Final

Secondary Investigation Addendum Report
OMS #28 – Pit 2
Alabama National Guard OMS
1622 South Broad Street
Mobile, Alabama

Facility ID#: 14587-097-012257
UST Incident #93-02-15

Prepared for:

U.S. Army Corps of Engineers, Mobile District
Contract DACA01-01-D-0027, Delivery Order 0014, Mod 001

Prepared by:

Bechtel-S Corp.
2319 Westoak Drive
Austin TX 78704
(512) 326-3223)

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List of Acronyms

ACFM	Actual cubic feet per minute
ADEM	Alabama Department of Environmental Management
ALARNG	Alabama Army National Guard
ARBCA	Alabama Risk Based Corrective Action
ASTM	American Society for Testing and Materials
BGS	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Chain-of-custody or Chemical of concern
DOD	Department of Defense
DPT	Direct-push technology
EPA	Environmental Protection Agency
ft	Feet
GC/MS	Gas chromatography/mass spectrometry
HSA	Hollow-stem auger
ICPES	Inductively coupled plasma emission spectroscopy
IDW	Investigation-derived waste
ISL	Initial screening level
LNAPL	Light non-aqueous phase liquids
MCL	Maximum contaminant level
MS/MSD	Matrix spike/matrix spike duplicate
MSL	Mean sea level
MTBE	Methyl-tert-butyl ether
NA	Not available
OD	Outer diameter
OSHA	Occupational Safety and Health Administration
PAHs	Polynuclear aromatic hydrocarbons
PI	Preliminary investigation
POC	Point of compliance or point of contact
PM	Project manager
ppm_v	Parts per million by volume
PSL	Preliminary screening level
PRG	Preliminary remediation goal
QA/QC	Quality assurance/quality control
QAPP	Quality assurance project plan
QCSR	Quality control summary report
RBSL	Risk based screening level
RI	Remedial investigation
RPD	Relative percent difference
SI	Secondary investigation
SOP	Standard operating procedure

List of Acronyms, cont.

SPH	Separated –phase hydrocarbons
SSHP	Site safety and health plan
SSTLs	Site-specific tolerance levels
TPH	Total petroleum hydrocarbons
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UST	Underground storage tank
VOA	Volatile organic analysis
VOCs	Volatile organic compounds

1.0 Introduction

This report describes the Secondary Investigation (SI) Addendum at Organizational Maintenance Shop (OMS) #28 – Pit 2, at 1622 South Broad St., Mobile, AL [UTM 16 398184E 3391744N (WGS84/NAD83)] conducted by Bechtel-S Corporation. Bechtel-S Corporation was contracted by the US Army Corps of Engineers, Mobile District (USACE-Mobile) to characterize the nature and extent of groundwater contamination at the site, prior to completing a risk-based corrective action evaluation of OMS #28 – Pit 2. This additional site characterization was required because recent groundwater sampling indicated that contamination extended beyond the network of monitoring wells installed during the original SI, and that traces of free-phase hydrocarbons remain in the source area. Activities discussed in this report were performed under USACE Contract No. DACA01-01-D-0027, Delivery Order Number 14, Modification 001. A draft of this report was reviewed by ADEM in July 2005 and accepted with no comments.

The remainder of this section includes a discussion of the previous investigation activities at the site, a brief summary of background data on the environmental setting; and the results from recent activities. These materials were also included in the September 2004 Secondary Investigation Addendum Work Plan for OMS #28 (Bechtel-S, 2004) and are reproduced here for completeness. Section 2 describes the activities conducted during the SI Addendum. Section 3 presents the results of these activities. Section 4 includes conclusions and recommendations for further activities at the site.

1.1 Background

The Alabama Army National Guard OMS is located in the city of Mobile, in Mobile County, Alabama. The facility is located near downtown Mobile, between Interstate 10 and Mobile Bay. Figure 1-1 shows the general vicinity of the OMS. The area is relatively flat with an elevation of 20-30 feet above mean sea level (MSL). Four underground storage tanks have been removed from three separate locations at the facility. Figure 1-2 shows a location map.

A single 2000 gallon gas/diesel underground storage tank (UST) was removed from Pit 2 in October 1992. A ½ to ¾ inch hole was noted in the east end of the tank when it was removed. A preliminary investigation for Pit 2 was performed in October 1993, but did not fully determine the extent of soil or groundwater contamination. A secondary investigation of Pit 2 was completed in December 1994, establishing the extent of soil and groundwater contamination at the site. The 1994 Secondary Investigation was followed by quarterly groundwater monitoring in 1995. Groundwater monitoring continued on a roughly semi-annual basis through 1997.

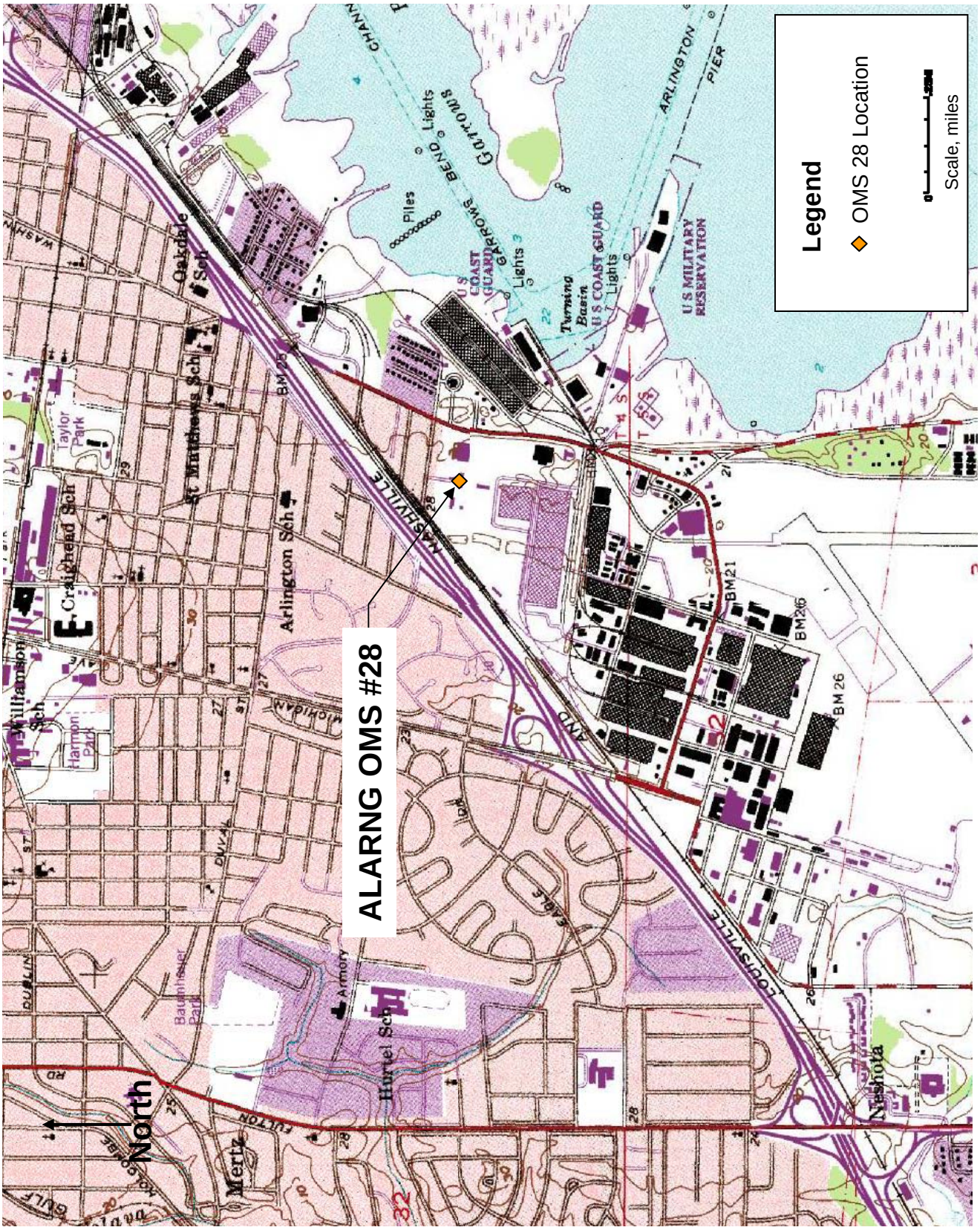


Figure 1-1. OMS #28 Vicinity Map

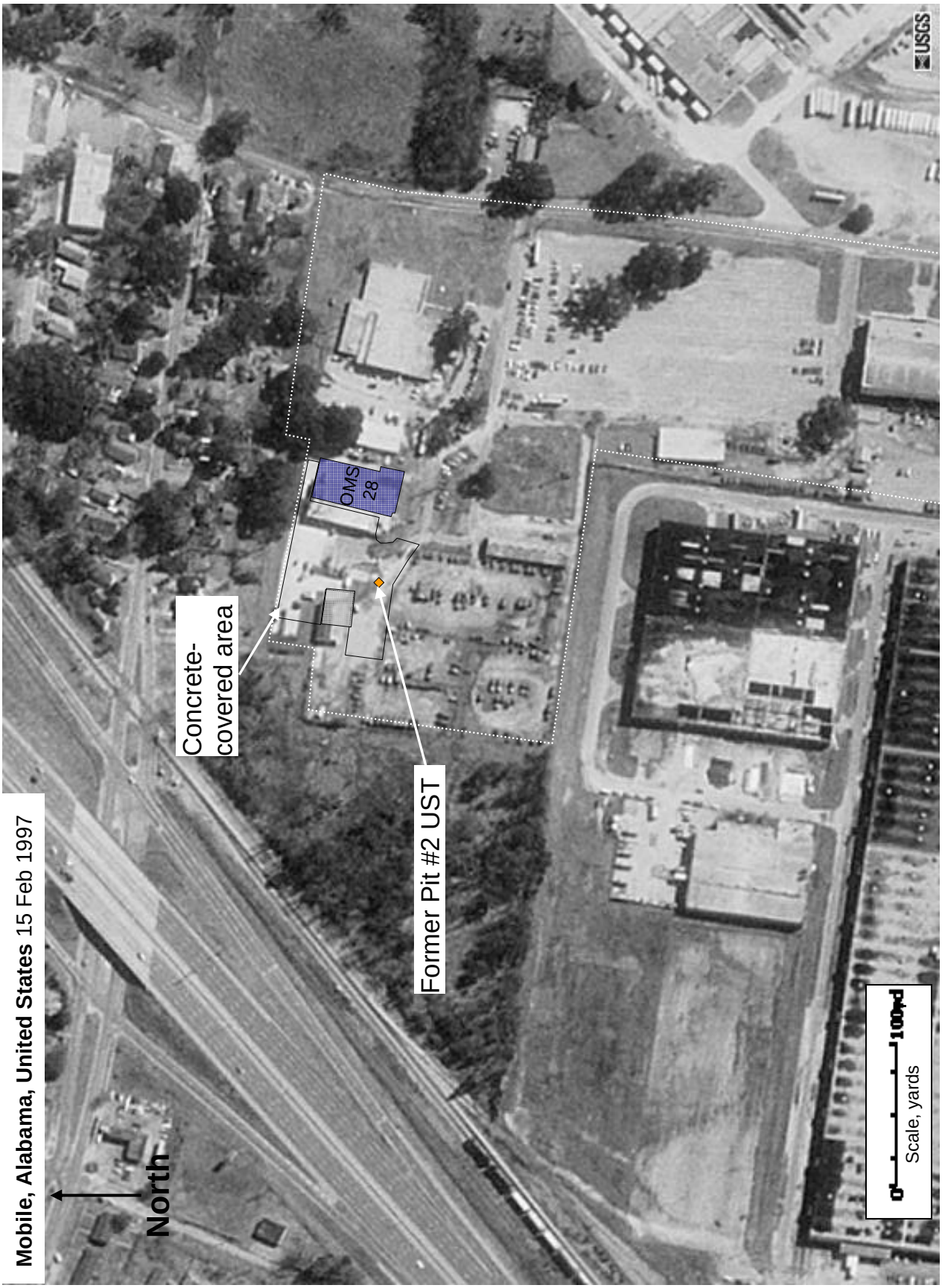


Figure 1-2. OMS #28 Location Map

An additional set of groundwater samples was collected in October 2001. Bechtel-S was contracted to complete a risk-based assessment of the site in 2003 and sampled existing wells on site in March 2004.

1.2 Geology and Hydrogeology

The regional geology and hydrogeology in the vicinity of ALARNG OMS are described in the *Final Data Acquisition Plan* for OMS #28 (Bechtel-S, 2004). Geologic units outcropping near the OMS range from Tertiary to Quaternary Age. Quaternary alluvial and terrace deposits overlie Tertiary deposits adjacent to the floodplains of the larger streams and rivers, and along Mobile Bay.

The major aquifers in the vicinity of the OMS include the Miocene, Pliocene-Pleistocene (also known as the Citronelle), and the alluvial-coastal aquifers. Although these aquifers represent different lithological units, they generally respond as a single hydrogeologic unit to large or long-term stresses (BCM, 1999). However, at a smaller scale there may be little hydraulic connection between units.

Groundwater at OMS #28 is found 2 to 5 feet below ground surface. Locally, the aquifer consists of fine sand. Groundwater flow is to the west to northwest across the site. All wells on site are completed across the water table. No site-specific data on deeper hydrogeological units are available.

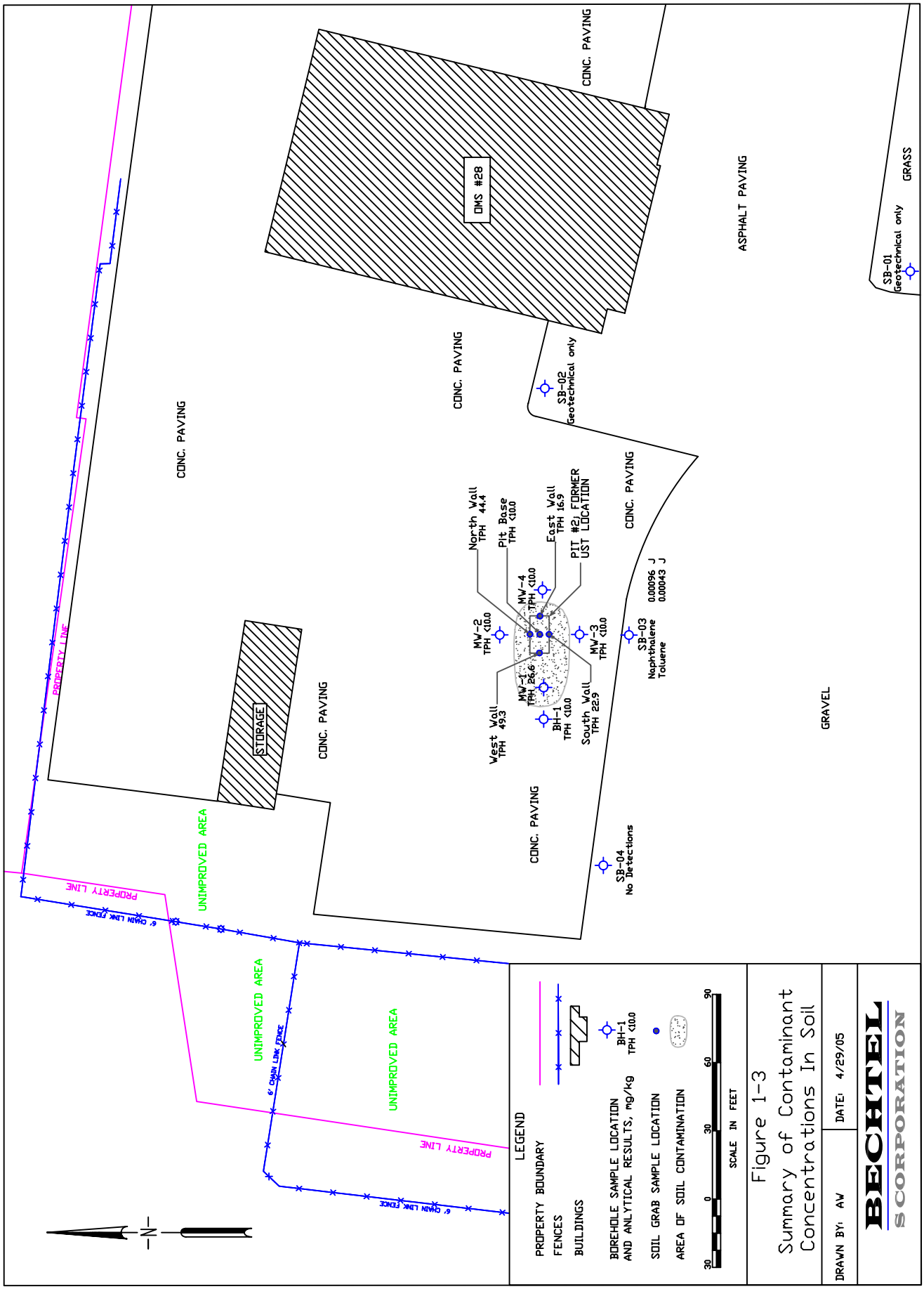
1.3 Previous Investigations at OMS 28 Pit #2

Site investigation activities and results are summarized in Table 1-1. A more detailed presentation of investigations at OMS #28 Pit 2 is presented in the ARBCA Data Acquisition Plan (Bechtel-S, 2004). Only the most recent results from the Bechtel-S sampling effort are presented in detail in this document to support the need for additional site characterization work, which is described in Section 2.

Soil contamination is restricted to the area immediately adjacent to the former UST. Figure 1-3 summarizes soil analytical data from the original SI and from ARBCA samples collected by Bechtel-S in March 2004. The most recent soil samples, collected just outside the concrete-covered area, contain only trace concentrations of fuel constituents, consistent with contamination by storm water runoff from the vehicle parking area rather than the former UST.

Table 1-1. Summary of Previous Investigations: OMS 28 Pit #2

Source	Primary Activities	Major Findings
UST Closure Report (CWA, Nov. 1992)	• Tank, piping, and 50 yd^3 soil excavated • Subsurface soil samples collected while installing 4 monitoring wells • Excavated soil spread in thin layer on ground surface	• Sidewall and bottom samples indicate TPH concentrations between <10 and 49 mg/kg • Composite samples of excavated soil contain up to 427 mg/kg TPH • Soil boring samples indicate 26.6 mg/kg TPH at 5 ft bgs in MW-1 and <10 mg/kg in all other borings
Preliminary Investigation Report (PELA, Dec. 1993)	• 4 monitoring wells sampled for benzene, toluene, ethylbenzene, and xylene (BTEX) and poly-cyclic aromatic hydrocarbons (PAHs)	• MW-1 groundwater contains 10,300 ug/L BTEX and 537 ug/L PAHs • MW-3 groundwater contains 24 ug/L BTEX and 9 ug/L PAHs • Extent of soil contamination not defined
Secondary Investigation Report (PELA, Dec. 1994)	• One hand auger soil boring sampled for TPH • 4 existing and 2 new monitoring wells sampled for benzene, toluene, ethylbenzene, and xylene (BTEX), PAHs, and lead • Water level surveys to determine groundwater flow direction	• TPH < 10 mg/kg in soil; extent of soil contamination defined • BTEX at 27,840 and naphthalene at 353 ug/L in MW-1 • Trace levels of BTEX in MW-3 • Lead concentrations exceeding MCL in 5 of 6 wells • No organic contaminants detected in new wells; extent of groundwater contamination defined. • Groundwater gradient 0.006 ft/ft to west
Groundwater Monitoring Report (ACT, Jan 1996)	• Four quarters of groundwater sampling and analysis for BTEX, with PAHs and lead for fourth quarter samples only.	• Reported concentrations of BTEX in MW-1 are substantially lower than previous results and generally increase over the course of the monitoring period. Napthalene detected in MW-1 and MW-3. Lead exceeds MCL in all wells.
Groundwater Monitoring Reports, PELA, 1997	• Two rounds of sampling at all wells for BTEX, and dissolved oxygen. MTBE included in July analyses.	• BTEX concentrations in MW-1 much higher than measured by ACT, but lower than results from Secondary Investigation and declining over time.
Fax from STL Pensacola to Mr. Craig Holloway, dated 11/6/01	• BTEX analyses reported for six wells sampled on 10/03/03	• Results indicate a gradual decline in concentrations of all contaminants in MW-1 except ethylbenzene since 1997 sampling. Benzene and ethylbenzene exceed MCLs.
ARBCA Data Acquisition, Bechtel-S Corp., March 2004	• Groundwater sampling from existing wells for BTEX, PAH and lead; aquifer tests • Soil sampling for BTEX and geotechnical data	• Benzene detected > MCLs in MW-1 and 6 • Trace amounts of LNAPL detected in MW-1 • Declining BTEX concentrations in MW-1; benzene and ethylbenzene still above MCLs. • Only trace BTEX in soil samples.


CONC. PAVING
OMS #28
CONC. PAVING
ASPHALT PAVING
GRASS
SB-01
Geotechnical only
SB-02
Geotechnical only
CONC. PAVING
CONC. PAVING
North Wall
TPH 44.4
Pit Base
TPH <10.0
East Wall
TPH 16.9
PIT #2 FORMER
UST LOCATION
MW-4
TPH <10.0
MW-2
TPH <10.0
MW-3
TPH <10.0
SB-03
Naphthalene 0.00096 J
Toluene 0.00043 J
MW-1
TPH 26.6
BH-1
TPH <10.0
West Wall
TPH 49.3
South Wall
TPH 22.9
GRAVEL
STORAGE
CONC. PAVING
CONC. PAVING
SB-04
No Detections
PROPERTY LINE
UNIMPROVED AREA
6' CHAIN LINK FENCE
UNIMPROVED AREA
UNIMPROVED AREA
6' CHAIN LINK FENCE
PROPERTY LINE
N
LEGEND
PROPERTY BOUNDARY
FENCES
BUILDINGS
BOREHOLE SAMPLE LOCATION AND ANLYTICAL RESULTS, mg/kg
BH-1
TPH <10.0
SOIL GRAB SAMPLE LOCATION
AREA OF SOIL CONTAMINATION
30
0
30
60
90
SCALE IN FEET
Figure 1-3
Summary of Contaminant Concentrations In Soil
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Groundwater monitoring at OMS #28 between 1992 and 2001 has consistently documented BTEX contamination in MW-1 in excess of ADEM Initial Screening Levels (ISLs), trace levels of contamination in MW-3, and no detectable contamination in downgradient wells MW-5 and -6. However, site conditions changed considerably between the 2001 sampling event and March 2004. A 1992 drawing of the site indicates an asphalt parking area immediately around OMS #28 with 'stone and grass parking' and grass covered areas around Pit #2. By 2004, the entire area west of OMS #28 to the fence line west of Pit #2 had been paved in concrete. OMS #28 personnel indicated that the concrete was placed shortly after the 2001 groundwater sampling.

The March 2004 sampling results indicated that the area of groundwater contamination exceeding ISLs has expanded to include MW-1 and the downgradient well MW-6. Soil and groundwater samples were collected at OMS# 28 by Bechtel-S personnel on March 9 -11, 2004 using a bladder pump and low-stress groundwater sampling techniques. Samples were collected from wells MW-1, -2, -3, -5, and -6 (MW-4 was apparently destroyed during paving operations). The March 2004 data indicate that the area of groundwater contamination exceeding ISLs now extends beyond the furthest downgradient monitoring locations. Aquifer slug tests were also conducted on MW-1, -2, -3, and -6. Results are summarized in Table 1-2.

Table 1-2. OMS #28 Groundwater Monitoring Results, March 2004

(All results in ug/L, except as noted)

Analyte	MW-1	MW-2	MW-3	MW-5	MW-6
Benzene	**200**	ND	ND	ND	**23**
Ethylbenzene	**750**	ND	1.2 J	ND	1.4 J
Toluene	140	ND	0.21 J	ND	0.55 J
Xylenes	1121	ND	1.8 J	ND	1.4 J
Napthalene	**76**	ND	0.60 JP	0.40 JP	**28**
Lead	2.0 JB	3.0 JB	4.0 JB	2.0 JB	ND
Hydraulic Conductivity, ft/day	0.2	0.4	0.1	NA	0.1

J = Estimated result
P = Second column result exceeds method criteria
B = Analyte detected in method blank at concentration similar to sample
ND = Not detected
NA = Not analyzed

BTEX concentrations in groundwater at MW-1 have gradually declined over the last ten years (Figure 1-4); but the contaminants benzene, ethylbenzene and naphthalene remain above ISLs. In addition, the purge water collected from MW-1 during the March 2004 groundwater sampling contained trace quantities of light non-aqueous phase liquid (LNAPL) hydrocarbons, present as red-orange globules. While the total volume of non-aqueous phase hydrocarbons recovered was less than 5 ml, the presence of even a small volume of mobile LNAPL suggests that a residual saturation of LNAPL is present in the aquifer around MW-1. This residual (i.e. non-mobile) LNAPL could amount to as much as 2% to 3% by volume, representing a significant continuing source of dissolved-phase hydrocarbons. The presence of such a hydrocarbon source is consistent with the long-term persistence of groundwater contamination at the site.

