.74	20	A	
1,1-Dichloropropene	0.266	0.295	.01	11.2	20	A	
1,2,3-Trichlorobenzene	0.831	0.814	.01	.4	20	W	
1,2,3-Trichloropropane	0.948	0.975	.01	2.81	20	A	
1,2,4-Trichlorobenzene	0.855	0.741	.01	-4.4	20	L	
1,2,4-Trimethylbenzene	2.032	2.160	.01	7.4	20	W	
1,2-Dibromo-3-chloropropane	0.182	0.198	.01	8.9	20	A	
1,2-Dibromoethane	0.518	0.541	.01	4.52	20	A	
1,2-Dichlorobenzene	1.262	1.313	.01	4.1	20	A	
1,2-Dichloroethane	0.360	0.357	.01	-.9	20	A	
1,2-Dichloroethane-d4	0.165	0.163	.01	-1.28	20	A	
1,2-Dichloroethene (total)	0.304	0.319	.01	4.98	20	A	
1,2-Dichloropropane	0.237	0.247	.01	3.97	20	A	
1,3,5-Trimethylbenzene	1.868	2.144	.01	14.8	20	A	
1,3-Dichlorobenzene	1.290	1.334	.01	3.41	20	A	
1,3-Dichloropropane	0.875	0.948	.01	8.24	20	A	
1,3-Dichloropropylene	0.370	0.369	.01	1	20	W	
1,4-Dichlorobenzene	1.326	1.338	.01	.89	20	A	
1-Bromo-2-Chloroethane	0.360	0.376	.01	4.44	20	A	
1-Chlorohexane	0.743	0.603	.01	-9.8	20	L	
2,2-Dichloropropane	0.294	0.312	.01	6.11	20	A	
2-Butanone	0.200	0.210	.01	6.4	20	W	
2-Chloroethylvinyl ether	0.115	0.094	.01	-16	20	W	
2-Chlorotoluene	1.936	2.052	.01	6.02	20	A	
2-Hexanone	0.588	0.511	.01	-5	20	W	
4-Bromofluorobenzene	0.790	0.802	.01	1.51	20	A	
4-Chlorotoluene	1.701	1.871	.01	9.94	20	A	
4-Isopropyltoluene	2.031	2.116	.01	5.4	20	W	
4-Methyl-2-pentanone	0.731	0.677	.01	-1.6	20	W	
Acetone	0.187	0.200	.01	7.05	20	A	
Acrolein	0.010	0.012	.01	24.4	20	W	*
Acrylonitrile	0.105	0.121	.01	15.3	20	A	
Benzene	0.913	0.975	.01	6.77	20	A	
Bromobenzene	1.206	1.199	.01	-.6	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218013015	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4270
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 0849	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.133	0.136	.01	2.51	20	A	
Bromodichloromethane	0.338	0.346	.01	2.39	20	A	
Bromoform	0.520	0.541	.1	4.05	20	A	
Bromomethane	0.122	0.127	.01	2.8	20	W	
Carbon disulfide	0.577	0.560	.01	-2.85	20	A	
Carbon tetrachloride	0.308	0.316	.01	2.39	20	A	
Chlorobenzene	1.610	1.641	.3	1.93	20	A	
Chloroethane	0.134	0.127	.01	-5.26	20	A	
Chloroform	0.428	0.431	.01	.67	20	A	
Chloromethane	0.284	0.274	.1	-3.63	20	A	
Cyclohexane	0.377	0.375	.01	1	20	W	
Dibromochloromethane	0.640	0.662	.01	3.37	20	A	
Dibromofluoromethane	0.270	0.266	.01	-1.49	20	A	
Dibromomethane	0.151	0.160	.01	5.93	20	A	
Dichlorodifluoromethane	0.259	0.251	.01	-3.15	20	A	
Ethylbenzene	0.783	0.842	.01	7.55	20	A	
Hexachlorobutadiene	0.426	0.436	.01	2.49	20	A	
Isopropylbenzene (Cumene)	2.353	2.448	.01	5.4	20	W	
Methyl Acetate	0.232	0.245	.01	5.56	20	A	
Methyl iodide	5.263	0.162	.01	-4.4	20	Q	
Methylcyclohexane	0.316	0.348	.01	10.3	20	A	
Methylene chloride	0.280	0.289	.01	3.3	20	A	
Naphthalene	2.134	1.764	.01	-5.8	20	W	
Styrene	1.605	1.690	.01	6.8	20	W	
Tetrachloroethene	0.506	0.519	.01	2.58	20	A	
Toluene	2.362	2.409	.01	1.98	20	A	
Toluene-d8	2.278	2.274	.01	-.15	20	A	
Trichloroethene	0.267	0.274	.01	2.59	20	A	
Trichlorofluoromethane	0.284	0.271	.01	-4.61	20	A	
Trichlorotrifluoroethane	0.164	0.161	.01	-1.93	20	A	
Vinyl acetate	0.237	0.221	.01	-4.6	20	W	
Vinyl chloride	0.266	0.262	.01	-1.43	20	A	
Xylene (total)	0.951	1.007	.01	6.67	20	W	
cis-1,2-Dichloroethene	0.298	0.320	.01	7.51	20	A	
cis-1,3-Dichloropropene	0.390	0.390	.01	1.6	20	W	
m,p-Xylene	0.943	1.023	.01	9	20	W	
n-Butylbenzene	1.703	1.745	.01	3.6	20	W	
n-Hexane	0.262	0.298	.01	13.8	20	A	
n-Propylbenzene	2.737	2.898	.01	5.88	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218013015	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4270
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 0849	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	0.971	0.975	.01	2	20	W	
sec-Butylbenzene	2.178	2.462	.01	13	20	A	
tert-Butyl methyl ether (MTBE)	0.596	0.667	.01	11.9	20	A	
tert-Butylbenzene	1.003	1.125	.01	12.2	20	A	
trans-1,2-Dichloroethene	0.309	0.317	.01	2.56	20	A	
trans-1,3-Dichloropropene	0.351	0.349	.01	1	20	W	
trans-1,4-Dichloro-2-butene	0.176	0.195	.01	10.8	20	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218013015	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4295
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	JCK
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 1806	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.588	.01	4.56	50	A	
1,1,1-Trichloroethane	0.339	0.357	.01	5.12	50	A	
1,1,2,2-Tetrachloroethane	0.866	0.865	.3	-.12	50	A	
1,1,2-Trichloroethane	0.554	0.565	.01	1.87	50	A	
1,1-Dichloroethane	0.435	0.453	.1	4.14	50	A	
1,1-Dichloroethene	0.165	0.167	.01	1.27	50	A	
1,1-Dichloropropene	0.266	0.308	.01	16	50	A	
1,2,3-Trichlorobenzene	0.831	0.842	.01	4	50	W	
1,2,3-Trichloropropane	0.948	0.972	.01	2.47	50	A	
1,2,4-Trichlorobenzene	0.855	0.761	.01	-2	50	L	
1,2,4-Trimethylbenzene	2.032	2.228	.01	10.6	50	W	
1,2-Dibromo-3-chloropropane	0.182	0.200	.01	9.87	50	A	
1,2-Dibromoethane	0.518	0.552	.01	6.58	50	A	
1,2-Dichlorobenzene	1.262	1.343	.01	6.41	50	A	
1,2-Dichloroethane	0.360	0.360	.01	-.1	50	A	
1,2-Dichloroethane-d4	0.165	0.165	.01	.16	50	A	
1,2-Dichloroethene (total)	0.304	0.329	.01	8.29	50	A	
1,2-Dichloropropane	0.237	0.251	.01	5.91	50	A	
1,3,5-Trimethylbenzene	1.868	2.214	.01	18.5	50	A	
1,3-Dichlorobenzene	1.290	1.381	.01	7.03	50	A	
1,3-Dichloropropane	0.875	0.957	.01	9.28	50	A	
1,3-Dichloropropylene	0.370	0.373	.01	2	50	W	
1,4-Dichlorobenzene	1.326	1.367	.01	3.07	50	A	
1-Bromo-2-Chloroethane	0.360	0.388	.01	7.77	50	A	
1-Chlorohexane	0.743	0.702	.01	3.6	50	L	
2,2-Dichloropropane	0.294	0.313	.01	6.46	50	A	
2-Butanone	0.200	0.199	.01	.8	50	W	
2-Chloroethylvinyl ether	0.115	0.085	.01	-24	50	W	
2-Chlorotoluene	1.936	2.116	.01	9.3	50	A	
2-Hexanone	0.588	0.492	.01	-8.2	50	W	
4-Bromofluorobenzene	0.790	0.796	.01	.72	50	A	
4-Chlorotoluene	1.701	1.941	.01	14.1	50	A	
4-Isopropyltoluene	2.031	2.197	.01	9.4	50	W	
4-Methyl-2-pentanone	0.731	0.674	.01	-2	50	W	
Acetone	0.187	0.190	.01	1.98	50	A	
Acrolein	0.010	0.013	.01	37.2	50	W	
Acrylonitrile	0.105	0.121	.01	14.8	50	A	
Benzene	0.913	1.011	.01	10.7	50	A	
Bromobenzene	1.206	1.243	.01	3.09	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218013015			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180201/e4295
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	JCK
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628147
Analysis Date:	02/01/18	Time: 1806		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.133	0.140	.01	5.73	50	A	
Bromodichloromethane	0.338	0.360	.01	6.47	50	A	
Bromoform	0.520	0.548	.1	5.37	50	A	
Bromomethane	0.122	0.135	.01	9	50	W	
Carbon disulfide	0.577	0.574	.01	-.52	50	A	
Carbon tetrachloride	0.308	0.323	.01	4.72	50	A	
Chlorobenzene	1.610	1.657	.3	2.91	50	A	
Chloroethane	0.134	0.140	.01	3.86	50	A	
Chloroform	0.428	0.442	.01	3.29	50	A	
Chloromethane	0.284	0.285	.1	.35	50	A	
Cyclohexane	0.377	0.391	.01	5.4	50	W	
Dibromochloromethane	0.640	0.669	.01	4.58	50	A	
Dibromofluoromethane	0.270	0.267	.01	-1.04	50	A	
Dibromomethane	0.151	0.161	.01	6.67	50	A	
Dichlorodifluoromethane	0.259	0.258	.01	-.41	50	A	
Ethylbenzene	0.783	0.862	.01	10.1	50	A	
Hexachlorobutadiene	0.426	0.454	.01	6.7	50	A	
Isopropylbenzene (Cumene)	2.353	2.523	.01	8.4	50	W	
Methyl Acetate	0.232	0.242	.01	4.41	50	A	
Methyl iodide	5.263	0.170	.01	-.6	50	Q	
Methylcyclohexane	0.316	0.361	.01	14.5	50	A	
Methylene chloride	0.280	0.299	.01	6.98	50	A	
Naphthalene	2.134	1.788	.01	-4.8	50	W	
Styrene	1.605	1.726	.01	9	50	W	
Tetrachloroethene	0.506	0.534	.01	5.69	50	A	
Toluene	2.362	2.463	.01	4.28	50	A	
Toluene-d8	2.278	2.237	.01	-1.78	50	A	
Trichloroethene	0.267	0.283	.01	5.79	50	A	
Trichlorofluoromethane	0.284	0.287	.01	1.11	50	A	
Trichlorotrifluoroethane	0.164	0.166	.01	1.59	50	A	
Vinyl acetate	0.237	0.197	.01	-14.6	50	W	
Vinyl chloride	0.266	0.271	.01	2.07	50	A	
Xylene (total)	0.951	1.033	.01	9.33	50	W	
cis-1,2-Dichloroethene	0.298	0.330	.01	10.9	50	A	
cis-1,3-Dichloropropene	0.390	0.398	.01	3.8	50	W	
m,p-Xylene	0.943	1.048	.01	12	50	W	
n-Butylbenzene	1.703	1.799	.01	6.8	50	W	
n-Hexane	0.262	0.297	.01	13.4	50	A	
n-Propylbenzene	2.737	3.008	.01	9.9	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218013015	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4295
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	JCK
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 1806	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	0.971	1.002	.01	4.8	50	W	
sec-Butylbenzene	2.178	2.581	.01	18.5	50	A	
tert-Butyl methyl ether (MTBE)	0.596	0.675	.01	13.3	50	A	
tert-Butylbenzene	1.003	1.164	.01	16.1	50	A	
trans-1,2-Dichloroethene	0.309	0.327	.01	5.73	50	A	
trans-1,3-Dichloropropene	0.351	0.347	.01	.6	50	W	
trans-1,4-Dichloro-2-butene	0.176	0.190	.01	8.11	50	A	

FORM V II VOA

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	218013015	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4243D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1346	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	154140	9.08	148135	10.54	345317	6.59

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#		#	
LCS1769808	1769808	154070		9.08		149975		10.54		351398		6.59	
LCSD1769809	1769809	153657		9.08		148939		10.54		349179		6.59	
MB1769807	1769807	123617		9.08		100427		10.54		317748		6.59	
OMS-28-GW73-16	21801301501	117001		9.08		97090		10.54		304925		6.59	
OMS-28-GW73-16-c	21801301502	118325		9.08		97258		10.54		306228		6.59	
OMS-28-GW73-33	21801301503	115990		9.08		95276		10.54		298713		6.59	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1203-9(ICAL)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-11	04/30/18
	CVE	250	126-86-7	07/08/18
1600 (ICV)	8260 ICV	250	126-83-12	05/03/18
	Ac/Ac/VA ICV	MC	126-87-12	04/30/18
	CVE ICV	250	126-84-6	05/09/18
1410 (CCV)	A9-1	250	126-85-8	06/13/18
	A9-2	250	126-85-5	02/05/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4235cD.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235D.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1201	NOT USED	e4236.d	5.00 ml	31-JAN-2018 11:03	1.0	JCK	1
1202	|	e4237.d	5.00 ml	31-JAN-2018 11:33	1.0	JCK	1
1203		e4238cD.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238D.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
2PPB		e4239.d	5.00 ml	31-JAN-2018 12:17	1.0	JCK	1
1204		e4240cD.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240D.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1205		e4241cD.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241D.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1206		e4242cD.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242D.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1207		e4243cD.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243D.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1208		e4244cD.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244D.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1209		e4245cD.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245D.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
BLANK		e4246.d	5.00 ml	31-JAN-2018 14:53	1.0	JCK	1
1600	RR	e4247.d	5.00 ml	31-JAN-2018 15:16	1.0	JCK	1
1600		e4248cD.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248D.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1769682		e4249c.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769687		e4249.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769683		e4250c.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1
1769688		e4250.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1410	APP9	e4251c.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769684		e4251Lc.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769628		e4251L.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769685		e4252c.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769629		e4252.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769681		e4253c.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
1769686 pH		e4253.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
21801200906 1		e4254.d	5.00 ml	31-JAN-2018 17:54	1.0	JCK	1
21801230501 1		e4255.d	5.00 ml	31-JAN-2018 18:16	1.0	JCK	1
21801230502 1		e4256.d	5.00 ml	31-JAN-2018 18:38	1.0	JCK	1
21801200901 1		e4257.d	5.00 ml	31-JAN-2018 19:01	1.0	JCK	1
21801200902 1		e4258.d	5.00 ml	31-JAN-2018 19:23	1.0	JCK	1
21801200903 1		e4259.d	5.00 ml	31-JAN-2018 19:45	1.0	JCK	1
21801200904 1		e4260.d	5.00 ml	31-JAN-2018 20:07	1.0	JCK	1
21801200905 1		e4261.d	5.00 ml	31-JAN-2018 20:30	1.0	GDG	1
21801200907 1		e4262ms.d	5.00 ml	31-JAN-2018 20:52	1.0	GDG	1
21801200908 1		e4263msd.d	5.00 ml	31-JAN-2018 21:14	1.0	GDG	1
1440	8260	e4264cD.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440		e4264D.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440	app9	e4265cD.d	5.00 ml	31-JAN-2018 21:59	1.0	GDG	1
BLANK		e4266.d	5.00 ml	31-JAN-2018 22:21	1.0	GDG	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 22:21

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 01-FEB-2018
Instrument: msv13.i
Analyst(s): GDG

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1400 (CCV)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-11	04/30/18
	CVE	250	126-86-7	07/08/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4268bfb.d	0.00 ml	01-FEB-2018 07:48	1.0	GDG	2
CONDITION PURG		e4269.d	5.00 ml	01-FEB-2018 08:27	1.0	GDG	1
1400		e4270.d	5.00 ml	01-FEB-2018 08:49	1.0	GDG	1
1769808		e4270L.d	5.00 ml	01-FEB-2018 08:49	1.0	GDG	1
1769809		e4271.d	5.00 ml	01-FEB-2018 09:11	1.0	GDG	1
BLANK		e4272.d	5.00 ml	01-FEB-2018 09:33	1.0	GDG	1
BLANK		e4273.d	5.00 ml	01-FEB-2018 09:56	1.0	GDG	1
1769807 pH		e4274.d	5.00 ml	01-FEB-2018 10:18	1.0	GDG	1
21801240301 1		e4275.d	5.00 ml	01-FEB-2018 10:40	1.0	GDG	1
21801240304 1		e4276.d	5.00 ml	01-FEB-2018 11:03	1.0	GDG	1
21801240305 1		e4277.d	5.00 ml	01-FEB-2018 11:25	1.0	GDG	1
21801240306 1		e4278.d	5.00 ml	01-FEB-2018 11:47	1.0	GDG	1
21801240307 1		e4279.d	5.00 ml	01-FEB-2018 12:10	1.0	GDG	1
21801301501 1		e4280.d	5.00 ml	01-FEB-2018 12:32	1.0	GDG	1
21801301502 1		e4281.d	5.00 ml	01-FEB-2018 12:54	1.0	GDG	1
21801301503 1		e4282.d	5.00 ml	01-FEB-2018 13:16	1.0	GDG	1
21801312901 1		e4283.d	5.00 ml	01-FEB-2018 13:39	1.0	GDG	1
21801312902 1		e4284.d	5.00 ml	01-FEB-2018 14:01	1.0	GDG	1
21801312903 1		e4285.d	5.00 ml	01-FEB-2018 14:23	1.0	GDG	1
21801312904 1		e4286.d	5.00 ml	01-FEB-2018 14:46	1.0	GDG	1
21801241801 1		e4287.d	5.00 ml	01-FEB-2018 15:08	1.0	GDG	1
21801241802 1		e4288.d	5.00 ml	01-FEB-2018 15:30	1.0	GDG	1
21801241803 1		e4289.d	5.00 ml	01-FEB-2018 15:52	1.0	GDG	1
21801241804 1		e4290.d	5.00 ml	01-FEB-2018 16:15	1.0	GDG	1
21801241805 1		e4291.d	5.00 ml	01-FEB-2018 16:37	1.0	GDG	1
21801241806 1		e4292.d	5.00 ml	01-FEB-2018 16:59	1.0	JCK	1
21801240302 1		e4293ms.d	5.00 ml	01-FEB-2018 17:22	1.0	JCK	1
21801240303 1		e4294msd.d	5.00 ml	01-FEB-2018 17:44	1.0	JCK	1
1440		e4295.d	5.00 ml	01-FEB-2018 18:06	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 19:48

Client ID: 4838 - AECOM
SDG: 218013015
PM: AMK

Chain of Custody and Analytical Requ

AECOM

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)	cis-1,2 DCE	Comments	Cooler ID
OMS-28-GW73-16	1/29/18	1515	12 16	N	WG	3	X	X	3 DAY TAT	-1
OMS-28-GW73-16c			-	TB	WQ	2	X	X		-2
OMS-28-GW73-33	1/29/18	1600	29-33	N	WG	3	X	X		-3
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							

Sample Analysis Requested

Comments

Cooler ID

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	1/29/18	1730			
2.	FedEx	1/30/18	09:40	Tiffany Sawyer	1-30-18	09:40
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped: XXX
Airbill #: 8492 5589 0411
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

AECOM Project Number: 60551681.2.0

Purchase Order Number: 81895

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Steve Holt

Analytical Data To: Vasi Kourlas and Dwight Parks

1.2°C EZ9
28 COM
8992-5589-0411

SAMPLE RECEIVING CHECKLIST

2180130015

SAMPLE DELIVERY GROUP 218013015	
Client **PM** AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** Savage, Tiffany R
Line Item(s) 3 - 3 day Water	**Receive Date(s)** 01/30/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E29	Temp °C
8992-5589-0411		1.2

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Appendix B13
GCAL Report 218013129 dated February 6, 2018

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/06/2018

GCAL Report 218013129

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

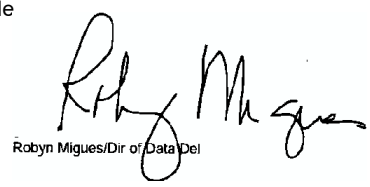
J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable



Authorized Signature
GCAL Report 218013129

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218013129

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21801312901	OMS-28-GW74-15	Water	01/30/2018 08:45	01/31/2018 09:15
21801312902	OMS-28-GW74-15-c	Water	01/30/2018 00:01	01/31/2018 09:15
21801312903	OMS-28-GW74-33	Water	01/30/2018 09:35	01/31/2018 09:15
21801312904	OMS-28-GW75-29	Water	01/30/2018 11:35	01/31/2018 09:15

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21801312901	OMS-28-GW74-15	W	EPA 8260B DOD Water
21801312902	OMS-28-GW74-15-c	W	EPA 8260B DOD Water
21801312903	OMS-28-GW74-33	W	EPA 8260B DOD Water
21801312904	OMS-28-GW75-29	W	EPA 8260B DOD Water

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.

Summary of Compounds Detected

OMS-28-GW75-29	Collect Date	01/30/2018 11:35	GCAL ID	21801312904
	Receive Date	01/31/2018 09:15	Matrix	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	9.02	0.200	0.500	1.00	ug/L

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013129			Client Sample ID:	OMS-28-GW74-15
Collect Date:	01/30/18	Time:	0845	GCAL Sample ID:	21801312901
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180201/e4283
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18	Time:	1339	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013129	Client Sample ID:	OMS-28-GW74-15-c
Collect Date:	01/30/18 Time: 0001	GCAL Sample ID:	21801312902
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180201/e4284
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 1401	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013129			Client Sample ID:	OMS-28-GW74-33
Collect Date:	01/30/18	Time:	0935	GCAL Sample ID:	21801312903
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180201/e4285
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18	Time:	1423	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013129			Client Sample ID:	OMS-28-GW75-29
Collect Date:	01/30/18	Time:	1135	GCAL Sample ID:	21801312904
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180201/e4286
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18	Time:	1446	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	9.02		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218013129			Client Sample ID:	MB1769807
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1769807
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180201/e4274
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18	Time:	1018	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 218013129 Analytical Method: EPA 8260B

	Client Sample ID	GCAL Sample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1.	OMS-28-GW74-15	21801312901	103		95		105		105		0
2.	OMS-28-GW74-15-c	21801312902	102		96		105		103		0
3.	OMS-28-GW74-33	21801312903	101		95		105		106		0
4.	OMS-28-GW75-29	21801312904	102		94		105		104		0
5.	MB1769807	1769807	101		95		104		106		0
6.	LCS1769808	1769808	99		102		99		100		0
7.	LCSD1769809	1769809	99		101		99		100		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 218013129

Analytical Method: EPA 8260B

Analytical Batch: 628147

GCAL QC ID: 1769808

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
Tetrachloroethene	ug/L	50	0	51.3	103		74 - 129
Trichloroethene	ug/L	50	0	51.3	103		79 - 123
cis-1,2-Dichloroethene	ug/L	50	0	53.8	108		78 - 123

GCAL QC ID: 1769809

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
Tetrachloroethene	ug/L	50	50.9	102		.8		74 - 129	0 - 20
Trichloroethene	ug/L	50	50.9	102		.8		79 - 123	0 - 20
cis-1,2-Dichloroethene	ug/L	50	54.2	108		.7		78 - 123	0 - 20

RPD : 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	218013129	Method Blank ID:	1769807
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180201/e4274
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 1018	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1769808	1769808	2180201/e4270L	02/01/18	0849
2 .	LCSD1769809	1769809	2180201/e4271	02/01/18	0911
3 .	OMS-28-GW74-15	21801312901	2180201/e4283	02/01/18	1339
4 .	OMS-28-GW74-15-c	21801312902	2180201/e4284	02/01/18	1401
5 .	OMS-28-GW74-33	21801312903	2180201/e4285	02/01/18	1423
6 .	OMS-28-GW75-29	21801312904	2180201/e4286	02/01/18	1446

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218013129	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4235D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1021	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	17.72	(	)	
75	30.0 - 60.0% of mass 95	46.53	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.39	(	)	
173	Less than 2.0% of mass 174	.98	(1.02	)	1
174	50.0 - 120.0% of mass 95	96.35	(	)	
175	5.0 - 9.0% of mass 174	7.19	(7.47	)	1
176	95.0 - 101.0% of mass 174	93.63	(97.18	)	1
177	5.0 - 9.0% of mass 176	5.94	(6.35	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2180131/e4238D	01/31/18	1155
2 .	V13STD005	1204	2180131/e4240D	01/31/18	1240
3 .	V13STD010	1205	2180131/e4241D	01/31/18	1302
4 .	V13STD020	1206	2180131/e4242D	01/31/18	1324
5 .	V13STD050	1207	2180131/e4243D	01/31/18	1346
6 .	V13STD100	1208	2180131/e4244D	01/31/18	1409
7 .	V13STD200	1209	2180131/e4245D	01/31/18	1431
8 .	ICV050	1600	2180131/e4248D	01/31/18	1538

FORM V VOA

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218013129	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4268bfb
Analyst:	GDG	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 0748	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	18.03	(	)	
75	30.0 - 60.0% of mass 95	47.08	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.55	(	)	
173	Less than 2.0% of mass 174	.83	(.87	)	1
174	50.0 - 120.0% of mass 95	95.65	(	)	
175	5.0 - 9.0% of mass 174	6.6	(6.91	)	1
176	95.0 - 101.0% of mass 174	93.3	(97.55	)	1
177	5.0 - 9.0% of mass 176	6.33	(6.79	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2180201/e4270	02/01/18	0849
2 .	LCS1769808	1769808	2180201/e4270L	02/01/18	0849
3 .	LCSD1769809	1769809	2180201/e4271	02/01/18	0911
4 .	MB1769807	1769807	2180201/e4274	02/01/18	1018
5 .	OMS-28-GW74-15	21801312901	2180201/e4283	02/01/18	1339
6 .	OMS-28-GW74-15-c	21801312902	2180201/e4284	02/01/18	1401
7 .	OMS-28-GW74-33	21801312903	2180201/e4285	02/01/18	1423
8 .	OMS-28-GW75-29	21801312904	2180201/e4286	02/01/18	1446
9 .	V13STD050	1440	2180201/e4295	02/01/18	1806

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013129		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.582	0.613	0.564	0.550	0.563	0.546	0.517	0.562			5.320	A
1,1,1-Trichloroethane			0.321	0.363	0.341	0.336	0.347	0.337	0.330	0.339			3.900	A
1,1,2,2-Tetrachloroethane			1.015	0.947	0.854	0.829	0.828	0.814	0.775	0.866			9.750	A
1,1,2-Trichloroethane			0.600	0.586	0.535	0.535	0.549	0.539	0.536	0.554			4.912	A
1,1-Dichloroethane			0.462	0.458	0.426	0.421	0.437	0.423	0.413	0.435			4.400	A
1,1-Dichloroethene			0.182	0.179	0.163	0.158	0.164	0.156	0.154	0.165			6.625	A
1,1-Dichloropropene			0.206	0.235	0.248	0.265	0.301	0.302	0.303	0.266			14.43	A
1,2,3-Trichlorobenzene (RSP)			477	5824	13716	35889	117256	253980	511192	0.831	0.026		0.995	W
1,2,3-Trichlorobenzene			0.225	0.458	0.524	0.641	0.792	0.837	0.840					
1,2,3-Trichloropropane			0.962	0.991	0.950	0.917	0.962	0.947	0.909	0.948			2.935	A
1,2,4-Trichlorobenzene (RSP)			575	5354	11975	31052	105242	247400	511416	0.855	0.090		0.998	L
1,2,4-Trichlorobenzene			0.271	0.421	0.458	0.555	0.710	0.815	0.841					
1,2,4-Trimethylbenzene (RSP)			2638	19970	46899	111022	318399	641277	1185541	2.032	0.010		0.997	W
1,2,4-Trimethylbenzene			1.242	1.572	1.792	1.983	2.149	2.113	1.949					
1,2-Dibromo-3-chloropropane			0.153	0.176	0.161	0.177	0.195	0.203	0.212	0.182			12.04	A
1,2-Dibromoethane			0.531	0.507	0.471	0.492	0.539	0.540	0.545	0.518			5.481	A
1,2-Dichlorobenzene			1.263	1.276	1.242	1.218	1.304	1.286	1.243	1.262			2.341	A
1,2-Dichloroethane			0.414	0.377	0.354	0.347	0.356	0.342	0.332	0.360			7.652	A
1,2-Dichloroethane-d4			0.169	0.167	0.165	0.166	0.165	0.162	0.160	0.165			1.738	A
1,2-Dichloroethene (total)			0.281	0.296	0.294	0.299	0.321	0.318	0.317	0.304			5.017	A
1,2-Dichloropropane			0.230	0.235	0.229	0.234	0.245	0.245	0.241	0.237			2.857	A
1,3,5-Trimethylbenzene			1.426	1.740	1.849	1.999	2.153	2.052	1.855	1.868			12.83	A
1,3-Dichlorobenzene			1.276	1.297	1.319	1.286	1.315	1.303	1.234	1.290			2.247	A
1,3-Dichloropropane			0.805	0.860	0.812	0.838	0.938	0.936	0.939	0.875			6.961	A
1,3-Dichloropropylene (RSP)			2542	16787	35541	81949	252531	533058	1103114	0.370	0.033		0.997	W

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013129		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,3-Dichloropropylene			0.209	0.261	0.277	0.309	0.366	0.372	0.373					
1,4-Dichlorobenzene			1.478	1.399	1.315	1.281	1.305	1.288	1.217	1.326			6.490	A
1-Bromo-2-Chloroethane			0.356	0.344	0.339	0.356	0.376	0.375	0.372	0.360			4.174	A
1-Chlorohexane (RSP)			1107	5416	12067	28084	90902	225775	457695	0.743	0.090		0.997	L
1-Chlorohexane			0.452	0.399	0.426	0.473	0.590	0.720	0.729					
2,2-Dichloropropane			0.267	0.303	0.287	0.293	0.300	0.306	0.303	0.294			4.580	A
2-Butanone (RSP)			803	5143	9977	23549	68871	144310	295627	0.200	0.012		0.998	W
2-Butanone			0.132	0.160	0.156	0.178	0.199	0.201	0.200					
2-Chloroethylvinyl ether (RSP)			366	2120	4679	11625	35122	77376	179733	0.115	0.024		0.990	W
2-Chloroethylvinyl ether			0.060	0.066	0.073	0.088	0.102	0.108	0.122					
2-Chlorotoluene			1.920	1.913	1.876	1.944	2.037	1.992	1.869	1.936			3.139	A
2-Hexanone (RSP)				4394	8678	21172	74100	173057	376361	0.588	0.080		0.992	W
2-Hexanone				0.324	0.306	0.357	0.481	0.552	0.599					
4-Bromofluorobenzene			0.767	0.787	0.781	0.773	0.790	0.806	0.828	0.790			2.623	A
4-Chlorotoluene			1.424	1.609	1.692	1.736	1.861	1.845	1.744	1.701			8.818	A
4-Isopropyltoluene (RSP)			2465	18779	45009	107177	314072	638401	1196201	2.031	0.012		0.997	W
4-Isopropyltoluene			1.161	1.478	1.720	1.914	2.120	2.104	1.966					
4-Methyl-2-pentanone (RSP)				6202	13383	32149	101375	222197	460940	0.731	0.058		0.997	W
4-Methyl-2-pentanone				0.457	0.472	0.542	0.658	0.709	0.734					
Acetone			0.183	0.197	0.183	0.192	0.192	0.183	0.176	0.187			3.929	A
Acrolein (RSP)				993	2486	4717	16141	33528	72265	0.010	0.239		0.997	W
Acrolein				0.006	0.008	0.007	0.009	0.009	0.010					
Acrylonitrile			0.090	0.093	0.106	0.111	0.117	0.107	0.112	0.105			9.463	A
Benzene			0.833	0.899	0.878	0.925	0.986	0.954	0.917	0.913			5.459	A
Bromobenzene			1.311	1.257	1.192	1.167	1.212	1.169	1.133	1.206			5.032	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013129		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Bromochloromethane			0.131	0.143	0.139	0.135	0.137	0.129	0.113	0.133			7.468	A
Bromodichloromethane			0.335	0.355	0.339	0.339	0.343	0.332	0.323	0.338			3.001	A
Bromoform			0.504	0.572	0.512	0.502	0.528	0.525	0.499	0.520			4.840	A
Bromomethane (RSP)			1087	5140	9147	17056	42570	85055	182023	0.122	-0.014		0.998	W
Bromomethane			0.179	0.160	0.143	0.129	0.123	0.119	0.123					
Carbon disulfide			0.645	0.613	0.578	0.565	0.572	0.541	0.522	0.577			7.248	A
Carbon tetrachloride			0.296	0.319	0.309	0.309	0.320	0.305	0.300	0.308			2.916	A
Chlorobenzene			1.806	1.735	1.598	1.572	1.598	1.522	1.439	1.610			7.726	A
Chloroethane			0.154	0.155	0.147	0.135	0.127	0.120	0.102	0.134			14.32	A
Chloroform			0.445	0.467	0.440	0.423	0.426	0.405	0.389	0.428			6.104	A
Chloromethane			0.325	0.311	0.297	0.280	0.268	0.258	0.251	0.284			9.730	A
Cyclohexane (RSP)			1260	8799	18824	43237	133879	271848	553105	0.377	0.015		0.998	W
Cyclohexane			0.207	0.274	0.294	0.327	0.388	0.379	0.374					
Dibromochloromethane			0.651	0.683	0.609	0.602	0.646	0.641	0.649	0.640			4.272	A
Dibromofluoromethane			0.283	0.278	0.276	0.271	0.263	0.261	0.256	0.270			3.656	A
Dibromomethane			0.124	0.164	0.156	0.152	0.157	0.153	0.150	0.151			8.379	A
Dichlorodifluoromethane			0.268	0.275	0.268	0.253	0.264	0.245	0.242	0.259			4.953	A
Ethylbenzene			0.728	0.792	0.787	0.788	0.824	0.803	0.758	0.783			3.977	A
Hexachlorobutadiene			0.456	0.438	0.424	0.404	0.417	0.426	0.416	0.426			3.973	A
Isopropylbenzene (Cumene) (			3501	24195	52574	126195	373920	763962	1443275	2.353	0.013		0.997	W
Isopropylbenzene (Cumene)			1.429	1.785	1.856	2.126	2.426	2.437	2.297					
Methyl Acetate			0.235	0.236	0.216	0.230	0.242	0.237	0.227	0.232			3.736	A
Methyl iodide (RSP)				2508	6103	15770	57090	131600	275600	5.263	0.104	-0.061	0.999	Q
Methyl iodide				0.078	0.095	0.119	0.165	0.183	0.186					
Methylcyclohexane			0.249	0.294	0.298	0.309	0.356	0.354	0.349	0.316			12.63	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013129			Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1:	1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2:	1431	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Methylene chloride			0.292	0.301	0.270	0.288	0.282	0.259	0.265	0.280			5.549	A
Naphthalene (RSP)				7131	18037	55774	248352	614835	1295606	2.134	0.115		0.990	W
Naphthalene				0.561	0.689	0.996	1.677	2.026	2.130					
Styrene (RSP)			2129	15824	36057	87567	255692	514927	987479	1.605	0.014		0.998	W
Styrene			0.869	1.167	1.273	1.475	1.659	1.642	1.572					
Tetrachloroethene			0.512	0.529	0.494	0.484	0.508	0.506	0.507	0.506			2.780	A
Toluene			2.494	2.496	2.297	2.300	2.364	2.333	2.249	2.362			4.127	A
Toluene-d8			2.371	2.279	2.219	2.246	2.227	2.270	2.332	2.278			2.451	A
Trichloroethene			0.262	0.276	0.268	0.270	0.282	0.263	0.250	0.267			3.874	A
Trichlorofluoromethane			0.317	0.307	0.289	0.276	0.279	0.261	0.257	0.284			7.888	A
Trichlorotrifluoroethane			0.161	0.177	0.176	0.166	0.162	0.155	0.150	0.164			6.227	A
Vinyl acetate (RSP)			848	4570	10724	24623	71333	159827	369833	0.237	0.021		0.991	W
Vinyl acetate			0.139	0.142	0.167	0.186	0.207	0.223	0.250					
Vinyl chloride			0.273	0.278	0.260	0.256	0.272	0.263	0.260	0.266			3.086	A
Xylene (total) (RSP)			4749	33290	70315	160471	460524	920641	1745097	0.951	0.026		0.998	W
Xylene (total)			0.646	0.818	0.827	0.901	0.996	0.979	0.926					
cis-1,2-Dichloroethene			0.258	0.283	0.280	0.292	0.325	0.324	0.322	0.298			8.738	A
cis-1,3-Dichloropropene (RSP)			1367	8661	18146	42900	133479	279970	581372	0.390	0.017		0.997	W
cis-1,3-Dichloropropene			0.225	0.269	0.283	0.324	0.387	0.390	0.393					
m,p-Xylene (RSP)			3361	23770	50062	113426	312699	613620	1131824	0.943	0.009		0.997	W
m,p-Xylene			0.686	0.877	0.883	0.956	1.014	0.979	0.901					
n-Butylbenzene (RSP)			2487	15865	35072	85648	253755	533009	1022170	1.703	0.013		0.997	W
n-Butylbenzene			1.171	1.249	1.340	1.530	1.713	1.756	1.680					
n-Hexane			0.221	0.243	0.237	0.253	0.286	0.293	0.300	0.262			11.83	A
n-Propylbenzene			2.743	2.695	2.699	2.753	2.894	2.811	2.566	2.737			3.742	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218013129		Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
o-Xylene (RSP)			1388	9520	20253	47045	147825	307021	613273	0.971	0.016		0.997	W
o-Xylene			0.566	0.702	0.715	0.793	0.959	0.979	0.976					
sec-Butylbenzene			1.618	2.013	2.208	2.316	2.462	2.423	2.209	2.178			13.28	A
tert-Butyl methyl ether (MTBE)			0.507	0.563	0.552	0.594	0.656	0.652	0.651	0.596			9.852	A
tert-Butylbenzene			0.817	0.906	0.954	1.016	1.124	1.123	1.080	1.003			11.64	A
trans-1,2-Dichloroethene			0.303	0.309	0.307	0.305	0.317	0.313	0.312	0.309			1.596	A
trans-1,3-Dichloropropene (RS			1175	8126	17395	39049	119052	253088	521742	0.351	0.016		0.997	W
trans-1,3-Dichloropropene			0.193	0.253	0.271	0.295	0.345	0.353	0.353					
trans-1,4-Dichloro-2-butene			0.135	0.164	0.172	0.176	0.188	0.196	0.199	0.176			12.53	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

Form 6I

ICAL Verifications

6I
ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	218013129	Instrument ID:	MSV13
Analysis Date:	01/31/18 1538	Lab File ID:	2180131/e4248D
Analysis Method:	EPA 8260B	Analytical Batch:	628122

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
cis-1,2-Dichloroethene	ug/L	50.0	50.5	101	80	120	
Tetrachloroethene	ug/L	50.0	47.1	94	80	120	
Trichloroethene	ug/L	50.0	47.6	95	80	120	

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218013129	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4270
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 0849	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.575	.01	2.21	20	A	
1,1,1-Trichloroethane	0.339	0.348	.01	2.63	20	A	
1,1,2,2-Tetrachloroethane	0.866	0.852	.3	-1.62	20	A	
1,1,2-Trichloroethane	0.554	0.564	.01	1.75	20	A	
1,1-Dichloroethane	0.435	0.434	.1	-.1	20	A	
1,1-Dichloroethene	0.165	0.161	.01	-2.74	20	A	
1,1-Dichloropropene	0.266	0.295	.01	11.2	20	A	
1,2,3-Trichlorobenzene	0.831	0.814	.01	.4	20	W	
1,2,3-Trichloropropane	0.948	0.975	.01	2.81	20	A	
1,2,4-Trichlorobenzene	0.855	0.741	.01	-4.4	20	L	
1,2,4-Trimethylbenzene	2.032	2.160	.01	7.4	20	W	
1,2-Dibromo-3-chloropropane	0.182	0.198	.01	8.9	20	A	
1,2-Dibromoethane	0.518	0.541	.01	4.52	20	A	
1,2-Dichlorobenzene	1.262	1.313	.01	4.1	20	A	
1,2-Dichloroethane	0.360	0.357	.01	-.9	20	A	
1,2-Dichloroethane-d4	0.165	0.163	.01	-1.28	20	A	
1,2-Dichloroethene (total)	0.304	0.319	.01	4.98	20	A	
1,2-Dichloropropane	0.237	0.247	.01	3.97	20	A	
1,3,5-Trimethylbenzene	1.868	2.144	.01	14.8	20	A	
1,3-Dichlorobenzene	1.290	1.334	.01	3.41	20	A	
1,3-Dichloropropane	0.875	0.948	.01	8.24	20	A	
1,3-Dichloropropylene	0.370	0.369	.01	1	20	W	
1,4-Dichlorobenzene	1.326	1.338	.01	.89	20	A	
1-Bromo-2-Chloroethane	0.360	0.376	.01	4.44	20	A	
1-Chlorohexane	0.743	0.603	.01	-9.8	20	L	
2,2-Dichloropropane	0.294	0.312	.01	6.11	20	A	
2-Butanone	0.200	0.210	.01	6.4	20	W	
2-Chloroethylvinyl ether	0.115	0.094	.01	-16	20	W	
2-Chlorotoluene	1.936	2.052	.01	6.02	20	A	
2-Hexanone	0.588	0.511	.01	-5	20	W	
4-Bromofluorobenzene	0.790	0.802	.01	1.51	20	A	
4-Chlorotoluene	1.701	1.871	.01	9.94	20	A	
4-Isopropyltoluene	2.031	2.116	.01	5.4	20	W	
4-Methyl-2-pentanone	0.731	0.677	.01	-1.6	20	W	
Acetone	0.187	0.200	.01	7.05	20	A	
Acrolein	0.010	0.012	.01	24.4	20	W	*
Acrylonitrile	0.105	0.121	.01	15.3	20	A	
Benzene	0.913	0.975	.01	6.77	20	A	
Bromobenzene	1.206	1.199	.01	-.6	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218013129	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4270
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 0849	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.133	0.136	.01	2.51	20	A	
Bromodichloromethane	0.338	0.346	.01	2.39	20	A	
Bromoform	0.520	0.541	.1	4.05	20	A	
Bromomethane	0.122	0.127	.01	2.8	20	W	
Carbon disulfide	0.577	0.560	.01	-2.85	20	A	
Carbon tetrachloride	0.308	0.316	.01	2.39	20	A	
Chlorobenzene	1.610	1.641	.3	1.93	20	A	
Chloroethane	0.134	0.127	.01	-5.26	20	A	
Chloroform	0.428	0.431	.01	.67	20	A	
Chloromethane	0.284	0.274	.1	-3.63	20	A	
Cyclohexane	0.377	0.375	.01	1	20	W	
Dibromochloromethane	0.640	0.662	.01	3.37	20	A	
Dibromofluoromethane	0.270	0.266	.01	-1.49	20	A	
Dibromomethane	0.151	0.160	.01	5.93	20	A	
Dichlorodifluoromethane	0.259	0.251	.01	-3.15	20	A	
Ethylbenzene	0.783	0.842	.01	7.55	20	A	
Hexachlorobutadiene	0.426	0.436	.01	2.49	20	A	
Isopropylbenzene (Cumene)	2.353	2.448	.01	5.4	20	W	
Methyl Acetate	0.232	0.245	.01	5.56	20	A	
Methyl iodide	5.263	0.162	.01	-4.4	20	Q	
Methylcyclohexane	0.316	0.348	.01	10.3	20	A	
Methylene chloride	0.280	0.289	.01	3.3	20	A	
Naphthalene	2.134	1.764	.01	-5.8	20	W	
Styrene	1.605	1.690	.01	6.8	20	W	
Tetrachloroethene	0.506	0.519	.01	2.58	20	A	
Toluene	2.362	2.409	.01	1.98	20	A	
Toluene-d8	2.278	2.274	.01	-.15	20	A	
Trichloroethene	0.267	0.274	.01	2.59	20	A	
Trichlorofluoromethane	0.284	0.271	.01	-4.61	20	A	
Trichlorotrifluoroethane	0.164	0.161	.01	-1.93	20	A	
Vinyl acetate	0.237	0.221	.01	-4.6	20	W	
Vinyl chloride	0.266	0.262	.01	-1.43	20	A	
Xylene (total)	0.951	1.007	.01	6.67	20	W	
cis-1,2-Dichloroethene	0.298	0.320	.01	7.51	20	A	
cis-1,3-Dichloropropene	0.390	0.390	.01	1.6	20	W	
m,p-Xylene	0.943	1.023	.01	9	20	W	
n-Butylbenzene	1.703	1.745	.01	3.6	20	W	
n-Hexane	0.262	0.298	.01	13.8	20	A	
n-Propylbenzene	2.737	2.898	.01	5.88	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218013129	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4270
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 0849	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	0.971	0.975	.01	2	20	W	
sec-Butylbenzene	2.178	2.462	.01	13	20	A	
tert-Butyl methyl ether (MTBE)	0.596	0.667	.01	11.9	20	A	
tert-Butylbenzene	1.003	1.125	.01	12.2	20	A	
trans-1,2-Dichloroethene	0.309	0.317	.01	2.56	20	A	
trans-1,3-Dichloropropene	0.351	0.349	.01	1	20	W	
trans-1,4-Dichloro-2-butene	0.176	0.195	.01	10.8	20	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218013129			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180201/e4295
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	JCK
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628147
Analysis Date:	02/01/18	Time: 1806		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.588	.01	4.56	50	A	
1,1,1-Trichloroethane	0.339	0.357	.01	5.12	50	A	
1,1,2,2-Tetrachloroethane	0.866	0.865	.3	-.12	50	A	
1,1,2-Trichloroethane	0.554	0.565	.01	1.87	50	A	
1,1-Dichloroethane	0.435	0.453	.1	4.14	50	A	
1,1-Dichloroethene	0.165	0.167	.01	1.27	50	A	
1,1-Dichloropropene	0.266	0.308	.01	16	50	A	
1,2,3-Trichlorobenzene	0.831	0.842	.01	4	50	W	
1,2,3-Trichloropropane	0.948	0.972	.01	2.47	50	A	
1,2,4-Trichlorobenzene	0.855	0.761	.01	-2	50	L	
1,2,4-Trimethylbenzene	2.032	2.228	.01	10.6	50	W	
1,2-Dibromo-3-chloropropane	0.182	0.200	.01	9.87	50	A	
1,2-Dibromoethane	0.518	0.552	.01	6.58	50	A	
1,2-Dichlorobenzene	1.262	1.343	.01	6.41	50	A	
1,2-Dichloroethane	0.360	0.360	.01	-.1	50	A	
1,2-Dichloroethane-d4	0.165	0.165	.01	.16	50	A	
1,2-Dichloroethene (total)	0.304	0.329	.01	8.29	50	A	
1,2-Dichloropropane	0.237	0.251	.01	5.91	50	A	
1,3,5-Trimethylbenzene	1.868	2.214	.01	18.5	50	A	
1,3-Dichlorobenzene	1.290	1.381	.01	7.03	50	A	
1,3-Dichloropropane	0.875	0.957	.01	9.28	50	A	
1,3-Dichloropropylene	0.370	0.373	.01	2	50	W	
1,4-Dichlorobenzene	1.326	1.367	.01	3.07	50	A	
1-Bromo-2-Chloroethane	0.360	0.388	.01	7.77	50	A	
1-Chlorohexane	0.743	0.702	.01	3.6	50	L	
2,2-Dichloropropane	0.294	0.313	.01	6.46	50	A	
2-Butanone	0.200	0.199	.01	.8	50	W	
2-Chloroethylvinyl ether	0.115	0.085	.01	-24	50	W	
2-Chlorotoluene	1.936	2.116	.01	9.3	50	A	
2-Hexanone	0.588	0.492	.01	-8.2	50	W	
4-Bromofluorobenzene	0.790	0.796	.01	.72	50	A	
4-Chlorotoluene	1.701	1.941	.01	14.1	50	A	
4-Isopropyltoluene	2.031	2.197	.01	9.4	50	W	
4-Methyl-2-pentanone	0.731	0.674	.01	-2	50	W	
Acetone	0.187	0.190	.01	1.98	50	A	
Acrolein	0.010	0.013	.01	37.2	50	W	
Acrylonitrile	0.105	0.121	.01	14.8	50	A	
Benzene	0.913	1.011	.01	10.7	50	A	
Bromobenzene	1.206	1.243	.01	3.09	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218013129			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180201/e4295
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	JCK
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628147
Analysis Date:	02/01/18	Time: 1806		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.133	0.140	.01	5.73	50	A	
Bromodichloromethane	0.338	0.360	.01	6.47	50	A	
Bromoform	0.520	0.548	.1	5.37	50	A	
Bromomethane	0.122	0.135	.01	9	50	W	
Carbon disulfide	0.577	0.574	.01	-.52	50	A	
Carbon tetrachloride	0.308	0.323	.01	4.72	50	A	
Chlorobenzene	1.610	1.657	.3	2.91	50	A	
Chloroethane	0.134	0.140	.01	3.86	50	A	
Chloroform	0.428	0.442	.01	3.29	50	A	
Chloromethane	0.284	0.285	.1	.35	50	A	
Cyclohexane	0.377	0.391	.01	5.4	50	W	
Dibromochloromethane	0.640	0.669	.01	4.58	50	A	
Dibromofluoromethane	0.270	0.267	.01	-1.04	50	A	
Dibromomethane	0.151	0.161	.01	6.67	50	A	
Dichlorodifluoromethane	0.259	0.258	.01	-.41	50	A	
Ethylbenzene	0.783	0.862	.01	10.1	50	A	
Hexachlorobutadiene	0.426	0.454	.01	6.7	50	A	
Isopropylbenzene (Cumene)	2.353	2.523	.01	8.4	50	W	
Methyl Acetate	0.232	0.242	.01	4.41	50	A	
Methyl iodide	5.263	0.170	.01	-.6	50	Q	
Methylcyclohexane	0.316	0.361	.01	14.5	50	A	
Methylene chloride	0.280	0.299	.01	6.98	50	A	
Naphthalene	2.134	1.788	.01	-4.8	50	W	
Styrene	1.605	1.726	.01	9	50	W	
Tetrachloroethene	0.506	0.534	.01	5.69	50	A	
Toluene	2.362	2.463	.01	4.28	50	A	
Toluene-d8	2.278	2.237	.01	-1.78	50	A	
Trichloroethene	0.267	0.283	.01	5.79	50	A	
Trichlorofluoromethane	0.284	0.287	.01	1.11	50	A	
Trichlorotrifluoroethane	0.164	0.166	.01	1.59	50	A	
Vinyl acetate	0.237	0.197	.01	-14.6	50	W	
Vinyl chloride	0.266	0.271	.01	2.07	50	A	
Xylene (total)	0.951	1.033	.01	9.33	50	W	
cis-1,2-Dichloroethene	0.298	0.330	.01	10.9	50	A	
cis-1,3-Dichloropropene	0.390	0.398	.01	3.8	50	W	
m,p-Xylene	0.943	1.048	.01	12	50	W	
n-Butylbenzene	1.703	1.799	.01	6.8	50	W	
n-Hexane	0.262	0.297	.01	13.4	50	A	
n-Propylbenzene	2.737	3.008	.01	9.9	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218013129	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180201/e4295
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	JCK
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628147
Analysis Date:	02/01/18 Time: 1806	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	0.971	1.002	.01	4.8	50	W	
sec-Butylbenzene	2.178	2.581	.01	18.5	50	A	
tert-Butyl methyl ether (MTBE)	0.596	0.675	.01	13.3	50	A	
tert-Butylbenzene	1.003	1.164	.01	16.1	50	A	
trans-1,2-Dichloroethene	0.309	0.327	.01	5.73	50	A	
trans-1,3-Dichloropropene	0.351	0.347	.01	.6	50	W	
trans-1,4-Dichloro-2-butene	0.176	0.190	.01	8.11	50	A	

FORM V II VOA

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	218013129	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4243D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1346	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	154140	9.08	148135	10.54	345317	6.59

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#		#	
LCS1769808	1769808	154070		9.08		149975		10.54		351398		6.59	
LCSD1769809	1769809	153657		9.08		148939		10.54		349179		6.59	
MB1769807	1769807	123617		9.08		100427		10.54		317748		6.59	
OMS-28-GW74-15	21801312901	118983		9.08		96099		10.54		303034		6.59	
OMS-28-GW74-15-c	21801312902	117877		9.08		96655		10.54		304458		6.59	
OMS-28-GW74-33	21801312903	118405		9.09		93645		10.54		306566		6.59	
OMS-28-GW75-29	21801312904	119633		9.08		94561		10.54		301368		6.59	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1203-9(ICAL)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-11	04/30/18
	CVE	250	126-86-7	07/08/18
1600 (ICV)	8260 ICV	250	126-83-12	05/03/18
	Ac/Ac/VA ICV	MC	126-87-12	04/30/18
	CVE ICV	250	126-84-6	05/09/18
1410 (CCV)	A9-1	250	126-85-8	06/13/18
	A9-2	250	126-85-5	02/05/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4235cD.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235D.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1201	NOT USED	e4236.d	5.00 ml	31-JAN-2018 11:03	1.0	JCK	1
1202	|	e4237.d	5.00 ml	31-JAN-2018 11:33	1.0	JCK	1
1203		e4238cD.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238D.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
2PPB		e4239.d	5.00 ml	31-JAN-2018 12:17	1.0	JCK	1
1204		e4240cD.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240D.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1205		e4241cD.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241D.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1206		e4242cD.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242D.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1207		e4243cD.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243D.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1208		e4244cD.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244D.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1209		e4245cD.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245D.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
BLANK		e4246.d	5.00 ml	31-JAN-2018 14:53	1.0	JCK	1
1600	RR	e4247.d	5.00 ml	31-JAN-2018 15:16	1.0	JCK	1
1600		e4248cD.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248D.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1769682		e4249c.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769687		e4249.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769683		e4250c.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1
1769688		e4250.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1410	APP9	e4251c.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769684		e4251Lc.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769628		e4251L.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769685		e4252c.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769629		e4252.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769681		e4253c.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
1769686 pH		e4253.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
21801200906 1		e4254.d	5.00 ml	31-JAN-2018 17:54	1.0	JCK	1
21801230501 1		e4255.d	5.00 ml	31-JAN-2018 18:16	1.0	JCK	1
21801230502 1		e4256.d	5.00 ml	31-JAN-2018 18:38	1.0	JCK	1
21801200901 1		e4257.d	5.00 ml	31-JAN-2018 19:01	1.0	JCK	1
21801200902 1		e4258.d	5.00 ml	31-JAN-2018 19:23	1.0	JCK	1
21801200903 1		e4259.d	5.00 ml	31-JAN-2018 19:45	1.0	JCK	1
21801200904 1		e4260.d	5.00 ml	31-JAN-2018 20:07	1.0	JCK	1
21801200905 1		e4261.d	5.00 ml	31-JAN-2018 20:30	1.0	GDG	1
21801200907 1		e4262ms.d	5.00 ml	31-JAN-2018 20:52	1.0	GDG	1
21801200908 1		e4263msd.d	5.00 ml	31-JAN-2018 21:14	1.0	GDG	1
1440	8260	e4264cD.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440		e4264D.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440	app9	e4265cD.d	5.00 ml	31-JAN-2018 21:59	1.0	GDG	1
BLANK		e4266.d	5.00 ml	31-JAN-2018 22:21	1.0	GDG	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 22:21

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 01-FEB-2018
Instrument: msv13.i
Analyst(s): GDG

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1400 (CCV)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-11	04/30/18
	CVE	250	126-86-7	07/08/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4268bfb.d	0.00 ml	01-FEB-2018 07:48	1.0	GDG	2
CONDITION PURG		e4269.d	5.00 ml	01-FEB-2018 08:27	1.0	GDG	1
1400		e4270.d	5.00 ml	01-FEB-2018 08:49	1.0	GDG	1
1769808		e4270L.d	5.00 ml	01-FEB-2018 08:49	1.0	GDG	1
1769809		e4271.d	5.00 ml	01-FEB-2018 09:11	1.0	GDG	1
BLANK		e4272.d	5.00 ml	01-FEB-2018 09:33	1.0	GDG	1
BLANK		e4273.d	5.00 ml	01-FEB-2018 09:56	1.0	GDG	1
1769807 pH		e4274.d	5.00 ml	01-FEB-2018 10:18	1.0	GDG	1
21801240301 1		e4275.d	5.00 ml	01-FEB-2018 10:40	1.0	GDG	1
21801240304 1		e4276.d	5.00 ml	01-FEB-2018 11:03	1.0	GDG	1
21801240305 1		e4277.d	5.00 ml	01-FEB-2018 11:25	1.0	GDG	1
21801240306 1		e4278.d	5.00 ml	01-FEB-2018 11:47	1.0	GDG	1
21801240307 1		e4279.d	5.00 ml	01-FEB-2018 12:10	1.0	GDG	1
21801301501 1		e4280.d	5.00 ml	01-FEB-2018 12:32	1.0	GDG	1
21801301502 1		e4281.d	5.00 ml	01-FEB-2018 12:54	1.0	GDG	1
21801301503 1		e4282.d	5.00 ml	01-FEB-2018 13:16	1.0	GDG	1
21801312901 1		e4283.d	5.00 ml	01-FEB-2018 13:39	1.0	GDG	1
21801312902 1		e4284.d	5.00 ml	01-FEB-2018 14:01	1.0	GDG	1
21801312903 1		e4285.d	5.00 ml	01-FEB-2018 14:23	1.0	GDG	1
21801312904 1		e4286.d	5.00 ml	01-FEB-2018 14:46	1.0	GDG	1
21801241801 1		e4287.d	5.00 ml	01-FEB-2018 15:08	1.0	GDG	1
21801241802 1		e4288.d	5.00 ml	01-FEB-2018 15:30	1.0	GDG	1
21801241803 1		e4289.d	5.00 ml	01-FEB-2018 15:52	1.0	GDG	1
21801241804 1		e4290.d	5.00 ml	01-FEB-2018 16:15	1.0	GDG	1
21801241805 1		e4291.d	5.00 ml	01-FEB-2018 16:37	1.0	GDG	1
21801241806 1		e4292.d	5.00 ml	01-FEB-2018 16:59	1.0	JCK	1
21801240302 1		e4293ms.d	5.00 ml	01-FEB-2018 17:22	1.0	JCK	1
21801240303 1		e4294msd.d	5.00 ml	01-FEB-2018 17:44	1.0	JCK	1
1440		e4295.d	5.00 ml	01-FEB-2018 18:06	1.0	JCK	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 19:48

Client ID: 4838 - AECOM
SDG: 218013129
PM: AMK

AECOM

Chain of Custody and Analytical Requ

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)	c15-1,2 DCE	Comments	Cooler ID
OMS-28-GW74-15	1/30/18	0845	11-15	N	WG	3	X	X		-1
OMS-28-GW74-15-c	1/30/18		-	TB	WQ	2	X	X	3 DAY TAT	-2
OMS-28-GW74-33	1/30/18	0935	29-33	N	WG	3	X	X		-3
OMS-28-GW75-29	1/30/18	1135	25-29	N	WG	3	X	X		-4
OMS-28-GW89-31	1/30/18	1425	27-31	N	WG	3	X	X	Standard TAT	
OMS-28-GW81-18	1/30/18	1630	14-18	N	WG		X	X	Standard TAT	
			-							
			-							
			-							
			-							
			-							
			-							
			-							

Sample Analysis Requested

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	[signature]	1/30/18	1800			
2.	FedEx	1/31/18	09:15	[signature]	1/31/18	09:15
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped: XXX
Airbill #: 8731 2991 6460
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

3.7°C E29 480pm

Page 1 of 1

AECOM Project Number 60556081 2.0

Purchase Order Number N/A

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

SAMPLE RECEIVING CHECKLIST

2180131129

SAMPLE DELIVERY GROUP 218013129	
Client **PM** AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** Savage, Tiffany R
Line Item(s) 3 - 3 day Water	**Receive Date(s)** 01/31/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E29	Temp °C
8731-2991-6460		3.7

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Appendix B14
GCAL Report 218013130 dated February 9, 2018

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/09/2018

GCAL Report 218013130

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____
Authorized Signature
GCAL Report 218013130

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218013130

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21801313001	OMS-28-GW89-31	Water	01/30/2018 14:25	01/31/2018 09:15
21801313002	OMS-28-GW81-18	Water	01/30/2018 16:30	01/31/2018 09:15

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21801313001	OMS-28-GW89-31	W	EPA 8260B DOD Water
21801313002	OMS-28-GW81-18	W	EPA 8260B DOD Water

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.

Summary of Compounds Detected

OMS-28-GW89-31

Collect Date 01/30/2018 14:25 **GCAL ID** 21801313001
Receive Date 01/31/2018 09:15 **Matrix** Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	1.03	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	5.22	0.200	0.500	1.00	ug/L

OMS-28-GW81-18

Collect Date 01/30/2018 16:30 **GCAL ID** 21801313002
Receive Date 01/31/2018 09:15 **Matrix** Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	1.29	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	11.1	0.200	0.500	1.00	ug/L

Sample Results

OMS-28-GW89-31

Collect Date	01/30/2018 14:25	**GCAL ID**	21801313001
Receive Date	01/31/2018 09:15	**Matrix**	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	02/06/2018 14:27	GDG	628461

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	**cis-1,2-Dichloroethene**	**1.03**	**0.200**	**0.500**	**1.00**	**ug/L**
127-18-4	Tetrachloroethene	0.500U	0.200	0.500	1.00	ug/L
79-01-6	**Trichloroethene**	**5.22**	**0.200**	**0.500**	**1.00**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49	ug/L	98	85 - 114
1868-53-7	Dibromofluoromethane	50	51.6	ug/L	103	80 - 119
2037-26-5	Toluene d8	50	52.9	ug/L	106	89 - 112
17060-07-0	1,2-Dichloroethane-d4	50	49.2	ug/L	98	81 - 118

OMS-28-GW81-18

Collect Date	01/30/2018 16:30	**GCAL ID**	21801313002
Receive Date	01/31/2018 09:15	**Matrix**	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	02/08/2018 12:33	JCK	628646

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	**cis-1,2-Dichloroethene**	**1.29**	**0.200**	**0.500**	**1.00**	**ug/L**
127-18-4	Tetrachloroethene	0.500U	0.200	0.500	1.00	ug/L
79-01-6	**Trichloroethene**	**11.1**	**0.200**	**0.500**	**1.00**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.3	ug/L	99	85 - 114
1868-53-7	Dibromofluoromethane	50	52.6	ug/L	105	80 - 119
2037-26-5	Toluene d8	50	51.9	ug/L	104	89 - 112
17060-07-0	1,2-Dichloroethane-d4	50	49.2	ug/L	98	81 - 118

GC/MS Volatiles QC Summary

Analytical Batch	Client ID	MB628461		LCS628461				LCSD628461				
628461	GCAL ID	1771421		1771422				1771423				
	Sample Type	MB		LCS				LCSD				
	Prep Date	NA		NA				NA				
	Analysis Date	02/06/2018 09:54		02/06/2018 08:25				02/06/2018 08:48				
	Matrix	Water		Water				Water				
EPA 8260B		Units Result	ug/L LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
cis-1,2-Dichloroethene	156-59-2	0.500U	0.500	50.0	50.4	101	78 - 123	50.0	46.0	92	9	20
Tetrachloroethene	127-18-4	0.500U	0.500	50.0	48.8	98	74 - 129	50.0	47.2	94	3	20
Trichloroethene	79-01-6	0.500U	0.500	50.0	50.0	100	79 - 123	50.0	46.3	93	8	20
Surrogate												
1,2-Dichloroethane-d4	17060-07-0	49.3	99	50	48.8	98	81 - 118	50	48.5	97	NA	NA
4-Bromofluorobenzene	460-00-4	49.2	98	50	49.1	98	85 - 114	50	51.3	103	NA	NA
Dibromofluoromethane	1868-53-7	52.2	104	50	49.6	99	80 - 119	50	50	100	NA	NA
Toluene d8	2037-26-5	53	106	50	48.5	97	89 - 112	50	50.1	100	NA	NA

Analytical Batch	Client ID	MB628646		LCS628646				LCSD628646				
628646	GCAL ID	1772543		1772544				1772545				
	Sample Type	MB		LCS				LCSD				
	Prep Date	NA		NA				NA				
	Analysis Date	02/08/2018 10:42		02/08/2018 09:02				02/08/2018 09:24				
	Matrix	Water		Water				Water				
EPA 8260B		Units Result	ug/L LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
cis-1,2-Dichloroethene	156-59-2	0.500U	0.500	50.0	51.6	103	78 - 123	50.0	49.0	98	5	20
Tetrachloroethene	127-18-4	0.500U	0.500	50.0	54.6	109	74 - 129	50.0	49.0	98	11	20
Trichloroethene	79-01-6	0.500U	0.500	50.0	50.8	102	79 - 123	50.0	48.2	96	5	20
Surrogate												
1,2-Dichloroethane-d4	17060-07-0	49.1	98	50	46.9	94	81 - 118	50	47.6	95	NA	NA
4-Bromofluorobenzene	460-00-4	49.8	100	50	53.3	107	85 - 114	50	51	102	NA	NA
Dibromofluoromethane	1868-53-7	52.7	105	50	49.2	98	80 - 119	50	48.7	97	NA	NA
Toluene d8	2037-26-5	53.2	106	50	51.6	103	89 - 112	50	49	98	NA	NA

Client ID: 4838 - AECOM
SDG: 218013130
PM: AMK

AECOM Chain of Custody and Analytical Reques

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	Sample Analysis Requested: PCE & TCE (8260B)	Sample Analysis Requested: 6215-12 ACE	Comments	Cooler ID
OMS-28-GW74-15	1/30/18	0845	11.15	N	WG	3	X	X	3 DAY TAT	
OMS-28-GW74-15-c	1/30/18		-	TB	WQ	2	X	X		
OMS-28-GW74-33	1/30/18	0935	29.33	N	WG	3	X	X		
OMS-28-GW75-29	1/30/18	1135	25.29	N	WG	3	X	X		
OMS-28-GW89-31	1/30/18	1425	27.31	N	WG	3	X	X	Standard TAT	-1
OMS 28-GW81-18	1/30/18	1630	14.18	N	WG		X	X	Standard TAT	-2
			-							
			-							
			-							
			-							
			-							
			-							
			-							

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	1/30/18	1800			
2.	FedEx	1/31/18	09:15	Tiffany Day	1/31/18	09:15
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped: XXX
Airbill #: 8731 2991 6460
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

3.7°C E29 48CPM

Page 1 of 1

AECOM Project Number 60556081 2.0

Purchase Order Number N/A

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

SAMPLE RECEIVING CHECKLIST

2180131130

SAMPLE DELIVERY GROUP 218013130	
Client **PM** AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** Savage, Tiffany R
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 01/31/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E29	Temp °C
8731-2991-6460		3.7

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Appendix B15
GCAL Report 218013133 dated February 6, 2018

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/06/2018

GCAL Report 218013133

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____
Authorized Signature
GCAL Report 218013133

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218013133

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

See subcontract laboratory report case narrative.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21801313301	OMS-28-GW-74-15	Water	01/30/2018 08:45	01/31/2018 09:10
21801313302	OMS-28-GW-74-15-c	Water	01/30/2018 00:01	01/31/2018 09:10
21801313303	OMS-28-GW-74-33	Water	01/30/2018 09:35	01/31/2018 09:10
21801313304	OMS-28-GW-75-29	Water	01/30/2018 11:35	01/31/2018 09:10
21801313401	OMS-28-GW-89-31	Water	01/30/2018 14:25	01/31/2018 09:10
21801313402	OMS-28-GW-81-18	Water	01/30/2018 16:30	01/31/2018 09:10

Client ID: 4838 - AECOM
SDG: 218013133
PM: AMK

AECOM Chain of Custody and Analytical Request

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (10 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	VC (8260SIM)	Comments	Cooler ID
*OMS-28-GW74-15	1-30-18	0845	11-15	N	WG	3	X	3 DAY TAT	-1
*OMS-28-GW74-15-c	1-30-18	-	-	TB	WQ	3	X		-2
*OMS-28-GW74-33	1-30-18	0935	29-33	N	WG	3	X		-3
*OMS-28-GW75-24	1-30-18	1135	25-29	N	WG	3	X		-4
*OMS-28-GW84-31	1-30-18	1425	27-31	N	WG	3	X	Standard TAT 218013134-01	
*OMS-28-GW81-18	1-30-18	1630	14-18	N	WG	3	X	Standard TAT	-02

Sample Analysis Requested

Comments *only samples in WO

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	1/30/18	1800			
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: Katahdin Analytical
Lab Receipient:

Shipped: XXX
Airbill #: 3931 2991 6759
Location: Scarborough ME
Date:
Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

Project Number 60556081 2.0

Purchase Order Number N/A

AECOM Project Name: ARNG OMS 28 Mobile AL

Project Manager: Anna Kinchen

Analytical Data To: Anna Kinchen

SAMPLE RECEIVING CHECKLIST

2180131133

SAMPLE DELIVERY GROUP 218013133	
Client **PM** AMK 4838 - AECOM	**Transport Method** OTHER
Profile Number 264814	**Received By** Reese, Sean M
Line Item(s) 1 - W - VOCs 4 - 3 Day - Sub	**Receive Date(s)** 01/31/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☐	☑

COOLERS

Airbill	Thermometer ID: NA	Temp °C
		NA

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES SUBOUTS ONLY.

GCAL
ARNG OMS 28 - MOBILE AL
SL0777

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

TABLE OF CONTENTS

Total number of pages: 44

SAMPLE DATA PACKAGE

Katahdin ANALYTICAL SERVICES

Cert. No. E87604

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
GCAL ANALYTICAL LABORATORIES
ARNG OMS 28 – MOBILE AL
SL0777

Sample Receipt

The following samples were received on January 31, 2018 and were logged in under Katahdin Analytical Services work order number SL0777 for a hardcopy due date of February 12, 2018.

KATAHDIN Sample No.	GCAL Sample Identification
SL0777-1	OMS-28-GW74-15
SL0777-2	OMS-28-GW74-15C
SL0777-3	OMS-28-GW74-33
SL0777-4	OMS-28-GW75-29
SL0777-5	OMS-28-GW89-31
SL0777-6	OMS-28-GW81-18

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SL0777 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8260B SIM Analysis

The closing continuing calibration verification standard (CV) (file D0174) had a high response for the target analyte vinyl chloride that resulted in a %D that exceeded the DoD QSM acceptance limit of ±50%. If a closing CV fails, the DoD QSM allows for the analysis of two additional CVs which do not need to be within the 12 hour window. The two additional CV's (files D0175 and D0176) were acceptable, and all three CVs are reported.

There were no other protocol deviations or observations noted by the organics laboratory staff.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond
02.05.18

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: GCAL	KAS PM:	Sampled By: Client
Project:	KMS Entry By:	Delivered By: Fedex
KAS Work Order#: SL0777	KMS Review By: AMH	Received By: JAB
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 1.31.18 910

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				
If yes, was there sufficient ice to meet temperature requirements?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

SL0777

AECOM

Chain of Custody and Analytical Request

Laboratory: Katahdin Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL						Sample Analysis Requested											
Client Name: GCAL																	
Collected by: Randy Morgan																	
Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Number of containers	VC (8260SIM)									Comments	Cooler ID
OMS-28-GW74-15	1-30-18	0845	11 - 15	N	WG	3	X									3 DAY TAT	
OMS-28-GW74-15-c	1-30-18			TB	WQ	3	X										
OMS-28-GW74-33	1-30-18	0935	29 - 33	N	WG	3	X										
OMS-28-GW75-29	1-30-18	1135	25 29	N	WG	3	X										
OMS-28-GW89-31	1-30-18	1425	27 31	N	WG	3	X									Standard TAT	
OMS-28-GW81-18	1-30-18	1630	14 - 18	N	WG	3	X									Standard TAT	
			-														
			-														
			-														
			-														
			-														
			-														
			-														

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	1/30/18	1800	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: Katahdin Analytical
Lab Receipient:

Shipped: XXX
Airbill #: 8731 2991 6759
Location: Scarborough ME
Date: 1.31.18 Time: 910

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

Project Number 60556081 2.0

Purchase Order Number N/A

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

9000000

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Jan. 31, 2018
11:15 AM

Login Number: SL0777

Account: GCAL001
GCAL

Project: GCAL-VOASIM

Quote/Incoming: GCAL-VOASIM

NoWeb

Primary Report Address:
Kimberly Drag
GCAL
7979 Innovation Park Dr

Baton Rouge,LA 70820
kimberly.drag@gcal.com

Primary Invoice Address:
Kelly Lott
GCAL Analytical Laboratories
7979 Innovation Park Drive

Baron Rouge,LA 70820

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD 5.0 project. Analysis for VC only.
CHECK NO.	:	
CLIENT PO#	:	Project# 60556081 2.0
CLIENT PROJECT MANAGE	:	Anna Kinchen
CONTRACT	:	
COOLER TEMPERATURE	:	0.7
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS135QC-CSV
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	ARNG OMS 28 - Mobile, AL
QC LEVEL	:	III
REPORT INSTRUCTIONS	:	Send final PDF and EDD to both Anna (anna.kinchen@gcal.com) and Kimberly (kimberly.drag@gcal.com). Invoice to Kimberly.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	24

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0777-1	OMS-28-GW74-15	30-JAN-18 08:45	31-JAN-18		**05-FEB-18**	12-FEB-18	
Matrix	***Product***	***Hold Date (shortest)***	***Bottle Type***		***Bottle Count***	***Comments***	
Aqueous	S SW8260SIMVC	13-FEB-18	40mL Vial+HCl				
SL0777-2	OMS-28-GW74-15C	30-JAN-18 00:00	31-JAN-18		**05-FEB-18**	12-FEB-18	
Matrix	***Product***	***Hold Date (shortest)***	***Bottle Type***		***Bottle Count***	***Comments***	
Aqueous	S SW8260SIMVC	13-FEB-18	40mL Vial+HCl				
SL0777-3	OMS-28-GW74-33	30-JAN-18 09:35	31-JAN-18		**05-FEB-18**	12-FEB-18	
Matrix	***Product***	***Hold Date (shortest)***	***Bottle Type***		***Bottle Count***	***Comments***	
Aqueous	S SW8260SIMVC	13-FEB-18	40mL Vial+HCl				
SL0777-4	OMS-28-GW75-29	30-JAN-18 11:35	31-JAN-18		**05-FEB-18**	12-FEB-18	
Matrix	***Product***	***Hold Date (shortest)***	***Bottle Type***		***Bottle Count***	***Comments***	
Aqueous	S SW8260SIMVC	13-FEB-18	40mL Vial+HCl				

Total Samples: **6** ***Total Analyses:*** **6**

AMH 1/31/18

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Jan. 31, 2018
11:15 AM

Login Number: SL0777

Account: GCAL001
GCAL

Project: GCAL-VOASIM

Quote/Incoming: GCAL-VOASIM

NoWeb

Primary Report Address:
Kimberly Drag
GCAL
7979 Innovation Park Dr

Baton Rouge,LA 70820
kimberly.drag@gcal.com

Primary Invoice Address:
Kelly Lott
GCAL Analytical Laboratories
7979 Innovation Park Drive

Baron Rouge,LA 70820

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD 5.0 project. Analysis for VC only.
CHECK NO.	:	
CLIENT PO#	:	Project# 60556081 2.0
CLIENT PROJECT MANAGE	:	Anna Kinchen
CONTRACT	:	
COOLER TEMPERATURE	:	0.7
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS135QC-CSV
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	ARNG OMS 28 - Mobile, AL
QC LEVEL	:	III
REPORT INSTRUCTIONS	:	Send final PDF and EDD to both Anna (anna.kinchen@gcal.com) and Kimberly (kimberly.drag@gcal.com). Invoice to Kimberly.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	24

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0777-5	OMS-28-GW89-31	30-JAN-18 14:25	31-JAN-18			12-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	13-FEB-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0777-6	OMS-28-GW81-18	30-JAN-18 16:30	31-JAN-18			12-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	13-FEB-18	40mL Vial+HCl		

Total Samples: **6** ***Total Analyses:*** **6**

AMH 1/31/18

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-1
Client ID: OMS-28-GW74-15
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0164.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		122.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-2
Client ID: OMS-28-GW74-15C
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0167.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		124.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-3
Client ID: OMS-28-GW74-33
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0165.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		121.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-4
Client ID: OMS-28-GW75-29
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0166.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		122.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-5
Client ID: OMS-28-GW89-31
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0168.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		121.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-6
Client ID: OMS-28-GW81-18
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0169.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		116.	%					

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SIM VOLATILES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** ARNG OMS 28 - Mobile, AL **Matrix:** AQ
Lab Code: KAS **SDG:** SL0777

Client Sample ID	Lab Sample ID	Col. ID	DBF	#
OMS-28-GW74-15	SL0777-1		122.	
OMS-28-GW74-15C	SL0777-2		124.	
OMS-28-GW74-33	SL0777-3		121.	
OMS-28-GW75-29	SL0777-4		122.	
OMS-28-GW89-31	SL0777-5		121.	
OMS-28-GW81-18	SL0777-6		116.	
Laboratory Control S	WG222731-1		97.9	
Method Blank Sample	WG222731-2		118.	

		QC Limits
DBF	DIBROMOFLUOROMETHANE	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File ID : D0160.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL0777
Lab Sample ID : WG222731-2
Date Analyzed : 01-FEB-18
Time Analyzed : 10:24

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG222731-1	D0158.D	02/01/18	09:01
OMS-28-GW74-15	SL0777-1	D0164.D	02/01/18	13:01
OMS-28-GW74-33	SL0777-3	D0165.D	02/01/18	13:39
OMS-28-GW75-29	SL0777-4	D0166.D	02/01/18	14:17
OMS-28-GW74-15C	SL0777-2	D0167.D	02/01/18	14:55
OMS-28-GW89-31	SL0777-5	D0168.D	02/01/18	15:33
OMS-28-GW81-18	SL0777-6	D0169.D	02/01/18	16:11

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG222731-2
Client ID: Method Blank Sample
Project:
SDG: SL0777
Lab File ID: D0160.D

Sample Date:
Received Date:
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		118.	%					

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Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG222731-1
Client ID: LCS
Project:
SDG: SL0777
LCS File ID: D0158.D

Sample Date:
Received Date:
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Vinyl Chloride	112.	0.500	0.560	ug/L	70-130
Dibromofluoromethane	97.9				70-130

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File ID : DB091A.D
Instrument ID : GCMS-D

SDG : SL0777
Date Analyzed : 31-JAN-18
Time Analyzed : 08:14
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.4		
75	30.0 - 60.0% of mass 95	50.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.5		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	88.7		
175	5.0 - 9.0% of mass 174	7.1	8.05	1
176	95.0 - 101.0% of mass 174	85.2	95.98	1
177	5.0 - 9.0% of mass 176	5.5	6.47	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG222666-5	D0137.D	01/31/18	08:44
Initial Calibration	WG222666-4	D0138.D	01/31/18	09:44
Initial Calibration	WG222666-3	D0139.D	01/31/18	10:22
Initial Calibration	WG222666-2	D0140.D	01/31/18	11:00
Initial Calibration	WG222666-1	D0141.D	01/31/18	11:38
Initial Calibration	WG222666-8	D0142.D	01/31/18	12:16
Initial Calibration	WG222666-7	D0143.D	01/31/18	12:54
Initial Calibration	WG222666-6	D0144.D	01/31/18	13:32
Independent Source	WG222666-9	D0146.D	01/31/18	15:04

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File ID : DB092A.D
Instrument ID : GCMS-D

SDG : SL0777
Date Analyzed : 01-FEB-18
Time Analyzed : 07:51
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	17.5		
75	30.0 - 60.0% of mass 95	46.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.3		
173	Less than 2.0% of mass 174	0.4	0.46	1
174	Greater than 50.0% of mass 95	83.0		
175	5.0 - 9.0% of mass 174	6.2	7.42	1
176	95.0 - 101.0% of mass 174	80.6	97.09	1
177	5.0 - 9.0% of mass 176	5.4	6.65	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG222731-4	D0157.D	02/01/18	08:17
Laboratory Control S	WG222731-1	D0158.D	02/01/18	09:01
Method Blank Sample	WG222731-2	D0160.D	02/01/18	10:24
OMS-28-GW74-15	SL0777-1	D0164.D	02/01/18	13:01
OMS-28-GW74-33	SL0777-3	D0165.D	02/01/18	13:39
OMS-28-GW75-29	SL0777-4	D0166.D	02/01/18	14:17
OMS-28-GW74-15C	SL0777-2	D0167.D	02/01/18	14:55
OMS-28-GW89-31	SL0777-5	D0168.D	02/01/18	15:33
OMS-28-GW81-18	SL0777-6	D0169.D	02/01/18	16:11
Continuing Calibrati	WG222731-5	D0174.D	02/01/18	19:21
Continuing Calibrati	WG222731-6	D0175.D	02/01/18	19:59
Continuing Calibrati	WG222731-7	D0176.D	02/01/18	20:37

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222666-5
Lab File ID : D0137.d

SDG: SL0777
Analytical Date: 01/31/18 08:44
Instrument ID: GCMS-D

Client Sample ID	Lab Sample ID	PENTAFLUOROBENZENE Area	#	RT	#
	Std .	35190		7.87	
	Upper Limit	70380		8.37	
	Lower Limit	17595		7.37	
Continuing Calibrati	WG222731-4	28691		7.86	
Laboratory Control S	WG222731-1	30111		7.86	
Method Blank Sample	WG222731-2	24349		7.86	
OMS-28-GW74-15	SL0777-1	23285		7.86	
OMS-28-GW74-33	SL0777-3	23428		7.86	
OMS-28-GW75-29	SL0777-4	23191		7.86	
OMS-28-GW74-15C	SL0777-2	22521		7.86	
OMS-28-GW89-31	SL0777-5	23291		7.87	
OMS-28-GW81-18	SL0777-6	25115		7.87	
Continuing Calibrati	WG222731-5	25008		7.86	
Continuing Calibrati	WG222731-6	25603		7.86	
Continuing Calibrati	WG222731-7	25517		7.87	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

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Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-1
Client ID: OMS-28-GW74-15
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0164.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		122.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-2
Client ID: OMS-28-GW74-15C
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0167.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		124.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-3
Client ID: OMS-28-GW74-33
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0165.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		121.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-4
Client ID: OMS-28-GW75-29
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0166.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		122.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-5
Client ID: OMS-28-GW89-31
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0168.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		121.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0777-6
Client ID: OMS-28-GW81-18
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0777
Lab File ID: D0169.D

Sample Date: 30-JAN-18
Received Date: 31-JAN-18
Extract Date: 01-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222731

Analysis Date: 01-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 02-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		116.	%					

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Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File IDs : D0141.d D0140.d D0139.d D0138.d D0137.d D0144.d D0143.d D0142.d

SDG: SL0777
Instrument ID: GCMS-D
Calibration Date(s): 31-JAN-18 08:44 31-JAN-18 13:32

	Level 1 0.050000(	Level 2 0.075000(	Level 3 0.100000(	Level 4 0.300000(	Level 5 0.500000(	Level 6 0.750000(	Level 7 1.0000	Level 8 2.0000	Crv New	b	m1	%RSD	Max %RSD	
Vinyl chloride	2.35153	2.23374	2.42195	2.20479	2.02643	2.06244	2.07490	1.89827	AVG		2.15926	8.13235	15.00000	O
Dibromofluoromethane	1.28770	1.24802	1.16220	1.09734	1.00412	1.14114	1.08099	1.04896	AVG		1.13381	8.54631	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-d.i\D013118.b\D0146.d
Report Date: 02-Feb-2018 08:28

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG222666-9
Level: LOW Operator: JSS/HG
Data Type: MS DATA SampleType: LCS
SpikeList File: SIMLCSvcldce.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D013118.b\D8SIMVCLDCE01.m
Misc Info: WG222666,WG217420-5

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
2 Vinyl chloride	0.50	0.53	105.96	70-130
6 1,1-Dichloroethene	0.50	0.53	106.58	70-130

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 16 Dibromofluorometha	1.0	0.90	89.78	70-130

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222731-4
Lab File ID : D0157.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0777
Analytical Date: 02/01/18 08:17
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	2.43860	0.010	12.93718	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.16817	0.010	3.03068	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222731-5
Lab File ID : D0174.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0777
Analytical Date: 02/01/18 19:21
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type	
10	Vinyl chloride	2.15926	3.27679	0.010	51.75548	50.00000	Averaged	<-
16	Dibromofluoromethane	1.13381	1.27163	0.010	12.15584	50.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222731-6
Lab File ID : D0175.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0777
Analytical Date: 02/01/18 19:59
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	2.45065	0.010	13.49505	50.00000	Averaged
16	Dibromofluoromethane	1.13381	1.27485	0.010	12.43962	50.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222731-7
Lab File ID : D0176.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0777
Analytical Date: 02/01/18 20:37
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	2.34714	0.010	8.70131	50.00000	Averaged
16	Dibromofluoromethane	1.13381	1.25516	0.010	10.70323	50.00000	Averaged

*** = Compound out of QC criteria**

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 013118

					PREP METHOD			Criteria			pH Paper Lot #:			KI Paper Lot #	
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG222666 - 12	D80901	1	-1	VOABFBAQ1							Y	JK			
- 5	D01137	1	1	D8SIMVELDCF01							Y				
- 4	38	1	2								Y				
- 3	39	1	3								Y				
- 2	40	1	4								Y				
- 1	41	1	5								Y				
- 8	42	1	6								Y				
- 7	43	1	7								Y				
- 6	44	1	8								Y				
LCS/MD -	45	1	9								N				
LCS/MD - 9/10	46	1	10								Y				
VBLK	47	1	11								N				
WG222666 - 11	48	1	12												
SL0744 -1 A	49	1	13		x			x							
-2 A	50	1	14												Archer Faulted Id not run
-3 A	51	1	15												
SL0777 -2 A	52	1	16												
CCV	53	1	17												
CCV	54	1	18												
CCV	55	1	19												
Rinse	56	1	1												

STANDARD	CODE
BFB	V0964
CAL. STD.	V0979
LCS/MS MIX	V0980
EXTRAS MIX	—

STANDARD	CODE
IS MIX	V0978
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
(SW846 8260 SIM)	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION:

					PREP METHOD			Criteria			pH Paper Lot #: HC613865				KI Paper Lot #
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG822731-3	D0052	1	-	VOABFBAQ2							Y	JS	-		
-52 AAB 020218	D0157		1	D8SIMVOLDCE01					X		Y		-		
-1	58		2						X		Y		-		
VBLK	59		3								N		-		
WG822731-2	60		4						X		Y		-		
SL0744-1 B	61		5		X			X			Y		<2		
-2	62		6												
-3	63		7												
SL0777 ~~-4~~ -1 A	64		8								Y				
-3 B	65		9												
-4 A	66		10												
-2 B	67		11												
-5 A	68		12												
-6	69		13												
CCV	70		14						X		N		-		↑
SL0803 -1 A	71		15										<2		
-2	72		16												
-3	73		17												
CCV -5	74		18						X		Y		-		↑
CCV -6	75		19										-		GOOD DOC
CCV -7	76		20										-		↓ ↓
Rinse	77		21								N		-		
															AAB 020218

STANDARD	CODE
BFB	V0964
CAL. STD.	V0979
LCS/MS MIX	V0981 / V0982
EXTRAS MIX	↓

STANDARD	CODE
IS MIX	V0978
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
(SW846 8260 SIM)	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

Appendix B16
GCAL Report 218020203 dated February 10, 2018

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/10/2018

GCAL Report 218020203

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Robyn Migues/Dir of Data Del

Authorized Signature
GCAL Report 218020203

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218020203

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

See subcontract laboratory report case narrative.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802020301	OMS-28-GW76-28	Water	01/31/2018 11:55	02/02/2018 08:55
21802020302	OMS-28-GW76-28-a	Water	01/31/2018 11:55	02/02/2018 08:55
21802020303	OMS-28-GW76-13	Water	01/31/2018 12:30	02/02/2018 08:55
21802020304	OMS-28-GW76-13-c	Water	01/31/2018 00:01	02/02/2018 08:55
21802020305	OMS-28-GW78-12	Water	01/31/2018 13:30	02/02/2018 08:55
21802020306	OMS-28-GW76-20	Water	01/31/2018 14:30	02/02/2018 08:55
21802020307	OMS-28-GW78-20	Water	01/31/2018 15:00	02/02/2018 08:55
21802020308	OMS-28-GW81-28	Water	01/31/2018 15:45	02/02/2018 08:55
21802020309	OMS-28-GW78-27	Water	02/01/2018 09:15	02/02/2018 08:55
21802020310	OMS-28-GW80-11	Water	02/01/2018 10:00	02/02/2018 08:55
21802020311	OMS-28-GW79-11	Water	02/01/2018 10:30	02/02/2018 08:55
21802020312	OMS-28-GW79-17	Water	02/01/2018 11:15	02/02/2018 08:55
21802020313	OMS-28-GW79-27	Water	02/01/2018 12:30	02/02/2018 08:55
21802020314	OMS-28-GW77-12	Water	02/01/2018 13:15	02/02/2018 08:55
21802020315	OMS-28-GW77-12-a	Water	02/01/2018 13:15	02/02/2018 08:55
21802020316	OMS-28-GW77-20	Water	02/01/2018 14:25	02/02/2018 08:55

Client ID: 4838 - AECOM
SDG: 218020203
PM: AMK

AECOM

Chain of Custody and Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (3)	Number of containers	VC (8260SIM)	Comments	Cooler ID
OMS-28-GW76-28	1/31/18	1155	24 28	N	WG	3	X	Standard TAT	-1
OMS-28-GW76-28-a	1/31/18	1155	24 28	FD	WG	3	X		-2
OMS-28-GW76-13	1/31/18	1230	9 13	N	WG	3	X		-3
OMS-28-GW76-13-c	1/31/18			TB	WQ	3	X		-4
OMS-28-GW78-12	1/31/18	1330	8 12	N	WG	3	X		-5
OMS-28-GW76-20	1/31/18	1430	16 20	N	WG	3	X		-6
OMS-28-GW78-20	1/31/18	1500	16 20	N	WG	3	X		-7
OMS-28-GW81-28	1/31/18	1545	24 28	N	WG	3	X		-8
OMS-28-GW78-27	2/1/18	0915	23 27	N	WG	3	X		-9
OMS-28-GW80-11	2/1/18	1000	7 11	N	WG	3	X		-10
OMS-28-GW79-11	2/1/18	1030	7 11	N	WG	3	X		-11
OMS-28-GW79-17	2/1/18	1115	13 17	N	WG	3	X		-12
OMS-28-GW79-27	2/1/18	1230	23 27	N	WG	3	X		-13

Sample Analysis Requested

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
Randy Morgan	2/1/18	1700	1.		
			2.		
			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: Katahdin Analytical
Lab Receipient:

Shipped: XXX
Airbill #: 8731 2491 6432
Location: Scarborough ME
Date: Time:

) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 2

Project Number 60556081 2.0

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Client ID: 4838 - AECOM
SDG: 218020203
PM: AMK

AECOM

Chain of Custody and Analytical Request

Laboratory: Katahdin Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL
Client Name: GCAL
Collected by: Randy Morgan

Field Sample ID (20 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code[1]	Sample Matrix[2]	Sample Analysis Requested: Number of containers	VC (8260SIM)	Comments	Cooler ID
OMS-28-GW77-12	2-1-2018	1315	8.12	N	WG	3	X	Standard TAT	-14
OMS-28-GW77-12-a	2-1-2018	1315	8.12	FD	WG	3	X		-15
OMS-28-GW77-20	2-1-2018	1425	16.20	N	WG	3	X		-16

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	2/1/18	1700	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: Fed Ex — Shipped: XXX
Method of Shipment: — Airbill #: 8731 2991 6437
Analytical Lab: Katahdin Analytical — Location: Scarborough ME
Lab Receipient: — Date: — Time:

(1) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-t) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

(2) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2
Project Number 60556081 2.0
Purchase Order Number:

AECOM Project Name: ARNG OMS 28 Mobile AL
Project Manager: Anna Kinchen
Analytical Data To: Anna Kinchen

SAMPLE RECEIVING CHECKLIST

218020203

SAMPLE DELIVERY GROUP 218020203	
Client **PM** AMK 4838 - AECOM	**Transport Method** OTHER
Profile Number 264814	**Received By** Reese, Sean M.
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 02/02/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☐	☑

COOLERS		
Airbill	**Thermometer ID:** NA	**Temp °C**
		NA

DISCREPANCIES	LAB PRESERVATIONS
None	None

NOTES	SUBOUTS ONLY.

Revision 1.6

GCAL
ARNG OMS 28 - MOBILE, AL
SL0867

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

TABLE OF CONTENTS

Total number of pages: 70

SAMPLE DATA PACKAGE

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
GCAL ANALYTICAL LABORATORIES
ARNG OMS 28 – MOBILE, AL
SL0867

Sample Receipt

The following samples were received on February 02, 2018 and were logged in under Katahdin Analytical Services work order number SL0867 for a hardcopy due date of February 14, 2018.

KATAHDIN Sample No.	GCAL Sample Identification
SL0867-1	OMS-28-GW76-28
SL0867-2	OMS-28-GW76-28-A
SL0867-3	OMS-28-GW76-13
SL0867-4	OMS-28-GW76-13-C
SL0867-5	OMS-28-GW78-12
SL0867-6	OMS-28-GW76-20
SL0867-7	OMS-28-GW78-20
SL0867-8	OMS-28-GW81-28
SL0867-9	OMS-28-GW78-27
SL0867-10	OMS-28-GW80-11
SL0867-11	OMS-28-GW79-11
SL0867-12	OMS-28-GW79-17
SL0867-13	OMS-28-GW79-27
SL0867-14	OMS-28-GW77-12
SL0867-15	OMS-28-GW77-12-A
SL0867-16	OMS-28-GW77-20

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SL0867 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8260B SIM Analysis

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

There were no other protocol deviations or observations noted by the organics laboratory staff.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond
02.09.18

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Kelso Analytical Services, LLC.