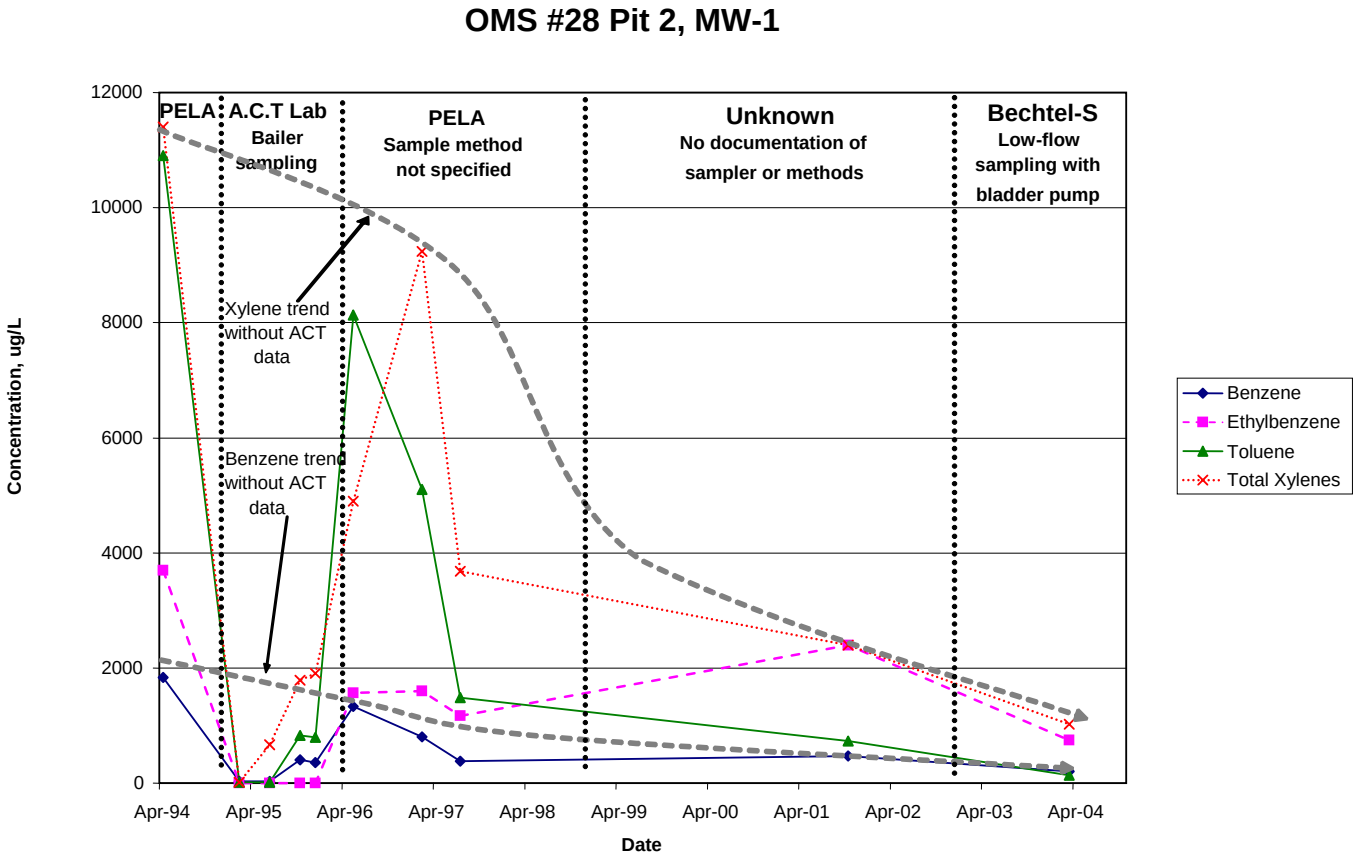


Figure 1-4. Trends in Contaminant Concentrations in MW-1, 1994 - 2004

The concrete covering the site appears to have reduced gas exchange between the atmosphere and the groundwater, limiting degradation of dissolved hydrocarbons, and allowing the plume to spread further downgradient. Dissolved oxygen concentrations in groundwater measured in February and July 1997 ranged from 6.0 to 9.0 mg/L. Dissolved oxygen concentrations were marginally lower in wells MW-1 and MW-3, the two wells in which organic contaminants have been detected at levels exceeding regulatory thresholds, although dissolved oxygen concentrations appear to have been sufficient to sustain oxidative metabolism of petroleum hydrocarbons by aerobic micro-organisms in the subsurface before the concrete was placed. The 2004 dissolved oxygen concentrations indicate very limited biodegradation capacity downgradient of the former tank location after the site was covered by concrete. The 2004 dissolved oxygen concentrations ranged from 0.37 mg/L to 2.04 mg/L after purging standing water from the wells. These measurements suggest that dissolved oxygen levels in the groundwater have been reduced following concrete placement, although without documentation of monitor well purging procedures during the previous sampling events it is not known whether the 1997 data represents dissolved oxygen measurements on standing water in the monitor wells or in fresh formation water.

2.0 SI Addendum Activities

This SI Addendum is intended to define the current extent of groundwater contamination, assess the presence or absence of LNAPL in the source area before and after vacuum extraction, and evaluate the potential for natural attenuation of the groundwater contaminants. After completing these activities, the site will be evaluated using the ARBCA process to determine site-specific tolerance levels (SSTLs) for contaminants of concern, which will provide the basis for determining whether remedial action is required and, if so, what remedy is most appropriate.

2.1 SI Addendum Field Activities

Bechtel-S Corp. performed Secondary Investigation activities OMS #28 Pit 2 to define the nature and extent of contamination in accordance with the ADEM rules. Key components of the SI Addendum investigation included:

1) Collecting groundwater grab samples downgradient of the concrete covered area west of Pit #2 on 6 October, 2004 to define the extent of the plume.

2) Installing new monitoring wells upgradient and downgradient of the plume on 7 October 2004.

3) Sampling all new and existing monitoring wells for BTEX, MTBE, naphthalene, PAHs, and lead on 9 – 10 November 2004 to verify the extent of groundwater contamination.

4) Evaluating the presence of LNAPL in MW-1 using standard low-flow purging techniques and, following sample collection, using higher flow rates to induce greater stress on the aquifer. All LNAPL produced from the well was documented with digital photographs.

5) Evaluating groundwater chemistry to determine if natural attenuation processes are active, especially in the area downgradient of the concrete cover.

6) Surveying all new and existing wells and piezometers to confirm elevation and location data following the placement of concrete paving at the site.

7) Measuring water levels at all new and existing wells and piezometers on site to calculate flow rates and directions based on the site-specific groundwater gradient and hydraulic conductivity.

In addition to these SI activities, Bechtel-S was scoped to perform additional services. These include 1) a multi-phase vacuum extraction event to remove LNAPL, if its presence is confirmed; and 2) a second round of groundwater monitoring in March 2005 for BTEX/MTBE,

PAHs, and lead at all monitoring wells on site. Although these activities are not part of the Secondary Investigation *per se*, they are included in this report to provide a complete and up-to date record of site conditions.

2.2 Deviations from Plan

All field work and data evaluation was conducted by a professional geologist licensed in the State of Alabama according to procedures specified in the project work plan with the following exceptions:

1) Groundwater grab samples were analyzed using Method SW8021B for purgeable organics instead of Method SW8260B. Method SW8021B provides equivalent detection limits for the target analytes.

2) Turbidity was not measured during the November 2004 groundwater sampling event. All monitor wells were purged until other water quality parameters were stable and the water was visibly clear and free from sediment. Numerical values of turbidity were estimated visually.

3) Equipment blank samples were collected and analyzed only during the March 2004 sampling event; the equipment blank sample contained trace levels of benzene, naphthalene, toluene, and xylene rinsed from the equipment after decontamination following sampling from MW-1. Because MW-1 was known to be contaminated it was sampled last. Consequently, the at least 100-fold reduction in contaminant concentrations provided by the decontamination procedures is sufficient to reduce concentrations in other wells on site below detectable levels.

3.0 Investigation Results

This Section presents the results of the investigation activities described in Section 2, including the vacuum extraction event and follow-up groundwater sampling.

3.1 Groundwater Grab Sampling and Analysis

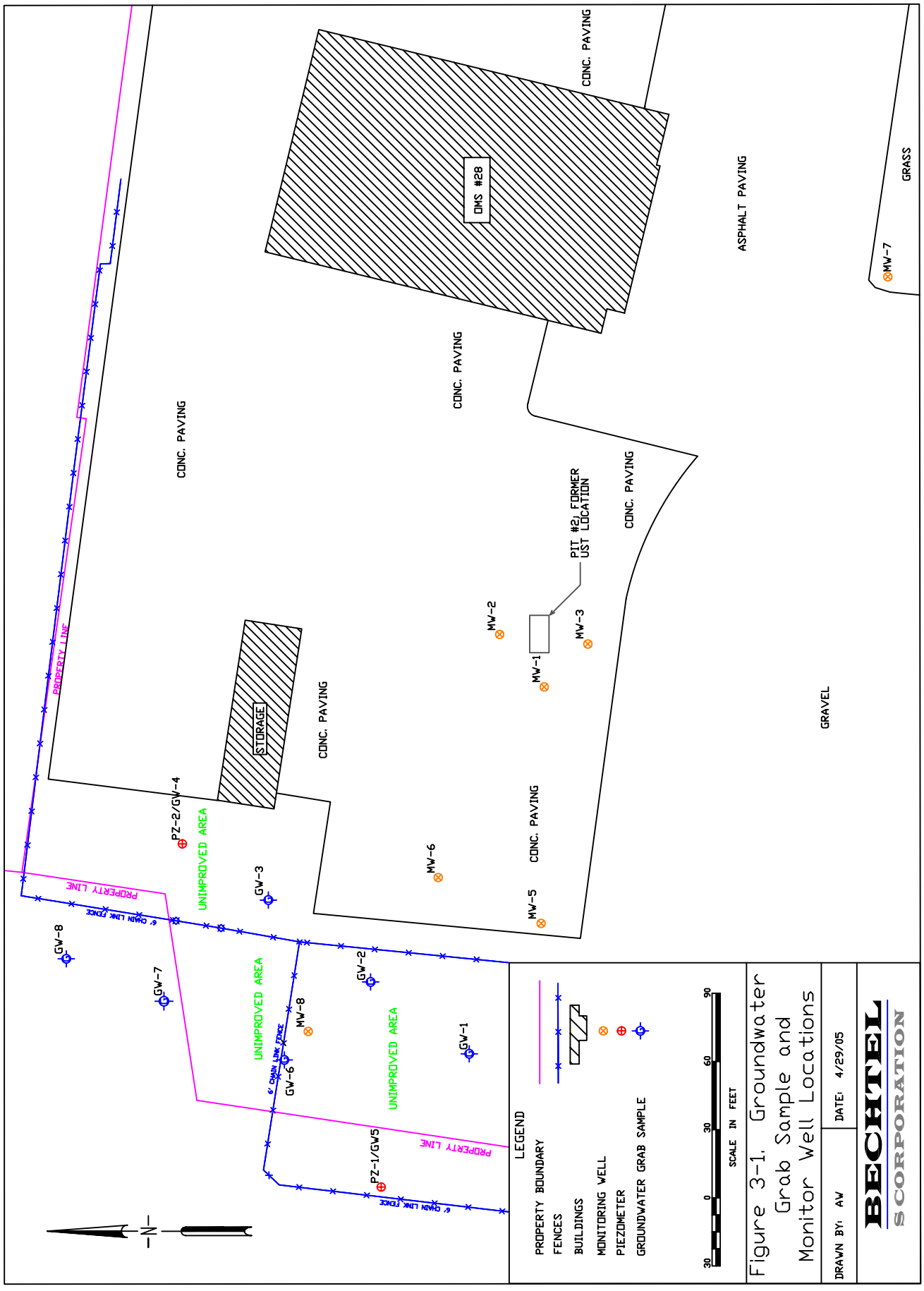
Groundwater grab samples indicate that contaminants associated with Pit #2 have not migrated off-site. Groundwater grab samples were collected from eight locations west and northwest of the concrete parking area. Grab sample locations are shown on the site map (Figure 3-1). The grab samples were collected using direct-push techniques. A pilot hole was hand augered to just above the water table. A screen-point sampler was then manually driven approximately four feet into the saturated zone. The drive rod was retracted to expose the screen, and a tubing check-valve pump was used to collect groundwater samples from the screen sampler. Groundwater grab samples were analyzed for BTEX and MTBE by Method 8021B at Severn Trent Laboratory in Mobile, AL with a next-day turn-around time. The only detection of target analyte was a trace detection of xylenes in sample 28GW2. Analytical results are summarized in Table 3-1. Complete analytical results are presented in Attachment A.

Table 3-1. Groundwater Grab Sample Analytical Results, µg/L

Sample ID	Benzene	Ethylbenzene	Toluene	Xylenes	MTBE
28GW1	<1.0	<1.0	<1.0	<2.0	<10.0
28GW2	<1.0	<1.0	<1.0	3.1	<10.0
28GW3	<1.0	<1.0	<1.0	<2.0	<10.0
28GW4	<1.0	<1.0	<1.0	<2.0	<10.0
28GW5	<1.0	<1.0	<1.0	<2.0	<10.0
28GW6	<1.0	<1.0	<1.0	<2.0	<10.0
28GW7	<1.0	<1.0	<1.0	<2.0	<10.0
28GW8	<1.0	<1.0	<1.0	<2.0	<10.0

3.2 Monitor Well Installation and Development

Shallow monitoring wells were installed in one upgradient and one downgradient location using a hollow-stem auger drill rig. The locations of the new wells are also shown on the site map (Figure 3-1). The upgradient monitor well was installed in the grassy area in the front of the OMS #28 main entrance. The downgradient well location was determined from the


CONC. PAVING
CONC. PAVING
CONC. PAVING
CONC. PAVING
CONC. PAVING
ASPHALT PAVING
GRAVEL
GRASS
OMS #28
STORAGE
PIT #2, FORMER UST LOCATION
MW-1
MW-2
MW-3
MW-5
MW-6
MW-7
PZ-2/GW-4
PZ-1/GW5
GW-1
GW-2
GW-3
GW-6
GW-7
GW-8
MW-8
UNIMPROVED AREA
UNIMPROVED AREA
UNIMPROVED AREA
PROPERTY LINE
PROPERTY LINE
PROPERTY LINE
6' CHAIN LINK FENCE
6' CHAIN LINK FENCE
6' CHAIN LINK FENCE
LEGEND
PROPERTY BOUNDARY
FENCES
BUILDINGS
MONITORING WELL
PIEZOMETER
GROUNDWATER GRAB SAMPLE
SCALE IN FEET
30
0
30
60
90
Figure 3-1, Groundwater Grab Sample and Monitor Well Locations
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results of the groundwater grab samples, and is located downgradient of the BTEX plume and west of the concrete-paved area. Both new monitoring wells have a 10 ft screen interval intercepting the water table and have a total depth of approximately 14 feet. Both wells were completed with a flush-mount surface protection. The wells were developed by surging with a bailer and pumping with a large-diameter tubing check-valve pump until the development water was visibly clear and free of sediment. Soil boring, monitoring well construction, and well development forms are included as Attachment B.

3.3 Monitor Well Sampling and Groundwater Analysis

The five existing and two new monitoring wells were sampled once as part of the SI in November 2004 and a second time in March 2005 to assess plume movement and any changes in contaminant concentrations following multi-phase vacuum extraction. Monitor well purging and sampling was conducted in accordance with the low-stress procedure to minimize sample turbidity and prevent loss of volatiles. Groundwater sampling log forms for both events are included as Attachment C.

All groundwater samples collected from the monitoring wells were analyzed by Severn Trent Laboratories, Pensacola (STL-Pensacola) for VOCs using Method SW8260B, for PAHs by Method SW8310, and for lead by Method SW6010B. Only analytes listed in the *Alabama Underground Storage Tank Release Investigation and Corrective Action Guidance Manual*. (ADEM, 1995) were reported for the November 2004 samples, while the full list of 8260B and 8310 analytes were reported for the March 2005 samples. Table 3-2 summarizes the results for all target analytes detected in the November and March sampling events. Complete analytical results and a quality control summary for each sampling event are included in Attachment D.

3.3.1 Groundwater Flow

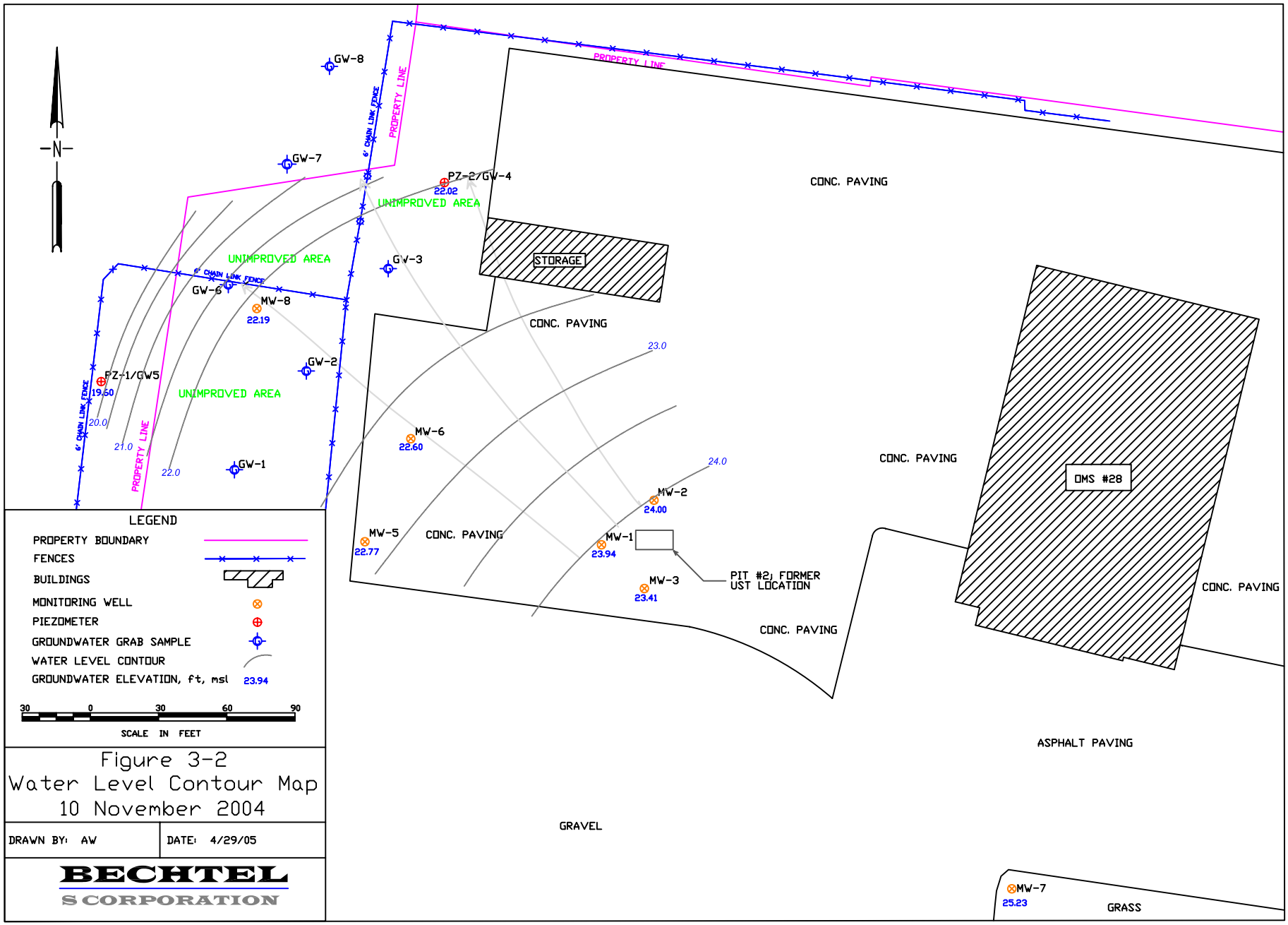
Two piezometers were installed at groundwater grab samples locations GW-4 and GW-5 to better define groundwater gradients across the site (see Figure 3-1). The piezometers are constructed of five feet of 1 inch PVC screen with a 1-inch PVC riser. The piezometer screen was driven approximately 2 to 3 feet below the water table. The top of the piezometer casing elevations were surveyed and all existing monitor wells were resurveyed to allow accurate measurement of groundwater elevations. Table 3-3 lists survey and water level data for all wells and piezometers at the site. Figures 3-2 and 3-3 show water table contour maps for November 2004 and March 2005, respectively. The figures show a slightly higher in water table elevation

Table 3-2. Summary of Analytes Detected in Groundwater

(All values in μg/L)

Analyte	PSL	MW-1	MW-2	MW-3	MW-5	MW-6	MW-7	MW-8
November 2004								
Benzene	5	**140**	<0.25	<0.25	<0.25	**60**	<0.25	<5.0
Ethylbenzene	700	580	<0.25	<0.25	<0.25	<1.2	<0.25	<5.0
Toluene	1000	7.6	<0.25	<0.25	<0.25	<1.2	<0.25	<5.0
Xylenes	10000	400	<0.75	<0.75	<0.75	10.5	<0.75	<15.0
Naphthalene	20	**260**	<0.25	<0.25	<0.25	**88**	<0.25	<5.0
Lead	15	<5.0	3.0 JB	5.0 B	4.0 JB	3.0 JB	6.0 B	<5.0
Benzo(b)fluoranthene	0.8	0.19 JP	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fluoranthene	20	0.2 JP	<1.0	<1.0	<1.0	0.076 JP	<1.0	<1.0
Phenanthrene	1000	0.38 JP	<1.0	<1.0	<1.0	0.20 JP	<1.0	<1.0
March 2005								
Benzene	5	**77**	<0.25	<0.25	<0.25	**41**	<0.25	<6.3
Ethylbenzene	700	400	<0.25	<0.25	<0.25	1.5	<0.25	<6.3
Isopropylbenzene	660[1]	16	<0.25	<0.25	<0.25	15	<0.25	<6.3
Naphthalene	20	**140**	<0.25	<0.25	<0.25	**59**	<0.25	<6.3
n-Butylbenzene	240[1]	<0.25	<0.25	<0.25	<0.25	4.7	<0.25	<6.3
n-Propylbenzene	240[1]	<0.25	<0.25	<0.25	<0.25	2.3	<0.25	<6.3
sec-Butylbenzene	240[1]	<0.25	<0.25	<0.25	<0.25	2.6	<0.25	<6.3
Toluene	1000	570	<0.25	<0.25	<0.25	0.71	<0.25	<6.3
1,2,3 Trimethylbenzene	12[1]	**350**	<0.25	<0.25	<0.25	6.8	<0.25	<6.3
1,2,4 Trimethylbenzene	12[1]	**100**	<0.25	<0.25	<0.25	**42**	<0.25	<6.3
o-Xylene	10000	270	<0.25	<0.25	<0.25	1.4	<0.25	<6.3
m & p Xylene	10000	960	<0. 50	<0. 50	<0. 50	5.1	<0. 50	<13
Lead	15	2.6 J	3.0 J	5.4	4.4 J	2.7 J	3.7 J	2.2 J
Acenapthalene	370	12	<1.0	<1.0	<1.0	<1.0	<1.2	<1.0
1-Methylnaphthalene	NA	29	<1.0	<1.0	<1.0	21	<1.2	<1.0
2-Methylnaphthalene	NA	56	<1.0	<1.0	<1.0	29	<1.2	<1.0

Notes: PSL = Preliminary Screening Level,; ADEM ISL (if available) or EPA Region 9 PRG
Bold = values exceed PSL
[1]EPA Region 9 PRG for Tap Water
J = Estimated result
NA = Not available
P = Second column result exceeds method criteria
B = Detected at similar concentration in blank


N
GW-8
GW-7
GW-3
GW-6
GW-2
GW-1
PZ-2/GW-4
22.02
PZ-1/GW5
19.60
MW-8
22.19
MW-6
22.60
MW-5
22.77
MW-2
24.00
MW-1
23.94
MW-3
23.41
MW-7
25.23
PROPERTY LINE
6' CHAIN LINK FENCE
UNIMPROVED AREA
STORAGE
CONC. PAVING
OMS #28
PIT #2, FORMER UST LOCATION
ASPHALT PAVING
GRASS
GRAVEL
20.0
21.0
22.0
23.0
24.0
LEGEND
PROPERTY BOUNDARY
FENCES
BUILDINGS
MONITORING WELL
PIEZOMETER
GROUNDWATER GRAB SAMPLE
WATER LEVEL CONTOUR
GROUNDWATER ELEVATION, ft, msl
23.94
30 0 30 60 90
SCALE IN FEET
Figure 3-2
Water Level Contour Map
10 November 2004
DRAWN BY: AW
DATE: 4/29/05
BECHTEL
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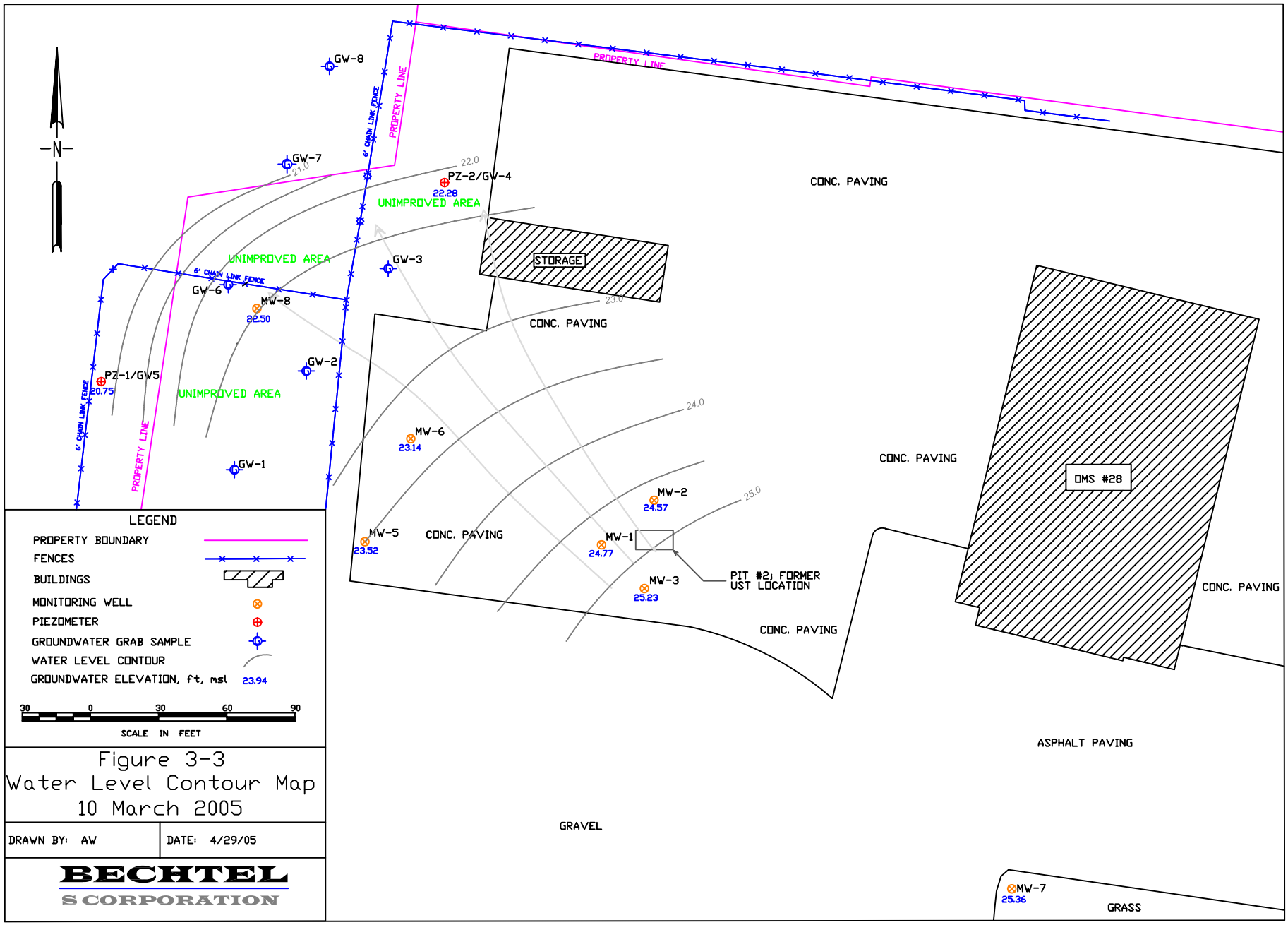
N
GW-8
GW-7
GW-6
GW-3
GW-2
GW-1
PZ-2/GW-4
22.28
PZ-1/GW5
20.75
MW-8
22.50
MW-6
23.14
MW-5
23.52
MW-2
24.57
MW-1
24.77
MW-3
25.23
MW-7
25.36
PROPERTY LINE
6' CHAIN LINK FENCE
UNIMPROVED AREA
STORAGE
CONC. PAVING
OMS #28
PIT #2; FORMER UST LOCATION
ASPHALT PAVING
GRAVEL
GRASS
22.0
23.0
24.0
25.0
LEGEND
PROPERTY BOUNDARY
FENCES
BUILDINGS
MONITORING WELL
PIEZOMETER
GROUNDWATER GRAB SAMPLE
WATER LEVEL CONTOUR
GROUNDWATER ELEVATION, ft, msl
23.94
30 0 30 60 90
SCALE IN FEET
Figure 3-3
Water Level Contour Map
10 March 2005
DRAWN BY: AW
DATE: 4/29/05
BECHTEL
S CORPORATION

in March than in November. Both figures also show a northwesterly flow direction, rather than the westerly flow determined by the 1994 SI; this apparent change is most likely an artifact of the improved control provided by the additional wells and piezometers installed in 2004. Both figures indicate that the groundwater gradient steepens markedly at the western edge of the area of investigation near PZ-1.

Table 3-3. Monitor Well and Piezometer Survey Data

Well ID	Northing	Easting	Top of Casing Elevation	Groundwater Elevation 3/10/04	Groundwater Elevation 11/10/04	Groundwater Elevation 3/10/05
MW-1	238316.1	1791029	28.82	24.39	23.94	24.77
MW-2	238335.5	1791052	28.53	24.52	24	24.57
MW-3	238296.7	1791048	28.99	24.84	24.41	25.23
MW-5	238317.5	1790925	28.14	23.21	22.77	23.52
MW-6	238362.4	1790945	28.15	22.90	22.6	23.14
MW-7	238164.7	1791210	27.55		25.23	25.36
MW-8	238419.9	1790877	28.17		22.19	22.5
PZ-1	238387.8	1790809	27.55		19.6	20.75
PZ-2	238475.2	1790960	28.15		22.02	22.28

NOTE: Survey coordinates based on AL State Plane Coordinate System, West Zone, NAD 83. Vertical elevations based on NGVD 1989.

3.3.2 Contaminant Distribution

A plume of dissolved hydrocarbons extends downgradient from the former tank location near MW-1 to MW-6. No other wells currently contain detectable concentrations of target analytes. The distributions of benzene in OMS #28 groundwater in November 2004 and March 2005 are shown in Figures 3-4 and 3-5, respectively. Other site contaminants have a distribution similar to that shown for benzene, with recent detections confined to MW-1 and MW-6.

Groundwater analytical results confirm that contaminants associated with the former Pit #2 UST have not migrated off site. No target analytes were detected in the new downgradient well west of the concrete covered area, MW-8; except for a low-level lead detection in March 2005 that is consistent with lead concentrations in the upgradient (background) location.

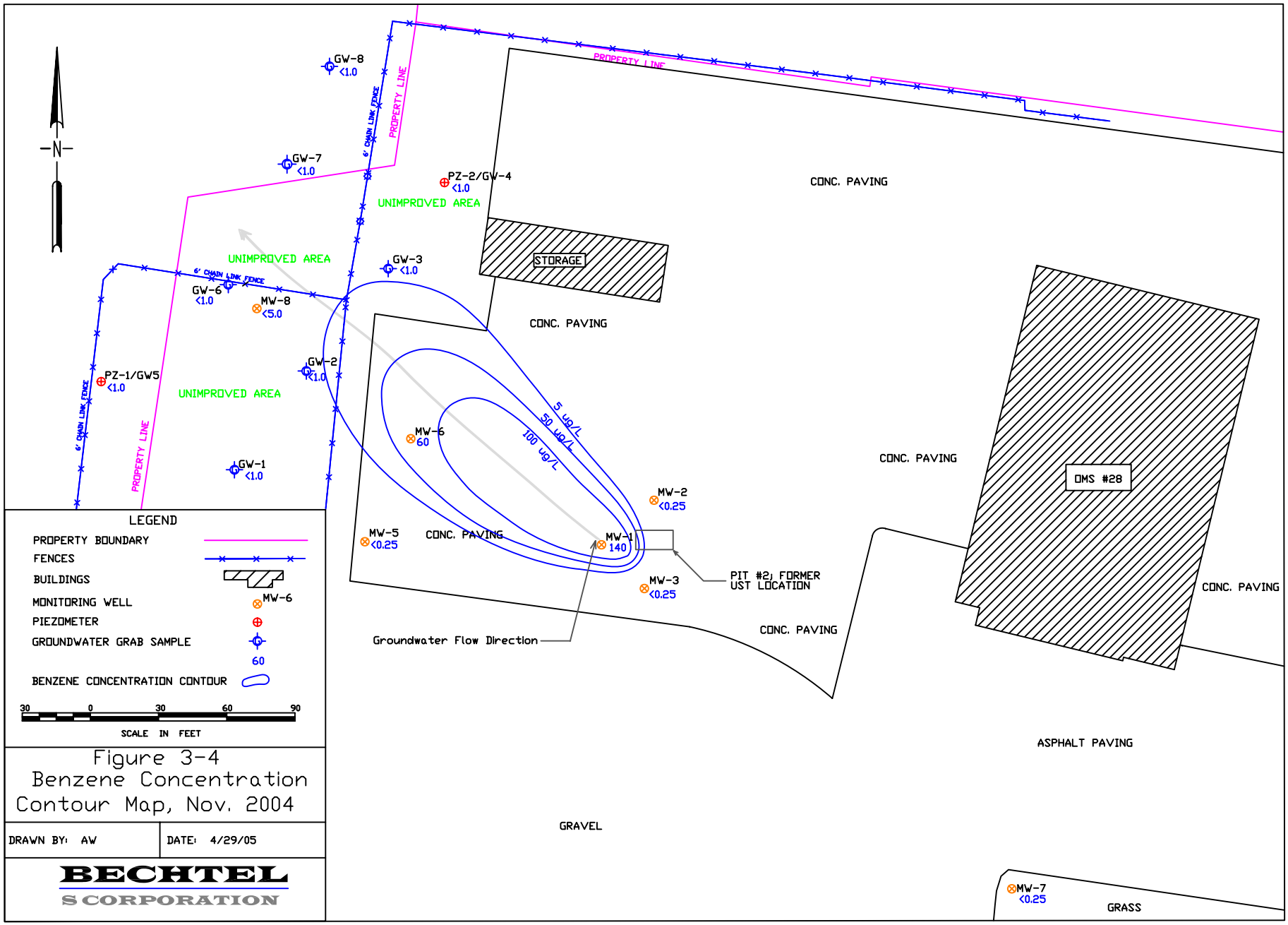

Figure 3-4
Benzene Concentration Contour Map, Nov. 2004

DRAWN BY: AW | DATE: 4/29/05

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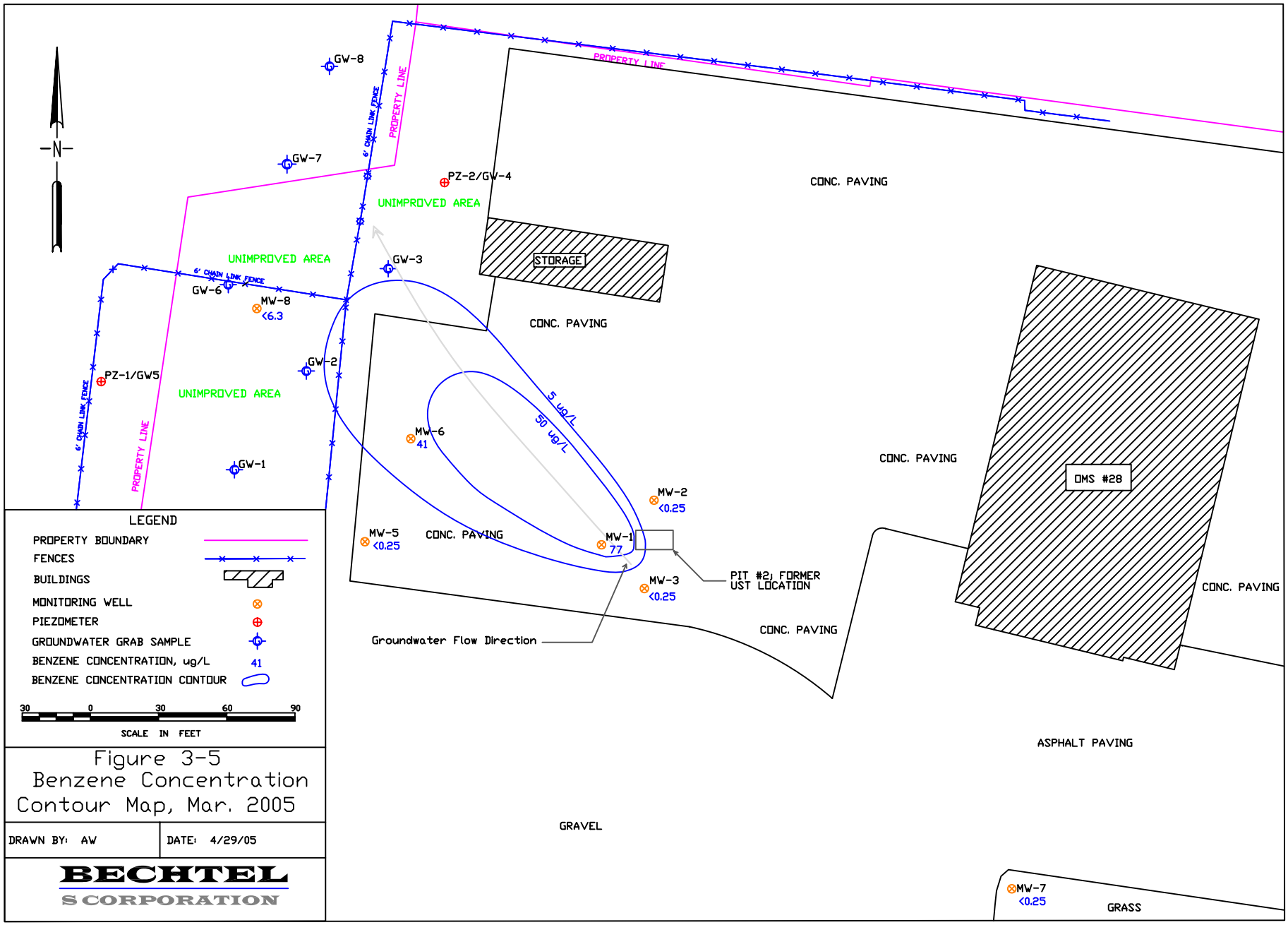

Figure 3-5
Benzene Concentration Contour Map, Mar. 2005

DRAWN BY: AW | DATE: 4/29/05

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The concentrations of several contaminants appear to vary as a function of water level. Source area (MW-1) concentrations of benzene, ethylbenzene, and naphthalene declined between November 2004 and March 2005, however toluene and xylene concentrations increased during the same time period.

The more extensive analyte list reported for March 2005 samples indicates the presence of additional fuel constituents in source area and downgradient groundwater, including butylbenzenes, trimethylbenzenes, and methylnaphthalenes in addition to the previously reported BTEX and naphthalene. Of these compounds, only 1,2,3 - trimethylbenzene and 1,2,4 – trimethylbenzene exceed preliminary screening levels (PSLs), in this case the EPA Region IX Preliminary Remediation Goals (PRGs) for tap water. None of the PAHs listed in the ADEM UST closure guidance exceed PSLs in either set of samples. All lead detections are below the PSL and are consistent with the concentrations reported in the upgradient well.

3.4 Source Area LNAPL

Trace amounts of LNAPL were produced with groundwater from MW-1 during sampling in 2004, especially at higher pumping rates (< 1000 mL/min). LNAPL was produced as small droplets that coalesced to form small floating blobs and a ring around the plastic bucket used to contain purge water. The total volume of LNAPL produced during purging was less than 5 mL in 5 gallons of water. Figure 3-6 shows the appearance of LNAPL in the MW-1 purge water from November 2004. In March 2005, following multi-phase extraction from MW-1, even smaller amounts of LNAPL were produced; only a faint ring of orange-colored hydrocarbons on the side of the bucket and a slight sheen was visible, as shown in Figure 3-7. Because of the small amounts of LNAPL present and the relatively tight formation, the prospects for further LNAPL recovery are limited.

3.5 Multi-Phase Vacuum Extraction

EcoVac Services was contracted to perform an 8-hour multi-phase vacuum extraction event at OMS #28 on December 10, 2004. The vacuum truck was connected to MW-1 and pumped an 8-hour period with a vacuum of approximately 25 inches of mercury. Flow rates ranged from 54 to 68 actual cubic feet per minute (ACFM) during this event. Vacuum readings recorded at extraction well MW-1 ranged from 20 to 21 inches of mercury. No measurable vacuum was recorded at any other well, indicating a very limited radius of influence for the vacuum extraction.

Figure 3-6. Non-Aqueous Phase Liquids in MW-1 Purge Water, Nov. 2004

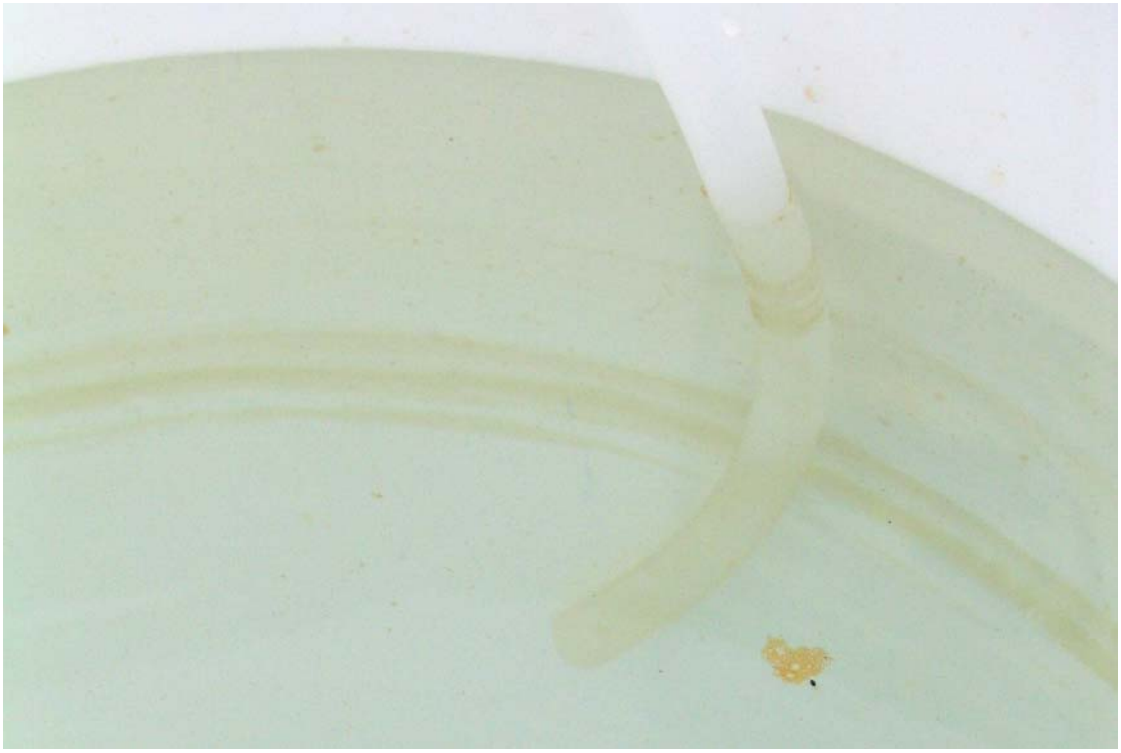


Figure 3-7. Non-Aqueous Phase Liquids in MW-1 Purge Water, March 2005

A calculated total of 5.6 pounds of petroleum hydrocarbons (approximately 0.9 equivalent gallon of gasoline) was removed as hydrocarbon vapors. Vapor concentrations ranged from 500 to 800 parts per million by volume (PPM_V) during the event. The hydrocarbon removal rate ranged from 0.4 to 0.8 pounds per hour during the event. Removal rates increased from 0.4 to 0.8 pound per hour during the initial two hours of extraction, as the water level around the extraction well was drawn down, and decreased to 0.7 pound per during the final six hours of this event. Vapors were treated with a dual internal combustion engine unit and analyzed for hydrocarbon content. A calculated total of 0.07 pound of hydrocarbons was released to the atmosphere. The vapor treatment achieved a destruction efficiency of 98.85%.

No measurable layer of LNAPL was detected in the extraction well prior to or upon completion of this event. The complete EcoVac report is included as Attachment E.

3.6 Contaminant Transport and Attenuation

Contaminant distribution in groundwater is controlled by source area conditions and the balance between migration and attenuation rates. This section evaluates results from the three most recent monitoring events and considers the potential for further contaminant migration.

3.6.1 Contaminant Transport

Results from the three most recent sampling events show no clear source area reduction in dissolved contaminants concentrations following vacuum extraction. Benzene and ethylbenzene concentrations in MW-1 have consistently decreased over time, but concentrations of toluene, xylene, and naphthalene in MW-1 have fluctuated but have generally increased. The fluctuations in contaminant concentrations may be correlated with changes in water level, as shown in Figure 3-8. The lower water level in November 2004 is correlated with decreased concentrations of toluene and xylenes. This correlation may be the result of groundwater interaction with a thin layer of soil near the maximum water table elevation that contains residual LNAPL; when the water table elevation drops below the level of the zone containing residual LNAPL dissolved contaminant concentrations also drop. It is unclear why benzene and ethylbenzene concentrations react differently to changes in water table elevation; additional monitoring data is needed to verify any correlation between water level and source area contaminant concentrations.

Downgradient concentrations of benzene and other contaminants have also fluctuated, but are generally increasing over time, as shown in Figure 3-9. The higher November 2004

Figure 3-8. Contaminant Concentration Trends, MW-1

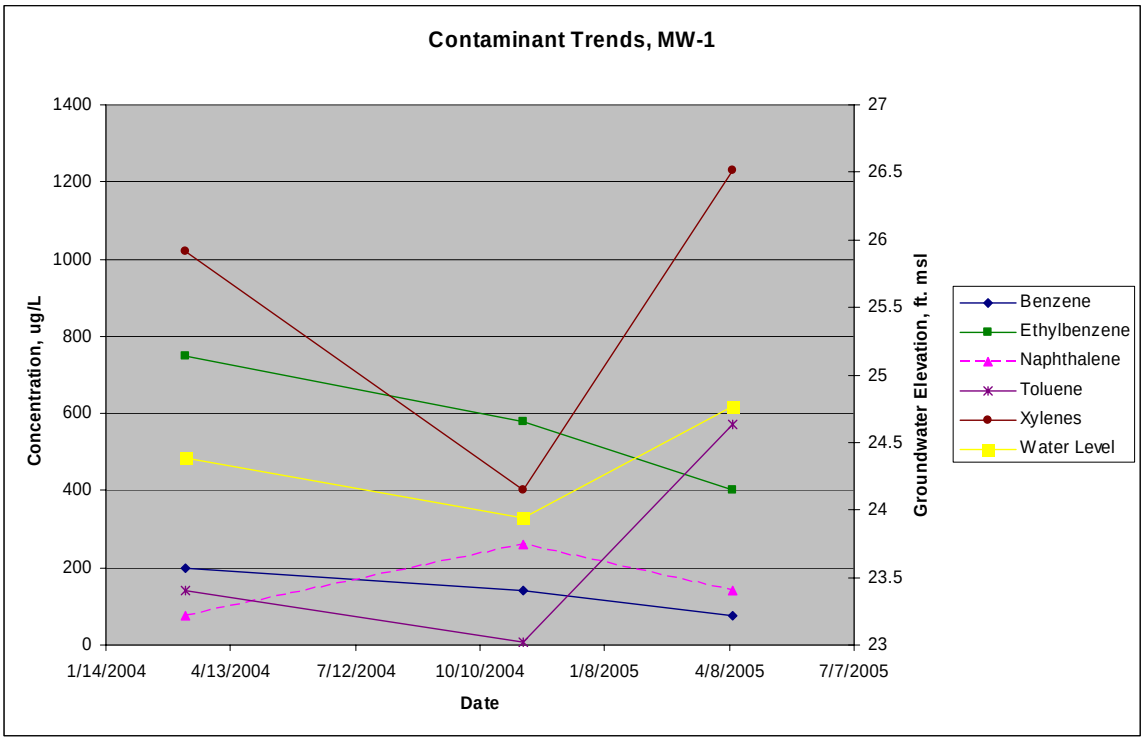
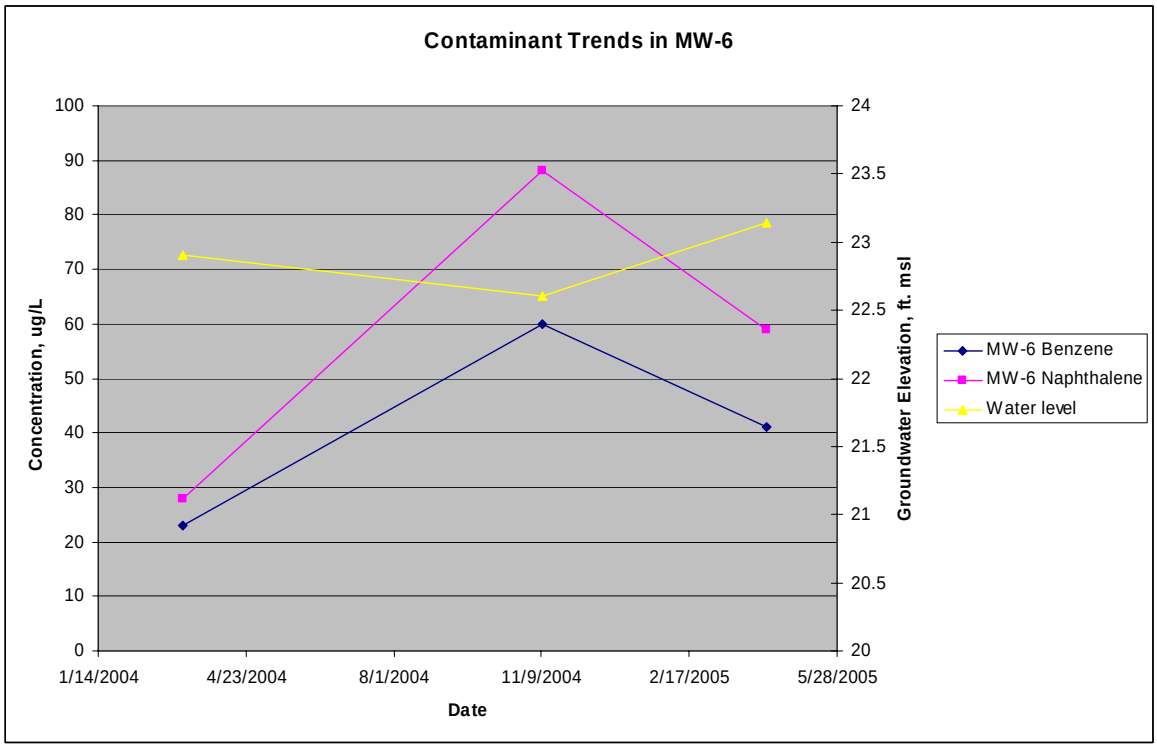


Figure 3-9. Contaminant Concentration Trends, MW-6



concentrations of benzene and naphthalene correlate with a lower water level, in contrast to the decrease in contaminant concentrations with decreasing water level in MW-1. Once again, additional monitoring is needed to determine if changes in contaminant concentration are the result of water level changes, changes in plume distribution or groundwater flow direction, or random variability in sampling and analytical procedures.