Sample Receipt Condition Report

Client: GCAL	KAS PM:	Sampled By: Client	
Project:	KMS Entry By:	Delivered By: Fedex	
KAS Work Order#: SL0867	KMS Review By: AMH	Received By: JOB	
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 2-2-18 855	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				
If yes, was there sufficient ice to meet temperature requirements?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2 Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

SL0867

AECOM

Chain of Custody and Analytical Request

Laboratory: Katahdin Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Number of containers	VC (8260SIM)								Comments	Cooler ID
OMS-28-GW76-28	1/31/18	1155	24 28	N	WG	3	X								Standard TAT	
OMS-28-GW76-28-a	1/31/18	1155	24 28	FD	WG	3	X									
OMS-28-GW76-13	1/31/18	1230	9 13	N	WG	3	X									
OMS-28-GW76-13-c	1/31/18			TB	WQ	3	X									
OMS-28-GW78-12	1/31/18	1330	8 12	N	WG	3	X									
OMS-28-GW76-20	1/31/18	1430	16 20	N	WG	3	X									
OMS-28-GW78-20	1/31/18	1500	16 20	N	WG	3	X									
OMS-28-GW81-28	1/31/18	1545	24 28	N	WG	3	X									
OMS-28-GW78-27	2/1/18	0915	23 27	N	WG	3	X									
OMS-28-GW80-11	2/1/18	1000	7 11	N	WG	3	X									
OMS-28-GW79-11	2/1/18	1030	7 11	N	WG	3	X									
OMS-28-GW79-17	2/1/18	1115	13 17	N	WG	3	X									
OMS-28-GW79-27	2/1/18	1230	23 27	N	WG	3	X									

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	2/1/18	1700	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX
Method of Shipment: Fed EX
Analytical Lab: Katahdin Analytical
Lab Receipient:
Shipped:
Airbill #: 8731 2991 6437
Location: Scarborough ME
Date: 2-2-18 Time: 855

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Project Number 60556081 2.0

Purchase Order Number

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

SL0867

AECOM

Chain of Custody and Analytical Request

Laboratory: Katahdin Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Number of containers	VC (8260SIM)								Comments	Cooler ID
OMS-28-GW77-12	2-1-2018	1315	8-12	N	WG	3	X								Standard TAT	
OMS-28-GW77-12-a	2-1-2018	1315	8-12	FD	WG	3	X								↓	
OMS-28-GW77-20	2-1-2018	1425	16-20	N	WG	3	X									
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													

Sample Analysis Requested

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	2/1/18	1700			
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX

Method of Shipment: Fed Ex

Analytical Lab: Katahdin Analytical

Lab Receipient: Jon Myers

Shipped:

Airbill #: 8731 2991 6437

Location: Scarborough ME

Date: 2-2-18 Time: 855

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 2

Project Number 60556081 2.0

Purchase Order Number

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Feb. 02, 2018
10:19 AM

Quote/Incoming: GCAL-VOASIM

Login Number: SL0867

Account: GCAL001
GCAL

NoWeb

Project: GCAL-VOASIM

Primary Report Address:
Kimberly Drag
GCAL
7979 Innovation Park Dr

Baton Rouge,LA 70820
kimberly.drag@gcal.com

Primary Invoice Address:
Kelly Lott
GCAL Analytical Laboratories
7979 Innovation Park Drive

Baron Rouge,LA 70820

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD 5.0 project. Analysis for VC only.
CHECK NO.	:	
CLIENT PO#	:	Project #60556081 2.0
CLIENT PROJECT MANAGE	:	Anna Kinchen
CONTRACT	:	
COOLER TEMPERATURE	:	0.4
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS135QC-CSV
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	ARNG OMS 28 - Mobile, AL
QC LEVEL	:	III
REPORT INSTRUCTIONS	:	Send final PDF and EDD to both Anna (anna.kinchen@gcal.com) and Kimberly (kimberly.drag@gcal.com). Invoice to Kimberly.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0867-1	OMS-28-GW76-28	31-JAN-18 11:55	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	14-FEB-18	40mL Vial+HCl		

SL0867-2	OMS-28-GW76-28-A	31-JAN-18 11:55	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	14-FEB-18	40mL Vial+HCl		

SL0867-3	OMS-28-GW76-13	31-JAN-18 12:30	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	14-FEB-18	40mL Vial+HCl		

SL0867-4	OMS-28-GW76-13-C	31-JAN-18 00:00	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	14-FEB-18	40mL Vial+HCl		

SL0867-5	OMS-28-GW78-12	31-JAN-18 13:30	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	14-FEB-18	40mL Vial+HCl		

SL0867-6	OMS-28-GW76-20	31-JAN-18 14:30	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	14-FEB-18	40mL Vial+HCl		

SL0867-7	OMS-28-GW78-20	31-JAN-18 15:00	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	14-FEB-18	40mL Vial+HCl		

AMH 2/2/18

Login Number: SL0867

Quote/Incoming: GCAL-VOASIM

Account: GCAL001 NoWeb
GCAL

Project: GCAL-VOASIM

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0867-8	OMS-28-GW81-28	31-JAN-18 15:45	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	14-FEB-18	40mL Vial+HCl		

SL0867-9	OMS-28-GW78-27	01-FEB-18 09:15	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	15-FEB-18	40mL Vial+HCl		

SL0867-10	OMS-28-GW80-11	01-FEB-18 10:00	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	15-FEB-18	40mL Vial+HCl		

SL0867-11	OMS-28-GW79-11	01-FEB-18 10:30	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	15-FEB-18	40mL Vial+HCl		

SL0867-12	OMS-28-GW79-17	01-FEB-18 11:15	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	15-FEB-18	40mL Vial+HCl		

SL0867-13	OMS-28-GW79-27	01-FEB-18 12:30	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	15-FEB-18	40mL Vial+HCl		

SL0867-14	OMS-28-GW77-12	01-FEB-18 13:15	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	15-FEB-18	40mL Vial+HCl		

SL0867-15	OMS-28-GW77-12-A	01-FEB-18 13:15	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	15-FEB-18	40mL Vial+HCl		

SL0867-16	OMS-28-GW77-20	01-FEB-18 14:25	02-FEB-18			14-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	15-FEB-18	40mL Vial+HCl		

Total Samples: *16* ***Total Analyses:*** *16*

AMH 2/2/18

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: GCAL
Lab ID: SL0867-1
Client ID: OMS-28-GW76-28
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0188.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		109.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-2
Client ID: OMS-28-GW76-28-A
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0189.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-3
Client ID: OMS-28-GW76-13
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0190.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		109.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-4
Client ID: OMS-28-GW76-13-C
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0187.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		112.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-5
Client ID: OMS-28-GW78-12
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0191.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		110.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-6
Client ID: OMS-28-GW76-20
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0192.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		109.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-7
Client ID: OMS-28-GW78-20
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0193.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		110.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-8
Client ID: OMS-28-GW81-28
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0194.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-9
Client ID: OMS-28-GW78-27
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0195.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		114.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-10
Client ID: OMS-28-GW80-11
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0196.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		112.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-11
Client ID: OMS-28-GW79-11
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0197.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		115.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-12
Client ID: OMS-28-GW79-17
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0198.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		111.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-13
Client ID: OMS-28-GW79-27
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0219.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		115.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-14
Client ID: OMS-28-GW77-12
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0209.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		110.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-15
Client ID: OMS-28-GW77-12-A
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0210.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-16
Client ID: OMS-28-GW77-20
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0211.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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SIM VOLATILES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** ARNG OMS 28 - Mobile, AL **Matrix:** AQ
Lab Code: KAS **SDG:** SL0867

Client Sample ID	Lab Sample ID	Col. ID	DBF	#
OMS-28-GW76-28	SL0867-1		109.	
OMS-28-GW80-11	SL0867-10		112.	
OMS-28-GW79-11	SL0867-11		115.	
OMS-28-GW79-17	SL0867-12		111.	
OMS-28-GW79-27	SL0867-13		115.	
OMS-28-GW77-12	SL0867-14		110.	
OMS-28-GW77-12-A	SL0867-15		113.	
OMS-28-GW77-20	SL0867-16		113.	
OMS-28-GW76-28-A	SL0867-2		113.	
OMS-28-GW76-13	SL0867-3		109.	
OMS-28-GW76-13-C	SL0867-4		112.	
OMS-28-GW78-12	SL0867-5		110.	
OMS-28-GW76-20	SL0867-6		109.	
OMS-28-GW78-20	SL0867-7		110.	
OMS-28-GW81-28	SL0867-8		113.	
OMS-28-GW78-27	SL0867-9		114.	
Laboratory Control S	WG222890-1		93.5	
Method Blank Sample	WG222890-2		107.	
Laboratory Control S	WG222933-1		73.5	
Method Blank Sample	WG222933-2		111.	

		QC Limits
DBF	DIBROMOFLUOROMETHANE	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File ID : D0186.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL0867
Lab Sample ID : WG222890-2
Date Analyzed : 05-FEB-18
Time Analyzed : 14:39

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG222890-1	D0184.D	02/05/18	13:19
OMS-28-GW76-13-C	SL0867-4	D0187.D	02/05/18	15:17
OMS-28-GW76-28	SL0867-1	D0188.D	02/05/18	15:55
OMS-28-GW76-28-A	SL0867-2	D0189.D	02/05/18	16:33
OMS-28-GW76-13	SL0867-3	D0190.D	02/05/18	17:11
OMS-28-GW78-12	SL0867-5	D0191.D	02/05/18	17:49
OMS-28-GW76-20	SL0867-6	D0192.D	02/05/18	18:27
OMS-28-GW78-20	SL0867-7	D0193.D	02/05/18	19:05
OMS-28-GW81-28	SL0867-8	D0194.D	02/05/18	19:43
OMS-28-GW78-27	SL0867-9	D0195.D	02/05/18	20:21
OMS-28-GW80-11	SL0867-10	D0196.D	02/05/18	20:59
OMS-28-GW79-11	SL0867-11	D0197.D	02/05/18	21:37
OMS-28-GW79-17	SL0867-12	D0198.D	02/05/18	22:15

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File ID : D0208.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL0867
Lab Sample ID : WG222933-2
Date Analyzed : 06-FEB-18
Time Analyzed : 11:57

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG222933-1	D0206.D	02/06/18	10:40
OMS-28-GW77-12	SL0867-14	D0209.D	02/06/18	12:35
OMS-28-GW77-12-A	SL0867-15	D0210.D	02/06/18	13:13
OMS-28-GW77-20	SL0867-16	D0211.D	02/06/18	13:51
OMS-28-GW79-27	SL0867-13	D0219.D	02/06/18	18:54

Report of Analytical Results

Client:
Lab ID: WG222890-2
Client ID: Method Blank Sample
Project:
SDG: SL0867
Lab File ID: D0186.D

Sample Date:
Received Date:
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		107.	%					

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Report of Analytical Results

Client:
Lab ID: WG222933-2
Client ID: Method Blank Sample
Project:
SDG: SL0867
Lab File ID: D0208.D

Sample Date:
Received Date:
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		111.	%					

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LCS Recovery Report

Client:
Lab ID: WG222890-1
Client ID: LCS
Project:
SDG: SL0867
LCS File ID: D0184.D

Sample Date:
Received Date:
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Vinyl Chloride	70.0	0.500	0.350	ug/L	70-130
Dibromofluoromethane	93.5				70-130

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LCS Recovery Report

Client:
Lab ID: WG222933-1
Client ID: LCS
Project:
SDG: SL0867
LCS File ID: D0206.D

Sample Date:
Received Date:
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Vinyl Chloride	72.0	0.500	0.360	ug/L	70-130
Dibromofluoromethane	73.5				70-130

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File ID : DB091A.D
Instrument ID : GCMS-D

SDG : SL0867
Date Analyzed : 31-JAN-18
Time Analyzed : 08:14
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.4		
75	30.0 - 60.0% of mass 95	50.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.5		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	88.7		
175	5.0 - 9.0% of mass 174	7.1	8.05	1
176	95.0 - 101.0% of mass 174	85.2	95.98	1
177	5.0 - 9.0% of mass 176	5.5	6.47	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG222666-5	D0137.D	01/31/18	08:44
Initial Calibration	WG222666-4	D0138.D	01/31/18	09:44
Initial Calibration	WG222666-3	D0139.D	01/31/18	10:22
Initial Calibration	WG222666-2	D0140.D	01/31/18	11:00
Initial Calibration	WG222666-1	D0141.D	01/31/18	11:38
Initial Calibration	WG222666-8	D0142.D	01/31/18	12:16
Initial Calibration	WG222666-7	D0143.D	01/31/18	12:54
Initial Calibration	WG222666-6	D0144.D	01/31/18	13:32
Independent Source	WG222666-9	D0146.D	01/31/18	15:04

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File ID : DB094.D
Instrument ID : GCMS-D

SDG : SL0867
Date Analyzed : 05-FEB-18
Time Analyzed : 12:10
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	17.9		
75	30.0 - 60.0% of mass 95	47.8		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.2		
173	Less than 2.0% of mass 174	0.5	0.56	1
174	Greater than 50.0% of mass 95	83.9		
175	5.0 - 9.0% of mass 174	6.4	7.60	1
176	95.0 - 101.0% of mass 174	84.4	100.63	1
177	5.0 - 9.0% of mass 176	6.4	7.62	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG222890-4	D0183.D	02/05/18	12:38
Laboratory Control S	WG222890-1	D0184.D	02/05/18	13:19
Method Blank Sample	WG222890-2	D0186.D	02/05/18	14:39
OMS-28-GW76-13-C	SL0867-4	D0187.D	02/05/18	15:17
OMS-28-GW76-28	SL0867-1	D0188.D	02/05/18	15:55
OMS-28-GW76-28-A	SL0867-2	D0189.D	02/05/18	16:33
OMS-28-GW76-13	SL0867-3	D0190.D	02/05/18	17:11
OMS-28-GW78-12	SL0867-5	D0191.D	02/05/18	17:49
OMS-28-GW76-20	SL0867-6	D0192.D	02/05/18	18:27
OMS-28-GW78-20	SL0867-7	D0193.D	02/05/18	19:05
OMS-28-GW81-28	SL0867-8	D0194.D	02/05/18	19:43
OMS-28-GW78-27	SL0867-9	D0195.D	02/05/18	20:21
OMS-28-GW80-11	SL0867-10	D0196.D	02/05/18	20:59
OMS-28-GW79-11	SL0867-11	D0197.D	02/05/18	21:37
OMS-28-GW79-17	SL0867-12	D0198.D	02/05/18	22:15
Continuing Calibrati	WG222890-5	D0199.D	02/05/18	22:53

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File ID : DB095.D
Instrument ID : GCMS-D

SDG : SL0867
Date Analyzed : 06-FEB-18
Time Analyzed : 08:42
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	15.4		
75	30.0 - 60.0% of mass 95	44.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.8		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	83.0		
175	5.0 - 9.0% of mass 174	6.7	8.03	1
176	95.0 - 101.0% of mass 174	80.4	96.82	1
177	5.0 - 9.0% of mass 176	5.3	6.64	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG222933-4	D0205.D	02/06/18	09:46
Laboratory Control S	WG222933-1	D0206.D	02/06/18	10:40
Method Blank Sample	WG222933-2	D0208.D	02/06/18	11:57
OMS-28-GW77-12	SL0867-14	D0209.D	02/06/18	12:35
OMS-28-GW77-12-A	SL0867-15	D0210.D	02/06/18	13:13
OMS-28-GW77-20	SL0867-16	D0211.D	02/06/18	13:51
OMS-28-GW79-27	SL0867-13	D0219.D	02/06/18	18:54
Continuing Calibrati	WG222933-5	D0221.D	02/06/18	20:10

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222666-5
Lab File ID : D0137.d

SDG: SL0867
Analytical Date: 01/31/18 08:44
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			
		Area	#	RT	#
	Std .	35190		7.87	
	Upper Limit	70380		8.37	
	Lower Limit	17595		7.37	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG222890-4	33152		7.86	
Laboratory Control S	WG222890-1	35878		7.86	
Method Blank Sample	WG222890-2	29178		7.86	
OMS-28-GW76-13-C	SL0867-4	28009		7.86	
OMS-28-GW76-28	SL0867-1	27664		7.86	
OMS-28-GW76-28-A	SL0867-2	27162		7.86	
OMS-28-GW76-13	SL0867-3	29057		7.86	
OMS-28-GW78-12	SL0867-5	28369		7.86	
OMS-28-GW76-20	SL0867-6	28364		7.86	
OMS-28-GW78-20	SL0867-7	28344		7.86	
OMS-28-GW81-28	SL0867-8	27552		7.86	
OMS-28-GW78-27	SL0867-9	27026		7.86	
OMS-28-GW80-11	SL0867-10	27120		7.86	
OMS-28-GW79-11	SL0867-11	27028		7.86	
OMS-28-GW79-17	SL0867-12	27427		7.86	
Continuing Calibrati	WG222890-5	28779		7.86	
Continuing Calibrati	WG222933-4	31798		7.86	
Laboratory Control S	WG222933-1	44245		7.86	
Method Blank Sample	WG222933-2	27847		7.86	
OMS-28-GW77-12	SL0867-14	28564		7.86	
OMS-28-GW77-12-A	SL0867-15	27177		7.86	
OMS-28-GW77-20	SL0867-16	26542		7.86	
OMS-28-GW79-27	SL0867-13	25468		7.86	
Continuing Calibrati	WG222933-5	28276		7.86	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

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Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Report of Analytical Results

Client: GCAL
Lab ID: SL0867-1
Client ID: OMS-28-GW76-28
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0188.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		109.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-2
Client ID: OMS-28-GW76-28-A
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0189.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-3
Client ID: OMS-28-GW76-13
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0190.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		109.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-4
Client ID: OMS-28-GW76-13-C
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0187.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		112.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-5
Client ID: OMS-28-GW78-12
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0191.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		110.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-6
Client ID: OMS-28-GW76-20
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0192.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		109.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-7
Client ID: OMS-28-GW78-20
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0193.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		110.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-8
Client ID: OMS-28-GW81-28
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0194.D

Sample Date: 31-JAN-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-9
Client ID: OMS-28-GW78-27
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0195.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		114.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-10
Client ID: OMS-28-GW80-11
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0196.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		112.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-11
Client ID: OMS-28-GW79-11
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0197.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		115.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-12
Client ID: OMS-28-GW79-17
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0198.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 05-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222890

Analysis Date: 05-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		111.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-13
Client ID: OMS-28-GW79-27
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0219.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		115.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-14
Client ID: OMS-28-GW77-12
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0209.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		110.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-15
Client ID: OMS-28-GW77-12-A
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0210.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0867-16
Client ID: OMS-28-GW77-20
Project: ARNG OMS 28 - Mobile, AL
SDG: SL0867
Lab File ID: D0211.D

Sample Date: 01-FEB-18
Received Date: 02-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 08-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab File IDs : D0141.d D0140.d D0139.d D0138.d D0137.d D0144.d D0143.d D0142.d

SDG: SL0867
Instrument ID: GCMS-D
Calibration Date(s): 31-JAN-18 08:44, 31-JAN-18 13:32

	0.0500000(Level 1	0.0750000(Level 2	0.1000000(Level 3	0.3000000(Level 4	0.5000000 Level 5	0.7500000(Level 6	1.0000 Level 7	2.0000 Level 8	New Crv	b	m1	%RSD	Max %RSD	
Vinyl chloride	2.35153	2.23374	2.42195	2.20479	2.02643	2.06244	2.07490	1.89827	AVG		2.15926	8.13235	15.00000	O
Dibromofluoromethane	1.28770	1.24802	1.16220	1.09734	1.00412	1.14114	1.08099	1.04896	AVG		1.13381	8.54631	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-d.i\D013118.b\D0146.d
Report Date: 02-Feb-2018 08:28

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG222666-9
Level: LOW Operator: JSS/HG
Data Type: MS DATA SampleType: LCS
SpikeList File: SIMLCSvcldce.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D013118.b\D8SIMVCLDCE01.m
Misc Info: WG222666,WG217420-5

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
2 Vinyl chloride	0.50	0.53	105.96	70-130
6 1,1-Dichloroethene	0.50	0.53	106.58	70-130

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 16 Dibromofluorometha	1.0	0.90	89.78	70-130

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222890-4
Lab File ID : D0183.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0867
Analytical Date: 02/05/18 12:38
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.93442	0.010	-10.41257	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.07779	0.010	-4.94050	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222890-5
Lab File ID : D0199.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0867
Analytical Date: 02/05/18 22:53
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.81841	0.010	-15.78543	50.00000	Averaged
16	Dibromofluoromethane	1.13381	1.22784	0.010	8.29335	50.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222933-4
Lab File ID : D0205.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0867
Analytical Date: 02/06/18 09:46
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	2.53985	0.010	17.62587	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.14602	0.010	1.07659	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28 - Mobile, AL
Lab ID : WG222933-5
Lab File ID : D0221.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0867
Analytical Date: 02/06/18 20:10
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.64974	0.010	-23.59696	50.00000	Averaged
16	Dibromofluoromethane	1.13381	1.21711	0.010	7.34699	50.00000	Averaged

*** = Compound out of QC criteria**

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 01/31/18

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	KI Paper Lot # PH	TRC	COMMENTS
WG322666 - 12	DB091	1	-1	VOABFBA02							Y	JK			
- 5	D0137	1	1	D8SIMVL1XF01							Y				
- 4	38	1	2								Y				
- 3	39	1	3								Y				
- 2	40	1	4								Y				
- 1	41	1	5								Y				
- 8	42	1	6								Y				
- 7	43	1	7								Y				
- 6	44	1	8								Y				
LCS/LMD -	45	1	9								N				
LCS/LMD - 9/10	46	1	10								Y				
VBLK	47	1	11								N				
WG322666 - 11	48	1	12												
SL0744 -1 A	49	1	13		x			x							
-2 A	50	1	14												Archen Faulted Id not run
-3 A	51	1	15												
SL0777 -2 A	52	1	16												
CCV	53	1	17												
CCV	54	1	18												
CCV	55	1	19												
Rinse	56	1	1												

STANDARD	CODE
BFB	VO964
CAL. STD.	VO979
LCS/MS MIX	VO980
EXTRAS MIX	—

STANDARD	CODE
IS MIX	VO978
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
(SW846 8260 SIM)	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 02-05-18 B 1210

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	PREP METHOD 5035	PREP METHOD 1311	Criteria KAS	Criteria DoD	Criteria QAPP	pH Paper Lot #: Y/N	pH Paper Lot #: ANALYST	pH Paper Lot #: PH	KI Paper Lot # TRC	COMMENTS
WG222890-3	DB094	1	-1	VBBFBA.M							Y	JR			
-5	D0183	1	1	DBSIMVCLICE01	X						Y				
-1	D0184	1	2								Y				
VBLK	D0185	1	3								N				
WG222890-2	D0186	1	4								Y				
SL0867-4 A	87	1	5						5.0		Y		<2		
-1 A	88	1	6								Y		<2		
-2 A	89	1	7								Y		<2		
-3 A	90	1	8								Y		<2		
-5 A	91	1	9								Y		<2		
-6 A	92	1	10								Y		<2		
-7 A	93	1	11								Y		<2		
-8 A	94	1	12								Y		<2		
-9 A	95	1	13								Y		<2		
-10 A	96	1	14								Y		<2		
-11 A	97	1	15								Y		<2		
-12 A	98	1	16								Y		<2		
CCV1	99	1	17								Y				2253 ✓
2	D0200	1	18								N				Not needed
3	01	1	19								N				↓
Rinse	02	1	20		✓						—				
															TIC 2/6/18

STANDARD	CODE
BFB	V0964
CAL. STD.	V0979
LCS/MS MIX	V0981/V0982
EXTRAS MIX	

STANDARD	CODE
IS MIX	V0985
SS MIX	

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 2-6-18 8:42

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	PREP METHOD 5035	PREP METHOD 1311	Criteria KAS	Criteria DoD	Criteria QAPP	pH Paper Lot #: Y/N	ANALYST	PH	KI Paper Lot # TRC	COMMENTS
W222933 -3	D0095	1	—	V8260D	✓						Y	SD			
Rinse	D0204		1	8SIMVOLEG1							N				
Blank -4	05		2								Y				
LCS -1	04		3								Y				
VBBLKA	07		4								Y				
↓ B -2	08		5								Y				
SLO907-14A	09		6								Y				
↓ -15A	10		7						5.0		Y				
-16A	11		8								Y				
SLO952-1A	12		9								Y				
↓ -2A	13		10								Y				
-5A	14		11								Y				
-6A	15		12								Y				
-7A	16		13								Y				
↓ -8A	17		14								Y				
-9A	18		15								Y				
SLO867-13A	19		16								Y				
SLO952-10A	20		17								Y				
CCV1	21		18								Y				
2	22		19								Y				
3	23		20								N				20:1 ✓
Rinse	24		21								N				not needed
↓	25		22								N	↓			↓

STANDARD	CODE
BFB	
CAL. STD.	V0979
LCS/MS MIX	V0981 V0982
EXTRAS MIX	

STANDARD	CODE
IS MIX	V0985
SS MIX	↓

2-7-18

Circle Methods:

SW846 8260

SW846 8260 SIM

SW846 8260 SIM (heated purge)

OLM 04.2

OLC 03.2

EPA 624

EPA 524

Appendix B17
GCAL Report 218020242 dated February 19, 2018

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/19/2018

GCAL Report 218020242

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

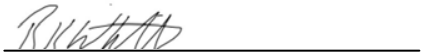
J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.



Authorized Signature
GCAL Report 218020242

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218020242

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802024201	OMS-28-GW76-28	Water	01/31/2018 11:55	02/02/2018 09:30
21802024202	OMS-28-GW76-28-a	Water	01/31/2018 11:55	02/02/2018 09:30
21802024203	OMS-28-GW76-13	Water	01/31/2018 12:30	02/02/2018 09:30
21802024204	OMS-28-GW76-13-c	Water	01/31/2018 00:01	02/02/2018 09:30
21802024205	OMS-28-GW78-12	Water	01/31/2018 13:30	02/02/2018 09:30
21802024206	OMS-28-GW76-20	Water	01/31/2018 14:30	02/02/2018 09:30
21802024207	OMS-28-GW78-20	Water	01/31/2018 15:00	02/02/2018 09:30
21802024208	OMS-28-GW81-28	Water	01/31/2018 15:45	02/02/2018 09:30
21802024209	OMS-28-GW78-27	Water	02/01/2018 09:15	02/02/2018 09:30
21802024210	OMS-28-GW80-11	Water	02/01/2018 10:00	02/02/2018 09:30
21802024211	OMS-28-GW79-11	Water	02/01/2018 10:30	02/02/2018 09:30
21802024212	OMS-28-GW79-17	Water	02/01/2018 11:15	02/02/2018 09:30
21802024213	OMS-28-GW79-27	Water	02/01/2018 12:30	02/02/2018 09:30
21802024214	OMS-28-GW77-12	Water	02/01/2018 13:15	02/02/2018 09:30
21802024215	OMS-28-GW77-12-a	Water	02/01/2018 13:15	02/02/2018 09:30
21802024216	OMS-28-GW77-20	Water	02/01/2018 14:25	02/02/2018 09:30

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802024201	OMS-28-GW76-28	W	EPA 8260B DOD Water
21802024202	OMS-28-GW76-28-a	W	EPA 8260B DOD Water
21802024203	OMS-28-GW76-13	W	EPA 8260B DOD Water
21802024204	OMS-28-GW76-13-c	W	EPA 8260B DOD Water
21802024205	OMS-28-GW78-12	W	EPA 8260B DOD Water
21802024206	OMS-28-GW76-20	W	EPA 8260B DOD Water
21802024207	OMS-28-GW78-20	W	EPA 8260B DOD Water
21802024208	OMS-28-GW81-28	W	EPA 8260B DOD Water
21802024209	OMS-28-GW78-27	W	EPA 8260B DOD Water
21802024210	OMS-28-GW80-11	W	EPA 8260B DOD Water
21802024211	OMS-28-GW79-11	W	EPA 8260B DOD Water
21802024212	OMS-28-GW79-17	W	EPA 8260B DOD Water
21802024213	OMS-28-GW79-27	W	EPA 8260B DOD Water
21802024214	OMS-28-GW77-12	W	EPA 8260B DOD Water
21802024215	OMS-28-GW77-12-a	W	EPA 8260B DOD Water
21802024216	OMS-28-GW77-20	W	EPA 8260B DOD Water

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.

Summary of Compounds Detected

No analytes were detected for analyses performed by GCAL.

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW76-28
Collect Date:	01/31/18	Time:	1155	GCAL Sample ID:	21802024201
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4603
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1104	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW76-28-a
Collect Date:	01/31/18	Time:	1155	GCAL Sample ID:	21802024202
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4604
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1127	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW76-13
Collect Date:	01/31/18	Time:	1230	GCAL Sample ID:	21802024203
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4605
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1149	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW76-13-c
Collect Date:	01/31/18	Time:	0001	GCAL Sample ID:	21802024204
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4606
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1211	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW78-12
Collect Date:	01/31/18	Time:	1330	GCAL Sample ID:	21802024205
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4608
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1256	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW76-20
Collect Date:	01/31/18	Time:	1430	GCAL Sample ID:	21802024206
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4609
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1318	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW78-20
Collect Date:	01/31/18	Time:	1500	GCAL Sample ID:	21802024207
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4610
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1340	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW81-28
Collect Date:	01/31/18	Time:	1545	GCAL Sample ID:	21802024208
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4611
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1402	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW78-27
Collect Date:	02/01/18	Time:	0915	GCAL Sample ID:	21802024209
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4612
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1424	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW80-11
Collect Date:	02/01/18	Time:	1000	GCAL Sample ID:	21802024210
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4613
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1447	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW79-11
Collect Date:	02/01/18	Time:	1030	GCAL Sample ID:	21802024211
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4614
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1509	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW79-17
Collect Date:	02/01/18	Time:	1115	GCAL Sample ID:	21802024212
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4615
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1531	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW79-27
Collect Date:	02/01/18	Time:	1230	GCAL Sample ID:	21802024213
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4616
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1553	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW77-12
Collect Date:	02/01/18	Time:	1315	GCAL Sample ID:	21802024214
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4617
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1616	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW77-12-a
Collect Date:	02/01/18	Time:	1315	GCAL Sample ID:	21802024215
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4618
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1638	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	OMS-28-GW77-20
Collect Date:	02/01/18	Time:	1425	GCAL Sample ID:	21802024216
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4619
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JMC2	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1700	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020242			Client Sample ID:	MB1772543
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1772543
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180208/e4602
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18	Time:	1042	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 218020242 Analytical Method: EPA 8260B

	Client Sample ID	GCALSample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1 .	OMS-28-GW76-28	21802024201	97		98		104		106		0
2 .	OMS-28-GW80-11	21802024210	98		99		106		105		0
3 .	OMS-28-GW79-11	21802024211	97		98		106		104		0
4 .	OMS-28-GW79-17	21802024212	96		98		104		106		0
5 .	OMS-28-GW79-27	21802024213	98		99		105		105		0
6 .	OMS-28-GW77-12	21802024214	99		99		108		108		0
7 .	OMS-28-GW77-12-a	21802024215	97		98		105		106		0
8 .	OMS-28-GW77-20	21802024216	97		98		106		108		0
9 .	MB1772543	1772543	98		100		105		106		0
10 .	LCS1772544	1772544	94		107		98		103		0
11 .	LCSD1772545	1772545	95		102		97		98		0
12 .	OMS-28-GW76-28-a	21802024202	98		99		105		107		0
13 .	OMS-28-GW76-13	21802024203	99		98		105		106		0
14 .	OMS-28-GW76-13-c	21802024204	99		97		104		108		0
15 .	OMS-28-GW78-12	21802024205	100		97		106		103		0
16 .	OMS-28-GW76-20	21802024206	99		98		105		108		0
17 .	OMS-28-GW78-20	21802024207	97		99		106		107		0
18 .	OMS-28-GW81-28	21802024208	98		98		104		106		0
19 .	OMS-28-GW78-27	21802024209	99		97		106		106		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 218020242

Analytical Method: EPA 8260B

Analytical Batch: 628646

GCAL QC ID: 1772544

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS
Tetrachloroethene	ug/L	50	0	54.6	109		74 - 129
Trichloroethene	ug/L	50	0	50.8	102		79 - 123
cis-1,2-Dichloroethene	ug/L	50	0	51.6	103		78 - 123

GCAL QC ID: 1772545

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
Tetrachloroethene	ug/L	50	49	98		11		74 - 129	0 - 20
Trichloroethene	ug/L	50	48.2	96		5		79 - 123	0 - 20
cis-1,2-Dichloroethene	ug/L	50	49	98		5		78 - 123	0 - 20

RPD : 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	218020242	Method Blank ID:	1772543
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180208/e4602
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: JCK	Analytical Batch:	628646
Analysis Date:	02/08/18 Time: 1042	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1772544	1772544	2180208/e4598L	02/08/18	0902
2 .	LCSD1772545	1772545	2180208/e4599	02/08/18	0924
3 .	OMS-28-GW76-28	21802024201	2180208/e4603	02/08/18	1104
4 .	OMS-28-GW76-28-a	21802024202	2180208/e4604	02/08/18	1127
5 .	OMS-28-GW76-13	21802024203	2180208/e4605	02/08/18	1149
6 .	OMS-28-GW76-13-c	21802024204	2180208/e4606	02/08/18	1211
7 .	OMS-28-GW78-12	21802024205	2180208/e4608	02/08/18	1256
8 .	OMS-28-GW76-20	21802024206	2180208/e4609	02/08/18	1318
9 .	OMS-28-GW78-20	21802024207	2180208/e4610	02/08/18	1340
10 .	OMS-28-GW81-28	21802024208	2180208/e4611	02/08/18	1402
11 .	OMS-28-GW78-27	21802024209	2180208/e4612	02/08/18	1424
12 .	OMS-28-GW80-11	21802024210	2180208/e4613	02/08/18	1447
13 .	OMS-28-GW79-11	21802024211	2180208/e4614	02/08/18	1509
14 .	OMS-28-GW79-17	21802024212	2180208/e4615	02/08/18	1531
15 .	OMS-28-GW79-27	21802024213	2180208/e4616	02/08/18	1553
16 .	OMS-28-GW77-12	21802024214	2180208/e4617	02/08/18	1616
17 .	OMS-28-GW77-12-a	21802024215	2180208/e4618	02/08/18	1638
18 .	OMS-28-GW77-20	21802024216	2180208/e4619	02/08/18	1700

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020242	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4235D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1021	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	17.72	(	)	
75	30.0 - 60.0% of mass 95	46.53	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.39	(	)	
173	Less than 2.0% of mass 174	.98	(1.02	)	1
174	50.0 - 120.0% of mass 95	96.35	(	)	
175	5.0 - 9.0% of mass 174	7.19	(7.47	)	1
176	95.0 - 101.0% of mass 174	93.63	(97.18	)	1
177	5.0 - 9.0% of mass 176	5.94	(6.35	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2180131/e4238D	01/31/18	1155
2 .	V13STD005	1204	2180131/e4240D	01/31/18	1240
3 .	V13STD010	1205	2180131/e4241D	01/31/18	1302
4 .	V13STD020	1206	2180131/e4242D	01/31/18	1324
5 .	V13STD050	1207	2180131/e4243D	01/31/18	1346
6 .	V13STD100	1208	2180131/e4244D	01/31/18	1409
7 .	V13STD200	1209	2180131/e4245D	01/31/18	1431
8 .	ICV050	1600	2180131/e4248D	01/31/18	1538

FORM V VOA

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020242	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180208/e4595
Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18 Time: 0746	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	16.9	(	)	
75	30.0 - 60.0% of mass 95	45.58	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.64	(	)	
173	Less than 2.0% of mass 174	1.23	(1.24	)	1
174	50.0 - 120.0% of mass 95	99.87	(	)	
175	5.0 - 9.0% of mass 174	7.26	(7.27	)	1
176	95.0 - 101.0% of mass 174	96.62	(96.75	)	1
177	5.0 - 9.0% of mass 176	6.08	(6.3	)	2

1- Value is % mass 174

2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2180208/e4598	02/08/18	0902
2 .	LCS1772544	1772544	2180208/e4598L	02/08/18	0902
3 .	LCSD1772545	1772545	2180208/e4599	02/08/18	0924
4 .	MB1772543	1772543	2180208/e4602	02/08/18	1042
5 .	OMS-28-GW76-28	21802024201	2180208/e4603	02/08/18	1104
6 .	OMS-28-GW76-28-a	21802024202	2180208/e4604	02/08/18	1127
7 .	OMS-28-GW76-13	21802024203	2180208/e4605	02/08/18	1149
8 .	OMS-28-GW76-13-c	21802024204	2180208/e4606	02/08/18	1211
9 .	OMS-28-GW78-12	21802024205	2180208/e4608	02/08/18	1256
10 .	OMS-28-GW76-20	21802024206	2180208/e4609	02/08/18	1318
11 .	OMS-28-GW78-20	21802024207	2180208/e4610	02/08/18	1340
12 .	OMS-28-GW81-28	21802024208	2180208/e4611	02/08/18	1402
13 .	OMS-28-GW78-27	21802024209	2180208/e4612	02/08/18	1424
14 .	OMS-28-GW80-11	21802024210	2180208/e4613	02/08/18	1447
15 .	OMS-28-GW79-11	21802024211	2180208/e4614	02/08/18	1509
16 .	OMS-28-GW79-17	21802024212	2180208/e4615	02/08/18	1531
17 .	OMS-28-GW79-27	21802024213	2180208/e4616	02/08/18	1553
18 .	OMS-28-GW77-12	21802024214	2180208/e4617	02/08/18	1616

FORM V VOA

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020242	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180208/e4595
Analyst:	JCK	Analytical Batch:	628646
Analysis Date:	02/08/18 Time: 0746	Analytical Method:	EPA 8260B

19 .	OMS-28-GW77-12-a	21802024215	2180208/e4618	02/08/18	1638
20 .	OMS-28-GW77-20	21802024216	2180208/e4619	02/08/18	1700
21 .	V13STD050	1440	2180208/e4620	02/08/18	1722

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020242		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.582	0.613	0.564	0.550	0.563	0.546	0.517	0.562			5.320	A
1,1,1-Trichloroethane			0.321	0.363	0.341	0.336	0.347	0.337	0.330	0.339			3.900	A
1,1,2,2-Tetrachloroethane			1.015	0.947	0.854	0.829	0.828	0.814	0.775	0.866			9.750	A
1,1,2-Trichloroethane			0.600	0.586	0.535	0.535	0.549	0.539	0.536	0.554			4.912	A
1,1-Dichloroethane			0.462	0.458	0.426	0.421	0.437	0.423	0.413	0.435			4.400	A
1,1-Dichloroethene			0.182	0.179	0.163	0.158	0.164	0.156	0.154	0.165			6.625	A
1,1-Dichloropropene			0.206	0.235	0.248	0.265	0.301	0.302	0.303	0.266			14.43	A
1,2,3-Trichlorobenzene (RSP)			477	5824	13716	35889	117256	253980	511192	0.831	0.026		0.995	W
1,2,3-Trichlorobenzene			0.225	0.458	0.524	0.641	0.792	0.837	0.840					
1,2,3-Trichloropropane			0.962	0.991	0.950	0.917	0.962	0.947	0.909	0.948			2.935	A
1,2,4-Trichlorobenzene (RSP)			575	5354	11975	31052	105242	247400	511416	0.855	0.090		0.998	L
1,2,4-Trichlorobenzene			0.271	0.421	0.458	0.555	0.710	0.815	0.841					
1,2,4-Trimethylbenzene (RSP)			2638	19970	46899	111022	318399	641277	1185541	2.032	0.010		0.997	W
1,2,4-Trimethylbenzene			1.242	1.572	1.792	1.983	2.149	2.113	1.949					
1,2-Dibromo-3-chloropropane			0.153	0.176	0.161	0.177	0.195	0.203	0.212	0.182			12.04	A
1,2-Dibromoethane			0.531	0.507	0.471	0.492	0.539	0.540	0.545	0.518			5.481	A
1,2-Dichlorobenzene			1.263	1.276	1.242	1.218	1.304	1.286	1.243	1.262			2.341	A
1,2-Dichloroethane			0.414	0.377	0.354	0.347	0.356	0.342	0.332	0.360			7.652	A
1,2-Dichloroethane-d4			0.169	0.167	0.165	0.166	0.165	0.162	0.160	0.165			1.738	A
1,2-Dichloroethene (total)			0.281	0.296	0.294	0.299	0.321	0.318	0.317	0.304			5.017	A
1,2-Dichloropropane			0.230	0.235	0.229	0.234	0.245	0.245	0.241	0.237			2.857	A
1,3,5-Trimethylbenzene			1.426	1.740	1.849	1.999	2.153	2.052	1.855	1.868			12.83	A
1,3-Dichlorobenzene			1.276	1.297	1.319	1.286	1.315	1.303	1.234	1.290			2.247	A
1,3-Dichloropropane			0.805	0.860	0.812	0.838	0.938	0.936	0.939	0.875			6.961	A
1,3-Dichloropropylene (RSP)			2542	16787	35541	81949	252531	533058	1103114	0.370	0.033		0.997	W

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020242			Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1:	1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2:	1431	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	$\overline{RF}$ / *b* / *A*	*m* / *B*	*C*	*FIT*	*TYPE*
1,3-Dichloropropylene			0.209	0.261	0.277	0.309	0.366	0.372	0.373					
1,4-Dichlorobenzene			1.478	1.399	1.315	1.281	1.305	1.288	1.217	1.326			6.490	A
1-Bromo-2-Chloroethane			0.356	0.344	0.339	0.356	0.376	0.375	0.372	0.360			4.174	A
1-Chlorohexane (RSP)			1107	5416	12067	28084	90902	225775	457695	0.743	0.090		0.997	L
1-Chlorohexane			0.452	0.399	0.426	0.473	0.590	0.720	0.729					
2,2-Dichloropropane			0.267	0.303	0.287	0.293	0.300	0.306	0.303	0.294			4.580	A
2-Butanone (RSP)			803	5143	9977	23549	68871	144310	295627	0.200	0.012		0.998	W
2-Butanone			0.132	0.160	0.156	0.178	0.199	0.201	0.200					
2-Chloroethylvinyl ether (RSP)			366	2120	4679	11625	35122	77376	179733	0.115	0.024		0.990	W
2-Chloroethylvinyl ether			0.060	0.066	0.073	0.088	0.102	0.108	0.122					
2-Chlorotoluene			1.920	1.913	1.876	1.944	2.037	1.992	1.869	1.936			3.139	A
2-Hexanone (RSP)				4394	8678	21172	74100	173057	376361	0.588	0.080		0.992	W
2-Hexanone				0.324	0.306	0.357	0.481	0.552	0.599					
4-Bromofluorobenzene			0.767	0.787	0.781	0.773	0.790	0.806	0.828	0.790			2.623	A
4-Chlorotoluene			1.424	1.609	1.692	1.736	1.861	1.845	1.744	1.701			8.818	A
4-Isopropyltoluene (RSP)			2465	18779	45009	107177	314072	638401	1196201	2.031	0.012		0.997	W
4-Isopropyltoluene			1.161	1.478	1.720	1.914	2.120	2.104	1.966					
4-Methyl-2-pentanone (RSP)				6202	13383	32149	101375	222197	460940	0.731	0.058		0.997	W
4-Methyl-2-pentanone				0.457	0.472	0.542	0.658	0.709	0.734					
Acetone			0.183	0.197	0.183	0.192	0.192	0.183	0.176	0.187			3.929	A
Acrolein (RSP)				993	2486	4717	16141	33528	72265	0.010	0.239		0.997	W
Acrolein				0.006	0.008	0.007	0.009	0.009	0.010					
Acrylonitrile			0.090	0.093	0.106	0.111	0.117	0.107	0.112	0.105			9.463	A
Benzene			0.833	0.899	0.878	0.925	0.986	0.954	0.917	0.913			5.459	A
Bromobenzene			1.311	1.257	1.192	1.167	1.212	1.169	1.133	1.206			5.032	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020242		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Bromochloromethane			0.131	0.143	0.139	0.135	0.137	0.129	0.113	0.133			7.468	A
Bromodichloromethane			0.335	0.355	0.339	0.339	0.343	0.332	0.323	0.338			3.001	A
Bromoform			0.504	0.572	0.512	0.502	0.528	0.525	0.499	0.520			4.840	A
Bromomethane (RSP)			1087	5140	9147	17056	42570	85055	182023	0.122	-0.014		0.998	W
Bromomethane			0.179	0.160	0.143	0.129	0.123	0.119	0.123					
Carbon disulfide			0.645	0.613	0.578	0.565	0.572	0.541	0.522	0.577			7.248	A
Carbon tetrachloride			0.296	0.319	0.309	0.309	0.320	0.305	0.300	0.308			2.916	A
Chlorobenzene			1.806	1.735	1.598	1.572	1.598	1.522	1.439	1.610			7.726	A
Chloroethane			0.154	0.155	0.147	0.135	0.127	0.120	0.102	0.134			14.32	A
Chloroform			0.445	0.467	0.440	0.423	0.426	0.405	0.389	0.428			6.104	A
Chloromethane			0.325	0.311	0.297	0.280	0.268	0.258	0.251	0.284			9.730	A
Cyclohexane (RSP)			1260	8799	18824	43237	133879	271848	553105	0.377	0.015		0.998	W
Cyclohexane			0.207	0.274	0.294	0.327	0.388	0.379	0.374					
Dibromochloromethane			0.651	0.683	0.609	0.602	0.646	0.641	0.649	0.640			4.272	A
Dibromofluoromethane			0.283	0.278	0.276	0.271	0.263	0.261	0.256	0.270			3.656	A
Dibromomethane			0.124	0.164	0.156	0.152	0.157	0.153	0.150	0.151			8.379	A
Dichlorodifluoromethane			0.268	0.275	0.268	0.253	0.264	0.245	0.242	0.259			4.953	A
Ethylbenzene			0.728	0.792	0.787	0.788	0.824	0.803	0.758	0.783			3.977	A
Hexachlorobutadiene			0.456	0.438	0.424	0.404	0.417	0.426	0.416	0.426			3.973	A
Isopropylbenzene (Cumene) (			3501	24195	52574	126195	373920	763962	1443275	2.353	0.013		0.997	W
Isopropylbenzene (Cumene)			1.429	1.785	1.856	2.126	2.426	2.437	2.297					
Methyl Acetate			0.235	0.236	0.216	0.230	0.242	0.237	0.227	0.232			3.736	A
Methyl iodide (RSP)				2508	6103	15770	57090	131600	275600	5.263	0.104	-0.061	0.999	Q
Methyl iodide				0.078	0.095	0.119	0.165	0.183	0.186					
Methylcyclohexane			0.249	0.294	0.298	0.309	0.356	0.354	0.349	0.316			12.63	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020242			Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1:	1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2:	1431	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Methylene chloride			0.292	0.301	0.270	0.288	0.282	0.259	0.265	0.280			5.549	A
Naphthalene (RSP)				7131	18037	55774	248352	614835	1295606	2.134	0.115		0.990	W
Naphthalene				0.561	0.689	0.996	1.677	2.026	2.130					
Styrene (RSP)			2129	15824	36057	87567	255692	514927	987479	1.605	0.014		0.998	W
Styrene			0.869	1.167	1.273	1.475	1.659	1.642	1.572					
Tetrachloroethene			0.512	0.529	0.494	0.484	0.508	0.506	0.507	0.506			2.780	A
Toluene			2.494	2.496	2.297	2.300	2.364	2.333	2.249	2.362			4.127	A
Toluene-d8			2.371	2.279	2.219	2.246	2.227	2.270	2.332	2.278			2.451	A
Trichloroethene			0.262	0.276	0.268	0.270	0.282	0.263	0.250	0.267			3.874	A
Trichlorofluoromethane			0.317	0.307	0.289	0.276	0.279	0.261	0.257	0.284			7.888	A
Trichlorotrifluoroethane			0.161	0.177	0.176	0.166	0.162	0.155	0.150	0.164			6.227	A
Vinyl acetate (RSP)			848	4570	10724	24623	71333	159827	369833	0.237	0.021		0.991	W
Vinyl acetate			0.139	0.142	0.167	0.186	0.207	0.223	0.250					
Vinyl chloride			0.273	0.278	0.260	0.256	0.272	0.263	0.260	0.266			3.086	A
Xylene (total) (RSP)			4749	33290	70315	160471	460524	920641	1745097	0.951	0.026		0.998	W
Xylene (total)			0.646	0.818	0.827	0.901	0.996	0.979	0.926					
cis-1,2-Dichloroethene			0.258	0.283	0.280	0.292	0.325	0.324	0.322	0.298			8.738	A
cis-1,3-Dichloropropene (RSP)			1367	8661	18146	42900	133479	279970	581372	0.390	0.017		0.997	W
cis-1,3-Dichloropropene			0.225	0.269	0.283	0.324	0.387	0.390	0.393					
m,p-Xylene (RSP)			3361	23770	50062	113426	312699	613620	1131824	0.943	0.009		0.997	W
m,p-Xylene			0.686	0.877	0.883	0.956	1.014	0.979	0.901					
n-Butylbenzene (RSP)			2487	15865	35072	85648	253755	533009	1022170	1.703	0.013		0.997	W
n-Butylbenzene			1.171	1.249	1.340	1.530	1.713	1.756	1.680					
n-Hexane			0.221	0.243	0.237	0.253	0.286	0.293	0.300	0.262			11.83	A
n-Propylbenzene			2.743	2.695	2.699	2.753	2.894	2.811	2.566	2.737			3.742	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020242		Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
o-Xylene (RSP)			1388	9520	20253	47045	147825	307021	613273	0.971	0.016		0.997	W
o-Xylene			0.566	0.702	0.715	0.793	0.959	0.979	0.976					
sec-Butylbenzene			1.618	2.013	2.208	2.316	2.462	2.423	2.209	2.178			13.28	A
tert-Butyl methyl ether (MTBE)			0.507	0.563	0.552	0.594	0.656	0.652	0.651	0.596			9.852	A
tert-Butylbenzene			0.817	0.906	0.954	1.016	1.124	1.123	1.080	1.003			11.64	A
trans-1,2-Dichloroethene			0.303	0.309	0.307	0.305	0.317	0.313	0.312	0.309			1.596	A
trans-1,3-Dichloropropene (RS			1175	8126	17395	39049	119052	253088	521742	0.351	0.016		0.997	W
trans-1,3-Dichloropropene			0.193	0.253	0.271	0.295	0.345	0.353	0.353					
trans-1,4-Dichloro-2-butene			0.135	0.164	0.172	0.176	0.188	0.196	0.199	0.176			12.53	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

Form 6I

ICAL Verifications

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	218020242	Instrument ID:	MSV13
Analysis Date:	01/31/18 1538	Lab File ID:	2180131/e4248D
Analytical Method:	EPA 8260B	Analytical Batch:	628122

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
cis-1,2-Dichloroethene	ug/L	50.0	50.5	101	80	120	
Tetrachloroethene	ug/L	50.0	47.1	94	80	120	
Trichloroethene	ug/L	50.0	47.6	95	80	120	

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020242	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180208/e4598
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	JCK
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628646
Analysis Date:	02/08/18 Time: 0902	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.599	.01	6.5	20	A	
1,1,1-Trichloroethane	0.339	0.334	.01	-1.65	20	A	
1,1,2,2-Tetrachloroethane	0.866	0.862	.3	-.45	20	A	
1,1,2-Trichloroethane	0.554	0.578	.01	4.36	20	A	
1,1-Dichloroethane	0.435	0.412	.1	-5.25	20	A	
1,1-Dichloroethene	0.165	0.159	.01	-3.58	20	A	
1,1-Dichloropropene	0.266	0.288	.01	8.48	20	A	
1,2,3-Trichlorobenzene	0.831	0.922	.01	13.6	20	W	
1,2,3-Trichloropropane	0.948	0.972	.01	2.53	20	A	
1,2,4-Trichlorobenzene	0.855	0.822	.01	5	20	L	
1,2,4-Trimethylbenzene	2.032	2.228	.01	10.6	20	W	
1,2-Dibromo-3-chloropropane	0.182	0.202	.01	10.6	20	A	
1,2-Dibromoethane	0.518	0.561	.01	8.23	20	A	
1,2-Dichlorobenzene	1.262	1.361	.01	7.85	20	A	
1,2-Dichloroethane	0.360	0.326	.01	-9.4	20	A	
1,2-Dichloroethane-d4	0.165	0.155	.01	-6.18	20	A	
1,2-Dichloroethene (total)	0.304	0.306	.01	.86	20	A	
1,2-Dichloropropane	0.237	0.237	.01	-.16	20	A	
1,3,5-Trimethylbenzene	1.868	2.187	.01	17.1	20	A	
1,3-Dichlorobenzene	1.290	1.405	.01	8.91	20	A	
1,3-Dichloropropane	0.875	0.962	.01	9.93	20	A	
1,3-Dichloropropylene	0.370	0.364	.01	-.1	20	W	
1,4-Dichlorobenzene	1.326	1.387	.01	4.55	20	A	
1-Bromo-2-Chloroethane	0.360	0.369	.01	2.58	20	A	
1-Chlorohexane	0.743	0.647	.01	-4	20	L	
2,2-Dichloropropane	0.294	0.301	.01	2.29	20	A	
2-Butanone	0.200	0.190	.01	-3.4	20	W	
2-Chloroethylvinyl ether	0.115	0.109	.01	-2.6	20	W	
2-Chlorotoluene	1.936	2.076	.01	7.24	20	A	
2-Hexanone	0.588	0.498	.01	-7.2	20	W	
4-Bromofluorobenzene	0.790	0.842	.01	6.6	20	A	
4-Chlorotoluene	1.701	1.927	.01	13.2	20	A	
4-Isopropyltoluene	2.031	2.252	.01	12.2	20	W	
4-Methyl-2-pentanone	0.731	0.686	.01	-.4	20	W	
Acetone	0.187	0.177	.01	-5.09	20	A	
Acrolein	0.010	0.008	.01	-8.4	20	W	*
Acrylonitrile	0.105	0.122	.01	15.7	20	A	
Benzene	0.913	0.948	.01	3.79	20	A	
Bromobenzene	1.206	1.216	.01	.85	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020242	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180208/e4598
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	JCK
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628646
Analysis Date:	02/08/18 Time: 0902	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.133	0.133	.01	.46	20	A	
Bromodichloromethane	0.338	0.335	.01	-.89	20	A	
Bromoform	0.520	0.582	.1	11.9	20	A	
Bromomethane	0.122	0.110	.01	-11.4	20	W	
Carbon disulfide	0.577	0.561	.01	-2.78	20	A	
Carbon tetrachloride	0.308	0.310	.01	.4	20	A	
Chlorobenzene	1.610	1.713	.3	6.36	20	A	
Chloroethane	0.134	0.131	.01	-2.41	20	A	
Chloroform	0.428	0.414	.01	-3.29	20	A	
Chloromethane	0.284	0.235	.1	-17.2	20	A	
Cyclohexane	0.377	0.360	.01	-2.8	20	W	
Dibromochloromethane	0.640	0.693	.01	8.3	20	A	
Dibromofluoromethane	0.270	0.266	.01	-1.5	20	A	
Dibromomethane	0.151	0.154	.01	2.15	20	A	
Dichlorodifluoromethane	0.259	0.224	.01	-13.7	20	A	
Ethylbenzene	0.783	0.889	.01	13.6	20	A	
Hexachlorobutadiene	0.426	0.543	.01	27.6	20	A	*
Isopropylbenzene (Cumene)	2.353	2.618	.01	12.6	20	W	
Methyl Acetate	0.232	0.225	.01	-3.22	20	A	
Methyl iodide	5.263	0.073	.01	-51.4	20	Q	*
Methylcyclohexane	0.316	0.349	.01	10.6	20	A	
Methylene chloride	0.280	0.274	.01	-2.19	20	A	
Naphthalene	2.134	1.863	.01	-1.2	20	W	
Styrene	1.605	1.768	.01	11.6	20	W	
Tetrachloroethene	0.506	0.552	.01	9.21	20	A	
Toluene	2.362	2.463	.01	4.28	20	A	
Toluene-d8	2.278	2.349	.01	3.14	20	A	
Trichloroethene	0.267	0.271	.01	1.54	20	A	
Trichlorofluoromethane	0.284	0.272	.01	-4.18	20	A	
Trichlorotrifluoroethane	0.164	0.167	.01	2.1	20	A	
Vinyl acetate	0.237	0.236	.01	2	20	W	
Vinyl chloride	0.266	0.243	.01	-8.56	20	A	
Xylene (total)	0.951	1.072	.01	13.3	20	W	
cis-1,2-Dichloroethene	0.298	0.307	.01	3.22	20	A	
cis-1,3-Dichloropropene	0.390	0.385	.01	.4	20	W	
m,p-Xylene	0.943	1.096	.01	17	20	W	
n-Butylbenzene	1.703	1.849	.01	9.8	20	W	
n-Hexane	0.262	0.282	.01	7.56	20	A	
n-Propylbenzene	2.737	2.982	.01	8.93	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020242	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180208/e4598
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	JCK
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628646
Analysis Date:	02/08/18 Time: 0902	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	0.971	1.025	.01	7.2	20	W	
sec-Butylbenzene	2.178	2.578	.01	18.4	20	A	
tert-Butyl methyl ether (MTBE)	0.596	0.644	.01	7.96	20	A	
tert-Butylbenzene	1.003	1.152	.01	14.9	20	A	
trans-1,2-Dichloroethene	0.309	0.305	.01	-1.41	20	A	
trans-1,3-Dichloropropene	0.351	0.343	.01	-.4	20	W	
trans-1,4-Dichloro-2-butene	0.176	0.188	.01	6.83	20	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020242	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180208/e4620
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	JMC2
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628646
Analysis Date:	02/08/18 Time: 1722	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.586	.01	4.17	50	A	
1,1,1-Trichloroethane	0.339	0.324	.01	-4.4	50	A	
1,1,2,2-Tetrachloroethane	0.866	0.797	.3	-7.99	50	A	
1,1,2-Trichloroethane	0.554	0.566	.01	2.03	50	A	
1,1-Dichloroethane	0.435	0.413	.1	-4.99	50	A	
1,1-Dichloroethene	0.165	0.157	.01	-5.15	50	A	
1,1-Dichloropropene	0.266	0.265	.01	-.1	50	A	
1,2,3-Trichlorobenzene	0.831	0.771	.01	-4.6	50	W	
1,2,3-Trichloropropane	0.948	0.913	.01	-3.72	50	A	
1,2,4-Trichlorobenzene	0.855	0.676	.01	-12	50	L	
1,2,4-Trimethylbenzene	2.032	2.096	.01	4.2	50	W	
1,2-Dibromo-3-chloropropane	0.182	0.190	.01	4.13	50	A	
1,2-Dibromoethane	0.518	0.534	.01	3.08	50	A	
1,2-Dichlorobenzene	1.262	1.325	.01	4.99	50	A	
1,2-Dichloroethane	0.360	0.330	.01	-8.27	50	A	
1,2-Dichloroethane-d4	0.165	0.157	.01	-4.64	50	A	
1,2-Dichloroethene (total)	0.304	0.294	.01	-3.26	50	A	
1,2-Dichloropropane	0.237	0.241	.01	1.5	50	A	
1,3,5-Trimethylbenzene	1.868	2.090	.01	11.9	50	A	
1,3-Dichlorobenzene	1.290	1.342	.01	4.04	50	A	
1,3-Dichloropropane	0.875	0.919	.01	4.96	50	A	
1,3-Dichloropropylene	0.370	0.331	.01	-8.8	50	W	
1,4-Dichlorobenzene	1.326	1.315	.01	-.83	50	A	
1-Bromo-2-Chloroethane	0.360	0.371	.01	3.11	50	A	
1-Chlorohexane	0.743	0.569	.01	-14.4	50	L	
2,2-Dichloropropane	0.294	0.267	.01	-9.12	50	A	
2-Butanone	0.200	0.180	.01	-8.8	50	W	
2-Chloroethylvinyl ether	0.115	0.000	.01	-100	50	W	*
2-Chlorotoluene	1.936	1.998	.01	3.23	50	A	
2-Hexanone	0.588	0.432	.01	-18.4	50	W	
4-Bromofluorobenzene	0.790	0.811	.01	2.57	50	A	
4-Chlorotoluene	1.701	1.801	.01	5.87	50	A	
4-Isopropyltoluene	2.031	2.050	.01	2.2	50	W	
4-Methyl-2-pentanone	0.731	0.613	.01	-10.4	50	W	
Acetone	0.187	0.164	.01	-11.9	50	A	
Acrolein	0.010	0.000	.01	-100	50	W	*
Acrylonitrile	0.105	0.000	.01	0	50	A	*
Benzene	0.913	0.957	.01	4.82	50	A	
Bromobenzene	1.206	1.152	.01	-4.42	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020242			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180208/e4620
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	JMC2
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628646
Analysis Date:	02/08/18	Time: 1722		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromochloromethane	0.133	0.138	.01	4.47	50	A	
Bromodichloromethane	0.338	0.342	.01	1.13	50	A	
Bromoform	0.520	0.564	.1	8.36	50	A	
Bromomethane	0.122	0.114	.01	-7.6	50	W	
Carbon disulfide	0.577	0.547	.01	-5.1	50	A	
Carbon tetrachloride	0.308	0.288	.01	-6.63	50	A	
Chlorobenzene	1.610	1.637	.3	1.69	50	A	
Chloroethane	0.134	0.139	.01	3.63	50	A	
Chloroform	0.428	0.425	.01	-.73	50	A	
Chloromethane	0.284	0.219	.1	-23.0	50	A	
Cyclohexane	0.377	0.264	.01	-28.4	50	W	
Dibromochloromethane	0.640	0.666	.01	4.06	50	A	
Dibromofluoromethane	0.270	0.271	.01	.42	50	A	
Dibromomethane	0.151	0.156	.01	3.68	50	A	
Dichlorodifluoromethane	0.259	0.158	.01	-39.2	50	A	
Ethylbenzene	0.783	0.842	.01	7.54	50	A	
Hexachlorobutadiene	0.426	0.384	.01	-9.72	50	A	
Isopropylbenzene (Cumene)	2.353	2.434	.01	4.8	50	W	
Methyl Acetate	0.232	0.219	.01	-5.49	50	A	
Methyl iodide	5.263	0.112	.01	-30.8	50	Q	
Methylcyclohexane	0.316	0.239	.01	-24.3	50	A	
Methylene chloride	0.280	0.289	.01	3.51	50	A	
Naphthalene	2.134	1.573	.01	-14.8	50	W	
Styrene	1.605	1.700	.01	7.4	50	W	
Tetrachloroethene	0.506	0.508	.01	.43	50	A	
Toluene	2.362	2.369	.01	.29	50	A	
Toluene-d8	2.278	2.171	.01	-4.69	50	A	
Trichloroethene	0.267	0.280	.01	4.92	50	A	
Trichlorofluoromethane	0.284	0.223	.01	-21.4	50	A	
Trichlorotrifluoroethane	0.164	0.123	.01	-24.7	50	A	
Vinyl acetate	0.237	0.000	.01	-100	50	W	*
Vinyl chloride	0.266	0.230	.01	-13.5	50	A	
Xylene (total)	0.951	1.021	.01	8	50	W	
cis-1,2-Dichloroethene	0.298	0.284	.01	-4.75	50	A	
cis-1,3-Dichloropropene	0.390	0.334	.01	-12.8	50	W	
m,p-Xylene	0.943	1.045	.01	11	50	W	
n-Butylbenzene	1.703	1.607	.01	-4.4	50	W	
n-Hexane	0.262	0.165	.01	-37.0	50	A	
n-Propylbenzene	2.737	2.777	.01	1.45	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020242	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180208/e4620
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	JMC2
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628646
Analysis Date:	02/08/18 Time: 1722	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
o-Xylene	0.971	0.972	.01	1.8	50	W	
sec-Butylbenzene	2.178	2.350	.01	7.89	50	A	
tert-Butyl methyl ether (MTBE)	0.596	0.618	.01	3.71	50	A	
tert-Butylbenzene	1.003	1.069	.01	6.62	50	A	
trans-1,2-Dichloroethene	0.309	0.304	.01	-1.83	50	A	
trans-1,3-Dichloropropene	0.351	0.328	.01	-5	50	W	
trans-1,4-Dichloro-2-butene	0.176	0.168	.01	-4.05	50	A	

FORM V II VOA

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	218020242			Standard ID:	1207
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0	(µL)		Lab File ID:	2180131/e4243D
Analyst:	JCK			Analytical Batch:	628122
Analysis Date:	01/31/18	Time: 1346		Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	154140	9.08	148135	10.54	345317	6.59

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#		#	
LCS1772544	1772544	135192		9.08		135776		10.53		320463		6.59	
OMS-28-GW78-20	21802024207	108720		9.08		90169		10.54		278945		6.59	
OMS-28-GW81-28	21802024208	109068		9.08		90292		10.54		281779		6.59	
OMS-28-GW78-27	21802024209	108695		9.08		91085		10.54		280096		6.59	
OMS-28-GW80-11	21802024210	109925		9.08		94614		10.54		285595		6.59	
OMS-28-GW79-11	21802024211	106794		9.08		89124		10.54		277339		6.59	
OMS-28-GW79-17	21802024212	108975		9.08		90725		10.54		281340		6.59	
OMS-28-GW79-27	21802024213	107687		9.08		91341		10.54		282638		6.59	
OMS-28-GW77-12	21802024214	108763		9.08		91782		10.54		283120		6.59	
OMS-28-GW77-12-a	21802024215	107955		9.08		89356		10.54		279352		6.59	
OMS-28-GW77-20	21802024216	106669		9.08		89360		10.54		279537		6.59	
LCSD1772545	1772545	146558		9.08		142741		10.53		329830		6.59	
MB1772543	1772543	113050		9.08		96243		10.54		291179		6.59	
OMS-28-GW76-28	21802024201	111001		9.08		93376		10.54		287381		6.59	
OMS-28-GW76-28-a	21802024202	108431		9.08		93101		10.54		283210		6.59	
OMS-28-GW76-13	21802024203	111147		9.08		93915		10.54		283904		6.59	
OMS-28-GW76-13-c	21802024204	107492		9.08		90171		10.54		282054		6.59	
OMS-28-GW78-12	21802024205	109491		9.08		92745		10.54		274726		6.59	
OMS-28-GW76-20	21802024206	107949		9.08		91274		10.54		279581		6.59	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1203-9(ICAL)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-11	04/30/18
	CVE	250	126-86-7	07/08/18
1600 (ICV)	8260 ICV	250	126-83-12	05/03/18
	Ac/Ac/VA ICV	MC	126-87-12	04/30/18
	CVE ICV	250	126-84-6	05/09/18
1410 (CCV)	A9-1	250	126-85-8	06/13/18
	A9-2	250	126-85-5	02/05/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4235cD.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235D.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1201	NOT USED	e4236.d	5.00 ml	31-JAN-2018 11:03	1.0	JCK	1
1202	|	e4237.d	5.00 ml	31-JAN-2018 11:33	1.0	JCK	1
1203		e4238cD.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238D.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
2PPB		e4239.d	5.00 ml	31-JAN-2018 12:17	1.0	JCK	1
1204		e4240cD.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240D.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1205		e4241cD.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241D.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1206		e4242cD.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242D.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1207		e4243cD.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243D.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1208		e4244cD.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244D.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1209		e4245cD.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245D.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
BLANK		e4246.d	5.00 ml	31-JAN-2018 14:53	1.0	JCK	1
1600	RR	e4247.d	5.00 ml	31-JAN-2018 15:16	1.0	JCK	1
1600		e4248cD.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248D.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1769682		e4249c.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769687		e4249.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769683		e4250c.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1
1769688		e4250.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1410	APP9	e4251c.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769684		e4251Lc.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769628		e4251L.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769685		e4252c.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769629		e4252.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769681		e4253c.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
1769686 pH		e4253.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
21801200906 1		e4254.d	5.00 ml	31-JAN-2018 17:54	1.0	JCK	1
21801230501 1		e4255.d	5.00 ml	31-JAN-2018 18:16	1.0	JCK	1
21801230502 1		e4256.d	5.00 ml	31-JAN-2018 18:38	1.0	JCK	1
21801200901 1		e4257.d	5.00 ml	31-JAN-2018 19:01	1.0	JCK	1
21801200902 1		e4258.d	5.00 ml	31-JAN-2018 19:23	1.0	JCK	1
21801200903 1		e4259.d	5.00 ml	31-JAN-2018 19:45	1.0	JCK	1
21801200904 1		e4260.d	5.00 ml	31-JAN-2018 20:07	1.0	JCK	1
21801200905 1		e4261.d	5.00 ml	31-JAN-2018 20:30	1.0	GDG	1
21801200907 1		e4262ms.d	5.00 ml	31-JAN-2018 20:52	1.0	GDG	1
21801200908 1		e4263msd.d	5.00 ml	31-JAN-2018 21:14	1.0	GDG	1
1440	8260	e4264cD.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440		e4264D.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440	app9	e4265cD.d	5.00 ml	31-JAN-2018 21:59	1.0	GDG	1
BLANK		e4266.d	5.00 ml	31-JAN-2018 22:21	1.0	GDG	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 22:21

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 08-FEB-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1400 (CCV)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-14	04/30/18
	CVE	250	126-86-7	07/08/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4595.d	0.00 ml	08-FEB-2018 07:46	1.0	JCK	2
CONDITION PURG		e4596.d	5.00 ml	08-FEB-2018 08:08	1.0	JCK	1
CONDITION PURG		e4597.d	5.00 ml	08-FEB-2018 08:31	1.0	JCK	1
1400		e4598.d	5.00 ml	08-FEB-2018 09:02	1.0	JCK	1
1772544		e4598L.d	5.00 ml	08-FEB-2018 09:02	1.0	JCK	1
1772545		e4599.d	5.00 ml	08-FEB-2018 09:24	1.0	JCK	1
MB		e4600.d	5.00 ml	08-FEB-2018 09:58	1.0	JCK	1
MB		e4601.d	5.00 ml	08-FEB-2018 10:20	1.0	JCK	1
1772543 pH		e4602.d	5.00 ml	08-FEB-2018 10:42	1.0	JCK	1
21802024201 1		e4603.d	5.00 ml	08-FEB-2018 11:04	1.0	JCK	1
21802024202 1		e4604.d	5.00 ml	08-FEB-2018 11:27	1.0	JCK	1
21802024203 1		e4605.d	5.00 ml	08-FEB-2018 11:49	1.0	JCK	1
21802024204 1		e4606.d	5.00 ml	08-FEB-2018 12:11	1.0	JCK	1
21801313002 1		e4607.d	5.00 ml	08-FEB-2018 12:33	1.0	JCK	1
21802024205 1		e4608.d	5.00 ml	08-FEB-2018 12:56	1.0	JCK	1
21802024206 1		e4609.d	5.00 ml	08-FEB-2018 13:18	1.0	JCK	1
21802024207 1		e4610.d	5.00 ml	08-FEB-2018 13:40	1.0	JCK	1
21802024208 1		e4611.d	5.00 ml	08-FEB-2018 14:02	1.0	JCK	1
21802024209 1		e4612.d	5.00 ml	08-FEB-2018 14:24	1.0	JCK	1
21802024210 1		e4613.d	5.00 ml	08-FEB-2018 14:47	1.0	JMC2	1
21802024211 1		e4614.d	5.00 ml	08-FEB-2018 15:09	1.0	JMC2	1
21802024212 1		e4615.d	5.00 ml	08-FEB-2018 15:31	1.0	JMC2	1
21802024213 1		e4616.d	5.00 ml	08-FEB-2018 15:53	1.0	JMC2	1
21802024214 1		e4617.d	5.00 ml	08-FEB-2018 16:16	1.0	JMC2	1
21802024215 1		e4618.d	5.00 ml	08-FEB-2018 16:38	1.0	JMC2	1
21802024216 1		e4619.d	5.00 ml	08-FEB-2018 17:00	1.0	JMC2	1
1440		e4620.d	5.00 ml	08-FEB-2018 17:22	1.0	JMC2	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 19:46

Client ID: 4838 - AECOM
SDG: 218020242
PM: AMK

AECOM

Chain of Custody and Analytical Requ

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	1,1,2 DCE	Comments	Cooler ID
OMS-28-GW76-28	1/31/18	1155	24-28	N	WG	3	X	X	Standard TAT	-1
OMS-28-GW76-28-a	1/31/18	1155	24-28	FD	WG	3	X	X		-2
OMS-28-GW76-13	1/31/18	1230	9-13	N	WG	3	X	X		-3
OMS-28-GW76-13-c	1/31/18		-	TB	WQ	2	X	X		-4
OMS-28-GW78-12	1/31/18	1330	8-12	N	WG	3	X	X		-5
OMS-28-GW76-20	1/31/18	1430	16-20	N	WG	3	X	X		-6
OMS-28-GW78-20	1/31/18	1500	16-20	N	WG	3	X	X		-7
OMS-28-GW81-28	1/31/18	1545	24-28	N	WG	3	X	X		-8
OMS-28-GW78-27	2/1/18	0915	23-27	N	WG	3	X	X		-9
OMS-28-GW80-11	2/1/18	1000	7-11	N	WG	3	X	X		-10
OMS-28-GW79-11	2/1/18	1030	7-11	N	WG	3	X	X		-11
OMS-28-GW79-17	2/1/18	1115	13-17	N	WG	3	X	X		-12
OMS-28-GW79-27	2/1/18	1230	23-27	N	WG	3	X	X		-13

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	2/1/18	1700			
2.	FedEx	2/2/18	09:30	Tiffany Sanya	2/2/18	09:30
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped: XXX
Airbill #: 8731 2491 6448
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

0.7 °C E29
34CPM

Page 1 of 2

AECOM Project Number 60556081 2.0

Purchase Order Number

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

Client ID: 4838 - AECOM
SDG: 218020242
PM: AMK

AECOM

Chain of Custody and Analytical Requ

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code[2]	Sample Matrix[2]	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	cis-1,2 DCE	Comments	Cooler ID
OMS-28-GW77-12	2/1/2018	1315	8 12	N	WG	3	X	X	Standard TAT	-14
OMS-28-GW77-12-a	2/1/2018	1315	8. 12	FD	WG	3	X	X	↓	-15
OMS-28-GW77-20	2/1/2018	1425	16 20	N	WG	3	X	X		-16
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	2-1-18	1700	1.		
2. FedEx	2/2/18	09:30	2. Tiffany Sery	2/2/18	09:30
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped: XXX
Airbill #: 8731 2991 6448
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

0.7°C E29
34CPM

Page 2 of 2

AECOM Project Number 60556081 2.0

Purchase Order Number

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

SAMPLE RECEIVING CHECKLIST

218020242

SAMPLE DELIVERY GROUP 218020242	
Client **PM** AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** Reese, Sean M
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 02/02/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E29	Temp °C
8731 2991 6448		0.7

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Appendix B18
GCAL Report 218020614 dated February 19, 2018

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/19/2018

GCAL Report 218020614

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218020614

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218020614

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

See subcontract laboratory report case narrative.

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802061401	OMS-28-GW80-17	Water	02/02/2018 08:45	02/06/2018 09:15
21802061402	OMS-28-GW80-17-C	Water	02/02/2018 00:01	02/06/2018 09:15
21802061403	OMS-28-GW77-27	Water	02/02/2018 09:20	02/06/2018 09:15
21802061404	OMS-28-GW77-27-MS	Water	02/02/2018 09:20	02/06/2018 09:15
21802061405	OMS-28-GW77-27-MSD	Water	02/02/2018 09:20	02/06/2018 09:15
21802061406	OMS-28-GW80-27	Water	02/02/2018 09:45	02/06/2018 09:15
21802061407	OMS-28-GW85-13	Water	02/02/2018 12:15	02/06/2018 09:15
21802061408	OMS-28-GW82-19	Water	02/02/2018 13:30	02/06/2018 09:15
21802061409	OMS-28-GW85-19	Water	02/02/2018 12:55	02/06/2018 09:15
21802061410	OMS-28-GW85-31	Water	02/02/2018 13:25	02/06/2018 09:15
21802061411	OMS-28-GW82-31	Water	02/02/2018 15:00	02/06/2018 09:15
21802061412	OMS-28-GW83-12	Water	02/02/2018 15:35	02/06/2018 09:15
21802061413	OMS-28-GW83-16	Water	02/02/2018 16:00	02/06/2018 09:15
21802061414	OMS-28-GW83-16-A	Water	02/02/2018 16:00	02/06/2018 09:15
21802061415	OMS-28-GW87-31	Water	02/03/2018 09:25	02/06/2018 09:15
21802061416	OMS-28-GW86-12	Water	02/03/2018 10:20	02/06/2018 09:15
21802061417	OMS-28-GW86-16	Water	02/03/2018 10:35	02/06/2018 09:15
21802061418	OMS-28-GW86-31	Water	02/03/2018 11:15	02/06/2018 09:15
21802061419	OMS-28-GW88-12	Water	02/05/2018 09:25	02/06/2018 09:15
21802061420	OMS-28-GW88-17	Water	02/05/2018 10:15	02/06/2018 09:15
21802061421	OMS-28-GW88-31	Water	02/05/2018 11:00	02/06/2018 09:15
21802061422	OMS-28-GW84-12	Water	02/05/2018 11:25	02/06/2018 09:15
21802061423	OMS-28-GW84-12-A	Water	02/05/2018 11:25	02/06/2018 09:15
21802061424	OMS-28-GW84-17	Water	02/05/2018 12:30	02/06/2018 09:15
21802061425	OMS-28-GW84-31	Water	02/05/2018 13:00	02/06/2018 09:15
21802061426	OMS-28-GW84-31-MS	Water	02/05/2018 13:00	02/06/2018 09:15
21802061427	OMS-28-GW84-31-MSD	Water	02/05/2018 13:00	02/06/2018 09:15
21802061428	OMS-28-GW90-33	Water	02/05/2018 14:00	02/06/2018 09:15
21802061429	OMS-28-GW83-31	Water	02/02/2018 16:25	02/06/2018 09:15

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802061401	OMS-28-GW80-17	W	Ship to Sub Lab
21802061401	OMS-28-GW80-17	W	Subcontract General
21802061402	OMS-28-GW80-17-C	W	Ship to Sub Lab
21802061402	OMS-28-GW80-17-C	W	Subcontract General
21802061403	OMS-28-GW77-27	W	Ship to Sub Lab
21802061403	OMS-28-GW77-27	W	Subcontract General
21802061404	OMS-28-GW77-27-MS	W	Ship to Sub Lab
21802061404	OMS-28-GW77-27-MS	W	Subcontract General
21802061405	OMS-28-GW77-27-MSD	W	Ship to Sub Lab
21802061405	OMS-28-GW77-27-MSD	W	Subcontract General
21802061406	OMS-28-GW80-27	W	Ship to Sub Lab
21802061406	OMS-28-GW80-27	W	Subcontract General
21802061407	OMS-28-GW85-13	W	Ship to Sub Lab
21802061407	OMS-28-GW85-13	W	Subcontract General
21802061408	OMS-28-GW82-19	W	Ship to Sub Lab
21802061408	OMS-28-GW82-19	W	Subcontract General
21802061409	OMS-28-GW85-19	W	Ship to Sub Lab
21802061409	OMS-28-GW85-19	W	Subcontract General
21802061410	OMS-28-GW85-31	W	Ship to Sub Lab
21802061410	OMS-28-GW85-31	W	Subcontract General
21802061411	OMS-28-GW82-31	W	Ship to Sub Lab
21802061411	OMS-28-GW82-31	W	Subcontract General
21802061412	OMS-28-GW83-12	W	Ship to Sub Lab
21802061412	OMS-28-GW83-12	W	Subcontract General
21802061413	OMS-28-GW83-16	W	Ship to Sub Lab
21802061413	OMS-28-GW83-16	W	Subcontract General
21802061414	OMS-28-GW83-16-A	W	Ship to Sub Lab
21802061414	OMS-28-GW83-16-A	W	Subcontract General
21802061415	OMS-28-GW87-31	W	Ship to Sub Lab
21802061415	OMS-28-GW87-31	W	Subcontract General
21802061416	OMS-28-GW86-12	W	Ship to Sub Lab
21802061416	OMS-28-GW86-12	W	Subcontract General
21802061417	OMS-28-GW86-16	W	Ship to Sub Lab
21802061417	OMS-28-GW86-16	W	Subcontract General
21802061418	OMS-28-GW86-31	W	Ship to Sub Lab
21802061418	OMS-28-GW86-31	W	Subcontract General
21802061419	OMS-28-GW88-12	W	Ship to Sub Lab
21802061419	OMS-28-GW88-12	W	Subcontract General
21802061420	OMS-28-GW88-17	W	Ship to Sub Lab
21802061420	OMS-28-GW88-17	W	Subcontract General
21802061421	OMS-28-GW88-31	W	Ship to Sub Lab
21802061421	OMS-28-GW88-31	W	Subcontract General
21802061422	OMS-28-GW84-12	W	Ship to Sub Lab
21802061422	OMS-28-GW84-12	W	Subcontract General
21802061423	OMS-28-GW84-12-A	W	Ship to Sub Lab
21802061423	OMS-28-GW84-12-A	W	Subcontract General
21802061424	OMS-28-GW84-17	W	Ship to Sub Lab
21802061424	OMS-28-GW84-17	W	Subcontract General
21802061425	OMS-28-GW84-31	W	Ship to Sub Lab
21802061425	OMS-28-GW84-31	W	Subcontract General

Test Summary (Continued)

GCAL ID	Client ID	Matrix	Procedure
21802061426	OMS-28-GW84-31-MS	W	Ship to Sub Lab
21802061426	OMS-28-GW84-31-MS	W	Subcontract General
21802061427	OMS-28-GW84-31-MSD	W	Ship to Sub Lab
21802061427	OMS-28-GW84-31-MSD	W	Subcontract General
21802061428	OMS-28-GW90-33	W	Ship to Sub Lab
21802061428	OMS-28-GW90-33	W	Subcontract General
21802061429	OMS-28-GW83-31	W	Ship to Sub Lab
21802061429	OMS-28-GW83-31	W	Subcontract General

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.

Sample Results

SL0952

Client ID: 4838 - AECOM
SDG: 218020614
PM: AMK

AECOM

Chain of Custody and Analytical Req

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [1]	Sample Matrix [2]	Number of containers	VC (8260SIM)	Comments	Cooler ID
OMS-28-GW80-17	7/2/18	0845	13.17	N	WG	3	X		
OMS-28-GW80-17-e	7/2/18		-	TB	WQ	3	X		
OMS-28-GW77-27	7/2/18	0920	23.27	N	WG	3	X		
OMS28-GW77-27-MS	7/2/18	0920	23.27	MS	WG	3	X		
OMS-28-GW77-27-MSD	7/2/18	0920	23.27	SD	WG	3	X		
OMS-28-GW80-27	7/2/18	0945	23.27	N	WG	3	X		
OMS-28-GW85-13	7/2/18	1215	9.13	N	WG	3	X		
OMS-28-GW82-19	7/2/18	1330	15.19	N	WG	3	X		
OMS-28-GW85-19	7/2/18	1255	15.19	N	WG	3	X		
OMS-28-GW85-31	7/2/18	1325	27.31	N	WG	3	X		
OMS-28-GW82-31	7/2/18	1500	27.31	N	WG	3	X		
OMS-28-GW83-12	7/2/18	1535	8.12	N	WG	3	X		
OMS-28-GW83-16	7/2/18	1600	12.16	N	WG	3	X		

Sample Analysis Requested

Comments

Cooler ID

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	7/5/18	1530			
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX
Method of Shipment: Fed EX
Analytical Lab: Katahdin Analytical
Lab Receipient:
Shipped:
Airbill #: 8992 5589 0260
Location: Scarborough ME
Date: 7-6-18 Time: 915

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 3

Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

SL0952

Client ID: 4838 - AECOM
SDG: 218020614
PM: AMK

AECOM

Chain of Custody and Analytical Req

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Number of containers	VC (8260SIM)	Comments	Cooler ID
OMS-28-GW83-16-a	7/2/18	1600	12 16	FD	WG	3	X		
OMS-28-GW87-31	7/3/18	0925	27.31	N	WG	3	X		
OMS-28-GW86-12	7/3/18	1020	8.12	N	WG	3	X		
OMS-28-GW86-16	7/3/18	1035	12 16	N	WG	3	X		
OMS-28-GW86-31	7/3/18	1115	27.31	N	WG	3	X		
OMS-28-GW88-12	7/5/18	0925	8.12	N	WG	3	X		
OMS-28-GW88-17	7/5/18	1015	13.17	N	WG	3	X		
OMS-28-GW88-31	7/5/18	1100	27.31	N	WG	3	X		
OMS-28-GW84-12	7/5/18	1125	8.12	N	WG	3	X		
OMS-28-GW84-12-a	7/5/18	1125	8.12	FD	WG	3	X		
OMS-28-GW84-17	7/5/18	1230	13.17	N	WG	3	X		
OMS-28-GW84-31	7/5/18	1300	27.31	N	WG	3	X		
OMS-28GW84-31-MS	7/5/18	1300	27.31	MS	WG	3	X		

Sample Analysis Requested

Comments

Cooler ID

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	7/5/18	1530	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: Katahdin Analytical
Lab Receipient:

Shipped: XXX
Airbill #: 8992-5589 0260
Location: Scarborough ME
Date: 2.6.18 Time: 915

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 3

Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

SL0952

Client ID: 4838 - AECOM
SDG: 218020614
PM: AMK

AECOM Chain of Custody and Analytical Rec

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	VC (8260SIM)	Comments	Cooler ID
OMS-28-GW84-31-MSD	7/5/18	1300	27 31	SD	WG	3	X		
OMS-28-GW90-33	7/5/18	1400	29. 33	N	WG	3	X		
OMS-28-GW83-31	7/2/18	1625	27.31	N	WG	3	X		
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						
			-						

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	7/5/18	1530	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: Katahdin Analytical
Lab Receipient:

Shipped: XXX
Airbill #: 8992 5589 0260
Location: Scarborough ME
Date: 7-6-18 Time: 915

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 3 of 3
Project Number 60556081 2.0
Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL
Project Manager Anna Kinchen
Analytical Data To Anna Kinchen

SAMPLE RECEIVING CHECKLIST

218020614

SAMPLE DELIVERY GROUP 218020614	
Client **PM** AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** Reese, Sean M
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 02/06/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☐	☑

COOLERS		
Airbill	**Thermometer ID:** NA	**Temp °C**
		NA

DISCREPANCIES	LAB PRESERVATIONS
None	None

NOTES	SUBOUTS ONLY.

GCAL
ARNG OMS 28
SL0952

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

TABLE OF CONTENTS

Total number of pages: 104

SAMPLE DATA PACKAGE

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
GCAL ANALYTICAL LABORATORIES
ARNG OMS 28
SL0952

Sample Receipt

The following samples were received on February 06, 2018 and were logged in under Katahdin Analytical Services work order number SL0952 for a hardcopy due date of February 18, 2018.