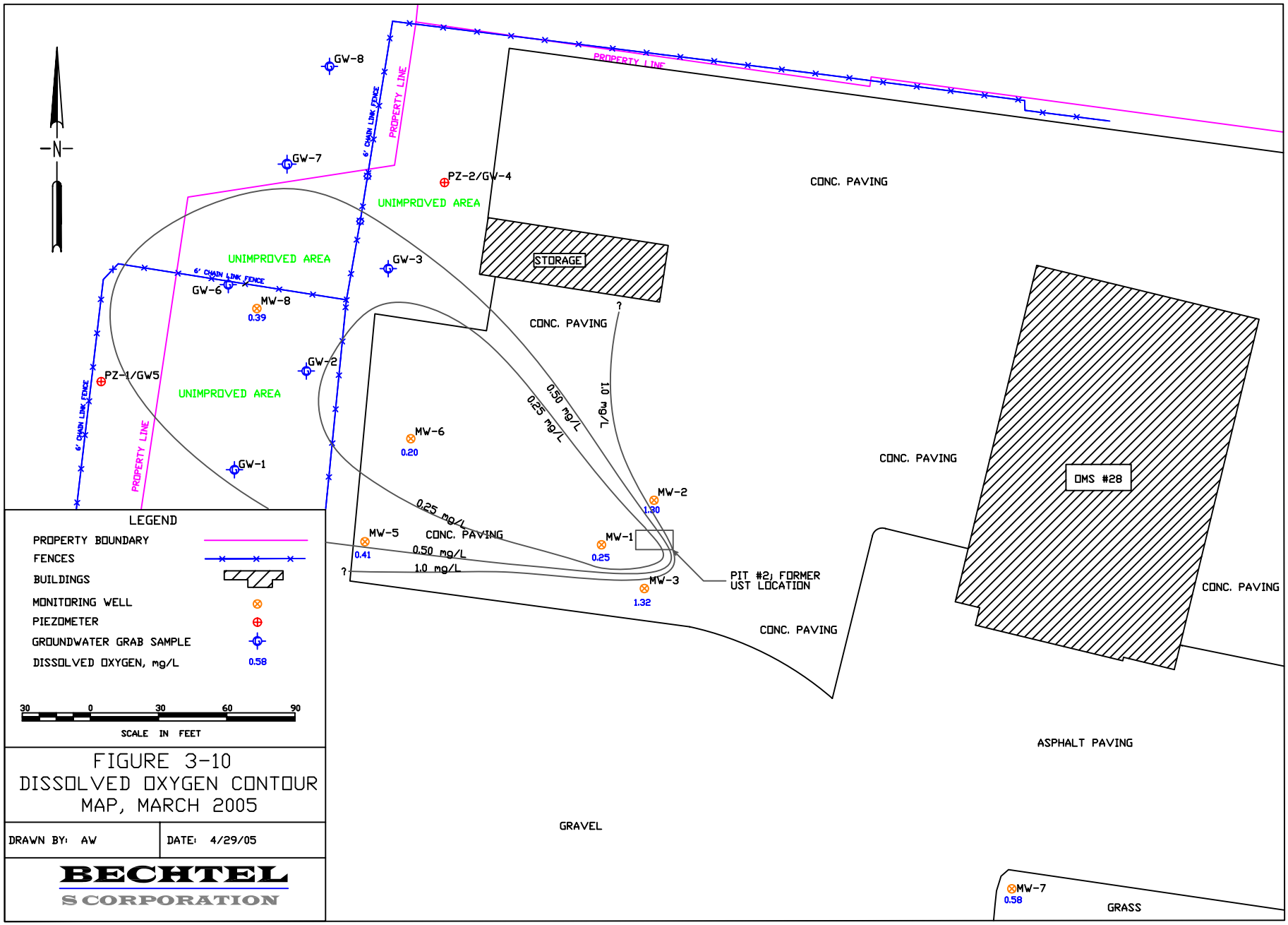
3.6.2 Natural Attenuation Potential

Data obtained during monitor well purging in March 2005 indicate that moderate levels of oxygen enter the source area from upgradient but are depleted in the source area and downgradient plume, limiting the attenuation of dissolved hydrocarbons. Downgradient of the concrete-paved area dissolved oxygen levels rebound slightly, allowing attenuation of the remaining dissolved hydrocarbons before the plume leaves ALARNG property.

The availability of adequate dissolved oxygen concentrations is the primary requirement for effective natural attenuation of fuel hydrocarbons. The availability of nutrients such as nitrate, near-neutral pH, and moderate temperature also affect the metabolic rates of the bacteria that degrade fuel hydrocarbons. At OMS #28 groundwater temperatures and pH are conducive to natural attenuation. No data on nitrate concentrations are available. Approximately 1.3 mg/L dissolved oxygen is present in wells MW-2 and MW-3, on either side of the source area. The upgradient well, MW-7 has a lower dissolved oxygen concentration, 0.58 mg/L, perhaps because groundwater in this area is locally confined below clayey sediments near the surface. The downgradient wells MW-5 and MW-8, outside the plume, had 0.41 and 0.39 mg/L dissolved oxygen respectively, suggesting that dissolved oxygen levels decline as groundwater moves under the concrete paving, even without the effects of fuel hydrocarbons. In the source area and within the downgradient plume dissolved oxygen concentrations are even lower; MW-1 and MW-6 contained 0.25 and 0.20 mg/L dissolved oxygen, respectively. Figure 3-10 shows approximate dissolved oxygen concentration contours for March 2005.

Dissolved oxygen data from November 2004 are considered unreliable. Several small bubbles were noted in the dissolved oxygen probe during sampling at MW-1, which was the last well sampled. The presence of bubbles causes dissolved oxygen readings to be biased high. It is not known how many readings were affected by the bubbles.

The increase in dissolved oxygen concentrations between MW-6 and MW-8, together with the shallow depth to groundwater and the relatively high groundwater recharge rates at the


N
GW-8
GW-7
PZ-2/GW-4
GW-3
GW-6
MW-8
0.39
GW-2
PZ-1/GW5
GW-1
MW-6
0.20
MW-5
0.41
MW-2
1.30
MW-1
0.25
MW-3
1.32
MW-7
0.58
PROPERTY LINE
6' CHAIN LINK FENCE
UNIMPROVED AREA
STORAGE
CONC. PAVING
OMS #28
PIT #2; FORMER UST LOCATION
ASPHALT PAVING
GRAVEL
GRASS
0.25 mg/L
0.50 mg/L
1.0 mg/L
LEGEND
PROPERTY BOUNDARY
FENCES
BUILDINGS
MONITORING WELL
PIEZOMETER
GROUNDWATER GRAB SAMPLE
DISSOLVED OXYGEN, mg/L
0.58
30 0 30 60 90
SCALE IN FEET
FIGURE 3-10
DISSOLVED OXYGEN CONTOUR MAP, MARCH 2005
DRAWN BY: AW
DATE: 4/29/05
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site suggest that sufficient oxygen is available downgradient of the concrete-paved area to degrade dissolved hydrocarbons before the plume leaves the OMS #28 site. However, groundwater dissolved oxygen concentrations are significantly below saturation at all locations sampled at OMS #28. The availability of additional dissolved oxygen would increase the natural attenuation rate for dissolved hydrocarbons, although nutrient additions might also be required to optimize attenuation rates.

3.7 Disposal of Investigation-Derived Waste

Monitoring well purge water and fluid produced during the multi-phase vacuum extraction was disposed as a non-hazardous, non-regulated waste at Industrial Water Services of Mobile, Alabama. Waste disposal manifests are included as Attachment F.

4.0 Conclusions and Recommendations

This section presents the conclusions of the SI Addendum and makes recommendations for further activities to support closure of OMS #28, Pit #2.

4.1 Conclusions

This SI Addendum has determined the current extent of groundwater contamination at OMS #28, Pit #2. Small amounts of residual LNAPL is present at MW-1. Vacuum extraction from MW-1 removed approximately 5.6 lbs of hydrocarbons from the immediate vicinity of MW-1, but had no effect on neighboring wells and removed only a small fraction of the total amount of hydrocarbons believed to be present. The vacuum extraction had no apparent effect on dissolved hydrocarbon concentrations, but a reduced the amount of LNAPL was produced in March 2005. The remaining LNAPL is effectively immobile under normal conditions, although it remains a source of dissolved hydrocarbons. The relatively tight formation conditions indicate that additional short-term vacuum extraction events from MW-1 will be of limited value.

Groundwater contamination does not extend off-site. Groundwater contamination with fuel hydrocarbons extends downgradient of the former UST location to MW-6; but only trace concentrations of fuel hydrocarbons were detected in grab samples downgradient of the concrete-paved area of the site and no target analytes were detected in the new downgradient monitoring well, MW-8. Contaminant concentrations in MW-6 have increased since the original SI, and appear to still be increasing, although more monitoring data is needed to establish clear trends.

Dissolved oxygen is depleted in the source area and as far downgradient as MW-6, however dissolved oxygen concentrations rebound downgradient of the concrete-paved area. Sufficient dissolved oxygen is present at MW-8 to degrade any hydrocarbons that might migrate that far downgradient, preventing any off-site migration.

4.2 Recommendations

Continued groundwater monitoring is recommended for OM #28. Semiannual monitoring of wells MW-1, 6, 7, and 8 for BTEX plus naphthalene is recommended to evaluate trends in contaminant concentrations and verify that no off-site migration occurs. Water level measurements at all wells and piezometers should be measured semiannually to evaluate the

groundwater flow direction and confirm the apparent correlations between water levels and contaminant concentrations.

No further LNAPL removal efforts are recommended. The trace amounts of LNAPL present in the formation are immobile and have largely been depleted of aromatic constituents in the decades since fuels were leaked from the former UST. The short-term vacuum extraction performed as part of this investigation indicates that 1) substantial effort would be needed to recover any additional hydrocarbons; 2) the LNAPL removal process would likely not achieve complete removal; and 3) any extraction efforts would likely have little if any immediate impact on dissolved hydrocarbon concentrations.

If continued monitoring detects any site contaminants at MW-8, additional oxygen should be supplied to the shallow groundwater along the western edge of the concrete paving using Regenesis' Oxygen-Releasing Compound (ORC), or an equivalent product. ORC injection provides an inexpensive and effective means to prevent any future off-site contaminant migration. Analysis for additional natural attenuation parameters, including groundwater alkalinity, iron, nitrate/nitrite, and total organic carbon would be useful at this point to assess ORC application rates and the need for any nutrient application.

The ARBCA for OMS #28, Pit #2, submitted concurrently with this SI Addendum, indicates no current or likely future risk from this site because no off-site migration has occurred and there is no current or likely future receptor exposed to the shallow groundwater. Consequently, the site is recommended for Tier 1 closure with monitored natural attenuation.

5.0 References

ADEM, 1995. *Alabama Underground Storage Tank Release Investigation and Corrective Action Guidance Manual*. May 1995

ADEM 1998a. Letter from Stephanie Carter to Ms Rita Reeves, Alabama Armory Commission, "RE: Groundwater Monitoring Reports dated March 6, 1997 and September 5 1997" dated 9 February, 1998.

ADEM 1998b. *Alabama Risk-Based Corrective Action for Underground Storage Tanks Guidance Manual*. April 1998

ADEM 2001. *Alabama Risk-Based Corrective Action for Underground Storage Tanks Guidance Manual*. November 2001.

ADEM 2001. *ARBCA Alabama Risk-Based Corrective Action Guidance Manual.* December 2001.

ADEM, 2004. Letter from John Pierce, UST Corrective Action Section, to LTC Brian Barrontine, Alabama Army National Guard Environmental Division, RE: Authorization To Implement Secondary Investigation Addendum Work Plan, OMS #28 Pit-2, dated 14 September 2004.

Analytical Chemical Testing Laboratory, Inc, 1996. *Groundwater Monitoring Report, Fourth Quarter Sampling Event, Alabama National Guard Armory OMS #28 &29 – Pit #2*. January 1996.

Bechtel-S Corp, 2003. *Final Work Plan and Site Safety and Health Plan For Investigation Activities, Sites 22 and 27, Brookley Field AFB, AL*. January 2003.

BCM Engineers, 1999. *Draft Final Site Investigation Report for the Former Brookley Field Air Force Base (AFB),* 1999.

CWA Group, Inc. 1992. *UST Closure Site Assessment Report, The Amory Commission of Alabama OMS #28 and 29 – Pit #1, Pit #2 and Pit #3.* Report dated November 10, 1992.

Foster Wheeler Environmental, August 2001. *Final Preliminary Investigation Report for Sites 22 And 27, Former Brookley Field Air Force Base Mobile, Alabama*

P.E. LaMoreaux and Associates, Inc, 1993. *Preliminary Investigation Report, OMS #28 Pit #2.* Report dated Dec. 7 1993.

P.E. LaMoreaux and Associates, Inc, 1994. *Underground Storage Tank Secondary Investigation Report, Alabama National Guard Armory OMS #28 and 29 - Pit #2*. Report dated Dec. 7 1994.

P.E. LaMoreaux and Associates, Inc, 1996. Letter to Mr. Tim Young, ADEM, "RE: OMS 28 and 29, Pit #2" dated July 3, 1997.

P.E. LaMoreaux and Associates, Inc, 1997a. Letter to Mr. Tim Young, ADEM, "RE: OMS 28 and 29, Pit #2" dated March 6, 1997.

P.E. LaMoreaux and Associates, Inc, 1997b. Letter to Ms. Stephanie Carter, ADEM, "RE: OMS 28 and 29, Pit #2" dated Sept. 5, 1997.

Attachment A
Data Quality Evaluation and Analytical Results for Groundwater Grab Samples, October 2004

Data Quality Evaluation

Eight groundwater grab samples were collected from OMS #28 on 6 October 2004 and delivered to Severn-Trent Laboratories in Mobile, Alabama on that same day for analysis of benzene, ethylbenzene, toluene, xylenes (BETX) and methyl-t-butyl ether (MTBE) by Method SW 8021B. One trip blank sample was also included. All samples were prepared and analyzed on 6 October 2004; all analytical work was completed within required hold times. Results were reported by STL-Mobile on 8 October 2004 as Order Number M437725.

The sample detection limits (1 μg/L for benzene, ethylbenzene, and toluene, 2 μg/L for xylenes, and 10 μg/L for MTBE) met the project requirements for screening-level analyses. The trip blank indicated no sample contamination at these detection limits. The method blank sample likewise demonstrates no detectable laboratory contamination of the analytical system. The laboratory control sample recoveries ranged from 75% for MTBE to 94% for toluene, with a relative percent difference (RPD) ranging from 0% for benzene to 13% for MTBE. All analytical recovery and RPD percentages are within project data quality limits.

No other analytical quality control procedures were performed for these screening-level analyses.

SEVERN TRENT STL

STL Mobile 900 Lakeside Drive - Mobile AL 36693 Telephone:(251) 666-6633 Fax:(251) 666-6696

Analytical Report

For: Mr. Andy Weinberg
Bechtel S Corporation
8817 Mosquero Circle
Austin, TX 78748
CC:

Order Number: M437725
SDG Number:
Client Project ID:
Project: ALARNG OMS 28
Report Date: 10/08/2004
Sampled By: Client
Sample Received Date: 10/06/2004
Requisition Number:
Purchase Order:

10/8/04

Dale Darley, Project Manager
ddarley@stl-inc.com

SEVERN TRENT STL

STL Mobile 900 Lakeside Drive - Mobile AL 36693 Telephone:(251) 666-6633 Fax:(251) 666-6696

Sample Summary

Order: M437725 Client: Bechtel S Corporation
Date Received: 10/06/2004 Project: ALARNG OMS 28

Client Sample ID	Lab Sample ID	Matrix	Date Sampled
28GW1	M437725*1	Liquid	10/06/2004 12:45
28GW2	M437725*2	Liquid	10/06/2004 13:10
28GW6	M437725*3	Liquid	10/06/2004 13:40
28GW5	M437725*4	Liquid	10/06/2004 14:00
28GW03	M437725*5	Liquid	10/06/2004 14:40
28GW04	M437725*6	Liquid	10/06/2004 15:00
28GW7	M437725*7	Liquid	10/06/2004 15:20
28GW8	M437725*8	Liquid	10/06/2004 15:45
Trip Blank	M437725*9	Liquid	10/06/2004 08:00

SEVERN TRENT STL

STL Mobile 900 Lakeside Drive - Mobile AL 36693 Telephone:(251) 666-6633 Fax:(251) 666-6696

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
37725-1	28GW1	Liquid	10/06/04	10/06/04 12:45	
37725-2	28GW2	Liquid	10/06/04	10/06/04 13:10	
37725-3	28GW6	Liquid	10/06/04	10/06/04 13:40	
37725-4	28GW5	Liquid	10/06/04	10/06/04 14:00	
37725-5	28GW03	Liquid	10/06/04	10/06/04 14:40	

		Lab Sample IDs				
Parameter	**Units**	**37725-1**	**37725-2**	**37725-3**	**37725-4**	**37725-5**
Purgeables (8021B)						
Benzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Ethyl Benzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes	ug/l	<2.0	3.1	<2.0	<2.0	<2.0
Methyl t-butyl ether (MTBE)	ug/l	<10	<10	<10	<10	<10
Prep Date		10/06/04	10/06/04	10/06/04	10/06/04	10/06/04
Analysis Date		10/06/04	10/06/04	10/06/04	10/06/04	10/06/04
Analysis Time		19:03	19:33	21:33	21:03	20:03
Analyst		JB	JB	JB	JB	JB

SEVERN TRENT STL

STL Mobile 900 Lakeside Drive - Mobile AL 36693 Telephone:(251) 666-6633 Fax:(251) 666-6696

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
37725-6	28GW04	Liquid	10/06/04	10/06/04 15:00	
37725-7	28GW7	Liquid	10/06/04	10/06/04 15:20	
37725-8	28GW8	Liquid	10/06/04	10/06/04 15:45	
37725-9	Trip Blank	Liquid	10/06/04	10/06/04 08:00	

Parameter	Units	Lab Sample IDs 37725-6	37725-7	37725-8	37725-9
Purgeables (8021B)					
Benzene	ug/l	<1.0	<1.0	<1.0	<1.0
Ethyl Benzene	ug/l	<1.0	<1.0	<1.0	<1.0
Toluene	ug/l	<1.0	<1.0	<1.0	<1.0
Xylenes	ug/l	<2.0	<2.0	<2.0	<2.0
Methyl t-butyl ether (MTBE)	ug/l	<10	<10	<10	<10
Prep Date		10/06/04	10/06/04	10/06/04	10/06/04
Analysis Date		10/06/04	10/06/04	10/06/04	10/06/04
Analysis Time		20:33	22:03	22:32	17:33
Analyst		JB	JB	JB	JB

SEVERN TRENT STL

STL Mobile 900 Lakeside Drive - Mobile AL 36693 Telephone:(251) 666-6633 Fax:(251) 666-6696

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
37725-10	Method Blank	Liquid	10/06/04		
37725-11	Lab Control Standard % Recovery	Liquid	10/06/04		
37725-12	Precision (%RPD) of LCS/LCSD	Liquid	10/06/04		

Parameter	Units	Lab Sample IDs 37725-10	37725-11	37725-12
Purgeables (8021B)				
Benzene	ug/l	<1.0	85 %	0 %
Ethyl Benzene	ug/l	<1.0	88 %	5.7 %
Toluene	ug/l	<1.0	94 %	5.3 %
Xylenes	ug/l	<2.0	91 %	2.2 %
Methyl t-butyl ether (MTBE)	ug/l	<10	75 %	13 %
Prep Date		10/06/04	10/06/04	
Analysis Date		10/06/04	10/06/04	
Analysis Time		14:28	13:28	
Analyst		JB	JB	

Serial Number 17671

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

X **STL Mobile**
900 Lakeside Drive
Mobile, AL 36693

Website: www.stl-inc.com
Phone: (251) 666-6633
Fax: (251) 666-6696

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
ALARNG OMS 28		AL
SAMPLER'S SIGNATURE	P.O. NUMBER	CONTRACT NO.
Andrew Weinbegg		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Andrew Weinbegg	512.693.9353	
CLIENT NAME	CLIENT E-MAIL	
Bechtel-S	aweinbegg@austin.rr.com	
CLIENT ADDRESS		
203 E. Milton St, Austin TX 78704		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) X

DATE DUE 10.7

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT,...)	REQUIRED ANALYSIS: 8260	REQUIRED ANALYSIS: PRESERVATIVE	NUMBER OF CONTAINERS SUBMITTED	REMARKS
10.6	1245	28GW1		G				3		3	no preservative
	1310	28GW2		G				3		3	
	1340	28GW6 *		G				3		3	
	1400	28GW5		G				3		3	
	1410	28GW03 *		G				3		3	
	1500	28GW04 *		G				3		3	
	1520	28GW7 *		G				3		3	
	1545	28GW8		G				3		3	
	1600	28GW9		G				3		3	
	0800	TB01		G				3		3	* priority samples

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS	10-6-04	1700						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS				10/6/04	1635			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL MOBILE LOG NO.	LABORATORY REMARKS
	10/6/04	16:45	YES ○ NO ○		M437725	2.9°C

STL8240-700 (12/02)

Attachment B
Soil Boring and Monitor Well Construction Logs

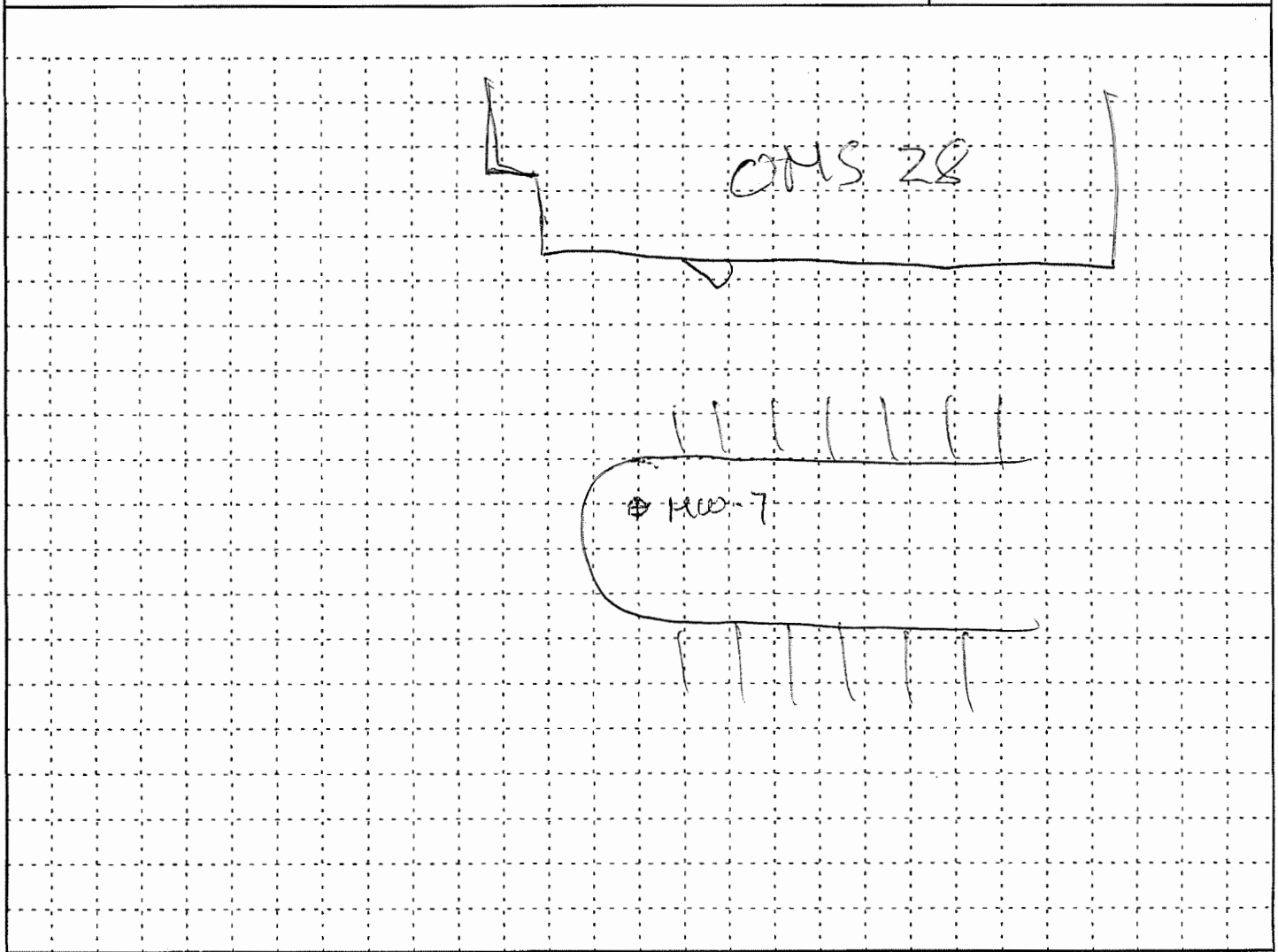
HTRW DRILLING LOG

DISTRICT: Mobile		HOLE NUMBER: OMS-28 MW 7
1. COMPANY NAME: Bechtel-S	2. DRILL SUBCONTRACTOR: Southern Earth Sciences	SHEET 1 OF 3
3. PROJECT: OMS 28 Addn'l ST	4. LOCATION: OMS-28	
5. NAME OF DRILLER: Mike White / Mike Cuif	6. MANUFACTURER'S DESIGNATION OF DRILL: Longyear	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 6" ID HSA	8. HOLE LOCATION	
	9. SURFACE ELEVATION	
	10. DATE STARTED: 10-7-04	11. DATE COMPLETED: 10-7-04
12. OVERBURDEN THICKNESS	15. DEPTH GROUNDWATER ENCOUNTERED	
13. DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE: 15'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	—	—	

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOLAL CORE RECOVERY %
	none					
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: Andrew Wenker		
		X				

LOCATION SKETCH/COMMENTS — SCALE



PROJECT — HOLE NO. OMS 28 MW07

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER

PROJECT | INSPECTOR | SHEET SHEETS OF

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	Silty Sand, fine to v fine sand, tan to yellow, moist soft, slightly plastic w 10% fines					
	2						casing
	3						
	4						
	5	As above, becoming wetter					
	6	Silty sand, increasing fines @ 5.7'					
	7	reddish brown, moist to dry					
		Silty sand, as at surface ~~above~~					
	8	~~tan~~ yellow to tan, moister					
▽	9						

PROJECT | HOLE NO.

ENG FORM 5056A-R. AUG 94 (Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: 28-MW07

PROJECT: OHS 28 Addn'l SI

INSPECTOR: Andrew Montreal

SHEET 3 OF 3 SHEETS

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	10	Silty sand, as above					
	11						
	12						
	13						Screen + Sand pack
	14	Sand, tan to white clean sand w 5% fines, more water coming in to hole					
	15						6" Sump

PROJECT

HOLE NO.

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

Facility/Project Name OMS-28	**Local Grid Location of Well** ____ m. ☐ N. ____ m. ☐ E. ____ m. ☐ S. ____ m. ☐ W.	**Well Number** OMS 28 MW07
Facility License, Permit or Monitoring Number	**Grid Origin Location** Lat. ____ Long. ____ or St. Plane ____ m. N. ____ m. E.	**Date Well Installed (Start)** 10-7-04
Type of Protective Cover: Above-Ground ☐ Flush-To-Ground ☒	**Section Location of Waste/Source** ____ ¼ of ____ ¼ of Sec. ____ T. ____ N.R. ☐ E. ☐ W.	**Date Well Installed (Completed)** 10-7-04
Well Distance From Waste/Source Boundary ~200' GRP	**Location of Well Relative to Waste/Source** u ☒ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	**Well Installed By: (Person's Name & Firm)** Andrew Weinberg Bechtel-S Coop
Maximum Depth of Frost Penetration (estimated) na		

Note: Use top of casing (TOC) for all depth measurements.