KATAHDIN Sample No.	GCAL Sample Identification
SL0952-1	OMS-28-GW80-17
SL0952-2	OMS-28-GW80-17-C
SL0952-3	OMS-28-GW77-27
SL0952-4	OMS-28-GW80-27
SL0952-5	OMS-28-GW85-13
SL0952-6	OMS-28-GW82-19
SL0952-7	OMS-28-GW85-19
SL0952-8	OMS-28-GW85-31
SL0952-9	OMS-28-GW82-31
SL0952-10	OMS-28-GW83-12
SL0952-11	OMS-28-GW83-16
SL0952-12	OMS-28-GW83-16-A
SL0952-13	OMS-28-GW87-31
SL0952-14	OMS-28-GW86-12
SL0952-15	OMS-28-GW86-16
SL0952-16	OMS-28-GW86-31
SL0952-17	OMS-28-GW88-12
SL0952-18	OMS-28-GW88-17
SL0952-19	OMS-28-GW88-31
SL0952-20	OMS-28-GW84-12
SL0952-21	OMS-28-GW84-12-A
SL0952-22	OMS-28-GW84-17
SL0952-23	OMS-28-GW84-31
SL0952-24	OMS-28-GW90-33
SL0952-25	OMS-28-GW83-31

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SL0952 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

Samples SL0952-3 and 23 were used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

8260B SIM Analysis

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond
02.16.18

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: GCAL	KAS PM:	Sampled By: Client	
Project:	KMS Entry By:	Delivered By: Fedex	
KAS Work Order#: SL0457	KMS Review By: AMH	Received By: JAB	
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 2-6-18 915	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): -1.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				
If yes, was there sufficient ice to meet temperature requirements?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2 Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

SL0952

AECOM

Chain of Custody and Analytical Request

Laboratory: Katahdin Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Sample Analysis Requested

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Number of containers	VC (8260SIM)	Comments	Cooler ID
OMS-28-GW80-17	2/2/18	0845	13.17	N	WG	3	X		
OMS-28-GW80-17-c	2/2/18			TB	WQ	3	X		
OMS-28-GW77-27	2/2/18	0920	23.27	N	WG	3	X		
OMS28-GW77-27-MS	2/2/18	0920	23.27	MS	WG	3	X		
OMS-28-GW77-27-MSD	2/2/18	0920	23.27	SD	WG	3	X		
OMS-28-GW80-27	2/2/18	0945	23.27	N	WG	3	X		
OMS-28-GW85-13	2/2/18	1215	9.13	N	WG	3	X		
OMS-28-GW82-19	2/2/18	1330	15.19	N	WG	3	X		
OMS-28-GW85-19	2/2/18	1255	15.19	N	WG	3	X		
OMS-28-GW85-31	2/2/18	1325	27.31	N	WG	3	X		
OMS-28-GW82-31	2/2/18	1500	27.31	N	WG	3	X		
OMS-28-GW83-12	2/2/18	1535	8.12	N	WG	3	X		
OMS-28-GW83-16	2/2/18	1600	12.16	N	WG	3	X		

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	2/5/18	1530	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX
Method of Shipment: Fed Ex
Analytical Lab: Katahdin Analytical
Lab Receipient:
Shipped:
Airbill #: 8992 5589 0260
Location: Scarborough ME
Date: 2-6-18 Time: 915

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 3

Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

9000000

SL0952

AECOM

Chain of Custody and Analytical Request

Laboratory: Katahdin Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Number of containers	VC (8260SIM)									Comments	Cooler ID
OMS-28-GW83-16-a	2/2/18	1600	12 16	FD	WG	3	X										
OMS-28-GW87-31	2/3/18	0925	27 31	N	WG	3	X										
OMS-28-GW86-12	2/3/18	1020	8 12	N	WG	3	X										
OMS-28-GW86-16	2/3/18	1035	12 16	N	WG	3	X										
OMS-28-GW86-31	2/3/18	1115	27 31	N	WG	3	X										
OMS-28-GW88-12	2/5/18	0925	8 12	N	WG	3	X										
OMS-28-GW88-17	2/5/18	1015	13 17	N	WG	3	X										
OMS-28-GW88-31	2/5/18	1100	27 31	N	WG	3	X										
OMS-28-GW84-12	2/5/18	1125	8 12	N	WG	3	X										
OMS-28-GW84-12-a	2/5/18	1125	8 12	FD	WG	3	X										
OMS-28-GW84-17	2/5/18	1230	13 17	N	WG	3	X										
OMS-28-GW84-31	2/5/18	1300	27 31	N	WG	3	X										
OMS-28GW84-31-MS	2/5/18	1300	27 31	MS	WG	3	X										

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	2/5/18	1530	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: Katahdin Analytical
Lab Receipient:

Shipped: XXX
Airbill #: 8992-5589 0260
Location: Scarborough ME
Date: 2-6-18 Time: 915

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 2 of 3

Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

0000007

SL0952

AECOM

Chain of Custody and Analytical Request

Laboratory: Katahdin Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Number of containers	VC (8260SIM)								Comments	Cooler ID
OMS-28-GW84-31-MSD	3/5/18	1300	27-31	SD	WG	3	X									
OMS-28-GW90-33	3/5/18	1400	29-33	N	WG	3	X									
OMS-28-GW83-31	3/2/18	1625	27-31	N	WG	3	X									
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													
			-													

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	3/5/18	1530	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX
Method of Shipment: Fed Ex
Analytical Lab: Katahdin Analytical
Lab Receipient:
Shipped:
Airbill #: 8992 5589 0260
Location: Scarborough ME
Date: 3-6-18 Time: 9:15

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 3 of 3

Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

8000000

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Feb. 06, 2018
02:07 PM

Login Number: SL0952

Account: GCAL001
GCAL

Project: GCAL-VOASIM

Quote/Incoming: GCAL-VOASIM

NoWeb

Primary Report Address:
Kimberly Drag
GCAL
7979 Innovation Park Dr

Baton Rouge,LA 70820
kimberly.drag@gcal.com

Primary Invoice Address:
Kelly Lott
GCAL Analytical Laboratories
7979 Innovation Park Drive

Baton Rouge,LA 70820

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD 5.0 project. Analysis for VC only.
CHECK NO.	:	
CLIENT PO#	:	98356
CLIENT PROJECT MANAGE	:	Anna Kinchen
CONTRACT	:	Project # 60556081 2.0
COOLER TEMPERATURE	:	-1.4
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS135QC-CSV
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	ARNG OMS 28
QC LEVEL	:	III
REPORT INSTRUCTIONS	:	Send final PDF and EDD to both Anna (anna.kinchen@gcal.com) and Kimberly (kimberly.drag@gcal.com). Invoice to Kimberly.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	24

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-1	OMS-28-GW80-17	02-FEB-18 08:45	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-2	OMS-28-GW80-17-C	02-FEB-18 00:00	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-3	OMS-28-GW77-27	02-FEB-18 09:20	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		**MS/MSD**

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-4	OMS-28-GW80-27	02-FEB-18 09:45	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-5	OMS-28-GW85-13	02-FEB-18 12:15	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-6	OMS-28-GW82-19	02-FEB-18 13:30	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-7	OMS-28-GW85-19	02-FEB-18 12:55	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

AMH 2/6/18

Login Number: SL0952

Account: GCAL001
GCAL

Project: GCAL-VOASIM

Quote/Incoming: GCAL-VOASIM

NoWeb

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-8	OMS-28-GW85-31	02-FEB-18 13:25	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

SL0952-9	OMS-28-GW82-31	02-FEB-18 15:00	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

SL0952-10	OMS-28-GW83-12	02-FEB-18 15:35	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

SL0952-11	OMS-28-GW83-16	02-FEB-18 16:00	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

SL0952-12	OMS-28-GW83-16-A	02-FEB-18 16:00	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

SL0952-13	OMS-28-GW87-31	03-FEB-18 09:25	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	17-FEB-18	40mL Vial+HCl		

SL0952-14	OMS-28-GW86-12	03-FEB-18 10:20	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	17-FEB-18	40mL Vial+HCl		

SL0952-15	OMS-28-GW86-16	03-FEB-18 10:35	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	17-FEB-18	40mL Vial+HCl		

SL0952-16	OMS-28-GW86-31	03-FEB-18 11:15	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	17-FEB-18	40mL Vial+HCl		

SL0952-17	OMS-28-GW88-12	05-FEB-18 09:25	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	19-FEB-18	40mL Vial+HCl		

AMH 2/6/18

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Feb. 06, 2018
02:07 PM

Login Number: SL0952

Quote/Incoming: GCAL-VOASIM

Account: GCAL001 NoWeb
GCAL

Project: GCAL-VOASIM

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0952-18	OMS-28-GW88-17	05-FEB-18 10:15	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	19-FEB-18	40mL Vial+HCl		

SL0952-19	OMS-28-GW88-31	05-FEB-18 11:00	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	19-FEB-18	40mL Vial+HCl		

SL0952-20	OMS-28-GW84-12	05-FEB-18 11:25	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	19-FEB-18	40mL Vial+HCl		

SL0952-21	OMS-28-GW84-12-A	05-FEB-18 11:25	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	19-FEB-18	40mL Vial+HCl		

SL0952-22	OMS-28-GW84-17	05-FEB-18 12:30	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	19-FEB-18	40mL Vial+HCl		

SL0952-23	OMS-28-GW84-31	05-FEB-18 13:00	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	19-FEB-18	40mL Vial+HCl		**MS/MSD**

SL0952-24	OMS-28-GW90-33	05-FEB-18 14:00	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	19-FEB-18	40mL Vial+HCl		

SL0952-25	OMS-28-GW83-31	02-FEB-18 16:25	06-FEB-18			18-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	16-FEB-18	40mL Vial+HCl		

Total Samples: **25** ***Total Analyses:*** **25**

AMH 2/6/18

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

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Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0952-1
Client ID: OMS-28-GW80-17
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0212.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		105.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-2
Client ID: OMS-28-GW80-17-C
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0213.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-3
Client ID: OMS-28-GW77-27
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0240.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		118.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-4
Client ID: OMS-28-GW80-27
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0238.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		120.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-5
Client ID: OMS-28-GW85-13
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0214.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		112.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-6
Client ID: OMS-28-GW82-19
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0215.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-7
Client ID: OMS-28-GW85-19
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0216.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	J	0.028	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-8
Client ID: OMS-28-GW85-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0217.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		114.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-9
Client ID: OMS-28-GW82-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0218.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		116.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-10
Client ID: OMS-28-GW83-12
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0220.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		111.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-11
Client ID: OMS-28-GW83-16
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0231.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		110.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-12
Client ID: OMS-28-GW83-16-A
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0232.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		108.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-13
Client ID: OMS-28-GW87-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0239.D

Sample Date: 03-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		120.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-14
Client ID: OMS-28-GW86-12
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0233.D

Sample Date: 03-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		108.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-15
Client ID: OMS-28-GW86-16
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0234.D

Sample Date: 03-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	J	0.034	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		109.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-16
Client ID: OMS-28-GW86-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0235.D

Sample Date: 03-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		119.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-17
Client ID: OMS-28-GW88-12
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0236.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		117.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-18
Client ID: OMS-28-GW88-17
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0237.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		117.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-19
Client ID: OMS-28-GW88-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0262.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		122.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-20
Client ID: OMS-28-GW84-12
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0255.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		124.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-21
Client ID: OMS-28-GW84-12-A
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0256.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		123.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-22
Client ID: OMS-28-GW84-17
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0257.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		121.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-23
Client ID: OMS-28-GW84-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0263.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		125.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-24
Client ID: OMS-28-GW90-33
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0258.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		121.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-25
Client ID: OMS-28-GW83-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0261.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		126.	%					

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SIM VOLATILES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** ARNG OMS 28 **Matrix:** AQ
Lab Code: KAS **SDG:** SL0952

Client Sample ID	Lab Sample ID	Col. ID	DBF #
OMS-28-GW80-17	SL0952-1		105.
OMS-28-GW83-12	SL0952-10		111.
OMS-28-GW83-16	SL0952-11		110.
OMS-28-GW83-16-A	SL0952-12		108.
OMS-28-GW87-31	SL0952-13		120.
OMS-28-GW86-12	SL0952-14		108.
OMS-28-GW86-16	SL0952-15		109.
OMS-28-GW86-31	SL0952-16		119.
OMS-28-GW88-12	SL0952-17		117.
OMS-28-GW88-17	SL0952-18		117.
OMS-28-GW88-31	SL0952-19		122.
OMS-28-GW80-17-C	SL0952-2		113.
OMS-28-GW84-12	SL0952-20		124.
OMS-28-GW84-12-A	SL0952-21		123.
OMS-28-GW84-17	SL0952-22		121.
OMS-28-GW84-31	SL0952-23		125.
OMS-28-GW90-33	SL0952-24		121.
OMS-28-GW83-31	SL0952-25		126.
OMS-28-GW77-27	SL0952-3		118.
OMS-28-GW80-27	SL0952-4		120.
OMS-28-GW85-13	SL0952-5		112.
OMS-28-GW82-19	SL0952-6		104.
OMS-28-GW85-19	SL0952-7		101.
OMS-28-GW85-31	SL0952-8		114.
OMS-28-GW82-31	SL0952-9		116.
Laboratory Control S	WG222933-1		73.5
Method Blank Sample	WG222933-2		111.
Laboratory Control S	WG222992-1		90.4
Method Blank Sample	WG222992-2		113.
Matrix Spike	WG222992-6		118.
Matrix Spike Duplica	WG222992-7		119.
Laboratory Control S	WG223053-1		101.
Method Blank Sample	WG223053-2		120.
Matrix Spike	WG223053-6		124.
Matrix Spike Duplica	WG223053-7		125.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** ARNG OMS 28 **Matrix:** AQ
Lab Code: KAS **SDG:** SL0952

		QC Limits
DBF	DIBROMOFLUOROMETHANE	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : D0208.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL0952
Lab Sample ID : WG222933-2
Date Analyzed : 06-FEB-18
Time Analyzed : 11:57

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG222933-1	D0206.D	02/06/18	10:40
OMS-28-GW80-17	SL0952-1	D0212.D	02/06/18	14:29
OMS-28-GW80-17-C	SL0952-2	D0213.D	02/06/18	15:07
OMS-28-GW85-13	SL0952-5	D0214.D	02/06/18	15:45
OMS-28-GW82-19	SL0952-6	D0215.D	02/06/18	16:23
OMS-28-GW85-19	SL0952-7	D0216.D	02/06/18	17:01
OMS-28-GW85-31	SL0952-8	D0217.D	02/06/18	17:38
OMS-28-GW82-31	SL0952-9	D0218.D	02/06/18	18:16
OMS-28-GW83-12	SL0952-10	D0220.D	02/06/18	19:32

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : D0230.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL0952
Lab Sample ID : WG222992-2
Date Analyzed : 07-FEB-18
Time Analyzed : 10:41

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG222992-1	D0228.D	02/07/18	09:16
OMS-28-GW83-16	SL0952-11	D0231.D	02/07/18	11:19
OMS-28-GW83-16-A	SL0952-12	D0232.D	02/07/18	11:57
OMS-28-GW86-12	SL0952-14	D0233.D	02/07/18	12:35
OMS-28-GW86-16	SL0952-15	D0234.D	02/07/18	13:13
OMS-28-GW86-31	SL0952-16	D0235.D	02/07/18	13:51
OMS-28-GW88-12	SL0952-17	D0236.D	02/07/18	14:29
OMS-28-GW88-17	SL0952-18	D0237.D	02/07/18	15:07
OMS-28-GW80-27	SL0952-4	D0238.D	02/07/18	15:45
OMS-28-GW87-31	SL0952-13	D0239.D	02/07/18	16:23
OMS-28-GW77-27	SL0952-3	D0240.D	02/07/18	17:00
Matrix Spike	WG222992-6	D0241.D	02/07/18	17:38
Matrix Spike Duplica	WG222992-7	D0242.D	02/07/18	18:16

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : D0253.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL0952
Lab Sample ID : WG223053-2
Date Analyzed : 08-FEB-18
Time Analyzed : 12:23

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG223053-1	D0251.D	02/08/18	10:58
OMS-28-GW84-12	SL0952-20	D0255.D	02/08/18	13:39
OMS-28-GW84-12-A	SL0952-21	D0256.D	02/08/18	14:17
OMS-28-GW84-17	SL0952-22	D0257.D	02/08/18	14:55
OMS-28-GW90-33	SL0952-24	D0258.D	02/08/18	15:33
OMS-28-GW83-31	SL0952-25	D0261.D	02/08/18	17:27
OMS-28-GW88-31	SL0952-19	D0262.D	02/08/18	18:05
OMS-28-GW84-31	SL0952-23	D0263.D	02/08/18	18:43
Matrix Spike	WG223053-6	D0264.D	02/08/18	19:21
Matrix Spike Duplica	WG223053-7	D0265.D	02/08/18	19:59

Report of Analytical Results

Client:
Lab ID: WG222933-2
Client ID: Method Blank Sample
Project:
SDG: SL0952
Lab File ID: D0208.D

Sample Date:
Received Date:
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		111.	%					

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Report of Analytical Results

Client:
Lab ID: WG222992-2
Client ID: Method Blank Sample
Project:
SDG: SL0952
Lab File ID: D0230.D

Sample Date:
Received Date:
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client:
Lab ID: WG223053-2
Client ID: Method Blank Sample
Project:
SDG: SL0952
Lab File ID: D0253.D

Sample Date:
Received Date:
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		120.	%					

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LCS Recovery Report

Client:
Lab ID: WG222933-1
Client ID: LCS
Project:
SDG: SL0952
LCS File ID: D0206.D

Sample Date:
Received Date:
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Vinyl Chloride	72.0	0.500	0.360	ug/L	70-130
Dibromofluoromethane	73.5				70-130

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LCS Recovery Report

Client:
Lab ID: WG222992-1
Client ID: LCS
Project:
SDG: SL0952
LCS File ID: D0228.D

Sample Date:
Received Date:
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Vinyl Chloride	70.0	0.500	0.350	ug/L	70-130
Dibromofluoromethane	90.4				70-130

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LCS Recovery Report

Client:
Lab ID: WG223053-1
Client ID: LCS
Project:
SDG: SL0952
LCS File ID: D0251.D

Sample Date:
Received Date:
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Vinyl Chloride	82.0	0.500	0.410	ug/L	70-130
Dibromofluoromethane	101.				70-130

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MS/MSD Recovery Report

MS ID: WG222992-6
MSD ID: WG222992-7
Sample ID: SL0952-3
Client ID: OMS-28-GW77-27
Project:
SDG: SL0952
MS File ID: D0241.D

Received Date:
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992
Report Date: 09-FEB-18
MSD File ID: D0242.d

Analysis Date: 07-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Vinyl Chloride	0.500	0.500	ug/L	U0.050	0.500	0.490	100.	98.0	2	20	70-130
Dibromofluoromethane							118.	119.			70-130

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MS/MSD Recovery Report

MS ID: WG223053-6
MSD ID: WG223053-7
Sample ID: SL0952-23
Client ID: OMS-28-GW84-31
Project:
SDG: SL0952
MS File ID: D0264.D

Received Date:
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053
Report Date: 09-FEB-18
MSD File ID: D0265.d

Analysis Date: 08-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Vinyl Chloride	0.500	0.500	ug/L	U0.050	0.550	0.570	110.	114.	4	20	70-130
Dibromofluoromethane							124.	125.			70-130

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : DB091A.D
Instrument ID : GCMS-D

SDG : SL0952
Date Analyzed : 31-JAN-18
Time Analyzed : 08:14
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.4		
75	30.0 - 60.0% of mass 95	50.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.5		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	88.7		
175	5.0 - 9.0% of mass 174	7.1	8.05	1
176	95.0 - 101.0% of mass 174	85.2	95.98	1
177	5.0 - 9.0% of mass 176	5.5	6.47	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG222666-5	D0137.D	01/31/18	08:44
Initial Calibration	WG222666-4	D0138.D	01/31/18	09:44
Initial Calibration	WG222666-3	D0139.D	01/31/18	10:22
Initial Calibration	WG222666-2	D0140.D	01/31/18	11:00
Initial Calibration	WG222666-1	D0141.D	01/31/18	11:38
Initial Calibration	WG222666-8	D0142.D	01/31/18	12:16
Initial Calibration	WG222666-7	D0143.D	01/31/18	12:54
Initial Calibration	WG222666-6	D0144.D	01/31/18	13:32
Independent Source	WG222666-9	D0146.D	01/31/18	15:04

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : DB095.D
Instrument ID : GCMS-D

SDG : SL0952
Date Analyzed : 06-FEB-18
Time Analyzed : 08:42
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	15.4		
75	30.0 - 60.0% of mass 95	44.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.8		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	83.0		
175	5.0 - 9.0% of mass 174	6.7	8.03	1
176	95.0 - 101.0% of mass 174	80.4	96.82	1
177	5.0 - 9.0% of mass 176	5.3	6.64	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG222933-4	D0205.D	02/06/18	09:46
Laboratory Control S	WG222933-1	D0206.D	02/06/18	10:40
Method Blank Sample	WG222933-2	D0208.D	02/06/18	11:57
OMS-28-GW80-17	SL0952-1	D0212.D	02/06/18	14:29
OMS-28-GW80-17-C	SL0952-2	D0213.D	02/06/18	15:07
OMS-28-GW85-13	SL0952-5	D0214.D	02/06/18	15:45
OMS-28-GW82-19	SL0952-6	D0215.D	02/06/18	16:23
OMS-28-GW85-19	SL0952-7	D0216.D	02/06/18	17:01
OMS-28-GW85-31	SL0952-8	D0217.D	02/06/18	17:38
OMS-28-GW82-31	SL0952-9	D0218.D	02/06/18	18:16
OMS-28-GW83-12	SL0952-10	D0220.D	02/06/18	19:32
Continuing Calibrati	WG222933-5	D0221.D	02/06/18	20:10

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : DB096A.D
Instrument ID : GCMS-D

SDG : SL0952
Date Analyzed : 07-FEB-18
Time Analyzed : 07:38
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	17.9		
75	30.0 - 60.0% of mass 95	45.2		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.3		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	88.7		
175	5.0 - 9.0% of mass 174	5.8	6.57	1
176	95.0 - 101.0% of mass 174	85.4	96.29	1
177	5.0 - 9.0% of mass 176	4.9	5.78	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG222992-4	D0227.D	02/07/18	08:05
Laboratory Control S	WG222992-1	D0228.D	02/07/18	09:16
Method Blank Sample	WG222992-2	D0230.D	02/07/18	10:41
OMS-28-GW83-16	SL0952-11	D0231.D	02/07/18	11:19
OMS-28-GW83-16-A	SL0952-12	D0232.D	02/07/18	11:57
OMS-28-GW86-12	SL0952-14	D0233.D	02/07/18	12:35
OMS-28-GW86-16	SL0952-15	D0234.D	02/07/18	13:13
OMS-28-GW86-31	SL0952-16	D0235.D	02/07/18	13:51
OMS-28-GW88-12	SL0952-17	D0236.D	02/07/18	14:29
OMS-28-GW88-17	SL0952-18	D0237.D	02/07/18	15:07
OMS-28-GW80-27	SL0952-4	D0238.D	02/07/18	15:45
OMS-28-GW87-31	SL0952-13	D0239.D	02/07/18	16:23
OMS-28-GW77-27	SL0952-3	D0240.D	02/07/18	17:00
Matrix Spike	WG222992-6	D0241.D	02/07/18	17:38
Matrix Spike Duplica	WG222992-7	D0242.D	02/07/18	18:16
Continuing Calibrati	WG222992-5	D0243.D	02/07/18	18:54

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : DB097.D
Instrument ID : GCMS-D

SDG : SL0952
Date Analyzed : 08-FEB-18
Time Analyzed : 08:59
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.0		
75	30.0 - 60.0% of mass 95	46.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.0		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	80.9		
175	5.0 - 9.0% of mass 174	5.3	6.52	1
176	95.0 - 101.0% of mass 174	80.0	98.89	1
177	5.0 - 9.0% of mass 176	5.5	6.85	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG223053-4	D0249.D	02/08/18	09:25
Laboratory Control S	WG223053-1	D0251.D	02/08/18	10:58
Method Blank Sample	WG223053-2	D0253.D	02/08/18	12:23
OMS-28-GW84-12	SL0952-20	D0255.D	02/08/18	13:39
OMS-28-GW84-12-A	SL0952-21	D0256.D	02/08/18	14:17
OMS-28-GW84-17	SL0952-22	D0257.D	02/08/18	14:55
OMS-28-GW90-33	SL0952-24	D0258.D	02/08/18	15:33
OMS-28-GW83-31	SL0952-25	D0261.D	02/08/18	17:27
OMS-28-GW88-31	SL0952-19	D0262.D	02/08/18	18:05
OMS-28-GW84-31	SL0952-23	D0263.D	02/08/18	18:43
Matrix Spike	WG223053-6	D0264.D	02/08/18	19:21
Matrix Spike Duplica	WG223053-7	D0265.D	02/08/18	19:59
Continuing Calibrati	WG223053-5	D0266.D	02/08/18	20:37

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG222666-5
Lab File ID : D0137.d

SDG: SL0952
Analytical Date: 01/31/18 08:44
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			
		Area	#	RT	#
	Std .	35190		7.87	
	Upper Limit	70380		8.37	
	Lower Limit	17595		7.37	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG222933-4	31798		7.86	
Laboratory Control S	WG222933-1	44245		7.86	
Method Blank Sample	WG222933-2	27847		7.86	
OMS-28-GW80-17	SL0952-1	28692		7.86	
OMS-28-GW80-17-C	SL0952-2	26253		7.86	
OMS-28-GW85-13	SL0952-5	26064		7.86	
OMS-28-GW82-19	SL0952-6	29309		7.86	
OMS-28-GW85-19	SL0952-7	29897		7.87	
OMS-28-GW85-31	SL0952-8	26076		7.87	
OMS-28-GW82-31	SL0952-9	25509		7.87	
OMS-28-GW83-12	SL0952-10	27090		7.86	
Continuing Calibrati	WG222933-5	28276		7.86	
Continuing Calibrati	WG222992-4	30761		7.87	
Laboratory Control S	WG222992-1	33272		7.87	
Method Blank Sample	WG222992-2	25948		7.87	
OMS-28-GW83-16	SL0952-11	26566		7.87	
OMS-28-GW83-16-A	SL0952-12	26613		7.87	
OMS-28-GW86-12	SL0952-14	27490		7.86	
OMS-28-GW86-16	SL0952-15	26690		7.87	
OMS-28-GW86-31	SL0952-16	24109		7.87	
OMS-28-GW88-12	SL0952-17	23965		7.87	
OMS-28-GW88-17	SL0952-18	24622		7.87	
OMS-28-GW80-27	SL0952-4	23849		7.87	
OMS-28-GW87-31	SL0952-13	23584		7.87	
OMS-28-GW77-27	SL0952-3	23564		7.87	
Matrix Spike	WG222992-6	23585		7.87	
Matrix Spike Duplica	WG222992-7	23542		7.87	
Continuing Calibrati	WG222992-5	24868		7.87	

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG222666-5
Lab File ID : D0137.d

SDG: SL0952
Analytical Date: 01/31/18 08:44
Instrument ID: GCMS-D

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG222666-5
Lab File ID : D0137.d

SDG: SL0952
Analytical Date: 01/31/18 08:44
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			
		Area	#	RT	#
	Std .	35190		7.87	
	Upper Limit	70380		8.37	
	Lower Limit	17595		7.37	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG223053-4	27114		7.86	
Laboratory Control S	WG223053-1	29453		7.86	
Method Blank Sample	WG223053-2	23962		7.86	
OMS-28-GW84-12	SL0952-20	22528		7.86	
OMS-28-GW84-12-A	SL0952-21	22809		7.86	
OMS-28-GW84-17	SL0952-22	23273		7.86	
OMS-28-GW90-33	SL0952-24	22820		7.86	
OMS-28-GW83-31	SL0952-25	21746		7.86	
OMS-28-GW88-31	SL0952-19	22204		7.86	
OMS-28-GW84-31	SL0952-23	21616		7.87	
Matrix Spike	WG223053-6	21577		7.86	
Matrix Spike Duplica	WG223053-7	21539		7.87	
Continuing Calibrati	WG223053-5	22670		7.86	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-1
Client ID: OMS-28-GW80-17
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0212.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		105.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-2
Client ID: OMS-28-GW80-17-C
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0213.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		113.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-3
Client ID: OMS-28-GW77-27
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0240.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		118.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-4
Client ID: OMS-28-GW80-27
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0238.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		120.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-5
Client ID: OMS-28-GW85-13
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0214.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		112.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-6
Client ID: OMS-28-GW82-19
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0215.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-7
Client ID: OMS-28-GW85-19
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0216.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	J	0.028	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-8
Client ID: OMS-28-GW85-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0217.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		114.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-9
Client ID: OMS-28-GW82-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0218.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		116.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0952-10
Client ID: OMS-28-GW83-12
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0220.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 06-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222933

Analysis Date: 06-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		111.	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-11
Client ID: OMS-28-GW83-16
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0231.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		110.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-12
Client ID: OMS-28-GW83-16-A
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0232.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		108.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-13
Client ID: OMS-28-GW87-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0239.D

Sample Date: 03-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		120.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-14
Client ID: OMS-28-GW86-12
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0233.D

Sample Date: 03-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		108.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-15
Client ID: OMS-28-GW86-16
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0234.D

Sample Date: 03-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	J	0.034	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		109.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-16
Client ID: OMS-28-GW86-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0235.D

Sample Date: 03-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		119.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-17
Client ID: OMS-28-GW88-12
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0236.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		117.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-18
Client ID: OMS-28-GW88-17
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0237.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 07-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG222992

Analysis Date: 07-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		117.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0952-19
Client ID: OMS-28-GW88-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0262.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		122.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0952-20
Client ID: OMS-28-GW84-12
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0255.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		124.	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: GCAL
Lab ID: SL0952-21
Client ID: OMS-28-GW84-12-A
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0256.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		123.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0952-22
Client ID: OMS-28-GW84-17
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0257.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		121.	%					

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Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0952-23
Client ID: OMS-28-GW84-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0263.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		125.	%					

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Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0952-24
Client ID: OMS-28-GW90-33
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0258.D

Sample Date: 05-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		121.	%					

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Cert No E87604

Report of Analytical Results

Client: GCAL
Lab ID: SL0952-25
Client ID: OMS-28-GW83-31
Project: ARNG OMS 28
SDG: SL0952
Lab File ID: D0261.D

Sample Date: 02-FEB-18
Received Date: 06-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 09-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		126.	%					

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Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL0952
Project : ARNG OMS 28
Instrument ID: GCMS-D
Lab File IDs : D0141.d D0140.d D0139.d D0138.d D0137.d D0144.d D0143.d D0142.d
Calibration Date(s): 31-JAN-18 08:44 31-JAN-18 13:32

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Crv				Max	
	0.0500000	0.0750000	0.1000000	0.3000000	0.5000000	0.7500000	1.0000	2.0000	New	b	m1	%RSD	%RSD	
Vinyl chloride	2.35153	2.23374	2.42195	2.20479	2.02643	2.06244	2.07490	1.89827	AVG		2.15926	8.13235	15.00000	O
Dibromofluoromethane	1.28770	1.24802	1.16220	1.09734	1.00412	1.14114	1.08099	1.04896	AVG		1.13381	8.54631	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Data File: \\target_server\gg\chem\gcms-d.i\D013118.b\D0146.d
Report Date: 09-Feb-2018 14:36

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG222666-9
Level: LOW Operator: JSS/HG
Data Type: MS DATA SampleType: LCS
SpikeList File: SIMLCSvcldce.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D013118.b\D8SIMVCLDCE01.m
Misc Info: WG222666,WG222666-5

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
2 Vinyl chloride	0.50	0.53	105.96	70-130
6 1,1-Dichloroethene	0.50	0.53	106.58	70-130

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 16 Dibromofluorometha	1.0	0.90	89.78	70-130

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG222933-4
Lab File ID : D0205.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0952
Analytical Date: 02/06/18 09:46
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	2.53985	0.010	17.62587	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.14602	0.010	1.07659	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG222933-5
Lab File ID : D0221.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0952
Analytical Date: 02/06/18 20:10
Instrument ID: GCMS-D
Column ID:

	Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.64974	0.010	-23.59696	50.00000	Averaged
16	Dibromofluoromethane	1.13381	1.21711	0.010	7.34699	50.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG222992-4
Lab File ID : D0227.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0952
Analytical Date: 02/07/18 08:05
Instrument ID: GCMS-D
Column ID:

	Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.83076	0.010	-15.21346	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.10312	0.010	-2.70693	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG222992-5
Lab File ID : D0243.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0952
Analytical Date: 02/07/18 18:54
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.92577	0.010	-10.81341	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.27175	0.010	12.16658	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG223053-4
Lab File ID : D0249.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0952
Analytical Date: 02/08/18 09:25
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.93553	0.010	-10.36124	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.17721	0.010	3.82831	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG223053-5
Lab File ID : D0266.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0952
Analytical Date: 02/08/18 20:37
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.75439	0.010	-18.75035	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.33736	0.010	17.95303	20.00000	Averaged

*** = Compound out of QC criteria**

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 01318

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	KI Paper Lot # PH	TRC	COMMENTS
WG222666 - 12	DB091	1	-1	VOABFBAR1							Y	JH			
- 5	D0137	1	1	DBSIMVELIXF01							Y				
- 4	38	1	2								Y				
- 3	39	1	3								Y				
- 2	40	1	4								Y				
- 1	41	1	5								Y				
- 8	42	1	6								Y				
- 7	43	1	7								Y				
- 6	44	1	8								Y				
LCS/MD -	45	1	9								N				
LCS/MD - 9/10	46	1	10								Y				
VBLK	47	1	11								N				
WG222666 - 11	48	1	12												
SL0744 -1 A	49	1	13		x			x							
-2 A	50	1	14												Archon Faulted Did not run
-3 A	51	1	15												
SL0772 -2 A	52	1	16												
CCV	53	1	17												
CCV	54	1	18												
CCV	55	1	19												
Rinse	56	1	1												

STANDARD	CODE
BFB	V0964
CAL. STD.	V0979
LCS/MS MIX	V0980
EXTRAS MIX	—

STANDARD	CODE
IS MIX	V0978
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
(SW846 8260 SIM)	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 2-6-18 5:42

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	KI Paper Lot # TRC	COMMENTS
W222933 -3	D0095	1	—	8260D	✓						Y	SO			
Rinse	D0204		1	8260SIMVOA01							N				
Blank -4	05		2								Y				
LCS -1	04		3								Y				
YBLANK	07		4								Y				
↓ B -2	08		5								Y				
SL0867-14A	09		6								Y				
↓ -15A	10		7					5.0			Y				
-16A	11		8								Y				
SL0952-1A	12		9								Y				
↓ -2A	13		10								Y				
-5A	14		11								Y				
-6A	15		12								Y				
-7A	16		13								Y				
↓ -8A	17		14								Y				
-9A	18		15								Y				
SL0867-13A	19		16								Y				
SL0952-10A	20		17								Y				
CCV1	21		18								Y				
2	22		19								Y				20:1 dil ✓
3	23		20								N				not needed
Rinse	24		21								N				
↓	25		22								N	✓			

STANDARD	CODE
BFB	
CAL. STD.	V0979
LCS/MS MIX	V0981 V0982
EXTRAS MIX	

STANDARD	CODE
IS MIX	V0985
SS MIX	↓

TO 2-7-18

Circle Methods:

SW846 8260

SW846 8260 SIM

SW846 8260 SIM (heated purge)

OLM 04.2

OLC 03.2

EPA 624

EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 2-7-18 7:38

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	KI Paper Lot # TRC	COMMENTS
WG222992-3	D80926	1	—	KADFBAQ	✓						Y		—	NA	
↓ -4	D80927	↓	.	D8SIMKUAE1	↓						Y	↓	↓	↓	
-1	28		2	↓							Y				
YBlankA	29		3								N				
↓ B -2	30		4								Y				
SL0952-11A	31		5						5.0		Y		↓		
-12A	32		6						↓		Y		12		
-14A	33		7								Y		↓		
-15A	34		8								Y				
-16A	35		9								Y				
-17A	36		10								Y				
-18A	37		11								Y				
-4A+B	38		12								Y				Decanted + Combined Sediment in Vial
-13A	39		13								Y				
-3A	40		14								Y				
-3MSB -6	41		15								Y				
↓ -3MSDC -7	42		16						↓		Y		↓		
CCV1 -5	43		17								Y		7		18:54
↓ 2	44		18								N				
↓ 3	45		19								N				
Rinse	46		20								U				
↓	47	↓	21	↓	↓						N	↓	L	↓	
Rinse	48	↓	1	↓	↓						N	↓		↓	
															020818

STANDARD	CODE
BFB	VQ5604
CAL. STD.	VQ579
LCS/MS MIX	VQ581 / VQ583
EXTRAS MIX	

STANDARD	CODE
IS MIX	VQ585
SS MIX	↓

Circle Methods:

~~SW846 8260~~	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 2-8-18 7:59

					PREP METHOD			Criteria			pH Paper Lot #:			KI Paper Lot #	
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG223053 -3	D02097	1	-	VOABCBAG	✓						Y	[illegible]	7	NA	
VSTD -4	D02109		1	DBSIMVCLOLE01							Y				
LCS	50		2								N				
LCS -1	51		3								Y				
VBLKA	52		4								N				
B	53		5								Y		L		
SL0996-2A	54		6						5.0		Y		12		
SL0952-20A	55		7								Y				
-21A	56		8								Y				
-22A	57		9								Y				
-24A	58		10								Y				
SL0996-1A	59		11								Y				
-3A	60		12								Y				
SL0952-25 -4A 2.9.18	61		13								Y				
SL0952-19A	62		14								Y				
SL0952-23A	63		15								Y				
23MS B -6	64		16								Y				
23MSD C -7	65		17						↓		Y		↓		
CCV -5	66		19								L				10:37 ✓
2	67		19								L				Conc. Fault did not run
3	69		20								L				
Rinse	69		21								L				
↓	70	↓	22	↓	↓						A	↓	↓	↓	
															020917

STANDARD	CODE
BFB	V0464
CAL. STD.	V0479
LCS/MS MIX	V0481/V0482B
~~EXTRAS~~ MIX MS10 MIX	V0487

STANDARD	CODE
IS MIX	V0485
SS MIX	

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

Appendix B19
GCAL Report 218020615 dated February 19, 2018

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/19/2018

GCAL Report 218020615

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218020615

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218020615

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES MASS SPECTROMETRY

In the EPA 8260B analysis, sample 21802061509 (OMS-28-GW85-19) had to be diluted to bracket the concentration of target analytes within the calibration range of the instrument. The dilution is reflected in elevated detection limits.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802061501	OMS-28-GW80-17	Water	02/02/2018 08:45	02/06/2018 09:20
21802061502	OMS-28-GW80-17-C	Water	02/02/2018 00:01	02/06/2018 09:20
21802061503	OMS-28-GW77-27	Water	02/02/2018 09:20	02/06/2018 09:20
21802061504	OMS-28-GW77-27-MS	Water	02/02/2018 09:20	02/06/2018 09:20
21802061505	OMS-28-GW77-27-MSD	Water	02/02/2018 09:20	02/06/2018 09:20
21802061506	OMS-28-GW80-27	Water	02/02/2018 09:45	02/06/2018 09:20
21802061507	OMS-28-GW85-13	Water	02/02/2018 12:15	02/06/2018 09:20
21802061508	OMS-28-GW82-19	Water	02/02/2018 13:30	02/06/2018 09:20
21802061509	OMS-28-GW85-19	Water	02/02/2018 12:55	02/06/2018 09:20
21802061510	OMS-28-GW85-31	Water	02/02/2018 13:25	02/06/2018 09:20
21802061511	OMS-28-GW82-31	Water	02/02/2018 15:00	02/06/2018 09:20
21802061512	OMS-28-GW83-12	Water	02/02/2018 15:35	02/06/2018 09:20
21802061513	OMS-28-GW83-16	Water	02/02/2018 16:00	02/06/2018 09:20
21802061514	OMS-28-GW83-16-A	Water	02/02/2018 16:00	02/06/2018 09:20
21802061515	OMS-28-GW87-31	Water	02/03/2018 09:25	02/06/2018 09:20
21802061516	OMS-28-GW86-12	Water	02/03/2018 10:20	02/06/2018 09:20
21802061517	OMS-28-GW86-16	Water	02/03/2018 10:35	02/06/2018 09:20
21802061518	OMS-28-GW86-31	Water	02/03/2018 11:15	02/06/2018 09:20
21802061519	OMS-28-GW88-12	Water	02/05/2018 09:25	02/06/2018 09:20
21802061520	OMS-28-GW88-17	Water	02/05/2018 10:15	02/06/2018 09:20
21802061521	OMS-28-GW88-31	Water	02/05/2018 11:00	02/06/2018 09:20
21802061522	OMS-28-GW84-12	Water	02/05/2018 11:25	02/06/2018 09:20
21802061523	OMS-28-GW84-12-A	Water	02/05/2018 11:25	02/06/2018 09:20
21802061524	OMS-28-GW84-17	Water	02/05/2018 12:30	02/06/2018 09:20
21802061525	OMS-28-GW84-31	Water	02/05/2018 13:00	02/06/2018 09:20
21802061526	OMS-28-GW84-31-MS	Water	02/05/2018 13:00	02/06/2018 09:20
21802061527	OMS-28-GW84-31-MSD	Water	02/05/2018 13:00	02/06/2018 09:20
21802061528	OMS-28-GW90-33	Water	02/05/2018 14:00	02/06/2018 09:20
21802061529	OMS-28-GW83-31	Water	02/02/2018 16:25	02/06/2018 09:20

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802061501	OMS-28-GW80-17	W	EPA 8260B DOD Water
21802061502	OMS-28-GW80-17-C	W	EPA 8260B DOD Water
21802061503	OMS-28-GW77-27	W	EPA 8260B DOD Water
21802061504	OMS-28-GW77-27-MS	W	EPA 8260B DOD Water
21802061505	OMS-28-GW77-27-MSD	W	EPA 8260B DOD Water
21802061506	OMS-28-GW80-27	W	EPA 8260B DOD Water
21802061507	OMS-28-GW85-13	W	EPA 8260B DOD Water
21802061508	OMS-28-GW82-19	W	EPA 8260B DOD Water
21802061509	OMS-28-GW85-19	W	EPA 8260B DOD Water
21802061510	OMS-28-GW85-31	W	EPA 8260B DOD Water
21802061511	OMS-28-GW82-31	W	EPA 8260B DOD Water
21802061512	OMS-28-GW83-12	W	EPA 8260B DOD Water
21802061513	OMS-28-GW83-16	W	EPA 8260B DOD Water
21802061514	OMS-28-GW83-16-A	W	EPA 8260B DOD Water
21802061515	OMS-28-GW87-31	W	EPA 8260B DOD Water
21802061516	OMS-28-GW86-12	W	EPA 8260B DOD Water
21802061517	OMS-28-GW86-16	W	EPA 8260B DOD Water
21802061518	OMS-28-GW86-31	W	EPA 8260B DOD Water
21802061519	OMS-28-GW88-12	W	EPA 8260B DOD Water
21802061520	OMS-28-GW88-17	W	EPA 8260B DOD Water
21802061521	OMS-28-GW88-31	W	EPA 8260B DOD Water
21802061522	OMS-28-GW84-12	W	EPA 8260B DOD Water
21802061523	OMS-28-GW84-12-A	W	EPA 8260B DOD Water
21802061524	OMS-28-GW84-17	W	EPA 8260B DOD Water
21802061525	OMS-28-GW84-31	W	EPA 8260B DOD Water
21802061526	OMS-28-GW84-31-MS	W	EPA 8260B DOD Water
21802061527	OMS-28-GW84-31-MSD	W	EPA 8260B DOD Water
21802061528	OMS-28-GW90-33	W	EPA 8260B DOD Water
21802061529	OMS-28-GW83-31	W	EPA 8260B DOD Water

Manual Integrations

GCAL ID	Client ID	Procedure	CAS	Analyte
21802061529	OMS-28-GW83-31	EPA 8260B	79-01-6	Trichloroethene

Summary of Compounds Detected

OMS-28-GW85-13				
	Collect Date	02/02/2018 12:15	GCAL ID	21802061507
	Receive Date	02/06/2018 09:20	Matrix	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	0.521J	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	17.1	0.200	0.500	1.00	ug/L

OMS-28-GW85-19				
	Collect Date	02/02/2018 12:55	GCAL ID	21802061509
	Receive Date	02/06/2018 09:20	Matrix	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	7.56	0.400	1.00	2.00	ug/L
79-01-6	Trichloroethene	291	0.400	1.00	2.00	ug/L

OMS-28-GW83-12				
	Collect Date	02/02/2018 15:35	GCAL ID	21802061512
	Receive Date	02/06/2018 09:20	Matrix	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	3.59	0.200	0.500	1.00	ug/L

OMS-28-GW83-16				
	Collect Date	02/02/2018 16:00	GCAL ID	21802061513
	Receive Date	02/06/2018 09:20	Matrix	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	1.28	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	51.3	0.200	0.500	1.00	ug/L

Summary of Compounds Detected

OMS-28-GW83-16-A

Collect Date	02/02/2018 16:00	**GCAL ID**	21802061514
Receive Date	02/06/2018 09:20	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	1.33	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	51.8	0.200	0.500	1.00	ug/L

OMS-28-GW86-12

Collect Date	02/03/2018 10:20	**GCAL ID**	21802061516
Receive Date	02/06/2018 09:20	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	2.90	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	42.4	0.200	0.500	1.00	ug/L

OMS-28-GW86-16

Collect Date	02/03/2018 10:35	**GCAL ID**	21802061517
Receive Date	02/06/2018 09:20	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
156-59-2	cis-1,2-Dichloroethene	4.34	0.200	0.500	1.00	ug/L
79-01-6	Trichloroethene	131	0.200	0.500	1.00	ug/L

OMS-28-GW88-31

Collect Date	02/05/2018 11:00	**GCAL ID**	21802061521
Receive Date	02/06/2018 09:20	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	0.894J	0.200	0.500	1.00	ug/L

Summary of Compounds Detected

OMS-28-GW90-33	**Collect Date**	02/05/2018 14:00	**GCAL ID**	21802061528
	Receive Date	02/06/2018 09:20	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	1.28	0.200	0.500	1.00	ug/L

OMS-28-GW83-31	**Collect Date**	02/02/2018 16:25	**GCAL ID**	21802061529
	Receive Date	02/06/2018 09:20	**Matrix**	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	0.644J	0.200	0.500	1.00	ug/L

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW80-17
Collect Date:	02/02/18	Time:	0845	GCAL Sample ID:	21802061501
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4661
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	0945	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW80-17-C
Collect Date:	02/02/18	Time:	0001	GCAL Sample ID:	21802061502
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4662
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1007	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW77-27
Collect Date:	02/02/18	Time:	0920	GCAL Sample ID:	21802061503
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4663
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1030	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW77-27-MS
Collect Date:	02/02/18	Time:	0920	GCAL Sample ID:	21802061504
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4677
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1544	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	46.6		0.200	0.500	1.00
127-18-4	Tetrachloroethene	52.0		0.200	0.500	1.00
79-01-6	Trichloroethene	52.1		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW77-27-MSD
Collect Date:	02/02/18	Time:	0920	GCAL Sample ID:	21802061505
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4678
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1606	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	47.6		0.200	0.500	1.00
127-18-4	Tetrachloroethene	51.2		0.200	0.500	1.00
79-01-6	Trichloroethene	49.7		0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW80-27
Collect Date:	02/02/18	Time:	0945	GCAL Sample ID:	21802061506
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4664
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1052	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW85-13
Collect Date:	02/02/18	Time:	1215	GCAL Sample ID:	21802061507
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4665
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1114	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.521	J	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	17.1		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW82-19
Collect Date:	02/02/18	Time:	1330	GCAL Sample ID:	21802061508
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4666
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1136	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW85-19
Collect Date:	02/02/18	Time:	1255	GCAL Sample ID:	21802061509
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4667
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	2	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1201	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	7.56		0.400	1.00	2.00
127-18-4	Tetrachloroethene	1.00	U	0.400	1.00	2.00
79-01-6	Trichloroethene	291		0.400	1.00	2.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW85-31
Collect Date:	02/02/18	Time:	1325	GCAL Sample ID:	21802061510
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4668
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1224	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW82-31
Collect Date:	02/02/18	Time:	1500	GCAL Sample ID:	21802061511
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4669
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1246	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW83-12
Collect Date:	02/02/18	Time:	1535	GCAL Sample ID:	21802061512
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4670
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1308	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	3.59		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW83-16
Collect Date:	02/02/18	Time:	1600	GCAL Sample ID:	21802061513
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4671
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1331	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	1.28		0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	51.3		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW83-16-A
Collect Date:	02/02/18	Time:	1600	GCAL Sample ID:	21802061514
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4672
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1353	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	1.33		0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	51.8		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW87-31
Collect Date:	02/03/18	Time:	0925	GCAL Sample ID:	21802061515
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4673
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1415	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW86-12
Collect Date:	02/03/18	Time:	1020	GCAL Sample ID:	21802061516
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4674
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1437	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	2.90		0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	42.4		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW86-16
Collect Date:	02/03/18	Time:	1035	GCAL Sample ID:	21802061517
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4675
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1500	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	4.34		0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	131		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW86-31
Collect Date:	02/03/18	Time:	1115	GCAL Sample ID:	21802061518
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4699
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1108	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615	Client Sample ID:	OMS-28-GW88-12
Collect Date:	02/05/18 Time: 0925	GCAL Sample ID:	21802061519
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180210/e4700
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 1130	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW88-17
Collect Date:	02/05/18	Time:	1015	GCAL Sample ID:	21802061520
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4701
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1152	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615	Client Sample ID:	OMS-28-GW88-31
Collect Date:	02/05/18 Time: 1100	GCAL Sample ID:	21802061521
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180210/e4702
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 1215	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.894	J	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW84-12
Collect Date:	02/05/18	Time:	1125	GCAL Sample ID:	21802061522
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4703
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1237	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW84-12-A
Collect Date:	02/05/18	Time:	1125	GCAL Sample ID:	21802061523
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4704
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1259	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW84-17
Collect Date:	02/05/18	Time:	1230	GCAL Sample ID:	21802061524
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4705
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1322	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW84-31
Collect Date:	02/05/18	Time:	1300	GCAL Sample ID:	21802061525
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4676
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1522	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW84-31-MS
Collect Date:	02/05/18	Time:	1300	GCAL Sample ID:	21802061526
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4679
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1629	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	46.5		0.200	0.500	1.00
127-18-4	Tetrachloroethene	50.5		0.200	0.500	1.00
79-01-6	Trichloroethene	49.8		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW84-31-MSD
Collect Date:	02/05/18	Time:	1300	GCAL Sample ID:	21802061527
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180209/e4680
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18	Time:	1651	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	45.6		0.200	0.500	1.00
127-18-4	Tetrachloroethene	49.5		0.200	0.500	1.00
79-01-6	Trichloroethene	48.0		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW90-33
Collect Date:	02/05/18	Time:	1400	GCAL Sample ID:	21802061528
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4706
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1344	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	1.28		0.200	0.500	1.00

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	OMS-28-GW83-31
Collect Date:	02/02/18	Time:	1625	GCAL Sample ID:	21802061529
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4707
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1406	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.644	J	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615	Client Sample ID:	MB1773198
Collect Date:	NA Time: NA	GCAL Sample ID:	1773198
Matrix:	Water % Moisture: NA	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180209/e4660
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628734
Analysis Date:	02/09/18 Time: 0923	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020615			Client Sample ID:	MB1773658
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1773658
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4698
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1046	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 218020615 Analytical Method: EPA 8260B

	Client Sample ID	GCALSample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1 .	OMS-28-GW80-17	21802061501	97		100		104		108		0
2 .	OMS-28-GW85-31	21802061510	97		100		105		108		0
3 .	OMS-28-GW82-31	21802061511	97		100		105		108		0
4 .	OMS-28-GW83-12	21802061512	96		100		107		107		0
5 .	OMS-28-GW83-16	21802061513	95		99		104		108		0
6 .	OMS-28-GW83-16-A	21802061514	98		99		106		109		0
7 .	OMS-28-GW87-31	21802061515	97		98		104		107		0
8 .	OMS-28-GW86-12	21802061516	98		100		103		107		0
9 .	OMS-28-GW86-16	21802061517	97		100		107		109		0
10 .	OMS-28-GW86-31	21802061518	98		100		106		108		0
11 .	OMS-28-GW88-12	21802061519	97		99		106		106		0
12 .	OMS-28-GW80-17-C	21802061502	97		97		105		106		0
13 .	OMS-28-GW88-17	21802061520	96		101		105		108		0
14 .	OMS-28-GW88-31	21802061521	98		100		106		107		0
15 .	OMS-28-GW84-12	21802061522	97		101		104		109		0
16 .	OMS-28-GW84-12-A	21802061523	96		100		106		107		0
17 .	OMS-28-GW84-17	21802061524	98		99		105		104		0
18 .	OMS-28-GW84-31	21802061525	98		99		106		106		0
19 .	OMS-28-GW84-31-MS	21802061526	94		105		102		97		0
20 .	OMS-28-GW84-31-MSD	21802061527	95		106		100		100		0
21 .	OMS-28-GW90-33	21802061528	97		99		105		105		0
22 .	OMS-28-GW83-31	21802061529	96		101		105		109		0
23 .	OMS-28-GW77-27	21802061503	97		98		107		104		0
24 .	MB1773198	1773198	98		100		105		108		0
25 .	LCS1773199	1773199	96		103		101		99		0
26 .	LCSD1773200	1773200	97		106		101		100		0
27 .	MB1773658	1773658	95		100		106		106		0
28 .	LCS1773659	1773659	95		106		102		99		0
29 .	LCSD1773660	1773660	94		107		100		101		0
30 .	OMS-28-GW77-27-MS	21802061504	96		104		101		98		0
31 .	OMS-28-GW77-27-MSD	21802061505	94		105		100		97		0
32 .	OMS-28-GW80-27	21802061506	98		98		106		106		0
33 .	OMS-28-GW85-13	21802061507	99		103		106		105		0
34 .	OMS-28-GW82-19	21802061508	98		100		106		107		0
35 .	OMS-28-GW85-19	21802061509	98		98		104		105		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 218020615 Parent Sample ID: OMS-28-GW77-27

Analytical Method: EPA 8260B Analytical Batch: 628734

GCAL QC ID: 21802061504

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	MS RESULT	MS % REC	#	QC LIMITS
Tetrachloroethene	ug/L	50	0	52	104		74 - 129
Trichloroethene	ug/L	50	0	52.1	104		79 - 123
cis-1,2-Dichloroethene	ug/L	50	0	46.6	93		78 - 123

GCAL QC ID: 21802061505

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
Tetrachloroethene	ug/L	50	51.2	102		2		74 - 129	0 - 20
Trichloroethene	ug/L	50	49.7	99		5		79 - 123	0 - 20
cis-1,2-Dichloroethene	ug/L	50	47.6	95		2		78 - 123	0 - 20

RPD : 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE MS/MSD RECOVERY

Report No: 218020615 Parent Sample ID: OMS-28-GW84-31

Analytical Method: EPA 8260B Analytical Batch: 628734

GCAL QC ID: 21802061526

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	MS RESULT	MS % REC	#	QC LIMITS
Tetrachloroethene	ug/L	50	0	50.5	101		74 - 129
Trichloroethene	ug/L	50	0	49.8	100		79 - 123
cis-1,2-Dichloroethene	ug/L	50	0	46.5	93		78 - 123

GCAL QC ID: 21802061527

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
Tetrachloroethene	ug/L	50	49.5	99		2		74 - 129	0 - 20
Trichloroethene	ug/L	50	48	96		4		79 - 123	0 - 20
cis-1,2-Dichloroethene	ug/L	50	45.6	91		2		78 - 123	0 - 20

RPD : 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 218020615

Analytical Method: EPA 8260B

Analytical Batch: 628818

GCAL QC ID: 1773659

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
Tetrachloroethene	ug/L	50	0	54.4	109		74 - 129
Trichloroethene	ug/L	50	0	54.1	108		79 - 123
cis-1,2-Dichloroethene	ug/L	50	0	46.2	92		78 - 123

GCAL QC ID: 1773660

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
Tetrachloroethene	ug/L	50	54.2	108		.4		74 - 129	0 - 20
Trichloroethene	ug/L	50	52.5	105		3		79 - 123	0 - 20
cis-1,2-Dichloroethene	ug/L	50	46.5	93		.6		78 - 123	0 - 20

RPD : 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 218020615

Analytical Method: EPA 8260B

Analytical Batch: 628734

GCAL QC ID: 1773199

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
Tetrachloroethene	ug/L	50	0	51.2	102		74 - 129
Trichloroethene	ug/L	50	0	52.4	105		79 - 123
cis-1,2-Dichloroethene	ug/L	50	0	45	90		78 - 123

GCAL QC ID: 1773200

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
Tetrachloroethene	ug/L	50	49.3	99		4		74 - 129	0 - 20
Trichloroethene	ug/L	50	49.7	99		5		79 - 123	0 - 20
cis-1,2-Dichloroethene	ug/L	50	45.1	90		.2		78 - 123	0 - 20

RPD : 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	218020615	Method Blank ID:	1773198
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180209/e4660
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628734
Analysis Date:	02/09/18 Time: 0923	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1773199	1773199	2180209/e4656L	02/09/18	0754
2 .	LCSD1773200	1773200	2180209/e4657	02/09/18	0816
3 .	OMS-28-GW80-17	21802061501	2180209/e4661	02/09/18	0945
4 .	OMS-28-GW80-17-C	21802061502	2180209/e4662	02/09/18	1007
5 .	OMS-28-GW77-27	21802061503	2180209/e4663	02/09/18	1030
6 .	OMS-28-GW80-27	21802061506	2180209/e4664	02/09/18	1052
7 .	OMS-28-GW85-13	21802061507	2180209/e4665	02/09/18	1114
8 .	OMS-28-GW82-19	21802061508	2180209/e4666	02/09/18	1136
9 .	OMS-28-GW85-19	21802061509	2180209/e4667	02/09/18	1201
10 .	OMS-28-GW85-31	21802061510	2180209/e4668	02/09/18	1224
11 .	OMS-28-GW82-31	21802061511	2180209/e4669	02/09/18	1246
12 .	OMS-28-GW83-12	21802061512	2180209/e4670	02/09/18	1308
13 .	OMS-28-GW83-16	21802061513	2180209/e4671	02/09/18	1331
14 .	OMS-28-GW83-16-A	21802061514	2180209/e4672	02/09/18	1353
15 .	OMS-28-GW87-31	21802061515	2180209/e4673	02/09/18	1415
16 .	OMS-28-GW86-12	21802061516	2180209/e4674	02/09/18	1437
17 .	OMS-28-GW86-16	21802061517	2180209/e4675	02/09/18	1500
18 .	OMS-28-GW84-31	21802061525	2180209/e4676	02/09/18	1522
19 .	OMS-28-GW77-27-MS	21802061504	2180209/e4677	02/09/18	1544
20 .	OMS-28-GW77-27-MSD	21802061505	2180209/e4678	02/09/18	1606
21 .	OMS-28-GW84-31-MS	21802061526	2180209/e4679	02/09/18	1629
22 .	OMS-28-GW84-31-MSD	21802061527	2180209/e4680	02/09/18	1651

FORM IV VOA

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	218020615	Method Blank ID:	1773658
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180210/e4698
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 1046	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1773659	1773659	2180210/e4694L	02/10/18	0917
2 .	LCSD1773660	1773660	2180210/e4695	02/10/18	0939
3 .	OMS-28-GW86-31	21802061518	2180210/e4699	02/10/18	1108
4 .	OMS-28-GW88-12	21802061519	2180210/e4700	02/10/18	1130
5 .	OMS-28-GW88-17	21802061520	2180210/e4701	02/10/18	1152
6 .	OMS-28-GW88-31	21802061521	2180210/e4702	02/10/18	1215
7 .	OMS-28-GW84-12	21802061522	2180210/e4703	02/10/18	1237
8 .	OMS-28-GW84-12-A	21802061523	2180210/e4704	02/10/18	1259
9 .	OMS-28-GW84-17	21802061524	2180210/e4705	02/10/18	1322
10 .	OMS-28-GW90-33	21802061528	2180210/e4706	02/10/18	1344
11 .	OMS-28-GW83-31	21802061529	2180210/e4707	02/10/18	1406

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020615	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4235D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1021	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	17.72	(	)	
75	30.0 - 60.0% of mass 95	46.53	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.39	(	)	
173	Less than 2.0% of mass 174	.98	(1.02	)	1
174	50.0 - 120.0% of mass 95	96.35	(	)	
175	5.0 - 9.0% of mass 174	7.19	(7.47	)	1
176	95.0 - 101.0% of mass 174	93.63	(97.18	)	1
177	5.0 - 9.0% of mass 176	5.94	(6.35	)	2

1- Value is % mass 174

2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2180131/e4238D	01/31/18	1155
2 .	V13STD005	1204	2180131/e4240D	01/31/18	1240
3 .	V13STD010	1205	2180131/e4241D	01/31/18	1302
4 .	V13STD020	1206	2180131/e4242D	01/31/18	1324
5 .	V13STD050	1207	2180131/e4243D	01/31/18	1346
6 .	V13STD100	1208	2180131/e4244D	01/31/18	1409
7 .	V13STD200	1209	2180131/e4245D	01/31/18	1431
8 .	ICV050	1600	2180131/e4248D	01/31/18	1538

FORM V VOA

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020615	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180209/e4655bfb
Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18 Time: 0715	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	16.29	(	)	
75	30.0 - 60.0% of mass 95	44.67	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.35	(	)	
173	Less than 2.0% of mass 174	1.32	(1.38	)	1
174	50.0 - 120.0% of mass 95	96.12	(	)	
175	5.0 - 9.0% of mass 174	7.05	(7.34	)	1
176	95.0 - 101.0% of mass 174	93.39	(97.16	)	1
177	5.0 - 9.0% of mass 176	6.16	(6.6	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1773199	1773199	2180209/e4656L	02/09/18	0754
2 .	V13STD050	1400	2180209/e4656	02/09/18	0754
3 .	LCSD1773200	1773200	2180209/e4657	02/09/18	0816
4 .	MB1773198	1773198	2180209/e4660	02/09/18	0923
5 .	OMS-28-GW80-17	21802061501	2180209/e4661	02/09/18	0945
6 .	OMS-28-GW80-17-C	21802061502	2180209/e4662	02/09/18	1007
7 .	OMS-28-GW77-27	21802061503	2180209/e4663	02/09/18	1030
8 .	OMS-28-GW80-27	21802061506	2180209/e4664	02/09/18	1052
9 .	OMS-28-GW85-13	21802061507	2180209/e4665	02/09/18	1114
10 .	OMS-28-GW82-19	21802061508	2180209/e4666	02/09/18	1136
11 .	OMS-28-GW85-19	21802061509	2180209/e4667	02/09/18	1201
12 .	OMS-28-GW85-31	21802061510	2180209/e4668	02/09/18	1224
13 .	OMS-28-GW82-31	21802061511	2180209/e4669	02/09/18	1246
14 .	OMS-28-GW83-12	21802061512	2180209/e4670	02/09/18	1308
15 .	OMS-28-GW83-16	21802061513	2180209/e4671	02/09/18	1331
16 .	OMS-28-GW83-16-A	21802061514	2180209/e4672	02/09/18	1353
17 .	OMS-28-GW87-31	21802061515	2180209/e4673	02/09/18	1415
18 .	OMS-28-GW86-12	21802061516	2180209/e4674	02/09/18	1437

FORM V VOA

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020615	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180209/e4655bfb
Analyst:	GDG	Analytical Batch:	628734
Analysis Date:	02/09/18 Time: 0715	Analytical Method:	EPA 8260B

19 .	OMS-28-GW86-16	21802061517	2180209/e4675	02/09/18	1500
20 .	OMS-28-GW84-31	21802061525	2180209/e4676	02/09/18	1522
21 .	OMS-28-GW77-27-MS	21802061504	2180209/e4677	02/09/18	1544
22 .	OMS-28-GW77-27-MSD	21802061505	2180209/e4678	02/09/18	1606
23 .	OMS-28-GW84-31-MS	21802061526	2180209/e4679	02/09/18	1629
24 .	OMS-28-GW84-31-MSD	21802061527	2180209/e4680	02/09/18	1651
25 .	V13STD050	1440	2180209/e4681	02/09/18	1713

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020615	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4693bfb
Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 0839	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	15.51	(	)	
75	30.0 - 60.0% of mass 95	42.8	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.38	(	)	
173	Less than 2.0% of mass 174	1.15	(1.2	)	1
174	50.0 - 120.0% of mass 95	96.63	(	)	
175	5.0 - 9.0% of mass 174	7.16	(7.41	)	1
176	95.0 - 101.0% of mass 174	94.71	(98.02	)	1
177	5.0 - 9.0% of mass 176	6.05	(6.39	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2180210/e4694	02/10/18	0917
2 .	LCS1773659	1773659	2180210/e4694L	02/10/18	0917
3 .	LCSD1773660	1773660	2180210/e4695	02/10/18	0939
4 .	MB1773658	1773658	2180210/e4698	02/10/18	1046
5 .	OMS-28-GW86-31	21802061518	2180210/e4699	02/10/18	1108
6 .	OMS-28-GW88-12	21802061519	2180210/e4700	02/10/18	1130
7 .	OMS-28-GW88-17	21802061520	2180210/e4701	02/10/18	1152
8 .	OMS-28-GW88-31	21802061521	2180210/e4702	02/10/18	1215
9 .	OMS-28-GW84-12	21802061522	2180210/e4703	02/10/18	1237
10 .	OMS-28-GW84-12-A	21802061523	2180210/e4704	02/10/18	1259
11 .	OMS-28-GW84-17	21802061524	2180210/e4705	02/10/18	1322
12 .	OMS-28-GW90-33	21802061528	2180210/e4706	02/10/18	1344
13 .	OMS-28-GW83-31	21802061529	2180210/e4707	02/10/18	1406
14 .	V13STD050	1440	2180210/e4717	02/10/18	1749

FORM V VOA

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020615		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.582	0.613	0.564	0.550	0.563	0.546	0.517	0.562			5.320	A
1,1,1-Trichloroethane			0.321	0.363	0.341	0.336	0.347	0.337	0.330	0.339			3.900	A
1,1,2,2-Tetrachloroethane			1.015	0.947	0.854	0.829	0.828	0.814	0.775	0.866			9.750	A
1,1,2-Trichloroethane			0.600	0.586	0.535	0.535	0.549	0.539	0.536	0.554			4.912	A
1,1-Dichloroethane			0.462	0.458	0.426	0.421	0.437	0.423	0.413	0.435			4.400	A
1,1-Dichloroethene			0.182	0.179	0.163	0.158	0.164	0.156	0.154	0.165			6.625	A
1,1-Dichloropropene			0.206	0.235	0.248	0.265	0.301	0.302	0.303	0.266			14.43	A
1,2,3-Trichlorobenzene (RSP)			477	5824	13716	35889	117256	253980	511192	0.831	0.026		0.995	W
1,2,3-Trichlorobenzene			0.225	0.458	0.524	0.641	0.792	0.837	0.840					
1,2,3-Trichloropropane			0.962	0.991	0.950	0.917	0.962	0.947	0.909	0.948			2.935	A
1,2,4-Trichlorobenzene (RSP)			575	5354	11975	31052	105242	247400	511416	0.855	0.090		0.998	L
1,2,4-Trichlorobenzene			0.271	0.421	0.458	0.555	0.710	0.815	0.841					
1,2,4-Trimethylbenzene (RSP)			2638	19970	46899	111022	318399	641277	1185541	2.032	0.010		0.997	W
1,2,4-Trimethylbenzene			1.242	1.572	1.792	1.983	2.149	2.113	1.949					
1,2-Dibromo-3-chloropropane			0.153	0.176	0.161	0.177	0.195	0.203	0.212	0.182			12.04	A
1,2-Dibromoethane			0.531	0.507	0.471	0.492	0.539	0.540	0.545	0.518			5.481	A
1,2-Dichlorobenzene			1.263	1.276	1.242	1.218	1.304	1.286	1.243	1.262			2.341	A
1,2-Dichloroethane			0.414	0.377	0.354	0.347	0.356	0.342	0.332	0.360			7.652	A
1,2-Dichloroethane-d4			0.169	0.167	0.165	0.166	0.165	0.162	0.160	0.165			1.738	A
1,2-Dichloroethene (total)			0.281	0.296	0.294	0.299	0.321	0.318	0.317	0.304			5.017	A
1,2-Dichloropropane			0.230	0.235	0.229	0.234	0.245	0.245	0.241	0.237			2.857	A
1,3,5-Trimethylbenzene			1.426	1.740	1.849	1.999	2.153	2.052	1.855	1.868			12.83	A
1,3-Dichlorobenzene			1.276	1.297	1.319	1.286	1.315	1.303	1.234	1.290			2.247	A
1,3-Dichloropropane			0.805	0.860	0.812	0.838	0.938	0.936	0.939	0.875			6.961	A
1,3-Dichloropropylene (RSP)			2542	16787	35541	81949	252531	533058	1103114	0.370	0.033		0.997	W

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020615		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,3-Dichloropropylene			0.209	0.261	0.277	0.309	0.366	0.372	0.373					
1,4-Dichlorobenzene			1.478	1.399	1.315	1.281	1.305	1.288	1.217	1.326			6.490	A
1-Bromo-2-Chloroethane			0.356	0.344	0.339	0.356	0.376	0.375	0.372	0.360			4.174	A
1-Chlorohexane (RSP)			1107	5416	12067	28084	90902	225775	457695	0.743	0.090		0.997	L
1-Chlorohexane			0.452	0.399	0.426	0.473	0.590	0.720	0.729					
2,2-Dichloropropane			0.267	0.303	0.287	0.293	0.300	0.306	0.303	0.294			4.580	A
2-Butanone (RSP)			803	5143	9977	23549	68871	144310	295627	0.200	0.012		0.998	W
2-Butanone			0.132	0.160	0.156	0.178	0.199	0.201	0.200					
2-Chloroethylvinyl ether (RSP)			366	2120	4679	11625	35122	77376	179733	0.115	0.024		0.990	W
2-Chloroethylvinyl ether			0.060	0.066	0.073	0.088	0.102	0.108	0.122					
2-Chlorotoluene			1.920	1.913	1.876	1.944	2.037	1.992	1.869	1.936			3.139	A
2-Hexanone (RSP)				4394	8678	21172	74100	173057	376361	0.588	0.080		0.992	W
2-Hexanone				0.324	0.306	0.357	0.481	0.552	0.599					
4-Bromofluorobenzene			0.767	0.787	0.781	0.773	0.790	0.806	0.828	0.790			2.623	A
4-Chlorotoluene			1.424	1.609	1.692	1.736	1.861	1.845	1.744	1.701			8.818	A
4-Isopropyltoluene (RSP)			2465	18779	45009	107177	314072	638401	1196201	2.031	0.012		0.997	W
4-Isopropyltoluene			1.161	1.478	1.720	1.914	2.120	2.104	1.966					
4-Methyl-2-pentanone (RSP)				6202	13383	32149	101375	222197	460940	0.731	0.058		0.997	W
4-Methyl-2-pentanone				0.457	0.472	0.542	0.658	0.709	0.734					
Acetone			0.183	0.197	0.183	0.192	0.192	0.183	0.176	0.187			3.929	A
Acrolein (RSP)				993	2486	4717	16141	33528	72265	0.010	0.239		0.997	W
Acrolein				0.006	0.008	0.007	0.009	0.009	0.010					
Acrylonitrile			0.090	0.093	0.106	0.111	0.117	0.107	0.112	0.105			9.463	A
Benzene			0.833	0.899	0.878	0.925	0.986	0.954	0.917	0.913			5.459	A
Bromobenzene			1.311	1.257	1.192	1.167	1.212	1.169	1.133	1.206			5.032	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

$\overline{RF}$ = Mean Response Factor For Average Curve

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

m,b = Slope and Intercept For Linear Curve

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020615		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Bromochloromethane			0.131	0.143	0.139	0.135	0.137	0.129	0.113	0.133			7.468	A
Bromodichloromethane			0.335	0.355	0.339	0.339	0.343	0.332	0.323	0.338			3.001	A
Bromoform			0.504	0.572	0.512	0.502	0.528	0.525	0.499	0.520			4.840	A
Bromomethane (RSP)			1087	5140	9147	17056	42570	85055	182023	0.122	-0.014		0.998	W
Bromomethane			0.179	0.160	0.143	0.129	0.123	0.119	0.123					
Carbon disulfide			0.645	0.613	0.578	0.565	0.572	0.541	0.522	0.577			7.248	A
Carbon tetrachloride			0.296	0.319	0.309	0.309	0.320	0.305	0.300	0.308			2.916	A
Chlorobenzene			1.806	1.735	1.598	1.572	1.598	1.522	1.439	1.610			7.726	A
Chloroethane			0.154	0.155	0.147	0.135	0.127	0.120	0.102	0.134			14.32	A
Chloroform			0.445	0.467	0.440	0.423	0.426	0.405	0.389	0.428			6.104	A
Chloromethane			0.325	0.311	0.297	0.280	0.268	0.258	0.251	0.284			9.730	A
Cyclohexane (RSP)			1260	8799	18824	43237	133879	271848	553105	0.377	0.015		0.998	W
Cyclohexane			0.207	0.274	0.294	0.327	0.388	0.379	0.374					
Dibromochloromethane			0.651	0.683	0.609	0.602	0.646	0.641	0.649	0.640			4.272	A
Dibromofluoromethane			0.283	0.278	0.276	0.271	0.263	0.261	0.256	0.270			3.656	A
Dibromomethane			0.124	0.164	0.156	0.152	0.157	0.153	0.150	0.151			8.379	A
Dichlorodifluoromethane			0.268	0.275	0.268	0.253	0.264	0.245	0.242	0.259			4.953	A
Ethylbenzene			0.728	0.792	0.787	0.788	0.824	0.803	0.758	0.783			3.977	A
Hexachlorobutadiene			0.456	0.438	0.424	0.404	0.417	0.426	0.416	0.426			3.973	A
Isopropylbenzene (Cumene) (			3501	24195	52574	126195	373920	763962	1443275	2.353	0.013		0.997	W
Isopropylbenzene (Cumene)			1.429	1.785	1.856	2.126	2.426	2.437	2.297					
Methyl Acetate			0.235	0.236	0.216	0.230	0.242	0.237	0.227	0.232			3.736	A
Methyl iodide (RSP)				2508	6103	15770	57090	131600	275600	5.263	0.104	-0.061	0.999	Q
Methyl iodide				0.078	0.095	0.119	0.165	0.183	0.186					
Methylcyclohexane			0.249	0.294	0.298	0.309	0.356	0.354	0.349	0.316			12.63	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020615			Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1:	1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2:	1431	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Methylene chloride			0.292	0.301	0.270	0.288	0.282	0.259	0.265	0.280			5.549	A
Naphthalene (RSP)				7131	18037	55774	248352	614835	1295606	2.134	0.115		0.990	W
Naphthalene				0.561	0.689	0.996	1.677	2.026	2.130					
Styrene (RSP)			2129	15824	36057	87567	255692	514927	987479	1.605	0.014		0.998	W
Styrene			0.869	1.167	1.273	1.475	1.659	1.642	1.572					
Tetrachloroethene			0.512	0.529	0.494	0.484	0.508	0.506	0.507	0.506			2.780	A
Toluene			2.494	2.496	2.297	2.300	2.364	2.333	2.249	2.362			4.127	A
Toluene-d8			2.371	2.279	2.219	2.246	2.227	2.270	2.332	2.278			2.451	A
Trichloroethene			0.262	0.276	0.268	0.270	0.282	0.263	0.250	0.267			3.874	A
Trichlorofluoromethane			0.317	0.307	0.289	0.276	0.279	0.261	0.257	0.284			7.888	A
Trichlorotrifluoroethane			0.161	0.177	0.176	0.166	0.162	0.155	0.150	0.164			6.227	A
Vinyl acetate (RSP)			848	4570	10724	24623	71333	159827	369833	0.237	0.021		0.991	W
Vinyl acetate			0.139	0.142	0.167	0.186	0.207	0.223	0.250					
Vinyl chloride			0.273	0.278	0.260	0.256	0.272	0.263	0.260	0.266			3.086	A
Xylene (total) (RSP)			4749	33290	70315	160471	460524	920641	1745097	0.951	0.026		0.998	W
Xylene (total)			0.646	0.818	0.827	0.901	0.996	0.979	0.926					
cis-1,2-Dichloroethene			0.258	0.283	0.280	0.292	0.325	0.324	0.322	0.298			8.738	A
cis-1,3-Dichloropropene (RSP)			1367	8661	18146	42900	133479	279970	581372	0.390	0.017		0.997	W
cis-1,3-Dichloropropene			0.225	0.269	0.283	0.324	0.387	0.390	0.393					
m,p-Xylene (RSP)			3361	23770	50062	113426	312699	613620	1131824	0.943	0.009		0.997	W
m,p-Xylene			0.686	0.877	0.883	0.956	1.014	0.979	0.901					
n-Butylbenzene (RSP)			2487	15865	35072	85648	253755	533009	1022170	1.703	0.013		0.997	W
n-Butylbenzene			1.171	1.249	1.340	1.530	1.713	1.756	1.680					
n-Hexane			0.221	0.243	0.237	0.253	0.286	0.293	0.300	0.262			11.83	A
n-Propylbenzene			2.743	2.695	2.699	2.753	2.894	2.811	2.566	2.737			3.742	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020615		Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
o-Xylene (RSP)			1388	9520	20253	47045	147825	307021	613273	0.971	0.016		0.997	W
o-Xylene			0.566	0.702	0.715	0.793	0.959	0.979	0.976					
sec-Butylbenzene			1.618	2.013	2.208	2.316	2.462	2.423	2.209	2.178			13.28	A
tert-Butyl methyl ether (MTBE)			0.507	0.563	0.552	0.594	0.656	0.652	0.651	0.596			9.852	A
tert-Butylbenzene			0.817	0.906	0.954	1.016	1.124	1.123	1.080	1.003			11.64	A
trans-1,2-Dichloroethene			0.303	0.309	0.307	0.305	0.317	0.313	0.312	0.309			1.596	A
trans-1,3-Dichloropropene (RS			1175	8126	17395	39049	119052	253088	521742	0.351	0.016		0.997	W
trans-1,3-Dichloropropene			0.193	0.253	0.271	0.295	0.345	0.353	0.353					
trans-1,4-Dichloro-2-butene			0.135	0.164	0.172	0.176	0.188	0.196	0.199	0.176			12.53	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

Form 6I

ICAL Verifications

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	218020615	Instrument ID:	MSV13
Analysis Date:	01/31/18 1538	Lab File ID:	2180131/e4248D
Analytical Method:	EPA 8260B	Analytical Batch:	628122

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
cis-1,2-Dichloroethene	ug/L	50.0	50.5	101	80	120	
Tetrachloroethene	ug/L	50.0	47.1	94	80	120	
Trichloroethene	ug/L	50.0	47.6	95	80	120	

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180209/e4656
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628734
Analysis Date:	02/09/18 Time: 0754	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.576	.01	2.47	20	A	
1,1,1-Trichloroethane	0.339	0.327	.01	-3.45	20	A	
1,1,2,2-Tetrachloroethane	0.866	0.771	.3	-10.9	20	A	
1,1,2-Trichloroethane	0.554	0.547	.01	-1.41	20	A	
1,1-Dichloroethane	0.435	0.400	.1	-7.84	20	A	
1,1-Dichloroethene	0.165	0.160	.01	-3.34	20	A	
1,1-Dichloropropene	0.266	0.272	.01	2.38	20	A	
1,2,3-Trichlorobenzene	0.831	0.739	.01	-8.4	20	W	
1,2,3-Trichloropropane	0.948	0.858	.01	-9.51	20	A	
1,2,4-Trichlorobenzene	0.855	0.658	.01	-14	20	L	
1,2,4-Trimethylbenzene	2.032	2.069	.01	2.8	20	W	
1,2-Dibromo-3-chloropropane	0.182	0.169	.01	-7.45	20	A	
1,2-Dibromoethane	0.518	0.516	.01	-.33	20	A	
1,2-Dichlorobenzene	1.262	1.261	.01	-.08	20	A	
1,2-Dichloroethane	0.360	0.317	.01	-12.0	20	A	
1,2-Dichloroethane-d4	0.165	0.159	.01	-3.74	20	A	
1,2-Dichloroethene (total)	0.304	0.279	.01	-8.05	20	A	
1,2-Dichloropropane	0.237	0.231	.01	-2.43	20	A	
1,3,5-Trimethylbenzene	1.868	2.058	.01	10.2	20	A	
1,3-Dichlorobenzene	1.290	1.307	.01	1.27	20	A	
1,3-Dichloropropane	0.875	0.881	.01	.62	20	A	
1,3-Dichloropropylene	0.370	0.344	.01	-5.4	20	W	
1,4-Dichlorobenzene	1.326	1.288	.01	-2.9	20	A	
1-Bromo-2-Chloroethane	0.360	0.349	.01	-2.93	20	A	
1-Chlorohexane	0.743	0.592	.01	-11.2	20	L	
2,2-Dichloropropane	0.294	0.280	.01	-4.69	20	A	
2-Butanone	0.200	0.166	.01	-15.6	20	W	
2-Chlorotoluene	1.936	1.944	.01	.43	20	A	
2-Hexanone	0.588	0.393	.01	-25.2	20	W	*
4-Bromofluorobenzene	0.790	0.816	.01	3.29	20	A	
4-Chlorotoluene	1.701	1.771	.01	4.11	20	A	
4-Isopropyltoluene	2.031	2.100	.01	4.6	20	W	
4-Methyl-2-pentanone	0.731	0.557	.01	-18	20	W	
Acetone	0.187	0.157	.01	-15.6	20	A	
Benzene	0.913	0.932	.01	1.99	20	A	
Bromobenzene	1.206	1.120	.01	-7.12	20	A	
Bromochloromethane	0.133	0.136	.01	2.44	20	A	
Bromodichloromethane	0.338	0.334	.01	-1.07	20	A	
Bromoform	0.520	0.531	.1	2.09	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180209/e4656
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628734
Analysis Date:	02/09/18 Time: 0754	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	0.122	0.115	.01	-6.8	20	W	
Carbon disulfide	0.577	0.557	.01	-3.32	20	A	
Carbon tetrachloride	0.308	0.304	.01	-1.34	20	A	
Chlorobenzene	1.610	1.630	.3	1.22	20	A	
Chloroethane	0.134	0.132	.01	-1.63	20	A	
Chloroform	0.428	0.413	.01	-3.38	20	A	
Chloromethane	0.284	0.220	.1	-22.5	20	A	*
Cyclohexane	0.377	0.344	.01	-7.2	20	W	
Dibromochloromethane	0.640	0.645	.01	.71	20	A	
Dibromofluoromethane	0.270	0.271	.01	.56	20	A	
Dibromomethane	0.151	0.147	.01	-2.87	20	A	
Dichlorodifluoromethane	0.259	0.224	.01	-13.6	20	A	
Ethylbenzene	0.783	0.847	.01	8.16	20	A	
Hexachlorobutadiene	0.426	0.425	.01	-.27	20	A	
Isopropylbenzene (Cumene)	2.353	2.462	.01	6	20	W	
Methyl Acetate	0.232	0.199	.01	-14.0	20	A	
Methyl iodide	5.263	0.113	.01	-30	20	Q	*
Methylcyclohexane	0.316	0.348	.01	10.2	20	A	
Methylene chloride	0.280	0.281	.01	.32	20	A	
Naphthalene	2.134	1.421	.01	-22	20	W	*
Styrene	1.605	1.681	.01	6.2	20	W	
Tetrachloroethene	0.506	0.517	.01	2.33	20	A	
Toluene	2.362	2.332	.01	-1.25	20	A	
Toluene-d8	2.278	2.263	.01	-.65	20	A	
Trichloroethene	0.267	0.280	.01	4.82	20	A	
Trichlorofluoromethane	0.284	0.277	.01	-2.58	20	A	
Trichlorotrifluoroethane	0.164	0.172	.01	5.14	20	A	
Vinyl chloride	0.266	0.236	.01	-11.3	20	A	
Xylene (total)	0.951	1.012	.01	7.33	20	W	
cis-1,2-Dichloroethene	0.298	0.268	.01	-9.95	20	A	
cis-1,3-Dichloropropene	0.390	0.365	.01	-4.8	20	W	
m,p-Xylene	0.943	1.037	.01	10	20	W	
n-Butylbenzene	1.703	1.699	.01	1	20	W	
n-Hexane	0.262	0.280	.01	6.89	20	A	
n-Propylbenzene	2.737	2.783	.01	1.66	20	A	
o-Xylene	0.971	0.962	.01	.8	20	W	
sec-Butylbenzene	2.178	2.429	.01	11.5	20	A	
tert-Butyl methyl ether (MTBE)	0.596	0.582	.01	-2.37	20	A	
tert-Butylbenzene	1.003	1.071	.01	6.81	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180209/e4656
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628734
Analysis Date:	02/09/18 Time: 0754	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,2-Dichloroethene	0.309	0.290	.01	-6.21	20	A	
trans-1,3-Dichloropropene	0.351	0.324	.01	-6	20	W	
trans-1,4-Dichloro-2-butene	0.176	0.163	.01	-7.08	20	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020615			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180209/e4681
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	GDG
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628734
Analysis Date:	02/09/18	Time: 1713		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.583	.01	3.63	50	A	
1,1,1-Trichloroethane	0.339	0.329	.01	-2.97	50	A	
1,1,2,2-Tetrachloroethane	0.866	0.752	.3	-13.1	50	A	
1,1,2-Trichloroethane	0.554	0.561	.01	1.22	50	A	
1,1-Dichloroethane	0.435	0.406	.1	-6.64	50	A	
1,1-Dichloroethene	0.165	0.163	.01	-1.15	50	A	
1,1-Dichloropropene	0.266	0.278	.01	4.72	50	A	
1,2,3-Trichlorobenzene	0.831	0.786	.01	-2.8	50	W	
1,2,3-Trichloropropane	0.948	0.888	.01	-6.37	50	A	
1,2,4-Trichlorobenzene	0.855	0.708	.01	-8.2	50	L	
1,2,4-Trimethylbenzene	2.032	2.064	.01	2.6	50	W	
1,2-Dibromo-3-chloropropane	0.182	0.189	.01	3.94	50	A	
1,2-Dibromoethane	0.518	0.537	.01	3.77	50	A	
1,2-Dichlorobenzene	1.262	1.281	.01	1.49	50	A	
1,2-Dichloroethane	0.360	0.317	.01	-12.0	50	A	
1,2-Dichloroethane-d4	0.165	0.154	.01	-6.43	50	A	
1,2-Dichloroethene (total)	0.304	0.292	.01	-3.77	50	A	
1,2-Dichloropropane	0.237	0.238	.01	.17	50	A	
1,3,5-Trimethylbenzene	1.868	2.063	.01	10.4	50	A	
1,3-Dichlorobenzene	1.290	1.315	.01	1.89	50	A	
1,3-Dichloropropane	0.875	0.911	.01	4.08	50	A	
1,3-Dichloropropylene	0.370	0.325	.01	-10.5	50	W	
1,4-Dichlorobenzene	1.326	1.281	.01	-3.39	50	A	
1-Bromo-2-Chloroethane	0.360	0.361	.01	.27	50	A	
1-Chlorohexane	0.743	0.638	.01	-5.2	50	L	
2,2-Dichloropropane	0.294	0.262	.01	-10.8	50	A	
2-Butanone	0.200	0.172	.01	-12.8	50	W	
2-Chlorotoluene	1.936	1.952	.01	.84	50	A	
2-Hexanone	0.588	0.442	.01	-16.8	50	W	
4-Bromofluorobenzene	0.790	0.848	.01	7.28	50	A	
4-Chlorotoluene	1.701	1.770	.01	4.02	50	A	
4-Isopropyltoluene	2.031	2.076	.01	3.4	50	W	
4-Methyl-2-pentanone	0.731	0.623	.01	-9	50	W	
Acetone	0.187	0.157	.01	-15.7	50	A	
Benzene	0.913	0.937	.01	2.61	50	A	
Bromobenzene	1.206	1.117	.01	-7.36	50	A	
Bromochloromethane	0.133	0.133	.01	.5	50	A	
Bromodichloromethane	0.338	0.325	.01	-3.74	50	A	
Bromoform	0.520	0.561	.1	7.85	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020615			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180209/e4681
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	GDG
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628734
Analysis Date:	02/09/18	Time: 1713		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	0.122	0.120	.01	-3	50	W	
Carbon disulfide	0.577	0.542	.01	-5.93	50	A	
Carbon tetrachloride	0.308	0.307	.01	-.57	50	A	
Chlorobenzene	1.610	1.646	.3	2.25	50	A	
Chloroethane	0.134	0.143	.01	6.74	50	A	
Chloroform	0.428	0.405	.01	-5.31	50	A	
Chloromethane	0.284	0.234	.1	-17.8	50	A	
Cyclohexane	0.377	0.336	.01	-9.4	50	W	
Dibromochloromethane	0.640	0.672	.01	4.94	50	A	
Dibromofluoromethane	0.270	0.268	.01	-.61	50	A	
Dibromomethane	0.151	0.150	.01	-.62	50	A	
Dichlorodifluoromethane	0.259	0.201	.01	-22.5	50	A	
Ethylbenzene	0.783	0.856	.01	9.4	50	A	
Hexachlorobutadiene	0.426	0.421	.01	-1.21	50	A	
Isopropylbenzene (Cumene)	2.353	2.525	.01	8.6	50	W	
Methyl Acetate	0.232	0.214	.01	-7.71	50	A	
Methyl iodide	5.263	0.144	.01	-13.6	50	Q	
Methylcyclohexane	0.316	0.322	.01	2.18	50	A	
Methylene chloride	0.280	0.279	.01	-.4	50	A	
Naphthalene	2.134	1.639	.01	-11.8	50	W	
Styrene	1.605	1.703	.01	7.6	50	W	
Tetrachloroethene	0.506	0.536	.01	5.96	50	A	
Toluene	2.362	2.392	.01	1.26	50	A	
Toluene-d8	2.278	2.306	.01	1.22	50	A	
Trichloroethene	0.267	0.285	.01	6.7	50	A	
Trichlorofluoromethane	0.284	0.262	.01	-7.58	50	A	
Trichlorotrifluoroethane	0.164	0.158	.01	-3.5	50	A	
Vinyl chloride	0.266	0.241	.01	-9.21	50	A	
Xylene (total)	0.951	1.033	.01	9.33	50	W	
cis-1,2-Dichloroethene	0.298	0.285	.01	-4.3	50	A	
cis-1,3-Dichloropropene	0.390	0.333	.01	-12.8	50	W	
m,p-Xylene	0.943	1.051	.01	12	50	W	
n-Butylbenzene	1.703	1.639	.01	-2.6	50	W	
n-Hexane	0.262	0.244	.01	-6.68	50	A	
n-Propylbenzene	2.737	2.770	.01	1.2	50	A	
o-Xylene	0.971	0.998	.01	4.4	50	W	
sec-Butylbenzene	2.178	2.411	.01	10.7	50	A	
tert-Butyl methyl ether (MTBE)	0.596	0.626	.01	4.95	50	A	
tert-Butylbenzene	1.003	1.083	.01	8.03	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180209/e4681
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628734
Analysis Date:	02/09/18 Time: 1713	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,2-Dichloroethene	0.309	0.299	.01	-3.26	50	A	
trans-1,3-Dichloropropene	0.351	0.317	.01	-8	50	W	
trans-1,4-Dichloro-2-butene	0.176	0.159	.01	-9.23	50	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4694
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 0917	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.601	.01	6.91	20	A	
1,1,1-Trichloroethane	0.339	0.342	.01	.71	20	A	
1,1,2,2-Tetrachloroethane	0.866	0.809	.3	-6.53	20	A	
1,1,2-Trichloroethane	0.554	0.559	.01	.9	20	A	
1,1-Dichloroethane	0.435	0.410	.1	-5.72	20	A	
1,1-Dichloroethene	0.165	0.172	.01	3.84	20	A	
1,1-Dichloropropene	0.266	0.285	.01	7.17	20	A	
1,2,3-Trichlorobenzene	0.831	0.782	.01	-3.4	20	W	
1,2,3-Trichloropropane	0.948	0.905	.01	-4.6	20	A	
1,2,4-Trichlorobenzene	0.855	0.704	.01	-8.8	20	L	
1,2,4-Trimethylbenzene	2.032	2.175	.01	8	20	W	
1,2-Dibromo-3-chloropropane	0.182	0.185	.01	1.47	20	A	
1,2-Dibromoethane	0.518	0.549	.01	6.01	20	A	
1,2-Dichlorobenzene	1.262	1.319	.01	4.56	20	A	
1,2-Dichloroethane	0.360	0.323	.01	-10.3	20	A	
1,2-Dichloroethane-d4	0.165	0.156	.01	-5.3	20	A	
1,2-Dichloroethene (total)	0.304	0.286	.01	-5.83	20	A	
1,2-Dichloropropane	0.237	0.239	.01	.86	20	A	
1,3,5-Trimethylbenzene	1.868	2.155	.01	15.4	20	A	
1,3-Dichlorobenzene	1.290	1.367	.01	5.92	20	A	
1,3-Dichloropropane	0.875	0.916	.01	4.62	20	A	
1,3-Dichloropropylene	0.370	0.337	.01	-7	20	W	
1,4-Dichlorobenzene	1.326	1.357	.01	2.34	20	A	
1-Bromo-2-Chloroethane	0.360	0.363	.01	.86	20	A	
1-Chlorohexane	0.743	0.618	.01	-7.8	20	L	
2,2-Dichloropropane	0.294	0.292	.01	-.86	20	A	
2-Butanone	0.200	0.170	.01	-13.8	20	W	
2-Chlorotoluene	1.936	2.013	.01	4.02	20	A	
2-Hexanone	0.588	0.410	.01	-22.2	20	W	*
4-Bromofluorobenzene	0.790	0.834	.01	5.56	20	A	
4-Chlorotoluene	1.701	1.870	.01	9.91	20	A	
4-Isopropyltoluene	2.031	2.196	.01	9.4	20	W	
4-Methyl-2-pentanone	0.731	0.577	.01	-15.4	20	W	
Acetone	0.187	0.159	.01	-14.7	20	A	
Benzene	0.913	0.954	.01	4.42	20	A	
Bromobenzene	1.206	1.156	.01	-4.11	20	A	
Bromochloromethane	0.133	0.138	.01	4.45	20	A	
Bromodichloromethane	0.338	0.345	.01	2.12	20	A	
Bromoform	0.520	0.558	.1	7.26	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4694
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 0917	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	0.122	0.130	.01	5	20	W	
Carbon disulfide	0.577	0.598	.01	3.78	20	A	
Carbon tetrachloride	0.308	0.321	.01	4.1	20	A	
Chlorobenzene	1.610	1.688	.3	4.82	20	A	
Chloroethane	0.134	0.143	.01	6.15	20	A	
Chloroform	0.428	0.426	.01	-.35	20	A	
Chloromethane	0.284	0.227	.1	-20.1	20	A	
Cyclohexane	0.377	0.356	.01	-3.8	20	W	
Dibromochloromethane	0.640	0.680	.01	6.2	20	A	
Dibromofluoromethane	0.270	0.274	.01	1.78	20	A	
Dibromomethane	0.151	0.157	.01	4.2	20	A	
Dichlorodifluoromethane	0.259	0.226	.01	-12.7	20	A	
Ethylbenzene	0.783	0.872	.01	11.4	20	A	
Hexachlorobutadiene	0.426	0.447	.01	4.94	20	A	
Isopropylbenzene (Cumene)	2.353	2.574	.01	10.6	20	W	
Methyl Acetate	0.232	0.206	.01	-11.1	20	A	
Methyl iodide	5.263	0.126	.01	-23.2	20	Q	*
Methylcyclohexane	0.316	0.356	.01	12.7	20	A	
Methylene chloride	0.280	0.291	.01	4.12	20	A	
Naphthalene	2.134	1.520	.01	-17.2	20	W	
Styrene	1.605	1.745	.01	10.2	20	W	
Tetrachloroethene	0.506	0.550	.01	8.83	20	A	
Toluene	2.362	2.428	.01	2.81	20	A	
Toluene-d8	2.278	2.259	.01	-.84	20	A	
Trichloroethene	0.267	0.289	.01	8.27	20	A	
Trichlorofluoromethane	0.284	0.290	.01	2.28	20	A	
Trichlorotrifluoroethane	0.164	0.178	.01	8.7	20	A	
Vinyl chloride	0.266	0.246	.01	-7.54	20	A	
Xylene (total)	0.951	1.056	.01	12	20	W	
cis-1,2-Dichloroethene	0.298	0.275	.01	-7.69	20	A	
cis-1,3-Dichloropropene	0.390	0.335	.01	-12.4	20	W	
m,p-Xylene	0.943	1.086	.01	16	20	W	
n-Butylbenzene	1.703	1.762	.01	4.6	20	W	
n-Hexane	0.262	0.288	.01	10.1	20	A	
n-Propylbenzene	2.737	2.882	.01	5.27	20	A	
o-Xylene	0.971	0.995	.01	4.2	20	W	
sec-Butylbenzene	2.178	2.554	.01	17.2	20	A	
tert-Butyl methyl ether (MTBE)	0.596	0.600	.01	.67	20	A	
tert-Butylbenzene	1.003	1.105	.01	10.2	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4694
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 0917	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,2-Dichloroethene	0.309	0.297	.01	-4.04	20	A	
trans-1,3-Dichloropropene	0.351	0.339	.01	-1.6	20	W	
trans-1,4-Dichloro-2-butene	0.176	0.168	.01	-4.12	20	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4717
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 1749	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.592	.01	5.21	50	A	
1,1,1-Trichloroethane	0.339	0.336	.01	-1.04	50	A	
1,1,2,2-Tetrachloroethane	0.866	0.788	.3	-9.04	50	A	
1,1,2-Trichloroethane	0.554	0.577	.01	4.05	50	A	
1,1-Dichloroethane	0.435	0.406	.1	-6.6	50	A	
1,1-Dichloroethene	0.165	0.169	.01	1.91	50	A	
1,1-Dichloropropene	0.266	0.280	.01	5.54	50	A	
1,2,3-Trichlorobenzene	0.831	0.761	.01	-5.8	50	W	
1,2,3-Trichloropropane	0.948	0.901	.01	-4.95	50	A	
1,2,4-Trichlorobenzene	0.855	0.675	.01	-12.2	50	L	
1,2,4-Trimethylbenzene	2.032	2.075	.01	3.2	50	W	
1,2-Dibromo-3-chloropropane	0.182	0.186	.01	2.01	50	A	
1,2-Dibromoethane	0.518	0.538	.01	3.94	50	A	
1,2-Dichlorobenzene	1.262	1.307	.01	3.62	50	A	
1,2-Dichloroethane	0.360	0.320	.01	-11.1	50	A	
1,2-Dichloroethane-d4	0.165	0.159	.01	-3.7	50	A	
1,2-Dichloroethene (total)	0.304	0.288	.01	-4.98	50	A	
1,2-Dichloropropane	0.237	0.240	.01	1.38	50	A	
1,3,5-Trimethylbenzene	1.868	2.092	.01	12	50	A	
1,3-Dichlorobenzene	1.290	1.329	.01	3	50	A	
1,3-Dichloropropane	0.875	0.915	.01	4.53	50	A	
1,3-Dichloropropylene	0.370	0.331	.01	-8.7	50	W	
1,4-Dichlorobenzene	1.326	1.317	.01	-.69	50	A	
1-Bromo-2-Chloroethane	0.360	0.368	.01	2.36	50	A	
1-Chlorohexane	0.743	3.254	.01	-7.2	50	L	
2,2-Dichloropropane	0.294	0.273	.01	-7.31	50	A	
2-Butanone	0.200	0.168	.01	-14.6	50	W	
2-Chlorotoluene	1.936	1.978	.01	2.2	50	A	
2-Hexanone	0.588	0.425	.01	-19.8	50	W	
4-Bromofluorobenzene	0.790	0.832	.01	5.27	50	A	
4-Chlorotoluene	1.701	1.793	.01	5.39	50	A	
4-Isopropyltoluene	2.031	2.112	.01	5.2	50	W	
4-Methyl-2-pentanone	0.731	0.605	.01	-11.6	50	W	
Acetone	0.187	0.158	.01	-15.1	50	A	
Benzene	0.913	0.948	.01	3.8	50	A	
Bromobenzene	1.206	1.131	.01	-6.17	50	A	
Bromochloromethane	0.133	0.139	.01	4.62	50	A	
Bromodichloromethane	0.338	0.340	.01	.55	50	A	
Bromoform	0.520	0.572	.1	10	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020615			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180210/e4717
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	GDG
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628818
Analysis Date:	02/10/18	Time: 1749		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	0.122	0.128	.01	4	50	W	
Carbon disulfide	0.577	0.584	.01	1.26	50	A	
Carbon tetrachloride	0.308	0.315	.01	2.28	50	A	
Chlorobenzene	1.610	1.669	.3	3.66	50	A	
Chloroethane	0.134	0.146	.01	8.74	50	A	
Chloroform	0.428	0.417	.01	-2.51	50	A	
Chloromethane	0.284	0.224	.1	-21.4	50	A	
Cyclohexane	0.377	0.344	.01	-7.2	50	W	
Dibromochloromethane	0.640	0.672	.01	5.01	50	A	
Dibromofluoromethane	0.270	0.274	.01	1.78	50	A	
Dibromomethane	0.151	0.155	.01	2.85	50	A	
Dichlorodifluoromethane	0.259	0.208	.01	-19.6	50	A	
Ethylbenzene	0.783	0.867	.01	10.7	50	A	
Hexachlorobutadiene	0.426	0.420	.01	-1.28	50	A	
Isopropylbenzene (Cumene)	2.353	2.554	.01	9.8	50	W	
Methyl Acetate	0.232	0.199	.01	-14.0	50	A	
Methyl iodide	5.263	0.137	.01	-17.8	50	Q	
Methylcyclohexane	0.316	0.341	.01	8.08	50	A	
Methylene chloride	0.280	0.290	.01	3.74	50	A	
Naphthalene	2.134	1.538	.01	-16.4	50	W	
Styrene	1.605	1.729	.01	9.2	50	W	
Tetrachloroethene	0.506	0.539	.01	6.51	50	A	
Toluene	2.362	2.400	.01	1.6	50	A	
Toluene-d8	2.278	2.271	.01	-.31	50	A	
Trichloroethene	0.267	0.292	.01	9.41	50	A	
Trichlorofluoromethane	0.284	0.277	.01	-2.51	50	A	
Trichlorotrifluoroethane	0.164	0.172	.01	4.98	50	A	
Vinyl chloride	0.266	0.244	.01	-8.2	50	A	
Xylene (total)	0.951	1.043	.01	10.7	50	W	
cis-1,2-Dichloroethene	0.298	0.280	.01	-5.93	50	A	
cis-1,3-Dichloropropene	0.390	0.334	.01	-12.6	50	W	
m,p-Xylene	0.943	1.059	.01	13	50	W	
n-Butylbenzene	1.703	1.651	.01	-1.8	50	W	
n-Hexane	0.262	0.246	.01	-5.93	50	A	
n-Propylbenzene	2.737	2.791	.01	1.98	50	A	
o-Xylene	0.971	1.011	.01	5.8	50	W	
sec-Butylbenzene	2.178	2.455	.01	12.7	50	A	
tert-Butyl methyl ether (MTBE)	0.596	0.609	.01	2.07	50	A	
tert-Butylbenzene	1.003	1.077	.01	7.38	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020615	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4717
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 1749	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,2-Dichloroethene	0.309	0.297	.01	-4.07	50	A	
trans-1,3-Dichloropropene	0.351	0.328	.01	-4.8	50	W	
trans-1,4-Dichloro-2-butene	0.176	0.165	.01	-6.18	50	A	

FORM V II VOA

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	218020615	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4243D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1346	Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	RT	Area	RT	Area	RT
STANDARD	154140	9.08	148135	10.54	345317	6.59

CLIENT SAMPLE ID	GCAL SAMP ID		#		#		#		#		#	
LCS1773199	1773199	133105		9.08		135929		10.54		298567		6.59	
OMS-28-GW85-19	21802061509	104590		9.08		89757		10.54		269167		6.59	
OMS-28-GW85-31	21802061510	105176		9.08		90556		10.54		275994		6.59	
OMS-28-GW82-31	21802061511	105889		9.08		90292		10.54		277824		6.59	
OMS-28-GW83-12	21802061512	105034		9.08		90373		10.54		270788		6.59	
OMS-28-GW83-16	21802061513	105927		9.08		91121		10.54		274392		6.59	
OMS-28-GW83-16-A	21802061514	107487		9.08		92495		10.54		276634		6.59	
OMS-28-GW87-31	21802061515	105965		9.09		89390		10.54		279323		6.59	
OMS-28-GW86-12	21802061516	105461		9.08		87410		10.54		275142		6.59	
OMS-28-GW86-16	21802061517	105662		9.08		88038		10.54		276495		6.59	
OMS-28-GW84-31	21802061525	105862		9.08		88349		10.54		273617		6.59	
LCSD1773200	1773200	134917		9.08		136776		10.54		303277		6.59	
OMS-28-GW77-27-MS	21802061504	132409		9.08		134583		10.54		299823		6.59	
OMS-28-GW77-27-MSD	21802061505	132997		9.08		135194		10.54		302296		6.59	
OMS-28-GW84-31-MS	21802061526	134798		9.08		135548		10.54		305255		6.59	
OMS-28-GW84-31-MSD	21802061527	135126		9.08		136433		10.54		307850		6.59	
LCS1773659	1773659	132616		9.08		135743		10.54		297538		6.59	
LCSD1773660	1773660	130588		9.08		133945		10.54		302719		6.59	
MB1773658	1773658	107344		9.08		89083		10.54		277927		6.59	
OMS-28-GW86-31	21802061518	104962		9.08		86778		10.54		275830		6.59	
OMS-28-GW88-12	21802061519	105179		9.09		89077		10.54		271214		6.59	
OMS-28-GW88-17	21802061520	103128		9.08		88071		10.54		269512		6.59	
MB1773198	1773198	106498		9.08		90288		10.54		278205		6.59	
OMS-28-GW88-31	21802061521	104999		9.08		88545		10.54		272620		6.59	
OMS-28-GW84-12	21802061522	103553		9.08		87386		10.54		271569		6.59	
OMS-28-GW84-12-A	21802061523	104396		9.08		89591		10.54		271263		6.59	
OMS-28-GW84-17	21802061524	105020		9.08		88213		10.54		272405		6.59	
OMS-28-GW90-33	21802061528	104393		9.08		86757		10.54		268631		6.59	
OMS-28-GW83-31	21802061529	102736		9.08		86756		10.54		271288		6.59	
OMS-28-GW80-17	21802061501	106463		9.08		91317		10.54		278335		6.59	
OMS-28-GW80-17-C	21802061502	106902		9.08		89928		10.54		276026		6.59	
OMS-28-GW77-27	21802061503	105333		9.08		89336		10.54		273846		6.59	
OMS-28-GW80-27	21802061506	106883		9.08		89138		10.54		274490		6.59	
OMS-28-GW85-13	21802061507	105845		9.08		91975		10.54		276384		6.59	
OMS-28-GW82-19	21802061508	107794		9.08		93945		10.54		276949		6.59	

FORM V III VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	218020615	Standard ID:	1207
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4243D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1346	Analytical Method:	EPA 8260B

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1203-9(ICAL)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-11	04/30/18
	CVE	250	126-86-7	07/08/18
1600 (ICV)	8260 ICV	250	126-83-12	05/03/18
	Ac/Ac/VA ICV	MC	126-87-12	04/30/18
	CVE ICV	250	126-84-6	05/09/18
1410 (CCV)	A9-1	250	126-85-8	06/13/18
	A9-2	250	126-85-5	02/05/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4235cD.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235D.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1201	NOT USED	e4236.d	5.00 ml	31-JAN-2018 11:03	1.0	JCK	1
1202	|	e4237.d	5.00 ml	31-JAN-2018 11:33	1.0	JCK	1
1203		e4238cD.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238D.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
2PPB		e4239.d	5.00 ml	31-JAN-2018 12:17	1.0	JCK	1
1204		e4240cD.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240D.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1205		e4241cD.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241D.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1206		e4242cD.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242D.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1207		e4243cD.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243D.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1208		e4244cD.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244D.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1209		e4245cD.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245D.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
BLANK		e4246.d	5.00 ml	31-JAN-2018 14:53	1.0	JCK	1
1600	RR	e4247.d	5.00 ml	31-JAN-2018 15:16	1.0	JCK	1
1600		e4248cD.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248D.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1769682		e4249c.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769687		e4249.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769683		e4250c.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1
1769688		e4250.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1410	APP9	e4251c.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769684		e4251Lc.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769628		e4251L.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769685		e4252c.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769629		e4252.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769681		e4253c.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
1769686 pH		e4253.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
21801200906 1		e4254.d	5.00 ml	31-JAN-2018 17:54	1.0	JCK	1
21801230501 1		e4255.d	5.00 ml	31-JAN-2018 18:16	1.0	JCK	1
21801230502 1		e4256.d	5.00 ml	31-JAN-2018 18:38	1.0	JCK	1
21801200901 1		e4257.d	5.00 ml	31-JAN-2018 19:01	1.0	JCK	1
21801200902 1		e4258.d	5.00 ml	31-JAN-2018 19:23	1.0	JCK	1
21801200903 1		e4259.d	5.00 ml	31-JAN-2018 19:45	1.0	JCK	1
21801200904 1		e4260.d	5.00 ml	31-JAN-2018 20:07	1.0	JCK	1
21801200905 1		e4261.d	5.00 ml	31-JAN-2018 20:30	1.0	GDG	1
21801200907 1		e4262ms.d	5.00 ml	31-JAN-2018 20:52	1.0	GDG	1
21801200908 1		e4263msd.d	5.00 ml	31-JAN-2018 21:14	1.0	GDG	1
1440	8260	e4264cD.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440		e4264D.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440	app9	e4265cD.d	5.00 ml	31-JAN-2018 21:59	1.0	GDG	1
BLANK		e4266.d	5.00 ml	31-JAN-2018 22:21	1.0	GDG	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 22:21

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 09-FEB-2018
Instrument: msv13.i
Analyst(s): GDG

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1400 (CCV)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-14	04/30/18
	CVE	250	126-86-7	07/08/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4655bfb.d	0.00 ml	09-FEB-2018 07:15	1.0	GDG	2
1400		e4656.d	5.00 ml	09-FEB-2018 07:54	1.0	GDG	1
1773199		e4656L.d	5.00 ml	09-FEB-2018 07:54	1.0	GDG	1
1773200		e4657.d	5.00 ml	09-FEB-2018 08:16	1.0	GDG	1
BLANK		e4658.d	5.00 ml	09-FEB-2018 08:38	1.0	GDG	1
BLANK		e4659.d	5.00 ml	09-FEB-2018 09:01	1.0	GDG	1
1773198		e4660.d	5.00 ml	09-FEB-2018 09:23	1.0	GDG	1
21802061501		e4661.d	5.00 ml	09-FEB-2018 09:45	1.0	GDG	1
21802061502		e4662.d	5.00 ml	09-FEB-2018 10:07	1.0	GDG	1
21802061503		e4663.d	5.00 ml	09-FEB-2018 10:30	1.0	GDG	1
21802061506		e4664.d	5.00 ml	09-FEB-2018 10:52	1.0	GDG	1
21802061507		e4665.d	5.00 ml	09-FEB-2018 11:14	1.0	GDG	1
21802061508		e4666.d	5.00 ml	09-FEB-2018 11:36	1.0	GDG	1
21802061509		e4667.d	5.00 ml	09-FEB-2018 12:01	2.0	GDG	1
21802061510		e4668.d	5.00 ml	09-FEB-2018 12:24	1.0	GDG	1
21802061511		e4669.d	5.00 ml	09-FEB-2018 12:46	1.0	GDG	1
21802061512		e4670.d	5.00 ml	09-FEB-2018 13:08	1.0	GDG	1
21802061513		e4671.d	5.00 ml	09-FEB-2018 13:31	1.0	GDG	1
21802061514		e4672.d	5.00 ml	09-FEB-2018 13:53	1.0	GDG	1
21802061515		e4673.d	5.00 ml	09-FEB-2018 14:15	1.0	GDG	1
21802061516		e4674.d	5.00 ml	09-FEB-2018 14:37	1.0	GDG	1
21802061517		e4675.d	5.00 ml	09-FEB-2018 15:00	1.0	GDG	1
21802061525		e4676.d	5.00 ml	09-FEB-2018 15:22	1.0	GDG	1
21802061504		e4677ms.d	5.00 ml	09-FEB-2018 15:44	1.0	GDG	1
21802061505		e4678msd.d	5.00 ml	09-FEB-2018 16:06	1.0	GDG	1
21802061526		e4679ms.d	5.00 ml	09-FEB-2018 16:29	1.0	GDG	1
21802061527		e4680msd.d	5.00 ml	09-FEB-2018 16:51	1.0	GDG	1
1440		e4681.d	5.00 ml	09-FEB-2018 17:13	1.0	GDG	1
1440		e4682.d	5.00 ml	09-FEB-2018 17:35	1.0	GDG	1
BLANK		e4683.d	5.00 ml	09-FEB-2018 17:58	1.0	GDG	1
BLANK		e4684.d	5.00 ml	09-FEB-2018 18:20	1.0	GDG	1
BLANK		e4685.d	5.00 ml	09-FEB-2018 18:42	1.0	GDG	1
BLANK		e4686.d	5.00 ml	09-FEB-2018 19:04	1.0	GDG	1

REVISED 1-28-15 Supervisor Review: LBH TUNE TIME: 19:15

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 10-FEB-2018
Instrument: msv13.i
Analyst(s): GDG

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1400 (CCV)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-14	04/30/18
	CVE	250	126-86-7	07/08/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4693bfb.d	0.00 ml	10-FEB-2018 08:39	1.0	GDG	2
1400		e4694.d	5.00 ml	10-FEB-2018 09:17	1.0	GDG	1
1773659		e4694L.d	5.00 ml	10-FEB-2018 09:17	1.0	GDG	1
1773660		e4695.d	5.00 ml	10-FEB-2018 09:39	1.0	GDG	1
BLANK		e4696.d	5.00 ml	10-FEB-2018 10:01	1.0	GDG	1
BLANK		e4697.d	5.00 ml	10-FEB-2018 10:23	1.0	GDG	1
1773658 pH		e4698.d	5.00 ml	10-FEB-2018 10:46	1.0	GDG	1
21802061518 1		e4699.d	5.00 ml	10-FEB-2018 11:08	1.0	GDG	1
21802061519 1		e4700.d	5.00 ml	10-FEB-2018 11:30	1.0	GDG	1
21802061520 1		e4701.d	5.00 ml	10-FEB-2018 11:52	1.0	GDG	1
21802061521 1		e4702.d	5.00 ml	10-FEB-2018 12:15	1.0	GDG	1
21802061522 1		e4703.d	5.00 ml	10-FEB-2018 12:37	1.0	GDG	1
21802061523 1		e4704.d	5.00 ml	10-FEB-2018 12:59	1.0	GDG	1
21802061524 1		e4705.d	5.00 ml	10-FEB-2018 13:22	1.0	GDG	1
21802061528 1		e4706.d	5.00 ml	10-FEB-2018 13:44	1.0	GDG	1
21802061529 1		e4707.d	5.00 ml	10-FEB-2018 14:06	1.0	GDG	1
21802072501 1		e4708.d	5.00 ml	10-FEB-2018 14:28	1.0	GDG	1
21802072502 1		e4709.d	5.00 ml	10-FEB-2018 14:51	1.0	GDG	1
21802072503 1		e4710.d	5.00 ml	10-FEB-2018 15:13	1.0	GDG	1
21802072504 1		e4711.d	5.00 ml	10-FEB-2018 15:35	1.0	GDG	1
21802072505 1		e4712.d	5.00 ml	10-FEB-2018 15:57	1.0	GDG	1
21802072506 1		e4713.d	5.00 ml	10-FEB-2018 16:20	1.0	GDG	1
21802072507 1		e4714.d	5.00 ml	10-FEB-2018 16:42	1.0	GDG	1
21802072508 1		e4715.d	5.00 ml	10-FEB-2018 17:04	1.0	GDG	1
21802072509 1		e4716.d	5.00 ml	10-FEB-2018 17:26	1.0	GDG	1
1440		e4717.d	5.00 ml	10-FEB-2018 17:49	1.0	GDG	1
1440		e4718.d	5.00 ml	10-FEB-2018 18:11	1.0	GDG	1

REVISED 1-28-15 Supervisor Review: LBH TUNE TIME: 20:39

Client ID: 4838 - AECOM
SDG: 218020615
PM: AMK

AECOM

Chain of Custody and Analytical Requ

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Sample Analysis Requested

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)	cis-1,2 DCE	Comments	Cooler ID
OMS-28-GW80-17	2/2/18	0845	13.17	N	WG	3	X	X		-1
OMS-28-GW80-17-c	2/2/18		-	TB	WQ	2	X	X		-2
OMS-28-GW77-27	2/2/18	0920	23.27	N	WG	3	X	X		-3
OMS-28-GW77-27-MS	2/2/18	0920	23.27	MS	WG	3	X	X		-4
OMS-28-GW77-27-MSD	2/2/18	0920	23.27	SD	WG	3	X	X		-5
OMS-28-GW 80-27	2/2/18	0945	23.27	N	WG	3	X	X		-6
OMS-28-GW85-13	2/2/18	1215	9.13	N	WG	3	X	X		-7
OMS-28-GW82-19	2/2/18	1330	15.19	N	WG	3	X	X		-8
OMS-28-GW85-19	2/2/18	1255	15.19	N	WG	3	X	X		-9
OMS-28-GW85-31	2/2/18	1325	27.31	N	WG	3	X	X		-10
OMS-28-GW82-31	2/2/18	1500	27.31	N	WG	3	X	X		-11
OMS-28-GW83-12	2/2/18	1535	8.12	N	WG	3	X	X		-12
OMS-28-GW83-16	2/2/18	1600	12.16	N	WG	3	X	X		-13

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	2/5/18	1530	1.		
2. FedEx	02/16/18	09:20	2. Tiffany Savage	02/06/18	09:20
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped: XXX
Airbill #: 8992 5589 0250
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

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2 l/cpm

Page 1 of 3

AECOM Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

Client ID: 4838 - AECOM
SDG: 218020615
PM: AMK

AECOM

Chain of Custody and Analytical Requ

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Number of containers	PCE & TCE (8260B)	615-12 DCE	Comments	Cooler ID
OMS-28-GW83-16-a	2/2/18	1600	12.16	FD	WG	3	X	X		-14
OMS-28-GW87-31	2/3/18	0925	27.31	N	WG	3	X	X		-15
OMS-28-GW86-12	2/3/18	1020	8.12	N	WG	3	X	X		-16
OMS-28-GW86-16	2/3/18	1035	12.16	N	WG	3	X	X		-17
OMS-28-GW86-31	2/3/18	1115	27.31	N	WG	3	X	X		-18
OMS-28-GW88-12	2/5/18	0925	8.12	N	WG	3	X	X		-19
OMS-28-GW88-17	2/5/18	1015	13.17	N	WG	3	X	X		-20
OMS-28-GW88-31	2/5/18	1100	27.31	N	WG	3	X	X		-21
OMS-28-GW84-12	2/5/18	1125	8.12	N	WG	3	X	X		-22
OMS-28-GW84-12-a	2/5/18	1125	8.12	FD	WG	3	X	X		-23
OMS 28-GW84-17	2/5/18	1230	13.17	N	WG	3	X	X		-24
OMS-28-GW84-31	2/5/18	1300	27.31	N	WG	3	X	X		-25
OMS-28-GW84-31-MS	2/5/18	1300	27.31	MS	WG	3	X	X		-26

Sample Analysis Requested

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	2/5/18	1530	1.		
2. FedEx	2/6/18	09:20	2. Tiffany Sawyer	2/6/18	09:20
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped: XXX
Airbill #: 8492 55890250
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

0.1° C E29
26 CPM

Page 2 of 3

AECOM Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

Client ID: 4838 - AECOM
SDG: 218020615
PM: AMK

AECOM

Chain of Custody and Analytical Requ

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	cis-1,2 DCE	Comments	Cooler ID
OMS-28-GW84-31-MS/SD	2/5/18	1300	27-31	SD	WG	3	X	X		-27
OMS-28-GW90-33	2/5/18	1400	29-33	N	WG	3	X	X		-28
OMS-28-GW83-31	2/2/18	1625	27-31	N	WG	3	X	X		-29
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							
			-							

Comments

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Randy Morgan	2/5/18	1530			
2.	FedEx	2/6/18	09:20	Tiffany Berry	2/6/18	09:20
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:

Shipped: XXX
Airbill #: 8492 5589 0250
Location: Baton Rouge LA
Date:
Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

0.1°C E24
26 CPM

Page 3 of 3

AECOM Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

SAMPLE RECEIVING CHECKLIST

2180206 15

SAMPLE DELIVERY GROUP 218020615	
Client **PM** AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** Reese, Sean M
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 02/06/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E29	Temp °C
8992 5589 0250		0.1

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Appendix B20
GCAL Report 218020702 dated February 20, 2018

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/20/2018

GCAL Report 218020702

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____
Authorized Signature
GCAL Report 218020702

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218020702

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

See subcontract laboratory report case narrative.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802070201	OMS-28-GW91-33	Water	02/06/2018 08:40	02/07/2018 11:00
21802070202	OMS-28-GW91-33-C	Water	02/06/2018 00:01	02/07/2018 11:00
21802070203	OMS-28-GW93-12	Water	02/06/2018 09:10	02/07/2018 11:00
21802070204	OMS-28-GW93-16	Water	02/06/2018 09:35	02/07/2018 11:00
21802070205	OMS-28-GW93-33	Water	02/06/2018 10:00	02/07/2018 11:00
21802070206	OMS-28-GW92-12	Water	02/06/2018 10:35	02/07/2018 11:00
21802070207	OMS-28-GW92-16	Water	02/06/2018 11:00	02/07/2018 11:00
21802070208	OMS-28-GW92-33	Water	02/06/2018 11:30	02/07/2018 11:00
21802070209	OMS-28-GW92-33-A	Water	02/06/2018 11:30	02/07/2018 11:00

520996

Client ID: 4838 - AECOM
SDG: 218020702
PM: AMK

AECOM Chain of Custody and Analytical R

Project Name / Site Name: ARNG OMS 28 Mobile AL
Client Name: GCAL
Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code [2]	Sample Matrix [2]	Number of containers	VC (8260SIM)	Comments	Cooler ID
OMS-28-GW91-33	7/6/2018	0840	29.33	N	WG	3	X		1
OMS-28-GW91-33-c	7/6/2018		-	TB	WQ	3	X		2
OMS-28-GW93-12	7/6/2018	0910	8.12	N	WG	3	X		3
OMS-28-GW93-16	7/6/2018	0935	12.16	N	WG	3	X		4
OMS-28-GW93-33	7/6/2018	1000	29.33	N	WG	3	X		5
OMS-28-GW92-12	7/6/2018	1035	8.12	N	WG	3	X		6
OMS-28-GW92-16	7/6/2018	1100	12.16	N	WG	3	X		7
OMS-28-GW92-33	7/6/2018	1130	29.33	N	WG	3	X		8
OMS-28-GW92-33-a	7/6/2018	1130	29.33	FD	WG	3	X		9
			-						
			-						
			-						
			-						

Sample Analysis Requested

Comments:

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
Randy Morgan	7/6/18	1330	1.		
			2.		
			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:
Method of Shipment: Fed Ex
Analytical Lab: Katahdin Analytical
Lab Receipient:
Shipped: XXX
Airbill #: 8992 5589 0282
Location: Scarborough ME
Date: 7.7.18 Time: 1100

Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1
Project Number 60556081 2.0
Purchase Order Number 98396

AECOM Project Name: ARNG OMS 28 Mobile AL
Project Manager: Anna Kinchen
Analytical Data To: Anna Kinchen

SAMPLE RECEIVING CHECKLIST

SAMPLE DELIVERY GROUP 218020702	
Client **PM** AMK 4838 - AECOM	**Transport Method** OTHER
Profile Number 264814	**Received By** Reese, Sean M
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 02/07/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS		
Airbill	**Thermometer ID:** NA	**Temp °C**
		NA

DISCREPANCIES	LAB PRESERVATIONS
None	None

NOTES	SUBOUTS ONLY.

Revision 1.6

GCAL
ARNG OMS 28
SL0996

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

TABLE OF CONTENTS

Total number of pages: 61

SAMPLE DATA PACKAGE

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
GCAL ANALYTICAL LABORATORIES
ARNG OMS 28
SL0996

Sample Receipt

The following samples were received on February 07, 2018 and were logged in under Katahdin Analytical Services work order number SL0996 for a hardcopy due date of February 19, 2018.

KATAHDIN Sample No.	GCAL Sample Identification
SL0996-1	OMS-28-GW91-33
SL0996-2	OMS-28-GW91-33-C
SL0996-3	OMS-28-GW93-12
SL0996-4	OMS-28-GW93-16
SL0996-5	OMS-28-GW93-33
SL0996-6	OMS-28-GW92-12
SL0996-7	OMS-28-GW92-16
SL0996-8	OMS-28-GW92-33
SL0996-9	OMS-28-GW92-33-A

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SL0996 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8260B SIM Analysis

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

There were no other protocol deviations or observations noted by the organics laboratory staff.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond
02.20.18

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: GCAL	KAS PM: HM	Sampled By: Client	
Project:	KMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: SL0996	KMS Review By: HM	Received By: JCB	
SDG #:	Cooler: _____ of _____	Date/Time Rec.: 2-7-18 1100	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.2
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

4 broken vials on arrival. One broken for -5 and -7

Two broken for -6

520996

0.2

AECOM

Chain of Custody and Analytical Request

Laboratory: Katahdin Analytical

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: GCAL

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (2)	Sample Matrix (2)	Number of containers	VC (8260SIM)								Comments	Cooler ID
OMS-28-GW91-33	2/6/2018	0840	29.33	N	WG	3	X									
OMS-28-GW91-33-c	2/6/2018		-	TB	WQ	3	X									
OMS-28-GW93-12	2/6/2018	0910	8.12	N	WG	3	X									
OMS-28-GW93-16	2/6/2018	0935	12.16	N	WG	3	X									
OMS28-GW93-33	2/6/2018	1000	29.33	N	WG	3	X									
OMS-28-GW92-12	2/6/2018	1035	8.12	N	WG	3	X									
OMS-28-GW92-16	2/6/2018	1100	12.16	N	WG	3	X									
OMS-28-GW92-33	2/6/2018	1130	29.33	N	WG	3	X									
OMS-28-GW92-33-a	2/6/2018	1130	29.33	FD	WG	3	X									
			-													
			-													
			-													
			-													

Sample Analysis Requested

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	2/6/18	1330	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab:

Method of Shipment: Fed EX

Analytical Lab: Katahdin Analytical

Lab Receipient:

Shipped: XXX

Airbill #: 8992 5589 9282

Location: Scarborough ME

Date: 2.7.18 Time: 1100

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

Page 1 of 1

Project Number 60556081 2.0

Purchase Order Number 98396

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Anna Kinchen

Analytical Data To Anna Kinchen

9000000

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Feb. 07, 2018
02:26 PM

Login Number: SL0996

Account: GCAL001
GCAL

Project: GCAL-VOASIM

Quote/Incoming: GCAL-VOASIM

NoWeb

Primary Report Address:
Kimberly Drag
GCAL
7979 Innovation Park Dr

Baton Rouge,LA 70820
kimberly.drag@gcal.com

Primary Invoice Address:
Kelly Lott
GCAL Analytical Laboratories
7979 Innovation Park Drive

Baton Rouge,LA 70820

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD 5.0 project. Analysis for VC only.
CHECK NO.	:	
CLIENT PO#	:	98356; Proj# 60556081 2.0
CLIENT PROJECT MANAGE	:	Anna Kinchen
CONTRACT	:	
COOLER TEMPERATURE	:	0.2
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	KAS135QC-CSV
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	ARNG OMS 28
QC LEVEL	:	III
REPORT INSTRUCTIONS	:	Send final PDF and EDD to both Anna (anna.kinchen@gcal.com) and Kimberly (kimberly.drag@gcal.com). Invoice to Kimberly.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	24

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0996-1	OMS-28-GW91-33	06-FEB-18 08:40	07-FEB-18			19-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		

SL0996-2	OMS-28-GW91-33-C	06-FEB-18 00:00	07-FEB-18			19-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		**Sample is Trip Blank**

SL0996-3	OMS-28-GW93-12	06-FEB-18 09:10	07-FEB-18			19-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		

SL0996-4	OMS-28-GW93-16	06-FEB-18 09:35	07-FEB-18			19-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		

SL0996-5	OMS-28-GW93-33	06-FEB-18 10:00	07-FEB-18			19-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		**One vial received broken.**

SL0996-6	OMS-28-GW92-12	06-FEB-18 10:35	07-FEB-18			19-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		**Two vials received broken.**

SL0996-7	OMS-28-GW92-16	06-FEB-18 11:00	07-FEB-18			19-FEB-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		**One vial received broken.**

lthh 2-7-18

Login Number: SL0996

Quote/Incoming: GCAL-VOASIM

Account: GCAL001 NoWeb
GCAL

Project: GCAL-VOASIM

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0996-8	OMS-28-GW92-33	06-FEB-18 11:30	07-FEB-18			19-FEB-18	

Matrix		*Product*	*Hold Date (shortest)*	*Bottle Type*	*Bottle Count*	*Comments*
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL0996-9	OMS-28-GW92-33-A	06-FEB-18 11:30	07-FEB-18			19-FEB-18	

Matrix		*Product*	*Hold Date (shortest)*	*Bottle Type*	*Bottle Count*	*Comments*
Aqueous	S	SW8260SIMVC	20-FEB-18	40mL Vial+HCl		**Sample is field dup of SL0996-8.**

Total Samples: ***9*** ***Total Analyses:*** ***9***

2-7-18

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: GCAL
Lab ID: SL0996-1
Client ID: OMS-28-GW91-33
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0259.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		124.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: GCAL
Lab ID: SL0996-2
Client ID: OMS-28-GW91-33-C
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0254.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		123.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: GCAL
Lab ID: SL0996-3
Client ID: OMS-28-GW93-12
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0260.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		125.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: GCAL
Lab ID: SL0996-4
Client ID: OMS-28-GW93-16
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0368.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		98.6	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: GCAL
Lab ID: SL0996-5
Client ID: OMS-28-GW93-33
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0369.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		99.4	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: GCAL
Lab ID: SL0996-6
Client ID: OMS-28-GW92-12
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0370.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		99.1	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: GCAL
Lab ID: SL0996-7
Client ID: OMS-28-GW92-16
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0371.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		98.4	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-8
Client ID: OMS-28-GW92-33
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0372.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		98.5	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-9
Client ID: OMS-28-GW92-33-A
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0373.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		97.7	%					

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SIM VOLATILES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** ARNG OMS 28 **Matrix:** AQ
Lab Code: KAS **SDG:** SL0996

Client Sample ID	Lab Sample ID	Col. ID	DBF	#
OMS-28-GW91-33	SL0996-1		124.	
OMS-28-GW91-33-C	SL0996-2		123.	
OMS-28-GW93-12	SL0996-3		125.	
OMS-28-GW93-16	SL0996-4		98.6	
OMS-28-GW93-33	SL0996-5		99.4	
OMS-28-GW92-12	SL0996-6		99.1	
OMS-28-GW92-16	SL0996-7		98.4	
OMS-28-GW92-33	SL0996-8		98.5	
OMS-28-GW92-33-A	SL0996-9		97.7	
Laboratory Control S	WG223053-1		101.	
Method Blank Sample	WG223053-2		120.	
Laboratory Control S	WG223502-1		94.7	
Method Blank Sample	WG223502-2		98.9	

		QC Limits
DBF	DIBROMOFLUOROMETHANE	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : D0253.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL0996
Lab Sample ID : WG223053-2
Date Analyzed : 08-FEB-18
Time Analyzed : 12:23

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG223053-1	D0251.D	02/08/18	10:58
OMS-28-GW91-33-C	SL0996-2	D0254.D	02/08/18	13:01
OMS-28-GW91-33	SL0996-1	D0259.D	02/08/18	16:11
OMS-28-GW93-12	SL0996-3	D0260.D	02/08/18	16:49

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : D0367.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL0996
Lab Sample ID : WG223502-2
Date Analyzed : 16-FEB-18
Time Analyzed : 10:42

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG223502-1	D0365.D	02/16/18	09:13
OMS-28-GW93-16	SL0996-4	D0368.D	02/16/18	11:20
OMS-28-GW93-33	SL0996-5	D0369.D	02/16/18	11:58
OMS-28-GW92-12	SL0996-6	D0370.D	02/16/18	12:36
OMS-28-GW92-16	SL0996-7	D0371.D	02/16/18	13:14
OMS-28-GW92-33	SL0996-8	D0372.D	02/16/18	13:52
OMS-28-GW92-33-A	SL0996-9	D0373.D	02/16/18	14:29

Report of Analytical Results

Client:
Lab ID: WG223053-2
Client ID: Method Blank Sample
Project:
SDG: SL0996
Lab File ID: D0253.D

Sample Date:
Received Date:
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		120.	%					

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Report of Analytical Results

Client:
Lab ID: WG223502-2
Client ID: Method Blank Sample
Project:
SDG: SL0996
Lab File ID: D0367.D

Sample Date:
Received Date:
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		98.9	%					

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LCS Recovery Report

Client:
Lab ID: WG223053-1
Client ID: LCS
Project:
SDG: SL0996
LCS File ID: D0251.D

Sample Date:
Received Date:
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HC
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Vinyl Chloride	82.0	0.500	0.410	ug/L	70-130
Dibromofluoromethane	101.				70-130

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LCS Recovery Report

Client:
Lab ID: WG223502-1
Client ID: LCS
Project:
SDG: SL0996
LCS File ID: D0365.D

Sample Date:
Received Date:
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Vinyl Chloride	82.0	0.500	0.410	ug/L	70-130
Dibromofluoromethane	94.7				70-130

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : DB091A.D
Instrument ID : GCMS-D

SDG : SL0996
Date Analyzed : 31-JAN-18
Time Analyzed : 08:14
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.4		
75	30.0 - 60.0% of mass 95	50.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.5		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	88.7		
175	5.0 - 9.0% of mass 174	7.1	8.05	1
176	95.0 - 101.0% of mass 174	85.2	95.98	1
177	5.0 - 9.0% of mass 176	5.5	6.47	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG222666-5	D0137.D	01/31/18	08:44
Initial Calibration	WG222666-4	D0138.D	01/31/18	09:44
Initial Calibration	WG222666-3	D0139.D	01/31/18	10:22
Initial Calibration	WG222666-2	D0140.D	01/31/18	11:00
Initial Calibration	WG222666-1	D0141.D	01/31/18	11:38
Initial Calibration	WG222666-8	D0142.D	01/31/18	12:16
Initial Calibration	WG222666-7	D0143.D	01/31/18	12:54
Initial Calibration	WG222666-6	D0144.D	01/31/18	13:32
Independent Source	WG222666-9	D0146.D	01/31/18	15:04

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : DB097.D
Instrument ID : GCMS-D

SDG : SL0996
Date Analyzed : 08-FEB-18
Time Analyzed : 08:59
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.0		
75	30.0 - 60.0% of mass 95	46.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.0		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	80.9		
175	5.0 - 9.0% of mass 174	5.3	6.52	1
176	95.0 - 101.0% of mass 174	80.0	98.89	1
177	5.0 - 9.0% of mass 176	5.5	6.85	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG223053-4	D0249.D	02/08/18	09:25
Laboratory Control S	WG223053-1	D0251.D	02/08/18	10:58
Method Blank Sample	WG223053-2	D0253.D	02/08/18	12:23
OMS-28-GW91-33-C	SL0996-2	D0254.D	02/08/18	13:01
OMS-28-GW91-33	SL0996-1	D0259.D	02/08/18	16:11
OMS-28-GW93-12	SL0996-3	D0260.D	02/08/18	16:49
Continuing Calibrati	WG223053-5	D0266.D	02/08/18	20:37

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : DB105A.D
Instrument ID : GCMS-D

SDG : SL0996
Date Analyzed : 15-FEB-18
Time Analyzed : 09:56
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	17.7		
75	30.0 - 60.0% of mass 95	47.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.6		
173	Less than 2.0% of mass 174	0.3	0.46	1
174	Greater than 50.0% of mass 95	72.5		
175	5.0 - 9.0% of mass 174	5.3	7.28	1
176	95.0 - 101.0% of mass 174	70.6	97.43	1
177	5.0 - 9.0% of mass 176	4.6	6.47	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG223434-5	D0353.D	02/15/18	11:08
Initial Calibration	WG223434-4	D0354.D	02/15/18	11:46
Initial Calibration	WG223434-3	D0355.D	02/15/18	12:24
Initial Calibration	WG223434-2	D0356.D	02/15/18	13:02
Initial Calibration	WG223434-1	D0357.D	02/15/18	13:40
Initial Calibration	WG223434-8	D0358.D	02/15/18	14:18
Initial Calibration	WG223434-7	D0359.D	02/15/18	14:56
Initial Calibration	WG223434-6	D0360.D	02/15/18	15:34

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab File ID : DB106.D
Instrument ID : GCMS-D

SDG : SL0996
Date Analyzed : 16-FEB-18
Time Analyzed : 07:37
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.3		
75	30.0 - 60.0% of mass 95	47.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.7		
173	Less than 2.0% of mass 174	0.2	0.34	1
174	Greater than 50.0% of mass 95	73.0		
175	5.0 - 9.0% of mass 174	4.8	6.60	1
176	95.0 - 101.0% of mass 174	71.7	98.26	1
177	5.0 - 9.0% of mass 176	4.5	6.27	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG223502-4	D0364.D	02/16/18	08:13
Laboratory Control S	WG223502-1	D0365.D	02/16/18	09:13
Independent Source	WG223502-6	D0365A.D	02/16/18	09:13
Method Blank Sample	WG223502-2	D0367.D	02/16/18	10:42
OMS-28-GW93-16	SL0996-4	D0368.D	02/16/18	11:20
OMS-28-GW93-33	SL0996-5	D0369.D	02/16/18	11:58
OMS-28-GW92-12	SL0996-6	D0370.D	02/16/18	12:36
OMS-28-GW92-16	SL0996-7	D0371.D	02/16/18	13:14
OMS-28-GW92-33	SL0996-8	D0372.D	02/16/18	13:52
OMS-28-GW92-33-A	SL0996-9	D0373.D	02/16/18	14:29
Continuing Calibrati	WG223502-5	D0377.D	02/16/18	17:01

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG222666-5
Lab File ID : D0137.d

SDG: SL0996
Analytical Date: 01/31/18 08:44
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			
		Area	#	RT	#
	Std .	35190		7.87	
	Upper Limit	70380		8.37	
	Lower Limit	17595		7.37	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG223053-4	27114		7.86	
Laboratory Control S	WG223053-1	29453		7.86	
Method Blank Sample	WG223053-2	23962		7.86	
OMS-28-GW91-33-C	SL0996-2	22668		7.86	
OMS-28-GW91-33	SL0996-1	22103		7.86	
OMS-28-GW93-12	SL0996-3	21867		7.86	
Continuing Calibrati	WG223053-5	22670		7.86	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG223434-5
Lab File ID : D0353.d

SDG: SL0996
Analytical Date: 02/15/18 11:08
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			
		Area	#	RT	#
	Std .	29339		7.86	
	Upper Limit	58678		8.36	
	Lower Limit	14669.5		7.36	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG223502-4	27985		7.86	
Laboratory Control S	WG223502-1	28073		7.86	
Method Blank Sample	WG223502-2	27417		7.86	
OMS-28-GW93-16	SL0996-4	27366		7.86	
OMS-28-GW93-33	SL0996-5	27038		7.86	
OMS-28-GW92-12	SL0996-6	26878		7.86	
OMS-28-GW92-16	SL0996-7	26712		7.86	
OMS-28-GW92-33	SL0996-8	26416		7.86	
OMS-28-GW92-33-A	SL0996-9	26306		7.86	
Continuing Calibrati	WG223502-5	25336		7.86	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data Section

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The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

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Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Report of Analytical Results

Client: GCAL
Lab ID: SL0996-1
Client ID: OMS-28-GW91-33
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0259.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		124.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-2
Client ID: OMS-28-GW91-33-C
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0254.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		123.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-3
Client ID: OMS-28-GW93-12
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0260.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 08-FEB-18
Extracted By: JSS/HC
Extraction Method: SW846 5030
Lab Prep Batch: WG223053

Analysis Date: 08-FEB-18
Analyst: JSS/HG
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		125.	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-4
Client ID: OMS-28-GW93-16
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0368.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		98.6	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-5
Client ID: OMS-28-GW93-33
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0369.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		99.4	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-6
Client ID: OMS-28-GW92-12
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0370.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		99.1	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-7
Client ID: OMS-28-GW92-16
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0371.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		98.4	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-8
Client ID: OMS-28-GW92-33
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0372.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		98.5	%					

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Report of Analytical Results

Client: GCAL
Lab ID: SL0996-9
Client ID: OMS-28-GW92-33-A
Project: ARNG OMS 28
SDG: SL0996
Lab File ID: D0373.D

Sample Date: 06-FEB-18
Received Date: 07-FEB-18
Extract Date: 16-FEB-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG223502

Analysis Date: 16-FEB-18
Analyst: JSS
Analysis Method: SW846 M8260B
Matrix: AQ
% Solids: NA
Report Date: 20-FEB-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Vinyl Chloride	U	0.050	ug/L	1	.1	0.10	0.017	0.050
Dibromofluoromethane		97.7	%					

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Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL0996
Project : ARNG OMS 28
Instrument ID: GCMS-D
Lab File IDs : D0141.d D0140.d D0139.d D0138.d D0137.d D0144.d D0143.d D0142.d
Calibration Date(s): 31-JAN-18 08:44 31-JAN-18 13:32

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Crv				Max	
	0.0500000	0.0750000	0.1000000	0.3000000	0.5000000	0.7500000	1.0000	2.0000	New	b	m1	%RSD	%RSD	
Vinyl chloride	2.35153	2.23374	2.42195	2.20479	2.02643	2.06244	2.07490	1.89827	AVG		2.15926	8.13235	15.00000	O
Dibromofluoromethane	1.28770	1.24802	1.16220	1.09734	1.00412	1.14114	1.08099	1.04896	AVG		1.13381	8.54631	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-d.i\D013118.b\D0146.d
Report Date: 02-Feb-2018 08:28

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG222666-9
Level: LOW Operator: JSS/HG
Data Type: MS DATA SampleType: LCS
SpikeList File: SIMLCSvcldce.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D013118.b\D8SIMVCLDCE01.m
Misc Info: WG222666,WG217420-5

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
2 Vinyl chloride	0.50	0.53	105.96	70-130
6 1,1-Dichloroethene	0.50	0.53	106.58	70-130

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 16 Dibromofluorometha	1.0	0.90	89.78	70-130

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL0996
Project : ARNG OMS 28
Instrument ID: GCMS-D
Lab File IDs : D0357.d D0356.d D0355.d D0354.d D0353.d D0360.d D0359.d D0358.d
Calibration Date(s): 15-FEB-18 11:08 15-FEB-18 15:34

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Crv				Max	
	0.0500000(	0.0750000(	0.1000000(	0.3000000(	0.5000000	0.7500000(	1.0000	2.0000	New	b	m1	%RSD	%RSD	
Vinyl chloride	0.84260	0.81636	0.86557	0.61846	0.79048	0.77959	0.81768	0.82400	AVG		0.79434	9.57316	15.00000	O
Dibromofluoromethane	0.47639	0.46502	0.46436	0.46930	0.47125	0.47419	0.47214	0.47542	AVG		0.47101	0.95897	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-d.i\D021618.b\D0365a.d
Report Date: 20-Feb-2018 07:20

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG223502-1
Level: LOW Operator: JSS
Data Type: MS DATA SampleType: LCS
SpikeList File: 826SIMLNGAQ.spk Quant Type: ISTD
Sublist File: SimVCL.sub
Method File: \\target_server\gg\chem\gcms-d.i\D021618.b\D82SIMCDM22.m
Misc Info: WG223502,WG223434-5

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Chloromethane	0.50	0.35	70.97	70-130
	2	Vinyl chloride	0.50	0.41	82.02	70-130
	3	Bromomethane	0.50	0.86	171.50*	70-130
	4	Chloroethane	0.50	0.00	*	70-130
	5	Trichlorofluoromet	0.50	0.44	87.44	70-130
	6	1,1-Dichloroethene	0.50	0.47	93.29	70-130
	7	Methylene Chloride	20.0	0.57	2.85*	70-130
	8	trans-1,2-Dichloro	0.50	0.47	94.74	70-130
	9	Methyl tert-butyl	0.50	0.00	*	70-130
	10	1,1-Dichloroethane	0.50	0.46	91.81	70-130
	12	cis-1,2-Dichloroet	0.50	0.47	93.45	70-130
M	48	1,2-Dichloroethyle	1.0	0.94	94.09	70-130
	13	Chloroform	0.50	0.46	92.94	70-130
	14	Carbon Tetrachlori	0.50	0.47	93.96	70-130
	15	1,1,1-Trichloroeth	0.50	0.47	94.91	70-130
	17	Benzene	0.50	0.47	93.32	70-130
	20	1,2-Dichloroethane	0.50	0.44	87.14	70-130
	21	Trichloroethene	0.50	0.46	92.91	70-130
	23	Dibromomethane	0.50	0.44	88.58	70-130
	24	1,2-Dichloropropan	0.50	0.46	91.11	70-130
	25	Bromodichlorometha	0.50	0.44	87.97	70-130
	30	4-methyl-2-pentano	0.50	1.9	382.42*	70-130
	35	2-Hexanone	0.50	1.9	382.54*	70-130
	26	cis-1,3-dichloropr	0.50	0.46	92.10	70-130
	28	Toluene	0.50	0.47	93.75	70-130
	29	Tetrachloroethene	0.50	0.48	96.96	70-130
	31	trans-1,3-Dichloro	0.50	0.43	85.95	70-130
	32	1,1,2-Trichloroeth	0.50	0.42	83.63	70-130
	33	Dibromochlorometha	0.50	0.46	91.96	70-130
	34	1,2-Dibromoethane	0.50	0.42	83.91	70-130
	37	Chlorobenzene	0.50	0.48	95.45	70-130
	38	Ethylbenzene	0.50	0.51	101.34	70-130
	39	1,1,1,2-Tetrachlor	0.50	0.48	96.09	70-130
M	57	Xylenes (total)	1.5	1.4	95.58	70-130
	40	m+p-Xylenes	1.0	0.96	95.60	70-130
	41	o-Xylene	0.50	0.48	95.56	70-130
	47	Bromoform	0.50	0.00	*	70-130
	42	Isopropylbenzene	0.50	0.47	93.81	70-130
	44	1,1,2,2-Tetrachlor	0.50	0.42	83.95	70-130
	45	1,2,3-Trichloropro	0.50	0.094	18.73*	70-130

Data File: \\target_server\gg\chem\gcms-d.i\D021618.b\D0365a.d
Report Date: 20-Feb-2018 07:20

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
46 1,2,4-Trimethylben	0.50	0.48	96.33	70-130
49 1,3-Dichlorobenzen	0.50	0.46	91.18	70-130
51 1,4-Dichlorobenzen	0.50	0.46	91.80	70-130
52 1,2-Dichlorobenzen	0.50	0.45	89.73	70-130
53 1,2-Dibromo-3-Chlo	0.50	0.42	83.57	70-130
54 Hexachlorobutadien	0.50	0.48	96.21	70-130
56 Naphthalene	0.50	0.39	78.06	70-130

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 16 Dibromofluorometha	1.0	0.95	94.73	70-130

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG223053-4
Lab File ID : D0249.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0996
Analytical Date: 02/08/18 09:25
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.93553	0.010	-10.36124	20.00000	Averaged
16	Dibromofluoromethane	1.13381	1.17721	0.010	3.82831	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG223053-5
Lab File ID : D0266.d
Initial Calibration Date(s): 01/31/18 08:44 01/31/18 13:32

SDG: SL0996
Analytical Date: 02/08/18 20:37
Instrument ID: GCMS-D
Column ID:

	Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
10	Vinyl chloride	2.15926	1.75439	0.010	-18.75035	50.00000	Averaged
16	Dibromofluoromethane	1.13381	1.33736	0.010	17.95303	50.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG223502-4
Lab File ID : D0364.d
Initial Calibration Date(s): 02/15/18 11:08 02/15/18 15:34

SDG: SL0996
Analytical Date: 02/16/18 08:13
Instrument ID: GCMS-D
Column ID:

	Compound	RRF/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
2	Vinyl chloride	0.79434	0.81015	0.81015	0.010	1.98978	20.00000	Averaged
16	Dibromofluoromethane	0.47101	0.44417	0.44417	0.010	-5.69883	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : ARNG OMS 28
Lab ID : WG223502-5
Lab File ID : D0377.d
Initial Calibration Date(s): 02/15/18 11:08 02/15/18 15:34

SDG: SL0996
Analytical Date: 02/16/18 17:01
Instrument ID: GCMS-D
Column ID:

	Compound	RRF/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
2	Vinyl chloride	0.79434	0.72016	0.72016	0.010	-9.33874	50.00000	Averaged
16	Dibromofluoromethane	0.47101	0.45982	0.45982	0.010	-2.37543	50.00000	Averaged

*** = Compound out of QC criteria**

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 01318

					PREP METHOD			Criteria			pH Paper Lot #:			KI Paper Lot #	
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG222666 - 12	DB091	1	-1	VOABFBA02							Y	JK			
- 5	DD137	1	1	DBSIMVOLDCF01							Y				
- 4	38	1	2								Y				
- 3	39	1	3								Y				
- 2	40	1	4								Y				
- 1	41	1	5								Y				
- 8	42	1	6								Y				
- 7	43	1	7								Y				
- 6	44	1	8								Y				
LCS/IMD -	45	1	9								N				
LCS/IMD - 9/10	46	1	10								Y				
VBLK	47	1	11								N				
WG222666 - 11	48	1	12												
SL0744 -1 A	49	1	13		x			x							
-2 A	50	1	14												Archea Failed Id
-3 A	51	1	15												
SL0777 -2 A	52	1	16												
CCV	53	1	17												
CCV	54	1	18												
CCV	55	1	19												
Rinse	56	1	1												

STANDARD	CODE
BFB	V0964
CAL. STD.	V0979
LCS/MS MIX	V0980
EXTRAS MIX	—

STANDARD	CODE
IS MIX	V0978
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 2-8-18 7:59

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	KI Paper Lot # TRC	COMMENTS
WG223053-3	D0247	1	-	V8260BSIM	✓						Y			NA	
VSTD -4	D0249		1	0SSIMVOLDLE01							Y				
LCS	50		2								N				
LCS -1	51		3								Y				
VBLKA	52		4								N				
B	53		5								Y				
SL0996-2A	54		6						5.0		Y		L2		
SL0952-20A	55		7								Y				
-21A	56		8								Y				
-22A	57		9								Y				
-24A	58		10								Y				
SL0996-1A	59		11								Y				
-3A	60		12								Y				
SL0952-25A 2/8/18	61		13								Y				
SL0952-19A	62		14								Y				
SL0952-23A	63		15								Y				
23MS B -6	64		16								Y				
23MSD C -7	65		17								Y				
CCV -5	66		18								Y				20:37 ✓
2	67		19								Y				Conc. Failed did not run
3	69		20								Y				
Rinse	69		21								Y				
↓	70	↓	22	↓	↓						A				
															080917

STANDARD	CODE
BFB	V0964
CAL. STD.	V0979
LCS/MS MIX	V0981/V0982
~~EXTRAS~~ MIX MS10 MIX	V0987

STANDARD	CODE
IS MIX	V0985
SS MIX	

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 2-15-18 9 56

					PREP METHOD			Criteria			pH Paper Lot #:				KI Paper Lot #
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG322424-12	DB105	1	—	8260/5035	✓						Y	HS	7		
0.5	D0352		1	D8260SIMCOM 23							N				
1 -5	53		2	HS 2/22/18							Y				
0.3 -4	54		3								Y				Curve OK HS 2-16-18
0.1 -3	55		4								Y				
0.075 -2	56		5								Y				
0.05 -1	57		6								Y				
2.0 -8	58		7								Y				
1.0 -7	59		8								Y				
0.75 -6	60		9								Y				
LCS/IND -9	61		10								N				
VBLK	D03 02	✓	11	✓	✓						N	✓	✓		
Rinse	63	1	1								N				

STANDARD	CODE
BFB	V0995
CAL. STD.	V1002
LCS/MS MIX	V0996 V0997 V0999
EXTRAS MIX	

STANDARD	CODE
IS MIX	V0991
SS MIX	✓

Circle Methods:

~~SW846 8260~~	OLM 04.2
SW846 8260 SIM	OLC 03.2
~~SW846~~ 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 021618 7:37

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG423502-3	DB106	1	4	V8260BFB_AQ_2	✓						Y	✓			
-5	D0364	1	1	D8260SIMSDM22							Y				
-11-6	65	1	2								Y				IND -6
VBLK	66	1	3								N				
WG423502-2	67	1	4								Y				
SL0996-4	68	1	5								Y		<2		
-5	69	1	6								Y		<2		
-6	70	1	7								Y		<2		
-7	71	1	8								Y		<2		
-8	72	1	9								Y		<2		
-9	73	1	10								Y		<2		
SL0830-2	74	1	11								Y		<2		RR scan TCE 37%
-5	75	1	12								Y		<2		TCE 34%
-6	76	1	13								Y		<2		TCE 23%
CCV 1 -5	77	1	14								Y				17:01 ✓
2	78	1	15								N				
3	79	1	16								N				
Rinse	80	1	17								N				
Rinse	81	1	18								N				
Rinse	82	1	1	↓	↓						N				

STANDARD	CODE
BFB	V0995
CAL. STD.	~~V8~~ V1002
LCS/MS MIX	V0996/V0997B
EXTRAS MIX	

STANDARD	CODE
IS MIX	V0991
SS MIX	✓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

02/19/18

Appendix B21
GCAL Report 218020725 dated February 19, 2018

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/19/2018

GCAL Report 218020725

Project ARNG OMS 28/ 60556081

Deliver To	***Additional Recipients***
Steve Holt AECOM 10 Patewood Drive, Bldg. VI Suite 500 Greenville, SC 29615 864-234-2260	NONE

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

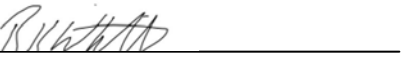
J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % diference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.



Authorized Signature
GCAL Report 218020725

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: AECOM **Report:** 218020725

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802072501	OMS-28-GW91-33	Water	02/06/2018 08:40	02/07/2018 10:00
21802072502	OMS-28-GW91-33-C	Water	02/06/2018 00:01	02/07/2018 10:00
21802072503	OMS-28-GW93-12	Water	02/06/2018 09:10	02/07/2018 10:00
21802072504	OMS-28-GW93-16	Water	02/06/2018 09:35	02/07/2018 10:00
21802072505	OMS-28-GW93-33	Water	02/06/2018 10:00	02/07/2018 10:00
21802072506	OMS-28-GW92-12	Water	02/06/2018 10:35	02/07/2018 10:00
21802072507	OMS-28-GW92-16	Water	02/06/2018 11:00	02/07/2018 10:00
21802072508	OMS-28-GW92-33	Water	02/06/2018 11:30	02/07/2018 10:00
21802072509	OMS-28-GW92-33-A	Water	02/06/2018 11:30	02/07/2018 10:00

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802072501	OMS-28-GW91-33	W	EPA 8260B DOD Water
21802072502	OMS-28-GW91-33-C	W	EPA 8260B DOD Water
21802072503	OMS-28-GW93-12	W	EPA 8260B DOD Water
21802072504	OMS-28-GW93-16	W	EPA 8260B DOD Water
21802072505	OMS-28-GW93-33	W	EPA 8260B DOD Water
21802072506	OMS-28-GW92-12	W	EPA 8260B DOD Water
21802072507	OMS-28-GW92-16	W	EPA 8260B DOD Water
21802072508	OMS-28-GW92-33	W	EPA 8260B DOD Water
21802072509	OMS-28-GW92-33-A	W	EPA 8260B DOD Water

Manual Integrations

GCAL ID	Client ID	Procedure	CAS	Analyte
21802072505	OMS-28-GW93-33	EPA 8260B	79-01-6	Trichloroethene

Summary of Compounds Detected

OMS-28-GW93-33	Collect Date	02/06/2018 10:00	GCAL ID	21802072505
	Receive Date	02/07/2018 10:00	Matrix	Water

EPA 8260B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
79-01-6	Trichloroethene	0.584J	0.200	0.500	1.00	ug/L

Form 1A

Results

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW91-33
Collect Date:	02/06/18	Time:	0840	GCAL Sample ID:	21802072501
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4708
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1428	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW91-33-C
Collect Date:	02/06/18	Time:	0001	GCAL Sample ID:	21802072502
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4709
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1451	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW93-12
Collect Date:	02/06/18	Time:	0910	GCAL Sample ID:	21802072503
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4710
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1513	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW93-16
Collect Date:	02/06/18	Time:	0935	GCAL Sample ID:	21802072504
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4711
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1535	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	***ANALYTE***	***RESULT***	***Q***	***DL***	***LOD***	***LOQ***
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW93-33
Collect Date:	02/06/18	Time:	1000	GCAL Sample ID:	21802072505
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4712
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1557	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.584	J	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW92-12
Collect Date:	02/06/18	Time:	1035	GCAL Sample ID:	21802072506
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4713
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1620	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW92-16
Collect Date:	02/06/18	Time:	1100	GCAL Sample ID:	21802072507
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4714
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1642	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW92-33
Collect Date:	02/06/18	Time:	1130	GCAL Sample ID:	21802072508
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4715
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1704	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	OMS-28-GW92-33-A
Collect Date:	02/06/18	Time:	1130	GCAL Sample ID:	21802072509
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4716
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1726	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	218020725			Client Sample ID:	MB1773658
Collect Date:	NA	Time:	NA	GCAL Sample ID:	1773658
Matrix:	Water	% Moisture:	NA	Instrument ID:	MSV13
Sample Amt:	5 mL			Lab File ID:	2180210/e4698
Injection Vol.:	1.0 (µL)			GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1	Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18	Time:	1046	Analytical Method:	EPA 8260B

CONCENTRATION UNITS: ug/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
156-59-2	cis-1,2-Dichloroethene	0.500	U	0.200	0.500	1.00
127-18-4	Tetrachloroethene	0.500	U	0.200	0.500	1.00
79-01-6	Trichloroethene	0.500	U	0.200	0.500	1.00

FORM I VOA

Form 2A

Surrogates

Water

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Report No: 218020725 Analytical Method: EPA 8260B

	Client Sample ID	GCALSample ID	SMC1	#	SMC2	#	SMC3	#	SMC4	#	TOT OUT
1 .	OMS-28-GW91-33	21802072501	96		100		106		108		0
2 .	MB1773658	1773658	95		100		106		106		0
3 .	LCS1773659	1773659	95		106		102		99		0
4 .	LCSD1773660	1773660	94		107		100		101		0
5 .	OMS-28-GW91-33-C	21802072502	96		98		104		107		0
6 .	OMS-28-GW93-12	21802072503	98		100		106		108		0
7 .	OMS-28-GW93-16	21802072504	97		100		105		106		0
8 .	OMS-28-GW93-33	21802072505	96		100		105		108		0
9 .	OMS-28-GW92-12	21802072506	96		101		104		108		0
10 .	OMS-28-GW92-16	21802072507	97		103		106		109		0
11 .	OMS-28-GW92-33	21802072508	96		102		104		108		0
12 .	OMS-28-GW92-33-A	21802072509	95		102		105		108		0

		QC LIMITS	
SMC 1	1,2-Dichloroethane-d4	81 - 118	# Column to be used to flag recovery values
SMC 2	4-Bromofluorobenzene	85 - 114	* Values outside of QC limits
SMC 3	Dibromofluoromethane	80 - 119	
SMC 4	Toluene-d8	89 - 112	

FORM II VOA-1

Form 3A

Spikes

Water

3A

WATER VOLATILE LCS/LCSD RECOVERY

Report No: 218020725

Analytical Method: EPA 8260B

Analytical Batch: 628818

GCAL QC ID: 1773659

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
Tetrachloroethene	ug/L	50	0	54.4	109		74 - 129
Trichloroethene	ug/L	50	0	54.1	108		79 - 123
cis-1,2-Dichloroethene	ug/L	50	0	46.2	92		78 - 123

GCAL QC ID: 1773660

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*RPD*
Tetrachloroethene	ug/L	50	54.2	108		.4		74 - 129	0 - 20
Trichloroethene	ug/L	50	52.5	105		3		79 - 123	0 - 20
cis-1,2-Dichloroethene	ug/L	50	46.5	93		.6		78 - 123	0 - 20

RPD : 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III VOA-1

Form 4A

Method Blanks

4A

VOLATILE METHOD BLANK SUMMARY

Report No:	218020725	Method Blank ID:	1773658
Matrix:	Water	Instrument ID:	MSV13
Sample Amt:	5 mL	Lab File ID:	2180210/e4698
Injection Vol.:	1.0 (µL)	GC Column:	RTX-VMS-30 ID .25 (mm)
Dilution Factor:	1 Analyst: GDG	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 1046	Analytical Method:	EPA 8260B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	LCS1773659	1773659	2180210/e4694L	02/10/18	0917
2 .	LCSD1773660	1773660	2180210/e4695	02/10/18	0939
3 .	OMS-28-GW91-33	21802072501	2180210/e4708	02/10/18	1428
4 .	OMS-28-GW91-33-C	21802072502	2180210/e4709	02/10/18	1451
5 .	OMS-28-GW93-12	21802072503	2180210/e4710	02/10/18	1513
6 .	OMS-28-GW93-16	21802072504	2180210/e4711	02/10/18	1535
7 .	OMS-28-GW93-33	21802072505	2180210/e4712	02/10/18	1557
8 .	OMS-28-GW92-12	21802072506	2180210/e4713	02/10/18	1620
9 .	OMS-28-GW92-16	21802072507	2180210/e4714	02/10/18	1642
10 .	OMS-28-GW92-33	21802072508	2180210/e4715	02/10/18	1704
11 .	OMS-28-GW92-33-A	21802072509	2180210/e4716	02/10/18	1726

FORM IV VOA

Form 5A

Tunes

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020725	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180131/e4235D
Analyst:	JCK	Analytical Batch:	628122
Analysis Date:	01/31/18 Time: 1021	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	17.72	(	)	
75	30.0 - 60.0% of mass 95	46.53	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.39	(	)	
173	Less than 2.0% of mass 174	.98	(1.02	)	1
174	50.0 - 120.0% of mass 95	96.35	(	)	
175	5.0 - 9.0% of mass 174	7.19	(7.47	)	1
176	95.0 - 101.0% of mass 174	93.63	(97.18	)	1
177	5.0 - 9.0% of mass 176	5.94	(6.35	)	2

1- Value is % mass 174 2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD001	1203	2180131/e4238D	01/31/18	1155
2 .	V13STD005	1204	2180131/e4240D	01/31/18	1240
3 .	V13STD010	1205	2180131/e4241D	01/31/18	1302
4 .	V13STD020	1206	2180131/e4242D	01/31/18	1324
5 .	V13STD050	1207	2180131/e4243D	01/31/18	1346
6 .	V13STD100	1208	2180131/e4244D	01/31/18	1409
7 .	V13STD200	1209	2180131/e4245D	01/31/18	1431
8 .	ICV050	1600	2180131/e4248D	01/31/18	1538

FORM V VOA

5A

VOLATILE ORGANICS INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Report No:	218020725	Tune ID:	1000
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4693bfb
Analyst:	GDG	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 0839	Analytical Method:	EPA 8260B

m / e	*ION ABUNDANCE CRITERIA*	*% Relative Abundance*			
50	15.0 - 40.0% of mass 95	15.51	(	)	
75	30.0 - 60.0% of mass 95	42.8	(	)	
95	Base Peak, 100% relative abundance	100	(	)	
96	5.0 -9.0% of mass 95	6.38	(	)	
173	Less than 2.0% of mass 174	1.15	(1.2	)	1
174	50.0 - 120.0% of mass 95	96.63	(	)	
175	5.0 - 9.0% of mass 174	7.16	(7.41	)	1
176	95.0 - 101.0% of mass 174	94.71	(98.02	)	1
177	5.0 - 9.0% of mass 176	6.05	(6.39	)	2

1- Value is % mass 174

2- Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1 .	V13STD050	1400	2180210/e4694	02/10/18	0917
2 .	LCS1773659	1773659	2180210/e4694L	02/10/18	0917
3 .	LCSD1773660	1773660	2180210/e4695	02/10/18	0939
4 .	MB1773658	1773658	2180210/e4698	02/10/18	1046
5 .	OMS-28-GW91-33	21802072501	2180210/e4708	02/10/18	1428
6 .	OMS-28-GW91-33-C	21802072502	2180210/e4709	02/10/18	1451
7 .	OMS-28-GW93-12	21802072503	2180210/e4710	02/10/18	1513
8 .	OMS-28-GW93-16	21802072504	2180210/e4711	02/10/18	1535
9 .	OMS-28-GW93-33	21802072505	2180210/e4712	02/10/18	1557
10 .	OMS-28-GW92-12	21802072506	2180210/e4713	02/10/18	1620
11 .	OMS-28-GW92-16	21802072507	2180210/e4714	02/10/18	1642
12 .	OMS-28-GW92-33	21802072508	2180210/e4715	02/10/18	1704
13 .	OMS-28-GW92-33-A	21802072509	2180210/e4716	02/10/18	1726
14 .	V13STD050	1440	2180210/e4717	02/10/18	1749

FORM V VOA

Form 6A

Calibrations

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020725			Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1:	1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2:	1431	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,1,1,2-Tetrachloroethane			0.582	0.613	0.564	0.550	0.563	0.546	0.517	0.562			5.320	A
1,1,1-Trichloroethane			0.321	0.363	0.341	0.336	0.347	0.337	0.330	0.339			3.900	A
1,1,2,2-Tetrachloroethane			1.015	0.947	0.854	0.829	0.828	0.814	0.775	0.866			9.750	A
1,1,2-Trichloroethane			0.600	0.586	0.535	0.535	0.549	0.539	0.536	0.554			4.912	A
1,1-Dichloroethane			0.462	0.458	0.426	0.421	0.437	0.423	0.413	0.435			4.400	A
1,1-Dichloroethene			0.182	0.179	0.163	0.158	0.164	0.156	0.154	0.165			6.625	A
1,1-Dichloropropene			0.206	0.235	0.248	0.265	0.301	0.302	0.303	0.266			14.43	A
1,2,3-Trichlorobenzene (RSP)			477	5824	13716	35889	117256	253980	511192	0.831	0.026		0.995	W
1,2,3-Trichlorobenzene			0.225	0.458	0.524	0.641	0.792	0.837	0.840					
1,2,3-Trichloropropane			0.962	0.991	0.950	0.917	0.962	0.947	0.909	0.948			2.935	A
1,2,4-Trichlorobenzene (RSP)			575	5354	11975	31052	105242	247400	511416	0.855	0.090		0.998	L
1,2,4-Trichlorobenzene			0.271	0.421	0.458	0.555	0.710	0.815	0.841					
1,2,4-Trimethylbenzene (RSP)			2638	19970	46899	111022	318399	641277	1185541	2.032	0.010		0.997	W
1,2,4-Trimethylbenzene			1.242	1.572	1.792	1.983	2.149	2.113	1.949					
1,2-Dibromo-3-chloropropane			0.153	0.176	0.161	0.177	0.195	0.203	0.212	0.182			12.04	A
1,2-Dibromoethane			0.531	0.507	0.471	0.492	0.539	0.540	0.545	0.518			5.481	A
1,2-Dichlorobenzene			1.263	1.276	1.242	1.218	1.304	1.286	1.243	1.262			2.341	A
1,2-Dichloroethane			0.414	0.377	0.354	0.347	0.356	0.342	0.332	0.360			7.652	A
1,2-Dichloroethane-d4			0.169	0.167	0.165	0.166	0.165	0.162	0.160	0.165			1.738	A
1,2-Dichloroethene (total)			0.281	0.296	0.294	0.299	0.321	0.318	0.317	0.304			5.017	A
1,2-Dichloropropane			0.230	0.235	0.229	0.234	0.245	0.245	0.241	0.237			2.857	A
1,3,5-Trimethylbenzene			1.426	1.740	1.849	1.999	2.153	2.052	1.855	1.868			12.83	A
1,3-Dichlorobenzene			1.276	1.297	1.319	1.286	1.315	1.303	1.234	1.290			2.247	A
1,3-Dichloropropane			0.805	0.860	0.812	0.838	0.938	0.936	0.939	0.875			6.961	A
1,3-Dichloropropylene (RSP)			2542	16787	35541	81949	252531	533058	1103114	0.370	0.033		0.997	W

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020725		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
1,3-Dichloropropylene			0.209	0.261	0.277	0.309	0.366	0.372	0.373					
1,4-Dichlorobenzene			1.478	1.399	1.315	1.281	1.305	1.288	1.217	1.326			6.490	A
1-Bromo-2-Chloroethane			0.356	0.344	0.339	0.356	0.376	0.375	0.372	0.360			4.174	A
1-Chlorohexane (RSP)			1107	5416	12067	28084	90902	225775	457695	0.743	0.090		0.997	L
1-Chlorohexane			0.452	0.399	0.426	0.473	0.590	0.720	0.729					
2,2-Dichloropropane			0.267	0.303	0.287	0.293	0.300	0.306	0.303	0.294			4.580	A
2-Butanone (RSP)			803	5143	9977	23549	68871	144310	295627	0.200	0.012		0.998	W
2-Butanone			0.132	0.160	0.156	0.178	0.199	0.201	0.200					
2-Chloroethylvinyl ether (RSP)			366	2120	4679	11625	35122	77376	179733	0.115	0.024		0.990	W
2-Chloroethylvinyl ether			0.060	0.066	0.073	0.088	0.102	0.108	0.122					
2-Chlorotoluene			1.920	1.913	1.876	1.944	2.037	1.992	1.869	1.936			3.139	A
2-Hexanone (RSP)				4394	8678	21172	74100	173057	376361	0.588	0.080		0.992	W
2-Hexanone				0.324	0.306	0.357	0.481	0.552	0.599					
4-Bromofluorobenzene			0.767	0.787	0.781	0.773	0.790	0.806	0.828	0.790			2.623	A
4-Chlorotoluene			1.424	1.609	1.692	1.736	1.861	1.845	1.744	1.701			8.818	A
4-Isopropyltoluene (RSP)			2465	18779	45009	107177	314072	638401	1196201	2.031	0.012		0.997	W
4-Isopropyltoluene			1.161	1.478	1.720	1.914	2.120	2.104	1.966					
4-Methyl-2-pentanone (RSP)				6202	13383	32149	101375	222197	460940	0.731	0.058		0.997	W
4-Methyl-2-pentanone				0.457	0.472	0.542	0.658	0.709	0.734					
Acetone			0.183	0.197	0.183	0.192	0.192	0.183	0.176	0.187			3.929	A
Acrolein (RSP)				993	2486	4717	16141	33528	72265	0.010	0.239		0.997	W
Acrolein				0.006	0.008	0.007	0.009	0.009	0.010					
Acrylonitrile			0.090	0.093	0.106	0.111	0.117	0.107	0.112	0.105			9.463	A
Benzene			0.833	0.899	0.878	0.925	0.986	0.954	0.917	0.913			5.459	A
Bromobenzene			1.311	1.257	1.192	1.167	1.212	1.169	1.133	1.206			5.032	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020725		Instrument ID:	MSV13		1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK		1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122		1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B				

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Bromochloromethane			0.131	0.143	0.139	0.135	0.137	0.129	0.113	0.133			7.468	A
Bromodichloromethane			0.335	0.355	0.339	0.339	0.343	0.332	0.323	0.338			3.001	A
Bromoform			0.504	0.572	0.512	0.502	0.528	0.525	0.499	0.520			4.840	A
Bromomethane (RSP)			1087	5140	9147	17056	42570	85055	182023	0.122	-0.014		0.998	W
Bromomethane			0.179	0.160	0.143	0.129	0.123	0.119	0.123					
Carbon disulfide			0.645	0.613	0.578	0.565	0.572	0.541	0.522	0.577			7.248	A
Carbon tetrachloride			0.296	0.319	0.309	0.309	0.320	0.305	0.300	0.308			2.916	A
Chlorobenzene			1.806	1.735	1.598	1.572	1.598	1.522	1.439	1.610			7.726	A
Chloroethane			0.154	0.155	0.147	0.135	0.127	0.120	0.102	0.134			14.32	A
Chloroform			0.445	0.467	0.440	0.423	0.426	0.405	0.389	0.428			6.104	A
Chloromethane			0.325	0.311	0.297	0.280	0.268	0.258	0.251	0.284			9.730	A
Cyclohexane (RSP)			1260	8799	18824	43237	133879	271848	553105	0.377	0.015		0.998	W
Cyclohexane			0.207	0.274	0.294	0.327	0.388	0.379	0.374					
Dibromochloromethane			0.651	0.683	0.609	0.602	0.646	0.641	0.649	0.640			4.272	A
Dibromofluoromethane			0.283	0.278	0.276	0.271	0.263	0.261	0.256	0.270			3.656	A
Dibromomethane			0.124	0.164	0.156	0.152	0.157	0.153	0.150	0.151			8.379	A
Dichlorodifluoromethane			0.268	0.275	0.268	0.253	0.264	0.245	0.242	0.259			4.953	A
Ethylbenzene			0.728	0.792	0.787	0.788	0.824	0.803	0.758	0.783			3.977	A
Hexachlorobutadiene			0.456	0.438	0.424	0.404	0.417	0.426	0.416	0.426			3.973	A
Isopropylbenzene (Cumene) (			3501	24195	52574	126195	373920	763962	1443275	2.353	0.013		0.997	W
Isopropylbenzene (Cumene)			1.429	1.785	1.856	2.126	2.426	2.437	2.297					
Methyl Acetate			0.235	0.236	0.216	0.230	0.242	0.237	0.227	0.232			3.736	A
Methyl iodide (RSP)				2508	6103	15770	57090	131600	275600	5.263	0.104	-0.061	0.999	Q
Methyl iodide				0.078	0.095	0.119	0.165	0.183	0.186					
Methylcyclohexane			0.249	0.294	0.298	0.309	0.356	0.354	0.349	0.316			12.63	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

						GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020725			Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID	.25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1:	1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2:	1431	Analytical Method:	EPA 8260B			

ANALYTE	*1201*	*1202*	*1203*	*1204*	*1205*	*1206*	*1207*	*1208*	*1209*	*$\overline{RF}$ / b / A*	*m / B*	*C*	*FIT*	*TYPE*
Methylene chloride			0.292	0.301	0.270	0.288	0.282	0.259	0.265	0.280			5.549	A
Naphthalene (RSP)				7131	18037	55774	248352	614835	1295606	2.134	0.115		0.990	W
Naphthalene				0.561	0.689	0.996	1.677	2.026	2.130					
Styrene (RSP)			2129	15824	36057	87567	255692	514927	987479	1.605	0.014		0.998	W
Styrene			0.869	1.167	1.273	1.475	1.659	1.642	1.572					
Tetrachloroethene			0.512	0.529	0.494	0.484	0.508	0.506	0.507	0.506			2.780	A
Toluene			2.494	2.496	2.297	2.300	2.364	2.333	2.249	2.362			4.127	A
Toluene-d8			2.371	2.279	2.219	2.246	2.227	2.270	2.332	2.278			2.451	A
Trichloroethene			0.262	0.276	0.268	0.270	0.282	0.263	0.250	0.267			3.874	A
Trichlorofluoromethane			0.317	0.307	0.289	0.276	0.279	0.261	0.257	0.284			7.888	A
Trichlorotrifluoroethane			0.161	0.177	0.176	0.166	0.162	0.155	0.150	0.164			6.227	A
Vinyl acetate (RSP)			848	4570	10724	24623	71333	159827	369833	0.237	0.021		0.991	W
Vinyl acetate			0.139	0.142	0.167	0.186	0.207	0.223	0.250					
Vinyl chloride			0.273	0.278	0.260	0.256	0.272	0.263	0.260	0.266			3.086	A
Xylene (total) (RSP)			4749	33290	70315	160471	460524	920641	1745097	0.951	0.026		0.998	W
Xylene (total)			0.646	0.818	0.827	0.901	0.996	0.979	0.926					
cis-1,2-Dichloroethene			0.258	0.283	0.280	0.292	0.325	0.324	0.322	0.298			8.738	A
cis-1,3-Dichloropropene (RSP)			1367	8661	18146	42900	133479	279970	581372	0.390	0.017		0.997	W
cis-1,3-Dichloropropene			0.225	0.269	0.283	0.324	0.387	0.390	0.393					
m,p-Xylene (RSP)			3361	23770	50062	113426	312699	613620	1131824	0.943	0.009		0.997	W
m,p-Xylene			0.686	0.877	0.883	0.956	1.014	0.979	0.901					
n-Butylbenzene (RSP)			2487	15865	35072	85648	253755	533009	1022170	1.703	0.013		0.997	W
n-Butylbenzene			1.171	1.249	1.340	1.530	1.713	1.756	1.680					
n-Hexane			0.221	0.243	0.237	0.253	0.286	0.293	0.300	0.262			11.83	A
n-Propylbenzene			2.743	2.695	2.699	2.753	2.894	2.811	2.566	2.737			3.742	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

					GCALID - FileID - Conc	1203 ~ 2180131/e4238D ~ 1	
Report No:	218020725		Instrument ID:	MSV13	1204 ~ 2180131/e4240D ~ 5	1205 ~ 2180131/e4241D ~ 10	
GC Column:	RTX-VMS-30	ID .25 (mm)	Analyst:	JCK	1206 ~ 2180131/e4242D ~ 20	1207 ~ 2180131/e4243D ~ 50	
Calib. Date 1:	01/31/18	Time 1: 1155	Analytical Batch:	628122	1208 ~ 2180131/e4244D ~ 100	1209 ~ 2180131/e4245D ~ 200	
Calib. Date 2:	01/31/18	Time 2: 1431	Analytical Method:	EPA 8260B			

ANALYTE	***1201***	***1202***	***1203***	***1204***	***1205***	***1206***	***1207***	***1208***	***1209***	***$\overline{RF}$ / b / A***	***m / B***	***C***	***FIT***	***TYPE***
o-Xylene (RSP)			1388	9520	20253	47045	147825	307021	613273	0.971	0.016		0.997	W
o-Xylene			0.566	0.702	0.715	0.793	0.959	0.979	0.976					
sec-Butylbenzene			1.618	2.013	2.208	2.316	2.462	2.423	2.209	2.178			13.28	A
tert-Butyl methyl ether (MTBE)			0.507	0.563	0.552	0.594	0.656	0.652	0.651	0.596			9.852	A
tert-Butylbenzene			0.817	0.906	0.954	1.016	1.124	1.123	1.080	1.003			11.64	A
trans-1,2-Dichloroethene			0.303	0.309	0.307	0.305	0.317	0.313	0.312	0.309			1.596	A
trans-1,3-Dichloropropene (RS			1175	8126	17395	39049	119052	253088	521742	0.351	0.016		0.997	W
trans-1,3-Dichloropropene			0.193	0.253	0.271	0.295	0.345	0.353	0.353					
trans-1,4-Dichloro-2-butene			0.135	0.164	0.172	0.176	0.188	0.196	0.199	0.176			12.53	A

FIT = %RSD For Average Curve And Calibration Coefficent For Linear And Quadratic

Curve Types: A - Averged, L - Linear Regression, W - Weighted Linear, Q - Quadratic

For curve types L and Q, the RRF and RSP (Response) are shown on separate lines to allow for evaluation against minimum RRF

$\overline{RF}$ = Mean Response Factor For Average Curve

m,b = Slope and Intercept For Linear Curve

A,B,C = Coefficents For Quadratic Curve

FORM V I VOA

Form 6I

ICAL Verifications

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	218020725	Instrument ID:	MSV13
Analysis Date:	01/31/18 1538	Lab File ID:	2180131/e4248D
Analytical Method:	EPA 8260B	Analytical Batch:	628122

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
cis-1,2-Dichloroethene	ug/L	50.0	50.5	101	80	120	
Tetrachloroethene	ug/L	50.0	47.1	94	80	120	
Trichloroethene	ug/L	50.0	47.6	95	80	120	

Form 7A

CCAL Verifications

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020725	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4694
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 0917	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.601	.01	6.91	20	A	
1,1,1-Trichloroethane	0.339	0.342	.01	.71	20	A	
1,1,2,2-Tetrachloroethane	0.866	0.809	.3	-6.53	20	A	
1,1,2-Trichloroethane	0.554	0.559	.01	.9	20	A	
1,1-Dichloroethane	0.435	0.410	.1	-5.72	20	A	
1,1-Dichloroethene	0.165	0.172	.01	3.84	20	A	
1,1-Dichloropropene	0.266	0.285	.01	7.17	20	A	
1,2,3-Trichlorobenzene	0.831	0.782	.01	-3.4	20	W	
1,2,3-Trichloropropane	0.948	0.905	.01	-4.6	20	A	
1,2,4-Trichlorobenzene	0.855	0.704	.01	-8.8	20	L	
1,2,4-Trimethylbenzene	2.032	2.175	.01	8	20	W	
1,2-Dibromo-3-chloropropane	0.182	0.185	.01	1.47	20	A	
1,2-Dibromoethane	0.518	0.549	.01	6.01	20	A	
1,2-Dichlorobenzene	1.262	1.319	.01	4.56	20	A	
1,2-Dichloroethane	0.360	0.323	.01	-10.3	20	A	
1,2-Dichloroethane-d4	0.165	0.156	.01	-5.3	20	A	
1,2-Dichloroethene (total)	0.304	0.286	.01	-5.83	20	A	
1,2-Dichloropropane	0.237	0.239	.01	.86	20	A	
1,3,5-Trimethylbenzene	1.868	2.155	.01	15.4	20	A	
1,3-Dichlorobenzene	1.290	1.367	.01	5.92	20	A	
1,3-Dichloropropane	0.875	0.916	.01	4.62	20	A	
1,3-Dichloropropylene	0.370	0.337	.01	-7	20	W	
1,4-Dichlorobenzene	1.326	1.357	.01	2.34	20	A	
1-Bromo-2-Chloroethane	0.360	0.363	.01	.86	20	A	
1-Chlorohexane	0.743	0.618	.01	-7.8	20	L	
2,2-Dichloropropane	0.294	0.292	.01	-.86	20	A	
2-Butanone	0.200	0.170	.01	-13.8	20	W	
2-Chlorotoluene	1.936	2.013	.01	4.02	20	A	
2-Hexanone	0.588	0.410	.01	-22.2	20	W	*
4-Bromofluorobenzene	0.790	0.834	.01	5.56	20	A	
4-Chlorotoluene	1.701	1.870	.01	9.91	20	A	
4-Isopropyltoluene	2.031	2.196	.01	9.4	20	W	
4-Methyl-2-pentanone	0.731	0.577	.01	-15.4	20	W	
Acetone	0.187	0.159	.01	-14.7	20	A	
Benzene	0.913	0.954	.01	4.42	20	A	
Bromobenzene	1.206	1.156	.01	-4.11	20	A	
Bromochloromethane	0.133	0.138	.01	4.45	20	A	
Bromodichloromethane	0.338	0.345	.01	2.12	20	A	
Bromoform	0.520	0.558	.1	7.26	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020725	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4694
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 0917	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	0.122	0.130	.01	5	20	W	
Carbon disulfide	0.577	0.598	.01	3.78	20	A	
Carbon tetrachloride	0.308	0.321	.01	4.1	20	A	
Chlorobenzene	1.610	1.688	.3	4.82	20	A	
Chloroethane	0.134	0.143	.01	6.15	20	A	
Chloroform	0.428	0.426	.01	-.35	20	A	
Chloromethane	0.284	0.227	.1	-20.1	20	A	
Cyclohexane	0.377	0.356	.01	-3.8	20	W	
Dibromochloromethane	0.640	0.680	.01	6.2	20	A	
Dibromofluoromethane	0.270	0.274	.01	1.78	20	A	
Dibromomethane	0.151	0.157	.01	4.2	20	A	
Dichlorodifluoromethane	0.259	0.226	.01	-12.7	20	A	
Ethylbenzene	0.783	0.872	.01	11.4	20	A	
Hexachlorobutadiene	0.426	0.447	.01	4.94	20	A	
Isopropylbenzene (Cumene)	2.353	2.574	.01	10.6	20	W	
Methyl Acetate	0.232	0.206	.01	-11.1	20	A	
Methyl iodide	5.263	0.126	.01	-23.2	20	Q	*
Methylcyclohexane	0.316	0.356	.01	12.7	20	A	
Methylene chloride	0.280	0.291	.01	4.12	20	A	
Naphthalene	2.134	1.520	.01	-17.2	20	W	
Styrene	1.605	1.745	.01	10.2	20	W	
Tetrachloroethene	0.506	0.550	.01	8.83	20	A	
Toluene	2.362	2.428	.01	2.81	20	A	
Toluene-d8	2.278	2.259	.01	-.84	20	A	
Trichloroethene	0.267	0.289	.01	8.27	20	A	
Trichlorofluoromethane	0.284	0.290	.01	2.28	20	A	
Trichlorotrifluoroethane	0.164	0.178	.01	8.7	20	A	
Vinyl chloride	0.266	0.246	.01	-7.54	20	A	
Xylene (total)	0.951	1.056	.01	12	20	W	
cis-1,2-Dichloroethene	0.298	0.275	.01	-7.69	20	A	
cis-1,3-Dichloropropene	0.390	0.335	.01	-12.4	20	W	
m,p-Xylene	0.943	1.086	.01	16	20	W	
n-Butylbenzene	1.703	1.762	.01	4.6	20	W	
n-Hexane	0.262	0.288	.01	10.1	20	A	
n-Propylbenzene	2.737	2.882	.01	5.27	20	A	
o-Xylene	0.971	0.995	.01	4.2	20	W	
sec-Butylbenzene	2.178	2.554	.01	17.2	20	A	
tert-Butyl methyl ether (MTBE)	0.596	0.600	.01	.67	20	A	
tert-Butylbenzene	1.003	1.105	.01	10.2	20	A	

FORM V II VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Report No:	218020725	CCAL ID:	1400
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4694
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 0917	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,2-Dichloroethene	0.309	0.297	.01	-4.04	20	A	
trans-1,3-Dichloropropene	0.351	0.339	.01	-1.6	20	W	
trans-1,4-Dichloro-2-butene	0.176	0.168	.01	-4.12	20	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020725			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180210/e4717
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	GDG
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628818
Analysis Date:	02/10/18	Time: 1749		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
1,1,1,2-Tetrachloroethane	0.562	0.592	.01	5.21	50	A	
1,1,1-Trichloroethane	0.339	0.336	.01	-1.04	50	A	
1,1,2,2-Tetrachloroethane	0.866	0.788	.3	-9.04	50	A	
1,1,2-Trichloroethane	0.554	0.577	.01	4.05	50	A	
1,1-Dichloroethane	0.435	0.406	.1	-6.6	50	A	
1,1-Dichloroethene	0.165	0.169	.01	1.91	50	A	
1,1-Dichloropropene	0.266	0.280	.01	5.54	50	A	
1,2,3-Trichlorobenzene	0.831	0.761	.01	-5.8	50	W	
1,2,3-Trichloropropane	0.948	0.901	.01	-4.95	50	A	
1,2,4-Trichlorobenzene	0.855	0.675	.01	-12.2	50	L	
1,2,4-Trimethylbenzene	2.032	2.075	.01	3.2	50	W	
1,2-Dibromo-3-chloropropane	0.182	0.186	.01	2.01	50	A	
1,2-Dibromoethane	0.518	0.538	.01	3.94	50	A	
1,2-Dichlorobenzene	1.262	1.307	.01	3.62	50	A	
1,2-Dichloroethane	0.360	0.320	.01	-11.1	50	A	
1,2-Dichloroethane-d4	0.165	0.159	.01	-3.7	50	A	
1,2-Dichloroethene (total)	0.304	0.288	.01	-4.98	50	A	
1,2-Dichloropropane	0.237	0.240	.01	1.38	50	A	
1,3,5-Trimethylbenzene	1.868	2.092	.01	12	50	A	
1,3-Dichlorobenzene	1.290	1.329	.01	3	50	A	
1,3-Dichloropropane	0.875	0.915	.01	4.53	50	A	
1,3-Dichloropropylene	0.370	0.331	.01	-8.7	50	W	
1,4-Dichlorobenzene	1.326	1.317	.01	-.69	50	A	
1-Bromo-2-Chloroethane	0.360	0.368	.01	2.36	50	A	
1-Chlorohexane	0.743	3.254	.01	-7.2	50	L	
2,2-Dichloropropane	0.294	0.273	.01	-7.31	50	A	
2-Butanone	0.200	0.168	.01	-14.6	50	W	
2-Chlorotoluene	1.936	1.978	.01	2.2	50	A	
2-Hexanone	0.588	0.425	.01	-19.8	50	W	
4-Bromofluorobenzene	0.790	0.832	.01	5.27	50	A	
4-Chlorotoluene	1.701	1.793	.01	5.39	50	A	
4-Isopropyltoluene	2.031	2.112	.01	5.2	50	W	
4-Methyl-2-pentanone	0.731	0.605	.01	-11.6	50	W	
Acetone	0.187	0.158	.01	-15.1	50	A	
Benzene	0.913	0.948	.01	3.8	50	A	
Bromobenzene	1.206	1.131	.01	-6.17	50	A	
Bromochloromethane	0.133	0.139	.01	4.62	50	A	
Bromodichloromethane	0.338	0.340	.01	.55	50	A	
Bromoform	0.520	0.572	.1	10	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020725			CCAL ID:	1440
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0		(µL)	Lab File ID:	2180210/e4717
Init. Calib. Date 1:	01/31/18	Time 1: 1155		Analyst:	GDG
Init. Calib. Date 2:	01/31/18	Time 2: 1431		Analytical Batch:	628818
Analysis Date:	02/10/18	Time: 1749		Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
Bromomethane	0.122	0.128	.01	4	50	W	
Carbon disulfide	0.577	0.584	.01	1.26	50	A	
Carbon tetrachloride	0.308	0.315	.01	2.28	50	A	
Chlorobenzene	1.610	1.669	.3	3.66	50	A	
Chloroethane	0.134	0.146	.01	8.74	50	A	
Chloroform	0.428	0.417	.01	-2.51	50	A	
Chloromethane	0.284	0.224	.1	-21.4	50	A	
Cyclohexane	0.377	0.344	.01	-7.2	50	W	
Dibromochloromethane	0.640	0.672	.01	5.01	50	A	
Dibromofluoromethane	0.270	0.274	.01	1.78	50	A	
Dibromomethane	0.151	0.155	.01	2.85	50	A	
Dichlorodifluoromethane	0.259	0.208	.01	-19.6	50	A	
Ethylbenzene	0.783	0.867	.01	10.7	50	A	
Hexachlorobutadiene	0.426	0.420	.01	-1.28	50	A	
Isopropylbenzene (Cumene)	2.353	2.554	.01	9.8	50	W	
Methyl Acetate	0.232	0.199	.01	-14.0	50	A	
Methyl iodide	5.263	0.137	.01	-17.8	50	Q	
Methylcyclohexane	0.316	0.341	.01	8.08	50	A	
Methylene chloride	0.280	0.290	.01	3.74	50	A	
Naphthalene	2.134	1.538	.01	-16.4	50	W	
Styrene	1.605	1.729	.01	9.2	50	W	
Tetrachloroethene	0.506	0.539	.01	6.51	50	A	
Toluene	2.362	2.400	.01	1.6	50	A	
Toluene-d8	2.278	2.271	.01	-.31	50	A	
Trichloroethene	0.267	0.292	.01	9.41	50	A	
Trichlorofluoromethane	0.284	0.277	.01	-2.51	50	A	
Trichlorotrifluoroethane	0.164	0.172	.01	4.98	50	A	
Vinyl chloride	0.266	0.244	.01	-8.2	50	A	
Xylene (total)	0.951	1.043	.01	10.7	50	W	
cis-1,2-Dichloroethene	0.298	0.280	.01	-5.93	50	A	
cis-1,3-Dichloropropene	0.390	0.334	.01	-12.6	50	W	
m,p-Xylene	0.943	1.059	.01	13	50	W	
n-Butylbenzene	1.703	1.651	.01	-1.8	50	W	
n-Hexane	0.262	0.246	.01	-5.93	50	A	
n-Propylbenzene	2.737	2.791	.01	1.98	50	A	
o-Xylene	0.971	1.011	.01	5.8	50	W	
sec-Butylbenzene	2.178	2.455	.01	12.7	50	A	
tert-Butyl methyl ether (MTBE)	0.596	0.609	.01	2.07	50	A	
tert-Butylbenzene	1.003	1.077	.01	7.38	50	A	

FORM V II VOA

7A

VOLATILE CLOSING CALIBRATION CHECK

Report No:	218020725	CCAL ID:	1440
GC Column:	RTX-VMS-30 ID .25 (mm)	Instrument ID:	MSV13
Injection Vol.:	1.0 (µL)	Lab File ID:	2180210/e4717
Init. Calib. Date 1:	01/31/18 Time 1: 1155	Analyst:	GDG
Init. Calib. Date 2:	01/31/18 Time 2: 1431	Analytical Batch:	628818
Analysis Date:	02/10/18 Time: 1749	Analytical Method:	EPA 8260B

ANALYTE	*$\overline{RRF}$*	*RRF CCV*	*Min RRF*	*%D/%Drift*	*Max %D/ %Drift*	*TYPE*	*Q*
trans-1,2-Dichloroethene	0.309	0.297	.01	-4.07	50	A	
trans-1,3-Dichloropropene	0.351	0.328	.01	-4.8	50	W	
trans-1,4-Dichloro-2-butene	0.176	0.165	.01	-6.18	50	A	

FORM V II VOA

Form 8A

Internal Standards

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Report No:	218020725			Standard ID:	1207
GC Column:	RTX-VMS-30	ID .25	(mm)	Instrument ID:	MSV13
Injection Vol.:	1.0	(µL)		Lab File ID:	2180131/e4243D
Analyst:	JCK			Analytical Batch:	628122
Analysis Date:	01/31/18	Time: 1346		Analytical Method:	EPA 8260B

	IS 1		IS 2		IS 3	
	Area	**RT**	**Area**	**RT**	**Area**	**RT**
STANDARD	154140	9.08	148135	10.54	345317	6.59

CLIENT SAMPLE ID	***GCAL SAMP ID***		#		#		#		#		#	
LCS1773659	1773659	132616		9.08		135743		10.54		297538		6.59	
OMS-28-GW92-16	21802072507	102969		9.08		87578		10.54		272753		6.59	
OMS-28-GW92-33	21802072508	103886		9.08		89543		10.54		274254		6.6	
OMS-28-GW92-33-A	21802072509	104805		9.09		88749		10.54		275313		6.6	
LCSD1773660	1773660	130588		9.08		133945		10.54		302719		6.59	
MB1773658	1773658	107344		9.08		89083		10.54		277927		6.59	
OMS-28-GW91-33	21802072501	103297		9.08		88510		10.54		268955		6.59	
OMS-28-GW91-33-C	21802072502	104961		9.08		87593		10.54		273262		6.59	
OMS-28-GW93-12	21802072503	103343		9.08		88221		10.54		269404		6.59	
OMS-28-GW93-16	21802072504	106187		9.09		89143		10.54		272907		6.59	
OMS-28-GW93-33	21802072505	103281		9.08		87829		10.54		272600		6.59	
OMS-28-GW92-12	21802072506	103917		9.08		88374		10.54		274693		6.59	

IS 1 ID : Chlorobenzene-d5
IS 2 ID : 1,4-Dichlorobenzene-d4
IS 3 ID : Fluorobenzene

Column used to flag values outside QC limits with an asterisk
* Value outside of QC limits

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

FORM V III VOA

RunLogs

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1203-9(ICAL)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-11	04/30/18
	CVE	250	126-86-7	07/08/18
1600 (ICV)	8260 ICV	250	126-83-12	05/03/18
	Ac/Ac/VA ICV	MC	126-87-12	04/30/18
	CVE ICV	250	126-84-6	05/09/18
1410 (CCV)	A9-1	250	126-85-8	06/13/18
	A9-2	250	126-85-5	02/05/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4235cD.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1000		e4235D.d	0.00 ml	31-JAN-2018 10:21	1.0	JCK	2
1201	NOT USED	e4236.d	5.00 ml	31-JAN-2018 11:03	1.0	JCK	1
1202	|	e4237.d	5.00 ml	31-JAN-2018 11:33	1.0	JCK	1
1203		e4238cD.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
1203		e4238D.d	5.00 ml	31-JAN-2018 11:55	1.0	JCK	1
2PPB		e4239.d	5.00 ml	31-JAN-2018 12:17	1.0	JCK	1
1204		e4240cD.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1204		e4240D.d	5.00 ml	31-JAN-2018 12:40	1.0	JCK	1
1205		e4241cD.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1205		e4241D.d	5.00 ml	31-JAN-2018 13:02	1.0	JCK	1
1206		e4242cD.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1206		e4242D.d	5.00 ml	31-JAN-2018 13:24	1.0	JCK	1
1207		e4243cD.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1207		e4243D.d	5.00 ml	31-JAN-2018 13:46	1.0	JCK	1
1208		e4244cD.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1208		e4244D.d	5.00 ml	31-JAN-2018 14:09	1.0	JCK	1
1209		e4245cD.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
1209		e4245D.d	5.00 ml	31-JAN-2018 14:31	1.0	JCK	1
BLANK		e4246.d	5.00 ml	31-JAN-2018 14:53	1.0	JCK	1
1600	RR	e4247.d	5.00 ml	31-JAN-2018 15:16	1.0	JCK	1
1600		e4248cD.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1600		e4248D.d	5.00 ml	31-JAN-2018 15:38	1.0	JCK	1
1769682		e4249c.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769687		e4249.d	5.00 ml	31-JAN-2018 16:00	1.0	JCK	1
1769683		e4250c.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1
1769688		e4250.d	5.00 ml	31-JAN-2018 16:22	1.0	JCK	1

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 31-JAN-2018
Instrument: msv13.i
Analyst(s): JCK

	Standard	Conc	ID	EXP
	8260 IS/SS	50		
1000 (BFB)	BFB IS/SS	50		
1400 (CCV)	8260	250		
	Ac/Ac/VA	MC		
	CVE	250		

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1410	APP9	e4251c.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769684		e4251Lc.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769628		e4251L.d	5.00 ml	31-JAN-2018 16:45	1.0	JCK	1
1769685		e4252c.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769629		e4252.d	5.00 ml	31-JAN-2018 17:07	1.0	JCK	1
1769681		e4253c.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
1769686 pH		e4253.d	5.00 ml	31-JAN-2018 17:29	1.0	JCK	1
21801200906 1		e4254.d	5.00 ml	31-JAN-2018 17:54	1.0	JCK	1
21801230501 1		e4255.d	5.00 ml	31-JAN-2018 18:16	1.0	JCK	1
21801230502 1		e4256.d	5.00 ml	31-JAN-2018 18:38	1.0	JCK	1
21801200901 1		e4257.d	5.00 ml	31-JAN-2018 19:01	1.0	JCK	1
21801200902 1		e4258.d	5.00 ml	31-JAN-2018 19:23	1.0	JCK	1
21801200903 1		e4259.d	5.00 ml	31-JAN-2018 19:45	1.0	JCK	1
21801200904 1		e4260.d	5.00 ml	31-JAN-2018 20:07	1.0	JCK	1
21801200905 1		e4261.d	5.00 ml	31-JAN-2018 20:30	1.0	GDG	1
21801200907 1		e4262ms.d	5.00 ml	31-JAN-2018 20:52	1.0	GDG	1
21801200908 1		e4263msd.d	5.00 ml	31-JAN-2018 21:14	1.0	GDG	1
1440	8260	e4264cD.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440		e4264D.d	5.00 ml	31-JAN-2018 21:37	1.0	GDG	1
1440	app9	e4265cD.d	5.00 ml	31-JAN-2018 21:59	1.0	GDG	1
BLANK		e4266.d	5.00 ml	31-JAN-2018 22:21	1.0	GDG	1

REVISED 1-28-15 Supervisor Review: JCK TUNE TIME: 22:21

LABORATORY CHRONICLE: MSV DEPARTMENT

Date: 10-FEB-2018
Instrument: msv13.i
Analyst(s): GDG

	Standard	Conc	ID	EXP
	8260 IS/SS	50	126-81-4	03/11/18
1000 (BFB)	BFB IS/SS	50	126-81-4	03/11/18
1400 (CCV)	8260	250	126-87-10	02/13/18
	Ac/Ac/VA	MC	126-87-14	04/30/18
	CVE	250	126-86-7	07/08/18

Sample ID	Comments	DataFile	Wgt/Vol	Injection Time	Dil	Anal	ALS
1000		e4693bfb.d	0.00 ml	10-FEB-2018 08:39	1.0	GDG	2
1400		e4694.d	5.00 ml	10-FEB-2018 09:17	1.0	GDG	1
1773659		e4694L.d	5.00 ml	10-FEB-2018 09:17	1.0	GDG	1
1773660		e4695.d	5.00 ml	10-FEB-2018 09:39	1.0	GDG	1
BLANK		e4696.d	5.00 ml	10-FEB-2018 10:01	1.0	GDG	1
BLANK		e4697.d	5.00 ml	10-FEB-2018 10:23	1.0	GDG	1
1773658 pH		e4698.d	5.00 ml	10-FEB-2018 10:46	1.0	GDG	1
21802061518 1		e4699.d	5.00 ml	10-FEB-2018 11:08	1.0	GDG	1
21802061519 1		e4700.d	5.00 ml	10-FEB-2018 11:30	1.0	GDG	1
21802061520 1		e4701.d	5.00 ml	10-FEB-2018 11:52	1.0	GDG	1
21802061521 1		e4702.d	5.00 ml	10-FEB-2018 12:15	1.0	GDG	1
21802061522 1		e4703.d	5.00 ml	10-FEB-2018 12:37	1.0	GDG	1
21802061523 1		e4704.d	5.00 ml	10-FEB-2018 12:59	1.0	GDG	1
21802061524 1		e4705.d	5.00 ml	10-FEB-2018 13:22	1.0	GDG	1
21802061528 1		e4706.d	5.00 ml	10-FEB-2018 13:44	1.0	GDG	1
21802061529 1		e4707.d	5.00 ml	10-FEB-2018 14:06	1.0	GDG	1
21802072501 1		e4708.d	5.00 ml	10-FEB-2018 14:28	1.0	GDG	1
21802072502 1		e4709.d	5.00 ml	10-FEB-2018 14:51	1.0	GDG	1
21802072503 1		e4710.d	5.00 ml	10-FEB-2018 15:13	1.0	GDG	1
21802072504 1		e4711.d	5.00 ml	10-FEB-2018 15:35	1.0	GDG	1
21802072505 1		e4712.d	5.00 ml	10-FEB-2018 15:57	1.0	GDG	1
21802072506 1		e4713.d	5.00 ml	10-FEB-2018 16:20	1.0	GDG	1
21802072507 1		e4714.d	5.00 ml	10-FEB-2018 16:42	1.0	GDG	1
21802072508 1		e4715.d	5.00 ml	10-FEB-2018 17:04	1.0	GDG	1
21802072509 1		e4716.d	5.00 ml	10-FEB-2018 17:26	1.0	GDG	1
1440		e4717.d	5.00 ml	10-FEB-2018 17:49	1.0	GDG	1
1440		e4718.d	5.00 ml	10-FEB-2018 18:11	1.0	GDG	1

REVISED 1-28-15 Supervisor Review: LBH TUNE TIME: 20:39

Client ID: 4838 - AECOM
SDG: 218020725
PM: AMK

AECOM Chain of Custody and Analytical Requ

Project Name / Site Name: ARNG OMS 28 Mobile AL

Client Name: USACE / ARNG

Collected by: Randy Morgan

Field Sample ID (30 Characters Max)	Date Collected	Time Collected	Sample Depth (beginning - ending)	SA Code (1)	Sample Matrix (2)	Sample Analysis Requested: Number of containers	PCE & TCE (8260B)	CL5-12 DCE	Comments	Cooler ID
OMS-28-GW91-33	7/6/2018	0840	29.33	N	WG	3	X	X		-1
OMS-28-GW91-33-c	7/6/2018		-	TB	WQ	2	X	X		-2
OMS-28-GW93-12	7/6/2018	0910	8.12	N	WG	3	X	X		-3
OMS-28-GW93-16	7/6/2018	0935	12.16	N	WG	3	X	X		-4
OMS-28-GW93-33	7/6/2018	1000	29.33	N	WG	3	X	X		-5
OMS-28-GW92-12	7/6/2018	1035	8.12	N	WG	3	X	X		-6
OMS-28-GW92-16	7/6/2018	1100	12.16	N	WG	3	X	X		-7
OMS-28-GW92-33	7/6/2018	1130	29.33	N	WG	3	X	X		-8
OMS-28-GW92-33a	7/6/2018	1130	29.33	FD	WG	3	X	X		-9
			-							
			-							
			-							
			-							

Comments

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Randy Morgan	7/6/18	1330	1.		
2. FedEx	7/7/18	1000	2. Tiffany Davis	7/7/18	1000
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: XXX
Method of Shipment: Fed EX
Analytical Lab: GCAL
Lab Receipient:
Shipped:
Airbill #: 8992 5589 0271
Location: Baton Rouge LA
Date: Time:

1.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike Samples, SD = Matrix Spike Duplicate Samples

2.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

0.7°C E29
25 CPM

Page 1 of 1

AECOM Project Number 60556081 2.0

Purchase Order Number 98356

AECOM Project Name ARNG OMS 28 Mobile AL

Project Manager Steve Holt

Analytical Data To Vasi Kourlas and Dwight Parks

SAMPLE RECEIVING CHECKLIST

218020725

SAMPLE DELIVERY GROUP 218020725	
Client **PM** AMK 4838 - AECOM	**Transport Method** FEDEX
Profile Number 264814	**Received By** Savage, Tiffany R
Line Item(s) 1 - W - VOCs	**Receive Date(s)** 02/07/18

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E29	Temp °C
8992-5589-0271		0.7

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Appendix C
Limited Data Validation

(Provided on CD)

C1 Organic Limited Data Validation Report dated February 9, 2016

C2 Organic Limited Data Validation Report dated July 6, 2017

C3 Organic Limited Data Validation Report dated September 22, 2017

C4 Organic Limited Data Validation Report dated February 23, 2018

Appendix C1
Organic Limited Data Validation Report dated February 9, 2016

AECOM Environment

Submitted to:
Alabama Army National Guard
Organizational Maintenance Shop #28
Mobile, Alabama

Submitted by:
AECOM
Denver, CO
60439687 task 2.2.
February 2016

February 9, 2016

Organic
Limited Data Validation Report

Alabama Army National Guard
Organizational Maintenance Shop #28
Mobile, Alabama
Water and QC Samples
GCAL Analytical Laboratories, LLC
January 2016

Prepared By Anne Kakai
Validation Chemist/Database Coordinator

Overview

The samples analyzed for the January sampling events (limited validation) are listed in the Table of Samples Analyzed (Table 1, page 3). Limited data validation was performed on a total of 11 water samples, one field duplicate sample and 2 associated trip blank samples.