A. Protective casing, top elevation 0 m. MSL
B. Well casing, top elevation 0 m. MSL
C. Land surface elevation ____ m. MSL
D. Surface seal, bottom 3' m. TOC or ____ m. MSL

16. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

17. Sieve analysis attached? ☐ Yes ☒ No

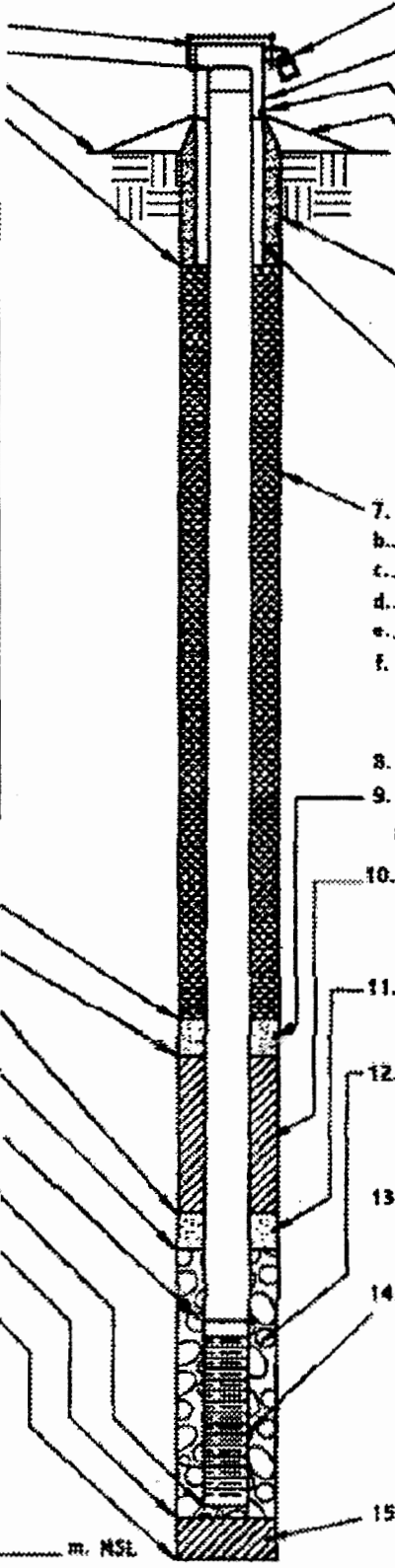
18. Drilling method used: Rotary ☐ Hollow Stem Auger ☒ ____ Other ☐

19. Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☒

20. Drilling additives used? ☐ Yes ☒ No
Describe ____

21. Source of water (attach analysis):
____

E. Secondary filter, top ____ m. TOC or ____ m. MSL
F. Bentonite seal, top 1' m. TOC or ____ m. MSL
G. Secondary filter, top ____ m. TOC or ____ m. MSL
H. Primary filter, top 3' m. TOC or ____ m. MSL
I. Screen joint, top 5' m. TOC or ____ m. MSL
J. Well bottom 15' m. TOC or ____ m. MSL
K. Filter pack, bottom 15.5 m. TOC or ____ m. MSL
L. Borehole, bottom 15.5 m. TOC or ____ m. MSL
M. Borehole, diameter ____ mm.
N. O.D. well casing 2.25" mm.
O. I.D. well casing 2" mm.
P. 24-hr water level after completion ____ m. TOC or ____ m. MSL



1. Cap and lock? ☒ Yes ☐ No
2. Protective posts? ☐ Yes ☒ No
3. Protective casing:
a. Inside diameter: 10" mm.
b. Length: 18" m.
4. Drainage port(s) ☐ Yes ☒ No
5. Surface seal:
a. Cap: Gravel blanket ☐ Bentonite ☐ Concrete ☒ ____ Other ☐
b. Annular space seal: Bentonite ☐ Cement ☒ ____ Other ☐
6. Material between well casing and protective casing: Bentonite ☐ Cement ☐ ____ Other ☐
7. Annular space seal: a. Granular Bentonite ☒
b. ____ Lbs/gal mud weight Bentonite-sand slurry ☐
c. ____ Lbs/gal mud weight Bentonite slurry ☐
d. ____ x Bentonite Bentonite-cement grout ☐
e. ____ m^3 volume added for any of the above
f. How installed: Tremie ☐ Tremie pumped ☐ Gravity ☒
8. Centralizers ☐ Yes ☒ No
9. Secondary Filter ☐ Yes ☐ No
a. Volume added ____ m^3 ____ Bags/Size
10. Bentonite seal: a. Bentonite granules ☐
b. ☐ ¼ in. ☒ ⅜ in. ☐ ½ in. Bentonite pellets ☒
c. ____ Other ☐
11. Secondary Filter ☐ Yes ☒ No
a. Volume added ____ m^3 ____ Bags/Size
12. Filter pack material: Manufacturer, product name & mesh size
a. Southern Filter Media 20/40
b. Volume added ____ m^3 7/#50 Bags/Size
13. Well casing: Flush threaded PVC schedule 40 ☒ Flush threaded PVC schedule 80 ☐ ____ Other ☐
14. Screen material: 0.10 slot sch 40 PVC
a. Screen type: Factory cut ☒ Continuous slot ☐ ____ Other ☐
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 10' m.
15. Backfill material (below filter pack): None ☒ ____ Other ☐

WELL DEVELOPMENT LOG

Sheet 1 of 1

PROJECT: OMS-28 Addn'l SI		WELL ID: OMS 28 MW-7	
Performed By: BSC	Signature:	Completion Date:	Development Date: 10.8.09
Water Level Initial: 4.5 Final:		Develop Method: Waterra	Total Vol. Dev. Water:
Total Depth: 15	Screen Interval	Top: 5	Bottom: 15
Wetted Volume: (0.16 gal/ft 2" casing + 0.87 gal/ft sand pack for 8" borehole)		10 gal	

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	
1230	1							4.5	thick fine silt
1332	5							9	tan silt/sand
1336	10				water clearing,			15	pumped dry
1356	15				800			13	tan sand
1358	16				700			14.5	pumped dry
1410	20				500			12	clearing slowly
1418	25				560			11	surged well
1422	27				400			15	dry
1435	30				300			12.5	
1445	35							15	surged, pumped dry
1500	40				200			13	surge + pump
1510	42.5				100			10	
1532	45				100			10	clearing
1545	50				50			11	
1555	52				20			11	

Remarks

HTRW DRILLING LOG

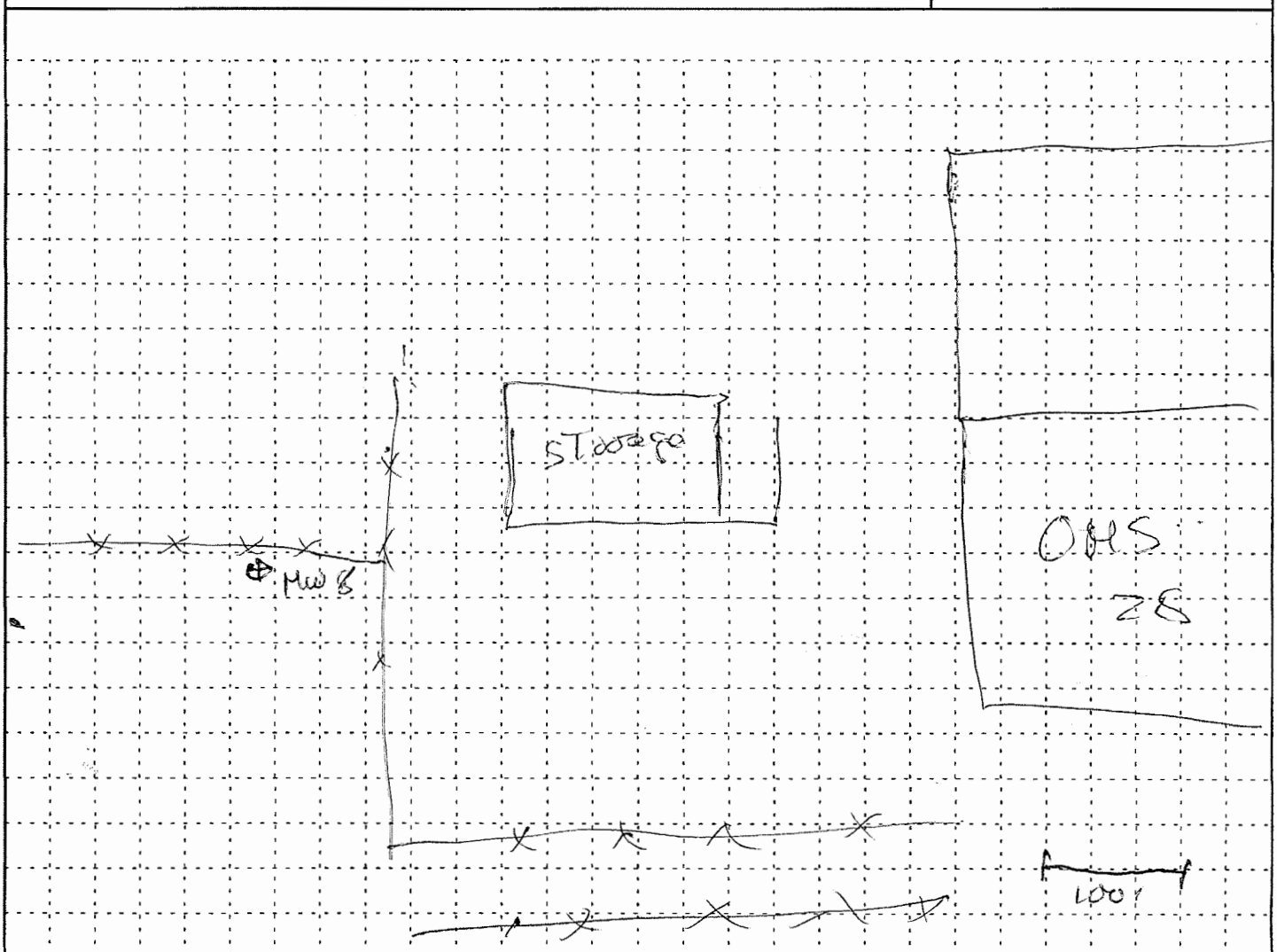
	DISTRICT	HOLE NUMBER 28-MW08
1. COMPANY NAME	2. DRILL SUBCONTRACTOR Southeon Earth Sciences	SHEET 1 OF SHEETS 3
3. PROJECT	4. LOCATION	
5. NAME OF DRILLER Mike White / Mike C	6. MANUFACTURER'S DESIGNATION OF DRILL Longyear	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 8" OD HSA	8. HOLE LOCATION	
	9. SURFACE ELEVATION	
	10. DATE STARTED 10-2-01	11. DATE COMPLETED 10-7-01
12. OVERBURDEN THICKNESS	15. DEPTH GROUNDWATER ENCOUNTERED 8'	
13. DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOLAL CORE RECOVERY %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS | **SCALE**



PROJECT | HOLE NO.

ENG FORM 5056-R. AUG 94 (Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER

PROJECT | INSPECTOR | SHEET SHEETS OF

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	0	Topsoil + sandy gravel					
	1	Silty Sand tan, fine to v. fine sand w trace silt					
	2						
	3						
	4	As above, less silt					
	5						
	6	sandy silt, moist yellow brown, plastic					
	7						
	8	Silty Sand, tan moist to wet,					
▽	9						
	10	Silty Sand as above saturated					

PROJECT | HOLE NO.

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: 28-MW08

PROJECT | INSPECTOR | SHEET 3 OF 3

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	11	As above, silty sand					
	12						
	13	Sand, SP. clean Tan to white v fine sand					
	14						
	15	Base of hole					

PROJECT | HOLE NO.

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

Facility/Project Name OMS-28	**Local Grid Location of Well** ____ m. ☐ N. ____ m. ☐ S. ☐ E. ☐ W.	**Well Number** OMS 28 MW08
Facility License, Permit or Monitoring Number	**Grid Origin Location** Lat. ____ Long. ____ or St. Plane ____ m. N. ____ m. E.	**Date Well Installed (Start)** 10-7-04
Type of Protective Cover: Above-Ground ☐ Flush-To-Ground ☐	**Section Location of Waste/Source** ___ ¼ of ___ ¼ of Sec. ___ T. ___ N.R. ☐ E. ☐ W.	**Date Well Installed (Completed)** 10-7-04
Well Distance From Waste/Source Boundary 250'	**Location of Well Relative to Waste/Source** u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	**Well Installed By: (Person's Name & Firm)** Andrew Weaber Bechtel-S Coos
Maximum Depth of Frost Penetration (estimated) na		

Note: Use top of casing (TOC) for all depth measurements.

A. Protective casing, top elevation ____ m. MSL
B. Well casing, top elevation ____ m. MSL
C. Land surface elevation ____ m. MSL
D. Surface seal, bottom ____ m. TOC or ____ m. MSL

16. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

17. Sieve analysis attached? ☐ Yes ☒ No

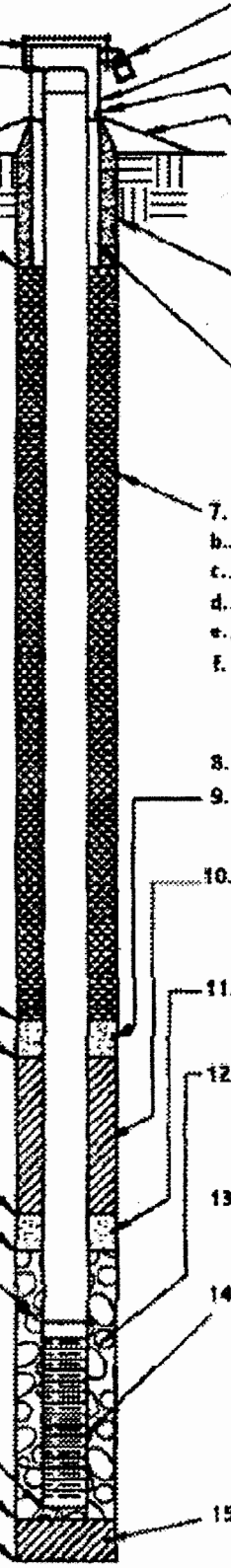
18. Drilling method used: Rotary ☐ Hollow Stem Auger ☒ ____ Other ☐

19. Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☒

20. Drilling additives used? ☐ Yes ☒ No
Describe ____

21. Source of water (attach analysis):

E. Secondary filter, top ____ m. TOC or ____ m. MSL
F. Bentonite seal, top 1' m. TOC or ____ m. MSL
G. Secondary filter, top ____ m. TOC or ____ m. MSL
H. Primary filter, top 3' m. TOC or ____ m. MSL
I. Screen joint, top 5' m. TOC or ____ m. MSL
J. Well bottom 15' m. TOC or ____ m. MSL
K. Filter pack, bottom 15' m. TOC or ____ m. MSL
L. Borehole, bottom 15.5' m. TOC or ____ m. MSL
M. Borehole, diameter 8" mm.
N. O.D. well casing 2.25 mm.
O. I.D. well casing 2.0 mm.
P. 24-hr water level after completion ____ m. TOC or ____ m. MSL



1. Cap and lock? ☒ Yes ☐ No
2. Protective posts? ☐ Yes ☒ No
3. Protective casing:
a. Inside diameter: 10" mm.
b. Length: 18" m.
4. Drainage port(s) ☐ Yes ☐ No
5. Surface seal:
a. Cap: Gravel blanket ☐ Bentonite ☐ Concrete ☒ ____ Other ☐
b. Annular space seal: Bentonite ☐ Cement ☒ ____ Other ☐
6. Material between well casing and protective casing: Bentonite ☒ Cement ☐ ____ Other ☐
7. Annular space seal: a. Granular Bentonite ☒
b. ____ lbs/gal mud weight Bentonite-sand slurry ☐
c. ____ lbs/gal mud weight Bentonite slurry ☐
d. ____ % Bentonite Bentonite-cement grout ☐
e. ____ m^3 volume added for any of the above
f. How installed: Tremie ☐ Tremie pumped ☐ Gravity ☒
8. Centralizers ☐ Yes ☒ No
9. Secondary Filter ☐ Yes ☒ No
a. Volume added ____ m^3 ____ Bags/Size
10. Bentonite seal: a. Bentonite granules ☐
b. ☐ ⅜in. ☒ ⅜in. ☐ ½in. Bentonite pellets ☐
c. ____ Other ☐
11. Secondary Filter ☐ Yes ☒ No
a. Volume added ____ m^3 ____ Bags/Size
12. Filter pack material: Manufacturer, product name & mesh size
a. Southern Filter Media 20/40
b. Volume added ____ m^3 4 #50 Bags/Size
13. Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ ____ Other ☐
14. Screen material: ____
a. Screen type: Factory cut ☒ Continuous slot ☐ ____ Other ☐
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 10' m.
15. Backfill material (below filter pack): None ☒
Some heave ____ Other ☐

WELL DEVELOPMENT LOG

Sheet 1 of 1

PROJECT: OMS-28 Addn'l SI		WELL ID: OMS-28 MW 8	
Performed By: BSC	Signature: A Cleanberg	Completion Date:	Development Date: 10-08-04
Water Level Initial: 7.0 Final:		Develop Method: waterra	Total Vol. Dev. Water:
Total Depth: 15'	Screen Interval	Top: 5	Bottom: 15
Wetted Volume: (0.16 gal/ft 2" casing + 0.87 gal/ft sand pack for 8" borehole)		~8 gal	

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	
1210	0.5								grey silty
1220	7.5								@ clearing, well
~~1242~~	~~7.5~~							9.	pumped dry
1242								7.5	recovered almost all the way
1248	12.5							14	clearing slowly
1254	16.5				~400			15	continued clearing
1305	21.5				~300			12	maintain WL w slower pumping
1317	26.5				11			12	v fine sand + silt
1328	31.5				200			11	
1338	36.5				100			13	slightly cloudy
1343	39				~20			11	clear

Remarks

Attachment C
Groundwater Sampling Logs

GROUNDWATER SAMPLING LOG

Sheet ____ of ____

PROJECT: ALARNG OMS #28			WELL ID: MW-01
PERFORMED BY: Bechtel-S Corp.	SAMPLER: AWenberg	LOG DATE: 11-10-01	SAMPLE TIME: 1450
WATER LEVEL Initial: 4.88 Final: 5.38	TOTAL DEPTH: 15	PURGE METHOD: Bladder pump	FLOW RATE: 300 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting F/D ~~(Hz)~~	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)		
1353	0	25.50	5.76	0.105	20	9.55	-4.4	5.12	12/3	~300mL/min
1357	1.2	26.01	5.72	0.089	15	12.91	-16.8	5.22	12/3	DO reading bad
1412	5.0	26.15	5.83	0.360	20	4.43	21	5.35	13/2.8	replaced DO membrane
1416	7.0	26.18	5.83	0.280	~10	3.13	-4	5.37	"	~300mL/min
1423	8.0	26.32	5.83	0.253	10	2.78	-23.8	5.36	"	"
1428	9.5	26.37	5.82	0.247	"	2.67	-34.3	5.36	"	"
1432	11	26.34	5.82	0.246	"	2.64	-40.7	"	"	"
1438	13	26.34	5.82	0.247	"	2.61	-45.6	"	"	"
1442	14.5	26.36	5.82	0.247	"	2.60	-47.2	"	"	"
1446	16	26.36	5.82	0.247	"	2.59	-49.5	"	"	"
1515	18							5.65	12.4/4.2	small droplets of product in water

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments

Remarks: Fuel odor
Pump @ 10'
Still small bubbles in DO membrane, readings may be biased high

GROUNDWATER SAMPLING LOG

Sheet 1 of 1

PROJECT: ALARNG OMS #28			WELL ID: MW-02
PERFORMED BY: Bechtel-S Corp.	SAMPLER: A Lundberg	LOG DATE: 11.10.04	SAMPLE TIME: 1140
WATER LEVEL Initial: 4.53 Final: 4.61	TOTAL DEPTH: 15'	PURGE METHOD: Bladder pump	FLOW RATE: 200 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting F/D (Hz)	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)		
1105	0	26.42	4.72	0.175	150	4.43	307	4.87	10/2.5	
1108	.500	26.82	4.68	0.173	120	2.76	318	4.91	13/2.5	~200 mL/min
1112	0.9	26.80	4.66	0.168	100	2.18	318	4.91	"	"
1117	1.5	26.68	4.66	0.168	50	1.88	320	4.92	"	"
1123	3.0	26.57	4.66	0.171	30	1.53	320	"	"	"
1126	4.0	26.48	4.65	0.175	25	1.44	320	"	"	"
1130	4.8	26.50	4.65	0.175	20	1.25	320	"	"	"
1134	5.6	26.59	4.65	0.174	10	1.12	320	"	"	"
1138	6.5	26.51	4.65	0.174	10	1.05	320	"	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments

Remarks: Pump @ 10'

GROUNDWATER SAMPLING LOG

Sheet 1 of 1

PROJECT: ALARNG OMS #28			WELL ID: MW-3
PERFORMED BY: Bechtel-S Corp.	SAMPLER: A Wenberg	LOG DATE: 11·10·04	SAMPLE TIME: 1010
WATER LEVEL Initial: 4.58 Final: 4.79	TOTAL DEPTH: 15'	PURGE METHOD: Bladder pump	FLOW RATE: 250 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting F/D	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(Hz)	
0940	0.1	25.73	3.96	0.188	50	2.59	280	5.04	8/3	250 mL/min
0944	1.5	26.32	3.94	0.199	30	2.05	310	5.15	10/3	250 mL/min
0948	2.5	26.23	3.92	0.216	20	1.77	329	5.15	10/3.5	300 mL/min
0952	4.0	26.20	3.91	0.223	15	1.71	342	5.12	12/3.5 12/2.5	250 mL/min
0956	5.0	26.25	3.91	0.229	10	1.66	353	5.11	12/2.5	"
1000	6.0	26.28	3.91	0.233	<10	1.66	357	5.10	"	"
1004	7.0	26.50	3.91	0.235	<10	1.67	367	"	"	"
1008	8.0	26.52	3.91	0.235	<10	1.62	372	"	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments

Remarks

Pump @ 9.5

GROUNDWATER SAMPLING LOG

Sheet 1 of 1

PROJECT: ALARNG OMS #28			WELL ID: MW-5
PERFORMED BY: Bechtel-S Corp.	SAMPLER: A. Weinbeer	LOG DATE: 11·10·04	SAMPLE TIME: 0835
WATER LEVEL Initial: 5.37 Final: 5.70	TOTAL DEPTH: 15	PURGE METHOD: Bladder pump	FLOW RATE: 200 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting F/D	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(HZ)	
0760	0	23.81	4.67	0.168	300	5.89	310	5.50	4.4/3.7	slightly silty
0753	0.800	24.69	4.63	0.162	400	3.48	321	5.64	"	300 mL/min
0758	2.5	24.96	4.62	0.159	500	2.39	327	5.72	6.0/3.7	
0802	3.5	25.21	4.60	0.153	300	1.48	331	5.76	"	250 mL/min
0806	5.0	25.21	4.61	0.151	133	1.56	333	5.77	"	"
0810	7.0	25.30	4.63	0.149	80	1.64	333	5.77	"	"
0817	10.0	25.21	4.64	0.149	40	1.75	332	5.80	6.6/3.7	"
0823	12.0	25.21	4.61	0.147	15	1.69	334	5.82	"	200 mL/min
0828	14.0	25.36	4.57	0.146	10	1.64	336	5.83	"	"
0835	16.0	25.40	4.54	0.146	<10	1.70	340	5.85	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
				MS/MSD	

Remarks

Pump @ 12'

GROUNDWATER SAMPLING LOG

Sheet 1 of 1

PROJECT: ALARNG OMS #28			WELL ID: MW-06
PERFORMED BY: Bechtel-S Corp.	SAMPLER: A Quarles	LOG DATE: 11.10.04	SAMPLE TIME: 1300
WATER LEVEL Initial: 5.55 Final: 5.78	TOTAL DEPTH: 15'	PURGE METHOD: Bladder pump	FLOW RATE: 350 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting F/D (HZ)	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)		
1222	0	25.99	4.75	0.096	40	1.65	278	5.60	13/3.5	350 mL/min
1225	0.800	26.19	4.74	0.095	40	1.08	286	5.75	"	"
1228	2.0	26.32	4.76	0.097	20	0.62	286	5.80	"	"
1231	3.0	26.44	4.84	0.102	15	0.51	282	5.83	"	"
1234	4.0	26.50	4.87	0.104	10	0.46	278	5.88	"	"
1238	5.5	26.57	4.87	0.105	10	0.40	275	5.91	"	"
1242	6.5	26.61	4.84	0.106	10	0.47	276	5.91	"	"
1246	7.8	26.64	4.77	0.098	10	0.60	279	5.92	"	"
1250	8.2	26.67	4.74	0.095	<10	0.41	278	5.95	"	"
1254	9.5	26.62	4.69	0.092	"	0.48	277	5.96	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
OMS28-MW05-1104			BTEX M, Pb, SW8310	WG	FD
OMS28-MW05-1104 FD					

Remarks

Pump @ 10'

GROUNDWATER SAMPLING LOG

Sheet 1 of 1

PROJECT: ALARNG OMS #28			WELL ID: MW-07
PERFORMED BY: Bechtel-S Corp.	SAMPLER: A Vanderberg	LOG DATE: 11.9.09	SAMPLE TIME: 1740
WATER LEVEL Initial: 2.32 Final: 2.64	TOTAL DEPTH: 15.0	PURGE METHOD: Bladder pump	FLOW RATE: 250 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level F/D → (feet)	Pump Setting (HZ)	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)			
1700	0	25.05	4.25	0.164	40	3.41	372	4.4/37	2.89	250 mL/min ↓
1703	0.8	25.26	4.19	0.161	20	2.11	388	"	2.98	"
1706	1.5	25.35	4.18	0.160	15	1.91	384	"	2.98	"
1709	2.0	25.41	4.16	0.158	10	1.96	380	"	"	"
1714	4.0	25.33	4.17	0.158	<5	1.96	379	"	3.01	"
1717	5.0	25.37	4.17	0.157	"	1.92	378	"	3.00	"
1721	6.0	25.35	4.16	0.157	"	1.94	378	"	"	"
1725	7.0	25.33	4.17	0.156	"	2.02	376	"	"	"
1729	8.0	25.31	4.16	0.156	"	1.96	376	"	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments

Remarks WL in well rose from ~4' to 2.3' after plug pulled
Pump @ 12.5'
Turbidity measurements estimated

GROUNDWATER SAMPLING LOG

Sheet 1 of 1

PROJECT: ALARNG OMS #28			WELL ID: MW-8
PERFORMED BY: Bechtel-S Corp.	SAMPLER: A Woodard	LOG DATE: 11.9.04	SAMPLE TIME: 1640
WATER LEVEL Initial: 5.98 Final: 6.08	TOTAL DEPTH: 15	PURGE METHOD: Bladder Pump	FLOW RATE: 500 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(HZ)	
1600	1.5	24.20	5.77	0.430	200	1.19	163	6.30	3.9/3.1	grey silt
1603	3.0	24.23	5.83	0.473	50	1.12	162	6.30	4.0/4.0	clearing
1606	5.0	24.21	5.77	0.450	10	0.88	160	"	"	500 mL/min
1609	7.0	24.22	5.70	0.433	<5	0.73	164	6.32	"	"
1612	9.0	24.20	5.66	0.415	<5	0.62	168	6.31	"	"
1615	11.0	24.20	5.63	0.404	<5	0.56	174	"	"	"
1619	14.0	24.19	5.61	0.398	<5	0.51	176	"	"	"
1622	16.0	24.18	5.62	0.397	<5	0.53	174	"	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
			BTEX, Pb, SW8310		

Remarks Pump @ 12.5' BTOC

GROUNDWATER SAMPLING LOG

PROJECT: OMS #28 Monitoring			WELL ID: MW-1
PERFORMED BY: Bechtel-S	SAMPLER: A. Weinberg	LOG DATE: 03/10/2005	SAMPLE TIME: 1245
WATER LEVEL Initial: 4.05 Final: 5.39	TOTAL DEPTH: 15	PURGE METHOD: bladder pump	FLOW RATE: 200 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(HZ)	
1217	0.5	XX	6.10	0.213	4.18	1.00	-110	4.29	12.5/2.5	~250mL/min
1224	1.5	XX	6.03	0.210	3.98	0.37	-114	4.45	"	~200
1229	3.0	XX	6.02	0.208	3.30	0.29	-114	4.56	"	"
1234	4.0	XX	5.99	0.205	1.35	0.27	-110	4.68	"	"
1239	5.0	XX	5.99	0.205	0.76	0.26	-109	4.74	"	"
1242	5.5	XX	5.99	0.205	0.55	0.25	-105	4.77	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
		varies	SW8021B, SW8310, Pb		

Remarks: increased pump rate after sample to check for product - slight odor since on bucket after ~5 gal pumped

GROUNDWATER SAMPLING LOG

PROJECT: OMS #28 Monitoring			WELL ID: MW-2
PERFORMED BY: Bechtel-S	SAMPLER: A. Weinberg	LOG DATE: 03/ 9 /2005	SAMPLE TIME: 1645
WATER LEVEL Initial: 3.96 Final: 3.90	TOTAL DEPTH: 15'	PURGE METHOD: bladder pump	FLOW RATE: 250 ml/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting I/O (HZ)	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)		
1611	0.5	19.41	5.16	291	36.4	4.39	210	4.40	11/4	
1615	1.5	19.79	4.95	303	19.1	2.70	235	4.50	4	
1620	5.0	19.80	4.92	300	10.0	2.19	266	4.60	12/3	~400 ml/min
1624	6.0	19.83	4.91	293	5.3	1.78	284	4.60	125/25	
1628	7.0	19.79	4.80	289	3.71	1.56	293	4.50	13/2	~250 ml/min
1633	8.0	19.76	4.89	282	2.87	1.44	304	4.45	"	"
1636	8.25	19.75	4.89	280	2.27	1.36	308	4.43	"	"
1639	9.50	19.75	4.88	275	2.18	1.30	315	4.40	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
		varies	SW8021B, SW8310, Pb		

Remarks only 1 bottle for 8310

GROUNDWATER SAMPLING LOG

PROJECT: OMS #28 Monitoring			WELL ID: MW-3
PERFORMED BY: Bechtel-S	SAMPLER: A. Weinberg	LOG DATE: 03/ 9 /2005	SAMPLE TIME: 1740
WATER LEVEL Initial: 3.76 Final: 4.15	TOTAL DEPTH: 15'	PURGE METHOD: bladder pump	FLOW RATE: 200 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(HZ)	
1709	1.0	18.17	4.12	0.196	27.9	2.86	326	4.25	12/3	
1714	2.5	19.05	4.13	0.196	16.6	1.79	365	"	"	~ 200 mL/min
1718	4.0	19.12	4.10	0.199	12.1	1.64	375	4.30	"	"
1722	5.5	19.19	4.11	0.203	8.61	1.50	358	4.35	"	"
1728	7.0	19.29	4.11	0.208	6.16	1.36	341	4.45	"	"
1731	8.0	19.30	4.11	0.211	4.60	1.32	336	4.48	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
		varies	SW8021B, SW8310, Pb		MS/MSD

Remarks

GROUNDWATER SAMPLING LOG

PROJECT: OMS #28 Monitoring			WELL ID: MW-5
PERFORMED BY: Bechtel-S	SAMPLER: A. Weinberg	LOG DATE: 03/10/2005	SAMPLE TIME: 0925
WATER LEVEL Initial: 4.62 Final: 4.75	TOTAL DEPTH: 65	PURGE METHOD: bladder pump	FLOW RATE: 200

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(HZ)	
0839	0.5	16.65	5.03	0.152	224	4.25	252	4.82	12/3	200 mL/min
0844	1.5	xx	5.15	0.134	238	0.70	279	4.93	"	"
0849	3.5	xx	5.16	0.134	62.7	0.66	271	5.15	"	"
0854	4.5	xx	5.13	0.131	36.3	0.61	278	5.20	"	"
0859	6.5	xx	5.12	0.127	26.3	0.43	286	5.30	"	"
0903	7.5	xx	5.03	0.124	21.0	0.50	291	"	"	"
0908	8.5	xx	4.95	0.119	18.5	0.38	300	5.18	"	"
0912	9.5	xx	4.98	0.119	11.7	0.36	302	5.35	"	"
0916	10.5	xx	4.95	0.118	8.84	0.41	305	5.35	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
		varies	SW8021B, SW8310, Pb		

Remarks Thermocouple malfunction - readings of > 60° C, unstable

GROUNDWATER SAMPLING LOG

PROJECT: OMS #28 Monitoring			WELL ID: MW-6
PERFORMED BY: Bechtel-S	SAMPLER: A. Weinberg	LOG DATE: 03/10/2005	SAMPLE TIME: 1020
WATER LEVEL Initial: 5.01 Final: 5.31	TOTAL DEPTH: 15'	PURGE METHOD: bladder pump	FLOW RATE: 250 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(HZ)	
0947	0.5	xx	5.10	0.067	16.6	0.65	245	5.13	12	250 mL/min
0951	2.0	xx	5.06	0.106	11.8	0.28	253	5.23	12/3	"
0956	3.5	xx	5.08	0.107	6.28	0.22	256	5.36	"	"
1002	4.5	xx	5.09	0.109	2.93	0.20	257	5.40	"	"
1006	6.0	xx	5.09	0.111	1.40	0.20	258	5.45	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
		varies	SW8021B, SW8310, Pb		

Remarks xx - Thermocouple malfunction - reading >60 °C

Piezometer # 2 = 5.87' BTOC @ 1031

P

GROUNDWATER SAMPLING LOG

PROJECT: OMS #28 Monitoring			WELL ID: MW-7
PERFORMED BY: Bechtel-S	SAMPLER: A. Weinberg	LOG DATE: 03/10/2005	SAMPLE TIME: 0800
WATER LEVEL Initial: 2.19 Final: 2.75	TOTAL DEPTH: 15'	PURGE METHOD: bladder pump	FLOW RATE: ~300 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(HZ)	
728	0.5	16.21	4.39	0.151	29.5	3.29	318	2.76	12/3	~300 mL/min
732	2.5	18.05	4.38	0.133	12.4	0.71	332	3.25	11	~500 mL/min
738	4.0	17.95	4.33	0.131	5.71	0.66	306	3.05	12B/3	reduced air P
745	5.5	17.83	4.39	0.131	2.71	0.58	293	3.01	12.6/3	
749	7.0	18.05	4.43	0.131		0.58	289	3.03	12/3	
752	8.0	18.24	4.45	0.132	1.60	0.58	286	3.03	11	300 mL/min

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
		varies	SW8021B, SW8310, Pb		

Remarks

GROUNDWATER SAMPLING LOG

PROJECT: OMS #28 Monitoring			WELL ID: MW-8
PERFORMED BY: Bechtel-S	SAMPLER: A. Weinberg	LOG DATE: 03/10/2005	SAMPLE TIME: 1130
WATER LEVEL Initial: 5.67 Final: 5.71	TOTAL DEPTH: 15	PURGE METHOD: bladder pump	FLOW RATE: 250 mL/min

Time	Cum. Volume (Liters)	Water Quality Parameters						Water Level	Pump Setting	Comments
		Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	D.O. (mg/L)	Redox (mV)	(feet)	(HZ)	
1053	0.5	XX	5.75	.341	12.6	1.95	209	5.80	11.5/3.5	250 mL/min
1057	1.5	XX	5.78	.347	5.33	1.38	212	5.80	"	
1101	2.5	XX	5.81	.344	3.05	1.11	212	"	"	"
1105	3.75	XX	5.83	.334	1.59	0.85	211	5.81	"	"
1110	4.75	XX	5.83	0.328	0.25	0.70	210	5.83	"	"
1115	6.00	XX	5.83	0.322	0.04	0.60	208	5.85	"	"
1120	7.25	XX	5.85	0.319	0.0	0.50	207	5.80	"	"
1125	8.75	XX	5.85	0.315	0.0	0.41	206	5.81	"	"
1128	9.5	XX	5.85	0.314	0.0	0.39	206	"	"	"

Sample ID	Matrix	Preservative	Analyses	Sample Type Code	Comments
OMS28-MW8-0305		varies	SW8021B, SW8310, Pb		
OMS28-DMW8-0305B					

Remarks Pumped 10'

XX Temp malfunction

Piez #1 6.80' BTOC @ 1155

Attachment D

Data Quality Evaluation and Analytical Reports for Groundwater Monitoring, Nov. 2004 and March 2005

Data Quality Evaluation: November 2004 Groundwater Samples

Groundwater samples were collected from seven monitor wells at OMS #28 on 9 - 10 November 2004 and delivered to STL Pensacola on 11 November for analysis of volatile organic compounds (VOCs) including benzene, ethylbenzene, toluene, xylenes (BETX), methyl-t-butyl ether (MTBE), and naphthalene by Method SW 8260B; polynuclear aromatic hydrocarbons (PAHs) by method SW8310; and lead by Method SW6010B. One field duplicate sample and one trip blank sample were also included. All samples were received in good condition, and were prepared and analyzed within required hold times. Results were reported by STL on 30 November 2004 as Order Number C411300.

All measures of laboratory quality control meet project requirements. No VOCs or PAHs were detected in the method blank sample; lead was reported at a concentration of 0.002 JB μ/L in the method blank. All reported lead concentrations in field samples are less than 5X this method blank concentration. The trip blank indicates no sample contamination at analytical detection limits. The laboratory control sample recoveries are within required limits, with most analytes within 95% to 105% recovery. All analytical recovery and RPD percentages are within project data quality limits. All surrogate recoveries are within required limits. Surrogate recoveries for SW8260 analyses range from 83% to 98%; for SW8310 analyses recoveries range from 78% to 97%.

Method detection and reporting limits meet or exceed project requirements for all analytes except benzo(a)pyrene. The MDL for benzo(a)pyene is 0/076 μ/L, which is less than three times the required reporting limit of 0.2 μ/L; however the reported MDL for this analyte meets the requirement for the best practically achievable value. The sample detection limits meet or exceed the project target levels as specified in the work plan for all samples except SW8260B analysis of OMS28-MW08-1104. This sample required 20-fold dilution for VOC analysis because of interference from non-target analytes. Samples OMS28-MW01-1104 and OMS28-MW06-1104 required dilution for SW8260B analysis because of relatively high concentrations of target analytes.

All matrix spike/matrix spike duplicate (MS/MSD) sample results are within project quality specifications, as summarized below:

Method	% Recovery	RPD
SW6010B	100%	0%
SW8260B	81 -107%	0 – 10%
SW8310	76 – 98%	0 – 8%

A field duplicate sample was collected from MW-6. Field duplicate results indicate excellent reproducibility across all sources of sampling and analytical variability for all samples detected at concentrations above the reporting limits (i.e. not J-flagged), as summarized in the table below. Naphthalene results from SW8260B analysis appear more consistent than SW8310 results for this analyte.

Field Duplicate Results, November 2004

(all results in µg/L, except as noted)

Method	Analyte	OMS28-MW06-1104	OMS28-MW06-1104 FD	RPD, %
SW6010B	Lead	0.0030 JB	0.0050 JB	25
SW8260B	Benzene	60	59	0.8
	Ethylbenzene	1.2 U	1.2 U	NC
	MTBE	1.2 U	1.2 U	NC
	Toluene	1.2 U	1.2 U	NC
	o-Xylene	2.7	2.7	0
	mp-Xylene	7.8	7.8	0
	Naphthalene	88	90	1.1
SW8310	Anthracene	1.0U	1.0U	NC
	Benzo(a)anthracene	0.20U	0.20U	NC
	Benzo(a)pyrene	0.20U	0.20U	NC
	Benzo(b)fluoranthene	0.20U	0.20U	NC
	Benzo(g,h,i)perylene	1.0U	1.0U	NC
	Benzo(k)fluoranthene	0.50U	0.50U	NC
	Chrysene	1.0U	1.0U	NC

SW8310, cont.	Fluoranthene	0.076JP	1.0U	NC
	Fluorene	1.0U	1.0U	NC
	Naphthalene	73	51	17.7
	Phenanthrene	0.20JP	0.10JP	33
	Pyrene	1.0U	1.0U	NC

J = estimated result less than reporting limit
B = analyte detected at similar concentration in method blank
U = not detected
NC = not calculated

STL Pensacola 3355 McLemore Drive - Pensacola FL 32514 Telephone:(850) 474-1001 Fax:(850) 478-2671

Analytical Report

For: Mr. Andy Weinberg
Bechtel S Corporation
8817 Mosquero Circle
Austin, TX 78748
CC:

Order Number:	C411300
SDG Number:	
Client Project ID:	ALARNG OMS #28
Project:	BROOKLEY AFB-MOBILE, AL
Report Date:	11/30/2004
Sampled By:	Client
Sample Received Date:	11/11/2004
Requisition Number:	
Purchase Order:	14.005.02

SCAkers

Stephanie Akers, Project Manager
SAkers@stl-inc.com
12/02/2004

Sample Summary

Order: C411300 Client: Bechtel S Corporation
Date Received: 11/11/2004 Project: BROOKLEY AFB-MOBILE, AL

Client Sample ID	Lab Sample ID	Matrix	Date Sampled
OMS28-MW01-1104	C411300*1	Liquid	11/10/2004 14:50
OMS28-MW02-1104	C411300*2	Liquid	11/10/2004 11:40
OMS28-MW03-1104	C411300*3	Liquid	11/10/2004 10:10
OMS28-MW05-1104	C411300*4	Liquid	11/10/2004 08:35
OMS28-MW06-1104	C411300*5	Liquid	11/10/2004 13:00
OMS28-MW07-1104	C411300*6	Liquid	11/09/2004 17:40
OMS28-MW08-1104	C411300*7	Liquid	11/09/2004 16:40
OMS28-MW06-1104FD	C411300*8	Liquid	11/10/2004 13:00
TB-1104	C411300*9	Liquid	11/09/2004 15:00

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-1	OMS28-MW01-1104	Liquid	11/11/04	11/10/04 14:50	
11300-2	OMS28-MW02-1104	Liquid	11/11/04	11/10/04 11:40	
11300-3	OMS28-MW03-1104	Liquid	11/11/04	11/10/04 10:10	
11300-4	OMS28-MW05-1104	Liquid	11/11/04	11/10/04 08:35	
11300-5	OMS28-MW06-1104	Liquid	11/11/04	11/10/04 13:00	

Parameter	Units	Sample ID: 11300-1 OMS28-MW01-1104	11300-2 OMS28-MW02-1104	11300-3 OMS28-MW03-1104	11300-4 OMS28-MW05-1104	11300-5 OMS28-MW06-1104
Lead (SW6010B)						
Lead	mg/l	0.0050U	0.0030JB	0.0050B	0.0040JB	0.0030JB
Dilution Factor		1	1	1	1	1
Prep Date		11/15/04	11/15/04	11/15/04	11/15/04	11/15/04
Prep Time		00:59	00:59	00:59	00:59	00:59
Analysis Date		11/18/04	11/18/04	11/18/04	11/18/04	11/18/04
Analysis Time		17:26	17:42	17:48	16:58	17:53
Batch ID		PW443	PW443	PW443	PW443	PW443
Prep Method		3010A	3010A	3010A	3010A	3010A
Analyst		GSP	GSP	GSP	GSP	GSP
Quantitation Factor		1.000	1.000	1.000	1.000	1.000
Polynuclear Aromatic Hydrocarbons (SW8310)						
Anthracene	ug/l	1.0U	1.0U	1.0U	1.0U	1.0U
Benzo(a)anthracene	ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Benzo(a)pyrene	ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Benzo(b)fluoranthene	ug/l	0.19JP	0.20U	0.20U	0.20U	0.20U
Benzo(g,h,i)perylene	ug/l	1.0U	1.0U	1.0U	1.0U	1.0U
Benzo(k)fluoranthene	ug/l	0.50U	0.50U	0.50U	0.50U	0.50U
Chrysene	ug/l	1.0U	1.0U	1.0U	1.0U	1.0U
Fluoranthene	ug/l	0.20JP	1.0U	1.0U	1.0U	0.076JP
Fluorene	ug/l	1.0U	1.0U	1.0U	1.0U	1.0U
Naphthalene	ug/l	180	1.0U	1.0U	0.20JP	73
Phenanthrene	ug/l	0.38JP	1.0U	1.0U	1.0U	0.20JP
Pyrene	ug/l	1.0U	1.0U	1.0U	1.0U	1.0U

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-1	OMS28-MW01-1104	Liquid	11/11/04	11/10/04 14:50	
11300-2	OMS28-MW02-1104	Liquid	11/11/04	11/10/04 11:40	
11300-3	OMS28-MW03-1104	Liquid	11/11/04	11/10/04 10:10	
11300-4	OMS28-MW05-1104	Liquid	11/11/04	11/10/04 08:35	
11300-5	OMS28-MW06-1104	Liquid	11/11/04	11/10/04 13:00	

Parameter	Units	Sample ID 11300-1 OMS28-MW01-1104	11300-2 OMS28-MW02-1104	11300-3 OMS28-MW03-1104	11300-4 OMS28-MW05-1104	11300-5 OMS28-MW06-1104
Polynuclear Aromatic Hydrocarbons (SW8310)						
Surrogate - 2-Chloroanthracene *	%	97 %	86 %	91 %	92 %	94 %
Dilution Factor		1.0	1.0	1.0	1.0	1.0
Prep Date		11/15/04	11/15/04	11/15/04	11/15/04	11/15/04
Prep Time		16:00	16:00	16:00	16:00	16:00
Analysis Date		11/17/04	11/17/04	11/17/04	11/17/04	11/17/04
Analysis Time		10:31	11:04	11:38	12:12	12:46
Batch ID		PAW949	PAW949	PAW949	PAW949	PAW949
Prep Method		3520C	3520C	3520C	3520C	3520C
Analyst		SGB	SGB	SGB	SGB	SGB
Quantitation Factor		1.0	1.0	1.0	1.0	1.0
Volatile Organic Compounds (SW8260B)						
Benzene	ug/l	140	0.25U	0.25U	0.25U	60
Ethylbenzene	ug/l	580	0.25U	0.25U	0.25U	1.2U
Methyl t-butyl ether (MTBE)	ug/l	5.0U	0.25U	0.25U	0.25U	1.2U
Toluene	ug/l	7.6	0.25U	0.25U	0.25U	1.2U
o-Xylene	ug/l	5.0U	0.25U	0.25U	0.25U	2.7
mp-Xylene	ug/l	400	0.50U	0.50U	0.50U	7.8
Surrogate - Dibromofluoromethane *	%	91 %	86 %	85 %	83 %	83 %
Surrogate - Toluene-d8 *	%	96 %	95 %	95 %	95 %	96 %
Surrogate - 4-Bromofluorobenzene *	%	98 %	91 %	90 %	91 %	95 %

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-1	OMS28-MW01-1104	Liquid	11/11/04	11/10/04 14:50	
11300-2	OMS28-MW02-1104	Liquid	11/11/04	11/10/04 11:40	
11300-3	OMS28-MW03-1104	Liquid	11/11/04	11/10/04 10:10	
11300-4	OMS28-MW05-1104	Liquid	11/11/04	11/10/04 08:35	
11300-5	OMS28-MW06-1104	Liquid	11/11/04	11/10/04 13:00	

		Sample ID				
Parameter	**Units**	**11300-1**	**11300-2**	**11300-3**	**11300-4**	**11300-5**
		OMS28-MW01-1104	**OMS28-MW02-1104**	**OMS28-MW03-1104**	**OMS28-MW05-1104**	**OMS28-MW06-1104**
Volatile Organic Compounds (SW8260B)						
Naphthalene	ug/l	260	0.25U	0.25U	0.25U	88
Dilution Factor		20	1	1	1	5
Prep Date		11/23/04	11/22/04	11/22/04	11/22/04	11/22/04
Prep Time		17:54	13:31	14:04	11:45	14:38
Analysis Date		11/23/04	11/22/04	11/22/04	11/22/04	11/22/04
Analysis Time		17:54	13:31	14:04	11:45	14:38
Batch ID		COW347	COW343	COW343	COW343	COW343
Prep Method		5030B	5030B	5030B	5030B	5030B
Analyst		GRH	GRH	GRH	GRH	GRH
Quantitation Factor		20	1	1	1	5

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-6	OMS28-MW07-1104	Liquid	11/11/04	11/09/04 17:40	
11300-7	OMS28-MW08-1104	Liquid	11/11/04	11/09/04 16:40	
11300-8	OMS28-MW06-1104FD	Liquid	11/11/04	11/10/04 13:00	

Parameter	Units	Sample ID 11300-6 OMS28-MW07-1104	11300-7 OMS28-MW08-1104	11300-8 OMS28-MW06-1104F
Lead (SW6010B)				
Lead	mg/l	0.0060B	0.0050U	0.0050B
Dilution Factor		1	1	1
Prep Date		11/15/04	11/15/04	11/15/04
Prep Time		00:59	00:59	00:59
Analysis Date		11/18/04	11/18/04	11/18/04
Analysis Time		17:59	18:04	18:10
Batch ID		PW443	PW443	PW443
Prep Method		3010A	3010A	3010A
Analyst		GSP	GSP	GSP
Quantitation Factor		1.000	1.000	1.000
Polynuclear Aromatic Hydrocarbons (SW8310)				
Anthracene	ug/l	1.0U	1.0U	1.0U
Benzo(a)anthracene	ug/l	0.20U	0.20U	0.20U
Benzo(a)pyrene	ug/l	0.20U	0.20U	0.20U
Benzo(b)fluoranthene	ug/l	0.20U	0.20U	0.20U
Benzo(g,h,i)perylene	ug/l	1.0U	1.0U	1.0U
Benzo(k)fluoranthene	ug/l	0.50U	0.50U	0.50U
Chrysene	ug/l	1.0U	1.0U	1.0U
Fluoranthene	ug/l	1.0U	1.0U	1.0U
Fluorene	ug/l	1.0U	1.0U	1.0U
Naphthalene	ug/l	1.0U	1.0U	51
Phenanthrene	ug/l	1.0U	1.0U	0.10JP
Pyrene	ug/l	1.0U	1.0U	1.0U
Surrogate - 2-Chloroanthracene *	%	78 %	86 %	79 %
Dilution Factor		1.0	1.0	1.0
Prep Date		11/15/04	11/15/04	11/15/04
Prep Time		16:00	16:00	16:00
Analysis Date		11/17/04	11/17/04	11/17/04
Analysis Time		13:20	14:27	15:01
Batch ID		PAW949	PAW949	PAW949
Prep Method		3520C	3520C	3520C
Analyst		SGB	SGB	SGB
Quantitation Factor		1.0	1.0	1.0

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-6	OMS28-MW07-1104	Liquid	11/11/04	11/09/04 17:40	
11300-7	OMS28-MW08-1104	Liquid	11/11/04	11/09/04 16:40	
11300-8	OMS28-MW06-1104FD	Liquid	11/11/04	11/10/04 13:00	

Parameter	Units	Sample ID 11300-6 OMS28-MW07-1104	11300-7 OMS28-MW08-1104	11300-8 OMS28-MW06-1104F
Volatile Organic Compounds (SW8260B)				
Benzene	ug/l	0.25U	5.0U	59
Ethylbenzene	ug/l	0.25U	5.0U	1.2U
Methyl t-butyl ether (MTBE)	ug/l	0.25U	5.0U	1.2U
Toluene	ug/l	0.25U	5.0U	1.2U
o-Xylene	ug/l	0.25U	5.0U	2.7
mp-Xylene	ug/l	0.50U	10U	7.8
Surrogate - Dibromofluoromethane *	%	87 %	85 %	83 %
Surrogate - Toluene-d8 *	%	95 %	95 %	96 %
Surrogate - 4-Bromofluorobenzene *	%	90 %	90 %	95 %
Naphthalene	ug/l	0.25U	5.0U	90
Dilution Factor		1	20	5
Prep Date		11/22/04	11/22/04	11/22/04
Prep Time		15:11	15:45	16:18
Analysis Date		11/22/04	11/22/04	11/22/04
Analysis Time		15:11	15:45	16:18
Batch ID		COW343	COW343	COW343
Prep Method		5030B	5030B	5030B
Analyst		GRH	GRH	GRH
Quantitation Factor		1	20	5

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-9	TB-1104	Liquid	11/11/04	11/09/04 15:00	

Parameter	Units	Sample ID 11300-9 TB-1104
Volatile Organic Compounds (SW8260B)		
Benzene	ug/l	0.25U
Ethylbenzene	ug/l	0.25U
Methyl t-butyl ether (MTBE)	ug/l	0.25U
Toluene	ug/l	0.25U
o-Xylene	ug/l	0.25U
mp-Xylene	ug/l	0.50U
Surrogate - Dibromofluoromethane *	%	82 %
Surrogate - Toluene-d8 *	%	95 %
Surrogate - 4-Bromofluorobenzene *	%	90 %
Naphthalene	ug/l	0.25U
Dilution Factor		1
Prep Date		11/22/04
Prep Time		16:52
Analysis Date		11/22/04
Analysis Time		16:52
Batch ID		COW343
Prep Method		5030B
Analyst		GRH
Quantitation Factor		1