Samples were analyzed by GCAL Analytical Laboratories, LA. The reviewed analyses were Volatile Organic Compounds (VOCs) by SW-846 Method 8260B.

The Analytical Data Validation Checklist is presented as pages 10-38. Laboratory data were reviewed in accordance with directives set forth in the Alabama Army National Guard Organizational Maintenance Shop #28, Uniform Federal Policy – Quality Assurance Project Plan (UFP QAPP), authored by AECOM Technical Services, January 2016. Data were also evaluated based on validation criteria set forth in the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as they applied to the reported methodology. Field duplicate RPD evaluation processes were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1996.

The following data components were reviewed during the limited data validation procedure:

Reviewed Deliverables/Data
Chain-of-Custody form(s) and sample integrity
Case Narratives (including any laboratory flags)
Sample results, reporting detection limits, dilution factors
Holding times
Laboratory blank results
Trip blank results
Organic surrogate recoveries
LCS, LCSD (blank spike, blank spike duplicate) results
MS, MSD (matrix spike, matrix spike duplicate) results
Laboratory duplicate (or spiked duplicate) results
Electronic data deliverables (EDDs)

Data Validation Qualifiers Assigned During this Review

J estimated concentration

Assigned qualifiers are detailed in the Analytical Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 10).

Overall Data Assessment

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness have been determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted.

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water Samples
GCAL Analytical Laboratories, LLC
Lab SDGs 216012310 and 216012515
January 2016

Table 1

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
WG	MW-8-012216	1/22/2016	08:03	216012310	21601231001	N
WQ	MW-8-C-012216	1/22/2016	08:03	216012310	21601231002	TB
WG	OMS-28-2-011916	1/19/2016	15:43	216012515	21601251501	N
WQ	OMS-28-2-C-011916	1/19/2016	15:43	216012515	21601251502	TB
WG	MW-9-012016	1/20/2016	08:23	216012515	21601251503	N
WG	OMS-28-5-012016	1/20/2016	10:40	216012515	21601251504	N
WG	OMS-28-4-012016	1/20/2016	11:40	216012515	21601251505	N
WG	MW-5-012016	1/20/2016	14:00	216012515	21601251506	N
WG	MW-6-012016	1/20/2016	15:05	216012515	21601251507	N
WG	OMS-28-7-012016	1/20/2016	16:23	216012515	21601251508	N
WG	OMS-28-3-012116	1/21/2016	11:25	216012515	21601251511	N
WG	MW-12-012116	1/21/2016	14:03	216012515	21601251512	N
WG	OMS-28-1-012116	1/21/2016	15:00	216012515	21601251513	N
WG	OMS-28-3-A-012116	1/21/2016	11:25	216012515	21601251514	FD

FD = field duplicate sample
ID = Identification
N = normal sample
TB = trip blank sample
SDG = Sample Delivery Group
WG= groundwater sample
WQ = water quality control sample

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Project Name: Alabama Army National Guard Organizational Maintenance Shop #28 Mobile, Alabama	Laboratory: GCAL Analytical Laboratories, LLC
Project Reference: Organizational Maintenance Shop #28 Mobile, Alabama	Sample Matrix: Water
AECOM Project: 60439687 task 2.2.	Sample Start Date: 01/19/2016
Validator/Date Validated: Anne Kakai 02/9/2016 (completed)	Sample End Date: 01/22/2016
Secondary Review by: Dwight Parks	Secondary Review Date: 2/9/2016
Samples Analyzed: see Table of Samples Analyzed, Alabama Army National Guard Organizational Maintenance Shop #28 Mobile, Alabama January 2016 (Table 1).	
Parameters Validated: VOCs by 8260B	
Laboratory Project IDs/Sample Delivery Groups (SDGs): 216012515 and 216012310	

PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT

Precision:	**X**	Acceptable		Unacceptable	AK	Initials
Comments: Precision is the measure of variability of individual sample measurements. Field precision is determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. RPD limits referenced EPA published QC limits. Data that required qualification based on laboratory and calculated field duplicate RPDs, is discussed as part of items 17 and 21 respectively. Overall field and laboratory precision is acceptable since no data is qualified or rejected based on these measurements.						
Accuracy:	**X**	Acceptable		Unacceptable	AK	Initials
Comments: Field accuracy, a measure of the sampling bias, is generally determined by reviewing trip blank results for evidence of sample contamination stemming from sampling activities and/or sample transport/bottle contamination in applicable methods. Laboratory accuracy is a measure of the system bias, and is measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and organic system monitoring compounds (surrogate and internal standard) percent recoveries (%Rs). LCS/LCSD %Rs, which demonstrated the overall performance of the analytical procedure, were compared to QAPP limits. MS/MSD %Rs, which provide information on sample matrix interferences, would be compared to QAPP limits, EPA published QC limits or laboratory control charted limits to evaluate matrix effects upon sample analysis. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to QAPP limits. Overall field and laboratory accuracy is acceptable since no data is qualified or rejected based on these measurements. Accuracy measurements are reviewed in items 12, 14, 15, and 16.						
Method Compliance:	**X**	Acceptable		Unacceptable	AK	Initials
Comments: For this sample set, method compliance was determined by evaluating sample integrity and holding time against method specified requirements, while applying QAPP validation guidelines. Although some data require qualification based on estimated quantitation (see item 6), overall method compliance is acceptable based on the data reported since a majority of the data are unqualified and no data are rejected. Method compliance measurements are reviewed in items 4, 6, 8, 11, 13, 18, 19, 20 and 22 below.						
Completeness:	**X**	Acceptable		Unacceptable	AK	Initials

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Review completeness goals were set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods, and reporting limits. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and EQuIS electronic data deliverables (EDDs). Any EDD modifications were made as documented in item 23.

All of the reported data are usable, some with qualification. Since no data are missing or rejected, completeness of the dataset is calculated to be 100% and is acceptable.

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

VALIDATION CRITERIA CHECK						
Data validation qualifiers assigned during this review for reportable data: J estimated concentration The following comments identifying sample results requiring qualification are in bold type. The other comments are of interest, but qualification of the sample results is not necessary. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).**						
1. Did the laboratory identify any non-conformances related to the analytical results?	**X**	Yes		No	AK	Initials
Explanation by laboratory: Comments: Sample OMS-28-5-012016 as concentrations exceeded the calibration range, (discussed under item #6). All laboratory case narrative comments are included in the hardcopy (or .pdf) laboratory report. All assigned laboratory flags were also reviewed during the limited validation procedure. Data qualification, if any, related to the narrative comments and/or assigned laboratory flags contained in the analytical reports are discussed in the following sections.						
2. Were sample Chain-of-Custody forms complete?	**X**	Yes		No	AK	Initials
Comments: COC records from field to laboratory were complete. Custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	**X**	Yes		No	AK	Initials
Comments: All requested analyses as documented on original COC records were completed by the laboratory.						
4. Were samples received in good condition and at the appropriate temperature?	**X**	Yes		No	AK	Initials
Comments: Samples were received on ice, intact, and in good condition. Cooler temperatures were within the 2°C - 6°C acceptance range as noted in the Sample Condition Upon Receipt form and on the COC. Data qualification is not needed.						
5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	**X**	Yes		No	AK	Initials
Comments: The reported analytical methods are in compliance with COC requests and the QAPP. Compliance with permit is generally evaluated by the project manager.						
6. Were detection limits in accordance with WP/QAPP, permit, or method?	**X**	Yes		No	AK	Initials
Comments: Reporting limits (RLs) are achievable by the quoted methods. Sample OMS-28-5-012016 had to be diluted due to concentrations exceeding the calibration range. The reporting limits were raised appropriately. No data qualification is required. **Sample results reported at concentrations ≥ the method detection limit (MDL) but < the limit of quantitation (LOQ) require J qualifiers to indicate estimated concentrations. The analyte cannot be accurately quantitated at this trace concentration level**. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).**						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	**X**	Yes		No	AK	Initials
Comments: The reported target analytes are in compliance with the constituents identified on the COC.						
8. Were sample holding times met?	**X**	Yes		No	AK	Initials
Comments: Sample preparation/extraction and analytical holding times were met for all samples and analyses.						
9. Were correct concentration units reported?	**X**	Yes		No	AK	Initials
Comments: All concentration units reported were correct.						
10. Were the reporting requirements for flagged data met?	**X**	Yes		No	AK	Initials
Comments: Data validation qualifiers override any assigned laboratory data flags.						
11. Were laboratory blank samples free of target analyte contamination?	**X**	Yes		No	AK	Initials
Comments: All laboratory blanks were free of target analyte contamination.						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?	**X**	Yes		No	AK	Initials
Comments: Field blank and equipment rinse blank samples were not collected for the data evaluated in this DVR. The trip blank samples were free of target analyte contamination. Data qualification is not required.						
13. Were instrument calibrations within method or data validation control limits?	**NA**	Yes	**NA**	No	AK	Initials
Comments: For this level of limited data validation, instrument calibrations are generally not evaluated. The laboratory's project narrative was utilized to verify that instrument calibrations met acceptance criteria. The laboratory's narrative did not identify any outliers.						
14. Were surrogate recoveries within control limits?	**X**	Yes		No	AK	Initials
Comments: Surrogate %Rs for organic analyses were within laboratory control-charted QC limits (as allowed for SW-846 methods) for all project samples and associated laboratory QC samples. Based on this, data qualification was not required.						
15. Were laboratory control sample recoveries within control limits?	**X**	Yes		No	AK	Initials
Comments: Submitted LCS %Rs were within laboratory control-charted QC limits for organic target analytes as allowed for SW-846 organic methods. Data qualification is not required.						
16. Were matrix spike recoveries within control limits?	**X**	Yes		No	AK	Initials
Comments: MS/MSD %Rs from non-project samples were considered, but were not utilized to qualify project samples since matrix similarity to project samples could not be guaranteed. When analyzed, project specific MS/MSD %Rs for target analytes were within laboratory control charted QC limits. MS/MSD %Rs must both be outside of QC limits in order for results to be qualified based on matrix.						
17. Were duplicate RPDs and/or serial dilution %Ds within control limits?	**X**	Yes		No	AK	Initials

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Comments: RPDs for target analytes in project-specific MS/MSD and laboratory duplicate samples were within laboratory control charted QC limits. *Serial Dilution %Ds: Not applicable for the methods evaluated in this SDG.*

18. Were organic system performance criteria met?	**NA**	Yes	**NA**	No	AK	Initials

Comments: For this level of limited data validation, organic system performance data were not supplied in analytical laboratory reports. The laboratory's project narrative was utilized to verify that organic system performance requirements were met. The laboratory's narrative did not identify any outliers; therefore, data qualification was not required.

19. Were internal standards within method criteria for GC/MS sample analyses?	**NA**	Yes	**NA**	No	AK	Initials

Comments: For this level of limited data validation, organic system performance data are generally not evaluated. The laboratory's project narrative was utilized to verify that organic system performance requirements were met.

20. Were inorganic system performance criteria met?	**NA**	Yes	**NA**	No	AK	Initials

Comments: Not applicable for the methods evaluated in this SDG.

21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	**X**	Yes		No	AK	Initials

SDG	Primary Sample ID	Duplicate Sample ID	Sample Date	Sample Time
216012515	OMS-28-3-012116	OMS-28-3-A-012116	1/21/2016	11:25

Comments: Field duplicate RPDs were within data validation QC limits of > 5XQL; ≤35% for water matrices, or RPDs were not applicable due to results that were within ± 2X the reporting limit or were undetected in both samples, except as noted in bold below. Field duplicate and native sample concentrations that were both undetected are not reflected below since RPDs are not applicable.

The following RPDs were calculated:

Method	Unit	Analyte	RPD	RL	OMS-28-3-012116	OMS-28-3-A-012116	Qualifier
SW8260B	UG/L	cis-1,2-Dichloroethene	0.6	0.5	1.59	1.60	None
SW8260B	UG/L	Trichloroethene	1.6	0.5	8.92	8.78	None

All RPDs were within QC acceptance criteria and based on this data qualification is not required.

22. Were qualitative criteria for organic target analyte identification met?	**NA**	Yes	**NA**	No	AK	Initials

Comments: For this level of limited data validation – Chromatograms, library searches, and quantitation reports are generally not evaluated. The laboratory's project narrative was utilized to verify that qualitative criteria for organic target analyte identification *were met.*

23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	**X**	Yes		No	AK	Initials

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Comments: The EDD entries were resolved with the hardcopy data results and corrected as necessary. According to validation protocol, the hardcopy data report was accepted as the correct reference. Qualifiers and reason codes were added to the EDD files for all reportable data. The four EQuIS EDD files were formatted for upload once data validation secondary review is completed.

Additional edits made to the EDD files by the Database Manager prior to data upload are listed below.

Unique sys_loc_codes were assigned to all samples. In order to upload multiple SDGs under one EDD, SDG numbers were appended to all laboratory QC data and dates were appended to trip blank samples in order to keep them unique. Parent sample designations were made for all LCS/LCSD and field duplicate samples. MS/MSD and laboratory duplicate samples already had pre-assigned parent sample designations which were verified using the hard copy laboratory report.

Updated the Analysis entries from “000” to “Initial”.

The result_comment field was updated from <PQL to <LOQ and the interpreted_qualifier field was updated accordingly.

A task_code field was assigned, “OMS28ARNG_GWJan2016”.

24. General Comments: Laboratory data were reviewed in accordance with directives set forth in the Alabama Army National Guard Organizational Maintenance Shop #28, Uniform Federal Policy – Quality Assurance Project Plan (UFP QAPP), authored by AECOM Technical Services, January 2016. Data were also evaluated based on validation criteria set forth in the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as they applied to the reported methodology. Field duplicate RPD evaluation processes were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1996.

Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).

Table of Qualified Analytical Results
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water Samples
GCAL Analytical Laboratories, LLC
Lab SDGs 216012310 and 216012515
January 2016
Table 2

SDG	Sample ID	Method	DF	Analysis	Analyte	Conc	Unit	Qualifier	Reason Code
216012515	OMS-28-2-011916	SW8260B	1	Initial	Methylene chloride	0.709	UG/L	J	<LOQ
216012515	OMS-28-4-012016	SW8260B	1	Initial	Tetrachloroethene	0.880	UG/L	J	<LOQ
216012515	OMS-28-7-012016	SW8260B	1	Initial	Methylene chloride	0.771	UG/L	J	<LOQ
216012515	OMS-28-3-012116	SW8260B	1	Initial	Methylene chloride	0.527	UG/L	J	<LOQ
216012515	OMS-28-1-012116	SW8260B	1	Initial	Methylene chloride	0.504	UG/L	J	<LOQ

Notes:
Conc = concentration
DF = dilution factor
Mg/L – milligrams per liter
ID = identification
ug/L – micrograms per liter
SDG – sample delivery group

Reason Codes
<LOQ - The reported concentration is greater than the MDL but less than the LOQ

Appendix C2
Organic Limited Data Validation Report dated July 6, 2017

AECOM Environment

Submitted to:
Alabama Army National Guard
Organizational Maintenance Shop #28
Mobile, Alabama

Submitted by:
AECOM
Denver, CO
60439687 task 2.3.
July 2017

July 6, 2017

Organic
Limited Data Validation Report

Alabama Army National Guard
Organizational Maintenance Shop #28
Mobile, Alabama
May 2017
Water and Soil Samples
Analyzed by GCAL Analytical Laboratories, LLC

Prepared By Joseph Capotrio
Validation Chemist/Database Coordinator

Overview

The samples analyzed for the May 2017 sampling events (limited validation) are listed in the Table of Samples Analyzed (Table 1, pages 3-4). Limited data validation was performed on a total of 44 water samples, 9 soil samples, 3 field duplicate water samples, and 8 associated trip blank samples.

Samples were analyzed for Volatile Organic Compounds (VOCs) by SW-846 Method 8260B by GCAL Analytical Laboratories, LA (GCAL) and VOCs by EPA Method 8260C-SIM by ALS Environmental—Kelso WA, Laboratory (ALS).

The Analytical Data Validation Checklist is presented as pages 5-11. Laboratory data were reviewed in accordance with directives set forth in the Alabama Army National Guard Organizational Maintenance Shop #28, Uniform Federal Policy – Quality Assurance Project Plan (UFP QAPP), authored by AECOM Technical Services, January 2016. Data were also evaluated based on validation criteria set forth in the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories Version 5.0 (DoD July 2013), and the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2014 as they applied to the reported methodology. Field duplicate RPD evaluation processes were taken from the *EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures April 22, 2013,* document number EQADR-Supplement.

The following data components were reviewed during the limited data validation procedure:

Reviewed Deliverables/Data
Case Narratives (including any assigned laboratory flags)
Chain-of-Custody (COC) form(s) and sample integrity
Sample results, reporting limits, dilution factors
Holding times
Method (preparation) blank results
Field blank results
Laboratory control sample (LCS), laboratory control sample duplicate (LCSD) results
Matrix spike (MS), matrix spike duplicate (MSD) results
Laboratory duplicate (or spiked duplicate) results
Field duplicate (FD) results (calculated Relative Percent Differences [RPD])
Electronic data deliverables (EDDs) – EQuIS format

Data Validation Qualifiers Assigned During this Review

J Results reported as a detect and qualified as an estimated concentration
U Results qualified as a non-detect

Assigned qualifiers are detailed in the Analytical Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 12).

Overall Data Assessment

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness have been determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted.

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
GCAL and ALS Laboratories
May 2017

Table 1

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
SDG #217050803						
WG	OMS-28-7	5/1/2017	11:27	217050803	21705080301	N
WQ	OMS-28-7-c	5/1/2017	00:01	217050803	21705080302	TB
WG	MW-8	5/1/2017	12:25	217050803	21705080303	N
WG	MW-5	5/1/2017	13:15	217050803	21705080304	N
WG	MW-6	5/1/2017	14:20	217050803	21705080305	N
WG	OMS-28-3	5/1/2017	15:13	217050803	21705080306	N
WG	OMS-28-1	5/1/2017	16:40	217050803	21705080309	N
WG	MW-12	5/1/2017	17:57	217050803	21705080310	N
WG	OMS-28-GW32-12-S	5/2/2017	14:30	217050803	21705080311	N
WG	OMS-28-GW02-19-S	5/3/2017	10:00	217050803	21705080312	N
WG	OMS-28-GW03-34-S	5/4/2017	10:30	217050803	21705080313	N
WG	OMS-28-GW20-12-S	5/5/2017	16:15	217050803	21705080314	N
WG	OMS-28-GW18-18-S	5/5/2017	10:45	217050803	21705080315	N
WG	MW-9	5/5/2017	12:35	217050803	21705080316	N
WG	OMS-28-5	5/5/2017	14:08	217050803	21705080317	N
WG	OMS-28-5-a	5/5/2017	14:08	217050803	21705080318	FD
WG	OMS-28-4	5/5/2017	15:15	217050803	21705080319	N
WG	OMS-28-2	5/5/2017	17:00	217050803	21705080320	N
SDG #217051044 (K1704509)						
WG	OMS-28-GW32-12-S	5/02/2017	14:30	217051044	K1704509-001	N
WG	OMS-28-GW02-19-S	5/03/2017	10:00	217051044	K1704509-002	N
WG	OMS-28-GW03-34-S	5/04/2017	10:30	217051044	K1704509-003	N
WG	OMS-28-GW20-12-S	5/04/2017	16:15	217051044	K1704509-004	N
WG	TRIP BLANK	5/02/2017	00:01	217051044	K1704509-005	TB
SDG #217051110						
SO	OMS-28-SB04-1-S_050817	5/8/2017	09:10	217051110	21705111001	N
SO	OMS-28-SB01-2-S_050817	5/8/2017	11:38	217051110	21705111002	N
SO	OMS-28-SB11-6-S_050817	5/8/2017	13:15	217051110	21705111003	N
SO	OMS-28-SB14-1-S_050817	5/8/2017	15:20	217051110	21705111004	N
WG	OMS-28-GW13-32-S_050917	5/9/2017	10:45	217051110	21705111005	N
WQ	OMS-28-GW13-32-C_050917	5/9/2017	00:01	217051110	21705111006	TB
SO	OMS-28-SB22-1.5-S_051017	5/10/2017	08:21	217051110	21705111007	N
SO	OMS-28-SB16-5-S_051017	5/10/2017	09:14	217051110	21705111008	N
SO	OMS-28-SB24-1-S_051017	5/10/2017	10:40	217051110	21705111009	N
SO	OMS-28-SB24-3-S_051017	5/10/2017	10:45	217051110	21705111010	N
SO	OMS-28-SB24-5-S_051017	5/10/2017	10:50	217051110	21705111011	N
WG	OMS-28-GW28-12-S_051017	5/10/2017	12:05	217051110	21705111012	N
SDG #217051316						

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
GCAL and ALS Laboratories
May 2017

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
WG	OMS-28-GW38-30-S	5/11/2017	09:40	217051316	21705131601	N
WQ	OMS-28-GW38-30-c	5/11/2017	00:01	217051316	21705131602	TB
WG	OMS-28-GW41-20-S	5/11/2017	15:30	217051316	21705131603	N
WG	OMS-28-GW57-16-S	5/12/2017	11:45	217051316	21705131604	N
WG	OMS-28-GW57-16-S-a	5/12/2017	11:45	217051316	21705131605	FD
SDG #217052202						
WG	OMS-28-GW11-11-s	5/13/2017	11:50	217052202	21705220201	N
WG	OMS-28-GW11-11-c	5/13/2017	00:01	217052202	21705220202	TB
WG	OMS-28-GW58-31-s	5/15/2017	08:50	217052202	21705220203	N
WG	OMS-28-GW49-12-s	5/15/2017	14:45	217052202	21705220204	N
WG	OMS-28-GW62-19-s	5/16/2017	14:30	217052202	21705220205	N
WG	OMS-28-GW34-31-s	5/17/2017	11:00	217052202	21705220206	N
WG	OMS-28-GW06-11-s	5/17/2017	16:00	217052202	21705220207	N
WG	OMS-28-GW12-12-s	5/19/2017	08:25	217052202	21705220208	N
SDG #217053111 (K1705066)						
WG	OMS-28-GW11-11-S	5/13/2017	11:50	K1705066	K1705066-001	N
WQ	OMS-28-GW11-11-C	5/13/2017	00:00	K1705066	K1705066-002	TB
WG	OMS-28-GW58-31-S	5/15/2017	08:50	K1705066	K1705066-003	N
WG	OMS-28-GW49-12-S	5/15/2017	14:45	K1705066	K1705066-004	N
WG	OMS-28-GW62-19-S	5/16/2017	14:30	K1705066	K1705066-005	N
WG	OMS-28-GW34-31-S	5/17/2017	11:00	K1705066	K1705066-006	N
WG	OMS-28-GW06-11-S	5/17/2017	16:00	K1705066	K1705066-007	N
SDG #217053112 (K1704732)						
WG	OMS-28-GW18-18-S	5/5/2017	10:45	K1704732	K1704732-001	N
WG	Trip Blank	5/5/2017	00:00	K1704732	K1704732-002	TB
WG	OMS-28-GW13-32-S	5/9/2017	10:45	K1704732	K1704732-003	N
WG	OMS-28-GW28-12-S	5/10/2017	12:05	K1704732	K1704732-004	N
SDG #217053113 (K1704857)						
WG	OMS-28-GW38-30-S	5/11/2017	09:40	K1704857	K1704857-001	N
WG	Trip Blank	5/11/2017	00:01	K1704857	K1704857-002	TB
WG	OMS-28-GW41-20-S	5/11/2017	15:30	K1704857	K1704857-003	N
WG	OMS-28-GW57-16-S	5/12/2017	11:45	K1704857	K1704857-004	N
WG	OMS-28-GW57-16-S-a	5/12/2017	11:45	K1704857	K1704857-005	FD

FD = field duplicate sample
ID = Identification
N = normal sample
TB = trip blank sample
SDG = Sample Delivery Group
SO =Soil sample
WG= groundwater sample
WQ = water quality control sample

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Project Name: Alabama Army National Guard Organizational Maintenance Shop #28 Mobile, Alabama	Laboratory: GCAL Analytical Laboratories, LLC and ALS Environmental—Kelso, WA
Project Reference: Organizational Maintenance Shop #28 Mobile, Alabama	Sample Matrix: Water and Soil
AECOM Project: 60439687 task 2.3.	Sample Start Date: 05/01/2017
Validator/Date Validated: Joseph Capotrio/Steve Szocik 07/06/2017 (completed)	Sample End Date: 05/19/2017
Secondary Review by: Steve Szocik	Secondary Review Date: 7/17/2017
Samples Analyzed: see Table of Samples Analyzed, Alabama Army National Guard Organizational Maintenance Shop #28 Mobile, Alabama May 2017 (Table 1).	
Parameters Validated: VOCs by 8260B and 8260C-SIM	
Laboratory Project IDs/Sample Delivery Groups (SDGs): 217050803, 217051044 (K170459), 217051110, 217051316, 217052202, 217053111 (K1705066), 217053112 (K1704732), and 217053113 (K1704857)	

PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT

Precision:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: Precision is the measure of variability of individual sample measurements. Field precision is determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. RPD limits referenced EPA published QC limits. Data that required qualification based on laboratory and calculated field duplicate RPDs, is discussed as part of items 17 and 21 respectively. Data was not rejected based on these measurements and the overall field and laboratory precision is acceptable						
Accuracy:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: Field accuracy, a measure of the sampling bias, is generally determined by reviewing trip blank results for evidence of sample contamination stemming from sampling activities and/or sample transport/bottle contamination in applicable methods. Laboratory accuracy is a measure of the system bias, and is measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and organic system monitoring compounds (surrogate and internal standard) percent recoveries (%Rs). LCS/LCSD %Rs, which demonstrated the overall performance of the analytical procedure, were compared to QAPP limits. MS/MSD %Rs, which provide information on sample matrix interferences, would be compared to QAPP limits, EPA published QC limits or laboratory control charted limits to evaluate matrix effects upon sample analysis. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to QAPP limits. Accuracy measurements are reviewed in items 12, 14, 15, and 16. Data was not qualified or rejected based on these measurements and the overall field and laboratory accuracy is acceptable.						
Method Compliance:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: For this sample set, method compliance was determined by evaluating sample integrity and holding time against method specified requirements, while applying QAPP validation guidelines. Although some data require qualification based on estimated quantitation (see item 6), overall method compliance is acceptable based on the data reported since a majority of the data are unqualified and no data are rejected. Method compliance measurements are reviewed in items 4, 6, 8, 11, 13, 18, 19, 20 and 22 below.						
Completeness: (Continued on next page)	**X**	Acceptable		Unacceptable	*JC*	Initials

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Review completeness goals were set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods, and reporting limits. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and EQuIS electronic data deliverables (EDDs). Any EDD modifications were made as documented in item 23.

All of the reported data are usable, some with qualification. Since no data are missing or rejected, completeness of the dataset is calculated to be 100% and is acceptable.

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

VALIDATION CRITERIA CHECK						
Data validation qualifiers assigned during this review for reportable data: J estimated concentration U Results qualified as a non-detect The following comments identifying sample results requiring qualification are in bold type. The other comments are of interest, but qualification of the sample results is not necessary. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 12).**						
1. Did the laboratory identify any non-conformances related to the analytical results?	**X**	Yes		No	*JC*	Initials
Explanation by laboratory: Comments: The following items were noted in laboratory case narrative comments included in the hardcopy (or .pdf) laboratory report: **SDG #217050803** - Samples OMS-28-GW32-12-S, OMS-28-5, and OMS-28-5-a exceeded the calibration range, (discussed under item #6). **SDG #217051044** - The toluene-d8 surrogate for the VOC analysis of samples OMS-28-GW32-12-S exceeded the upper control limits (discussed under item #14) **SDG #217051110** - Samples OMS-28-SB24-1-S, OMS-28-SB24-3-S, and OMS-28-SB24-5-S exceeded the calibration range, (discussed under item #6). **SDG #217052202** – The RPDs between the LCS and LCSD results were above the control limits for acetone, 1,1-dichloroethane, trans-1,2-dichloroethene, methylene chloride, tert-butyl methyl ether (MTBE) and methyl acetate, (discussed under item #17). Data qualification, if any, related to the narrative comments and/or assigned laboratory flags contained in the analytical reports are discussed in the following sections. All assigned laboratory flags were also reviewed during the limited validation procedure.						
2. Were sample Chain-of-Custody forms complete?	**X**	Yes		No	*JC*	Initials
Comments: COC records from field to laboratory were complete. Custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	**X**	Yes		No	*JC*	Initials
Comments: All requested analyses as documented on original COC records were completed by the laboratory.						
4. Were samples received in good condition and at the appropriate temperature?	**X**	Yes		No	*JC*	Initials
Comments: Samples were received on ice, intact, and in good condition. Cooler temperatures were within the 2-4°C acceptance range as noted in the Sample Condition Upon Receipt form and on the COC. Data qualification is not needed.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	**X**	Yes		No	*JC*	Initials
Comments: The reported analytical methods are in compliance with COC requests and the QAPP. Compliance with permit is generally evaluated by the project manager.						
6. Were detection limits in accordance with WP/QAPP, permit, or method?	**X**	Yes		No	*JC*	Initials
Comments: Detection limits (DLs) and limits of quantitation (LOQs) are achievable by the quoted methods. Samples OMS-28-GW32-12-S, OMS-28-5, OMS-28-5-a, OMS-28-SB24-1-S, OMS-28-SB24-3-S, and OMS-28-SB24-5-S had to be diluted due to concentrations exceeding the calibration range. The LOQs were raised appropriately. No data qualification is required. **Sample results reported at concentrations ≥ the DL but < the LOQ require J qualifiers to indicate estimated concentrations. The analyte cannot be accurately quantitated at this trace concentration level**. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 12).**						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	**X**	Yes		No	*JC*	Initials
Comments: The reported target analytes are in compliance with the constituents identified on the COC.						
8. Were sample holding times met?	**X**	Yes		No	*JC*	Initials
Comments: Sample preparation/extraction and analytical holding times were met for all samples and analyses.						
9. Were correct concentration units reported?	**X**	Yes		No	*JC*	Initials
Comments: All concentration units reported were correct.						
10. Were the reporting requirements for flagged data met?	**X**	Yes		No	*JC*	Initials
Comments: Data validation qualifiers override any assigned laboratory data flags.						
11. Were laboratory blank samples free of target analyte contamination?		Yes	**X**	No	*JC*	Initials
Comments: With the exceptions listed below, laboratory blanks were free of target analyte contamination. Methylene chloride was detected in method blank 1684001-LB-217051110 (SDG # 217051110) at a concentration of 1.61 µg/L. Methylene chloride results reported as detected at concentration less than 10 times the blank contamination for samples associated with the method blank were qualified as non-detect. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 12).**						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?	**X**	Yes		No	*JC*	Initials
Comments: Field blank and equipment rinse blank samples were not collected for the data evaluated in this DVR. The trip blank samples were free of target analyte contamination. Data qualification is not required.						
13. Were instrument calibrations within method or data validation control limits?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: For this level of limited data validation, instrument calibrations are generally not evaluated. The laboratory's project narrative was utilized to verify that instrument calibrations met acceptance criteria. The laboratory's narrative did not identify any outliers.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

14. Were surrogate recoveries within control limits?		Yes	**X- no effect**	No	*JC*	Initials
Comments: With the exception listed below, surrogate %Rs for organic analyses were within laboratory control-charted QC limits (as allowed for SW-846 methods) for all project samples and associated laboratory QC samples. The toluene-d8 surrogate for sample OMS-28-GW32-12-S reported in data package 217051044 was outside the acceptance limits of 74-112% with a recovery of 117%. This surrogate is not associated with the analytes reported in this sample; therefore, data qualification was not required.						
15. Were laboratory control sample recoveries within control limits?	**X**	Yes		No	*JC*	Initials
Comments: Submitted LCS %Rs were within laboratory control-charted QC limits for organic target analytes as allowed for SW-846 organic methods. Data qualification is not required.						
16. Were matrix spike recoveries within control limits?	**X**	Yes		No	*JC*	Initials
Comments: MS/MSD %Rs from non-project samples were considered, but were not utilized to qualify project samples since matrix similarity to project samples could not be guaranteed. When analyzed, project specific MS/MSD %Rs for target analytes were within laboratory control charted QC limits.						
17. Were duplicate RPDs and/or serial dilution %Ds within control limits?		Yes	**X**	No	*JC*	Initials
Comments: With the exceptions listed below, the RPDs for target analytes in project-specific MS/MSD and laboratory duplicate samples were within the QAPP or QSM QC limits. For SDG # 217052202, the RPDs between the LCS and LCSD (batch 611089) results were above the control limits of ≤20% for acetone (31%), 1,1-dichloroethane (21%), trans-1,2-dichloroethene (28%), methylene chloride (27%), tert-butyl methyl ether (MTBE) (28%), and methyl acetate (37%). Any associated detected analytes were J qualified, and analytes not detected were not affected. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 12).** *Serial Dilution %Ds: Not applicable for the methods evaluated in this SDG.*						
18. Were organic system performance criteria met?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: For this level of limited data validation, organic system performance data were not supplied in analytical laboratory reports. The laboratory's project narrative was utilized to verify that organic system performance requirements were met. The laboratory's narrative did not identify any outliers; therefore, data qualification was not required.						
19. Were internal standards within method criteria for GC/MS sample analyses?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: For this level of limited data validation, organic system performance data are generally not evaluated. The laboratory's project narrative was utilized to verify that organic system performance requirements were met.						
20. Were inorganic system performance criteria met?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: Not applicable for the methods evaluated in this SDG.						
21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results. (Continued on next page)	**X**	Yes		No	*JC*	Initials

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

SDG	Primary Sample ID	Duplicate Sample ID	Sample Date	Sample Time
217050803	OMS-28-5	OMS-28-5-A	5/05/2017	14:08
217051316	OMS-28-GW57-16-S	OMS-28-GW57-16-S-a	5/12/2017	11:45
217053112	OMS-28-GW57-16-S	OMS-28-GW57-16-S-a	5/12/2017	11:45

Comments: Field duplicate RPDs were within data validation QC limits of ≤35% for water matrices when the result is > 5X the LOQ, or RPDs were within ± 2X the LOQ or were undetected in both samples. Field duplicate and native sample concentrations that were both undetected are not reflected below since RPDs are not applicable.

The following RPDs were calculated:

Duplicate Pair	Method	Unit	Analyte	RPD	RL	Primary Result (µg/L)	Duplicate Result (µg/L)	Qualifier
SDG# 217050803								
OMS-28-5-A/ OMS-28-5	SW8260B	UG/L	cis-1,2-Dichloroethene	1.0	1.0	103	102	None
	SW8260B	UG/L	trans-1,2-Dichloroethene	6.7	1.0	31.6	33.8	None
	SW8260B	UG/L	Tetrachloroethene	6.0	1.0	154	145	None
	SW8260B	UG/L	Trichloroethene	0.4	1.0	246	247	None

All RPDs were within QC acceptance criteria and based on this data qualification is not required.

22. Were qualitative criteria for organic target analyte identification met?	**NA**	Yes	**NA**	No	*JC*	Initials

Comments: For this level of limited data validation – Chromatograms, library searches, and quantitation reports are generally not evaluated. The laboratory's project narrative was utilized to verify that qualitative criteria for organic target analyte identification *were met.*

23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	**X**	Yes		No	*JC*	Initials

Comments: The EDD entries were resolved with the hardcopy data results and corrected as necessary. According to validation protocol, the hardcopy data report was accepted as the correct reference. Qualifiers and reason codes were added to the EDD files for all reportable data. The four EQuIS EDD files were formatted for upload once data validation secondary review is completed.

Additional edits made to the EDD files by the Database Manager prior to data upload are listed below.

Unique sys_loc_codes were assigned to all samples. In order to upload multiple SDGs under one EDD, SDG numbers were appended to all laboratory QC data and dates were appended to trip blank samples in order to keep them unique. Parent sample designations were made for all LCS/LCSD and field duplicate samples. MS/MSD and laboratory duplicate samples already had pre-assigned parent sample designations which were verified using the hard copy laboratory report.

Updated the Analysis entries from "000" to "Initial".

A task_code field was assigned, "OMS28_GW_SO_May2017".

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

24. General Comments: Laboratory data were reviewed in accordance with directives set forth in the Alabama Army National Guard Organizational Maintenance Shop #28, Uniform Federal Policy – Quality Assurance Project Plan (UFP QAPP), authored by AECOM Technical Services, January 2016. Data were also evaluated based on validation criteria set forth in the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories Version 5.0 (DoD July 2013), and *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as they applied to the reported methodology. Field duplicate RPD evaluation processes were taken from the *EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures April 22, 2013,* document number EQADR-Supplement.

Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 12).

Table of Qualified Analytical Results
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
GCAL and ALS Laboratories
May 2017
Table 2

SDG	Sample ID	Method	DF	Analysis	Analyte	Conc	Unit	Qualifier	Reason Code
217050803	MW-8	SW8260B	1	Initial	Trichloroethene	0.373	µg/L	J	<LOQ
217050803	OMS-28-GW02-19-S	SW8260B	1	Initial	2-Butanone	3.87	µg/L	J	<LOQ
217050803	OMS-28-GW20-12-S	SW8260B	1	Initial	cis-1,2-Dichloroethene	0.927	µg/L	J	<LOQ
217050803	OMS-28-5	SW8260B	2	Initial	1,1-Dichloroethene	1.29	µg/L	J	<LOQ
217050803	OMS-28-5-a	SW8260B	2	Initial	1,1-Dichloroethene	1.60	µg/L	J	<LOQ
217051044	OMS-28-GW02-19-S	SW8260CSIM	1	Initial	Vinyl Chloride	11.0	ng/l	J	<LOQ
217051110	OMS-28-SB04-1-S_050817	SW8260B	1	Initial	Benzene	0.499	µg/kg	J	<LOQ
217051110	OMS-28-SB04-1-S_050817	SW8260B	1	Initial	Methylcyclohexane	1.43	µg/kg	J	<LOQ
217051110	OMS-28-SB04-1-S_050817	SW8260B	1	Initial	Toluene	1.37	µg/kg	J	<LOQ
217051110	OMS-28-SB04-1-S_050817	SW8260B	1	Initial	Cyclohexane	0.698	µg/kg	J	<LOQ
217051110	OMS-28-SB04-1-S_050817	SW8260B	1	Initial	Acetone	4.37	µg/kg	J	<LOQ
217051110	OMS-28-SB04-1-S_050817	SW8260B	1	Initial	Methylene chloride	3.14	µg/kg	U	MB
217051110	OMS-28-SB04-1-S_050817	SW8260B	1	Initial	Xylene (total)	0.862	µg/kg	J	<LOQ
217051110	OMS-28-SB01-2-S_050817	SW8260B	1	Initial	Methylene chloride	11.3	µg/kg	U	MB
217051110	OMS-28-SB01-2-S_050817	SW8260B	1	Initial	Acetone	9.80	µg/kg	J	<LOQ
217051110	OMS-28-SB11-6-S_050817	SW8260B	1	Initial	Methylene chloride	9.09	µg/kg	U	MB
217051110	OMS-28-SB14-1-S_050817	SW8260B	1	Initial	4-Methyl-2-pentanone	1.39	µg/kg	J	<LOQ
217051110	OMS-28-SB14-1-S_050817	SW8260B	1	Initial	Methylene chloride	1.92	µg/kg	U	MB
217051110	OMS-28-SB14-1-S_050817	SW8260B	1	Initial	2-Butanone	4.03	µg/kg	J	<LOQ
217051110	OMS-28-SB22-1.5-S_051017	SW8260B	1	Initial	Methylene chloride	4.18	µg/kg	U	MB
217051110	OMS-28-SB22-1.5-S_051017	SW8260B	1	Initial	Acetone	6.16	µg/kg	J	<LOQ
217051110	OMS-28-SB16-5-S_051017	SW8260B	1	Initial	Methylene chloride	2.73	µg/kg	U	MB
217051110	OMS-28-GW28-12-S_051017	SW8260B	1	Initial	Tetrachloroethene	0.863	µg/L	J	<LOQ
217051110	OMS-28-GW28-12-S_051017	SW8260B	1	Initial	Trichloroethene	0.751	µg/L	J	<LOQ
217052202	OMS-28-GW11-11-S_051317	SW8260B	1	Initial	Isopropylbenzene (Cumene)	0.374	µg/L	J	<LOQ
217052202	OMS-28-GW11-11-S_051317	SW8260B	1	Initial	Carbon disulfide	0.666	µg/L	J	<LOQ
217052202	OMS-28-GW62-19-S_051617	SW8260B	1	Initial	Acetone	5.05	µg/L	J	D
217053111	OMS-28-GW62-19-S	SW8260CSIM	1	initial	Vinyl Chloride	8.0	ng/l	J	<LOQ
217053113	OMS-28-GW41-20-S	SW8260CSIM	1	initial	Vinyl Chloride	6.3	ng/l	J	<LOQ

Notes:
µg/kg – micrograms per kilogram
µg/L – micrograms per liter
Conc = concentration
DF = dilution factor
ID = identification
ng/L – nanograms per liter
SDG – sample delivery group

Qualifier Codes:
J – Result reported as detected and qualified as estimated
U – Result qualified as non-detect
UJ – Result reported as non-detect and qualified as estimated.

Reason Codes
<LOQ - The reported concentration is greater than the DL but less than the LOQ
MB – Results qualified due to method blank contamination

Appendix C3
Organic Limited Data Validation Report dated September 22, 2017

AECOM Environment

Submitted to:
Alabama Army National Guard
Organizational Maintenance Shop #28
Mobile, Alabama

Submitted by:
AECOM
Denver, CO
60439687 task 2.3.

September 22, 2017

Organic
Limited Data Validation Report

Alabama Army National Guard
Organizational Maintenance Shop #28
Mobile, Alabama
Water and Soil Samples
Collected May 2017
Analyzed by Columbia Technologies, LLC

Prepared By Joseph Capotrio
Validation Chemist/Database Coordinator

Overview

The samples analyzed for the May 2017 sampling events (limited validation) are listed in the Table of Samples Analyzed (Table 1, pages 3-10). Limited data validation was performed on a total of 172 water samples, 18 field duplicate water samples, 93 soil samples, and 8 field duplicate soil samples.

Samples were analyzed for Volatile Organic Compounds (VOCs) by SW-846 Method 8260B by Columbia Technologies, LLC, with an on-site mobile laboratory.

The Analytical Data Validation Checklist is presented as pages 11-19. Laboratory data were reviewed in accordance with directives set forth in the Alabama Army National Guard Organizational Maintenance Shop #28, Uniform Federal Policy – Quality Assurance Project Plan (UFP QAPP), authored by AECOM Technical Services, January 2016. Data were also evaluated based on validation criteria set forth in the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories Version 5.0 (DoD July 2013), and the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2014 as they applied to the reported methodology. Field duplicate RPD evaluation processes were taken from the *EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures April 22, 2013,* document number EQADR-Supplement.

The following data components were reviewed during the limited data validation procedure:

Reviewed Deliverables/Data
Case Narratives (including any assigned laboratory flags)
Chain-of-Custody (COC) form(s) and sample integrity
Sample results, reporting limits, dilution factors
Holding times
Method (preparation) blank results
Field blank results
Laboratory control sample (LCS), laboratory control sample duplicate (LCSD) results
Matrix spike (MS), matrix spike duplicate (MSD) results
Laboratory duplicate (or spiked duplicate) results
Field duplicate (FD) results (calculated Relative Percent Differences [RPD])
Electronic data deliverables (EDDs) – EQuIS format

Data Validation Qualifiers Assigned During this Review

NR Results not selected for reporting due to more defensible results available
J Results reported as a detect and qualified as an estimated concentration
UJ Results reported as a non-detect and qualified as an estimated concentration

Assigned qualifiers are detailed in the Analytical Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 20-23).

Overall Data Assessment

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness have been determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted.

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
Columbia Technologies, LLC
May 2017

Table 1

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
GW	OMS-28-GW01-10	5/2/2017	8:50	10050217	10050217-01	N
GW	OMS-28-GW01-19	5/2/2017	9:55	10050217	10050217-02	N
GW	OMS-28-GW01-32	5/2/2017	10:20	10050217	10050217-03	N
GW	OMS-28-GW05-11	5/2/2017	11:30	10050217	10050217-04	N
GW	OMS-28-GW05-19	5/2/2017	12:00	10050217	10050217-05	N
GW	OMS-28-GW05-33	5/2/2017	12:35	10050217	10050217-06	N
GW	OMS-28-GW33-12	5/2/2017	13:00	10050217	10050217-07	N
GW	OMS-28-GW33-19	5/2/2017	13:20	10050217	10050217-08	N
GW	OMS-28-GW33-33	5/2/2017	13:55	10050217	10050217-09	N
GW	OMS-28-GW32-12	5/2/2017	14:30	10050217	10050217-10	N
GW	OMS-28-GW32-12-a	5/2/2017	14:30	10050217	10050217-11	FD
GW	OMS-28-GW32-19	5/2/2017	14:50	10050217	10050217-12	N
GW	OMS-28-GW32-31	5/2/2017	15:43	10050217	10050217-13	N
GW	OMS-28-GW31-12	5/2/2017	16:05	10050217	10050217-14	N
GW	OMS-28-GW31-19	5/2/2017	16:35	10050217	10050217-15	N
GW	OMS-28-GW31-31	5/2/2017	17:10	10050217	10050217-16	N
GW	OMS-28-GW04-10	5/3/2017	7:50	10050317	10050317-01	N
GW	OMS-28-GW04-17	5/3/2017	8:25	10050317	10050317-02	N
GW	OMS-28-GW04-31	5/3/2017	9:00	10050317	10050317-03	N
GW	OMS-28-GW02-12	5/3/2017	9:35	10050317	10050317-04	N
GW	OMS-28-GW02-19	5/3/2017	10:00	10050317	10050317-05	N
GW	OMS-28-GW02-19-a	5/3/2017	10:00	10050317	10050317-06	FD
GW	OMS-28-GW08-10	5/3/2017	11:45	10050317	10050317-07	MS/MSD
GW	OMS-28-GW08-17	5/3/2017	12:10	10050317	10050317-08	N
GW	OMS-28-GW09-10	5/3/2017	12:50	10050317	10050317-09	N
GW	OMS-28-GW09-16	5/3/2017	13:15	10050317	10050317-10	N
GW	OMS-28-GW02-31	5/3/2017	14:30	10050317	10050317-11	N
GW	OMS-28-GW08-31	5/3/2017	15:15	10050317	10050317-12	N
GW	OMS-28-GW09-33	5/3/2017	16:05	10050317	10050317-13	N
GW	OMS-28-GW03-12	5/4/2017	9:15	10050417	10050417-01	N
GW	OMS-28-GW03-20	5/4/2017	9:40	10050417	10050417-02	N
GW	OMS-28-GW03-34	5/4/2017	10:30	10050417	10050417-03	N
GW	OMS-28-GW03-34-a	5/4/2017	10:30	10050417	10050417-04	FD
GW	OMS-28-GW30-11	5/4/2017	11:10	10050417	10050417-05	N
GW	OMS-28-GW30-20	5/4/2017	11:45	10050417	10050417-06	N
GW	OMS-28-GW16-12	5/4/2017	13:45	10050417	10050417-07	N
GW	OMS-28-GW16-19	5/4/2017	14:00	10050417	10050417-08	N
GW	OMS-28-GW16-30	5/4/2017	14:20	10050417	10050417-09	N
GW	OMS-28-GW17-12	5/4/2017	15:05	10050417	10050417-10	N

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
Columbia Technologies, LLC
May 2017

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
GW	OMS-28-GW17-19	5/4/2017	15:30	10050417	10050417-11	N
GW	OMS-28-GW17-28	5/4/2017	15:50	10050417	10050417-12	N
GW	OMS-28-GW20-12	5/4/2017	16:15	10050417	10050417-13	N
GW	OMS-28-GW20-12-a	5/4/2017	16:15	10050417	10050417-14	FD
GW	OMS-28-GW30-22	5/4/2017	12:45	10050417	10050417-15	N
GW	OMS-28-GW20-19	5/4/2017	16:45	10050417	10050417-16	MS/MSD
GW	OMS-28-GW20-28	5/4/2017	17:00	10050417	10050417-17	N
GW	OMS-28-GW21-12	5/5/2017	8:20	10050517	10050517-01	N
GW	OMS-28-GW21-18	5/5/2017	8:40	10050517	10050517-02	N
GW	OMS-28-GW21-30	5/5/2017	9:00	10050517	10050517-03	N
GW	OMS-28-GW15-12	5/5/2017	9:30	10050517	10050517-04	N
GW	OMS-28-GW15-19	5/5/2017	9:40	10050517	10050517-05	N
GW	OMS-28-GW15-30	5/5/2017	10:05	10050517	10050517-06	N
GW	OMS-28-GW18-12	5/5/2017	10:35	10050517	10050517-07	N
GW	OMS-28-GW18-18	5/5/2017	10:45	10050517	10050517-08	N
GW	OMS-28-GW18-18-a	5/5/2017	10:45	10050517	10050517-09	FD
GW	OMS-28-GW18-30	5/5/2017	11:20	10050517	10050517-10	N
SO	OMS-28-SB05-1	5/8/2017	8:05	10050817	10050817-01A	N
SO	OMS-28-SB05-2	5/8/2017	8:07	10050817	10050817-02A	N
SO	OMS-28-SB05-5	5/8/2017	8:09	10050817	10050817-03A	N
SO	OMS-28-SB06-1	5/8/2017	8:25	10050817	10050817-04A	N
SO	OMS-28-SB06-3	5/8/2017	8:30	10050817	10050817-05A	N
SO	OMS-28-SB06-6	5/8/2017	8:32	10050817	10050817-06A	N
SO	OMS-28-SB07-1	5/8/2017	8:47	10050817	10050817-07A	N
SO	OMS-28-SB07-3	5/8/2017	8:48	10050817	10050817-08A	N
SO	OMS-28-SB07-6	5/8/2017	8:57	10050817	10050817-09A	N
SO	OMS-28-SB04-1	5/8/2017	9:10	10050817	10050817-10A	N
SO	OMS-28-SB04-1a	5/8/2017	9:10	10050817	10050817-11A	FD
SO	OMS-28-SB04-2	5/8/2017	9:15	10050817	10050817-12A	N
SO	OMS-28-SB04-5	5/8/2017	9:17	10050817	10050817-13A	N
SO	OMS-28-SB03-1	5/8/2017	10:58	10050817	10050817-14A	N
SO	OMS-28-SB03-3	5/8/2017	11:00	10050817	10050817-15A	N
SO	OMS-28-SB03-5	5/8/2017	11:02	10050817	10050817-16A	N
SO	OMS-28-SB02-1	5/8/2017	11:17	10050817	10050817-17A	N
SO	OMS-28-SB02-3	5/8/2017	11:19	10050817	10050817-18A	N
SO	OMS-28-SB02-5	5/8/2017	11:21	10050817	10050817-19A	N
SO	OMS-28-SB01-1	5/8/2017	11:35	10050817	10050817-20A	N
SO	OMS-28-SB01-1	5/8/2017	11:35	10050817	10050817-21A	MS/MSD
SO	OMS-28-SB01-2	5/8/2017	11:38	10050817	10050817-22A	N
SO	OMS-28-SB01-2a	5/8/2017	11:38	10050817	10050817-23A	FD

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
Columbia Technologies, LLC
May 2017

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
SO	OMS-28-SB01-3	5/8/2017	11:40	10050817	10050817-24A	N
SO	OMS-28-SB10-1	5/8/2017	12:35	10050817	10050817-25A	N
SO	OMS-28-SB10-2	5/8/2017	12:37	10050817	10050817-26A	N
SO	OMS-28-SB10-3	5/8/2017	12:39	10050817	10050817-27A	N
SO	OMS-28-SB09-1	5/8/2017	12:52	10050817	10050817-28A	N
SO	OMS-28-SB09-2	5/8/2017	12:54	10050817	10050817-29A	N
SO	OMS-28-SB09-3	5/8/2017	12:56	10050817	10050817-30A	N
SO	OMS-28-SB11-1	5/8/2017	13:09	10050817	10050817-31A	N
SO	OMS-28-SB11-4	5/8/2017	13:11	10050817	10050817-32A	N
SO	OMS-28-SB11-6	5/8/2017	13:15	10050817	10050817-33A	N
SO	OMS-28-SB11-6a	5/8/2017	13:15	10050817	10050817-34A	FD
SO	OMS-28-SB08-1	5/8/2017	13:35	10050817	10050817-35A	N
SO	OMS-28-SB08-3	5/8/2017	13:37	10050817	10050817-36A	N
SO	OMS-28-SB08-6	5/8/2017	13:39	10050817	10050817-37A	N
SO	OMS-28-SB12-1	5/8/2017	14:10	10050817	10050817-38A	N
SO	OMS-28-SB12-3	5/8/2017	14:12	10050817	10050817-39A	N
SO	OMS-28-SB12-6	5/8/2017	14:14	10050817	10050817-40A	N
SO	OMS-28-SB13-1	5/8/2017	14:33	10050817	10050817-41A	N
SO	OMS-28-SB13-3	5/8/2017	14:35	10050817	10050817-42A	N
SO	OMS-28-SB13-5	5/8/2017	14:37	10050817	10050817-43A	N
SO	OMS-28-SB14-1	5/8/2017	15:20	10050817	10050817-44A	N
SO	OMS-28-SB14-1a	5/8/2017	15:20	10050817	10050817-45A	FD
SO	OMS-28-SB14-3	5/8/2017	15:25	10050817	10050817-46A	N
SO	MS-28-SB14-3	5/8/2017	15:25	10050817	10050817-47A	MS/MSD
SO	OMS-28-SB14-5	5/8/2017	15:28	10050817	10050817-48A	N
SO	OMS-28-SB15-1	5/8/2017	15:42	10050817	10050817-49A	N
SO	OMS-28-SB15-3	5/8/2017	15:44	10050817	10050817-50A	N
SO	OMS-28-SB15-5	5/8/2017	15:46	10050817	10050817-51A	N
GW	OMS-28-GW26-31	5/9/2017	8:05	10050917	10050917-01A	N
GW	OMS-28-GW10-10	5/9/2017	8:45	10050917	10050917-02A	N
GW	OMS-28-GW10-16	5/9/2017	9:05	10050917	10050917-03A	N
GW	OMS-28-GW10-33	5/9/2017	9:30	10050917	10050917-04A	N
GW	OMS-28-GW13-13	5/9/2017	10:00	10050917	10050917-05A	N
GW	OMS-28-GW13-18	5/9/2017	10:15	10050917	10050917-06A	N
GW	OMS-28-GW13-32	5/9/2017	10:45	10050917	10050917-07A	N
GW	OMS-28-GW19-12	5/9/2017	11:25	10050917	10050917-08A	N
GW	OMS-28-GW19-12	5/9/2017	11:25	10050917	10050917-08A	MS/MSD
GW	OMS-28-GW19-19	5/9/2017	11:40	10050917	10050917-09A	N
GW	OMS-28-GW19-19a	5/9/2017	11:40	10050917	10050917-10A	FD
GW	OMS-28-GW19-30	5/9/2017	12:10	10050917	10050917-11A	N

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
Columbia Technologies, LLC
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Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
GW	OMS-28-GW22-11	5/9/2017	13:15	10050917	10050917-12A	N
GW	OMS-28-GW22-20	5/9/2017	13:45	10050917	10050917-13A	N
GW	OMS-28-GW22-28	5/9/2017	14:15	10050917	10050917-14A	N
GW	OMS-28-GW24-19	5/9/2017	14:55	10050917	10050917-15A	N
GW	OMS-28-GW24-30	5/9/2017	15:25	10050917	10050917-16A	N
GW	OMS-28-GW25-19	5/9/2017	15:45	10050917	10050917-17A	N
GW	OMS-28-GW25-28	5/9/2017	16:05	10050917	10050917-18A	N
SO	OMS-28-SB23-1	5/10/2017	8:00	10051017	10051017-01A	N
SO	OMS-28-SB23-1.5	5/10/2017	8:01	10051017	10051017-02A	N
SO	OMS-28-SB23-2	5/10/2017	8:02	10051017	10051017-03A	N
SO	OMS-28-SB22-1	5/10/2017	8:20	10051017	10051017-04A	N
SO	OMS-28-SB22-1a	5/10/2017	8:20	10051017	10051017-05A	FD
SO	OMS-28-SB22-1.5	5/10/2017	8:21	10051017	10051017-06A	N
SO	OMS-28-SB22-2	5/10/2017	8:22	10051017	10051017-07A	N
SO	OMS-28-SB21-1	5/10/2017	8:33	10051017	10051017-08A	N
SO	OMS-28-SB21-1.5	5/10/2017	8:34	10051017	10051017-09A	N
SO	OMS-28-SB22-2	5/10/2017	8:35	10051017	10051017-10A	N
SO	OMS-28-SB20-1	5/10/2017	8:42	10051017	10051017-11A	N
SO	OMS-28-SB20-1.5	5/10/2017	8:43	10051017	10051017-12A	N
SO	OMS-28-SB20-2	5/10/2017	8:44	10051017	10051017-13A	N
SO	OMS-28-SB16-1	5/10/2017	9:10	10051017	10051017-14A	N
SO	OMS-28-SB16-1a	5/10/2017	9:10	10051017	10051017-15A	FD
SO	OMS-28-SB16-2.5	5/10/2017	9:12	10051017	10051017-16A	N
SO	OMS-28-SB16-2.5	5/10/2017	9:12	10051017	10051017-17A	MS/MSD
SO	OMS-28-SB16-4	5/10/2017	9:14	10051017	10051017-18A	N
SO	OMS-28-SB17-1	5/10/2017	9:29	10051017	10051017-19A	N
SO	OMS-28-SB17-2.5	5/10/2017	9:30	10051017	10051017-20A	N
SO	OMS-28-SB17-5	5/10/2017	9:31	10051017	10051017-21A	N
SO	OMS-28-SB18-1	5/10/2017	9:53	10051017	10051017-22A	N
SO	OMS-28-SB18-2.5	5/10/2017	9:54	10051017	10051017-23A	N
SO	OMS-28-SB18-5	5/10/2017	9:55	10051017	10051017-24A	N
SO	OMS-28-SB19-1	5/10/2017	10:08	10051017	10051017-25A	N
SO	OMS-28-SB19-2.5	5/10/2017	10:09	10051017	10051017-26A	N
SO	OMS-28-SB19-5	5/10/2017	10:10	10051017	10051017-27A	N
SO	OMS-28-SB19-5a	5/10/2017	10:10	10051017	10051017-28A	FD
SO	OMS-28-SB24-1	5/10/2017	10:40	10051017	10051017-29A	N
SO	OMS-28-SB24-3	5/10/2017	10:45	10051017	10051017-30A	N
SO	OMS-28-SB24-5	5/10/2017	10:50	10051017	10051017-31A	N
GW	OMS-28-GW23-12	5/10/2017	12:05	10051017	10051017-32A	N
GW	OMS-28-GW23-20	5/10/2017	12:50	10051017	10051017-33A	N

Table of Samples Analyzed
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Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
GW	OMS-28-GW23-28	5/10/2017	13:15	10051017	10051017-34A	N
GW	OMS-28-GW23-28a	5/10/2017	13:15	10051017	10051017-35A	FD
GW	OMS-28-GW42-12	5/10/2017	13:55	10051017	10051017-36A	N
GW	OMS-28-GW42-20	5/10/2017	14:15	10051017	10051017-37A	N
GW	OMS-28-GW42-28	5/10/2017	14:45	10051017	10051017-38A	N
GW	OMS-28-GW39-13	5/10/2017	15:40	10051017	10051017-39A	N
GW	OMS-28-GW39-20	5/10/2017	16:10	10051017	10051017-40A	N
GW	OMS-28-GW39-28	5/10/2017	16:30	10051017	10051017-41A	N
GW	OMS-28-GW38-12	5/11/2017	8:25	10051117	10051117-01A	N
GW	OMS-28-GW38-12a	5/11/2017	8:25	10051117	10051117-02A	FD
GW	OMS-28-GW38-20	5/11/2017	9:05	10051117	10051117-03A	N
GW	OMS-28-GW38-30	5/11/2017	9:40	10051117	10051117-04A	N
GW	OMS-28-GW37-12	5/11/2017	10:20	10051117	10051117-05A	N
GW	OMS-28-GW37-19	5/11/2017	10:40	10051117	10051117-06A	N
GW	OMS-28-GW37-28	5/11/2017	11:10	10051117	10051117-07A	N
GW	OMS-28-GW36-12	5/11/2017	11:45	10051117	10051117-08A	N
GW	OMS-28-GW36-18	5/11/2017	12:10	10051117	10051117-09A	N
GW	OMS-28-GW36-29	5/11/2017	12:35	10051117	10051117-10A	N
GW	OMS-28-GW40-13	5/11/2017	13:40	10051117	10051117-11A	N
GW	OMS-28-GW40-20	5/11/2017	14:00	10051117	10051117-12A	N
GW	OMS-28-GW40-28	5/11/2017	14:20	10051117	10051117-13A	N
GW	OMS-28-GW41-12	5/11/2017	15:05	10051117	10051117-14A	N
GW	OMS-28-GW41-12	5/11/2017	15:05	10051117	10051117-15A	MS/MSD
GW	OMS-28-GW41-20	5/11/2017	15:30	10051117	10051117-16A	N
GW	OMS-28-GW41-28	5/11/2017	16:35	10051117	10051117-17A	N
GW	OMS-28-GW41-28a	5/11/2017	16:35	10051117	10051117-18A	FD
SO	OMS-28-SB25-1	5/12/2017	7:41	10051217	10051217-01A	N
SO	OMS-28-SB25-3	5/12/2017	7:42	10051217	10051217-02A	N
SO	OMS-28-SB25-5	5/12/2017	7:43	10051217	10051217-03A	N
SO	OMS-28-SB26-1	5/12/2017	7:50	10051217	10051217-04A	N
SO	OMS-28-SB26-3	5/12/2017	7:51	10051217	10051217-05A	N
SO	OMS-28-SB26-5	5/12/2017	7:52	10051217	10051217-06A	N
SO	OMS-28-SB27-1	5/12/2017	8:00	10051217	10051217-07A	N
SO	OMS-28-SB27-1a	5/12/2017	8:00	10051217	10051217-08A	FD
SO	OMS-28-SB27-3	5/12/2017	8:02	10051217	10051217-09A	N
SO	OMS-28-SB27-3	5/12/2017	8:02	10051217	10051217-010A	MS/MSD
SO	OMS-28-SB27-5	5/12/2017	8:04	10051217	10051217-11A	N
GW	OMS-28-GW24-12	5/12/2017	8:08	10051217	10051217-12A	N
GW	OMS-28-GW43-12	5/12/2017	8:50	10051217	10051217-13A	N
GW	OMS-28-GW43-20	5/12/2017	9:05	10051217	10051217-14A	N

Table of Samples Analyzed
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Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
GW	OMS-28-GW43-28	5/12/2017	9:25	10051217	10051217-15A	N
GW	OMS-28-GW45-18	5/12/2017	9:50	10051217	10051217-16A	N
GW	OMS-28-GW45-32	5/12/2017	10:15	10051217	10051217-17A	N
GW	OMS-28-GW46-16	5/12/2017	10:45	10051217	10051217-18A	N
GW	OMS-28-GW46-33	5/12/2017	11:05	10051217	10051217-19A	N
GW	OMS-28-GW46-33a	5/12/2017	11:05	10051217	10051217-20A	FD
GW	OMS-28-GW57-16	5/12/2017	11:45	10051217	10051217-21A	N
GW	OMS-28-GW57-33	5/12/2017	12:30	10051217	10051217-22A	N
GW	OMS-28-GW52-31	5/13/2017	8:00	10051317	10051317-01A	N
GW	OMS-28-GW53-13	5/13/2017	8:43	10051317	10051317-02A	N
GW	OMS-28-GW53-19	5/13/2017	9:05	10051317	10051317-03A	N
GW	OMS-28-GW53-31	5/13/2017	9:35	10051317	10051317-04A	N
GW	OMS-28-GW14-11	5/13/2017	10:38	10051317	10051317-05A	N
GW	OMS-28-GW14-20	5/13/2017	10:50	10051317	10051317-06A	N
GW	OMS-28-GW14-30	5/13/2017	11:15	10051317	10051317-07A	N
GW	OMS-28-GW11-11	5/13/2017	11:50	10051317	10051317-08A	N
GW	OMS-28-GW11-19	5/13/2017	12:15	10051317	10051317-09A	N
GW	OMS-28-GW11-19a	5/13/2017	12:15	10051317	10051317-10A	FD
GW	OMS-28-GW11-30	5/13/2017	12:45	10051317	10051317-11A	N
GW	OMS-28-GW11-30	5/13/2017	12:45	10051317	10051317-12A	MS/MSD
GW	OMS-28-GW54-12	5/13/2017	13:20	10051317	10051317-13A	N
GW	OMS-28-GW54-19	5/13/2017	13:33	10051317	10051317-14A	N
GW	OMS-28-GW54-32	5/13/2017	14:05	10051317	10051317-15A	N
GW	OMS-28-GW55-12	5/13/2017	14:38	10051317	10051317-16A	N
GW	OMS-28-GW55-19	5/13/2017	14:55	10051317	10051317-17A	N
GW	OMS-28-GW55-32	5/13/2017	15:15	10051317	10051317-18A	N
GW	OMS-28-GW51-30	5/13/2017	16:00	10051317	10051317-19A	N
GW	OMS-28-GW58-12	5/15/2017	8:00	10051517	10051517-01	N
GW	OMS-28-GW58-12a	5/15/2017	8:00	10051517	10051517-02	FD
GW	OMS-28-GW58-19	5/15/2017	8:23	10051517	10051517-03	N
GW	OMS-28-GW58-31	5/15/2017	8:50	10051517	10051517-04	N
GW	OMS-28-GW56-18	5/15/2017	10:15	10051517	10051517-05	N
GW	OMS-28-GW56-31	5/15/2017	10:45	10051517	10051517-06	N
GW	OMS-28-GW52-19	5/15/2017	11:35	10051517	10051517-07	N
GW	OMS-28-GW50-13	5/15/2017	12:55	10051517	10051517-08	N
GW	OMS-28-GW50-18	5/15/2017	13:20	10051517	10051517-09	N
GW	OMS-28-GW50-30	5/15/2017	14:00	10051517	10051517-10	N
GW	OMS-28-GW49-12	5/15/2017	14:45	10051517	10051517-11	N
GW	OMS-28-GW49-18	5/15/2017	15:15	10051517	10051517-12	MS/MSD
GW	OMS-28-GW49-30	5/15/2017	16:00	10051517	10051517-13	N

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
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Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
GW	OMS-28-GW49-30a	5/15/2017	16:00	10051517	10051517-14	FD
SO	OMS-28-SB28-1	5/16/2017	7:50	10051617	10051617-01	N
SO	OMS-28-SB28-3	5/16/2017	7:51	10051617	10051617-02	N
SO	OMS-28-SB28-5	5/16/2017	7:52	10051617	10051617-03	N
SO	OMS-28-SB29-1	5/16/2017	7:57	10051617	10051617-04	N
SO	OMS-28-SB29-3	5/16/2017	7:58	10051617	10051617-05	N
SO	OMS-28-SB29-5	5/16/2017	7:59	10051617	10051617-06	N
SO	OMS-28-SB30-1	5/16/2017	8:05	10051617	10051617-07	N
SO	OMS-28-SB30-3	5/16/2017	8:06	10051617	10051617-08	N
SO	OMS-28-SB30-5	5/16/2017	8:07	10051617	10051617-09	N
SO	OMS-28-SB31-1	5/16/2017	8:13	10051617	10051617-10	N
SO	OMS-28-SB31-3	5/16/2017	8:14	10051617	10051617-11	N
SO	OMS-28-SB31-5	5/16/2017	8:15	10051617	10051617-12	N
GW	OMS-28-GW25-12	5/16/2017	8:30	10051617	10051617-13	N
GW	OMS-28-GW44-28	5/16/2017	9:05	10051617	10051617-14	N
GW	OMS-28-GW60-16	5/16/2017	9:40	10051617	10051617-15	N
GW	OMS-28-GW60.33	5/16/2017	10:15	10051617	10051617-16	N
GW	OMS-28-GW59-10	5/16/2017	11:35	10051617	10051617-17	N
GW	OMS-28-GW59-18	5/16/2017	12:00	10051617	10051617-18	N
GW	OMS-28-GW59-30	5/16/2017	12:45	10051617	10051617-19	N
GW	OMS-28-GW62-12	5/16/2017	14:00	10051617	10051617-20	N
GW	OMS-28-GW62-12a	5/16/2017	14:00	10051617	10051617-21	FD
GW	OMS-28-GW62-19	5/16/2017	14:30	10051617	10051617-22	N
GW	OMS-28-GW-62-30	5/16/2017	16:05	10051617	10051617-23	N
GW	OMS-28-GW63-12	5/17/2017	7:35	10051717	10051717-01	N
GW	OMS-28-GW63-19	5/17/2017	7:50	10051717	10051717-02	N
GW	OMS-28-GW63-30	5/17/2017	8:10	10051717	10051717-03	N
GW	OMS-28-GW62-12	5/17/2017	8:45	10051717	10051717-04	N
GW	OMS-28-GW61-19	5/17/2017	9:10	10051717	10051717-05	N
GW	OMS-28-GW61-31	5/17/2017	9:35	10051717	10051717-06	N
GW	OMS-28-GW34-19	5/17/2017	10:10	10051717	10051717-07	N
GW	OMS-28-GW34-31	5/17/2017	11:00	10051717	10051717-08	N
GW	OMS-28-GW65-12	5/17/2017	11:55	10051717	10051717-09	N
GW	OMS-28-GW65-12a	5/17/2017	11:55	10051717	10051717-10	FD
GW	OMS-28-GW65-19	5/17/2017	12:15	10051717	10051717-11	MS/MSD
GW	OMS-28-GW65-29	5/17/2017	12:40	10051717	10051717-12	N
GW	OMS-28-GW64-16	5/17/2017	13:15	10051717	10051717-13	N
GW	OMS-28-GW64-33	5/17/2017	13:40	10051717	10051717-14	N
GW	OMS-28-GW57-12	5/17/2017	14:10	10051717	10051717-15	N
GW	OMS-28-GW47-19	5/17/2017	14:40	10051717	10051717-16	N

Table of Samples Analyzed
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Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
GW	OMS-28-GW47-32	5/17/2017	15:05	10051717	10051717-17	N
GW	OMS-28-GW06-11	5/17/2017	16:00	10051717	10051717-18	N
GW	OMS-28-GW06-32	5/17/2017	16:45	10051717	10051717-19	N
GW	OMS-28-GW06-32a	5/17/2017	16:45	10051717	10051717-20	FD
GW	OMS-28-GW06-17	5/17/2017	16:15	10051717	10051717-21	N
GW	OMS-28-GW66-26	5/18/2017	9:38	10051817	10051817-01	N
GW	OMS-28-GW66-49	5/18/2017	11:00	10051817	10051817-02	N
GW	OMS-28-GW67-26	5/18/2017	12:50	10051817	10051817-03	N
GW	OMS-28-GW67-52	5/18/2017	14:00	10051817	10051817-04	N
GW	OMS-28-GW68-26	5/18/2017	14:50	10051817	10051817-05	N
GW	OMS-28-GW68-57	5/18/2017	16:20	10051817	10051817-06	N
GW	OMS-28-GW69-26	5/18/2017	17:10	10051817	10051817-07	N
GW	OMS-28-GW69-49	5/19/2017	7:30	10051917	10051917-01	N
GW	OMS-28-GW12-12	5/19/2017	8:25	10051917	10051917-02	N
GW	OMS-28-GW12-12a	5/19/2017	8:25	10051917	10051917-03	FD
GW	OMS-28-GW12-18	5/19/2017	8:45	10051917	10051917-04	MS/MSD
GW	OMS-28-GW12-32	5/19/2017	9:10	10051917	10051917-05	N
GW	OMS-28-GW07-11	5/19/2017	9:45	10051917	10051917-06	N
GW	OMS-28-GW07-18	5/19/2017	10:00	10051917	10051917-07	N
GW	OMS-28-GW07-31	5/19/2017	10:20	10051917	10051917-08	N
GW	OMS-28-GW07-31a	5/19/2017	10:20	10051917	10051917-09	FD
GW	OMS-28-GW72-33	5/19/2017	11:10	10051917	10051917-10	N
GW	OMS-28-GW71-19	5/19/2017	11:45	10051917	10051917-11	N
GW	OMS-28-GW71-30	5/19/2017	12:40	10051917	10051917-12	N

FD = Field Duplicate Sample
GW = Groundwater Sample
ID = Identification
MS/MSD = Matrix Spike/ Matrix Spike Duplicate Sample
N = Normal Sample
SDG = Sample Delivery Group
SO = Soil Sample

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Project Name: Alabama Army National Guard Organizational Maintenance Shop #28 Mobile, Alabama	Laboratory: Columbia Technologies, LLC Mobil Laboratory
Project Reference: Organizational Maintenance Shop #28 Mobile, Alabama	Sample Matrix: Water and Soil
AECOM Project: 60439687 task 2.3.	Sample Start Date: 05/02/2017
Validator/Date Validated: Joseph Capotrio 09/23/2017 (completed)	Sample End Date: 05/19/2017
Secondary Review by: Steve Szocik	Secondary Review Date: 10/3/2017
Samples Analyzed: see Table of Samples Analyzed (Table 1).	
Parameters Validated: VOCs by 8260B	
Laboratory Project IDs/Sample Delivery Groups (SDGs): 10050217, 10050317, 10050417, 10050517, 10050817, 10050917, 10051017, 10051117, 10051217, 10051317, 10051517, 10051617, 10051717, 10051817, 10051917	

PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT

Precision:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: Precision is the measure of variability of individual sample measurements. Field precision is determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. RPD limits referenced QAPP QC limits. Data that required qualification based on laboratory and calculated field duplicate RPDs, is discussed as part of items 17 and 21 respectively. One result was qualified based on a high MS/MSD RPD. However, data was not rejected based on these measurements and the overall field and laboratory precision is acceptable						
Accuracy:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: Laboratory accuracy is a measure of the system bias, and is measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and organic system monitoring compounds (surrogate and internal standard) percent recoveries (%Rs). LCS/LCSD %Rs, which demonstrated the overall performance of the analytical procedure, were compared to laboratory/QAPP limits. MS/MSD %Rs, which provide information on sample matrix interferences, would be compared to laboratory/QAPP limits to evaluate matrix effects upon sample analysis. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to laboratory/QAPP limits. Accuracy measurements are reviewed in items 12, 14, 15, and 16. Although some results were qualified for surrogate or MS recovery outliers, data was not rejected based on these measurements and the overall laboratory accuracy is acceptable.						
Method Compliance:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: For this sample set, method compliance was determined by evaluating sample integrity and holding time against method specified requirements, while applying QAPP validation guidelines. Although some data require qualification based on estimated quantitation (see item 6), overall method compliance is acceptable based on the data reported since a majority of the data are unqualified and no data are rejected. Method compliance measurements are reviewed in items 4, 6, 8, 11, 13, 18, 19, 20 and 22 below.						
Completeness: (Continued on next page)	**X**	Acceptable		Unacceptable	*JC*	Initials

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Review completeness goals were set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods, and reporting limits. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and EQuIS electronic data deliverables (EDDs). Any EDD modifications were made as documented in item 23.

All of the reported data are usable, some with qualification. Since no data are missing or rejected, completeness of the dataset is calculated to be 100% and is acceptable.

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

VALIDATION CRITERIA CHECK						
Data validation qualifiers assigned during this review for reportable data: NR Results not selected for reporting due to more defensible results available J Results reported as a detect and qualified as an estimated concentration UJ Results reported as a non-detect and qualified as an estimated concentration The following comments identifying sample results requiring qualification are in bold type. The other comments are of interest, but qualification of the sample results is not necessary. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 20-23).**						
1. Did the laboratory identify any non-conformances related to the analytical results?	**X**	Yes		No	JC	Initials
Explanation by laboratory: Comments: The following items were noted in laboratory case narrative comments included in the hardcopy (or .pdf) laboratory report: Analysis times, laboratory identification (IDs), and/ or sample IDs for several samples were corrected to reflect proper times and/ or nomenclatures. Data was not affected and qualification of data was not required. Matrix interference issues were observed in surrogates for soil samples primarily collected in the 1 to 2-foot range. Selected samples were re-analyzed to confirm the matrix interference, (discussed under item #14). **SDG #10050417** - Sample OMS-28-GW17-19 result was updated report to 6.7 ug/L from 6.8 ug/L in the Final Report for rounding and significant figures. Qualification was not required. **SDG #10050217** - Sample OMS-28-GW31-31 was run on May 2nd, 2017 as an unsettled sample. The sample was allowed to settle overnight and reanalyzed on May 3rd, 2017. Both results are reported. The greater of the two results (May 3rd analysis) was selected for reporting. Data qualification, if any, related to the narrative comments and/or assigned laboratory flags contained in the analytical reports are discussed in the following sections. All assigned laboratory flags were also reviewed during the limited validation procedure.						
2. Were sample Chain-of-Custody forms complete?	**X**	Yes		No	JC	Initials
Comments: COC records from field to laboratory were complete. Custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. For some samples, the site and/ or laboratory IDs were corrected to reflect the correct nomenclature. Data was not affected and qualification was not required.						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	**X**	Yes		No	JC	Initials
Comments: All requested analyses as documented on original COC records were completed by the laboratory.						
4. Were samples received in good condition and at the appropriate temperature?	**X**	Yes		No	JC	Initials
Comments: Samples were hand delivered with all samples intact, in good condition, and with ice present. Cooler temperatures were not noted, however, since the samples were received the same day of collection and the cooling process had been initiated with ice, qualification of data is not required.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	**X**	Yes		No	*JC*	Initials
Comments: The reported analytical methods are in compliance with COC requests and the QAPP. Compliance with permit or work plan is generally evaluated by the project manager.						
6. Were detection limits in accordance with WP/QAPP, permit, or method?	**X**	Yes		No	*JC*	Initials
Comments: Detection limits (DLs) and limits of quantitation (LOQs) are achievable by the quoted methods. Samples OMS-28-GW07-18, OMS-28-GW21-12, OMS-28-GW21-18, OMS-28-GW32-12-a, OMS-28-GW32-12, OMS-28-SB30-1, OMS-28-SB28-1, OMS-28-SB29-1, and OMS-28-SB31-1 had to be diluted due to concentrations exceeding the calibration range. Samples OMS-28-GW22-11 and OMS-28-SB24-1 were originally analyzed at a dilution due to matrix interference and were re-analyzed at greater dilutions due to concentrations exceeding the calibration range. The LOQs were raised appropriately. The following criteria were used to select results from the undiluted and diluted runs for these samples: • If results exceeded the calibration range in the initial run, the results were selected for reporting in the second run. • If results were within the calibration range and were reported as detected, the higher detected result was always selected for reporting. • If both results were reported as non-detect, the non-detect result with the lower reporting limit was selected for reporting. Samples OMS-28-GW39-13, OMS-28-GW39-20, OMS-28-GW40-13, OMS-28-GW40-20, OMS-28-SB24-3, and OMS-28-SB24-5 were originally analyzed at dilutions due to matrix interferences. The LOQs were raised appropriately. Results reported as non-detect will need to be evaluated by the end user of the data with respect to project objectives. **Sample results reported at concentrations ≥ the DL but < the LOQ require J qualifiers to indicate estimated concentrations. The analyte cannot be accurately quantitated at this trace concentration level**. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 20-23).**						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	**X**	Yes		No	*JC*	Initials
Comments: The reported target analytes are in compliance with the constituents identified on the COC. More than one analytical result was reported for some samples where both results were within the calibration range. The diluted not-needed results were NR qualified to indicate another result should be reported. The "reportable_result" field was changed from "Yes" to "No" in the database.						
8. Were sample holding times met?	**X**	Yes		No	*JC*	Initials
Comments: Sample preparation/extraction and analytical holding times were met for all samples and analyses.						
9. Were correct concentration units reported?	**X**	Yes		No	*JC*	Initials
Comments: All concentration units reported were correct.						
10. Were the reporting requirements for flagged data met?	**X**	Yes		No	*JC*	Initials
Comments: Data validation qualifiers override any assigned laboratory data flags.						
11. Were laboratory blank samples free of target analyte contamination?	**X**	Yes		No	*JC*	Initials
Comments: Laboratory blanks were free of target analyte contamination. Data qualification is not required.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: Trip blank, field blank, and equipment rinse blank samples were not collected for the data evaluated in this DVR and assessments could not be made.						
13. Were instrument calibrations within method or data validation control limits?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: For this level of limited data validation, instrument calibrations are generally not evaluated. The laboratory's project narrative was utilized to verify that instrument calibrations met acceptance criteria. The laboratory's narrative did not identify any outliers.						
14. Were surrogate recoveries within control limits?		Yes	**X**	No	*JC*	Initials

Comments: With the exception listed below, surrogate %Rs for organic analyses were within laboratory control-charted QC limits (as allowed for SW-846 methods) for all project samples and associated laboratory QC samples.

The toluene-d8 and/or 4-Bromofluorobenzene surrogate recoveries for several samples were above the acceptance limits. As the potential bias indicated by the surrogate is considered to be high, the associated results reported as non-detect were not qualified. The detected results in the associated samples listed below were qualified to reflect the potential high bias. The higher detected result was preferred for samples that were re-analyzed and exhibited %R outliers in both runs. The non-preferred results were flagged with DNR and the reportable result field changed to "No". **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 20-23).**

Sample ID	Surrogate	Limits (%)	Recovery (%)
OMS-28-SB17-2.5	Toluene-d8	88-116	119
OMS-28-SB19-1	Toluene-d8	88-116	162
	4-Bromofluorobenzene	77-122	172
OMS-28-SB19-1 (RERUN)	Toluene-d8	88-116	172
	4-Bromofluorobenzene	77-122	183
OMS-28-SB25-1	Toluene-d8	88-116	141
	4-Bromofluorobenzene	77-122	141
OMS-28-SB27-1	4-Bromofluorobenzene	77-122	124
OMS-28-SB28-1 (1X)	Toluene-d8	88-116	139
	4-Bromofluorobenzene	77-122	155
OMS-28-SB29-1 (1X)	Toluene-d8	88-116	160
	4-Bromofluorobenzene	77-122	163
OMS-28-SB30-1	Toluene-d8	88-116	164
	4-Bromofluorobenzene	77-122	175
OMS-28-SB31-1	Toluene-d8	88-116	146
	4-Bromofluorobenzene	77-122	149

% - Percent ID - Identification

The dibromofluoromethane surrogate recovery (68%) was below the acceptance limits of 84-121% and the 1,2-Dichloroethane-d4 surrogate recovery (70%) was below the acceptance limits of 66-139% for sample OMS-28-SB29-5. The sample was re-analyzed with acceptable surrogate %Rs, however the detected concentration for tetrachloroethene was much lower in the reanalysis and the original result was preferred. Detected and non-detect results were qualified to reflect the potential low bias. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 20-23).**

15. Were laboratory control sample recoveries within control limits?	**X**	Yes		No	*JC*	Initials
Comments: Submitted LCS %Rs were within laboratory control-charted QC limits for organic target analytes as allowed for SW-846 organic methods. Data qualification is not required.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

16. Were matrix spike recoveries within control limits? (Continued on next page)		Yes	**X**	No	*JC*	Initials

Comments: MS/MSD %Rs from non-project samples were considered, but were not utilized to qualify project samples since matrix similarity to project samples could not be guaranteed. The following project specific samples were analyzed for MS/MSD.

OMS-28-GW01-10	OMS-28-GW18-30	OMS-28-GW43-20	OMS-28-GW65-19
OMS-28-GW08-10	OMS-28-GW19-12	OMS-28-GW11-11	OMS-28-GW34-31
OMS-28-GW03-12	OMS-28-SB16-2.5	OMS-28-GW49-18	OMS-28-GW06-17
OMS-28-GW20-19	OMS-28-GW41-12	OMS-28-GW11-30	OMS-28-GW12-18
OMS-28-SB01-1	OMS-28-SB18-5	OMS-28-SB28-3	OMS-28-SB37-3
OMS-28-SB14-3	OMS-28-GW25-28	OMS-28-GW52-12	

With the exceptions listed below, project specific MS/MSD %Rs for target analytes were within laboratory control charted QC limits.

The tetrachloroethene MSD recovery for sample OMS-28-SB28-3 was above the control limits of 46-147% with a recovery of 184% and the trichloroethene MS recovery for sample OMS-28-GW06-17 was above the control limits of 54-139% with a recovery of 146%. The results reported as detected in the associated samples were qualified as estimated to reflect the potential high bias. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 20-23).**

17. Were duplicate RPDs and/or serial dilution %Ds within control limits?		Yes	**X**	No	*JC*	Initials

Comments: With the exceptions listed below, the RPDs for target analytes in project-specific MS/MSD and laboratory duplicate samples were within the QAPP QC limits.

The RPDs between the MS and MSD tetrachloroethene results were above the control limits of ≤40% for sample OMS-28-SB28-3 (51%). Any associated detected analytes were J qualified, and analytes not detected were not affected.

Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 20-23).

Serial Dilution %Ds: Not applicable for the methods evaluated in this SDG.

18. Were organic system performance criteria met?	**NA**	Yes	**NA**	No	*JC*	Initials

Comments: For this level of limited data validation, organic system performance data were not supplied in analytical laboratory reports. The laboratory's project narrative was utilized to verify that organic system performance requirements were met. The laboratory's narrative did not identify any outliers; therefore, data qualification was not required.

19. Were internal standards within method criteria for GC/MS sample analyses?	**NA**	Yes	**NA**	No	*JC*	Initials

Comments: For this level of limited data validation, organic system performance data are generally not evaluated. The laboratory's project narrative was utilized to verify that organic system performance requirements were met.

20. Were inorganic system performance criteria met?	**NA**	Yes	**NA**	No	*JC*	Initials

Comments: Not applicable for the methods evaluated in this SDG.

21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	**X**	Yes		No	*JC*	Initials

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Matrix	SDG	Primary Sample ID	Duplicate Sample ID	Sample Date	Sample Time
GW	10050217	OMS-28-GW32-12	OMS-28-GW32-12-a	5/2/2017	14:30
GW	10050317	OMS-28-GW02-19	OMS-28-GW02-19-a	5/3/2017	10:00
GW	10050417	OMS-28-GW03-34	OMS-28-GW03-34-a	5/4/2017	10:30
GW	10050417	OMS-28-GW20-12	OMS-28-GW20-12-a	5/4/2017	16:15
GW	10050517	OMS-28-GW18-18	OMS-28-GW18-18-a	5/5/2017	10:45
SO	10050817	OMS-28-SB04-1	OMS-28-SB04-1a	5/8/2017	9:10
SO	10050817	OMS-28-SB01-2	OMS-28-SB01-2a	5/8/2017	11:38
SO	10050817	OMS-28-SB11-6	OMS-28-SB11-6a	5/8/2017	13:15
SO	10050817	OMS-28-SB14-1	OMS-28-SB14-1a	5/8/2017	15:20
GW	10050917	OMS-28-GW19-19	OMS-28-GW19-19a	5/9/2017	11:40
SO	10051017	OMS-28-SB16-1	OMS-28-SB16-1a	5/10/2017	8:10
SO	10051017	OMS-28-SB19-5	OMS-28-SB19-5a	5/10/2017	10:10
SO	10051017	OMS-28-SB22-1	OMS-28-SB22-1a	5/10/2017	8:20
GW	10051017	OMS-28-GW23-28	OMS-28-GW23-28a	5/10/2017	13:15
GW	10051117	OMS-28-GW38-12	OMS-28-GW38-12a	5/11/2017	8:25
GW	10051117	OMS-28-GW41-28	OMS-28-GW41-28a	5/11/2017	16:35
SO	10051217	OMS-28-SB27-1	OMS-28-SB27-1a	5/12/2017	8:00
GW	10051217	OMS-28-GW46-33	OMS-28-GW46-33a	5/12/2017	11:05
GW	10051317	OMS-28-GW11-19	OMS-28-GW11-19a	5/13/2017	12:15
GW	10051517	OMS-28-GW58-12	OMS-28-GW58-12a	5/15/2017	8:00
GW	10051517	OMS-28-GW49-30	OMS-28-GW49-30a	5/15/2017	16:00
GW	10051617	OMS-28-GW62-12	OMS-28-GW62-12a	5/16/2017	14:00
GW	10051717	OMS-28-GW06-32	OMS-28-GW06-32a	5/17/2017	16:45
GW	10051717	OMS-28-GW65-12	OMS-28-GW65-12a	5/17/2017	11:55
GW	10051917	OMS-28-GW12-12	OMS-28-GW12-12a	5/19/2017	8:25
GW	10051917	OMS-28-GW07-31	OMS-28-GW07-31a	5/19/2017	10:20

GW – Groundwater Sample SO – Soil Sample

Comments:

The comparison between results of the field duplicate pair met the criteria listed below.

- When both the sample and duplicate values are >5xLOQ acceptable sampling and analytical precision is indicated by an RPD between the results of ≤35% for water samples and ≤40% for soil samples.
- Where the result for one or both analytes of the field duplicate pair is <5xLOQ, satisfactory precision is indicated if the absolute difference between the field duplicate results is <2xLOQ.

Field duplicate and native sample concentrations that were both undetected are not reflected below since RPDs are not applicable.

The following RPDs were calculated:

(Continued on next page)

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Duplicate Pair	Method	Analyte	RL	Primary Result (µg/L)	Duplicate Result ()	Units	RPD	Qualifier
OMS-28-GW11-19/ OMS-28-GW11-19a	SW8260B	Trichloroethene	1.0	24	24	µg/L	0.0	None
OMS-28-GW18-18/ OMS-28-GW18-18a		Trichloroethene	1.0	2.7	2.8	µg/L	3.6	
OMS-28-GW20-12/ OMS-28-GW20-12a		Trichloroethene	1.0	16	18	µg/L	11.8	
		Tetrachloroethene	1.0	13	13	µg/L	0.0	
OMS-28-GW32-12/ OMS-28-GW32-12a		Trichloroethene	1.0	140	180	µg/L	25	
OMS-28-GW38-12/ OMS-28-GW38-12a		Trichloroethene	1.0	12	12	µg/L	0	
		Tetrachloroethene	1.0	60	57	µg/L	5.1	
OMS-28-GW46-33/ OMS-28-GW46-33a		Trichloroethene	1.0	1.3	1.3	µg/L	0	
OMS-28-GW58-12/ OMS-28-GW58-12a		Trichloroethene	1.0	5.3	4.9	µg/L	7.8	
OMS-28-GW62-12/ OMS-28-GW62-12a		Trichloroethene	1.0	3.5	3.4	µg/L	2.9	
OMS-28-GW65-12/ OMS-28-GW65-12a		Trichloroethene	1.0	5.5	6.8	µg/L	21.1	
		Tetrachloroethene	1.0	38	48	µg/L	23.3	
OMS-28-SB19-5/ OMS-28-SB19-5a		Trichloroethene	0.002	0.0025	0.0020	mg/kg	22.2	
		Tetrachloroethene	0.002	0.0264	0.022	mg/kg	18.2	

All RPDs were within QC acceptance criteria and based on this data qualification is not required.

22. Were qualitative criteria for organic target analyte identification met?	**NA**	Yes	**NA**	No	*JC*	Initials

Comments: For this level of limited data validation – Chromatograms, library searches, and quantitation reports are generally not evaluated. The laboratory's project narrative was utilized to verify that qualitative criteria for organic target analyte identification *were met.*

23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	**X**	Yes		No	*JC*	Initials

Comments: The EDD entries were resolved with the hardcopy data results and corrected as necessary. According to validation protocol, the hardcopy data report was accepted as the correct reference. Qualifiers and reason codes were added to the EDD files for all reportable data. The four EQuIS EDD files were formatted for upload once data validation secondary review is completed.

Additional edits made to the EDD files by the Database Manager prior to data upload are listed below.

Unique sys_loc_codes were assigned to all samples. In order to upload multiple SDGs under one EDD, SDG numbers were appended to all laboratory QC data and dates were appended to trip blank samples in order to keep them unique. Parent sample designations were made for all LCS/LCSD and field duplicate samples. MS/MSD and laboratory duplicate samples already had pre-assigned parent sample designations which were verified using the hard copy laboratory report.

Updated the Analysis entries from "000" to "Initial".

A task_code field was assigned, "OMS28_GW_SO_May2017".

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

24. General Comments: Laboratory data were reviewed in accordance with directives set forth in the Alabama Army National Guard Organizational Maintenance Shop #28, Uniform Federal Policy – Quality Assurance Project Plan (UFP QAPP), authored by AECOM Technical Services, January 2016. Data were also evaluated based on validation criteria set forth in the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories Version 5.0 (DoD July 2013), and *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as they applied to the reported methodology. Field duplicate RPD evaluation processes were taken from the *EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures April 22, 2013,* document number EQADR-Supplement.

Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 20-23).

Table of Qualified Analytical Results
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
Columbia Technologies, LLC
May 2017

Table 2

SDG	Sample ID	Method	DF	Analysis	Analyte	Conc	Unit	Qualifier	Reason Code
10050917	OMS-28-GW25-19	SW8260b	1	Initial	Trichloroethene	0.8	ug/L	J	<LOQ
10050217	OMS-28-GW01-19	SW8260b	10	Dilution	Tetrachloroethene	10	ug/L	NR	DNR
10050517	OMS-28-GW21-18	SW8260b	1	Initial	Tetrachloroethene	7.65	ug/L	NR	DNR
10050517	OMS-28-GW21-18	SW8260b	1	Initial	1,2-Dichloroethane-D4	104.55	PCT_REC	NR	DNR
10050517	OMS-28-GW21-18	SW8260b	1	Initial	Dibromofluoromethane	103.8	PCT_REC	NR	DNR
10050517	OMS-28-GW21-18	SW8260b	1	Initial	Toluene-D8	101.3	PCT_REC	NR	DNR
10050517	OMS-28-GW21-18	SW8260b	1	Initial	4-Bromofluorobenzene	95.05	PCT_REC	NR	DNR
10050517	OMS-28-GW21-18	SW8260b	1	Initial	Trichloroethene	120	ug/L	NR	DNR
10050917	OMS-28-GW22-11	SW8260b	100	Dilution	Tetrachloroethene	23500	ug/L	NR	DNR
10050917	OMS-28-GW22-11	SW8260b	400	Dilution2	Trichloroethene	400	ug/L	NR	DNR
10050917	OMS-28-GW22-20	SW8260b	1	Initial	Trichloroethene	0.82	ug/L	J	<LOQ
10050917	OMS-28-GW22-28	SW8260b	1	Initial	Trichloroethene	0.92	ug/L	J	<LOQ
10050517	OMS-28-GW21-12	SW8260b	1	Initial	4-Bromofluorobenzene	96.35	PCT_REC	NR	DNR
10051017	OMS-28-GW23-12	SW8260b	1	Initial	Trichloroethene	0.63	ug/L	J	<LOQ
10050517	OMS-28-GW21-12	SW8260b	1	Initial	Toluene-D8	100.9	PCT_REC	NR	DNR
10050917	OMS-28-GW25-28	SW8260b	1	Initial	Trichloroethene	0.89	ug/L	J	<LOQ
10050217	OMS-28-GW31-31	SW8260b	1	Initial	Tetrachloroethene	1	ug/L	NR	DNR
10050217	OMS-28-GW31-31	SW8260b	1	Initial	1,2-Dichloroethane-D4	107.2	PCT_REC	NR	DNR
10050217	OMS-28-GW31-31	SW8260b	1	Initial	Dibromofluoromethane	103.95	PCT_REC	NR	DNR
10050217	OMS-28-GW31-31	SW8260b	1	Initial	Toluene-D8	102.25	PCT_REC	NR	DNR
10050217	OMS-28-GW31-31	SW8260b	1	Initial	4-Bromofluorobenzene	102.85	PCT_REC	NR	DNR
10050217	OMS-28-GW31-31	SW8260b	1	Initial	Trichloroethene	10.84	ug/L	NR	DNR
10050217	OMS-28-GW32-12	SW8260b	1	Initial	Trichloroethene	120	ug/L	NR	DNR
10050217	OMS-28-GW32-12	SW8260b	10	Dilution	Tetrachloroethene	10	ug/L	NR	DNR
10050217	OMS-28-GW32-12-a	SW8260b	1	Initial	Trichloroethene	120	ug/L	NR	DNR
10050217	OMS-28-GW32-12-a	SW8260b	10	Dilution	Tetrachloroethene	10	ug/L	NR	DNR
10051017	OMS-28-GW23-12	SW8260b	1	Initial	Tetrachloroethene	0.72	ug/L	J	<LOQ
10050317	OMS-28-GW04-17	SW8260b	50	Dilution	1,2-Dichloroethane-D4	117	PCT_REC	NR	DNR
10050217	OMS-28-GW01-19	SW8260b	10	Dilution	1,2-Dichloroethane-D4	103.5	PCT_REC	NR	DNR
10050217	OMS-28-GW01-19	SW8260b	10	Dilution	Dibromofluoromethane	99.55	PCT_REC	NR	DNR
10050217	OMS-28-GW01-19	SW8260b	10	Dilution	Toluene-D8	101	PCT_REC	NR	DNR
10050217	OMS-28-GW01-19	SW8260b	10	Dilution	4-Bromofluorobenzene	95.2	PCT_REC	NR	DNR

Table of Qualified Analytical Results
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
Columbia Technologies, LLC
May 2017

SDG	Sample ID	Method	DF	Analysis	Analyte	Conc	Unit	Qualifier	Reason Code
10050217	OMS-28-GW01-19	SW8260b	10	Dilution	Trichloroethene	34.6	ug/L	NR	DNR
10050317	OMS-28-GW02-12	SW8260b	1	Initial	Trichloroethene	0.63	ug/L	J	<LOQ
10050317	OMS-28-GW04-17	SW8260b	10	Dilution2	Tetrachloroethene	10	ug/L	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	10	Dilution2	1,2-Dichloroethane-D4	108	PCT_REC	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	10	Dilution2	Dibromofluoromethane	103	PCT_REC	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	10	Dilution2	Toluene-D8	99	PCT_REC	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	10	Dilution2	4-Bromofluorobenzene	94	PCT_REC	NR	DNR
10050517	OMS-28-GW21-12	SW8260b	1	Initial	Trichloroethene	290	ug/L	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	50	Dilution	Tetrachloroethene	50	ug/L	NR	DNR
10051217	OMS-28-GW45-32	SW8260b	1	Initial	Trichloroethene	0.62	ug/L	J	<LOQ
10050317	OMS-28-GW04-17	SW8260b	50	Dilution	Dibromofluoromethane	105	PCT_REC	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	50	Dilution	Toluene-D8	96	PCT_REC	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	50	Dilution	4-Bromofluorobenzene	94	PCT_REC	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	50	Dilution	Trichloroethene	50	ug/L	NR	DNR
10051717	OMS-28-GW06-11	SW8260b	1	Initial	Trichloroethene	0.63	ug/L	J	<LOQ
10051917	OMS-28-GW07-18	SW8260b	10	Dilution	Tetrachloroethene	10	ug/L	NR	DNR
10051917	OMS-28-GW07-18	SW8260b	1	Initial	Trichloroethene	204.29	ug/L	NR	DNR
10050417	OMS-28-GW16-12	SW8260b	1	Initial	Trichloroethene	0.52	ug/L	J	<LOQ
10050517	OMS-28-GW21-12	SW8260b	1	Initial	Tetrachloroethene	290	ug/L	NR	DNR
10050517	OMS-28-GW21-12	SW8260b	1	Initial	1,2-Dichloroethane-D4	108.65	PCT_REC	NR	DNR
10050517	OMS-28-GW21-12	SW8260b	1	Initial	Dibromofluoromethane	107.25	PCT_REC	NR	DNR
10050317	OMS-28-GW04-17	SW8260b	10	Dilution2	Trichloroethene	10	ug/L	NR	DNR
10051617	OMS-28-SB29-5	SW8260b	1	Initial	Trichloroethene	0.002	mg/kg	UJ	SUR
10051017	OMS-28-SB19-1	SW8260b	1	Reanalysis	Trichloroethene	0.002	mg/kg	NR	DNR
10051017	OMS-28-SB19-2.5	SW8260b	1	Initial	Tetrachloroethene	1.23304562268804E-03	mg/kg	J	<LOQ
10051017	OMS-28-SB24-1	SW8260b	400	Dilution	Tetrachloroethene	150	mg/kg	NR	DNR
10051017	OMS-28-SB24-1	SW8260b	1000	Dilution2	Trichloroethene	2	mg/kg	NR	DNR
10051217	OMS-28-SB25-1	SW8260b	1	Initial	Tetrachloroethene	2.10656753407683E-02	mg/kg	J	SUR
10051217	OMS-28-SB27-1	SW8260b	1	Initial	Tetrachloroethene	1.15874855156431E-03	mg/kg	J	<LOQ,SUR
10051617	OMS-28-SB28-1	SW8260b	1	Initial	Tetrachloroethene	0.457847533632287	mg/kg	NR	SUR,DNR
10051617	OMS-28-SB28-1	SW8260b	100	Dilution	Trichloroethene	0.2	mg/kg	NR	DNR
10051617	OMS-28-SB28-3	SW8260b	1	Initial	Tetrachloroethene	0.14906976744186	mg/kg	J	DUP,MS
10051617	OMS-28-SB29-1	SW8260b	1	Initial	Tetrachloroethene	1.07622857142857	mg/kg	NR	SUR,DNR
10051617	OMS-28-SB29-1	SW8260b	1	Initial	Trichloroethene	1.37142857142857E-02	mg/kg	J	SUR

Table of Qualified Analytical Results
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
Columbia Technologies, LLC
May 2017

SDG	Sample ID	Method	DF	Analysis	Analyte	Conc	Unit	Qualifier	Reason Code
10051117	OMS-28-GW41-20	SW8260b	1	Initial	Tetrachloroethene	0.61	ug/L	J	<LOQ
10051617	OMS-28-SB29-5	SW8260b	1	Initial	Tetrachloroethene	0.088	mg/kg	J	SUR
10051017	OMS-28-SB19-1	SW8260b	1	Reanalysis	Dibromofluoromethane	114	PCT_REC	NR	DNR
10051617	OMS-28-SB29-5	SW8260b	1	Reanalysis	Tetrachloroethene	6.48148148148148E-03	mg/kg	NR	DNR
10051617	OMS-28-SB29-5	SW8260b	1	Reanalysis	1,2-Dichloroethane-D4	100.55	PCT_REC	NR	DNR
10051617	OMS-28-SB29-5	SW8260b	1	Reanalysis	Dibromofluoromethane	102.8	PCT_REC	NR	DNR
10051617	OMS-28-SB29-5	SW8260b	1	Reanalysis	Toluene-D8	103.7	PCT_REC	NR	DNR
10051617	OMS-28-SB29-5	SW8260b	1	Reanalysis	4-Bromofluorobenzene	104.35	PCT_REC	NR	DNR
10051617	OMS-28-SB29-5	SW8260b	1	Reanalysis	Trichloroethene	0.002	mg/kg	NR	DNR
10051617	OMS-28-SB30-1	SW8260b	1	Initial	Tetrachloroethene	1.45403800475059	mg/kg	NR	SUR,DNR
10051617	OMS-28-SB30-1	SW8260b	1	Initial	Trichloroethene	3.44418052256532E-03	mg/kg	J	SUR
10051617	OMS-28-SB30-1	SW8260b	1000	Dilution	Trichloroethene	2	mg/kg	NR	DNR
10051617	OMS-28-SB31-1	SW8260b	1	Initial	Tetrachloroethene	0.769177288528389	mg/kg	NR	SUR,DNR
10051617	OMS-28-SB31-1	SW8260b	1	Initial	Trichloroethene	9.26998841251448E-03	mg/kg	J	SUR
10051617	OMS-28-SB29-1	SW8260b	1000	Dilution	Trichloroethene	2	mg/kg	NR	DNR
10050817	OMS-28-SB11-1	SW8260b	1	Reanalysis	4-Bromofluorobenzene	121	PCT_REC	NR	DNR
10051617	OMS-28-SB31-1	SW8260b	100	Dilution	Trichloroethene	0.2	mg/kg	NR	DNR
10051317	OMS-28-GW55-12	SW8260b	1	Initial	Trichloroethene	0.65	ug/L	J	<LOQ
10051817	OMS-28-GW67-26	SW8260b	1	Initial	Trichloroethene	0.91	ug/L	J	<LOQ
10050817	OMS-28-SB10-1	SW8260b	1	Reanalysis	Tetrachloroethene	0.002	mg/kg	NR	DNR
10050817	OMS-28-SB10-1	SW8260b	1	Reanalysis	1,2-Dichloroethane-D4	98	PCT_REC	NR	DNR
10050817	OMS-28-SB10-1	SW8260b	1	Reanalysis	Dibromofluoromethane	100	PCT_REC	NR	DNR
10050817	OMS-28-SB10-1	SW8260b	1	Reanalysis	Toluene-D8	116	PCT_REC	NR	DNR
10050817	OMS-28-SB10-1	SW8260b	1	Reanalysis	4-Bromofluorobenzene	123	PCT_REC	NR	DNR
10050817	OMS-28-SB10-1	SW8260b	1	Reanalysis	Trichloroethene	0.002	mg/kg	NR	DNR
10050817	OMS-28-SB11-1	SW8260b	1	Reanalysis	Tetrachloroethene	0.002	mg/kg	NR	DNR
10050817	OMS-28-SB11-1	SW8260b	1	Reanalysis	1,2-Dichloroethane-D4	104	PCT_REC	NR	DNR
10051017	OMS-28-SB19-1	SW8260b	1	Reanalysis	4-Bromofluorobenzene	183	PCT_REC	NR	DNR
10050817	OMS-28-SB11-1	SW8260b	1	Reanalysis	Toluene-D8	115	PCT_REC	NR	DNR
10051017	OMS-28-SB19-1	SW8260b	1	Reanalysis	Toluene-D8	159	PCT_REC	NR	DNR
10050817	OMS-28-SB11-1	SW8260b	1	Reanalysis	Trichloroethene	0.002	mg/kg	NR	DNR
10050817	OMS-28-SB14-1	SW8260b	1	Reanalysis	Tetrachloroethene	0.002	mg/kg	NR	DNR
10050817	OMS-28-SB14-1	SW8260b	1	Reanalysis	1,2-Dichloroethane-D4	102	PCT_REC	NR	DNR
10050817	OMS-28-SB14-1	SW8260b	1	Reanalysis	Dibromofluoromethane	102	PCT_REC	NR	DNR

Table of Qualified Analytical Results
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water and Soil Samples
Columbia Technologies, LLC
May 2017

SDG	Sample ID	Method	DF	Analysis	Analyte	Conc	Unit	Qualifier	Reason Code
10050817	OMS-28-SB14-1	SW8260b	1	Reanalysis	Toluene-D8	135	PCT_REC	NR	DNR
10050817	OMS-28-SB14-1	SW8260b	1	Reanalysis	4-Bromofluorobenzene	158	PCT_REC	NR	DNR
10050817	OMS-28-SB14-1	SW8260b	1	Reanalysis	Trichloroethene	0.002	mg/kg	NR	DNR
10051017	OMS-28-SB17-2.5	SW8260b	1	Initial	Tetrachloroethene	0.0016	mg/kg	J	SUR
10051017	OMS-28-SB19-1	SW8260b	1	Initial	Tetrachloroethene	5.67536889897843E-02	mg/kg	J	SUR
10051017	OMS-28-SB19-1	SW8260b	1	Reanalysis	Tetrachloroethene	0.039727582292849	mg/kg	NR	DNR
10051017	OMS-28-SB19-1	SW8260b	1	Reanalysis	1,2-Dichloroethane-D4	120	PCT_REC	NR	DNR
10051217	OMS-28-GW43-12	SW8260b	1	Initial	Tetrachloroethene	0.56	ug/L	J	<LOQ
10050817	OMS-28-SB11-1	SW8260b	1	Reanalysis	Dibromofluoromethane	103	PCT_REC	NR	DNR

Notes:
mg/kg – milligrams per kilogram
µg/L – micrograms per liter
Conc – concentration
DF – dilution factor
ID – identification
PCT_REC – percent recovery
SDG – sample delivery group

Qualifier Codes:
J – Result reported as detected and qualified as estimated.
NR – Result was not selected for reporting.
UJ – Result reported as non-detect and qualified as estimated.

Reason Codes
<LOQ - The reported concentration is greater than the DL but less than the LOQ.
DUP – Results qualified due to duplicate RPDs outside the control limits.
DNR – Do not report due to more defensible data available.
MS – Results qualified due to matrix spike recovery outside the control limits.
SUR – Results qualified due to surrogate recovery outside the control limits.

Appendix C4
Organic Limited Data Validation Report dated February 23, 2018

AECOM Environment

Submitted to:
Alabama Army National Guard
Organizational Maintenance Shop #28
Mobile, Alabama

Submitted by:
AECOM
Denver, CO

February 23, 2018

Organic
Limited Data Validation Report

Alabama Army National Guard
Organizational Maintenance Shop #28
Mobile, Alabama
Water Samples
Collected January & February 2018
Analyzed by GCAL Analytical Laboratories, LLC

Prepared By Joseph Capotrio
Validation Chemist/Database Coordinator

Overview

The samples analyzed for the January & February 2018 sampling events (limited validation) are listed in the Table of Samples Analyzed (Table 1, pages 3-6). Limited data validation was performed on a total of 49 water samples, 5 field duplicate water samples, and 5 associated trip blank samples.

Samples were analyzed for Volatile Organic Compounds (VOCs) by SW-846 Method 8260B by GCAL Analytical Laboratories, LA and VOCs by EPA Method 8260C-SIM by Katahdin analytical Services, Scarborough, ME.

The Analytical Data Validation Checklist is presented as pages 7-12. Laboratory data were reviewed in accordance with directives set forth in the Alabama Army National Guard Organizational Maintenance Shop #28, Uniform Federal Policy – Quality Assurance Project Plan (UFP QAPP), authored by AECOM Technical Services, January 2016. Data were also evaluated based on validation criteria set forth in the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories Version 5.0 (DoD July 2013), and the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2014 as they applied to the reported methodology. Field duplicate RPD evaluation processes were taken from the *EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures April 22, 2013,* document number EQADR-Supplement.

The following data components were reviewed during the limited data validation procedure:

Reviewed Deliverables/Data
Case Narratives (including any assigned laboratory flags)
Chain-of-Custody (COC) form(s) and sample integrity
Sample results, reporting limits, dilution factors
Holding times
Method (preparation) blank results
Field blank results
Laboratory control sample (LCS), laboratory control sample duplicate (LCSD) results
Matrix spike (MS), matrix spike duplicate (MSD) results
Laboratory duplicate (or spiked duplicate) results
Field duplicate (FD) results (calculated Relative Percent Differences [RPD])
Electronic data deliverables (EDDs) – EQuIS format

Data Validation Qualifiers Assigned During this Review

J Results reported as a detect and qualified as an estimated concentration

Assigned qualifiers are detailed in the Analytical Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 13).

Overall Data Assessment

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness have been determined to be acceptable, based on the data submitted. No data were missing or rejected. All reported data are suitable for their intended use with the qualifications and clarifications noted.

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water Samples
GCAL Analytical Laboratories, LLC
January & February 2018

Table 1

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
SDG #218013009 (SL0744)						
WG	OMS-28-GW73-16	01/29/2018	15:15	218013009	21801300901	N
WQ	OMS-28-GW73-16-c	01/29/2018	00:01	218013009	21801300902	TB
WG	OMS-28-GW73-33	01/29/2018	16:00	218013009	21801300903	N
SDG #218013015						
WG	OMS-28-GW73-16	01/29/2018	15:15	218013015	21801301501	N
WQ	OMS-28-GW73-16-c	01/29/2018	00:01	218013015	21801301502	TB
WG	OMS-28-GW73-33	01/29/2018	16:00	218013015	21801301503	N
SDG #218013129						
WG	OMS-28-GW-74-15	01/30/2018	08:45	218013129	21801312901	N
WQ	OMS-28-GW-74-15-c	01/30/2018	00:01	218013129	21801312902	TB
WG	OMS-28-GW-74-33	01/30/2018	09:35	218013129	21801312903	N
WG	OMS-28-GW-75-29	01/30/2018	08:45	218013129	21801312904	N
SDG #218013130						
WG	OMS-28-GW-89-31	01/30/2018	14:25	218013130	21801313001	N
WG	OMS-28-GW-81-18	01/30/2018	16:30	218013130	21801313002	N
SDG #218013133 (SL0777)						
WG	OMS-28-GW-74-15	01/30/2018	08:45	218013133	21801313301	N
WG	OMS-28-GW-74-15-c	01/30/2018	00:01	218013133	21801313302	TB
WG	OMS-28-GW-74-33	01/30/2018	09:35	218013133	21801313303	N
WG	OMS-28-GW-75-29	01/30/2018	11:35	218013133	21801313304	N
WG	OMS-28-GW-89-31	01/30/2018	14:25	218013133	21801313401	N
WG	OMS-28-GW-81-18	01/30/2018	16:30	218013133	21801313402	N
SDG #218020203 (SL0867)						
WG	OMS-28-GW76-28	01/31/2018	11:55	218020203	21802020301	N
WG	OMS-28-GW76-28-a	01/31/2018	11:55	218020203	21802020302	FD
WG	OMS-28-GW76-13	01/31/2018	12:30	218020203	21802020303	N
WQ	OMS-28-GW76-13-c	01/31/2018	00:01	218020203	21802020304	TB
WG	OMS-28-GW78-12	01/31/2018	13:30	218020203	21802020305	N
WG	OMS-28-GW76-20	01/31/2018	14:30	218020203	21802020306	N
WG	OMS-28-GW78-20	01/31/2018	15:00	218020203	21802020307	N
WG	OMS-28-GW81-28	01/31/2018	15:45	218020203	21802020308	N
WG	OMS-28-GW78-27	02/01/2018	09:15	218020203	21802020309	N
WG	OMS-28-GW80-11	02/01/2018	10:00	218020203	21802020310	N
WG	OMS-28-GW79-11	02/01/2018	10:30	218020203	21802020311	N
WG	OMS-28-GW79-17	02/01/2018	11:15	218020203	21802020312	N
WG	OMS-28-GW79-27	02/01/2018	12:30	218020203	21802020313	N
WG	OMS-28-GW77-12	02/01/2018	13:15	218020203	21802020314	N
WG	OMS-28-GW77-12-a	02/01/2018	13:15	218020203	21802020315	FD

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water Samples
GCAL Analytical Laboratories, LLC
January & February 2018

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
WG	OMS-28-GW77-20	02/01/2018	14:25	218020203	21802020316	N
SDG #218020242						
WG	OMS-28-GW76-28	01/31/2018	11:55	218020242	21802024201	N
WG	OMS-28-GW76-28-a	01/31/2018	11:55	218020242	21802024202	FD
WG	OMS-28-GW76-13	01/31/2018	12:30	218020242	21802024203	N
WQ	OMS-28-GW76-13-c	01/31/2018	00:01	218020242	21802024204	TB
WG	OMS-28-GW78-12	01/31/2018	13:30	218020242	21802024205	N
WG	OMS-28-GW76-20	01/31/2018	14:30	218020242	21802024206	N
WG	OMS-28-GW78-20	01/31/2018	15:00	218020242	21802024207	N
WG	OMS-28-GW81-28	01/31/2018	15:45	218020242	21802024208	N
WG	OMS-28-GW78-27	02/01/2018	09:15	218020242	21802024209	N
WG	OMS-28-GW80-11	02/01/2018	10:00	218020242	21802024210	N
WG	OMS-28-GW79-11	02/01/2018	10:30	218020242	21802024211	N
WG	OMS-28-GW79-17	02/01/2018	11:15	218020242	21802024212	N
WG	OMS-28-GW79-27	02/01/2018	12:30	218020242	21802024213	N
WG	OMS-28-GW77-12	02/01/2018	13:15	218020242	21802024214	N
WG	OMS-28-GW77-12-a	02/01/2018	13:15	218020242	21802024215	FD
WG	OMS-28-GW77-20	02/01/2018	14:25	218020242	21802024215	N
SDG #218020614 (SL952)						
WG	OMS-28-GW80-17	02/02/2018	08:45	218020614	21802061401	N
WQ	OMS-28-GW80-17-C	02/02/2018	00:01	218020614	21802061402	TB
WG	OMS-28-GW77-27	02/02/2018	09:20	218020614	21802061403	N
WG	OMS-28-GW77-27-MS	02/02/2018	09:20	218020614	21802061404	MS
WG	OMS-28-GW77-27-MSD	02/02/2018	09:20	218020614	21802061405	MSD
WG	OMS-28-GW80-27	02/02/2018	09:45	218020614	21802061406	N
WG	OMS-28-GW85-13	02/02/2018	12:15	218020614	21802061407	N
WG	OMS-28-GW82-19	02/02/2018	13:30	218020614	21802061408	N
WG	OMS-28-GW85-19	02/02/2018	12:55	218020614	21802061409	N
WG	OMS-28-GW85-31	02/02/2018	13:25	218020614	21802061410	N
WG	OMS-28-GW82-31	02/02/2018	15:00	218020614	21802061411	N
WG	OMS-28-GW83-12	02/02/2018	15:35	218020614	21802061412	N
WG	OMS-28-GW83-16	02/02/2018	16:00	218020614	21802061413	N
WG	OMS-28-GW83-16-A	02/02/2018	16:00	218020614	21802061414	FD
WG	OMS-28-GW87-31	02/03/2018	09:25	218020614	21802061415	N
WG	OMS-28-GW86-12	02/03/2018	10:20	218020614	21802061416	N
WG	OMS-28-GW86-16	02/03/2018	10:35	218020614	21802061417	N
WG	OMS-28-GW86-31	02/03/2018	11:15	218020614	21802061418	N
WG	OMS-28-GW88-12	02/05/2018	09:25	218020614	21802061419	N
WG	OMS-28-GW88-17	02/05/2018	10:15	218020614	21802061420	N
WG	OMS-28-GW88-31	02/05/2018	11:00	218020614	21802061421	N

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water Samples
GCAL Analytical Laboratories, LLC
January & February 2018

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
WG	OMS-28-GW84-12	02/05/2018	11:25	218020614	21802061422	N
WG	OMS-28-GW84-12-A	02/05/2018	11:25	218020614	21802061423	FD
WG	OMS-28-GW84-17	02/05/2018	12:30	218020614	21802061424	N
WG	OMS-28-GW84-31	02/05/2018	13:00	218020614	21802061425	N
WG	OMS-28-GW84-31-MS	02/05/2018	13:00	218020614	21802061426	MS
WG	OMS-28-GW84-31-MSD	02/05/2018	13:00	218020614	21802061427	MSD
WG	OMS-28-GW90-33	02/05/2018	14:00	218020614	21802061428	N
WG	OMS-28-GW83-31	02/02/2018	16:25	218020614	21802061429	N
SDG #218020615						
WG	OMS-28-GW80-17	02/02/2018	08:45	218020615	21802061501	N
WQ	OMS-28-GW80-17-C	02/02/2018	00:01	218020615	21802061502	TB
WG	OMS-28-GW77-27	02/02/2018	09:20	218020615	21802061503	N
WG	OMS-28-GW77-27-MS	02/02/2018	09:20	218020615	21802061504	MS
WG	OMS-28-GW77-27-MSD	02/02/2018	09:20	218020615	21802061505	MSD
WG	OMS-28-GW80-27	02/02/2018	09:45	218020615	21802061506	N
WG	OMS-28-GW85-13	02/02/2018	12:15	218020615	21802061507	N
WG	OMS-28-GW82-19	02/02/2018	13:30	218020615	21802061508	N
WG	OMS-28-GW85-19	02/02/2018	12:55	218020615	21802061509	N
WG	OMS-28-GW85-31	02/02/2018	13:25	218020615	21802061510	N
WG	OMS-28-GW82-31	02/02/2018	15:00	218020615	21802061511	N
WG	OMS-28-GW83-12	02/02/2018	15:35	218020615	21802061512	N
WG	OMS-28-GW83-16	02/02/2018	16:00	218020615	21802061513	N
WG	OMS-28-GW83-16-A	02/02/2018	16:00	218020615	21802061514	FD
WG	OMS-28-GW87-31	02/03/2018	09:25	218020615	21802061515	N
WG	OMS-28-GW86-12	02/03/2018	10:20	218020615	21802061516	N
WG	OMS-28-GW86-16	02/03/2018	10:35	218020615	21802061517	N
WG	OMS-28-GW86-31	02/03/2018	11:15	218020615	21802061518	N
WG	OMS-28-GW88-12	02/05/2018	09:25	218020615	21802061519	N
WG	OMS-28-GW88-17	02/05/2018	10:15	218020615	21802061520	N
WG	OMS-28-GW88-31	02/05/2018	11:00	218020615	21802061521	N
WG	OMS-28-GW84-12	02/05/2018	11:25	218020615	21802061522	N
WG	OMS-28-GW84-12-A	02/05/2018	11:25	218020615	21802061523	FD
WG	OMS-28-GW84-17	02/05/2018	12:30	218020615	21802061524	N
WG	OMS-28-GW84-31	02/05/2018	13:00	218020615	21802061525	N
WG	OMS-28-GW84-31-MS	02/05/2018	13:00	218020615	21802061526	MS
WG	OMS-28-GW84-31-MSD	02/05/2018	13:00	218020615	21802061527	MSD
WG	OMS-28-GW90-33	02/05/2018	14:00	218020615	21802061528	N
WG	OMS-28-GW83-31	02/02/2018	16:25	218020615	21802061529	N
SDG #218020702 (SL0996)						
WG	OMS-28-GW91-33	02/06/2018	08:40	218020702	21802070201	N

Table of Samples Analyzed
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water Samples
GCAL Analytical Laboratories, LLC
January & February 2018

Matrix	Sample ID	Sample Date	Sample Time	Lab SDG	Lab ID	Sample Type
WQ	OMS-28-GW91-33-C	02/06/2018	00:01	218020702	21802070202	TB
WG	OMS-28-GW93-12	02/06/2018	09:10	218020702	21802070203	N
WG	OMS-28-GW93-16	02/06/2018	09:35	218020702	21802070204	N
WG	OMS-28-GW93-33	02/06/2018	10:00	218020702	21802070205	N
WG	OMS-28-GW92-12	02/06/2018	10:35	218020702	21802070206	N
WG	OMS-28-GW92-16	02/06/2018	11:00	218020702	21802070207	N
WG	OMS-28-GW92-33	02/06/2018	11:30	218020702	21802070208	N
WG	OMS-28-GW92-33-A	02/06/2018	11:30	218020702	21802070209	FD
SDG #218020725						
WG	OMS-28-GW91-33	02/06/2018	08:40	218020725	21802072501	N
WQ	OMS-28-GW91-33-C	02/06/2018	00:01	218020725	21802072502	TB
WG	OMS-28-GW93-12	02/06/2018	09:10	218020725	21802072503	N
WG	OMS-28-GW93-16	02/06/2018	09:35	218020725	21802072504	N
WG	OMS-28-GW93-33	02/06/2018	10:00	218020725	21802072505	N
WG	OMS-28-GW92-12	02/06/2018	10:35	218020725	21802072506	N
WG	OMS-28-GW92-16	02/06/2018	11:00	218020725	21802072507	N
WG	OMS-28-GW92-33	02/06/2018	11:30	218020725	21802072508	N
WG	OMS-28-GW92-33-A	02/06/2018	11:30	218020725	21802072509	FD

FD = field duplicate sample
ID = Identification
MS = matrix spike sample
MSD = matrix spike duplicate sample
N = normal sample
TB = trip blank sample
SDG = Sample Delivery Group
WG= groundwater sample
WQ = water quality control sample

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Project Name: Alabama Army National Guard Organizational Maintenance Shop #28 Mobile, Alabama	Laboratory: GCAL Analytical Laboratories, LLC and Katahdin Analytical Services — Scarborough, ME
Project Reference: Organizational Maintenance Shop #28 Mobile, Alabama	Sample Matrix: Water
AECOM Project: 60556081 task 3.0	Sample Start Date: 01/29/2018
Validator/Date Validated: Joseph Capotrio 02/23/2018 (completed)	Sample End Date: 02/06/2018
Secondary Review by: Steve Szocik	Secondary Review Date: 2/28/2018
Samples Analyzed: see Table of Samples Analyzed (Table 1).	
Parameters Validated: VOCs by 8260B and 8260C-SIM	
Laboratory Project IDs/Sample Delivery Groups (SDGs): 218013009 (SL0744), 218013015, 218013129, 218013130, 218013133 (SL0777), 218020203 (SL0867), 218020242, 218020614 (SL952), 218020615, 218020702 (SL0996), 218020725	

PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT

Precision:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: Precision is the measure of variability of individual sample measurements. Field precision is determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. RPD limits referenced EPA published QC limits. Precision measurements are reviewed in items 17 and 21. Data was not qualified or rejected based on these measurements and the overall field and laboratory accuracy is acceptable.						
Accuracy:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: Field accuracy, a measure of the sampling bias, is generally determined by reviewing trip blank results for evidence of sample contamination stemming from sampling activities and/or sample transport/bottle contamination in applicable methods. Laboratory accuracy is a measure of the system bias, and is measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and organic system monitoring compounds (surrogate and internal standard) percent recoveries (%Rs). LCS/LCSD %Rs, which demonstrated the overall performance of the analytical procedure, were compared to QAPP limits. MS/MSD %Rs, which provide information on sample matrix interferences, would be compared to QAPP limits, EPA published QC limits or laboratory control charted limits to evaluate matrix effects upon sample analysis. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to QAPP limits. Accuracy measurements are reviewed in items 12, 14, 15, and 16. Data was not qualified or rejected based on these measurements and the overall field and laboratory accuracy is acceptable.						
Method Compliance:	**X**	Acceptable		Unacceptable	*JC*	Initials
Comments: For this sample set, method compliance was determined by evaluating sample integrity and holding time against method specified requirements, while applying QAPP validation guidelines. Although some data require qualification based on estimated quantitation (see item 6), overall method compliance is acceptable based on the data reported since a majority of the data are unqualified and no data are rejected. Method compliance measurements are reviewed in items 4, 6, 8, 11, 13, 18, 19, 20 and 22 below.						
Completeness: (Continued on next page)	**X**	Acceptable		Unacceptable	*JC*	Initials

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Review completeness goals were set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods, and reporting limits. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and EQuIS electronic data deliverables (EDDs). Any EDD modifications were made as documented in item 23.

All of the reported data are usable, some with qualification. Since no data are missing or rejected, completeness of the dataset is calculated to be 100% and is acceptable.

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

VALIDATION CRITERIA CHECK						
Data validation qualifiers assigned during this review for reportable data: J estimated concentration The following comments identifying sample results requiring qualification are in bold type. The other comments are of interest, but qualification of the sample results is not necessary. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 13).**						
1. Did the laboratory identify any non-conformances related to the analytical results?	**X**	Yes		No	*JC*	Initials
Explanation by laboratory: Comments: The following items were noted in laboratory case narrative comments included in the hardcopy (or .pdf) laboratory report: **SDG #218013009 (SL0744) & 218013133 (SL0777)** – The vinyl chloride continuing calibration verification (CCV) D0174 response was above the acceptance limits of ±50%. The Department of Defense (DoD) Quality Standard Manual (QSM) allows for the analysis of two additional CCVs that do not need to be within the 12 hour window. The laboratory analyzed two additional CCV's, D0175 and D0176, which were acceptable. Further Action was not required. Data qualification, if any, related to the narrative comments and/or assigned laboratory flags contained in the analytical reports are discussed in the following sections. All assigned laboratory flags were also reviewed during the limited validation procedure.						
2. Were sample Chain-of-Custody forms complete?	**X**	Yes		No	*JC*	Initials
Comments: COC records from field to laboratory were complete. Custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	**X**	Yes		No	*JC*	Initials
Comments: All requested analyses as documented on original COC records were completed by the laboratory.						
4. Were samples received in good condition and at the appropriate temperature?		Yes	**X – no effect**	No	*JC*	Initials
Comments: With the exceptions listed below, samples were received on ice, intact, and in good condition. Cooler temperatures were within the 0-6°C acceptance range as noted in the Sample Condition Upon Receipt form and on the COC. Data qualification is not needed. **SDG #218020614 (SL0952) –** The samples were received by the laboratory at a temperature of -1.4°C, below the method required acceptance range. The laboratory did not note that the samples were freezing and there was no ice present in the samples; therefore, sample integrity was unlikely affected. Further Action was not required.						
5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	**X**	Yes		No	*JC*	Initials
Comments: The reported analytical methods are in compliance with COC requests and the QAPP. Compliance with permit is generally evaluated by the project manager.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

6. Were detection limits in accordance with WP/QAPP, permit, or method?	**X**	Yes		No	*JC*	Initials
Comments: Detection limits (DLs) and limits of quantitation (LOQs) are achievable by the quoted methods. Sample OMS-28-GW85-19 had to be diluted due to concentrations exceeding the calibration range. The LOQs were raised appropriately. The tetrachloroethene result was reported as non-detect at an elevated reporting limit and will need to be evaluated by the end user of the data with respect to meeting project standards. No data qualification is required. **Sample results reported at concentrations ≥ the DL but < the LOQ require J qualifiers to indicate estimated concentrations. The analyte cannot be accurately quantitated at this trace concentration level**. **Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 13).**						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	**X**	Yes		No	*JC*	Initials
Comments: The reported target analytes are in compliance with the constituents identified on the COC.						
8. Were sample holding times met?	**X**	Yes		No	*JC*	Initials
Comments: Sample preparation/extraction and analytical holding times were met for all samples and analyses.						
9. Were correct concentration units reported?	**X**	Yes		No	*JC*	Initials
Comments: All concentration units reported were correct.						
10. Were the reporting requirements for flagged data met?	**X**	Yes		No	*JC*	Initials
Comments: Data validation qualifiers override any assigned laboratory data flags.						
11. Were laboratory blank samples free of target analyte contamination?	**X**	Yes		No	*JC*	Initials
Comments: Laboratory blanks were free of target analyte contamination.						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?	**X**	Yes		No	*JC*	Initials
Comments: Field blank and equipment rinse blank samples were not collected for the data evaluated in this report. The trip blank samples were free of target analyte contamination. Data qualification is not required.						
13. Were instrument calibrations within method or data validation control limits?		Yes	**X – no effect**	No	*JC*	Initials
Comments: For this level of limited data validation, instrument calibrations are generally not evaluated. However, the laboratory's project narrative was utilized to verify that instrument calibrations met acceptance criteria. The laboratory's narrative for lab reports SDG #218013009 (SL0744) & 218013133 (SL0777) noted a calibration verification analysis greater than the control limits (Section 1). The remaining laboratory narratives did not identify outliers. Qualification was not required as the affected calibration verification was re-analyzed in accordance with the DoD QSM.						
14. Were surrogate recoveries within control limits?	**X**	Yes		No	*JC*	Initials
Comments: Surrogate %Rs for organic analyses were within laboratory control-charted QC limits (as allowed for SW-846 methods) for all project samples and associated laboratory QC samples.						

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

15. Were laboratory control sample recoveries within control limits?	**X**	Yes		No	*JC*	Initials
Comments: Submitted LCS %Rs were within laboratory control-charted QC limits for organic target analytes as allowed for SW-846 organic methods. Data qualification is not required.						
16. Were matrix spike recoveries within control limits?	**X**	Yes		No	*JC*	Initials
Comments: MS/MSD %Rs from non-project samples were considered, but were not utilized to qualify project samples since matrix similarity to project samples could not be guaranteed. When analyzed, project specific MS/MSD %Rs for target analytes were within laboratory control charted QC limits.						
17. Were duplicate RPDs and/or serial dilution %Ds within control limits?	**X**	Yes		No	*JC*	Initials
Comments: The RPDs for target analytes in project-specific MS/MSD and laboratory duplicate samples were within the QAPP or QSM QC limits. Serial Dilution %Ds: Not applicable for the methods evaluated in this SDG.						
18. Were organic system performance criteria met?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: For this level of limited data validation, organic system performance data were not supplied in analytical laboratory reports. The laboratory's project narrative was utilized to verify that organic system performance requirements were met. The laboratory's narrative did not identify any outliers; therefore, data qualification was not required.						
19. Were internal standards within method criteria for GC/MS sample analyses?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: For this level of limited data validation, organic system performance data are generally not evaluated. The laboratory's project narrative was utilized to verify that organic system performance requirements were met.						
20. Were inorganic system performance criteria met?	**NA**	Yes	**NA**	No	*JC*	Initials
Comments: Not applicable for the methods evaluated in this SDG.						
21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	**X**	Yes		No	*JC*	Initials

Comments: The following table lists the field duplicate samples collected. Field duplicate RPDs were within data validation QC limits of ≤35% for water matrices when the result is > 5X the LOQ, or RPDs were within ± 2X the LOQ or were undetected in both samples. Field duplicate and native sample concentrations that were both undetected are not reflected below since RPDs are not applicable.

SDG	Primary Sample ID	Duplicate Sample ID	Sample Date	Sample Time
218020203/ 218020242	OMS-28-GW76-28	OMS-28-GW76-28-a	1/31/2018	11:55
	OMS-28-GW77-12	OMS-28-GW77-12-a	2/1/2018	13:15
218020614/	OMS-28-GW83-16	OMS-28-GW83-16-A	2/2/2018	16:00
218020615	OMS-28-GW84-12	OMS-28-GW84-12-A	2/5/2018	11:25
218020702/ 218020725	OMS-28-GW92-33	OMS-28-GW92-33-A	2/6/2018	11:30

Definitions:
SDG –sample delivery group
ID–identifier

(Continued on next page)

ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

The following RPDs were calculated:

Duplicate Pair	Method	Unit	Analyte	RPD	LOQ	Primary Result (µg/L)	Duplicate Result (µg/L)	Qualifier
SDG# 218020615								
OMS-28-GW83-16-A/	SW8260B	UG/L	cis-1,2-Dichloroethene	3.8%	1.0	1.28	1.33	None
OMS-28-GW83-16	SW8260B	UG/L	Trichloroethene	1.0%	1.0	51.3	51.8	None

Definitions:
LOQ –limit of quantitation
RPD – relative percent difference
SDG –sample delivery group
ug/L- micrograms per liter

All RPDs were within QC acceptance criteria and data qualification is not required.

22. Were qualitative criteria for organic target analyte identification met?	**NA**	Yes	**NA**	No	*JC*	Initials

Comments: For this level of limited data validation – Chromatograms, library searches, and quantitation reports are generally not evaluated. The laboratory's project narrative was utilized to verify that qualitative criteria for organic target analyte identification *were met.*

23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	**X**	Yes		No	*JC*	Initials

Comments: The EDD entries were resolved with the hardcopy data results and corrected as necessary. According to validation protocol, the hardcopy data report was accepted as the correct reference. Qualifiers and reason codes were added to the EDD files for all reportable data. The four EQuIS EDD files were formatted for upload once data validation secondary review is completed.

Additional edits made to the EDD files by the Database Manager prior to data upload are listed below.

Unique sys_loc_codes were assigned to all samples. In order to upload multiple SDGs under one EDD, SDG numbers were appended to all laboratory QC data and dates were appended to trip blank samples in order to keep them unique. Parent sample designations were made for all LCS/LCSD and field duplicate samples. MS/MSD and laboratory duplicate samples already had pre-assigned parent sample designations which were verified using the hard copy laboratory report.

Updated the Analysis entries from "000" to "Initial".

A task_code field was assigned, "2018_GW Samples from Temp wells".

24. General Comments: Laboratory data were reviewed in accordance with directives set forth in the Alabama Army National Guard Organizational Maintenance Shop #28, Uniform Federal Policy – Quality Assurance Project Plan (UFP QAPP), authored by AECOM Technical Services, January 2016. Data were also evaluated based on validation criteria set forth in the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories Version 5.0 (DoD July 2013), and *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as they applied to the reported methodology. Field duplicate RPD evaluation processes were taken from the *EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures April 22, 2013,* document number EQADR-Supplement.

Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 13).

Table of Qualified Analytical Results
Alabama Army National Guard
Organizational Maintenance Shop #28 Mobile, Alabama
Water Samples
GCAL Analytical Laboratories, LLC
January/ February 2018
Table 2

SDG	Sample ID	Method	DF	Analysis	Analyte	Conc	Unit	Qualifier	Reason Code
218020614 (SL952)	OMS-28-GW85-19	SW8260CSIM	1	Initial	Vinyl Chloride	0.028	µg/L	J	q
	OMS-28-GW86-16	SW8260CSIM	1	Initial	Vinyl Chloride	0.034	µg/L	J	q
218020615	OMS-28-GW83-31	SW8260B	1	Initial	Trichloroethene	0.644	µg/L	J	q
	OMS-28-GW85-13	SW8260B	1	Initial	cis-1,2-Dichloroethene	0.521	µg/L	J	q
	OMS-28-GW88-31	SW8260B	1	Initial	Trichloroethene	0.894	µg/L	J	q
218020725	OMS-28-GW93-33	SW8260B	1	Initial	Trichloroethene	0.584	µg/L	J	q

Notes:
µg/L – micrograms per liter
Conc = concentration
DF = dilution factor
ID = identification
SDG – sample delivery group

Qualifier Codes:
J – Result reported as detected and qualified as estimated

Reason Codes
q – Quantitation: The reported concentration is greater than the DL but less than the LOQ

Appendix D
Manifests

(Provided on CD)

D1 January 2016 and May 2017 IDW Manifest

D2 January 2018 and February 2018 IDW Manifest

Appendix D1

January 2016 and May 2017 IDW Manifest

C 17-154-03

01

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	RPF # 17PRC-20009-GV01	1		AECOM

5. Generator's Name and Mailing Address
Army National Guard
Organizational Maintenance Shop #28. Mobile, AL
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
Horizon Environmental Services
U.S. EPA ID Number

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Oil Recovery Company
1001 S. Conception St. Mobile, AL
Facility's Phone:
U.S. EPA ID Number

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Petroleum Contaminated Water	9	DM	9	55 Gal	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Matthew Lowe
Signature: Matthew Lowe
Month 08 Day 08 Year 17

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Matthew Lowe
Signature: Matthew Lowe
Month 08 Day 08 Year 17

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

495 water & oil

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: J. McIntosh
Signature: John
Month 8 Day 8 Year 17

169-BLS-C 5 11979 (Rev. 9/09)

DESIGNATED FACILITY'S COPY

Appendix D2

January 2018 and February 2018 IDW Manifest

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
GAV5QG	1	800-434-7750	90518

GENERATOR

5. Generator's Name and Mailing Address
Accom (usapImaging@Accom.com)
10 Patewood Drive, Building 6, Ste 500
Greenville, SC 29615
Generator's Phone: 404-965-9612

Generator's Site Address (if different than mailing address)
Alabama Army National Guard (AIARNG)
Organizational Maintenance Shop #28
1620 Broad St. Mobile AL 36602
U.S. EPA ID Number

6. Transporter 1 Company Name
A&D Environmental Services (SC), LLC
U.S. EPA ID Number
SC0987588331

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (GA) LLC
100 Waste Research Drive
Macon, GA 31205
U.S. EPA ID Number
GAR000007484
Facility's Phone: 478-788-8899

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non RCRA, Non Regulated Environmental Investigation Labeler	002	DM	800	P
2.	Non RCRA, Non DOT Regulated Environmental Investigation Soil	001	DM	500	P
3.					
4.					

13. Special Handling Instructions and Additional Information
91) GA20180262
92) GA20180263
JOB-1809-0064

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Melissa L SHIRLEY
Signature: for the AIARNG
Month: SEP Day: 6 Year: 2018

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Bruce Cornwell
Signature:
Month: 9 Day: 6 Year: 18

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Mark Rhew
Signature:
Month: 09 Day: 19 Year: 18

Appendix E
High Resolution Site Evaluation Report
Columbia Technologies, Inc.

(Provided on CD)

ARNG OMS 28

Reference Number: 60439687

Army National Guard OMS #28 1622 South Broad St, Mobile, AL, 36605

High Resolution Site Evaluation Report

February 13, 2017

Lead Consultant

AECOM

Prepared For

Army National Guard
May 25th 2017

Anna Milligan

anna.milligan@azimuth1.com

Site Info

Army National Guard OMS #28 1622 South Broad St,Mobile,AL,36605,United States

Client

Army National Guard
Mobile,AL,United States

Lead Consultant

AECOM
10 Patewood Drive, Building 6, Suite 500, Greenville, SC, 29615, United States

Sensor Technologies

☑ **MIHPT (MEMBRANE INTERFACE PROBE WITH HYDRAULIC PROFILING TOOL)**
| PID | FID | XSD | EC | HPT Flow Avg | HPT Press Avg | Est K |

Lab Data

☑ **WATER**
| Vinyl chloride | Tetrachloroethene | Trichloroethene |

☑ **CONFIRMATION-WATER-SAMPLE-LABS**
| Trichloroethene | Tetrachloroethene |

☑ **CONFIRMATION-SOIL-SAMPLE-LABS**
| Trichloroethene | Tetrachloroethene |

Electrical Conductivity (EC)
EC continuously measures soil electrical conductivity by transmitting a low level alternating electrical current through the soil between electrically isolated sensfor pins of the probe and the probe body. The voltage response of the imposed current to the soil is measured across these same two points. Conductivity, the inverse of resistivity, is measured in milliSiemens/meter (mS/m). The probe is reasonably accurate in the range of 5 to 400 mS/m. In general lower conductivity values are characteristic of larger grain soil types while higher conductivities are characteristic of finer sized particles such as finer sand, silts, and clays.

Hydraulic Profile Tool (HPT)
HPT continuously measures the hydraulic conductivity of the soil by injecting the constant flow of water through a small stainless steel screen into the soil formation and measuring the hydraulic pressure at both the pump source and the injection port vs. depth. The flow rate of the water into the soil formation is also measured and recorded in milliliters per minute (mL/min) versus depth. Static formation hydraulic pressure measurements (dissipation tests) can also be made by stopping at discrete intervals to determine the static water level. The HPT software can also provide an estimate of K (a value used in hydrogeologic calculations) to provide an interpretation of the hydraulic permeability of the formation.

Membrane Interface Probe (MIP)
MIP continuously measures total chemical detector response to volatile organic compounds (VOCs) vs. depth. The operating principle is based on heating the soil and/or water around a semi-permeable polymer membrane to 121° Celsius (C), volatilizing VOCs that then partition across this membrane. Nitrogen is used as an inert carrier gas, and travels from a surface supply down a transfer tubing which sweeps across the back of the membrane and returns any captured VOCs to the installed detectors at the surface. It takes approximately 60 seconds for the nitrogen gas stream to travel through 50 meters of inert tubing and reach the detectors (see detectors below). Detector response is recorded in microvolts vs. depth. The MIP can be used in saturated or unsaturated soils, as water does not pass through the membrane.

Photo Ionization Detector (PID)
The PID consists of a special 10.2 electron volt (eV) ultraviolet lamp that emits sufficient energy to ionize most aromatics such as benzene, toluene, xylene, etc., and many other molecules with an ionization potential below 10.2 eV. The PID also emits a response for chlorinated compounds containing double-bonded carbons (halogenated ethylenes), such as trichloroethylene (TCE) and tetrachloroethylene (PCE).

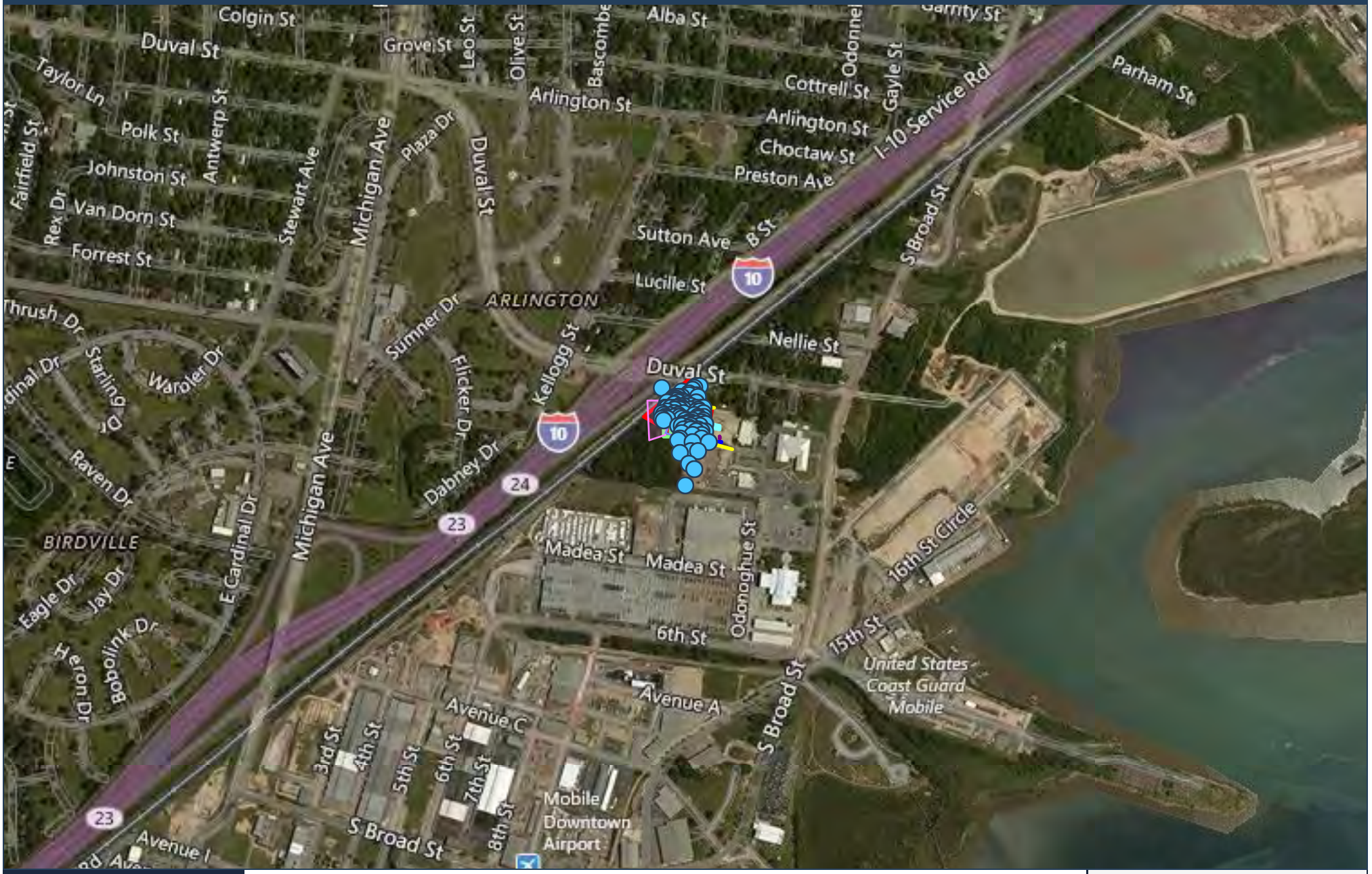
Flame Ionization Detector (FID)
The FID utilizes a hydrogen flame to combust compounds in the carrier gas and responds to any molecule with a carbon-hydrogen bond.

Halogen Specific Detector (XSD)
The XSD consists of a ceramic probe, platinum wire (anode) and platinum bead (cathode) mounted inside a high temperature reactor. The XSD is sensitive and provides a linear response to the quantity of halogen.

Electron Capture Detector (ECD)
The ECD detector consists of a sealed stainless steel cylinder containing radioactive Nickel-63, similar to a household smoke detector, that emits beta particles (electrons), which collide with the instrument carrier gas molecules, ionizing them in the process. When electro-negative compounds including chlorinated, fluorinated, or brominated molecules enter the cell, they immediately combine with the free electrons and provide a detector response. The ECD response is non-linear and variable depending on the atomic structure of the compound detected.

Low Level MIP (LL-MIP)
LL MIP can greatly increase the sensitivity of the MIP logging tool. The primary feature of LL MIP technology is that the carrier gas stream that sweeps the internal surface of the MIP membrane is pulsed. This results in an increase in the concentration of VOC contaminant delivered to the MIP detectors. This technology can provide the ability to track and map contaminant plumes down to concentrations at or below the 100 ppb range for some contaminants. Performance is highly dependent on the condition of the MIP system and the sensitivity of the installed detectors.

Laser Induced Fluorescence - UltraViolet Optical Scanning Tool (LIF-UVOST®)
The LIF/UVOST® system uses a high- energy laser to produce an ultraviolet light source for the detection of polycyclic aromatic hydrocarbons (PAHs). The LIF/ UVOST® system employs a excitation beam of light from a XeCl laser at 308 nm light pulsed at 50 megahertz. Any residual phase PAHs present in the soil grains will absorb this photon energy in the form of fluorescence. This fluorescence is returned to the optical detection system via a second silica fiber optic line, measured, and recorded in real time across four specific wavelengths, namely 350, 400, 450, and 500 nm. Individual LIF/UVOST® logs consist of a primary graph of total fluorescence as a percentage of a Reference Emitter (RE) test standard versus depth, an information box and up to five waveform callouts. These callouts present the fluoresce intensity of each of the monitored wavelengths on the Y-axis (in microvolts (uV)). The four peaks are due to the fluorescence at the four monitored wavelengths called channels. Each channel is assigned a color. Various NAPLs will have a unique waveform signature based on the relative amplitude of the four channels and/or the broadening of one or more of the channels. Performance Testing: All detector systems are tested before and after each survey location to verify proper system response to known reference values. Records of these performance tests are kept with the project and system operating logs. UVOST® is a registered trademark of Dakota Technologies, Inc.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Duval St
Grove St
Leo St
Olive St
Bascombe
Alba St
Garrity St
Taylor Ln
Polk St
Antwerp St
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Cottrell St
Odonnel
Gayle St
Parham St
Fairfield St
Johnston St
Stewart Ave
Michigan Ave
Plaza Dr
Duval St
Arlington St
Choctaw St
I-10 Service Rd
Rex Dr
Van Dorn St
Forrest St
Preston Ave
Sutton Ave
B St
S Broad St
Lucille St
10
ARLINGTON
Sumner Dr
Thrush Dr
Starling Dr
Waroler Dr
Flicker Dr
Kellogg St
Nellie St
Duval St
Raven Dr
Dabney Dr
24
23
BIRDVILLE
E Cardinal Dr
Michigan Ave
Madea St
Madea St
Odonoghue St
16th St Circle
Eagle Dr
Jay Dr
Bobolink Dr
6th St
15th St
United States Coast Guard Mobile
Avenue A
Avenue C
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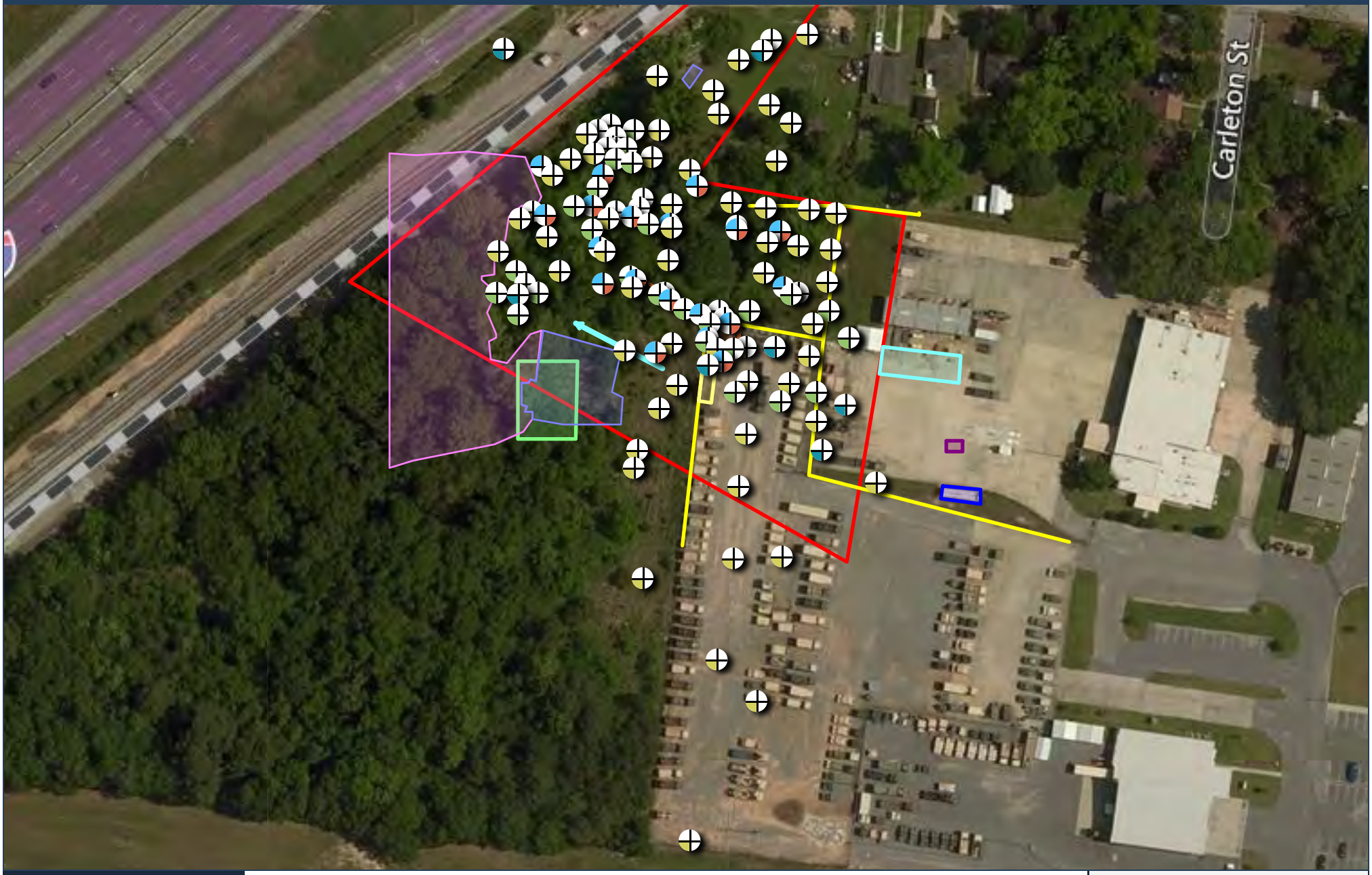
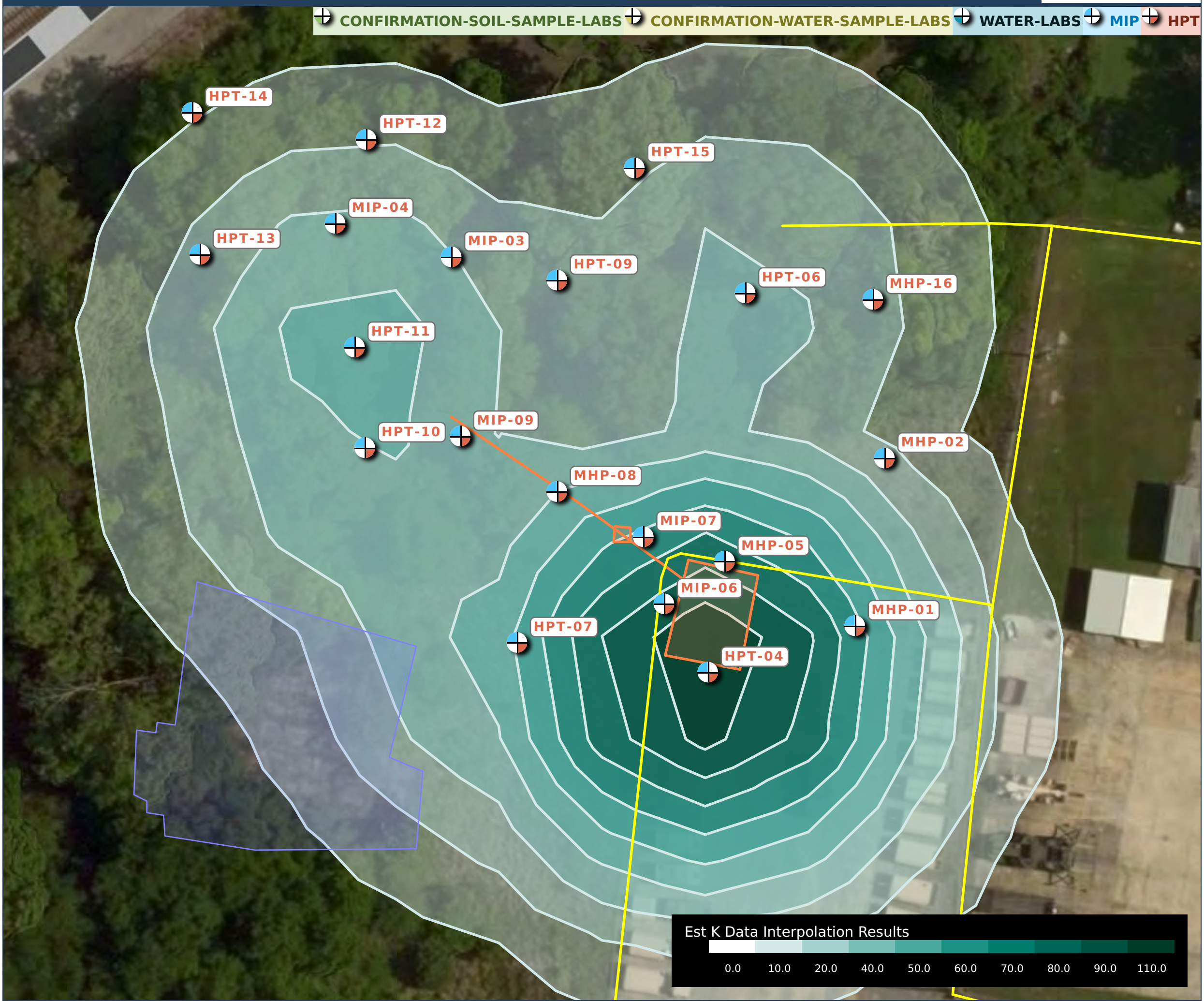
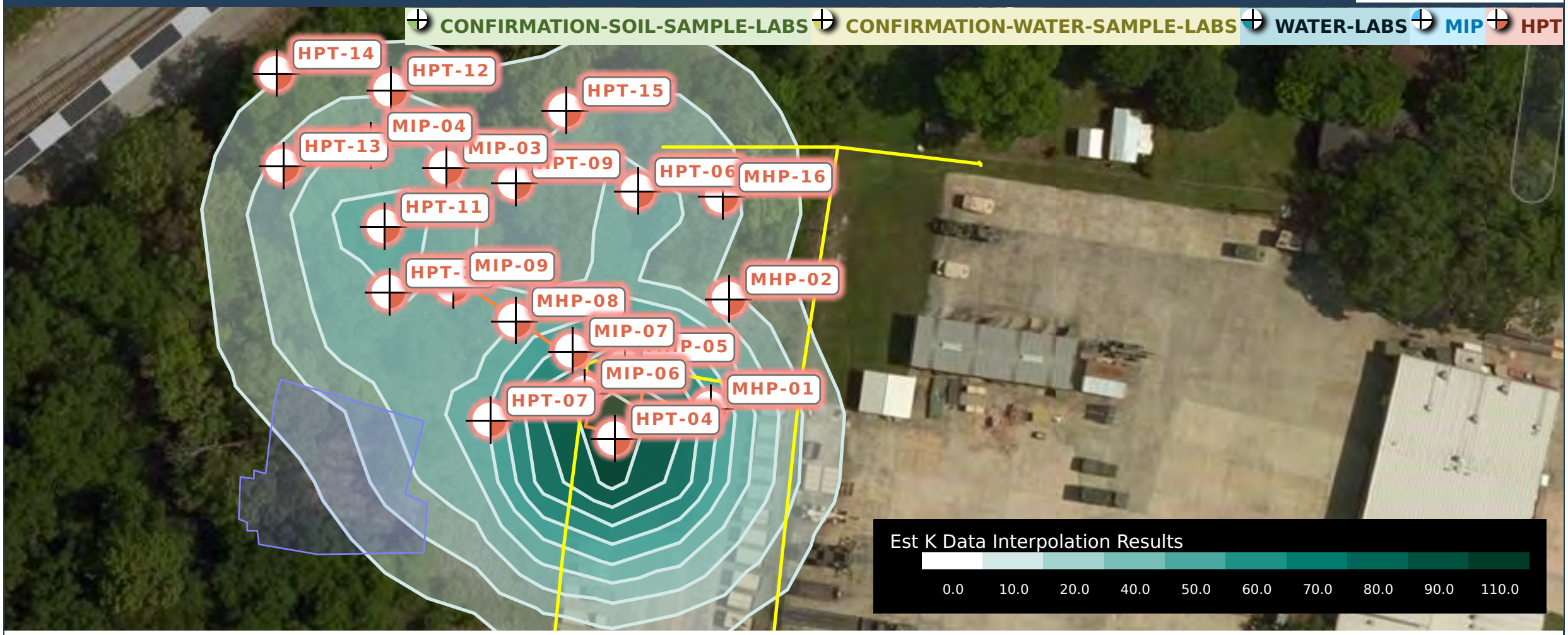
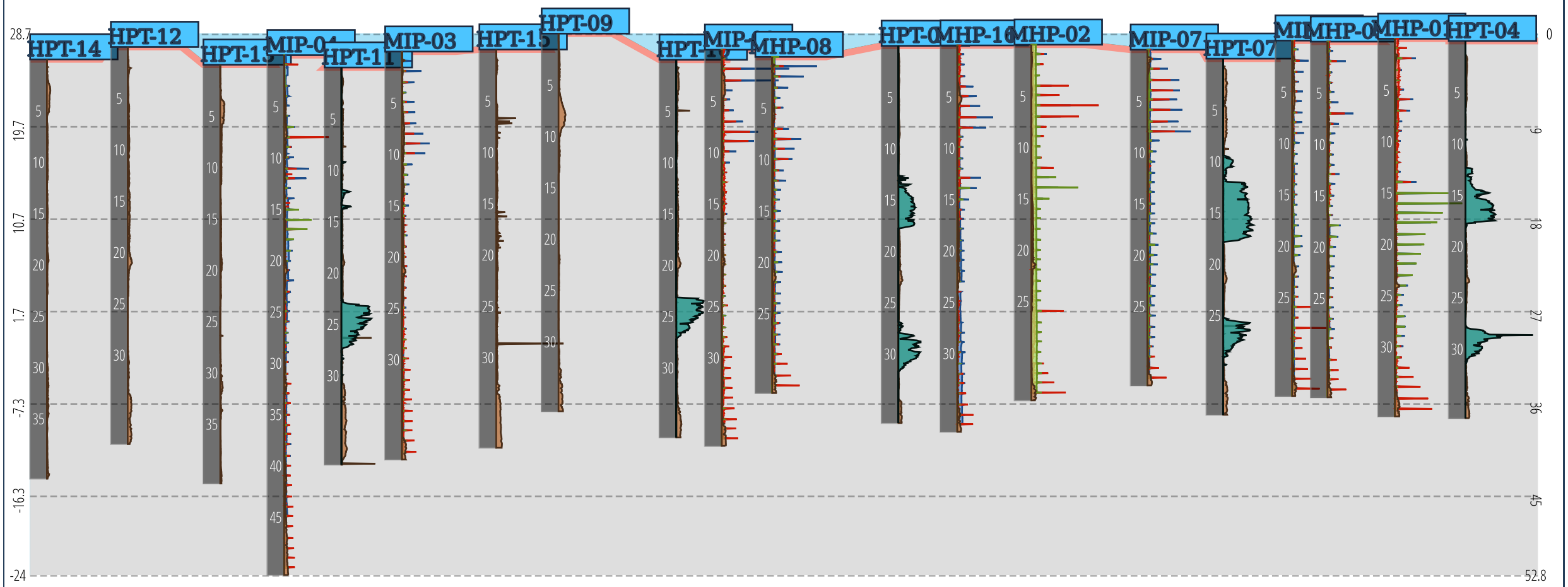
6th St
7th St
8th St
Mobile Downtown Airport
S Broad St
Avenue I


Carleton St







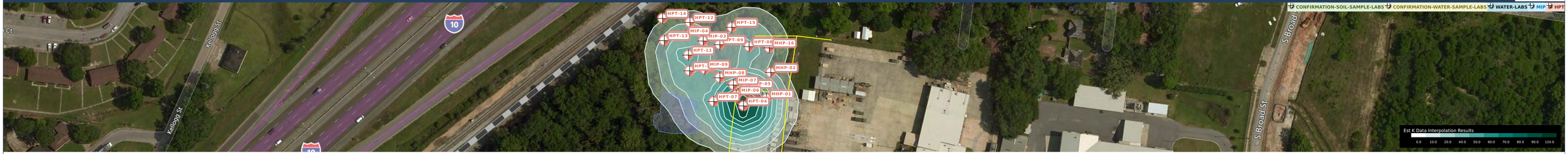
Elevation (ft.)

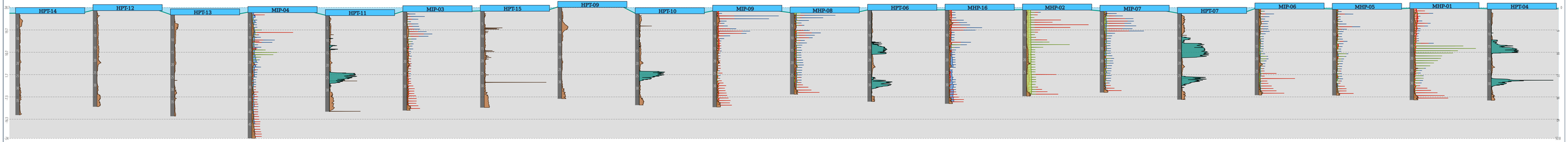
Depth (ft.)

X Scale: collectiveSelected	**Y Scale:** collectiveSelected	**Elevation Range:** 28.7--24.0 ft.

AECOM

CONFIRMATION-SOIL-SAMPLE-LABS CONFIRMATION-WATER-SAMPLE-LABS WATER-LABS MIP HPT





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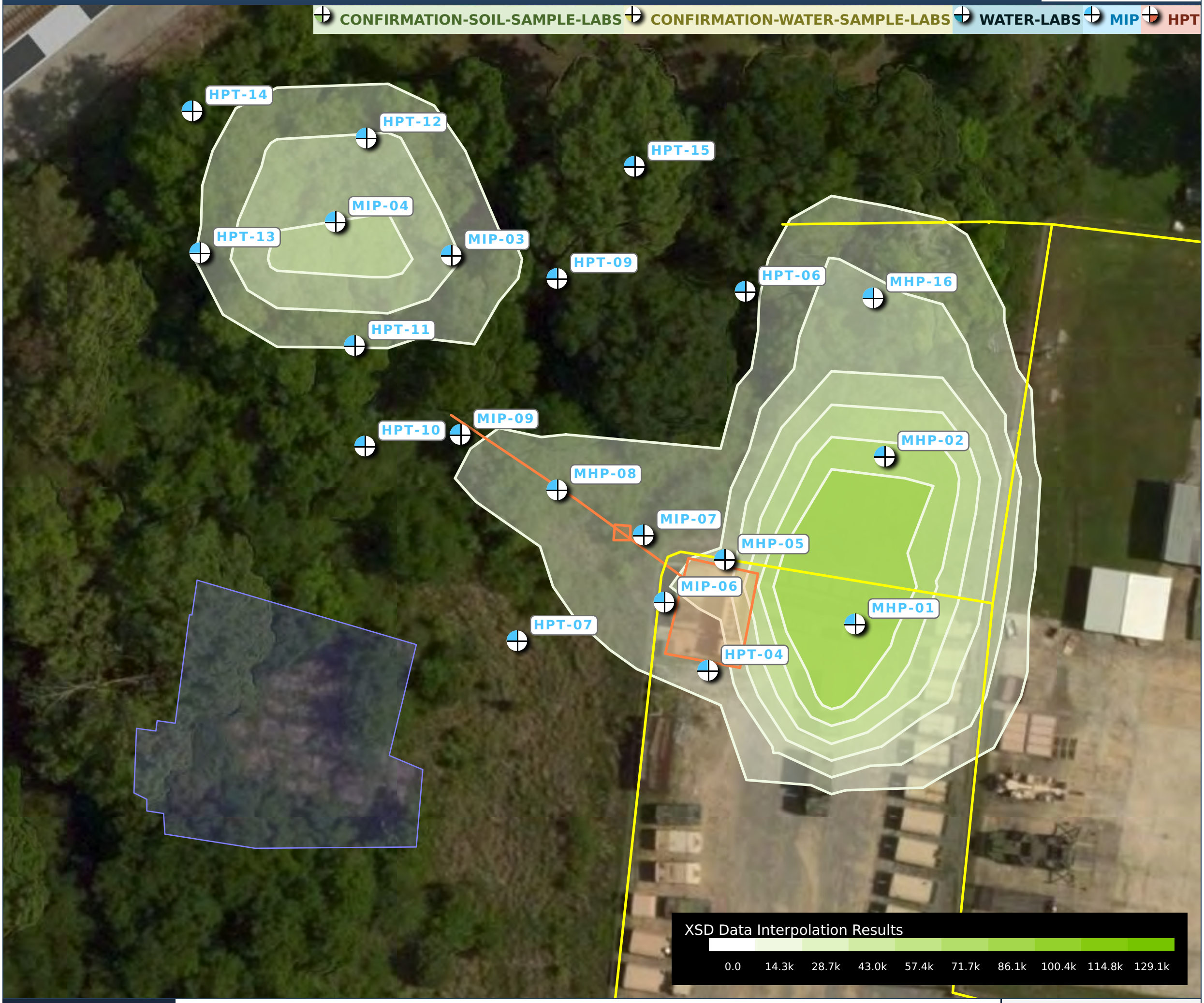
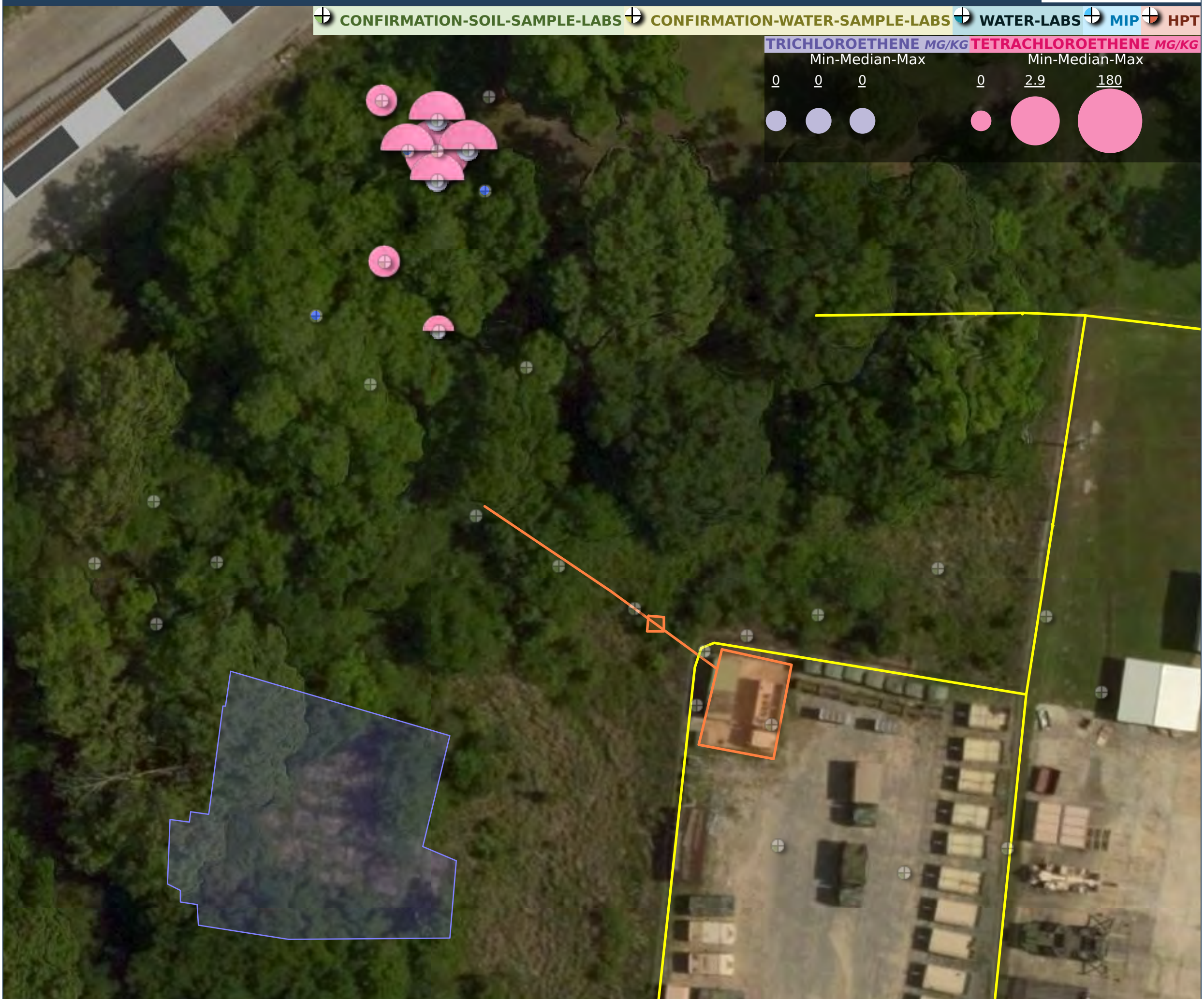
X Scale:
collectiveSelected

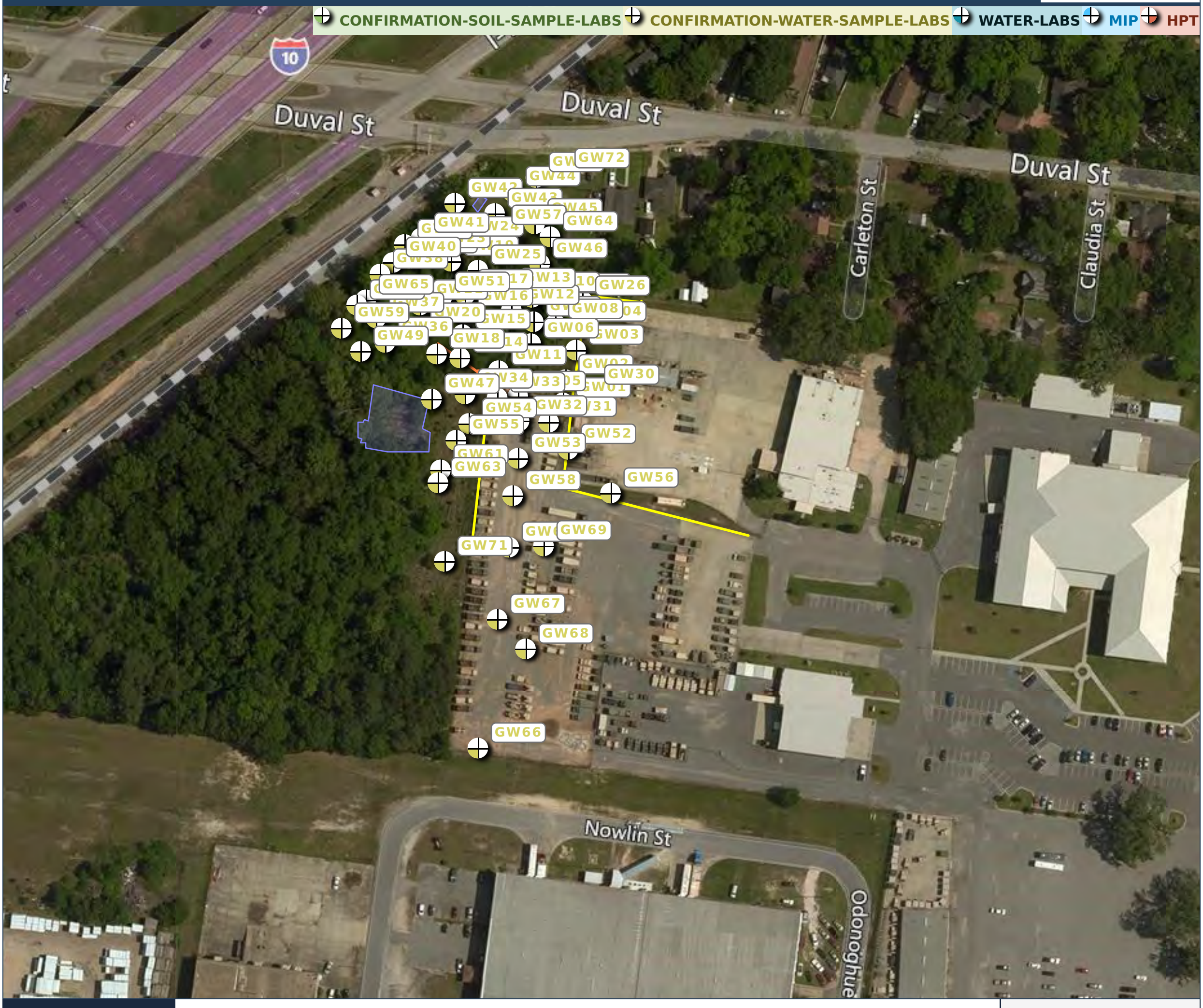
Y Scale:
collectiveSelected

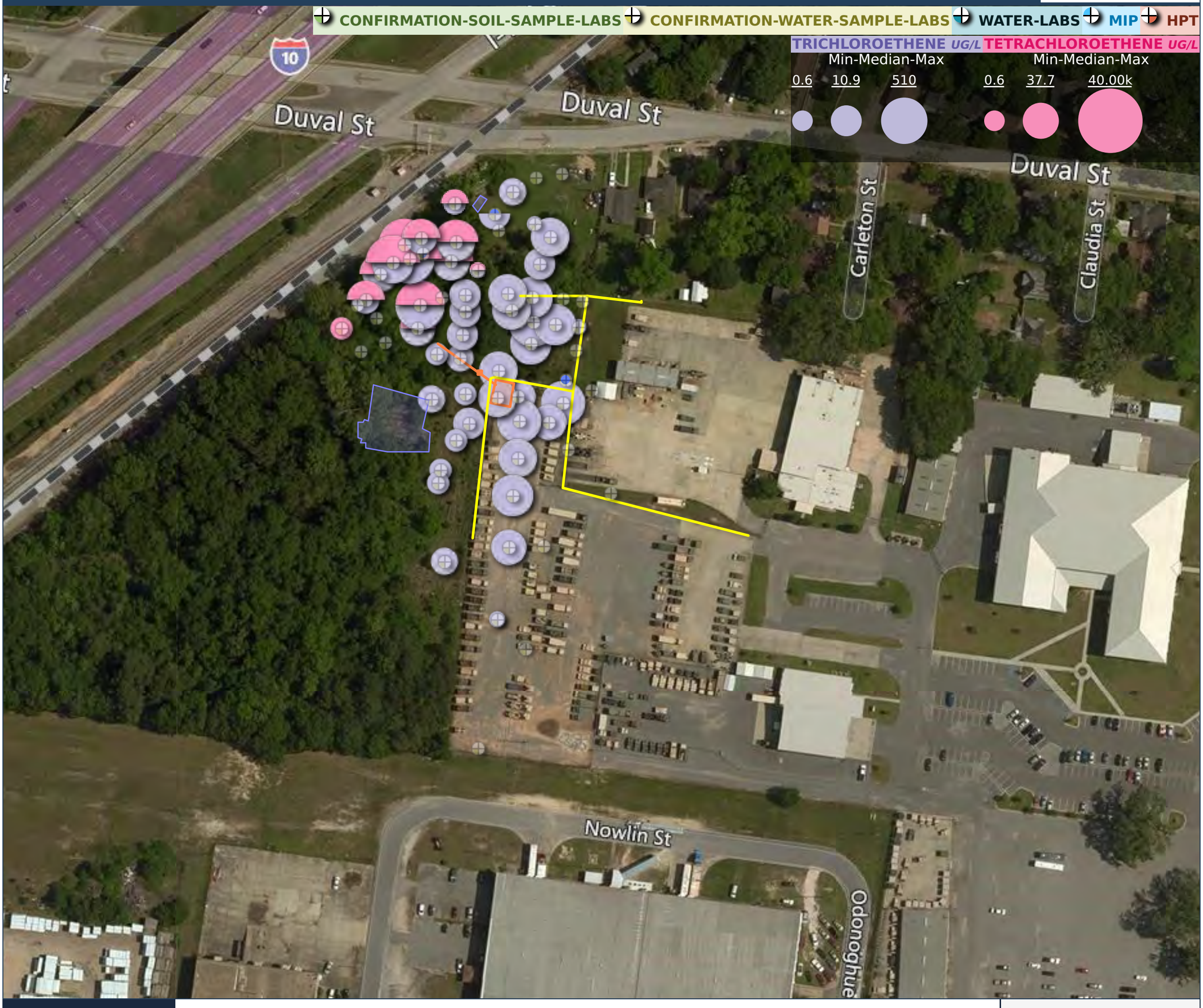
Elevation Range:
28.7–-24.0 ft.