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-10	Method Blank	Liquid	11/11/04		
11300-11	LCS True Value	Liquid	11/11/04		
11300-12	LCS Result	Liquid	11/11/04		
11300-13	LCS % Recovery	Liquid	11/11/04		
11300-14	LCS Accuracy Control Limit (%R)	Liquid	11/11/04		

Parameter	Units	Sample ID: 11300-10 Method Blank	11300-11 LCS True Value	11300-12 LCS Result	11300-13 LCS % Recovery	11300-14 LCS Accuracy Co
Lead (SW6010B)						
Lead	mg/l	0.0020J	1.0	1.0	101 %	80-120
Dilution Factor		1		1		
Prep Date		11/15/04		11/15/04		
Prep Time		00:59		00:59		
Analysis Date		11/18/04		11/18/04		
Analysis Time		16:47		16:53		
Batch ID		PW443	PW443	PW443	PW443	
Prep Method		3010A		3010A		
Analyst		GSP		GSP		
Quantitation Factor		1.000		1.000		
Polynuclear Aromatic Hydrocarbons (SW8310)						
Anthracene	ug/l	1.0U	10.0	10.4	104 %	43-143
Benzo(a)anthracene	ug/l	0.20U	10.0	9.2	92 %	42-128
Benzo(a)pyrene	ug/l	0.20U	10.0	9.5	95 %	33-114
Benzo(b)fluoranthene	ug/l	0.20U	10.0	9.3	93 %	44-132
Benzo(g,h,i)perylene	ug/l	1.0U	10.0	9.5	95 %	21-140
Benzo(k)fluoranthene	ug/l	0.50U	10.0	9.4	94 %	41-136
Chrysene	ug/l	1.0U	10.0	9.4	94 %	47-135
Fluoranthene	ug/l	1.0U	10.0	8.9	89 %	40-119
Fluorene	ug/l	1.0U	10.0	8.2	82 %	26-115
Naphthalene	ug/l	1.0U	10.0	7.9	79 %	19-102
Phenanthrene	ug/l	1.0U	10.0	8.6	86 %	35-132
Pyrene	ug/l	1.0U	10.0	9.0	90 %	40-130

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-10	Method Blank	Liquid	11/11/04		
11300-11	LCS True Value	Liquid	11/11/04		
11300-12	LCS Result	Liquid	11/11/04		
11300-13	LCS % Recovery	Liquid	11/11/04		
11300-14	LCS Accuracy Control Limit (%R)	Liquid	11/11/04		

Parameter	Units	Sample ID: 11300-10 Method Blank	11300-11 LCS True Value	11300-12 LCS Result	11300-13 LCS % Recovery	11300-14 LCS Accuracy Co
Polynuclear Aromatic Hydrocarbons (SW8310)						
Surrogate - 2-Chloroanthracene *	%	91 %	1.00	0.89	89 %	28-138
Dilution Factor		1.0		1.0		
Prep Date		11/15/04		11/15/04		
Prep Time		16:00		16:00		
Analysis Date		11/17/04		11/17/04		
Analysis Time		08:49		08:15		
Batch ID		PAW949	PAW949	PAW949	PAW949	
Prep Method		3520C		3520C		
Analyst		SGB		SGB		
Quantitation Factor		1.0		1.0		
Volatile Organic Compounds (SW8260B)						
Benzene	ug/l	0.25U	5.00	4.89	98 %	83-110
Ethylbenzene	ug/l	0.25U	5.00	5.16	103 %	76-123
Methyl t-butyl ether (MTBE)	ug/l	0.25U	5.00	4.67	93 %	71-123
Toluene	ug/l	0.25U	5.00	4.97	99 %	82-117
o-Xylene	ug/l	0.25U	5.00	5.12	102 %	76-126
mp-Xylene	ug/l	0.50U	10.00	10.52	105 %	69-130
Surrogate - Dibromofluoromethane *	%	83 %	25.00	21.33	85 %	69-130
Surrogate - Toluene-d8 *	%	96 %	25.00	24.24	97 %	86-116
Surrogate - 4-Bromofluorobenzene *	%	92 %	25.00	23.86	95 %	83-126

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-10	Method Blank	Liquid	11/11/04		
11300-11	LCS True Value	Liquid	11/11/04		
11300-12	LCS Result	Liquid	11/11/04		
11300-13	LCS % Recovery	Liquid	11/11/04		
11300-14	LCS Accuracy Control Limit (%R)	Liquid	11/11/04		

		Sample ID				
Parameter	**Units**	**11300-10**	**11300-11**	**11300-12**	**11300-13**	**11300-14**
		Method Blank	**LCS True Value**	**LCS Result**	**LCS % Recovery**	**LCS Accuracy Co**
Volatile Organic Compounds (SW8260B)						
Naphthalene	ug/l	0.25U	5.00	4.00	80 %	64-138
Dilution Factor		1		1		
Prep Date		11/22/04		11/22/04		
Prep Time		08:55		09:29		
Analysis Date		11/22/04		11/22/04		
Analysis Time		08:55		09:29		
Batch ID		COW343	COW343	COW343	COW343	
Prep Method		5030B		5030B		
Analyst		GRH		GRH		
Quantitation Factor		1		1		

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-15	MS True Value	Liquid	11/11/04		
11300-16	Matrix Spike Result	Liquid	11/11/04		
11300-17	Matrix Spike % Recovery	Liquid	11/11/04		
11300-18	MSD True Value	Liquid	11/11/04		
11300-19	MSD Result	Liquid	11/11/04		

Parameter	Units	Sample ID 11300-15 MS True Value	11300-16 Matrix Spike Res	11300-17 Matrix Spike % R	11300-18 MSD True Value	11300-19 MSD Result
Lead (SW6010B)						
Lead	mg/l	1.0	1.0	100 %	1.0	1.0
Dilution Factor			1			1
Prep Date			11/15/04			11/15/04
Prep Time			00:59			00:59
Analysis Date			11/18/04			11/18/04
Analysis Time			17:09			17:15
Batch ID		PW443	PW443	PW443	PW443	PW443
Prep Method			3010A			3010A
Analyst			GSP			GSP
Quantitation Factor			1.000			1.000
Polynuclear Aromatic Hydrocarbons (SW8310)						
Anthracene	ug/l	10.0	9.8	98 %	10.0	9.7
Benzo(a)anthracene	ug/l	10.0	9.2	92 %	10.0	9.0
Benzo(a)pyrene	ug/l	10.0	9.2	92 %	10.0	9.2
Benzo(b)fluoranthene	ug/l	10.0	9.1	91 %	10.0	9.1
Benzo(g,h,i)perylene	ug/l	10.0	9.2	92 %	10.0	9.3
Benzo(k)fluoranthene	ug/l	10.0	9.2	92 %	10.0	9.2
Chrysene	ug/l	10.0	9.4	94 %	10.0	9.3
Fluoranthene	ug/l	10.0	9.3	93 %	10.0	9.0
Fluorene	ug/l	10.0	7.7	77 %	10.0	7.9
Naphthalene	ug/l	10.0	7.6	76 %	10.0	8.3
Phenanthrene	ug/l	10.0	8.6	86 %	10.0	8.5
Pyrene	ug/l	10.0	9.3	93 %	10.0	9.0

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-15	MS True Value	Liquid	11/11/04		
11300-16	Matrix Spike Result	Liquid	11/11/04		
11300-17	Matrix Spike % Recovery	Liquid	11/11/04		
11300-18	MSD True Value	Liquid	11/11/04		
11300-19	MSD Result	Liquid	11/11/04		

Parameter	Units	Sample ID 11300-15 MS True Value	11300-16 Matrix Spike Res	11300-17 Matrix Spike % R	11300-18 MSD True Value	11300-19 MSD Result
Polynuclear Aromatic Hydrocarbons (SW8310)						
Surrogate - 2-Chloroanthracene *	ug/l	1.00	0.87	87 %	1.00	0.86
Dilution Factor			1.0			1.0
Prep Date			11/15/04			11/15/04
Prep Time			16:00			16:00
Analysis Date			11/17/04			11/17/04
Analysis Time			09:23			09:57
Batch ID		PAW949	PAW949	PAW949	PAW949	PAW949
Prep Method			3520C			3520C
Analyst			SGB			SGB
Quantitation Factor			1.0			1.0
Volatile Organic Compounds (SW8260B)						
Benzene	ug/l	10.00	9.80	98 %	10.00	9.90
Ethylbenzene	ug/l	10.00	10.69	107 %	10.00	10.67
Methyl t-butyl ether (MTBE)	ug/l	10.00	8.94	89 %	10.00	9.91
Toluene	ug/l	10.00	9.92	99 %	10.00	9.96
o-Xylene	ug/l	10.00	10.69	107 %	10.00	10.66
mp-Xylene	ug/l	20.00	21.42	107 %	20.00	21.02
Surrogate - Dibromofluoromethane *	ug/l	25.00	20.35	81 %	25.00	20.93
Surrogate - Toluene-d8 *	ug/l	25.00	24.04	96 %	25.00	23.99
Surrogate - 4-Bromofluorobenzene *	ug/l	25.00	24.06	96 %	25.00	24.16

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-15	MS True Value	Liquid	11/11/04		
11300-16	Matrix Spike Result	Liquid	11/11/04		
11300-17	Matrix Spike % Recovery	Liquid	11/11/04		
11300-18	MSD True Value	Liquid	11/11/04		
11300-19	MSD Result	Liquid	11/11/04		

Parameter	Units	Sample ID 11300-15 MS True Value	11300-16 Matrix Spike Res	11300-17 Matrix Spike % R	11300-18 MSD True Value	11300-19 MSD Result
Volatile Organic Compounds (SW8260B)						
Naphthalene	ug/l	10.00	8.52	85 %	10.00	9.28
Dilution Factor			1			1
Prep Date			11/22/04			11/22/04
Prep Time			10:02			10:38
Analysis Date			11/22/04			11/22/04
Analysis Time			10:02			10:38
Batch ID		COW343	COW343	COW343	COW343	COW343
Prep Method			5030B			5030B
Analyst			GRH			GRH
Quantitation Factor			1			1

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-20	MSD % Recovery	Liquid	11/11/04		
11300-21	MS Accuracy Advisory Limit (%R)	Liquid	11/11/04		
11300-22	Precision (%RPD) MS/MSD	Liquid	11/11/04		
11300-23	MS Precision Advisory Limit (%RPD)	Liquid	11/11/04		

Parameter	Units	Sample ID 11300-20 MSD % Recovery	11300-21 MS Accuracy Advi	11300-22 Precision (%RPD)	11300-23 MS Precision Adv
Lead (SW6010B)					
Lead	%	101 %	75-125	0 %	20
Batch ID		PW443		PW443	
Polynuclear Aromatic Hydrocarbons (SW8310)					
Anthracene	%	97 %	33-145	1	68
Benzo(a)anthracene	%	90 %	34-139	1	52
Benzo(a)pyrene	%	92 %	27-117	0	47
Benzo(b)fluoranthene	%	91 %	30-140	0	59
Benzo(g,h,i)perylene	%	93 %	19-141	1	51
Benzo(k)fluoranthene	%	92 %	31-142	0	47
Chrysene	%	93 %	31-144	1	61
Fluoranthene	%	90 %	22-139	3	73
Fluorene	%	79 %	19-113	3	79
Naphthalene	%	83 %	2-108	8	93
Phenanthrene	%	85 %	26-136	1	70
Pyrene	%	90 %	26-142	3	68
Surrogate - 2-Chloroanthracene *	%	86 %	28-138		
Batch ID		PAW949		PAW949	

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-20	MSD % Recovery	Liquid	11/11/04		
11300-21	MS Accuracy Advisory Limit (%R)	Liquid	11/11/04		
11300-22	Precision (%RPD) MS/MSD	Liquid	11/11/04		
11300-23	MS Precision Advisory Limit (%RPD)	Liquid	11/11/04		

Parameter	Units	Sample ID 11300-20 MSD % Recovery	11300-21 MS Accuracy Advi	11300-22 Precision (%RPD)	11300-23 MS Precision Adv
Volatile Organic Compounds (SW8260B)					
Benzene	%	99 %	85-116	1	11
Ethylbenzene	%	107 %	83-121	0	18
Methyl t-butyl ether (MTBE)	%	99 %	51-152	10	20
Toluene	%	100 %	84-119	0	14
o-Xylene	%	107 %	83-126	0	15
mp-Xylene	%	105 %	82-126	2	18
Surrogate - Dibromofluoromethane *	%	84 %	69-130		
Surrogate - Toluene-d8 *	%	96 %	86-116		
Surrogate - 4-Bromofluorobenzene *	%	97 %	83-126		
Naphthalene	%	93 %	62-153	9	23
Batch ID		COW343		COW343	

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-24	Method Detection Limit (MDL)	Liquid	11/11/04		
11300-25	Reporting Limit (RL)	Liquid	11/11/04		

Parameter	Units	Sample ID 11300-24 Method Detection	11300-25 Reporting Limit
Lead (SW6010B)			
Lead	mg/l	0.0020	0.0050
Polynuclear Aromatic Hydrocarbons (SW8310)			
Anthracene	ug/l	0.063	1.0
Benzo(a)anthracene	ug/l	0.057	0.20
Benzo(a)pyrene	ug/l	0.076	0.20
Benzo(b)fluoranthene	ug/l	0.064	0.20
Benzo(g,h,i)perylene	ug/l	0.088	1.0
Benzo(k)fluoranthene	ug/l	0.079	0.50
Chrysene	ug/l	0.065	1.0
Fluoranthene	ug/l	0.070	1.0
Fluorene	ug/l	0.072	1.0
Naphthalene	ug/l	0.089	1.0
Phenanthrene	ug/l	0.069	1.0
Pyrene	ug/l	0.059	1.0
Volatile Organic Compounds (SW8260B)			
Benzene	ug/l	0.15	0.25
Ethylbenzene	ug/l	0.15	0.25
Methyl t-butyl ether (MTBE)	ug/l	0.15	0.25
Toluene	ug/l	0.15	0.25
o-Xylene	ug/l	0.15	0.25
mp-Xylene	ug/l	0.25	0.50
Naphthalene	ug/l	0.15	0.25

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
11300-26	Method Blank 2	Liquid	11/11/04		
11300-27	LCS True Value 2	Liquid	11/11/04		
11300-28	Lab Control Standard Result 2	Liquid	11/11/04		
11300-29	Lab Control Standard % Recovery 2	Liquid	11/11/04		
11300-30	LCS Accuracy Control Limit (%R) 2	Liquid	11/11/04		

		Sample ID				
Parameter	**Units**	**11300-26**	**11300-27**	**11300-28**	**11300-29**	**11300-30**
		Method Blank 2	**LCS True Value 2**	**Lab Control Stan**	**Lab Control Stan**	**LCS Accuracy Co**
Volatile Organic Compounds (SW8260B)						
Benzene	ug/l	0.25U	5.00	4.57	91 %	83-110
Ethylbenzene	ug/l	0.25U	5.00	4.91	98 %	76-123
Methyl t-butyl ether (MTBE)	ug/l	0.25U	5.00	4.72	94 %	71-123
Toluene	ug/l	0.25U	5.00	4.60	92 %	82-117
o-Xylene	ug/l	0.25U	5.00	4.89	98 %	76-126
mp-Xylene	ug/l	0.50U	10.00	9.82	98 %	69-130
Surrogate - Dibromofluoromethane *	%	87 %	25.00	21.93	88 %	69-130
Surrogate - Toluene-d8 *	%	95 %	25.00	24.12	96 %	86-116
Surrogate - 4-Bromofluorobenzene *	%	91 %	25.00	24.31	97 %	83-126
Naphthalene	ug/l	0.25U	5.00	3.83	77 %	64-138
Dilution Factor		1		1		
Prep Date		11/23/04		11/23/04		
Prep Time		12:20		12:53		
Analysis Date		11/23/04		11/23/04		
Analysis Time		12:20		12:53		
Batch ID		COW347	COW347	COW347	COW347	
Prep Method		5030B		5030B		
Analyst		GRH		GRH		
Quantitation Factor		1		1		

Order Number: C411300

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Data Quality Evaluation: March 2005 Groundwater Samples

Groundwater samples were collected from seven monitor wells at OMS #28 on 9 - 10 March 2005 and delivered to STL Pensacola on 11 March for analysis of volatile organic compounds (VOCs) by Method SW 8260B; polynuclear aromatic hydrocarbons (PAHs) by method SW8310; and lead by Method SW6010B. One field duplicate sample and one trip blank sample were also included. All samples were received in good condition, with a temperature between 0.5 and 1.0 °C and were prepared and analyzed within required hold times. Results were reported by STL on 14 May 2005 as Job Number 400-785.1. SW8260B analyses were conducted in two batches, 400-2376 and 400-2555.

All measures of laboratory quality control meet project requirements. No VOCs or PAHs were detected in the method blank sample except for one detection of methylene chloride at 0.3 µg/L in the method blank for analytical batch 400-2555. Lead was reported at a concentration of 0.0029 J µ/L in the method blank for Method SW6010B. All reported lead concentrations in field samples are less than 5X this method blank concentration. The trip blank indicates no sample contamination at analytical detection limits. The laboratory control sample (LCS) recoveries for target analytes in all analytical batches are within required limits, with most VOCs within 95% to 100% recovery. Naphthalene recoveries in Method 8260B were somewhat lower, at 75% in both analytical batches. LCS recoveries for Method 8310 are within acceptance criteria, ranging from 64% to 101%. All analytical recovery and RPD percentages are within project data quality limits. All surrogate recoveries are within required limits. Surrogate recoveries for SW8260 analyses range from 89% to 98%; for SW8310 analyses recoveries range from 68% to 81%.

Method detection and reporting limits meet or exceed project requirements for all analytes except benzo(a)pyrene. The MDL for benzo(a)pyene is 0/076 µ/L, which is less than three times the required reporting limit of 0.2 µ/L; however the reported MDL for this analyte meets the requirement for the best practically achievable value. The sample detection limits meet or exceed the project target levels as specified in the work plan for all samples except SW8260B analysis of OMS28-MW08-1104. This sample required 25-fold dilution for SW8260B analysis because of interference from non-target analytes. Samples OMS28-MW01-1104 and OMS28-MW06-1104 required dilution for SW8260B analysis because of relatively high concentrations of target analytes.

All matrix spike/matrix spike duplicate (MS/MSD) sample results for target analytes are within project quality specifications, as summarized below:

Method	Analyte	MS % Recovery	RPD
SW6010B	Lead	97	1
SW8260B	Benzene	95	0
	Ethylbenzene	100	0
	Naphthalene	90	7
	Toluene	95	1
	o-Xylene	97	0
	m & p Xylene	95	3
SW8310	Anthracene	99	12
	Benzo(a)anthracene	83	14
	Benzo(a)pyrene	76	18
	Benzo(b)fluoranthene	77	13
	Benzo(g,h,i)perylene	69	14
	Benzo(k)fluoranthene	71	14
	Chrysene	83	14
	Fluoranthene	99	17
	Fluorene	95	11
	Naphthalene	82	8
	Phenanthrene	96	12
	Pyrene	101	14

A field duplicate sample was collected from MW-8. MW-8 was selected as the site for the field duplicate to help confirm the detection of non-target analytes noted in the November 2004 samples; however this well does not have detectable concentrations of any SW8310 target analytes. Consequently, the sampling variability cannot be assessed for this method. Field duplicate results indicate excellent reproducibility for VOCs analyzed by Method SW8260B and lead analyzed by Method SW6010, as summarized in the table below.

Field Duplicate Results, March 2005

(all results in µg/L, except as noted)

Method	Analyte	OMS28-MW08-0305	OMS28-MW08-0305B	RPD, %
SW6010B	Lead	0.0022 JB	0.0030 JB	15
SW8260B	cis-1,2 Dichloroethylene	11	10	4.8
	Trichloroethylene	460	430	3.4

J = estimated result < reporting limit B = detected at similar concentration in method blank

ANALYTICAL REPORT

Job Number: 400-785.1

Job Description: OMS #28 Brookley

For:

Bechtel S Corporation
8817 Mosquero Circle
Austin, TX 78748

Attention: Andy Weinberg

Stephanie Akers
Project Manager I
sakers@stl-inc.com
05/14/2005

cc: Ann Behl

Severn Trent Laboratories, Inc.
STL Pensacola 3355 McLemore Drive, Pensacola, FL 32514
Tel 850-4741001 Fax 850-4782671 www.stl-inc.com

CASE NARRATIVE

STL Pensacola Job 400-785.1
Client Project Name: ALARNG OMS #28, Brookley AFB

The following samples were received at STL Pensacola on March 11, 2005. The sample cooler temperatures were 0.5 °C, 0.8 °C, and 1.0 °C and sample bottles were intact upon arrival. No problems were found upon sample receipt and inspection.

STL Pensacola Sample ID	Client Sample Description	Sample Matrix	STL Pensacola Sample ID	Client Sample Description	Sample Matrix
400-785-1	OMS28-MW1-0305	Aqueous	400-785-6	OMS28-MW7-0305	Aqueous
400-785-2	OMS28-MW2-0305	Aqueous	400-785-7	OMS28-MW8-0305	Aqueous
400-785-3	OMS28-MW3-0305	Aqueous	400-785-8	OMS28-MW8-0305B	Aqueous
400-785-4	OMS28-MW5-0305	Aqueous	400-785-9	TB	Aqueous
400-785-5	OMS28-MW6-0305	Aqueous			

Matrix spike/matrix spike parent sample IDs are identified in the LIMS report.

An explanation of data qualifiers is provided in the LIMS report immediately following sample results.

Stephanie C. Akers
Project Manager/QA
STL Pensacola

May 14, 2005

EXECUTIVE SUMMARY - Detections

Client: Bechtel S Corporation Job Number: 400-785.1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
400-785-1	**OMS28-MW1-0305**					
Benzene		77		13	ug/L	8260B
Ethylbenzene		400		13	ug/L	8260B
Isopropylbenzene		16		13	ug/L	8260B
Naphthalene		140		13	ug/L	8260B
Toluene		570		13	ug/L	8260B
1,2,4-Trimethylbenzene		350		13	ug/L	8260B
1,3,5-Trimethylbenzene		100		13	ug/L	8260B
N-Propylbenzene		40		13	ug/L	8260B
o-Xylene		270		13	ug/L	8260B
m-Xylene & p-Xylene		960		25	ug/L	8260B
Naphthalene		130		1.0	ug/L	8310
Acenaphthylene		12		1.0	ug/L	8310
1-Methylnaphthalene		29		1.0	ug/L	8310
2-Methylnaphthalene		56		1.0	ug/L	8310
Lead		0.0026	J	0.0050	mg/L	6010B
400-785-2	**OMS28-MW2-0305**					
Lead		0.0030	J	0.0050	mg/L	6010B
400-785-3	**OMS28-MW3-0305**					
Lead		0.0054		0.0050	mg/L	6010B
400-785-4	**OMS28-MW5-0305**					
Lead		0.0044	J	0.0050	mg/L	6010B
400-785-5	**OMS28-MW6-0305**					
Acetone		24	B	10	ug/L	8260B
Benzene		41		0.63	ug/L	8260B
Benzene		34		2.5	ug/L	8260B
4-Chlorotoluene		2.4	J	2.5	ug/L	8260B
Ethylbenzene		1.5		0.63	ug/L	8260B
Isopropylbenzene		15		0.63	ug/L	8260B
Isopropylbenzene		6.9		2.5	ug/L	8260B
p-Cymene		0.80		0.63	ug/L	8260B
Methylene Chloride		2.5	J B	2.5	ug/L	8260B
Naphthalene		79	E	0.63	ug/L	8260B
Naphthalene		59		2.5	ug/L	8260B
n-Butylbenzene		4.7		0.63	ug/L	8260B
n-Butylbenzene		1.8	J	2.5	ug/L	8260B
sec-Butylbenzene		2.6		0.63	ug/L	8260B
Toluene		0.71		0.63	ug/L	8260B
Toluene		2.6		2.5	ug/L	8260B
1,2,4-Trimethylbenzene		6.8		0.63	ug/L	8260B

EXECUTIVE SUMMARY - Detections

Client: Bechtel S Corporation Job Number: 400-785.1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
400-785-5	**OMS28-MW6-0305**					
1,2,4-Trimethylbenzene		4.0		2.5	ug/L	8260B
1,3,5-Trimethylbenzene		42		0.63	ug/L	8260B
1,3,5-Trimethylbenzene		21		2.5	ug/L	8260B
N-Propylbenzene		2.3		0.63	ug/L	8260B
o-Xylene		1.4		0.63	ug/L	8260B
m-Xylene & p-Xylene		5.1		1.3	ug/L	8260B
m-Xylene & p-Xylene		4.1	J	5.0	ug/L	8260B
Naphthalene		45		1.0	ug/L	8310
1-Methylnaphthalene		21		1.0	ug/L	8310
2-Methylnaphthalene		29		1.0	ug/L	8310
Lead		0.0027	J	0.0050	mg/L	6010B
400-785-6	**OMS28-MW7-0305**					
Lead		0.0037	J	0.0050	mg/L	6010B
400-785-7	**OMS28-MW8-0305**					
cis-1,2-Dichloroethene		11		6.3	ug/L	8260B
Trichloroethene		460		6.3	ug/L	8260B
Lead		0.0022	J	0.0050	mg/L	6010B
400-785-8	**OMS28-MW8-0305B**					
cis-1,2-Dichloroethene		10		6.3	ug/L	8260B
Trichloroethene		430		6.3	ug/L	8260B
Lead		0.0030	J	0.0050	mg/L	6010B

METHOD SUMMARY

Client: Bechtel S Corporation Job Number: 400-785.1

Description	Method	Preparation Method
Matrix: Water		
Volatile Organic Compounds by GC/MS	SW846 8260B	
Purge-and-Trap Low Level		SW846 5030B
Polynuclear Aromatic Hydrocarbons	SW846 8310	
Continuous Liquid-Liquid Extraction		SW846 3520C
Inductively Coupled Plasma - Atomic Emission Spectrometry	SW846 6010B	
Acid Digestion of Aqueous Samples and Extracts for Total Metals		SW846 3010A

REFERENCES

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986
And Its Updates.