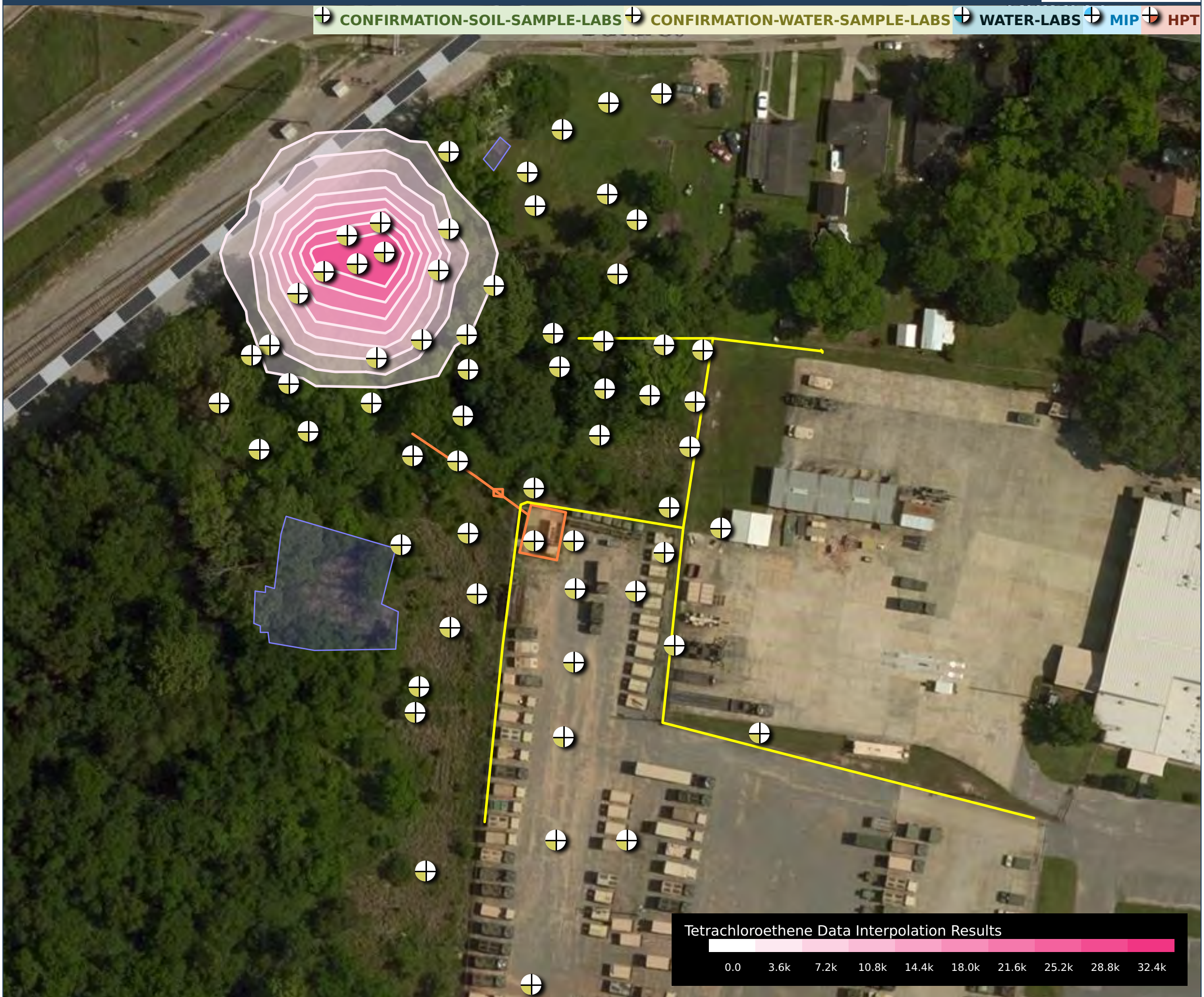


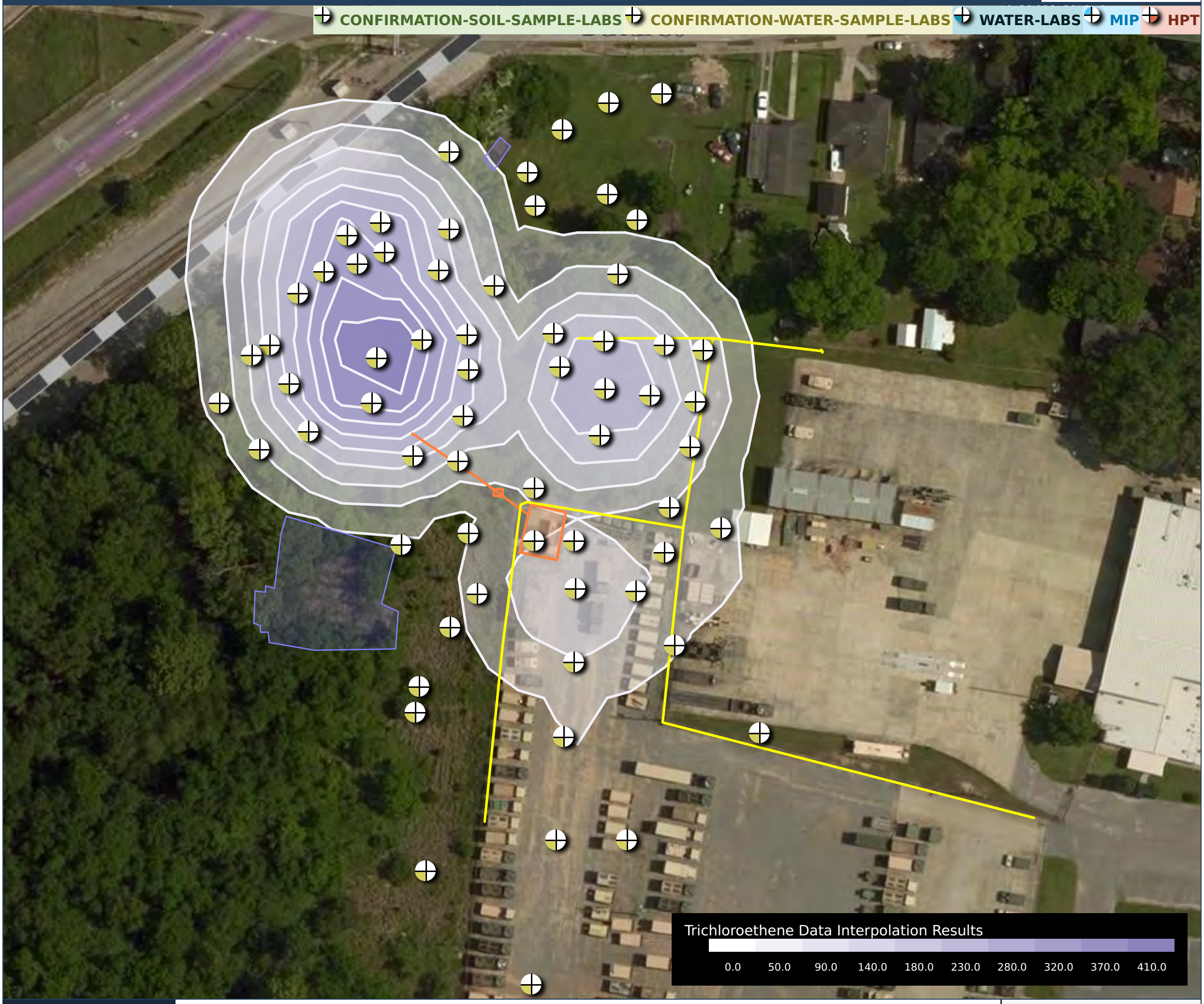


CONFIRMATION-SOIL-SAMPLE-LABS CONFIRMATION-WATER-SAMPLE-LABS WATER-LABS MIP HPT









SampleID	BR142	BR146	BR149	BR192	BR196	BR199	BR242	BR246	BR249	BR292
Date	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16
StationName	MW-9	MW-9	MW-9	OMS-28-5	OMS-28-5	OMS-28-5	OMS-28-4	OMS-28-4	OMS-28-4	MW-5
TopDepth	7.4	7.4	7.4	10	10	10	66	66	66	3.3
BottomDepth	17.4	17.4	17.4	20	20	20	76	76	76	13.3
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	ND	-	-	455	-	-	0.88	-	-	ND
Trichloroethene	-	ND	-	-	200	-	-	ND	-	-
Vinyl chloride	-	-	ND	-	-	ND	-	-	ND	-

SampleID	BR296	BR299	BR342	BR346	BR349	BR392	BR396	BR399	BR42	BR442
Date	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/20/16	1/19/16	1/20/16
StationName	MW-5	MW-5	MW-6	MW-6	MW-6	OMS-28-7	OMS-28-7	OMS-28-7	OMS-28-2	OMS-28-...
TopDepth	3.3	3.3	2.3	2.3	2.3	10	10	10	10	10
BottomDepth	13.3	13.3	12.3	12.3	12.3	20	20	20	20	20
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	-	-	ND	-	-	ND	-	-	ND	49.2
Trichloroethene	ND	-	-	ND	-	-	ND	-	-	-
Vinyl chloride	-	ND	-	-	ND	-	-	ND	-	-

SampleID	BR446	BR46	BR49	BR492	BR496	BR499	BR542	BR549	BR592	BR596
Date	1/20/16	1/19/16	1/19/16	1/20/16	1/20/16	1/20/16	1/21/16	1/21/16	1/21/16	1/21/16
StationName	OMS-28-...	OMS-28-2	OMS-28-2	OMS-28-...	OMS-28-...	OMS-28-...	OMS-28-3	OMS-28-3	MW-12	MW-12
TopDepth	10	10	10	10	10	10	10	10	5.6	5.6
BottomDepth	20	20	20	20	20	20	20	20	15.6	15.6
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	-	-	-	47.9	-	-	ND	-	ND	-
Trichloroethene	52.7	ND	-	-	50.8	-	-	-	-	ND
Vinyl chloride	-	-	ND	-	-	39.5	-	ND	-	-

SampleID	BR599	BR642	BR646	BR649	BR696	BR699	BR742	BR746	BR749	BR792
Date	1/21/16	1/21/16	1/21/16	1/21/16	1/21/16	1/21/16	NA	NA	NA	NA
StationName	MW-12	OMS-28-1	OMS-28-1	OMS-28-1	OMS-28-...	OMS-28-...	MB1532...	MB15329...	MB15329...	LCS1532...
TopDepth	5.6	70	70	70	10	10	-	-	-	-
BottomDepth	15.6	80	80	80	20	20	1	1	1	1
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	-	ND	-	-	-	-	ND	-	-	ND
Trichloroethene	-	-	ND	-	8.78	-	-	ND	-	-
Vinyl chloride	ND	-	-	ND	-	ND	-	-	ND	-

SampleID	BR796	BR799	BR842	BR846	BR849	BR92	BR96	BR99	BR9A	LCS153249...
Date	NA	NA	NA	NA	NA	1/19/16	1/19/16	1/19/16	1/21/16	1/25/16
StationName	LCS1532...	LCS1532...	LCSD15...	LCSD15...	LCSD15...	OMS-28-...	OMS-28-...	OMS-28-2-c	OMS-28-3	LCS1532...
TopDepth	-	-	-	-	-	10	10	10	10	-
BottomDepth	1	1	1	1	1	20	20	20	20	1
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	-	-	ND	-	-	ND	-	-	-	52.2
Trichloroethene	ND	-	-	ND	-	-	ND	-	8.92	-
Vinyl chloride	-	ND	-	-	ND	-	-	ND	-	-

SampleID	LCS153249...	LCS153249...	LCSD15324...	LCSD15324...	LCSD15324...	MB1532493...	MB1532493...	MB1532493...	MW-8-42	MW-8-46
Date	1/25/16	1/25/16	1/25/16	1/25/16	1/25/16	1/25/16	1/25/16	1/25/16	1/25/16	1/25/16
StationName	LCS1532...	LCS1532...	LCSD15...	LCSD15...	LCSD15...	MB1532...	MB1532...	MB15324...	MW-8	MW-8
TopDepth	-	-	-	-	-	-	-	-	4.8	4.8
BottomDepth	1	1	1	1	1	1	1	1	14.8	14.8
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	-	-	49.4	-	-	ND	-	-	ND	-
Trichloroethene	55.2	-	-	52.9	-	-	ND	-	-	7.8
Vinyl chloride	-	42.9	-	-	42.7	-	-	ND	-	-

SampleID	MW-8-49	MW-8C-42	MW-8C-46	MW-8C-49
Date	1/25/16	1/25/16	1/25/16	1/25/16
StationName	MW-8	MW-8C	MW-8C	MW-8C
TopDepth	4.8	-	-	-
BottomDepth	14.8	1	1	1
Basis	Wet	Wet	Wet	Wet
Dilution	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	-	ND	-	-
Trichloroethene	-	-	ND	-
Vinyl chloride	ND	-	-	ND

SampleID	OMS-28-GW01-10	OMS-28-GW01-19	OMS-28-GW01-32	OMS-28-GW02-12	OMS-28-GW02-19	OMS-28-GW02-31	OMS-28-GW03-12	OMS-28-GW03-20	OMS-28-GW03-34	OMS-28-GW04-10
Date	5/2/17	5/2/17	5/2/17	5/3/17	5/3/17	5/3/17	5/4/17	5/4/17	5/5/17	5/3/17
StationName	GW01	GW01	GW01	GW02	GW02	GW02	GW03	GW03	GW03	GW04
TopDepth	6	15	28	8	15	27	8	16	30	6
BottomDepth	10	19	32	12	19	31	12	20	34	10
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	82.2	38	<1.0	0.63	<1.0	<1.0	<1.0	<1.0	<1.0	1.37

SampleID	OMS-28-GW04-17	OMS-28-GW04-31	OMS-28-GW05-11	OMS-28-GW05-19	OMS-28-GW05-33	OMS-28-GW06-11	OMS-28-GW06-17	OMS-28-GW06-32	OMS-28-GW07-11	OMS-28-GW07-18
Date	5/3/17	5/4/17	5/2/17	5/2/17	5/2/17	5/17/17	5/18/17	5/18/17	5/19/17	5/19/17
StationName	GW04	GW04	GW05	GW05	GW05	GW06	GW06	GW06	GW07	GW07
TopDepth	13	27	7	15	29	7	13	28	7	14
BottomDepth	17	31	11	19	33	11	17	32	11	18
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	16.1	3.14	<1.0	0.63	66	<1.0	<1.0	204.3

SampleID	OMS-28-GW07-31	OMS-28-GW08-10	OMS-28-GW08-17	OMS-28-GW08-31	OMS-28-GW09-10	OMS-28-GW09-16	OMS-28-GW09-33	OMS-28-GW10-10	OMS-28-GW10-16	OMS-28-GW10-33
Date	5/19/17	5/3/17	5/3/17	5/4/17	5/3/17	5/3/17	5/4/17	5/9/17	5/9/17	5/9/17
StationName	GW07	GW08	GW08	GW08	GW09	GW09	GW09	GW10	GW10	GW10
TopDepth	27	6	13	27	6	12	29	6	12	29
BottomDepth	31	10	17	31	10	16	33	10	16	33
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	71.2	<1.0	<1.0	<1.0	<1.0	68.9	<1.0

SampleID	OMS-28-GW11-11	OMS-28-GW11-19	OMS-28-GW11-30	OMS-28-GW12-12	OMS-28-GW12-18	OMS-28-GW12-32	OMS-28-GW13-12	OMS-28-GW13-18	OMS-28-GW13-32	OMS-28-GW14-11
Date	5/13/17	5/13/17	5/15/17	5/19/17	5/19/17	5/19/17	5/9/17	5/9/17	5/9/17	5/13/17
StationName	GW11	GW11	GW11	GW12	GW12	GW12	GW13	GW13	GW13	GW14
TopDepth	7	15	7	8	14	28	8	14	28	7
BottomDepth	11	19	11	12	18	32	12	18	32	11
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	24.3	<1.0	<1.0	23.7	<1.0	1.5	37.2	<1.0	<1.0

SampleID	OMS-28-GW14-20	OMS-28-GW14-30	OMS-28-GW15-12	OMS-28-GW15-19	OMS-28-GW15-30	OMS-28-GW16-12	OMS-28-GW16-19	OMS-28-GW16-30	OMS-28-GW17-12	OMS-28-GW17-19
Date	5/13/17	5/15/17	5/5/17	5/5/17	5/8/17	5/4/17	5/4/17	5/5/17	5/4/17	5/4/17
StationName	GW14	GW14	GW15	GW15	GW15	GW16	GW16	GW16	GW17	GW17
TopDepth	16	10	8	15	26	8	15	26	8	15
BottomDepth	20	14	12	19	30	12	19	30	12	19
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	3.6	<1.0	2.8	7.1	<1.0	0.52	6	<1.0	1.6	6.8

SampleID	OMS-28-GW17-28	OMS-28-GW18-12	OMS-28-GW18-18	OMS-28-GW18-30	OMS-28-GW19-12	OMS-28-GW19-19	OMS-28-GW19-30	OMS-28-GW20-12	OMS-28-GW20-19	OMS-28-GW20-28
Date	5/5/17	5/5/17	5/5/17	5/8/17	5/9/17	5/9/17	5/10/17	5/4/17	5/5/17	5/5/17
StationName	GW17	GW18	GW18	GW18	GW19	GW19	GW19	GW20	GW20	GW20
TopDepth	24	8	14	26	8	15	26	8	15	24
BottomDepth	28	12	18	30	12	19	30	12	19	28
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	2.2	95.7	<1.0	12.7	<1.0	<1.0
Trichloroethene	<1.0	1.6	2.7	<1.0	3.3	38.7	<1.0	16.1	<1.0	<1.0

SampleID	OMS-28-GW21-12	OMS-28-GW21-18	OMS-28-GW21-30	OMS-28-GW22-11	OMS-28-GW22-20	OMS-28-GW22-28	OMS-28-GW23-12	OMS-28-GW23-20	OMS-28-GW23-28	OMS-28-GW24-12
Date	5/5/17	5/5/17	5/8/17	5/9/17	5/12/17	5/10/17	5/11/17	5/11/17	5/12/17	5/12/17
StationName	GW21	GW21	GW21	GW22	GW22	GW22	GW23	GW23	GW23	GW24
TopDepth	8	14	26	7	16	24	8	16	24	8
BottomDepth	12	18	30	11	20	28	12	20	28	12
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	10	5	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	460	12	<1.0	40000	74.3	77	0.7	<1.0	<1.0	38.1
Trichloroethene	510	230	<1.0	400	0.8	0.9	0.6	<1.0	<1.0	13.5

SampleID	OMS-28-GW24-19	OMS-28-GW24-30	OMS-28-GW25-12	OMS-28-GW25-19	OMS-28-GW25-28	OMS-28-GW26-31	OMS-28-GW30-11	OMS-28-GW30-20	OMS-28-GW30-33	OMS-28-GW31-12
Date	5/9/17	5/10/17	5/16/17	5/9/17	5/10/17	5/10/17	5/4/17	5/4/17	5/4/17	5/2/17
StationName	GW24	GW24	GW25	GW25	GW25	GW26	GW30	GW30	GW30	GW31
TopDepth	15	26	8	15	24	27	7	16	29	8
BottomDepth	19	30	12	19	28	31	11	20	33	12
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	100	1.2	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	35.9	<1.0	<1.0	0.8	0.9	<1.0	<1.0	<1.0	<1.0	<1.0

SampleID	OMS-28-GW31-19	OMS-28-GW31-31	OMS-28-GW32-12	OMS-28-GW32-19	OMS-28-GW32-31	OMS-28-GW33-12	OMS-28-GW33-19	OMS-28-GW33-33	OMS-28-GW34-19	OMS-28-GW34-31
Date	5/2/17	5/3/17	5/2/17	5/2/17	5/2/17	5/2/17	5/2/17	5/2/17	5/17/17	5/17/17
StationName	GW31	GW31	GW32	GW32	GW32	GW33	GW33	GW33	GW34	GW34
TopDepth	15	27	8	15	27	8	15	29	15	27
BottomDepth	19	31	12	19	31	12	19	33	19	31
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	10	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	13.4	140	6.26	15.6	<1.0	38.2	<1.0	2.6	<1.0

SampleID	OMS-28-GW36-12	OMS-28-GW36-18	OMS-28-GW36-29	OMS-28-GW37-12	OMS-28-GW37-19	OMS-28-GW37-28	OMS-28-GW38-12	OMS-28-GW38-18	OMS-28-GW38-30	OMS-28-GW39-13
Date	5/11/17	5/11/17	5/12/17	5/11/17	5/11/17	5/12/17	5/11/17	5/11/17	5/11/17	5/11/17
StationName	GW36	GW36	GW36	GW37	GW37	GW37	GW38	GW38	GW38	GW39
TopDepth	8	14	25	8	15	24	8	14	26	9
BottomDepth	12	18	29	12	19	28	12	18	30	13
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	10
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	59.7	14.2	<1.0	1000
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11.8	1.5	<1.0	15

SampleID	OMS-28-GW39-20	OMS-28-GW39-28	OMS-28-GW40-13	OMS-28-GW40-20	OMS-28-GW40-28	OMS-28-GW41-12	OMS-28-GW41-20	OMS-28-GW41-28	OMS-28-GW42-12	OMS-28-GW42-20
Date	5/11/17	5/11/17	5/11/17	5/11/17	5/11/17	5/11/17	5/11/17	5/12/17	5/11/17	5/11/17
StationName	GW39	GW39	GW40	GW40	GW40	GW41	GW41	GW41	GW42	GW42
TopDepth	16	24	9	16	24	8	16	24	8	16
BottomDepth	20	28	13	20	28	12	20	28	12	20
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	2	1	20	20	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	120	<1.0	1800	1500	<1.0	31.5	0.6	<1.0	3.6	1.6
Trichloroethene	5.9	<1.0	35	46	<1.0	6.5	<1.0	<1.0	1.7	1.8

SampleID	OMS-28-GW42-28	OMS-28-GW43-12	OMS-28-GW43-20	OMS-28-GW43-28	OMS-28-GW44-28	OMS-28-GW45-18	OMS-28-GW45-32	OMS-28-GW46-16	OMS-28-GW46-33	OMS-28-GW47-19
Date	5/11/17	5/12/17	5/12/17	5/12/17	5/16/17	5/12/17	5/12/17	5/12/17	5/12/17	5/17/17
StationName	GW42	GW43	GW43	GW43	GW44	GW45	GW45	GW46	GW46	GW47
TopDepth	24	8	16	24	20	14	28	12	29	15
BottomDepth	28	12	20	28	28	18	32	16	33	19
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	1.3	0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	10	4.4	1	0.6	8.1	1.3	3.3

SampleID	OMS-28-GW47-32	OMS-28-GW49-12	OMS-28-GW49-18	OMS-28-GW49-30	OMS-28-GW50-13	OMS-28-GW50-18	OMS-28-GW50-30	OMS-28-GW51-30	OMS-28-GW52-19	OMS-28-GW52-31
Date	5/18/17	5/15/17	5/15/17	5/16/17	5/15/17	5/15/17	5/16/17	5/15/17	5/15/17	5/13/17
StationName	GW47	GW49	GW49	GW49	GW50	GW50	GW50	GW51	GW52	GW52
TopDepth	28	8	14	26	9	14	26	47	15	27
BottomDepth	32	12	18	30	13	18	30	51	19	31
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

SampleID	OMS-28-GW53-12	OMS-28-GW53-19	OMS-28-GW53-31	OMS-28-GW54-12	OMS-28-GW54-19	OMS-28-GW54-32	OMS-28-GW55-12	OMS-28-GW55-19	OMS-28-GW55-32	OMS-28-GW56-18
Date	5/13/17	5/13/17	5/15/17	5/13/17	5/13/17	5/13/17	5/13/17	5/13/17	5/13/17	5/15/17
StationName	GW53	GW53	GW53	GW54	GW54	GW54	GW55	GW55	GW55	GW56
TopDepth	8	15	49	8	15	28	8	15	28	14
BottomDepth	12	19	53	12	19	32	12	19	32	18
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	21.4	31.3	<1.0	<1.0	7.5	<1.0	0.7	2.9	<1.0	<1.0

SampleID	OMS-28-GW56-31	OMS-28-GW57-12	OMS-28-GW57-16	OMS-28-GW57-33	OMS-28-GW58-12	OMS-28-GW58-19	OMS-28-GW58-31	OMS-28-GW59-10	OMS-28-GW59-18	OMS-28-GW59-30
Date	5/16/17	5/17/17	5/12/17	5/12/17	5/15/17	5/15/17	5/15/17	5/16/17	5/16/17	5/17/17
StationName	GW56	GW57	GW57	GW57	GW58	GW58	GW58	GW59	GW59	GW59
TopDepth	27	8	12	29	8	15	27	6	12	26
BottomDepth	31	12	16	33	12	19	31	10	18	30
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	5.3	48	<1.0	<1.0	<1.0	<1.0

SampleID	OMS-28-GW60-16	OMS-28-GW60-33	OMS-28-GW61-12	OMS-28-GW61-19	OMS-28-GW61-31	OMS-28-GW62-12	OMS-28-GW62-19	OMS-28-GW62-30	OMS-28-GW63-12	OMS-28-GW63-19
Date	5/16/17	5/16/17	5/17/17	5/17/17	5/18/17	5/16/17	5/16/17	5/17/17	5/17/17	5/17/17
StationName	GW60	GW60	GW61	GW61	GW61	GW62	GW62	GW62	GW63	GW63
TopDepth	12	29	8	15	27	8	15	26	8	15
BottomDepth	16	33	12	19	31	12	19	30	12	19
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	2	<1.0	3.5	20.5	<1.0	<1.0	2.4

SampleID	OMS-28-GW63-30	OMS-28-GW64-16	OMS-28-GW64-33	OMS-28-GW65-12	OMS-28-GW65-19	OMS-28-GW65-29	OMS-28-GW66-26	OMS-28-GW66-49	OMS-28-GW67-26	OMS-28-GW67-52
Date	5/18/17	5/17/17	5/17/17	5/17/17	5/17/17	5/18/17	5/18/17	5/18/17	5/19/17	5/18/17
StationName	GW63	GW64	GW64	GW65	GW65	GW65	GW66	GW66	GW67	GW67
TopDepth	26	12	29	8	15	25	22	45	22	48
BottomDepth	30	16	33	12	19	29	26	49	26	52
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	37.7	30.8	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	27.1	5.5	2	<1.0	<1.0	<1.0	0.91	<1.0

SampleID	OMS-28-GW68-26	OMS-28-GW68-57	OMS-28-GW69-26	OMS-28-GW69-49	OMS-28-GW71-19	OMS-28-GW71-30	OMS-28-GW72-33
Date	5/19/17	5/19/17	5/19/17	5/19/17	5/19/17	5/19/17	5/19/17
StationName	GW68	GW68	GW69	GW69	GW71	GW71	GW72
TopDepth	22	53	22	45	15	26	29
BottomDepth	26	57	26	49	19	30	33
Basis	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dilution	1	1	1	1	1	1	1
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	4.7	<1.0	<1.0

SampleID	OMS-28-SB01-1	OMS-28-SB01-2	OMS-28-SB01-3	OMS-28-SB02-1	OMS-28-SB02-3	OMS-28-SB02-5	OMS-28-SB03-1	OMS-28-SB03-3	OMS-28-SB03-5	OMS-28-SB04-1
Date	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
StationName	SB01	SB01	SB01	SB02	SB02	SB02	SB03	SB03	SB03	SB04
TopDepth	0.75	0.75	2.75	0.75	2.75	4.75	0.75	2.75	4.75	0.75
BottomDepth	1.25	1.25	3.25	1.25	3.25	5.25	1.25	3.25	5.25	1.25
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	1	1	1	1	1	1	1	1	1	1
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

SampleID	OMS-28-SB04-2	OMS-28-SB04-5	OMS-28-SB05-1	OMS-28-SB05-2	OMS-28-SB05-5	OMS-28-SB06-1	OMS-28-SB06-3	OMS-28-SB06-6	OMS-28-SB07-1	OMS-28-SB07-3
Date	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
StationName	SB04	SB04	SB05	SB05	SB05	SB06	SB06	SB06	SB07	SB07
TopDepth	1.75	4.75	0.75	1.75	4.75	0.75	2.75	5.75	0.75	2.75
BottomDepth	2.25	5.25	1.25	2.25	5.25	1.25	3.25	6.25	1.25	3.25
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	1	1	1	1	1	1	1	1	1	1
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

SampleID	OMS-28-SB07-6	OMS-28-SB08-1	OMS-28-SB08-3	OMS-28-SB08-6	OMS-28-SB09-1	OMS-28-SB09-2	OMS-28-SB09-3	OMS-28-SB10-1	OMS-28-SB10-2	OMS-28-SB10-3
Date	5/8/17	5/9/17	5/9/17	5/9/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17	5/8/17
StationName	SB07	SB08	SB08	SB08	SB09	SB09	SB09	SB10	SB10	SB10
TopDepth	5.75	0.75	2.75	5.75	0.75	1.75	2.75	0.75	1.75	2.75
BottomDepth	6.25	1.25	3.25	6.25	1.25	2.25	3.25	1.25	2.25	3.25
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	1	1	1	1	1	1	1	1	1	1
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

SampleID	OMS-28-SB11-1	OMS-28-SB11-4	OMS-28-SB11-6	OMS-28-SB12-1	OMS-28-SB12-3	OMS-28-SB12-6	OMS-28-SB13-1	OMS-28-SB13-3	OMS-28-SB13-5	OMS-28-SB14-1
Date	5/8/17	5/8/17	5/8/17	5/9/17	5/9/17	5/9/17	5/9/17	5/9/17	5/9/17	5/9/17
StationName	SB11	SB11	SB11	SB12	SB12	SB12	SB13	SB13	SB13	SB14
TopDepth	0.75	3.75	5.75	0.75	2.75	5.75	0.75	2.75	4.75	0.75
BottomDepth	1.25	4.25	6.25	1.25	3.25	6.25	1.25	3.25	5.25	1.25
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	1	1	1	1	1	1	1	1	1	1
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

SampleID	OMS-28-SB14-3	OMS-28-SB14-5	OMS-28-SB15-1	OMS-28-SB15-3	OMS-28-SB15-5	OMS-28-SB16-1	OMS-28-SB16-2.5	OMS-28-SB16-4	OMS-28-SB17-1	OMS-28-SB17-2.5
Date	5/9/17	5/9/17	5/9/17	5/9/17	5/9/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
StationName	SB14	SB14	SB15	SB15	SB15	SB16	SB16	SB16	SB17	SB17
TopDepth	2.75	4.75	0.75	2.75	4.75	0.75	2.25	3.75	0.75	2.25
BottomDepth	3.25	5.25	1.25	3.25	5.25	1.25	2.75	4.25	1.25	2.75
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	1	1	1	1	1	1	1	1	1	1
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	0.002
Trichloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002

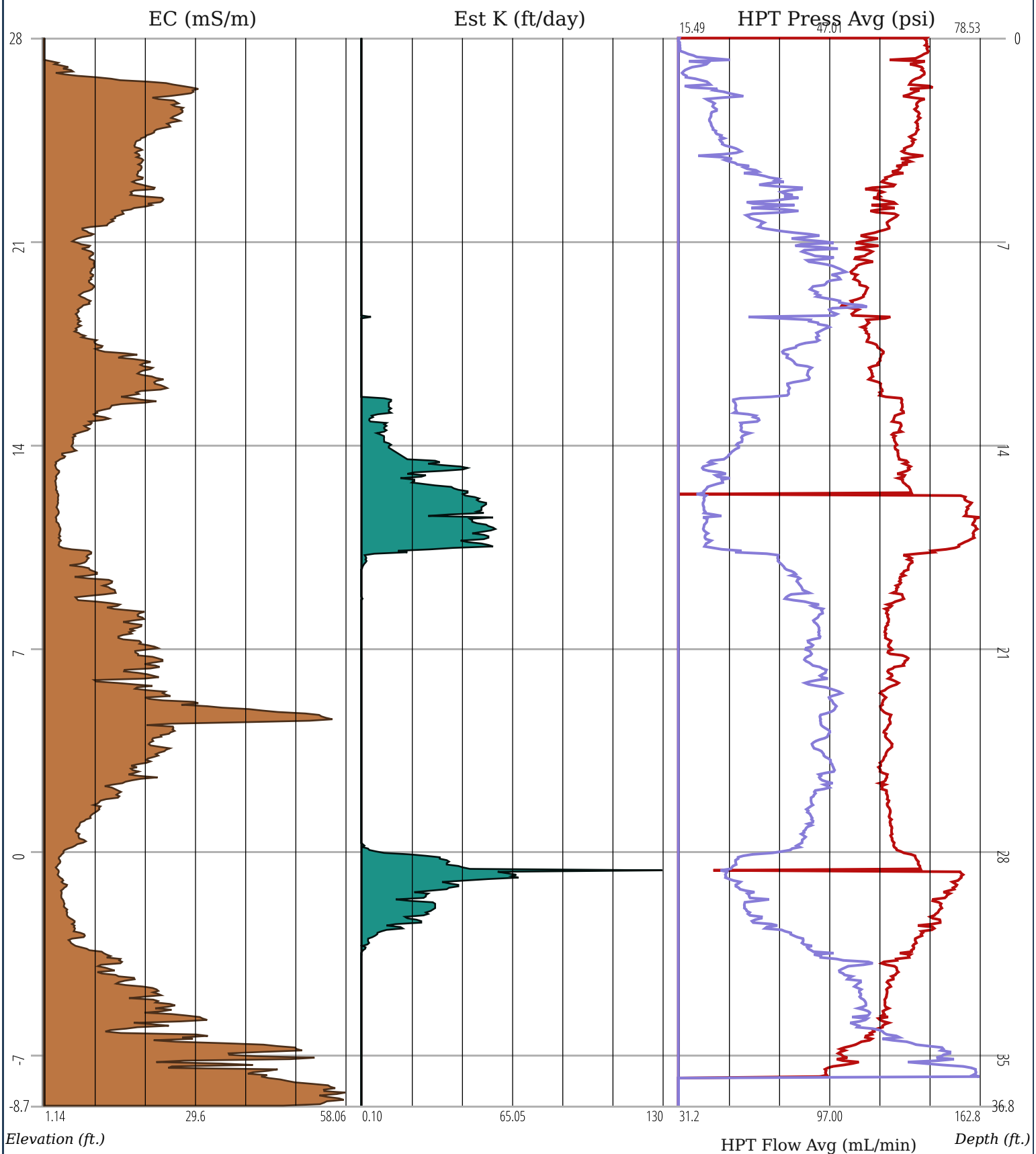
SampleID	OMS-28-SB17-5	OMS-28-SB18-1	OMS-28-SB18-2.5	OMS-28-SB18-5	OMS-28-SB19-1	OMS-28-SB19-2.5	OMS-28-SB19-5	OMS-28-SB20-1	OMS-28-SB20-1.5	OMS-28-SB20-2
Date	5/10/17	5/10/17	5/11/17	5/11/17	5/11/17	5/11/17	5/11/17	5/10/17	5/10/17	5/10/17
StationName	SB17	SB18	SB18	SB18	SB19	SB19	SB19	SB20	SB20	SB20
TopDepth	4.75	0.75	2.25	4.75	0.75	2.25	4.75	0.75	1.25	1.75
BottomDepth	5.25	1.25	2.75	5.25	1.25	2.75	5.25	1.25	1.75	2.25
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	1	1	1	1	1	1	1	1	1	1
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	<0.002	0.033	0.023	<0.002	0.04	0.001	0.026	<0.002	<0.002	<0.003
Trichloroethene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.003

SampleID	OMS-28-SB21-1	OMS-28-SB21-1.5	OMS-28-SB21-2	OMS-28-SB22-1	OMS-28-SB22-1.5	OMS-28-SB22-2	OMS-28-SB23-1	OMS-28-SB23-1.5	OMS-28-SB23-2	OMS-28-SB24-1
Date	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
StationName	SB21	SB21	SB21	SB22	SB22	SB22	SB23	SB23	SB23	SB24
TopDepth	0.75	1.25	1.75	0.75	1.25	1.75	0.75	1.25	1.75	0.75
BottomDepth	1.25	1.75	2.25	1.75	1.75	2.25	1.25	1.75	2.25	1.25
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	1	1	1	1	1	1	1	1	1	1000
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	180
Trichloroethene	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<2.3

SampleID	OMS-28-SB24-3	OMS-28-SB24-5	OMS-28-SB25-1	OMS-28-SB25-3	OMS-28-SB25-5	OMS-28-SB26-1	OMS-28-SB26-3	OMS-28-SB26-5	OMS-28-SB27-1	OMS-28-SB27-3
Date	5/10/17	5/10/17	5/12/17	5/12/17	5/12/17	5/12/17	5/12/17	5/12/17	5/12/17	5/12/17
StationName	SB24	SB24	SB25	SB25	SB25	SB26	SB26	SB26	SB27	SB27
TopDepth	2.75	4.75	0.75	2.75	4.75	0.75	2.75	4.75	0.75	2.75
BottomDepth	3.25	5.25	1.25	3.25	5.25	1.25	3.25	5.25	1.25	3.25
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	200	200	1	1	1	1	1	1	1	1
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	23	5.4	0.021	<0.002	0.002	<0.002	<0.002	<0.065	0.001	<0.002
Trichloroethene	<0.49	<0.49	<0.002	<0.002	<0.002	<0.002	<0.002	<0.065	<0.002	<0.002

SampleID	OMS-28-SB27-5	OMS-28-SB28-1	OMS-28-SB28-3	OMS-28-SB28-5	OMS-28-SB29-1	OMS-28-SB29-3	OMS-28-SB29-5	OMS-28-SB30-1	OMS-28-SB30-3	OMS-28-SB30-5
Date	5/12/17	5/18/17	5/16/17	5/16/17	5/18/17	5/16/17	5/17/17	5/18/17	5/16/17	5/16/17
StationName	SB27	SB28	SB28	SB28	SB29	SB29	SB29	SB30	SB30	SB30
TopDepth	4.75	0.75	2.75	4.75	0.75	2.75	4.75	0.75	2.75	4.75
BottomDepth	5.25	1.25	3.25	5.25	1.25	3.25	5.25	1.25	3.25	5.25
Basis	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dilution	1	100	1	1	1000	1	1	1000	1	1
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tetrachloroethene	0.002	5.8	0.015	0.24	16.3	0.12	0.006	19.8	0.053	0.046
Trichloroethene	<0.002	<0.2	0.002	0.002	<2.3	0.009	<0.002	<2.4	0.007	<0.002

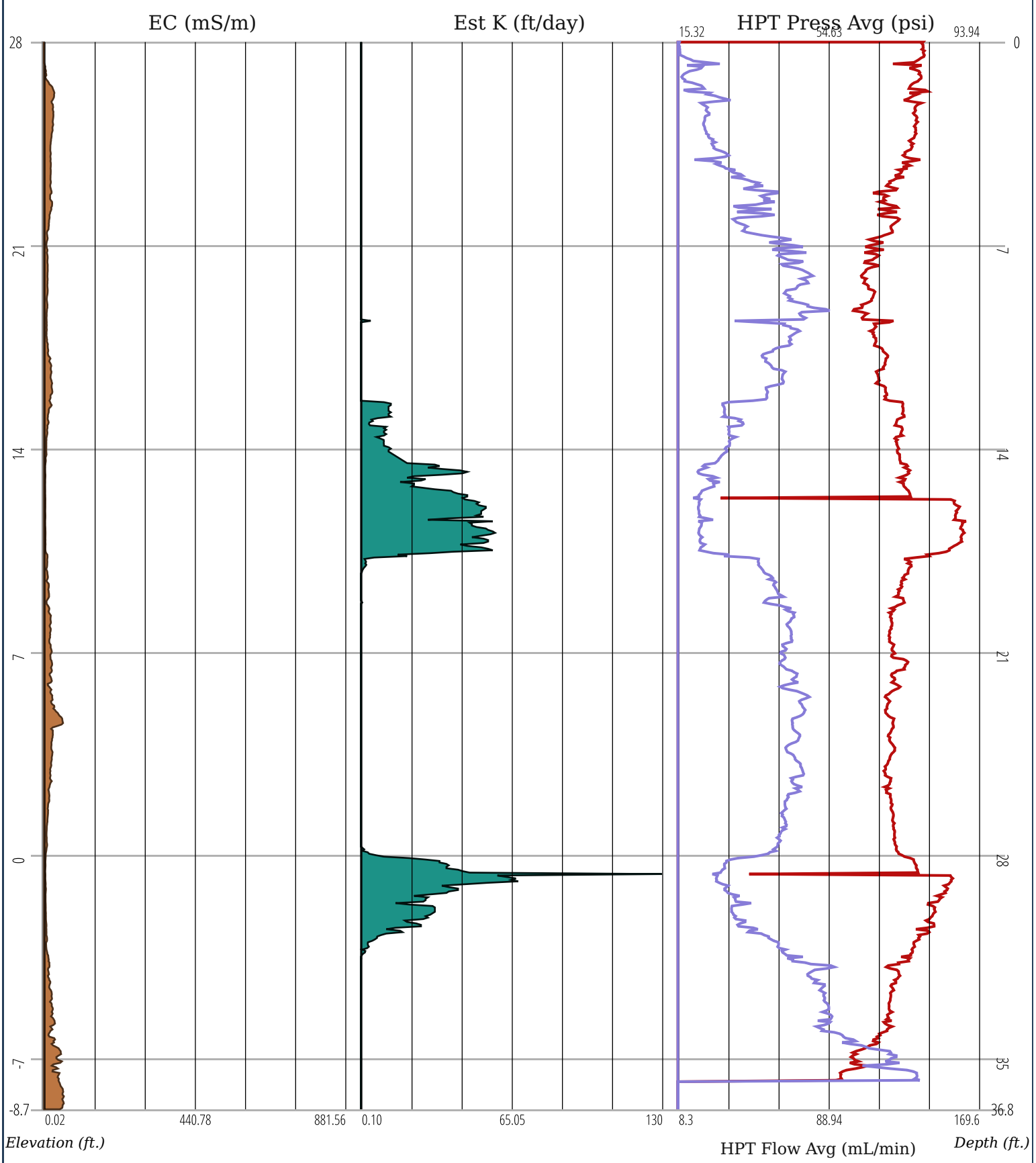
SampleID	OMS-28-SB31-1	OMS-28-SB31-3	OMS-28-SB31-5
Date	5/18/17	5/16/17	5/16/17
StationName	SB31	SB31	SB31
TopDepth	0.75	2.75	4.75
BottomDepth	1.25	3.25	5.25
Basis	Dry	Dry	Dry
Dilution	1	1	1
Units	mg/kg	mg/kg	mg/kg
Tetrachloroethene	0.77	0.042	0.089
Trichloroethene	0.009	0.005	<0.002



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6543,-88.0651	28 - (-8.7) ft.

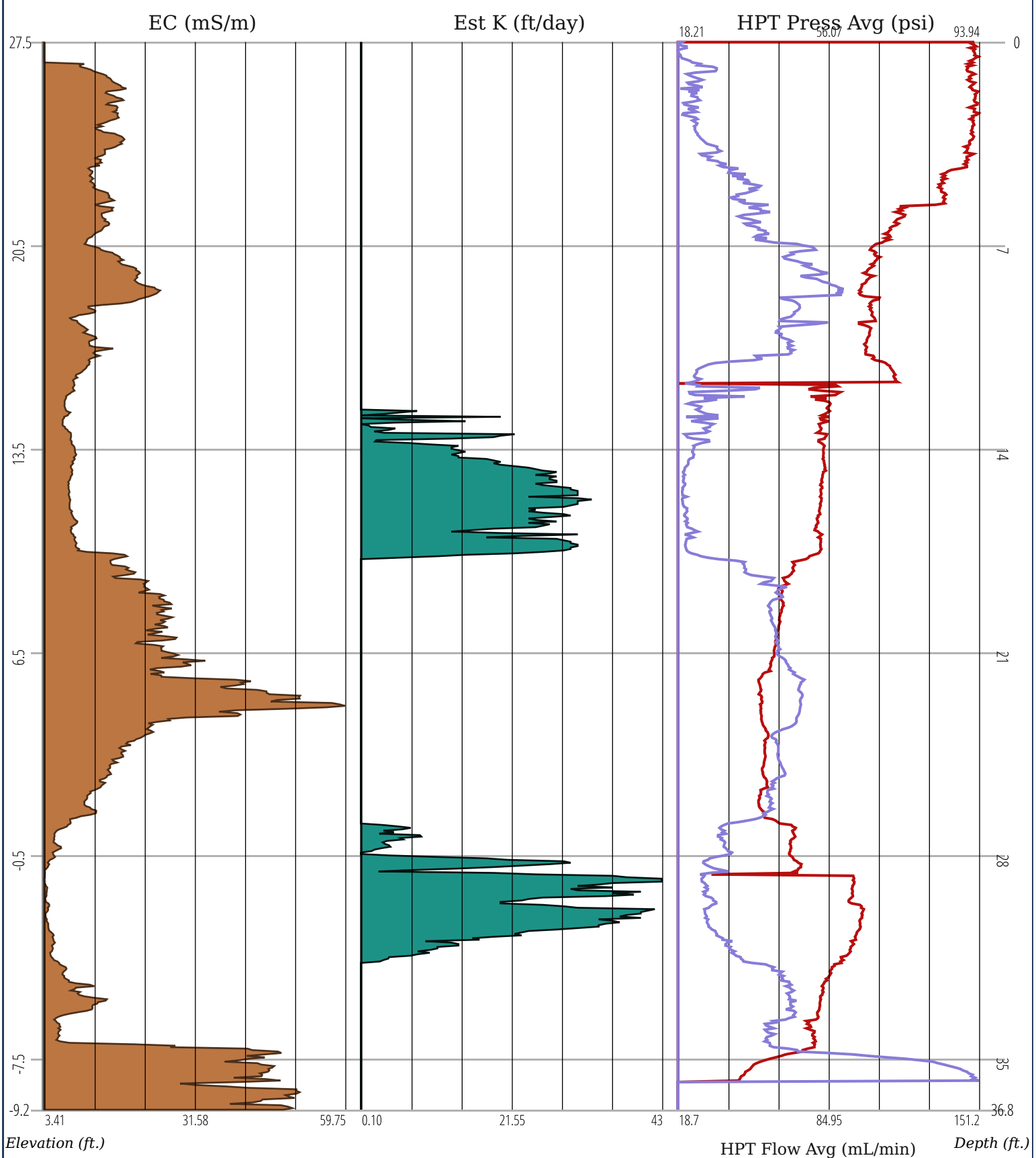
Depth Range:
0 - 36.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6543,-88.0651	28 - (-8.7) ft.

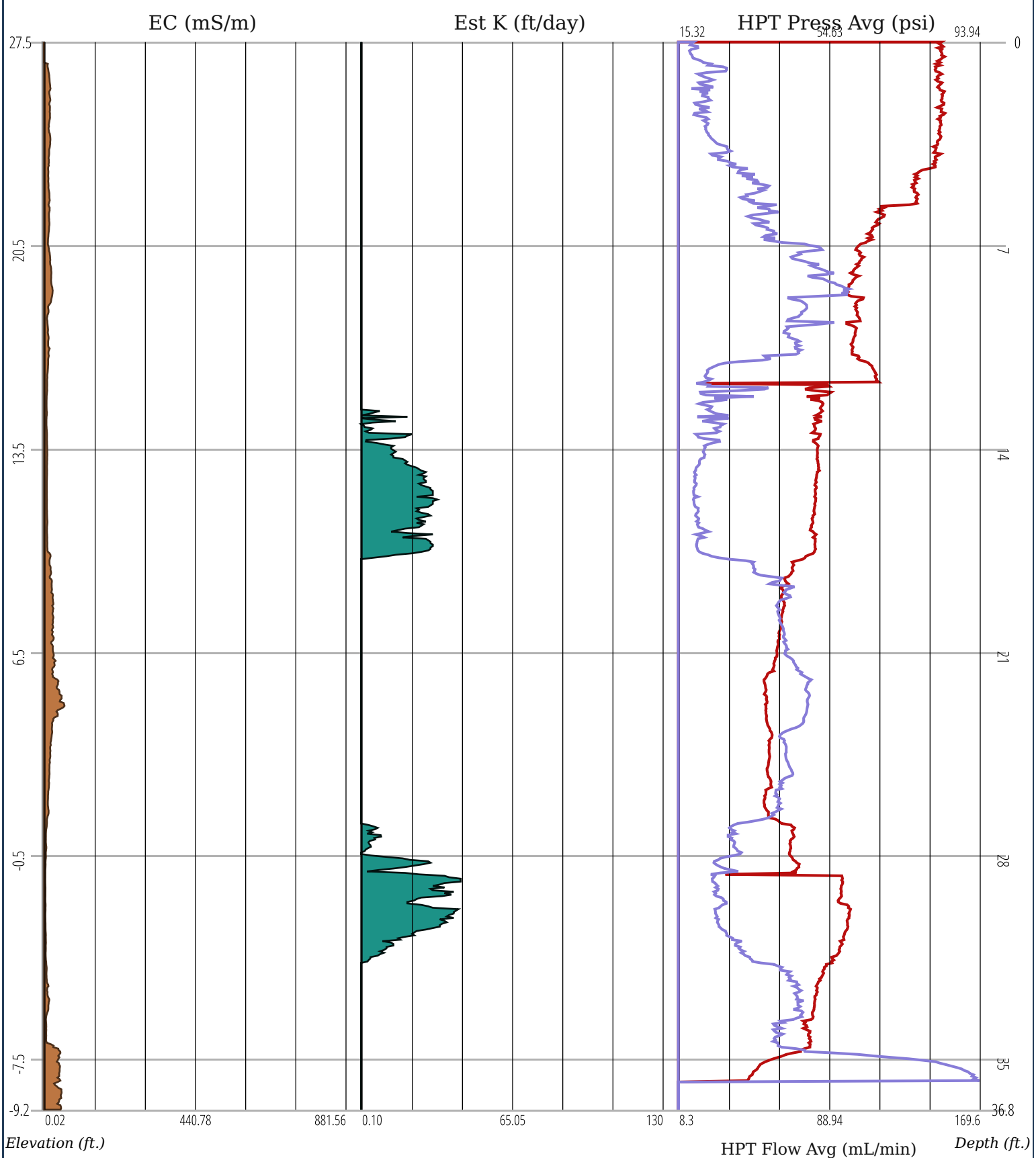
Depth Range:
0 - 36.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6546,-88.0650	27.5 - (-9.2) ft.

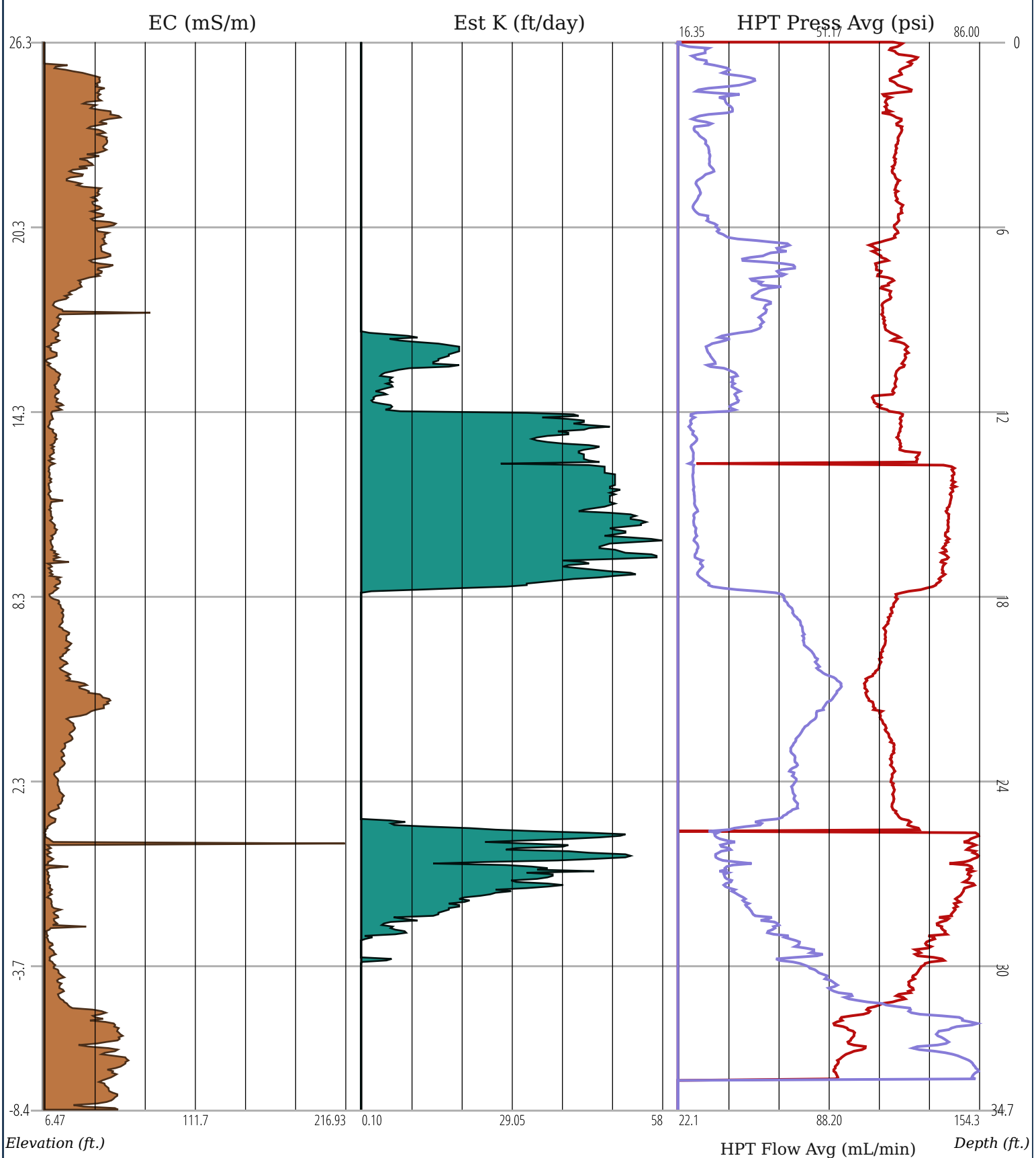
Depth Range:
0 - 36.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6546,-88.0650	27.5 - (-9.2) ft.

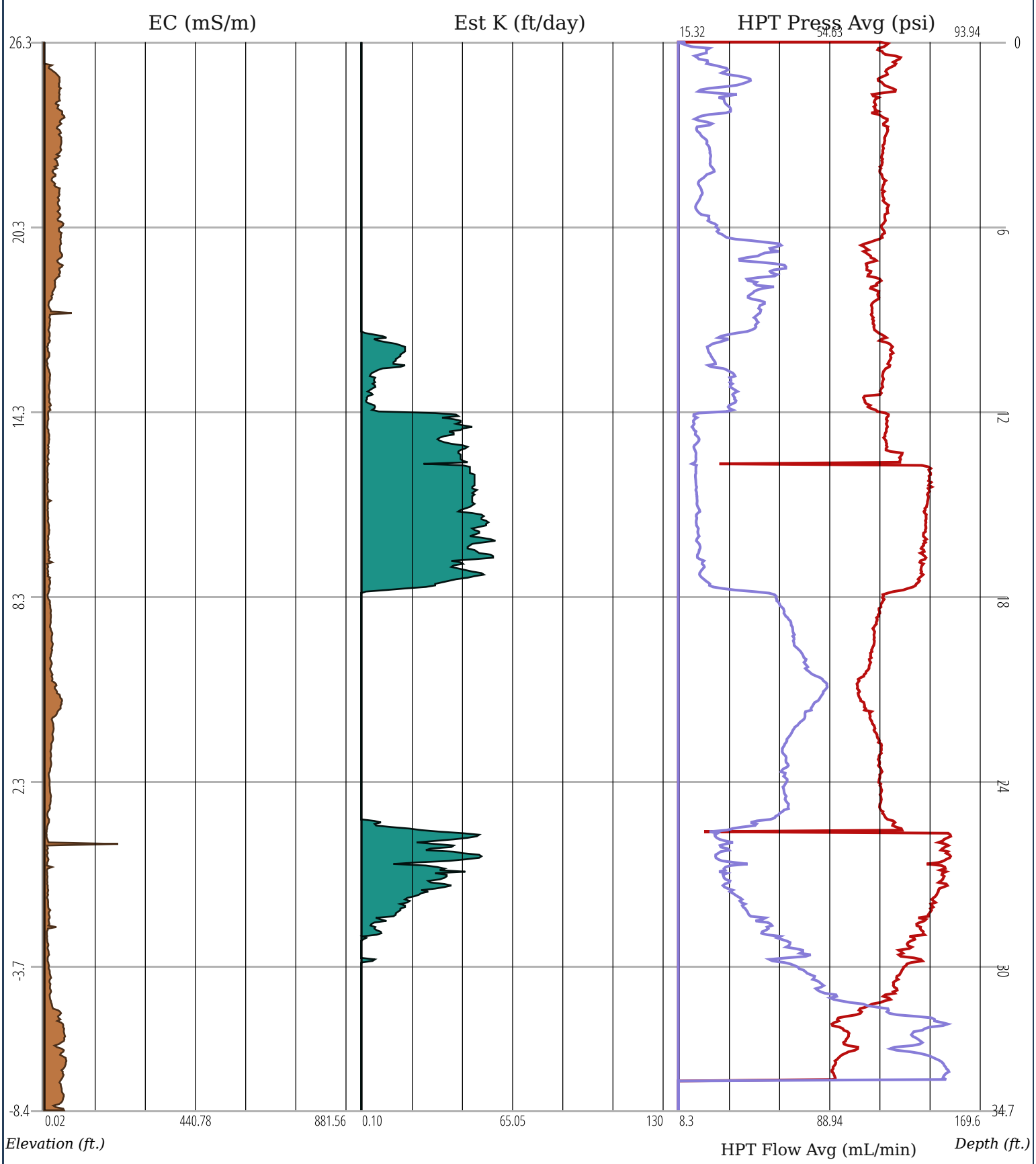
Depth Range:
0 - 36.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6543,-88.0653	26.3 - (-8.4) ft.

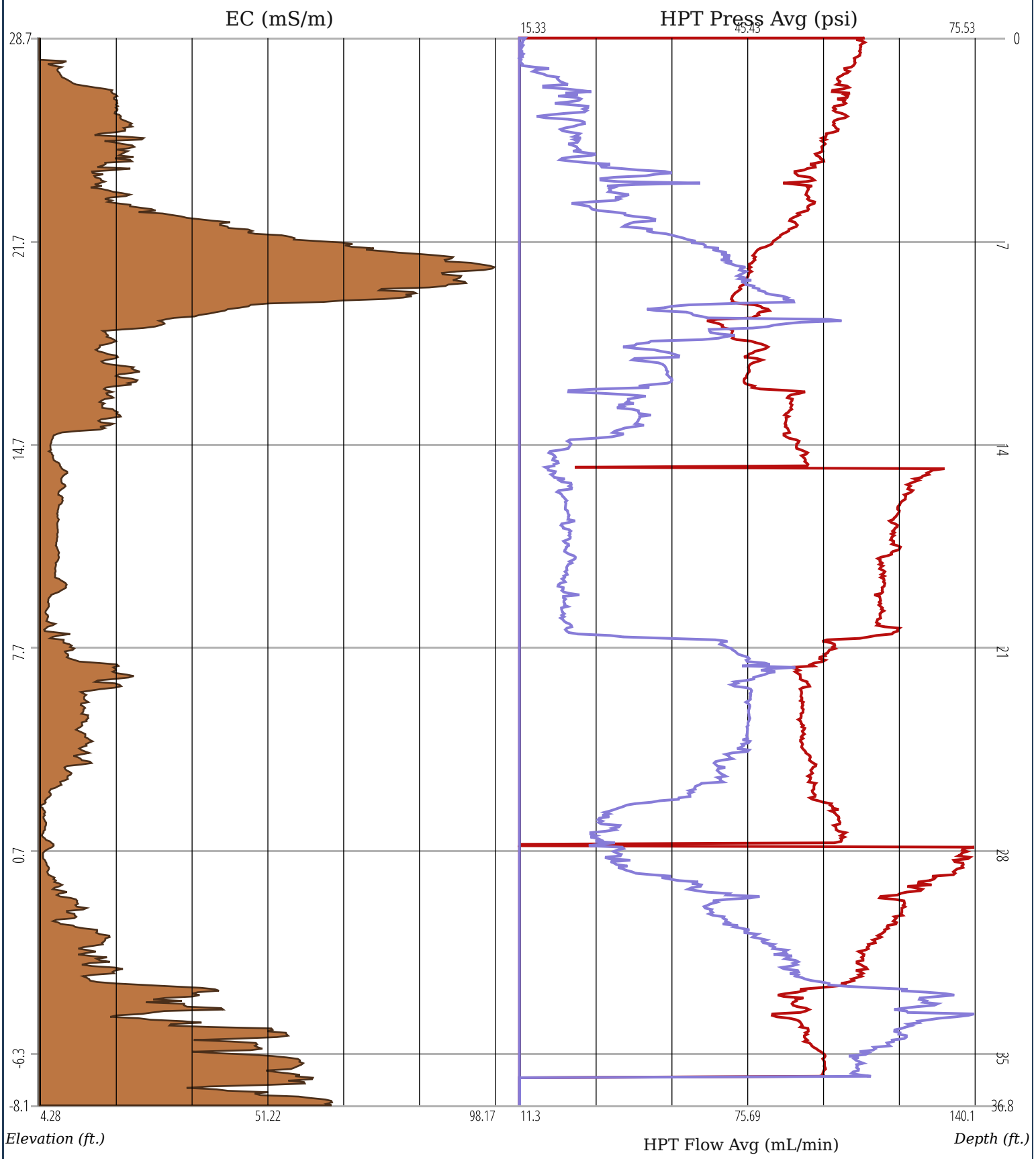
Depth Range:
0 - 34.7 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6543,-88.0653	26.3 - (-8.4) ft.

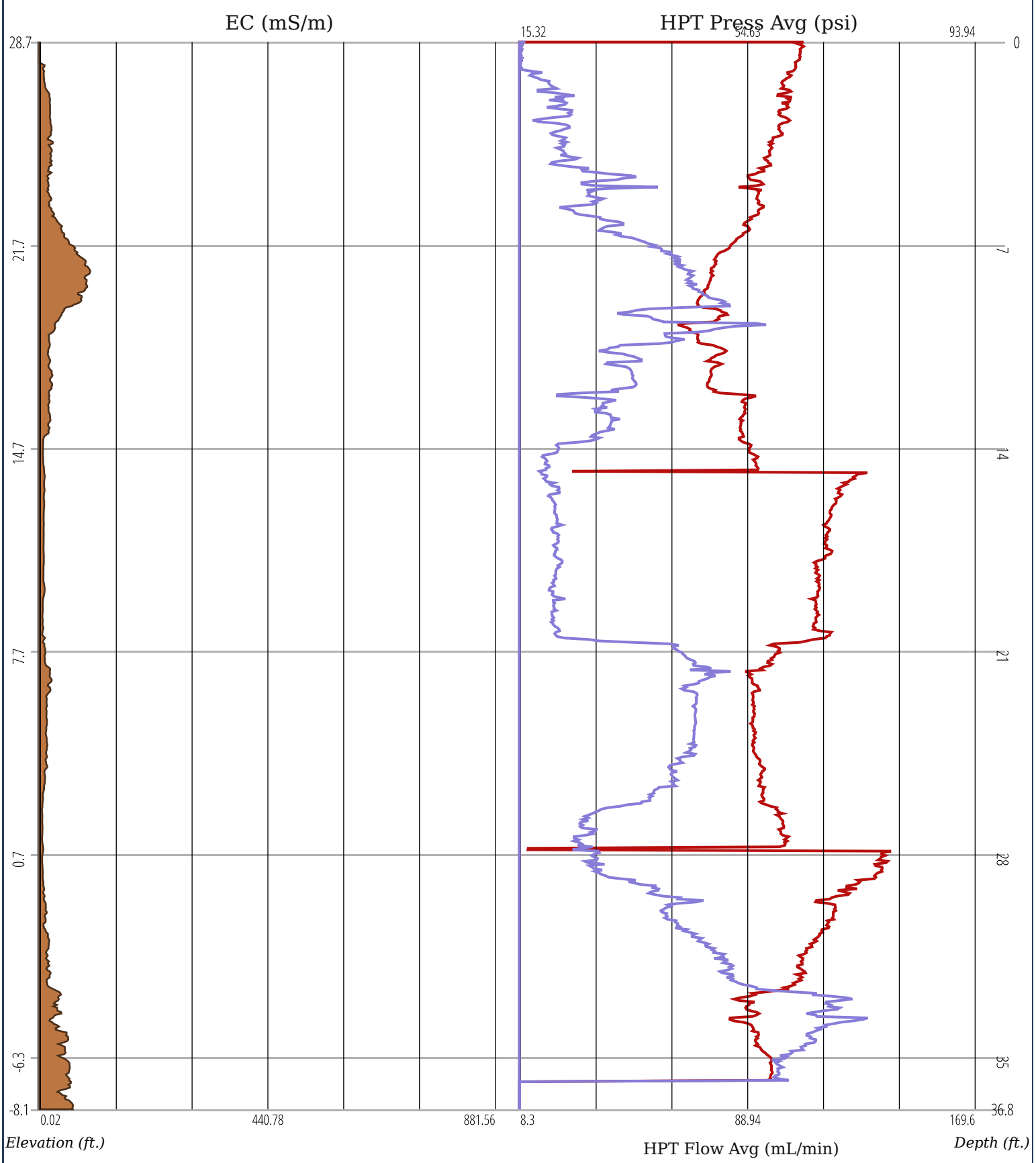
Depth Range:
0 - 34.7 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6546,-88.0652	28.7 - (-8.1) ft.

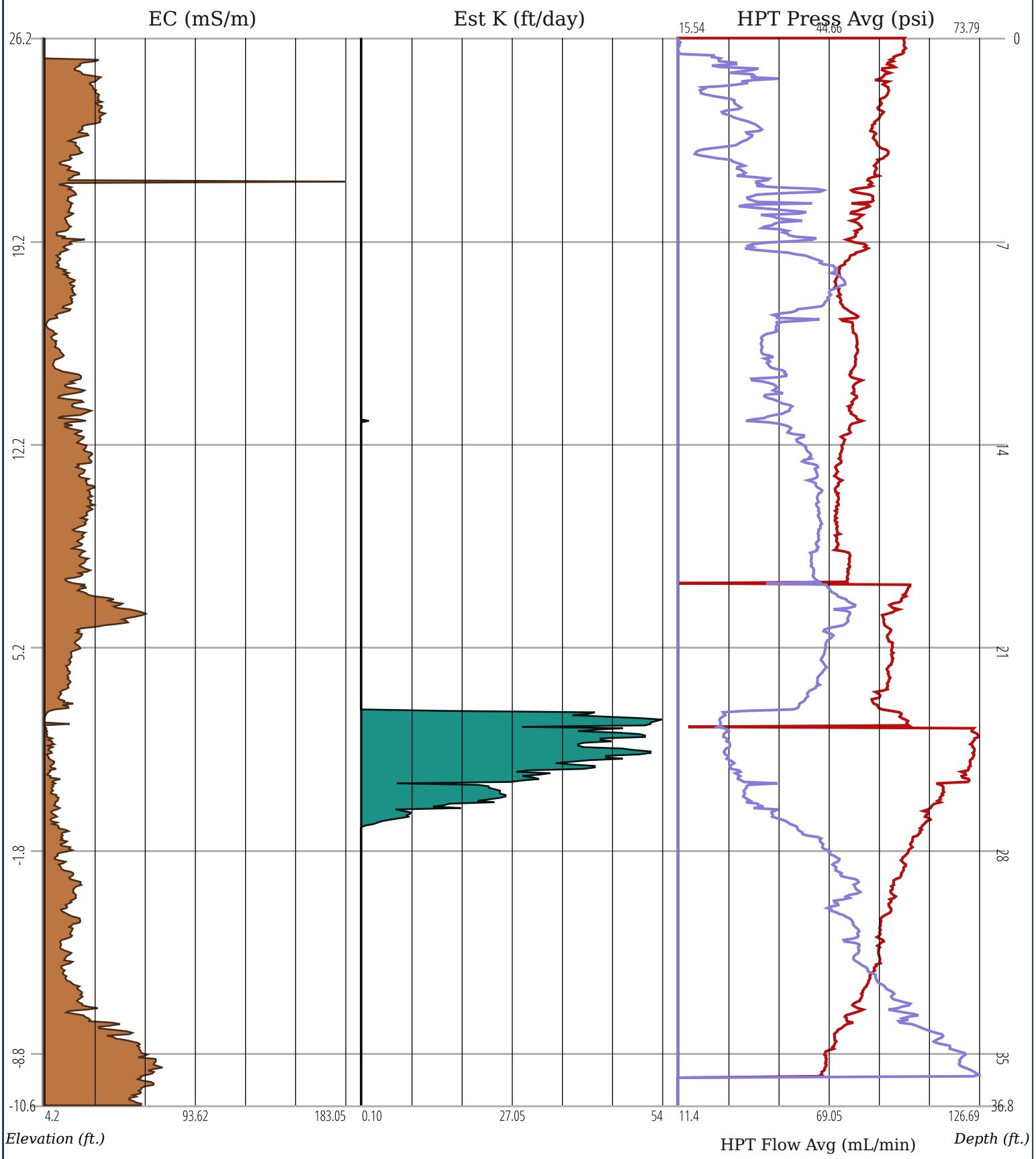
Depth Range:
0 - 36.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6546,-88.0652	28.7 - (-8.1) ft.

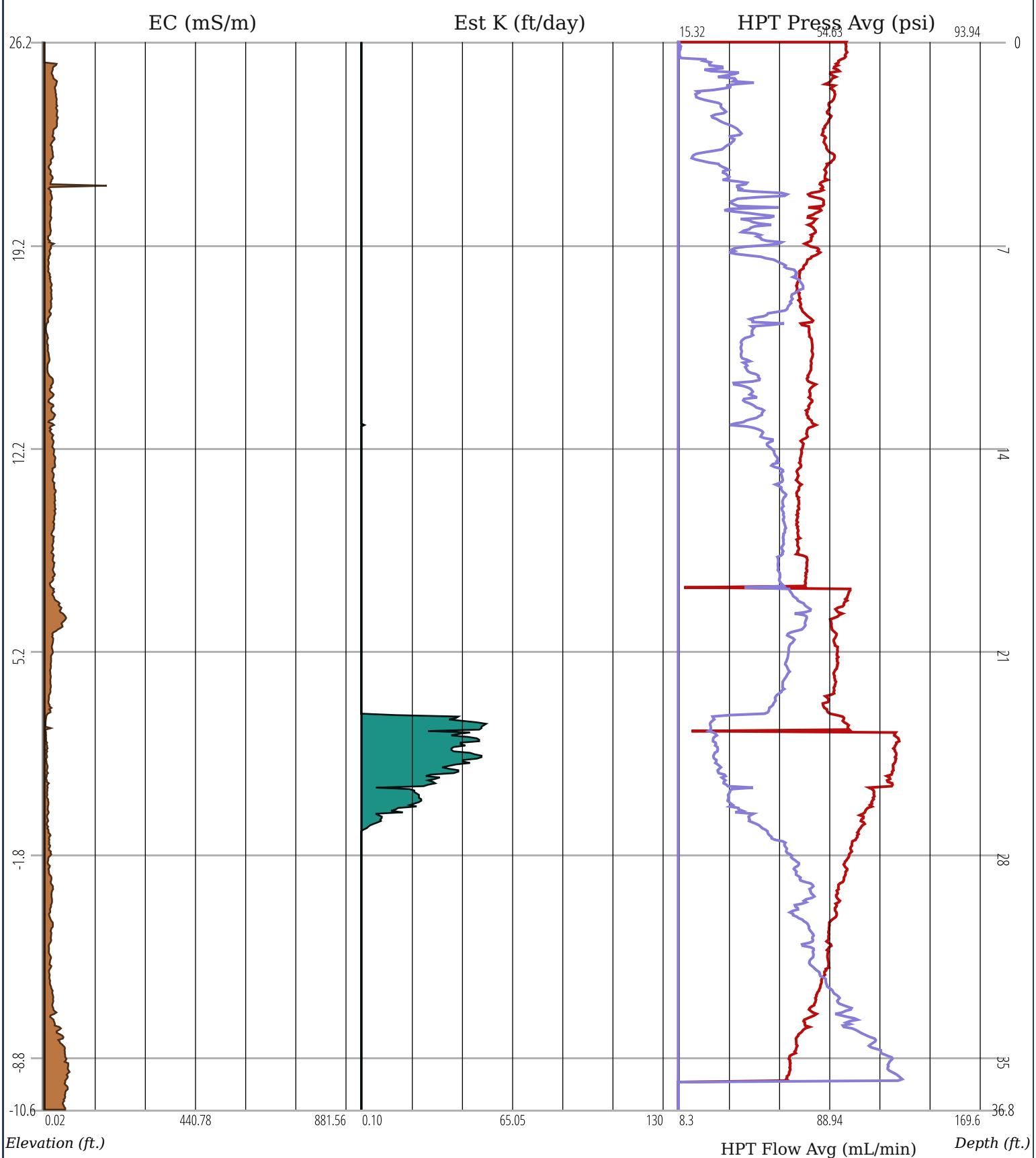
Depth Range:
0 - 36.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6545,-88.0654	26.2 - (-10.6) ft.

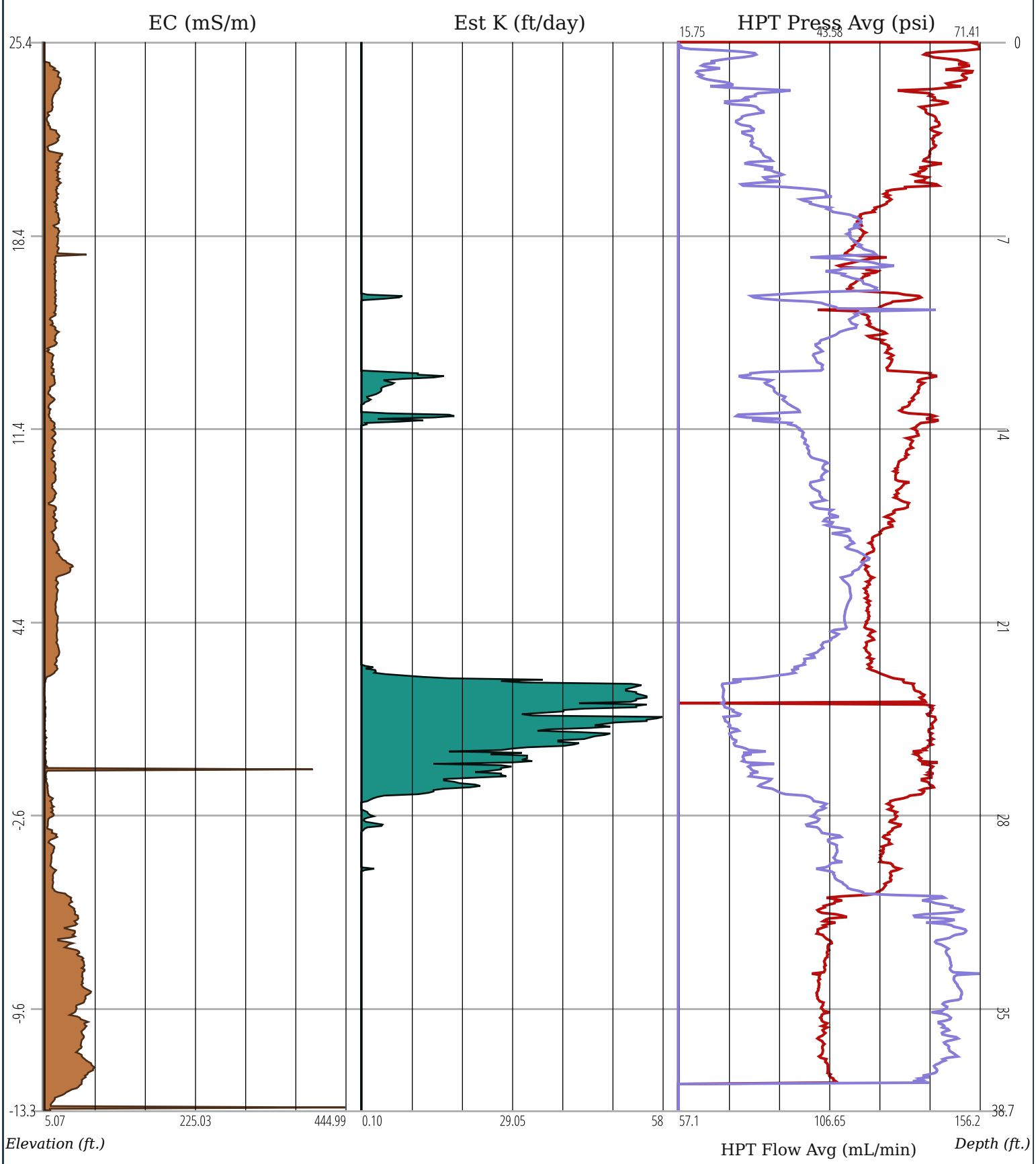
Depth Range:
0 - 36.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6545,-88.0654	26.2 - (-10.6) ft.

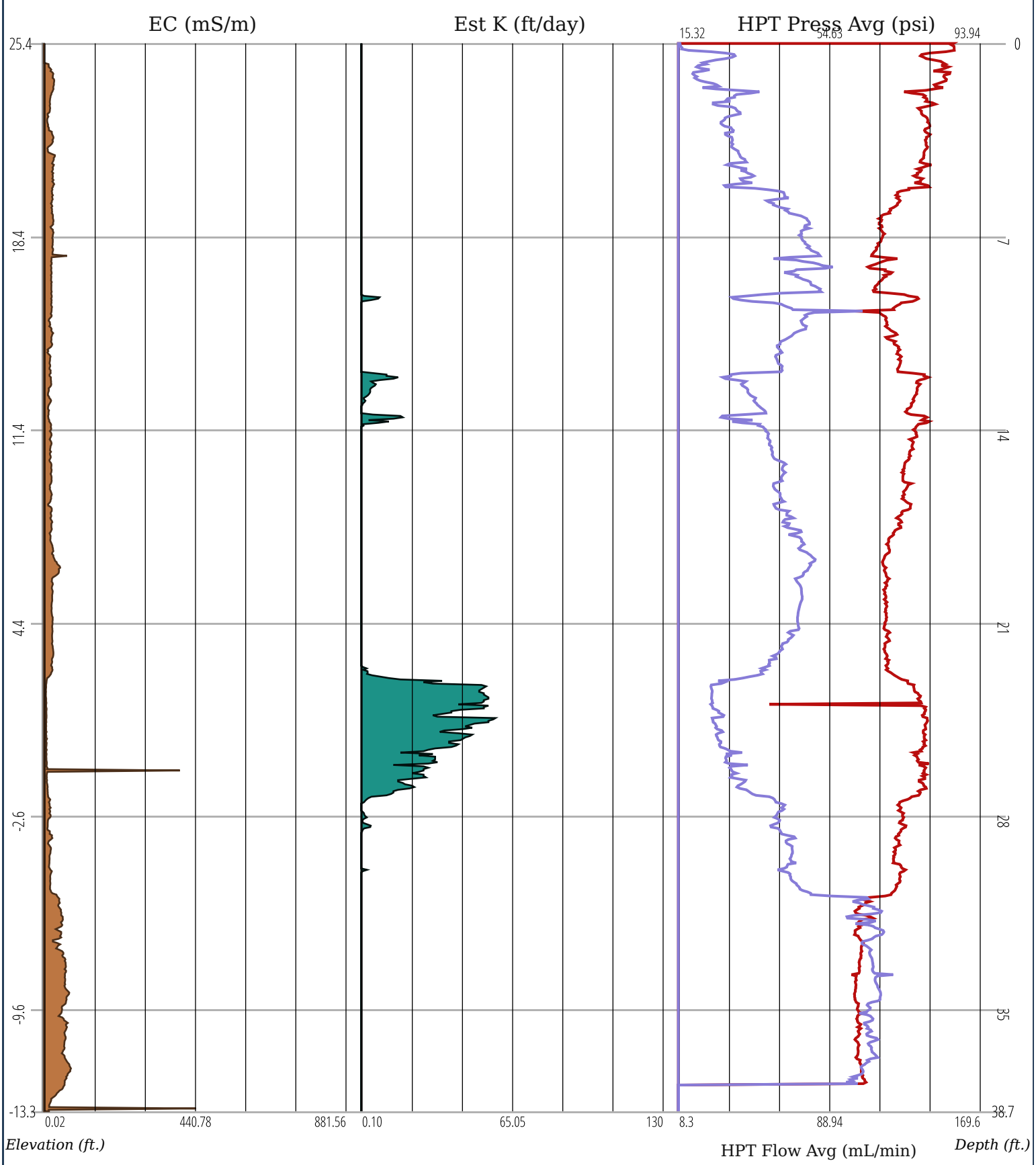
Depth Range:
0 - 36.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6546,-88.0654	25.4 - (-13.3) ft.

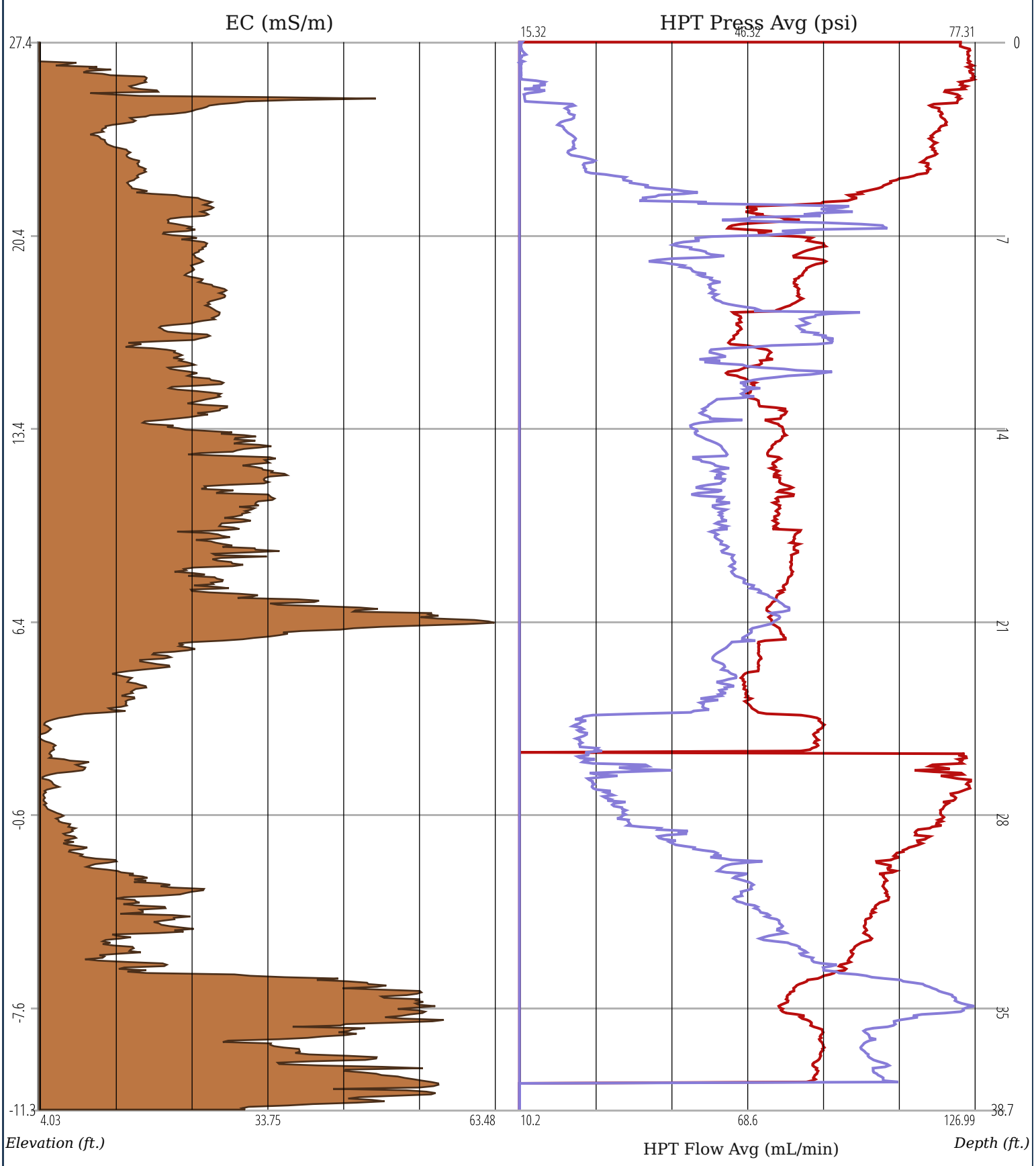
Depth Range:
0 - 38.7 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6546,-88.0654	25.4 - (-13.3) ft.

Depth Range:
0 - 38.7 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6548,-88.0654	27.4 - (-11.3) ft.

Depth Range:
0 - 38.7 ft.

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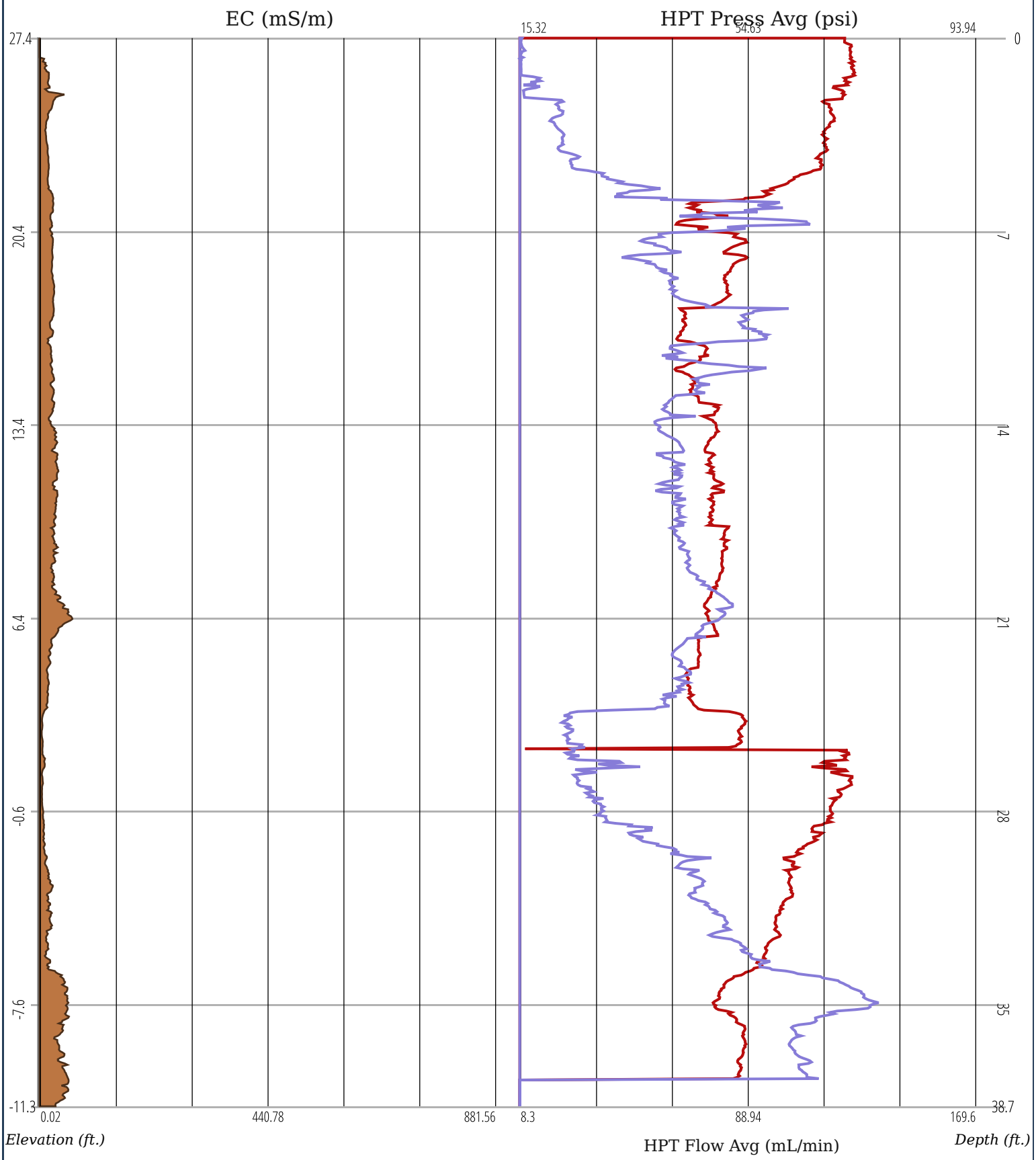
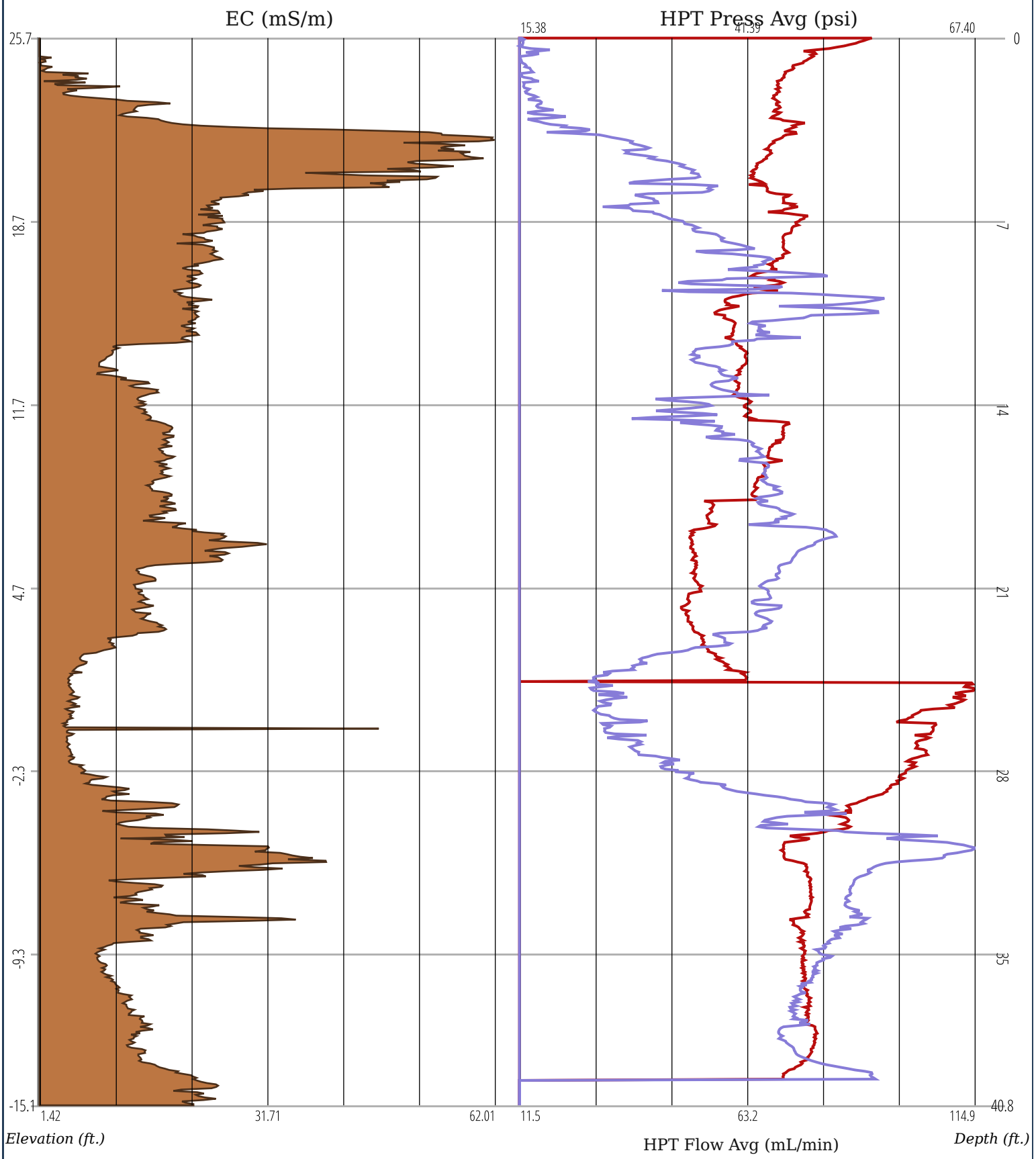


smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6548,-88.0654	27.4 - (-11.3) ft.

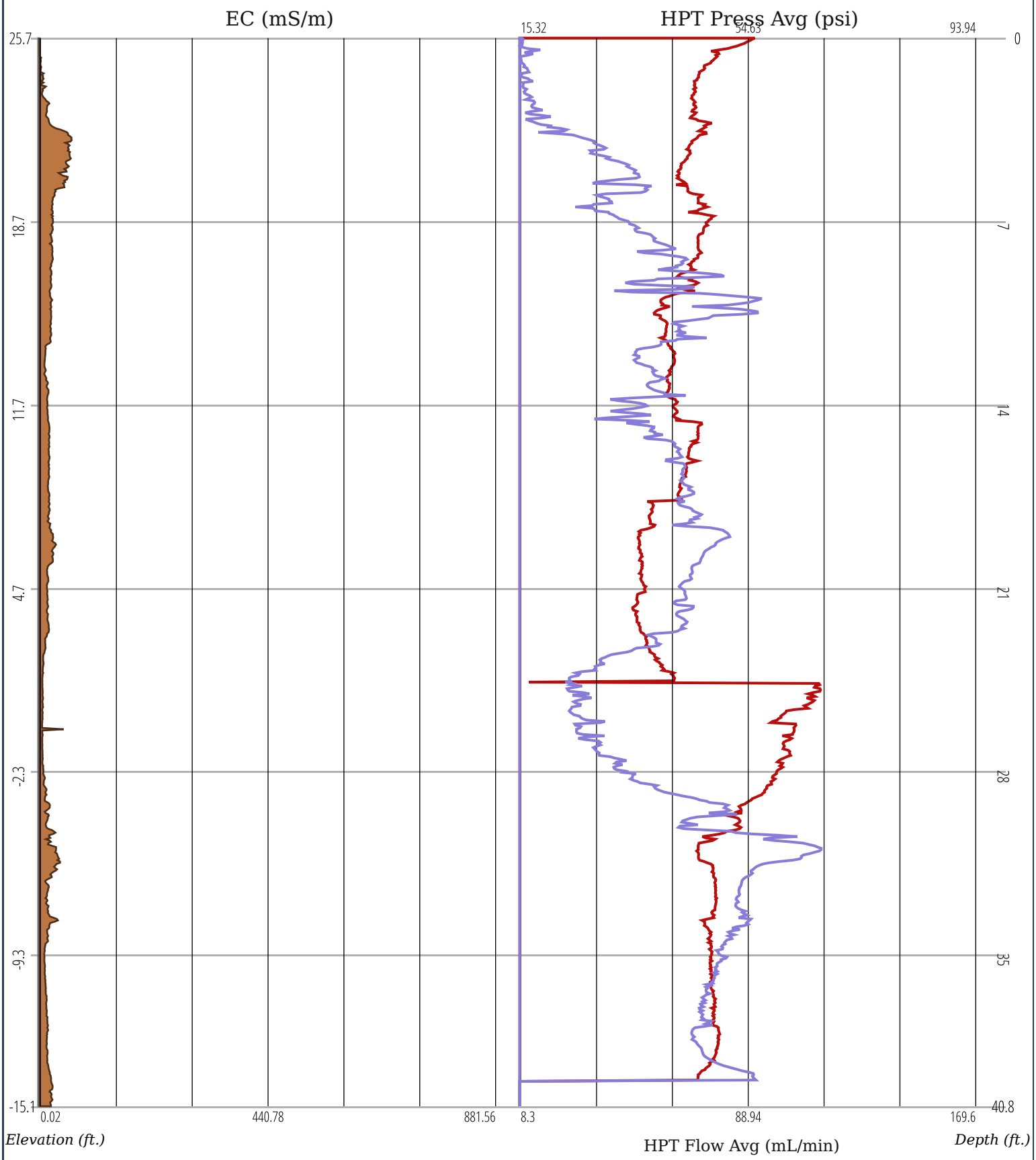
Depth Range:
0 - 38.7 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6547,-88.0656	25.7 - (-15.1) ft.

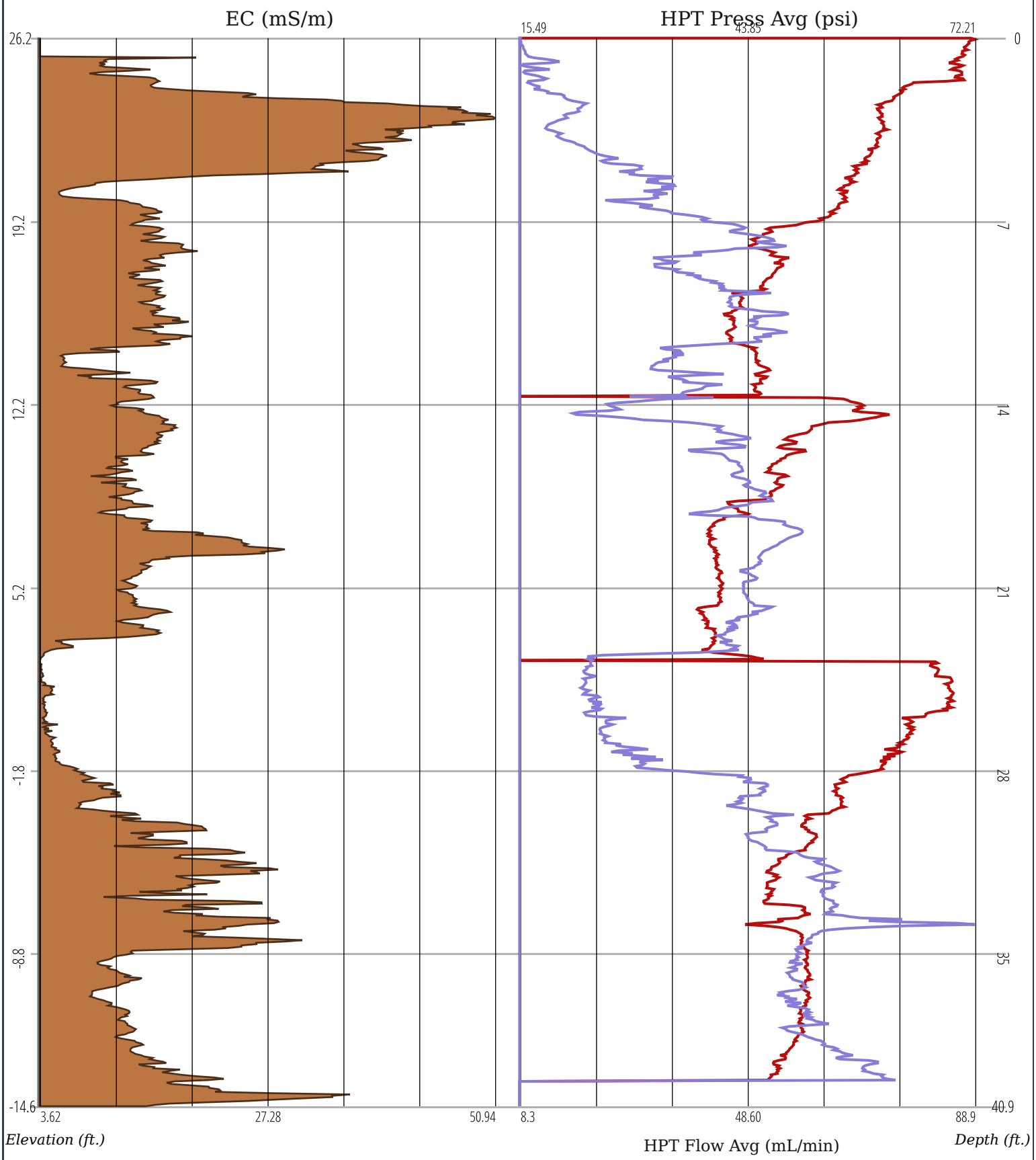
Depth Range:
0 - 40.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6547,-88.0656	25.7 - (-15.1) ft.

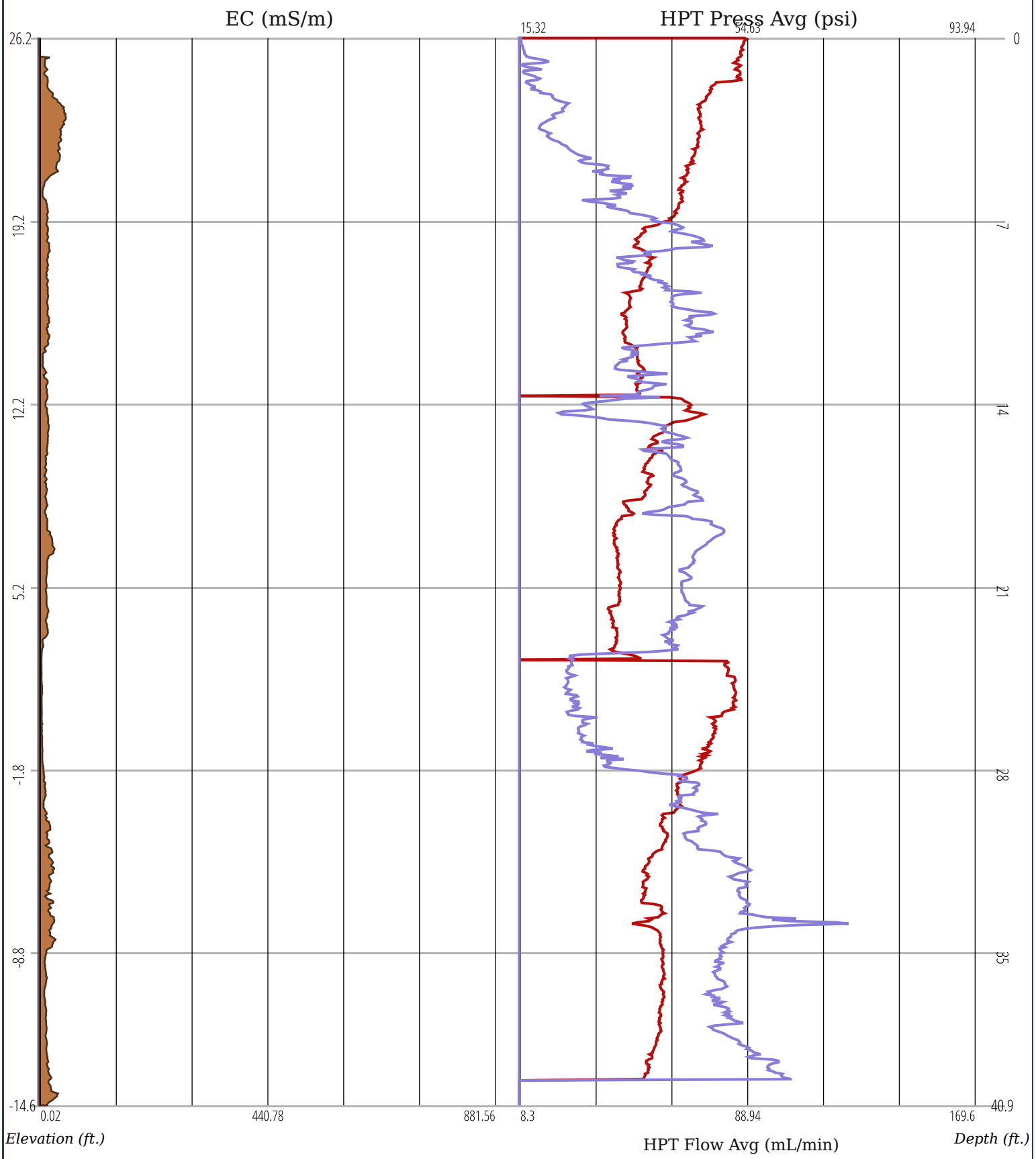
Depth Range:
0 - 40.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6548,-88.0656	26.2 - (-14.6) ft.

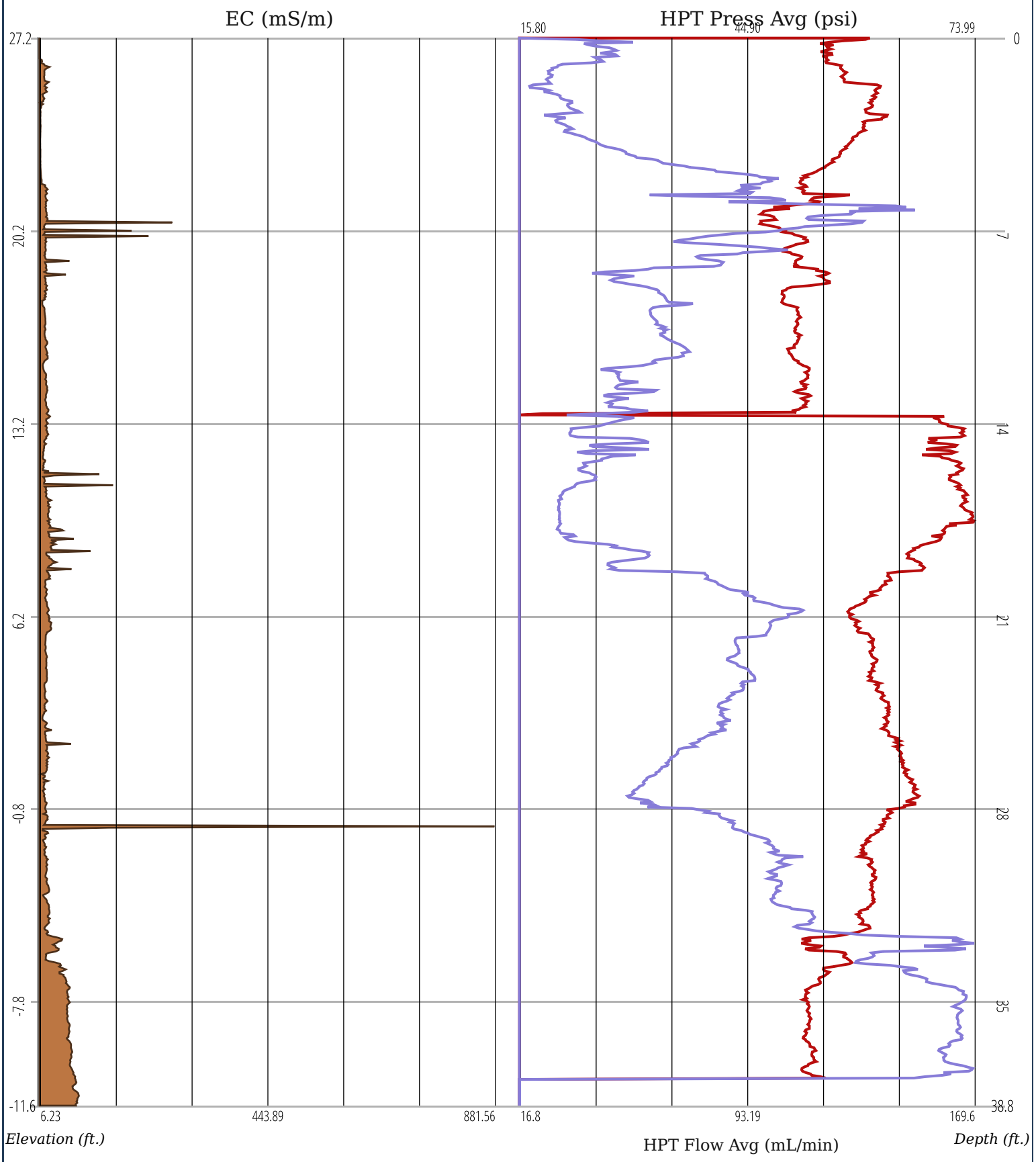
Depth Range:
0 - 40.9 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6548,-88.0656	26.2 - (-14.6) ft.

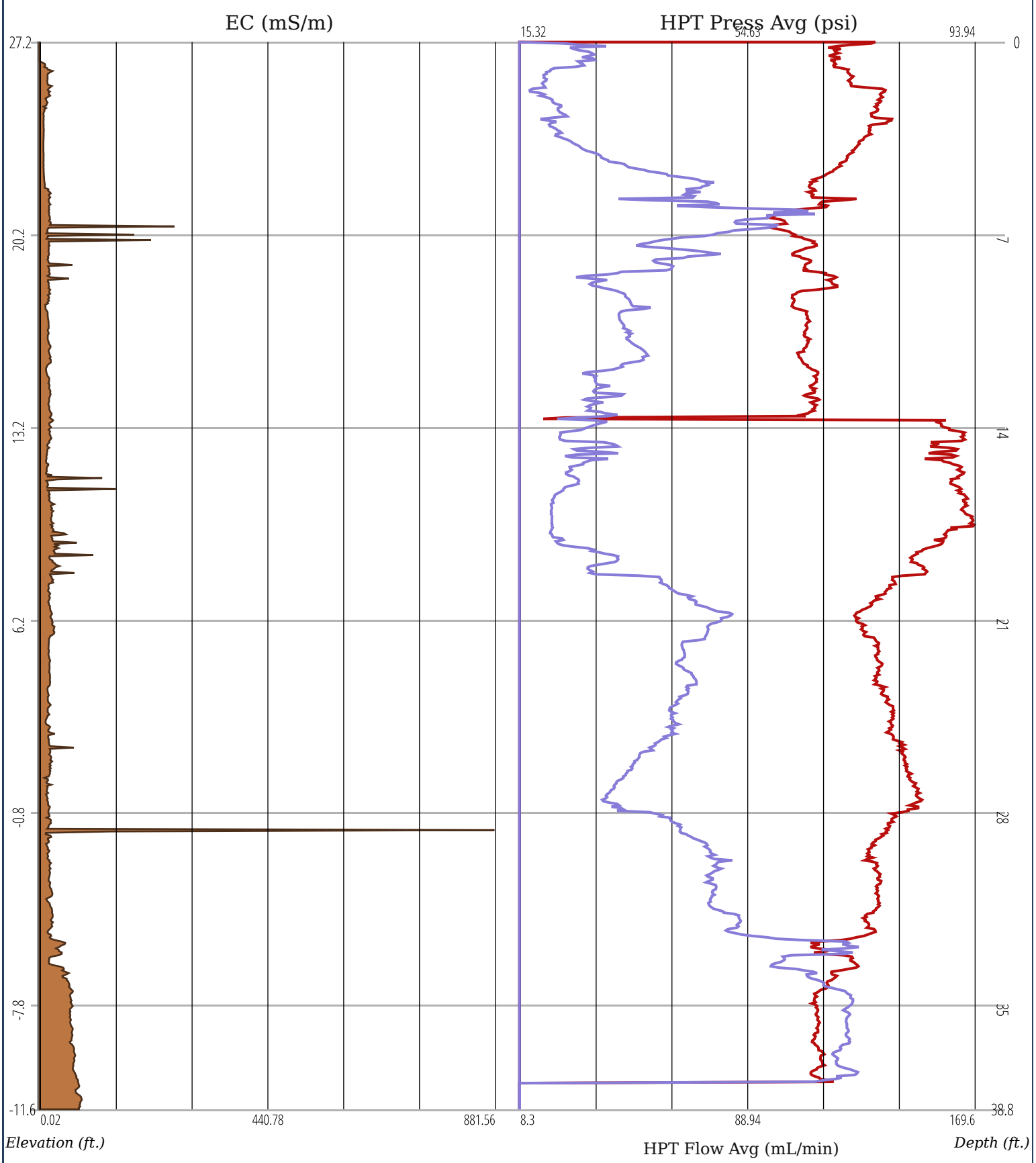
Depth Range:
0 - 40.9 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6547,-88.0651	27.2 - (-11.6) ft.

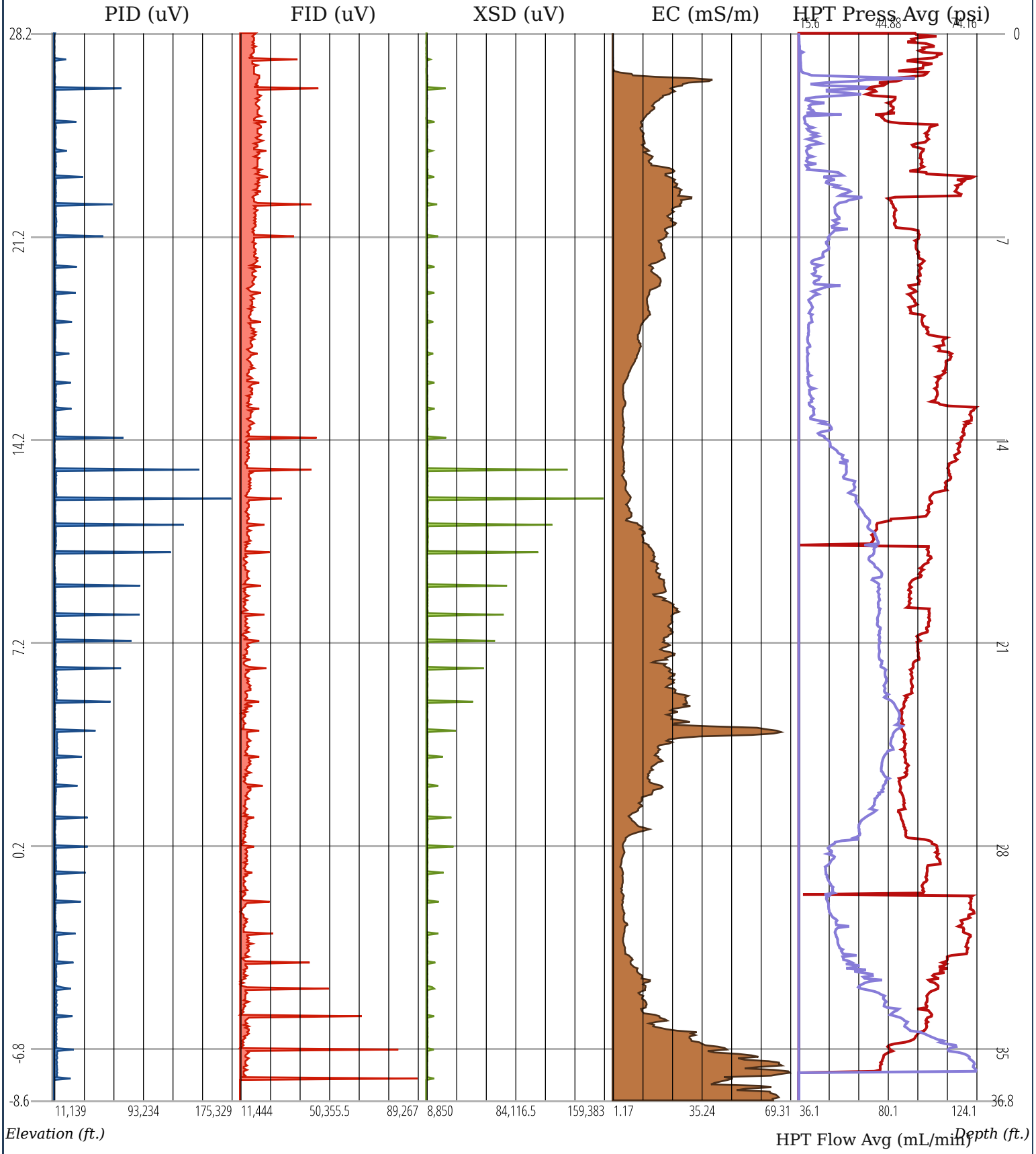
Depth Range:
0 - 38.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6547,-88.0651	27.2 - (-11.6) ft.

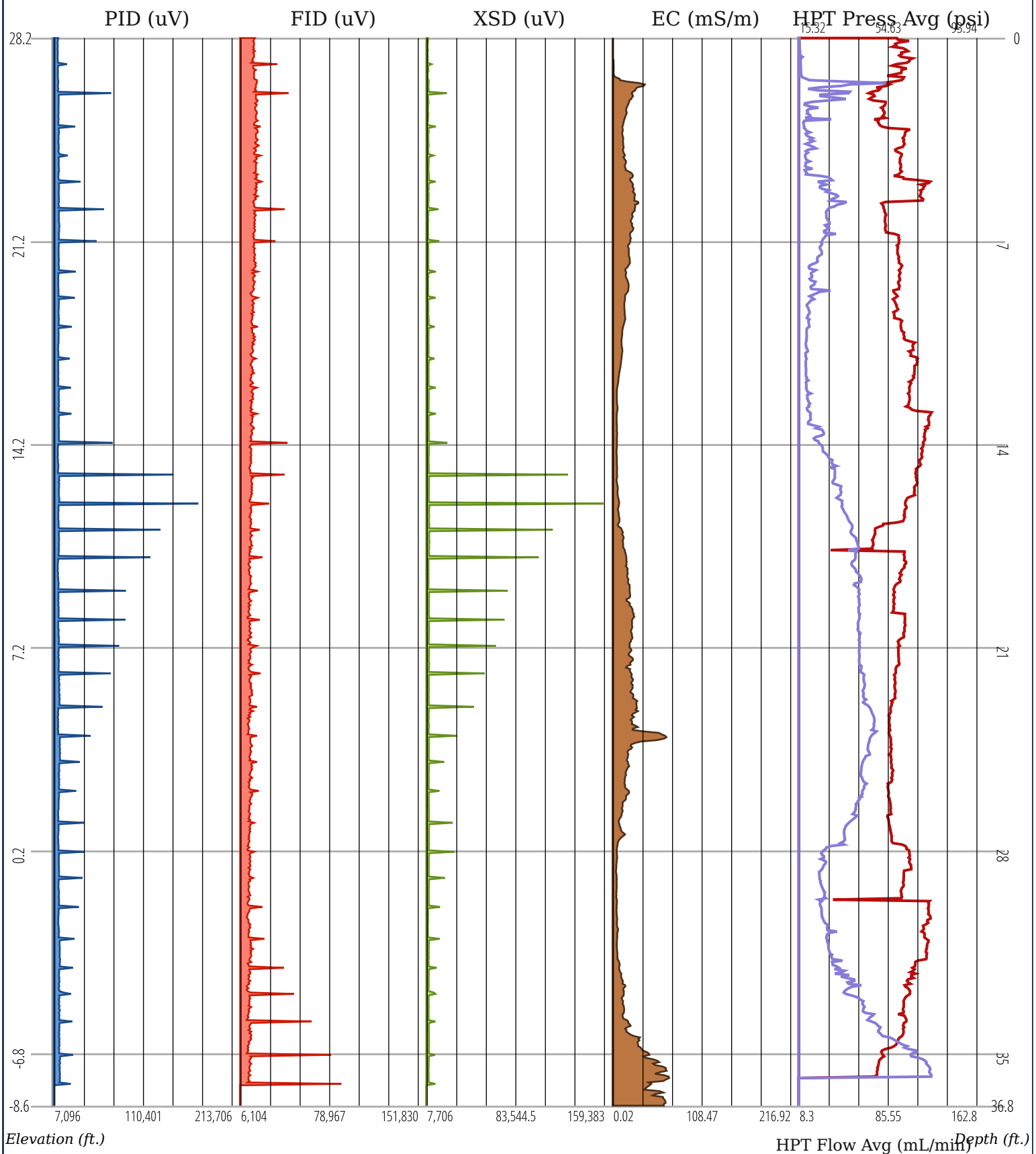
Depth Range:
0 - 38.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6543,-88.0649	28.2 - (-8.6) ft.

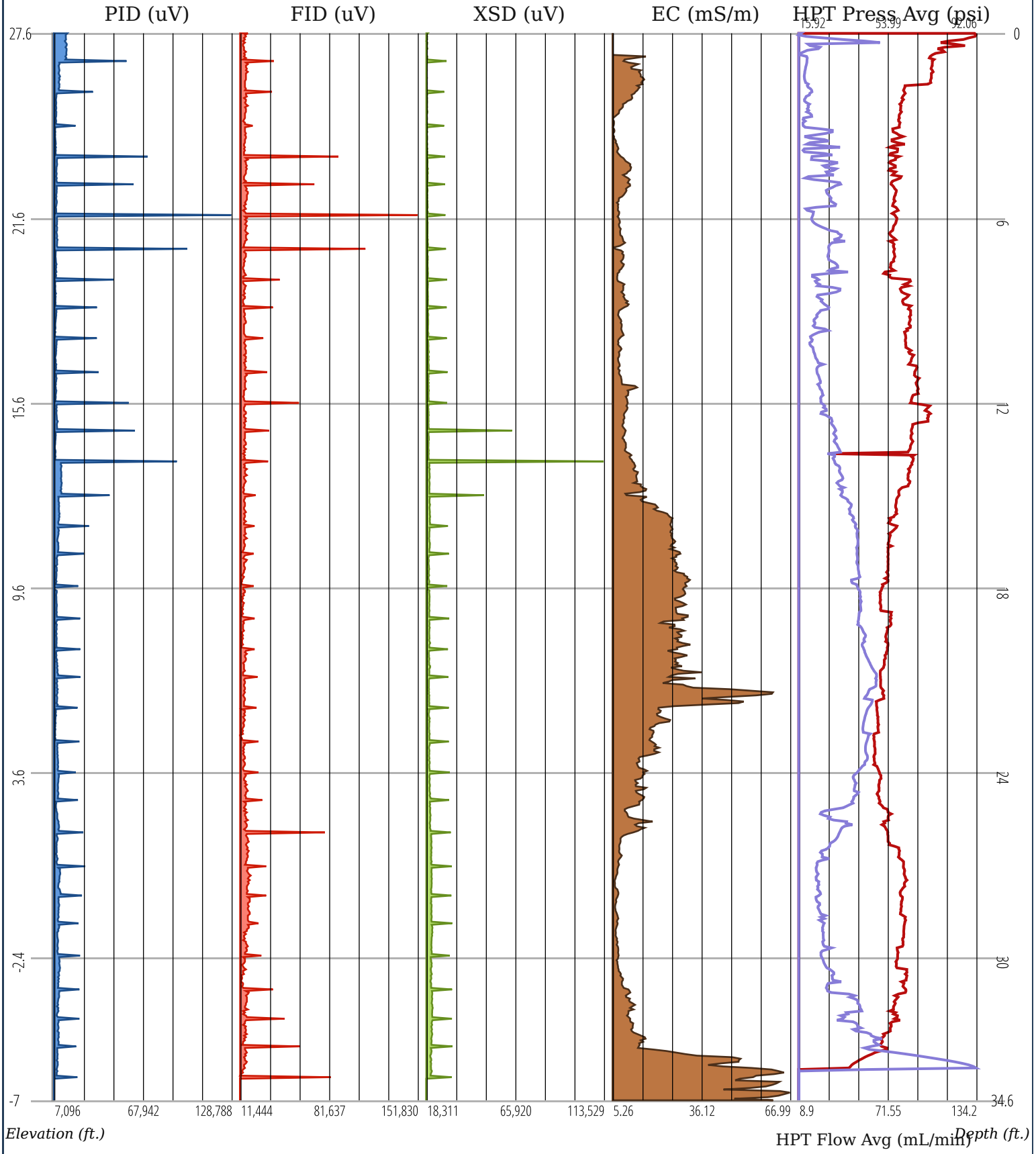
Depth Range:
0 - 36.8 ft.



smartdata

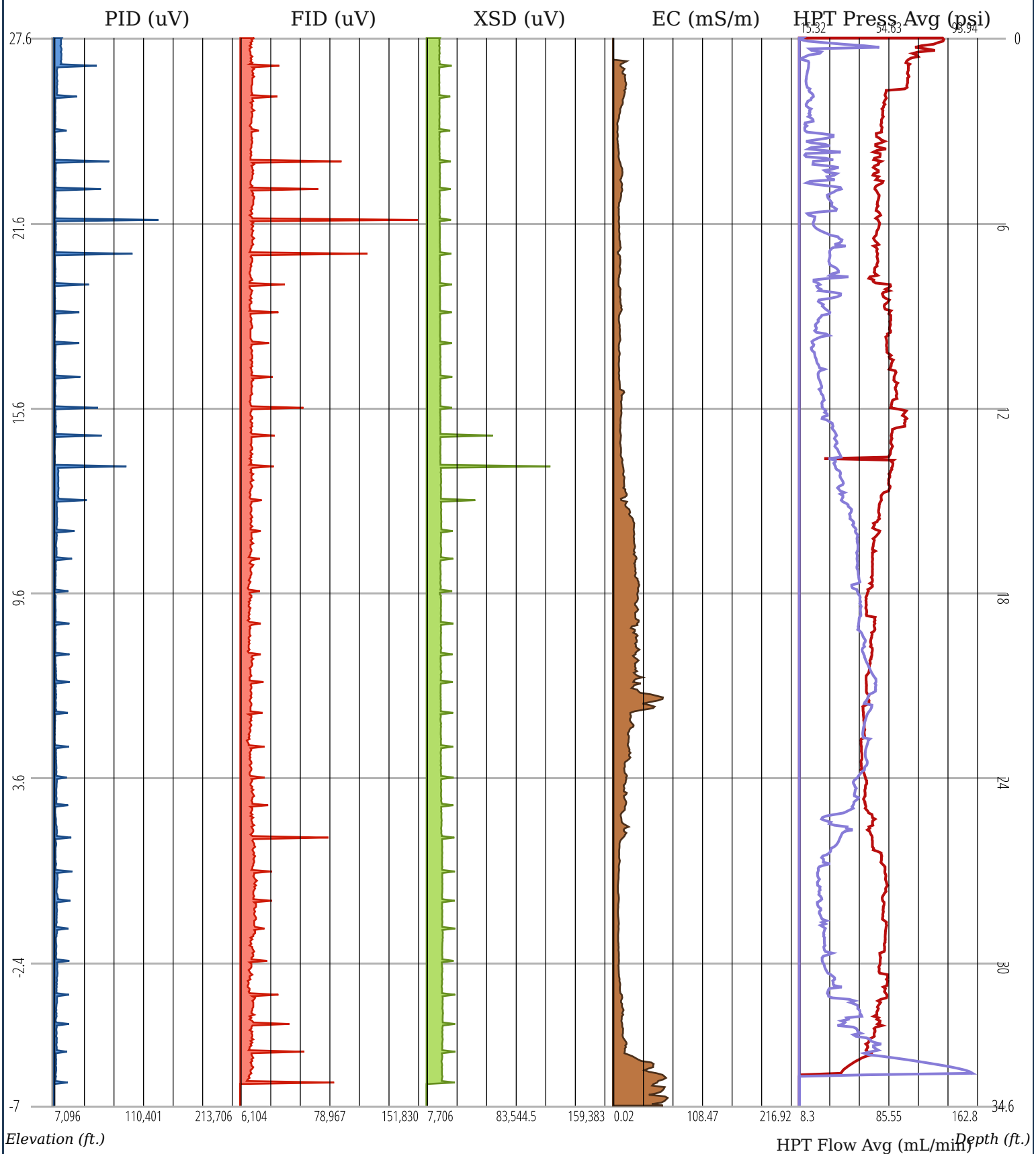
X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6543,-88.0649	28.2 - (-8.6) ft.

Depth Range:
0 - 36.8 ft.



X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6545,-88.0649	27.6 - (-7) ft.

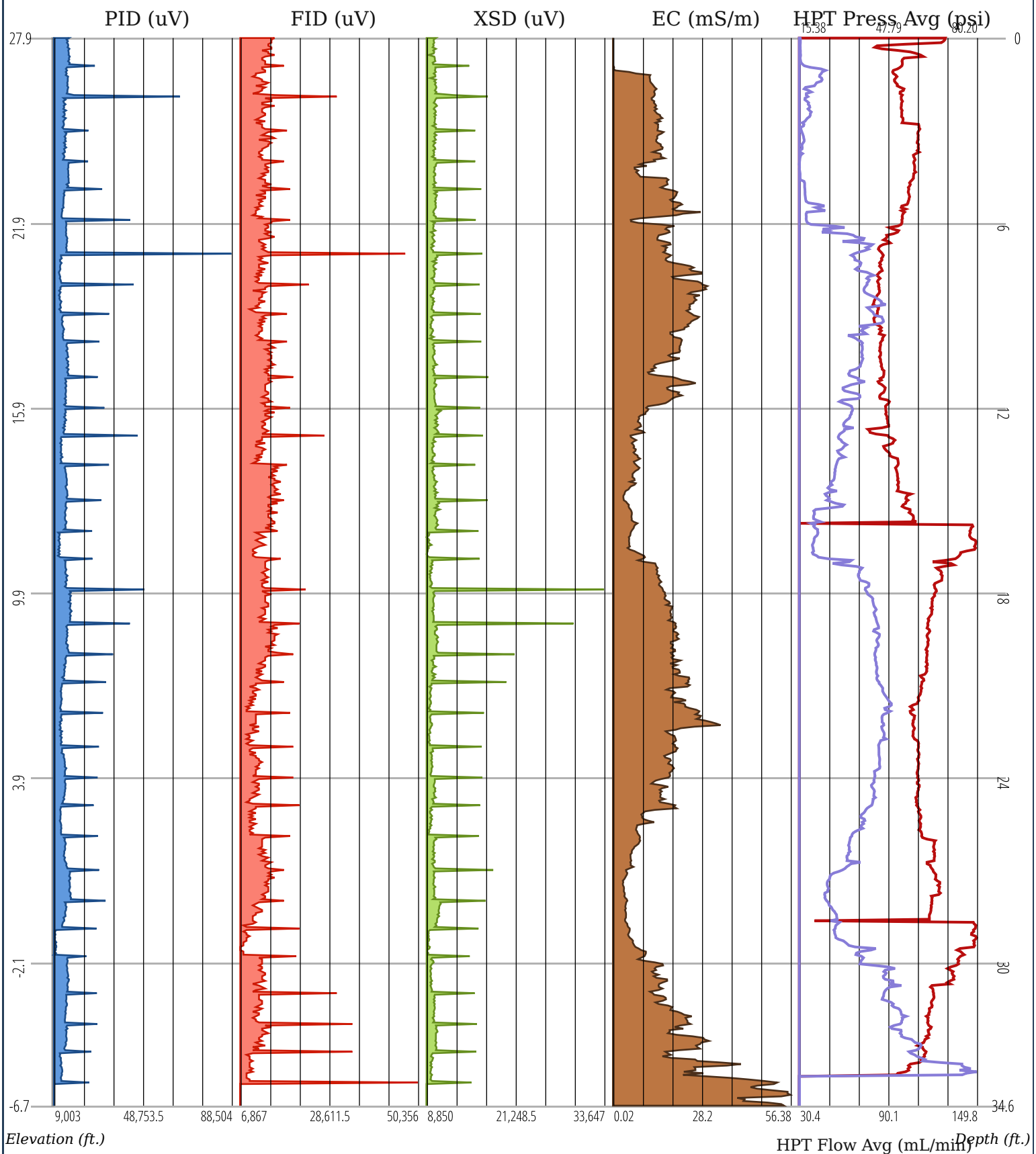
Depth Range:
0 - 34.6 ft.



smartdata

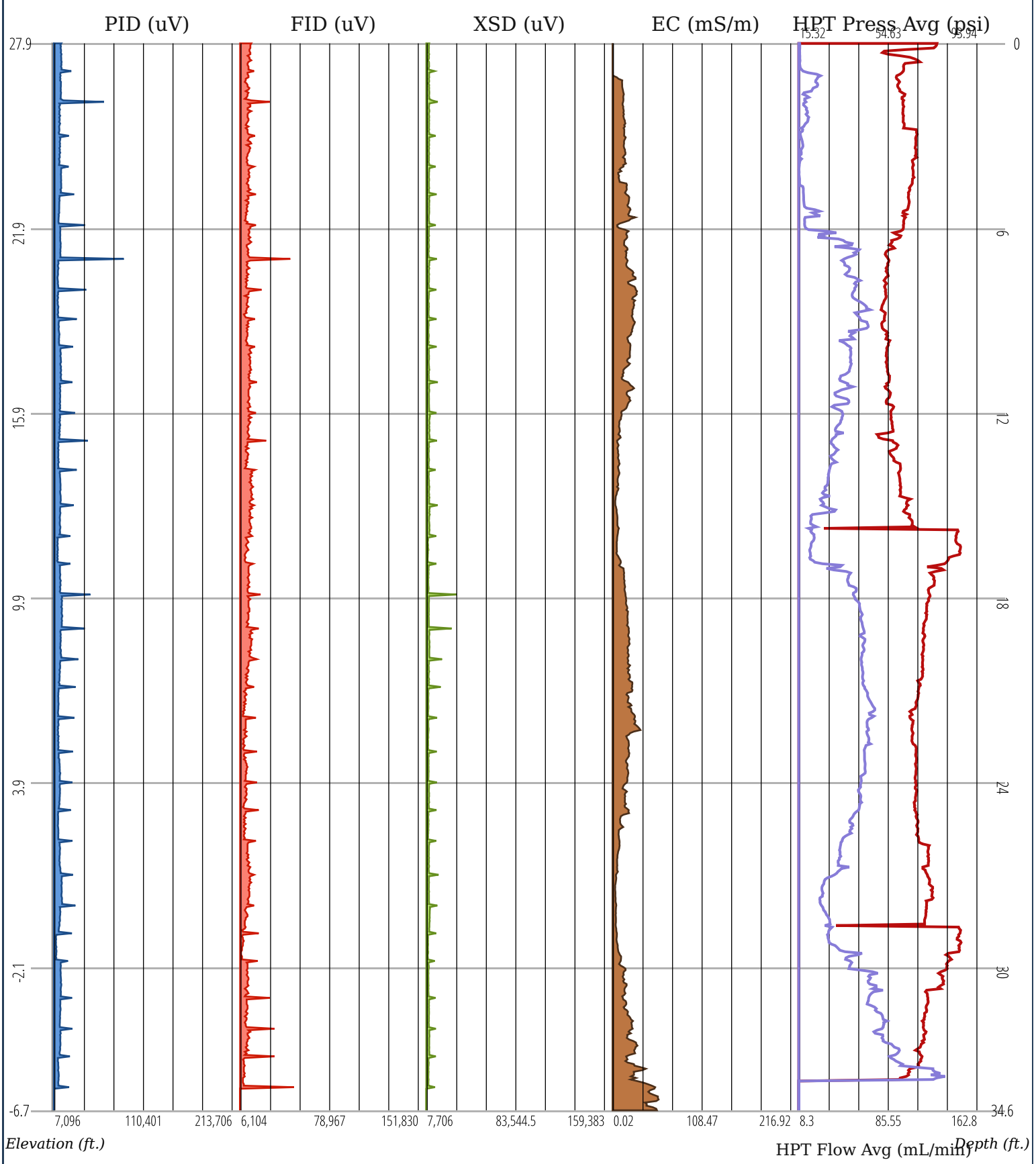
X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6545,-88.0649	27.6 - (-7) ft.

Depth Range:
0 - 34.6 ft.



X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6544,-88.0650	27.9 - (-6.7) ft.

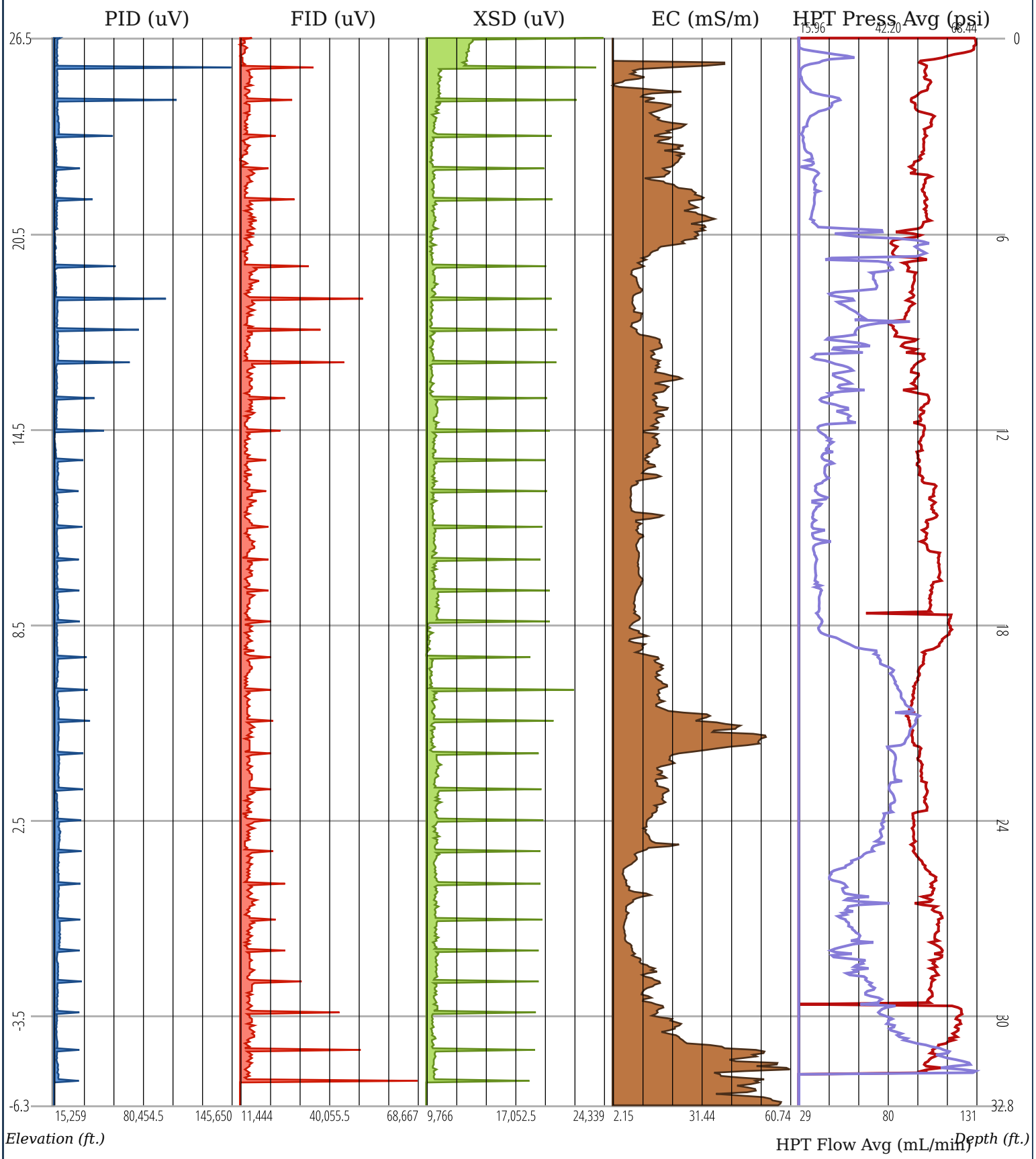
Depth Range:
0 - 34.6 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6544,-88.0650	27.9 - (-6.7) ft.

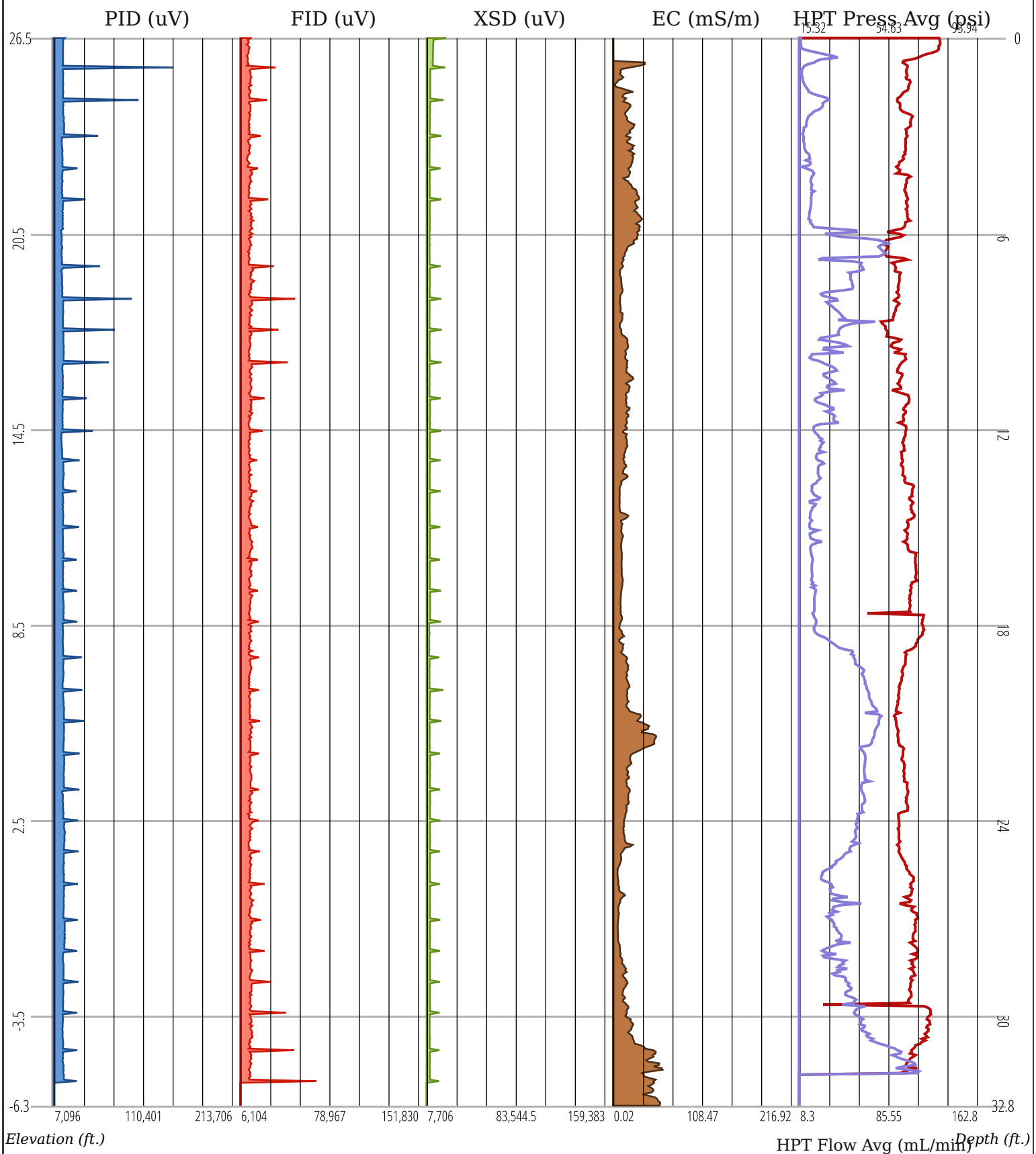
Depth Range:
0 - 34.6 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6545,-88.0652	26.5 - (-6.3) ft.

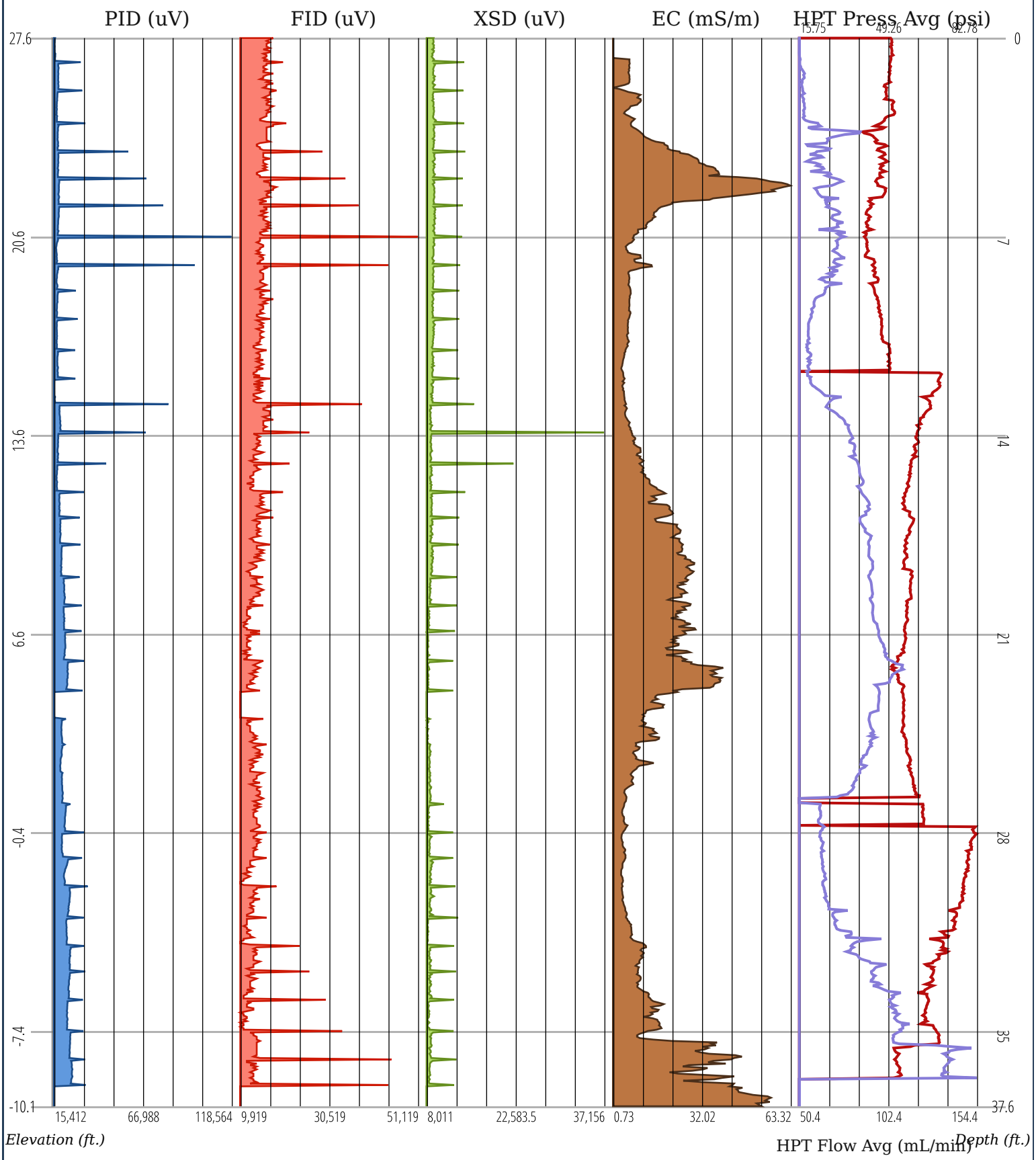
Depth Range:
0 - 32.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6545,-88.0652	26.5 - (-6.3) ft.

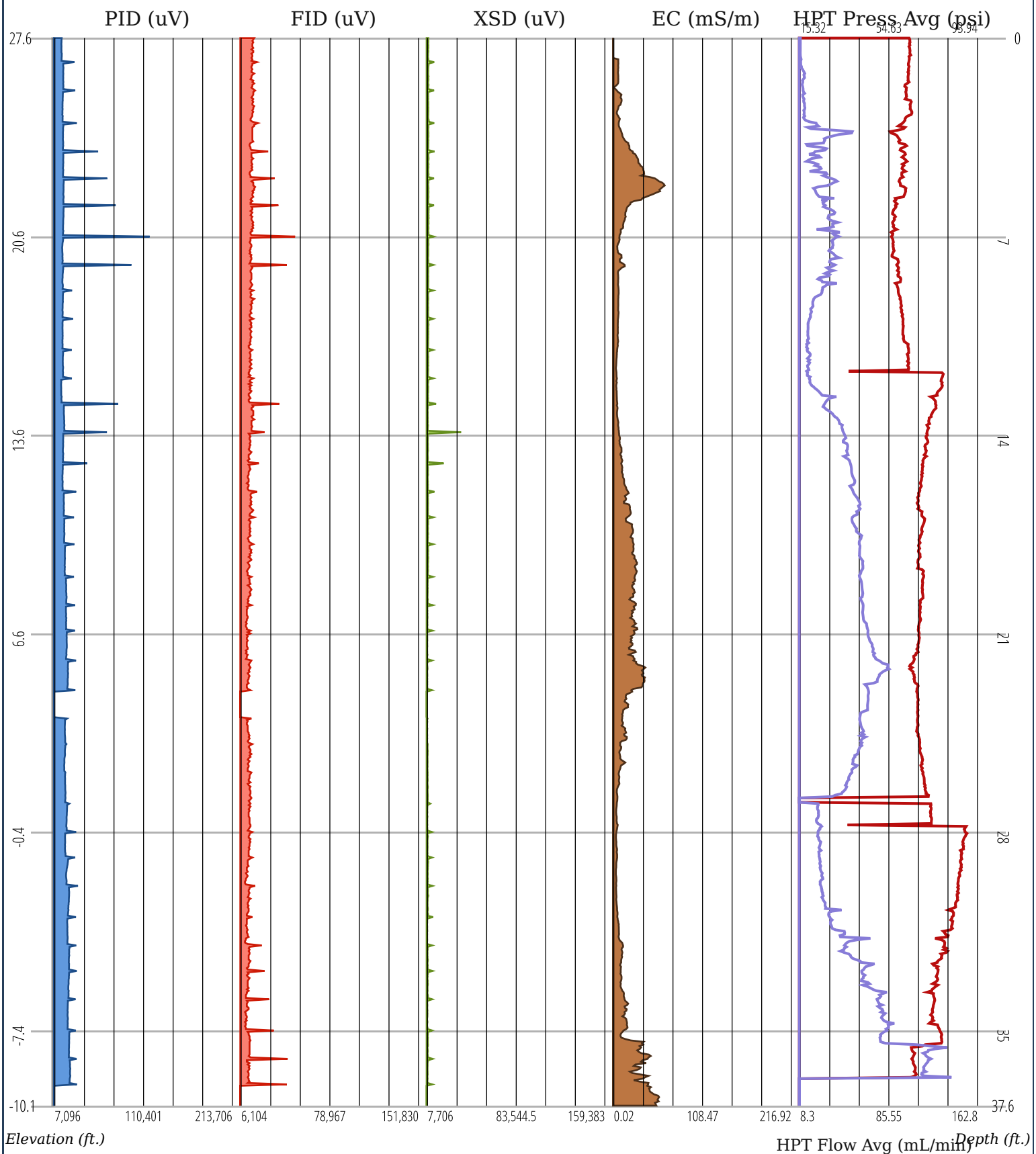
Depth Range:
0 - 32.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6546,-88.0649	27.6 - (-10.1) ft.

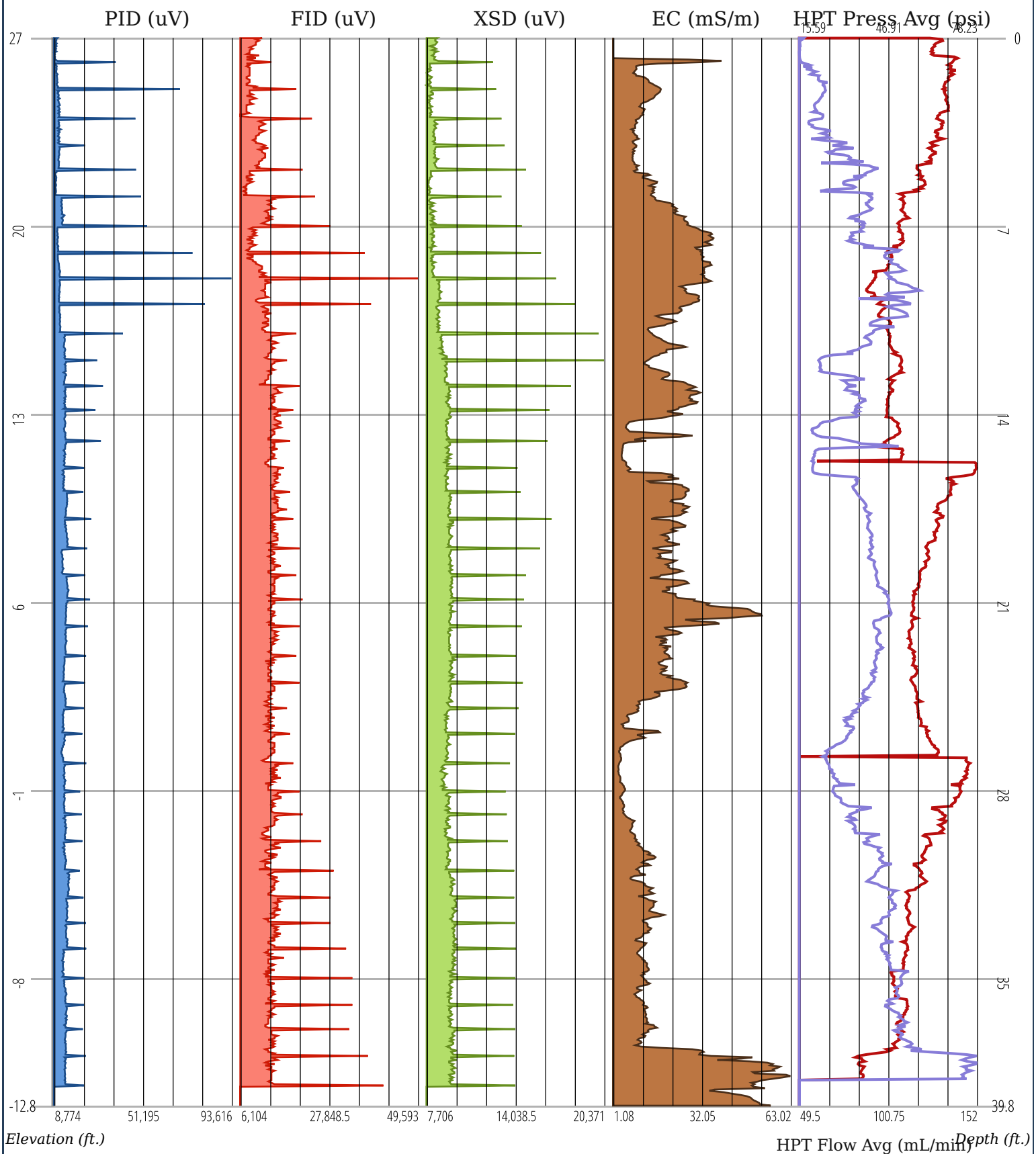
Depth Range:
0 - 37.6 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6546,-88.0649	27.6 - (-10.1) ft.

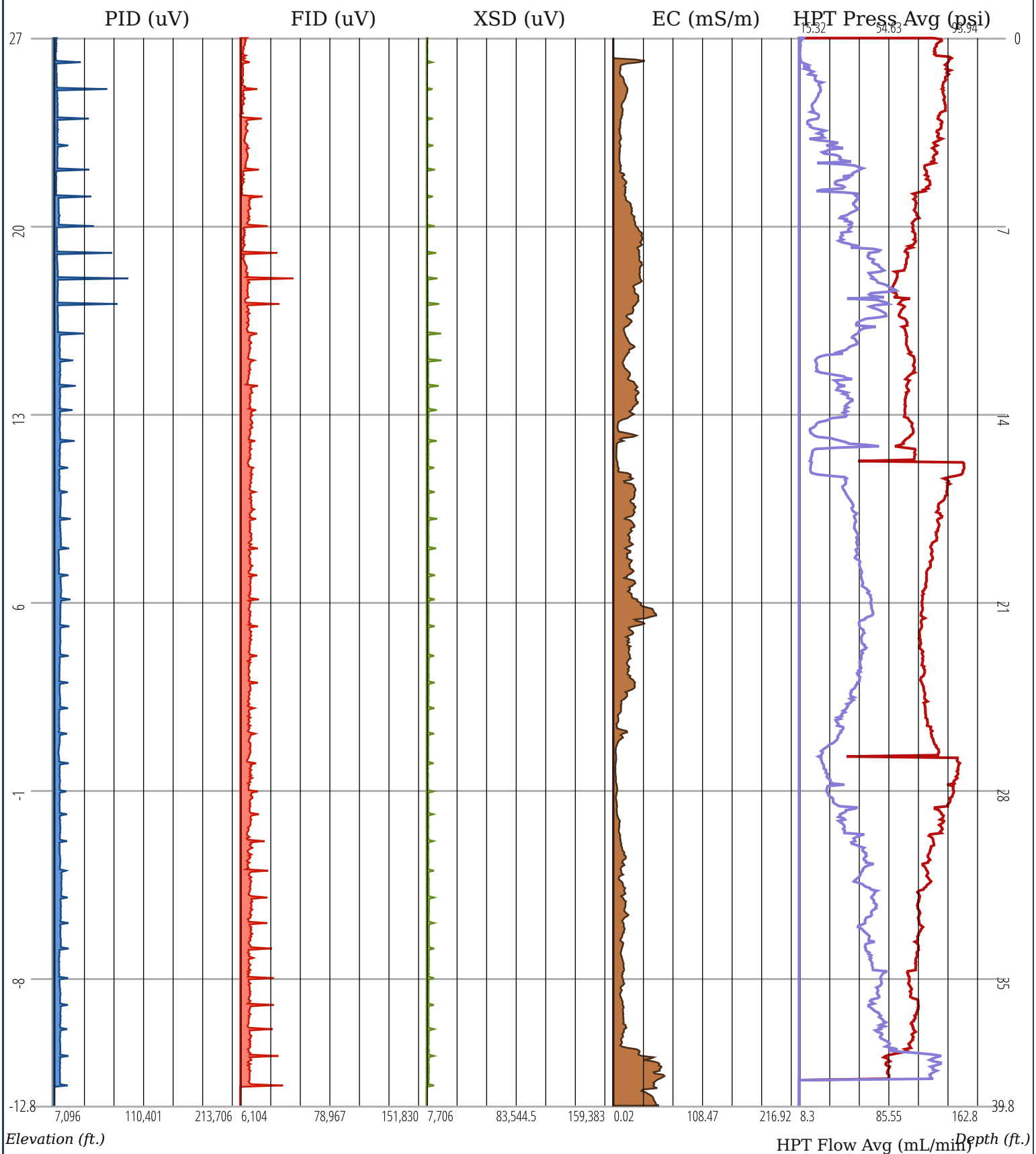
Depth Range:
0 - 37.6 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6547,-88.0653	27 - (-12.8) ft.

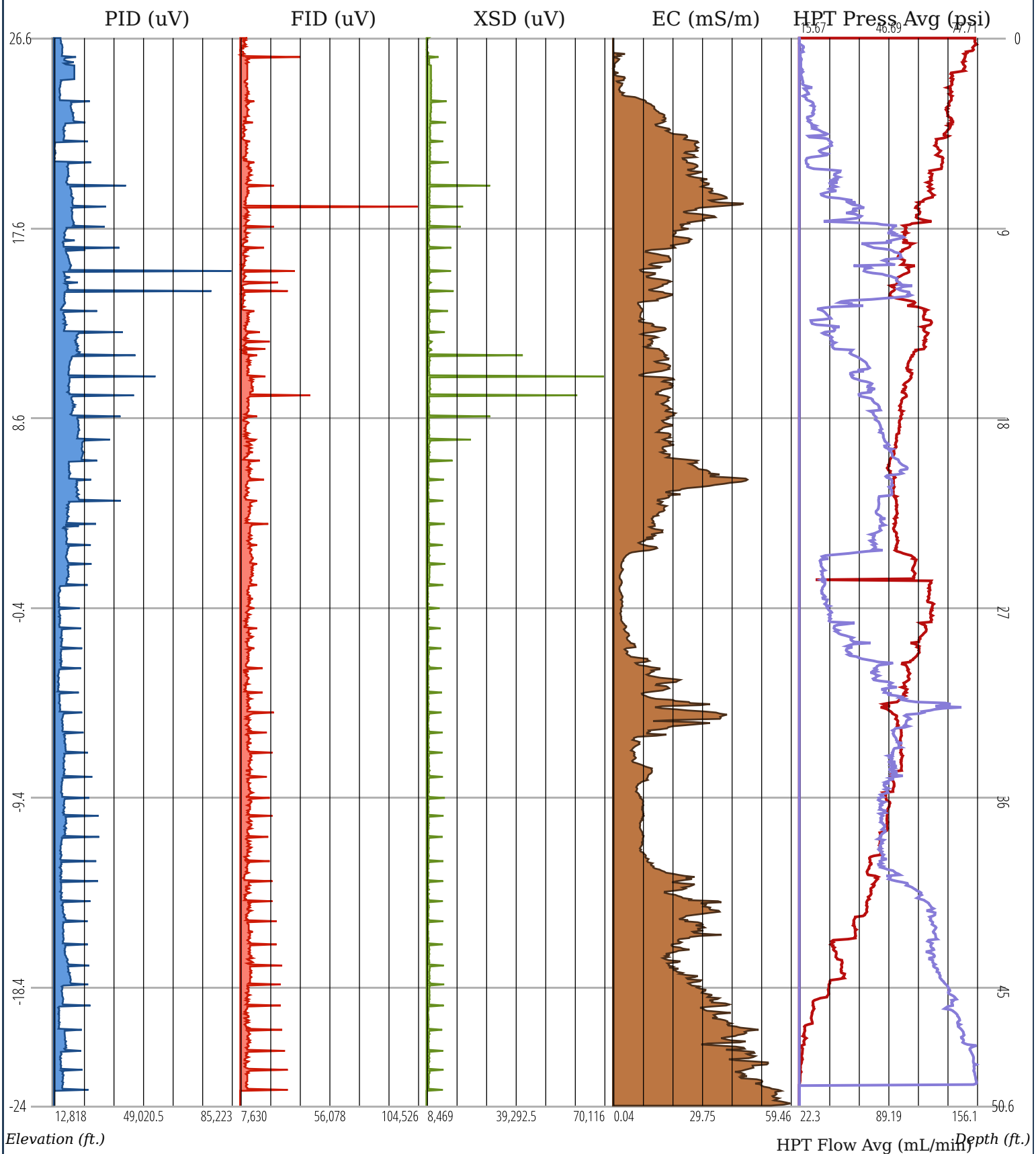
Depth Range:
0 - 39.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6547,-88.0653	27 - (-12.8) ft.

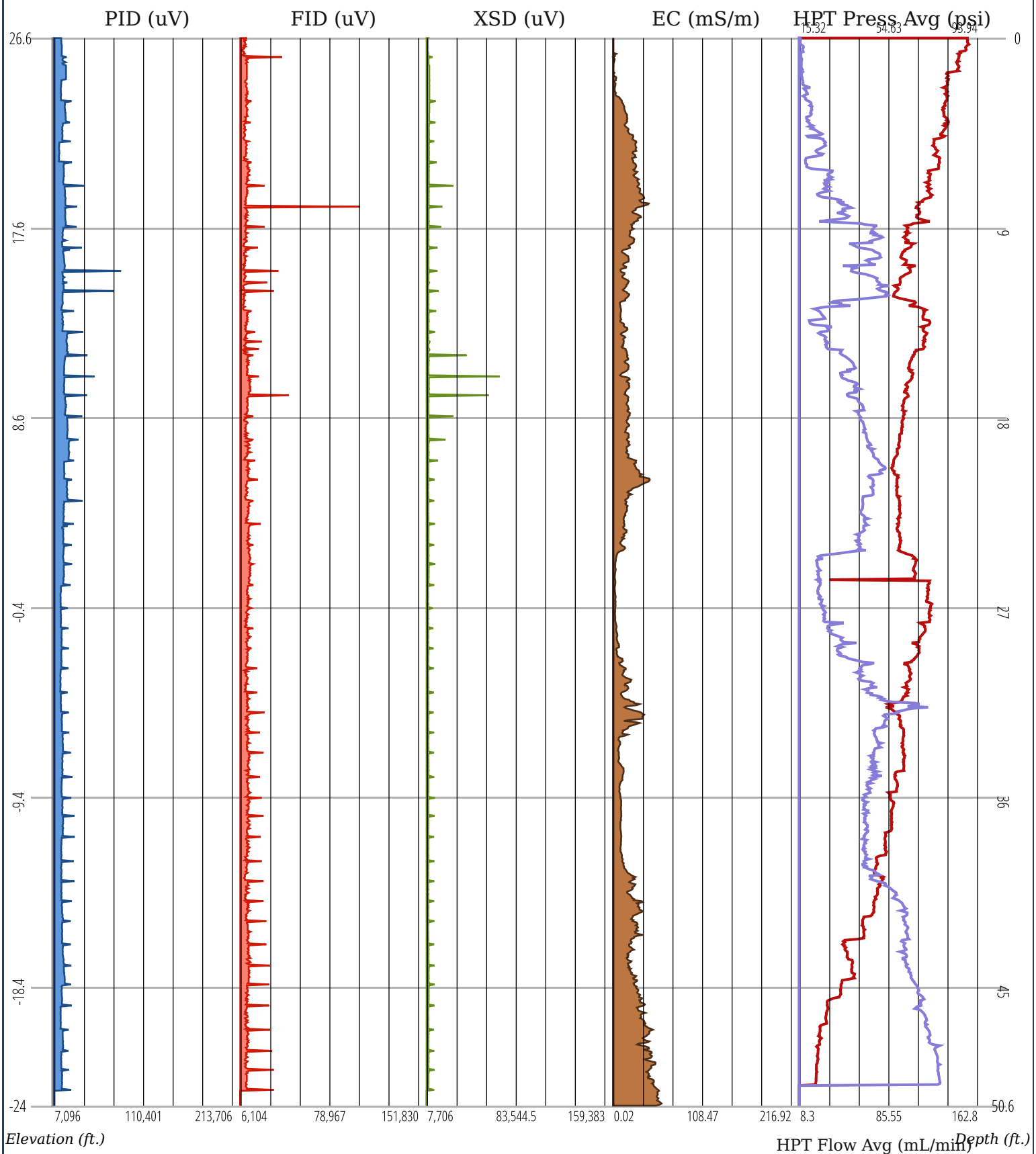
Depth Range:
0 - 39.8 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6547,-88.0654	26.6 - (-24) ft.

Depth Range:
0 - 50.6 ft.



smartdata

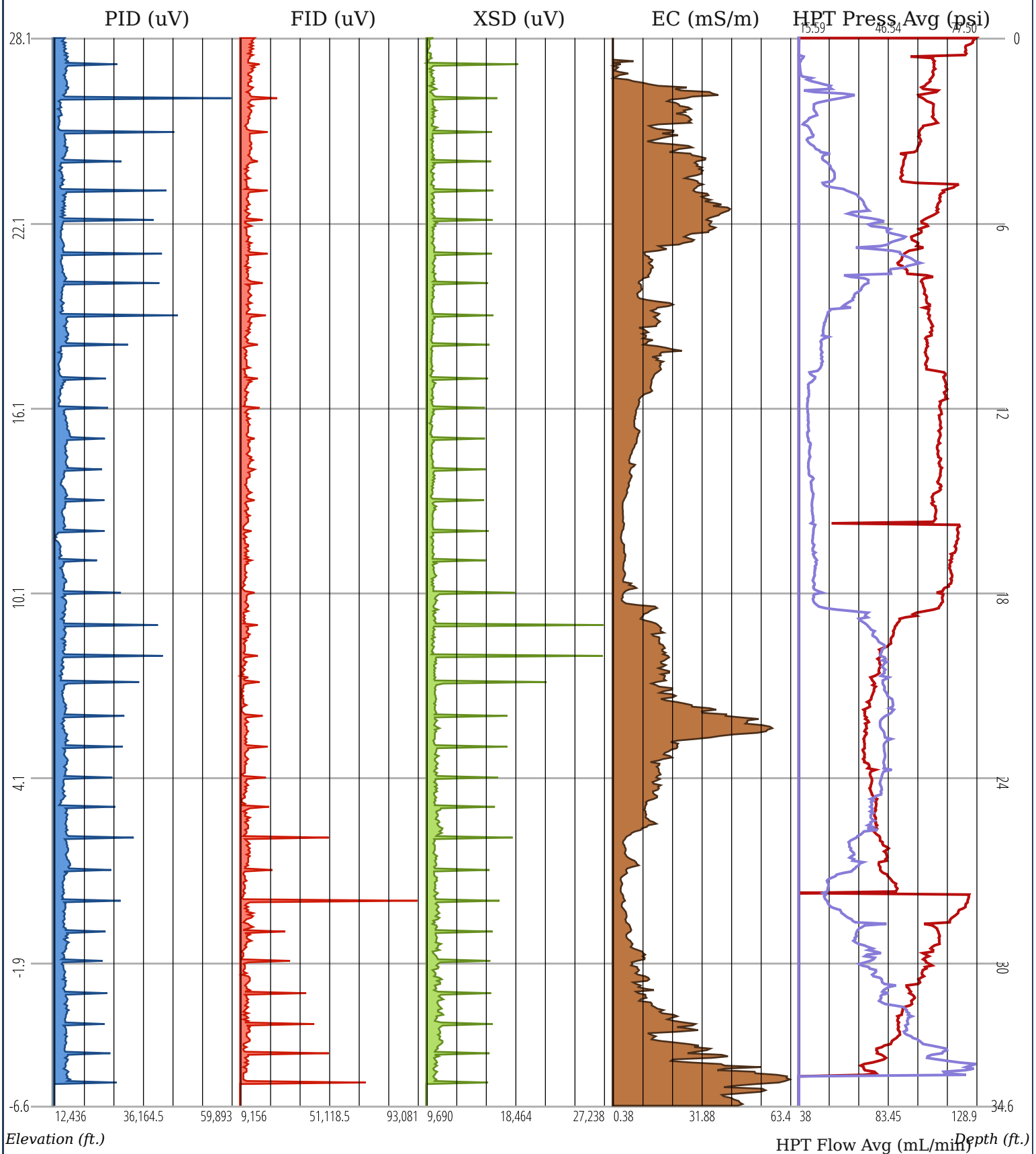
X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6547,-88.0654	26.6 - (-24) ft.

Depth Range:
0 - 50.6 ft.

ARNG OMS 28

MIP-06 *MHP INDIVIDUAL*

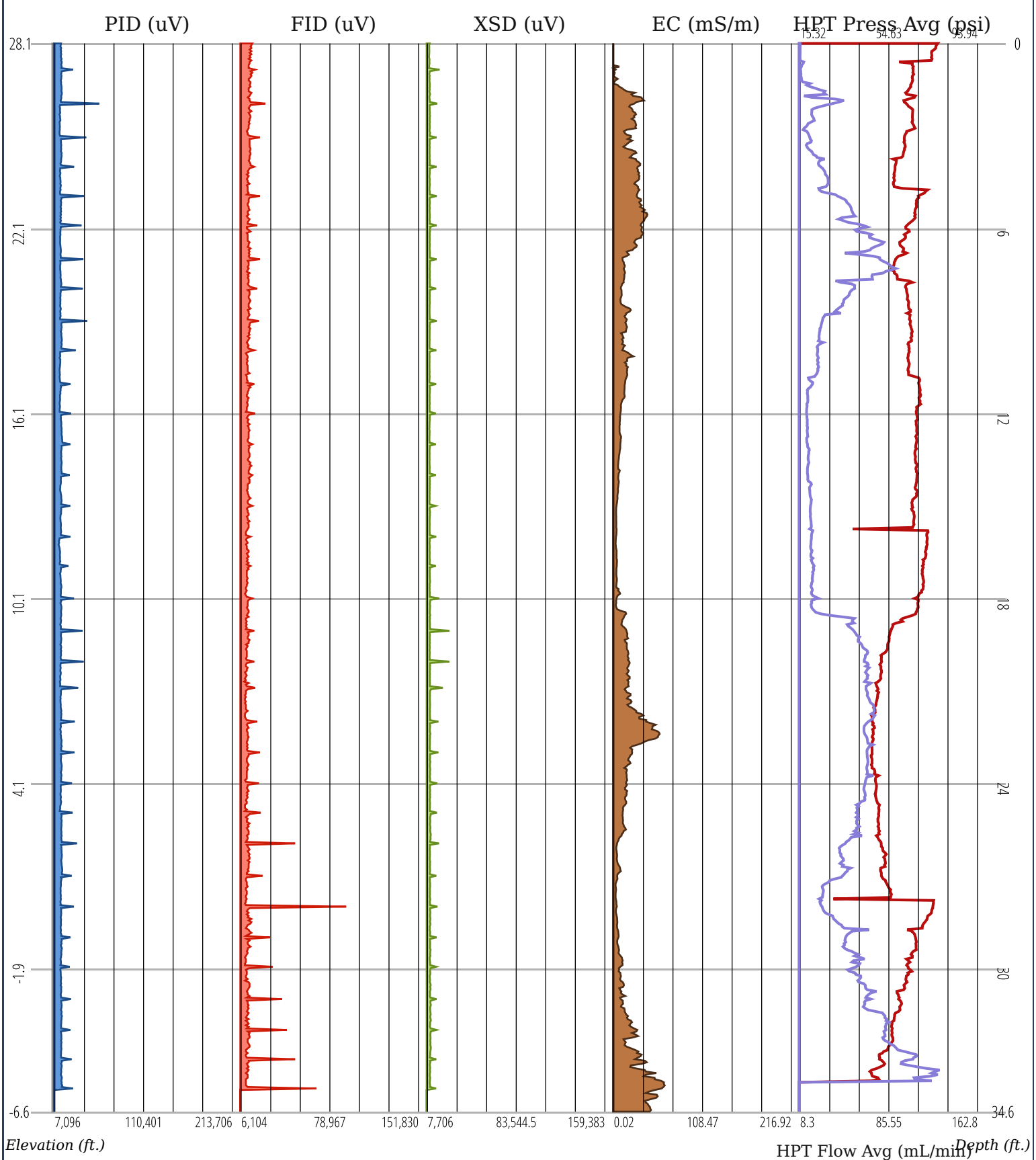
AECOM



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6544,-88.0651	28.1 - (-6.6) ft.

Depth Range:
0 - 34.6 ft.



smartdata

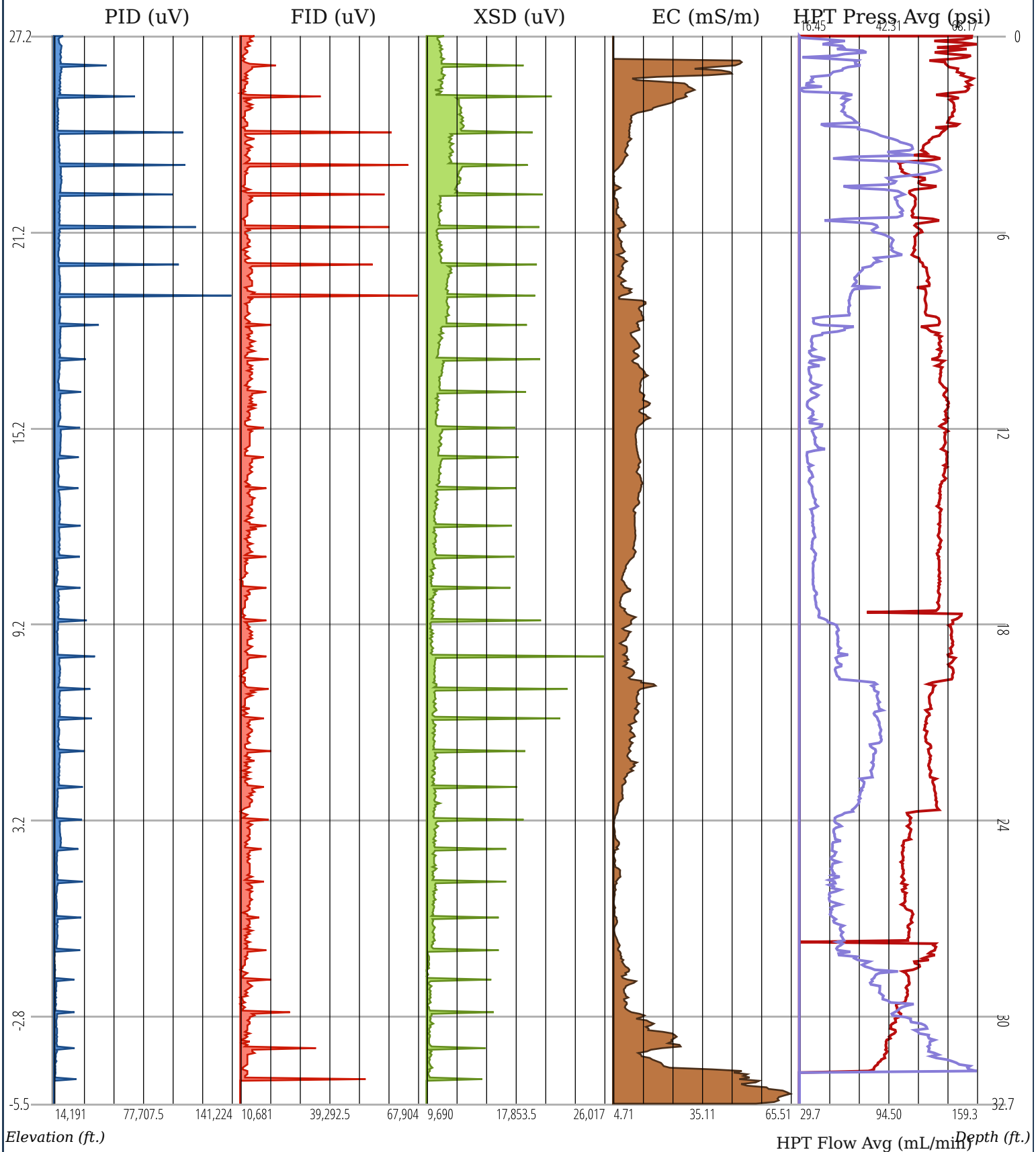
X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6544,-88.0651	28.1 - (-6.6) ft.

Depth Range:
0 - 34.6 ft.

ARNG OMS 28

MIP-07 *MHP INDIVIDUAL*

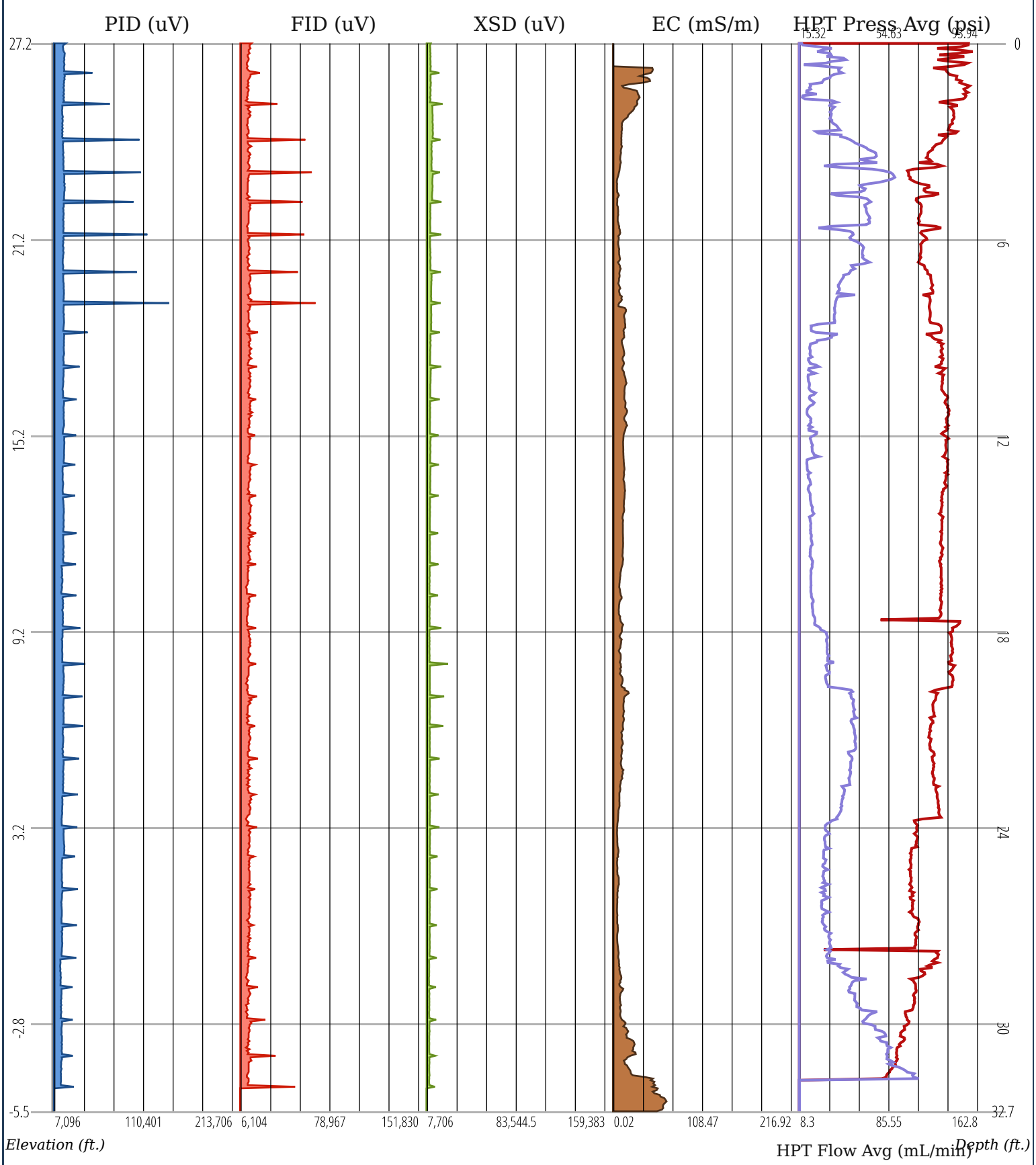
AECOM



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6544,-88.0651	27.2 - (-5.5) ft.

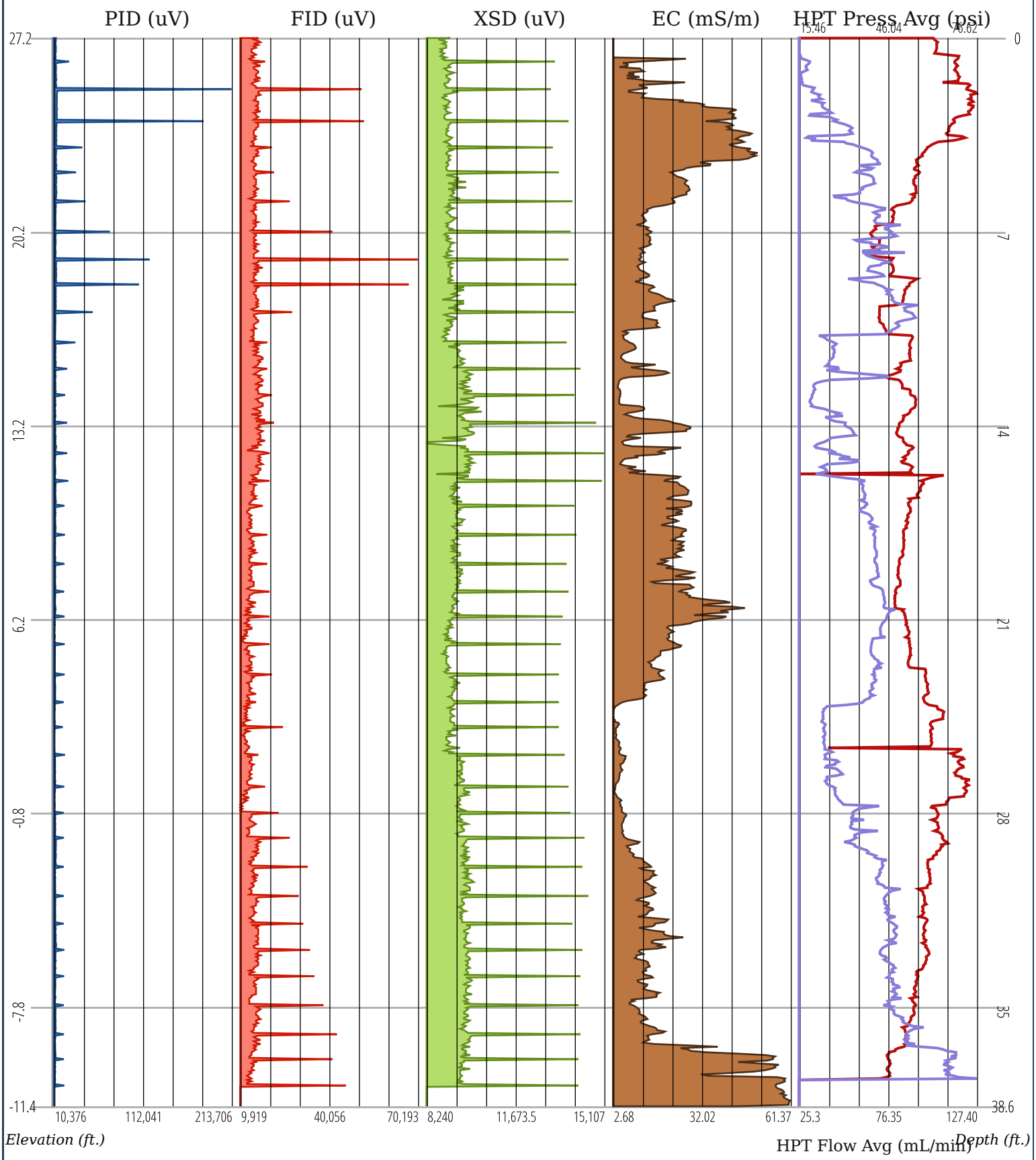
Depth Range:
0 - 32.7 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6544,-88.0651	27.2 - (-5.5) ft.

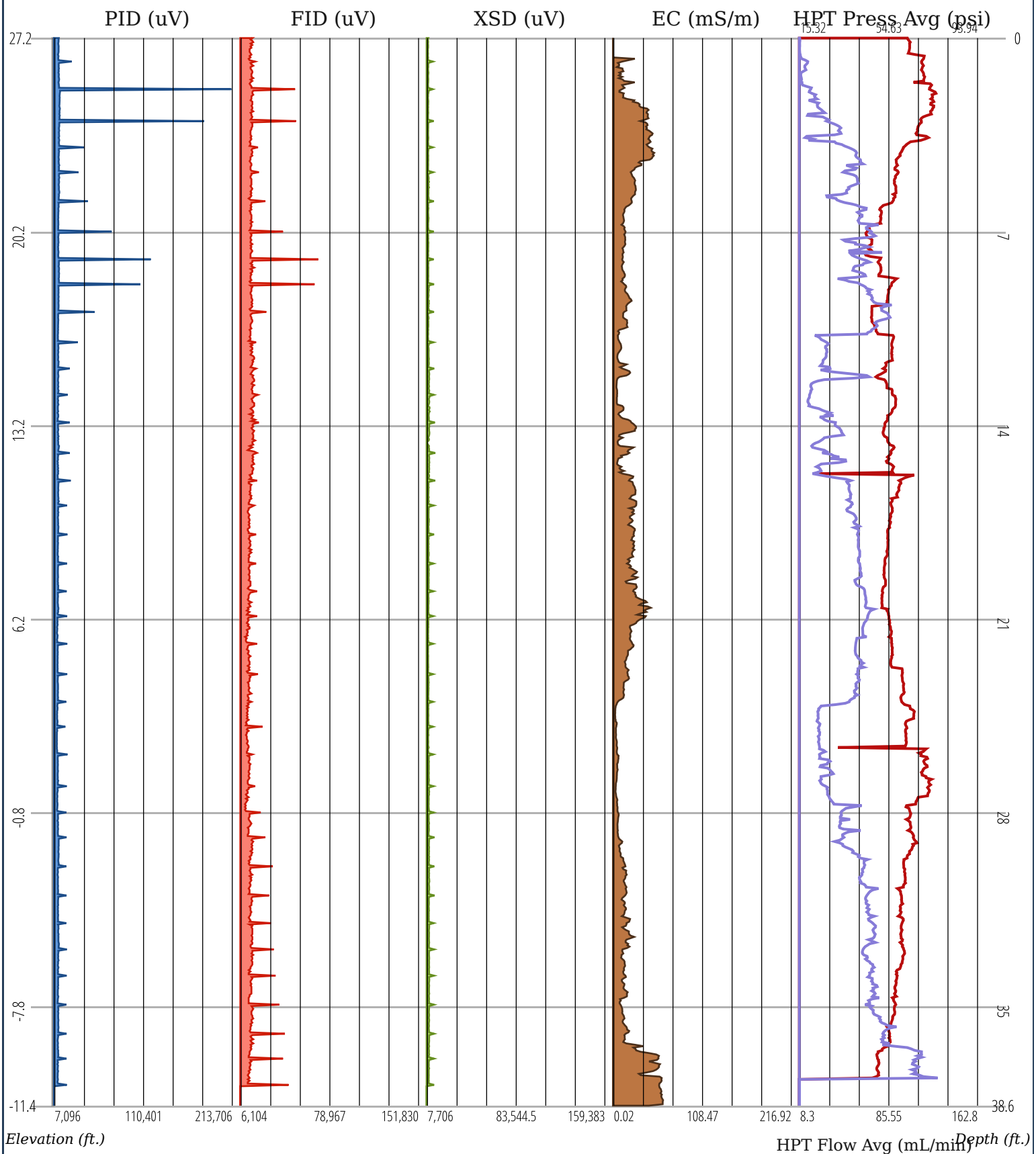
Depth Range:
0 - 32.7 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
individual	individual	30.6545,-88.0653	27.2 - (-11.4) ft.

Depth Range:
0 - 38.6 ft.



smartdata

X Scale:	Y Scale:	Lat/Lng:	Elevation Range:
collective	individual	30.6545,-88.0653	27.2 - (-11.4) ft.

Depth Range:
0 - 38.6 ft.