METHOD / ANALYST SUMMARY

Client: Bechtel S Corporation Job Number: 400-785.1

Method	Analyst	Analyst ID
SW846 8260B	Akers, Stephanie	SA
SW846 8260B	Dilmore, Larry	LD
SW846 8310	Bubien, Stephanie	SB
SW846 6010B	Reed, John	JR

SAMPLE SUMMARY

Client: Bechtel S Corporation Job Number: 400-785.1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
400-785-1	OMS28-MW1-0305	Water	03/10/2005 1245	03/11/2005 0925
400-785-2	OMS28-MW2-0305	Water	03/09/2005 1645	03/11/2005 0925
400-785-3	OMS28-MW3-0305	Water	03/09/2005 1740	03/11/2005 0925
400-785-3MS	OMS28-MW3-0305	Water	03/09/2005 1740	03/11/2005 0925
400-785-3MSD	OMS28-MW3-0305	Water	03/09/2005 1740	03/11/2005 0925
400-785-4	OMS28-MW5-0305	Water	03/10/2005 0925	03/11/2005 0925
400-785-5	OMS28-MW6-0305	Water	03/10/2005 1020	03/11/2005 0925
400-785-6	OMS28-MW7-0305	Water	03/10/2005 0800	03/11/2005 0925
400-785-7	OMS28-MW8-0305	Water	03/10/2005 1130	03/11/2005 0925
400-785-8	OMS28-MW8-0305B	Water	03/10/2005 1130	03/11/2005 0925
400-785-9	TB	Water	03/10/2005 1530	03/11/2005 0925

Cooler 1

SERIAL NUMBER: 22062

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

8310 90.00
8260X 75.00
Pb 10.00

SEVERN TRENT **STL**

STL Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone: 850-474-1001
Fax: 850-478-2671
Website: www.stl-inc.com

QUOTE NO.	BOTTLE ORDER NO. SCA C5021363	ORDER - LOG-IN NO. C400-J785

CLIENT	ADDRESS	PAGE	OF
Bechtel-S	2319 Westoak Dr, Austin TX 78704	1	1

PROJECT NAME	PROJECT NO.	CLIENT PROJECT MANAGER	PROJECT LOC. (STATE)
OMS #28	14.05	Andy Weinberg	AL

SAMPLED BY	CONTRACT / P.O. NO.
A. Weinberg	14.005

CLIENT PHONE	CLIENT E-MAIL OR FAX
512-693-9353	

TAT REQUESTED: RUSH NEEDS LAB PREAPPROVAL ☐ NORMAL - 10 BUSINESS DAYS
☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ 5 DAYS ☐ 20 DAYS (Package) ☐ OTHER:

SAMPLE DISPOSAL: ☐ RETURN TO CLIENT ☒ DISPOSAL BY LAB
☐ SEE CONTRACT ☐ OTHER:

REQUESTED ANALYSIS: SW8260 - SW6010 - Pb

POSSIBLE HAZARD IDENTIFICATION
☒ NON-HAZARD
Δ FLAMMABLE
Δ RADIOACTIVE
Δ POISON B
Δ UNKNOWN
Δ OTHER:

NO. OF COOLERS PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	PRESERVATIVE: No Preservative	HCL - Hydrochloric Acid	HNO3 - Nitric Acid	H2SO4 - Sulfuric Acid or H3PO4	NAOH - Sodium Hydroxide	CH3OH - Methanol	NAHSO4 - Sodium Bisulfate	NA2S2O3 - Sodium Thiosulfate	Other:	MATRIX: Drinking Water	Aqeuous GW, SW, WW	Solid, Semisolid, Sediment	Air	NonAqueous (Oil,Solvent, etc.)	NUMBER OF CONTAINERS SUBMITTED	SPECIAL INSTRUCTIONS/ CONDITIONS OF RECEIPT
3.10.05	1245	OMS28-MW1-0305											✓				1	
3.9.05	1645	OMS28-MW2-0305											✓				1	
3.9.05	1740	OMS28-MW3-0305											✓				3	MS/MSD
3.10.05	0925	OMS28-MW5-0305											✓				1	
"	1020	OMS28-MW6-0305											✓				1	
"	0800	OMS28-MW7-0305											✓				1	
"	1130	OMS28-MW8-0305											✓				1	
"	1130	OMS28-MW8-0305B											✓				1	
3.9.05	1530	TB											✓				2	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Danielle Howard	3.8.05	1640	A Weinberg	3.10.05	1630			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	CUSTODY INTACT? Δ YES Δ NO	CUSTODY SEAL NO.	REMARKS:
Linda L. Kitt	3/11/05	0925			0.5 °C

LAB USE ONLY - SAMPLE NUMBER

SERIAL NUMBER: 22064

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

STL Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone: 850-474-1001
Fax: 850-478-2671
Website: www.stl-inc.com

QUOTE NO.	BOTTLE ORDER NO.	ORDER - LOG-IN NO.
		C 400-5785

CLIENT	ADDRESS	PAGE	OF
Bechtel-S	2319 Westoak, Austin TX	1	1

PROJECT NAME	PROJECT NO.	CLIENT PROJECT MANAGER	PROJECT LOC. (STATE)
OMS #28	14.005	A. Weinberg	AL

SAMPLED BY	CONTRACT / P.O. NO.
A Weinberg	14.005

CLIENT PHONE	CLIENT E-MAIL OR FAX
512-693-9353	

TAT REQUESTED: RUSH NEEDS LAB PREAPPROVAL ☐ NORMAL - 10 BUSINESS DAYS
☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ 5 DAYS ☐ 20 DAYS (Package) ☐ OTHER:

SAMPLE DISPOSAL: ☐ RETURN TO CLIENT ☒ DISPOSAL BY LAB
☐ SEE CONTRACT ☐ OTHER:

REQUESTED ANALYSIS: SW8310 PAH

POSSIBLE HAZARD IDENTIFICATION
☒ NON-HAZARD
Δ FLAMMABLE
Δ RADIOACTIVE
Δ POISON B
Δ UNKNOWN
Δ OTHER:

NO. OF COOLERS PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	PRESERVATIVE: No Preservative	HCL - Hydrochloric Acid	HNO3 - Nitric Acid	H2SO4 - Sulfuric Acid or H3PO4	NAOH - Sodium Hydroxide	CH3OH - Methanol	NAHSO4 - Sodium Bisulfate	NA2S2O3 - Sodium Thiosulfate	Other:	MATRIX: Drinking Water	Aqueous GW, SW, WW	Solid, Semisolid, Sediment	Air	NonAqueous (Oil,Solvent, etc.)	NUMBER OF CONTAINERS SUBMITTED	SPECIAL INSTRUCTIONS/ CONDITIONS OF RECEIPT
3.10.05	1245	OMS28-MW1-0305											✓				2	
	0925	OMS28-MW5-0305											✓				2	
	1020	OMS28-MW6-0305											✓				2	
	0800	OMS28-MW7-0305											✓				2	

LAB USE ONLY - SAMPLE NUMBER

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			A Weinberg	3.10.05	1630			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	CUSTODY INTACT? Δ YES Δ NO	CUSTODY SEAL NO.	REMARKS:
Judy L. Kitt	3/11/05	0925			

Cooler 3

SERIAL NUMBER: 22063

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

STL Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone: 850-474-1001
Fax: 850-478-2671
Website: www.stl-inc.com

QUOTE NO.

BOTTLE ORDER NO.

ORDER LOG-IN NO.: C 400-3785

CLIENT: Bechtel-S

ADDRESS: 2319 Westoak Dr, Austin TX

PAGE: 1 OF: 1

PROJECT NAME: OMS #28

PROJECT NO.: 14.005

CLIENT PROJECT MANAGER: Andy Weinberg

PROJECT LOC. (STATE): AL

SAMPLED BY: Andy Weinberg

CONTRACT / P.O. NO.: 14.005

CLIENT PHONE: 512-693-9353

CLIENT E-MAIL OR FAX:

TAT REQUESTED: RUSH NEEDS LAB PREAPPROVAL ☐ NORMAL - 10 BUSINESS DAYS
☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ 5 DAYS ☐ 20 DAYS (Package) ☐ OTHER:

SAMPLE DISPOSAL: ☐ RETURN TO CLIENT ☒ DISPOSAL BY LAB
☐ SEE CONTRACT ☐ OTHER:

REQUESTED ANALYSIS

SW8310 - PAHs

POSSIBLE HAZARD IDENTIFICATION
☒ NON-HAZARD
Δ FLAMMABLE
Δ RADIOACTIVE
Δ POISON B
Δ UNKNOWN
Δ OTHER:

NO. OF COOLERS PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	PRESERVATIVE: No Preservative	HCL - Hydrochloric Acid	HNO3 - Nitric Acid	H2SO4 - Sulfuric Acid or H3PO4	NAOH - Sodium Hydroxide	CH3OH - Methanol	NAHSO4 - Sodium Bisulfate	NA2S2O3 - Sodium Thiosulfate	Other:	MATRIX: Drinking Water	Aqueous GW, SW, WW	Solid, Semisolid, Sediment	Air	NonAqueous (Oil,Solvent, etc.)	NUMBER OF CONTAINERS SUBMITTED	SPECIAL INSTRUCTIONS/ CONDITIONS OF RECEIPT
3.9.05	1740	OMS28-MW3-0305	X										X				6	MS/MSD
3.10.05	1130	OMS28-MW8-0305	X										X				2	
3.10.05	1130	OMS28-MW8-0305B	X										X				2	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			A Weinberg	3.10.04	1630			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	CUSTODY INTACT?	CUSTODY SEAL NO.	REMARKS:
Lynda L. Kitt	3/11/05	0925	Δ YES Δ NO		1.0 °C

SAMPLE RESULTS

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW1-0305**

Lab Sample ID: 400-785-1 Date Sampled: 03/10/2005 1245
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488019.D
Dilution: 50 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1600 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1600

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	50	U	32	50
Benzene	77		7.5	13
Bromobenzene	13	U	7.5	13
Bromochloromethane	13	U	7.5	13
Bromodichloromethane	13	U	7.5	13
Bromoform	13	U	7.5	13
2-Butanone (MEK)	50	U	7.5	50
Carbon disulfide	13	U	7.5	13
Bromomethane	13	U	7.5	13
Carbon tetrachloride	13	U	7.5	13
Chlorobenzene	13	U	7.5	13
Chloroethane	13	U	7.5	13
Chloroform	13	U	1.1	13
Chloromethane	13	U	7.5	13
2-Chlorotoluene	13	U	7.5	13
4-Chlorotoluene	13	U	7.5	13
Dibromochloromethane	13	U	2.0	13
Dibromomethane	13	U	7.5	13
1,2-Dibromo-3-Chloropropane	25	U	12	25
Ethylene Dibromide	13	U	7.5	13
1,2-Dichlorobenzene	13	U	7.5	13
1,3-Dichlorobenzene	13	U	7.5	13
Dichlorodifluoromethane	13	U	7.5	13
1,1-Dichloroethane	13	U	7.5	13
1,1-Dichloroethene	13	U	7.5	13
1,2-Dichloroethane	13	U	1.3	13
cis-1,2-Dichloroethene	13	U	7.5	13
trans-1,2-Dichloroethene	13	U	7.5	13
1,2-Dichloropropane	13	U	7.5	13
1,3-Dichloropropane	13	U	7.5	13
2,2-Dichloropropane	13	U	7.5	13
1,1-Dichloropropene	13	U	7.5	13
cis-1,3-Dichloropropene	13	U	7.5	13
trans-1,3-Dichloropropene	13	U	7.5	13
Ethylbenzene	400		7.5	13
Hexachlorobutadiene	13	U	7.5	13
2-Hexanone	50	U	7.5	50
Iodomethane	13	U *	7.5	13
Isopropylbenzene	16		7.5	13
Isopropyl ether	13	U	7.5	13
p-Cymene	13	U	7.5	13
Methylene Chloride	13	U *	7.5	13
Methyl tert-butyl ether	13	U	7.5	13

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW1-0305**

Lab Sample ID: 400-785-1 Date Sampled: 03/10/2005 1245
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488019.D
Dilution: 50 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1600 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1600

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	50	U	7.5	50
Naphthalene	140		7.5	13
n-Butylbenzene	13	U	7.5	13
sec-Butylbenzene	13	U	7.5	13
Styrene	13	U	7.5	13
tert-Butylbenzene	13	U	7.5	13
1,1,1,2-Tetrachloroethane	13	U	7.5	13
1,1,2,2-Tetrachloroethane	13	U	1.9	13
Tetrachloroethene	13	U	7.5	13
Toluene	570		7.5	13
1,1,1-Trichloroethane	13	U	7.5	13
1,1,2-Trichloroethane	13	U	7.5	13
1,2,3-Trichlorobenzene	13	U	7.5	13
1,2,4-Trichlorobenzene	13	U	7.5	13
Trichloroethene	13	U	7.5	13
Trichlorofluoromethane	13	U	7.5	13
1,2,3-Trichloropropane	13	U	1.1	13
1,2,4-Trimethylbenzene	350		7.5	13
1,3,5-Trimethylbenzene	100		7.5	13
Vinyl acetate	25	U	7.5	25
Vinyl chloride	13	U	7.5	13
N-Propylbenzene	40		7.5	13
o-Xylene	270		7.5	13
m-Xylene & p-Xylene	960		13	25
1,4-Dichlorobenzene	13	U	7.5	13

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	92	83 - 126
Dibromofluoromethane	97	69 - 130
Toluene-d8	95	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW2-0305**

Lab Sample ID: 400-785-2 Date Sampled: 03/09/2005 1645
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488021.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1634 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1634

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.0	U	0.64	1.0
Benzene	0.25	U	0.15	0.25
Bromobenzene	0.25	U	0.15	0.25
Bromochloromethane	0.25	U	0.15	0.25
Bromodichloromethane	0.25	U	0.15	0.25
Bromoform	0.25	U	0.15	0.25
2-Butanone (MEK)	1.0	U	0.15	1.0
Carbon disulfide	0.25	U	0.15	0.25
Bromomethane	0.25	U	0.15	0.25
Carbon tetrachloride	0.25	U	0.15	0.25
Chlorobenzene	0.25	U	0.15	0.25
Chloroethane	0.25	U	0.15	0.25
Chloroform	0.25	U	0.021	0.25
Chloromethane	0.25	U	0.15	0.25
2-Chlorotoluene	0.25	U	0.15	0.25
4-Chlorotoluene	0.25	U	0.15	0.25
Dibromochloromethane	0.25	U	0.039	0.25
Dibromomethane	0.25	U	0.15	0.25
1,2-Dibromo-3-Chloropropane	0.50	U	0.23	0.50
Ethylene Dibromide	0.25	U	0.15	0.25
1,2-Dichlorobenzene	0.25	U	0.15	0.25
1,3-Dichlorobenzene	0.25	U	0.15	0.25
Dichlorodifluoromethane	0.25	U	0.15	0.25
1,1-Dichloroethane	0.25	U	0.15	0.25
1,1-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloroethane	0.25	U	0.025	0.25
cis-1,2-Dichloroethene	0.25	U	0.15	0.25
trans-1,2-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloropropane	0.25	U	0.15	0.25
1,3-Dichloropropane	0.25	U	0.15	0.25
2,2-Dichloropropane	0.25	U	0.15	0.25
1,1-Dichloropropene	0.25	U	0.15	0.25
cis-1,3-Dichloropropene	0.25	U	0.15	0.25
trans-1,3-Dichloropropene	0.25	U	0.15	0.25
Ethylbenzene	0.25	U	0.15	0.25
Hexachlorobutadiene	0.25	U	0.15	0.25
2-Hexanone	1.0	U	0.15	1.0
Iodomethane	0.25	U *	0.15	0.25
Isopropylbenzene	0.25	U	0.15	0.25
Isopropyl ether	0.25	U	0.15	0.25
p-Cymene	0.25	U	0.15	0.25
Methylene Chloride	0.25	U *	0.15	0.25
Methyl tert-butyl ether	0.25	U	0.15	0.25

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW2-0305**

Lab Sample ID: 400-785-2 Date Sampled: 03/09/2005 1645
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488021.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1634 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1634

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	1.0	U	0.15	1.0
Naphthalene	0.25	U	0.15	0.25
n-Butylbenzene	0.25	U	0.15	0.25
sec-Butylbenzene	0.25	U	0.15	0.25
Styrene	0.25	U	0.15	0.25
tert-Butylbenzene	0.25	U	0.15	0.25
1,1,1,2-Tetrachloroethane	0.25	U	0.15	0.25
1,1,2,2-Tetrachloroethane	0.25	U	0.037	0.25
Tetrachloroethene	0.25	U	0.15	0.25
Toluene	0.25	U	0.15	0.25
1,1,1-Trichloroethane	0.25	U	0.15	0.25
1,1,2-Trichloroethane	0.25	U	0.15	0.25
1,2,3-Trichlorobenzene	0.25	U	0.15	0.25
1,2,4-Trichlorobenzene	0.25	U	0.15	0.25
Trichloroethene	0.25	U	0.15	0.25
Trichlorofluoromethane	0.25	U	0.15	0.25
1,2,3-Trichloropropane	0.25	U	0.022	0.25
1,2,4-Trimethylbenzene	0.25	U	0.15	0.25
1,3,5-Trimethylbenzene	0.25	U	0.15	0.25
Vinyl acetate	0.50	U	0.15	0.50
Vinyl chloride	0.25	U	0.15	0.25
N-Propylbenzene	0.25	U	0.15	0.25
o-Xylene	0.25	U	0.15	0.25
m-Xylene & p-Xylene	0.50	U	0.25	0.50
1,4-Dichlorobenzene	0.25	U	0.15	0.25

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	90	83 - 126
Dibromofluoromethane	98	69 - 130
Toluene-d8	95	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW3-0305**

Lab Sample ID: 400-785-3 Date Sampled: 03/09/2005 1740
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488017.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1527 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1527

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.0	U	0.64	1.0
Benzene	0.25	U	0.15	0.25
Bromobenzene	0.25	U	0.15	0.25
Bromochloromethane	0.25	U	0.15	0.25
Bromodichloromethane	0.25	U	0.15	0.25
Bromoform	0.25	U	0.15	0.25
2-Butanone (MEK)	1.0	U	0.15	1.0
Carbon disulfide	0.25	U	0.15	0.25
Bromomethane	0.25	U	0.15	0.25
Carbon tetrachloride	0.25	U	0.15	0.25
Chlorobenzene	0.25	U	0.15	0.25
Chloroethane	0.25	U	0.15	0.25
Chloroform	0.25	U	0.021	0.25
Chloromethane	0.25	U	0.15	0.25
2-Chlorotoluene	0.25	U	0.15	0.25
4-Chlorotoluene	0.25	U	0.15	0.25
Dibromochloromethane	0.25	U	0.039	0.25
Dibromomethane	0.25	U	0.15	0.25
1,2-Dibromo-3-Chloropropane	0.50	U	0.23	0.50
Ethylene Dibromide	0.25	U	0.15	0.25
1,2-Dichlorobenzene	0.25	U	0.15	0.25
1,3-Dichlorobenzene	0.25	U	0.15	0.25
Dichlorodifluoromethane	0.25	U	0.15	0.25
1,1-Dichloroethane	0.25	U	0.15	0.25
1,1-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloroethane	0.25	U	0.025	0.25
cis-1,2-Dichloroethene	0.25	U	0.15	0.25
trans-1,2-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloropropane	0.25	U	0.15	0.25
1,3-Dichloropropane	0.25	U	0.15	0.25
2,2-Dichloropropane	0.25	U	0.15	0.25
1,1-Dichloropropene	0.25	U	0.15	0.25
cis-1,3-Dichloropropene	0.25	U	0.15	0.25
trans-1,3-Dichloropropene	0.25	U	0.15	0.25
Ethylbenzene	0.25	U	0.15	0.25
Hexachlorobutadiene	0.25	U	0.15	0.25
2-Hexanone	1.0	U	0.15	1.0
Iodomethane	0.25	U *	0.15	0.25
Isopropylbenzene	0.25	U	0.15	0.25
Isopropyl ether	0.25	U	0.15	0.25
p-Cymene	0.25	U	0.15	0.25
Methylene Chloride	0.25	U *	0.15	0.25
Methyl tert-butyl ether	0.25	U	0.15	0.25

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW3-0305**

Lab Sample ID: 400-785-3 Date Sampled: 03/09/2005 1740
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488017.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1527 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1527

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	1.0	U	0.15	1.0
Naphthalene	0.25	U	0.15	0.25
n-Butylbenzene	0.25	U	0.15	0.25
sec-Butylbenzene	0.25	U	0.15	0.25
Styrene	0.25	U	0.15	0.25
tert-Butylbenzene	0.25	U	0.15	0.25
1,1,1,2-Tetrachloroethane	0.25	U	0.15	0.25
1,1,2,2-Tetrachloroethane	0.25	U	0.037	0.25
Tetrachloroethene	0.25	U	0.15	0.25
Toluene	0.25	U	0.15	0.25
1,1,1-Trichloroethane	0.25	U	0.15	0.25
1,1,2-Trichloroethane	0.25	U	0.15	0.25
1,2,3-Trichlorobenzene	0.25	U	0.15	0.25
1,2,4-Trichlorobenzene	0.25	U	0.15	0.25
Trichloroethene	0.25	U	0.15	0.25
Trichlorofluoromethane	0.25	U	0.15	0.25
1,2,3-Trichloropropane	0.25	U	0.022	0.25
1,2,4-Trimethylbenzene	0.25	U	0.15	0.25
1,3,5-Trimethylbenzene	0.25	U	0.15	0.25
Vinyl acetate	0.50	U	0.15	0.50
Vinyl chloride	0.25	U	0.15	0.25
N-Propylbenzene	0.25	U	0.15	0.25
o-Xylene	0.25	U	0.15	0.25
m-Xylene & p-Xylene	0.50	U	0.25	0.50
1,4-Dichlorobenzene	0.25	U	0.15	0.25

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	90	83 - 126
Dibromofluoromethane	98	69 - 130
Toluene-d8	95	86 - 116

Analytical Data

Client: Bechtel S Corporation

Job Number: 400-785.1

Client Sample ID: **OMS28-MW5-0305**

Lab Sample ID: 400-785-4
Client Matrix: Water

Date Sampled: 03/10/2005 0925
Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation:
Dilution: 1.0
Date Analyzed: 03/15/2005 1707
Date Prepared: 03/15/2005 1707

Analysis Batch: 400-2376

Instrument ID: GC/MS
Lab File ID: 3488023.D
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.0	U	0.64	1.0
Benzene	0.25	U	0.15	0.25
Bromobenzene	0.25	U	0.15	0.25
Bromochloromethane	0.25	U	0.15	0.25
Bromodichloromethane	0.25	U	0.15	0.25
Bromoform	0.25	U	0.15	0.25
2-Butanone (MEK)	1.0	U	0.15	1.0
Carbon disulfide	0.25	U	0.15	0.25
Bromomethane	0.25	U	0.15	0.25
Carbon tetrachloride	0.25	U	0.15	0.25
Chlorobenzene	0.25	U	0.15	0.25
Chloroethane	0.25	U	0.15	0.25
Chloroform	0.25	U	0.021	0.25
Chloromethane	0.25	U	0.15	0.25
2-Chlorotoluene	0.25	U	0.15	0.25
4-Chlorotoluene	0.25	U	0.15	0.25
Dibromochloromethane	0.25	U	0.039	0.25
Dibromomethane	0.25	U	0.15	0.25
1,2-Dibromo-3-Chloropropane	0.50	U	0.23	0.50
Ethylene Dibromide	0.25	U	0.15	0.25
1,2-Dichlorobenzene	0.25	U	0.15	0.25
1,3-Dichlorobenzene	0.25	U	0.15	0.25
Dichlorodifluoromethane	0.25	U	0.15	0.25
1,1-Dichloroethane	0.25	U	0.15	0.25
1,1-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloroethane	0.25	U	0.025	0.25
cis-1,2-Dichloroethene	0.25	U	0.15	0.25
trans-1,2-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloropropane	0.25	U	0.15	0.25
1,3-Dichloropropane	0.25	U	0.15	0.25
2,2-Dichloropropane	0.25	U	0.15	0.25
1,1-Dichloropropene	0.25	U	0.15	0.25
cis-1,3-Dichloropropene	0.25	U	0.15	0.25
trans-1,3-Dichloropropene	0.25	U	0.15	0.25
Ethylbenzene	0.25	U	0.15	0.25
Hexachlorobutadiene	0.25	U	0.15	0.25
2-Hexanone	1.0	U	0.15	1.0
Iodomethane	0.25	U *	0.15	0.25
Isopropylbenzene	0.25	U	0.15	0.25
Isopropyl ether	0.25	U	0.15	0.25
p-Cymene	0.25	U	0.15	0.25
Methylene Chloride	0.25	U *	0.15	0.25
Methyl tert-butyl ether	0.25	U	0.15	0.25

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW5-0305**

Lab Sample ID: 400-785-4 Date Sampled: 03/10/2005 0925
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488023.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1707 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1707

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	1.0	U	0.15	1.0
Naphthalene	0.25	U	0.15	0.25
n-Butylbenzene	0.25	U	0.15	0.25
sec-Butylbenzene	0.25	U	0.15	0.25
Styrene	0.25	U	0.15	0.25
tert-Butylbenzene	0.25	U	0.15	0.25
1,1,1,2-Tetrachloroethane	0.25	U	0.15	0.25
1,1,2,2-Tetrachloroethane	0.25	U	0.037	0.25
Tetrachloroethene	0.25	U	0.15	0.25
Toluene	0.25	U	0.15	0.25
1,1,1-Trichloroethane	0.25	U	0.15	0.25
1,1,2-Trichloroethane	0.25	U	0.15	0.25
1,2,3-Trichlorobenzene	0.25	U	0.15	0.25
1,2,4-Trichlorobenzene	0.25	U	0.15	0.25
Trichloroethene	0.25	U	0.15	0.25
Trichlorofluoromethane	0.25	U	0.15	0.25
1,2,3-Trichloropropane	0.25	U	0.022	0.25
1,2,4-Trimethylbenzene	0.25	U	0.15	0.25
1,3,5-Trimethylbenzene	0.25	U	0.15	0.25
Vinyl acetate	0.50	U	0.15	0.50
Vinyl chloride	0.25	U	0.15	0.25
N-Propylbenzene	0.25	U	0.15	0.25
o-Xylene	0.25	U	0.15	0.25
m-Xylene & p-Xylene	0.50	U	0.25	0.50
1,4-Dichlorobenzene	0.25	U	0.15	0.25

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	90	83 - 126
Dibromofluoromethane	96	69 - 130
Toluene-d8	95	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW6-0305**

Lab Sample ID: 400-785-5 Date Sampled: 03/10/2005 1020
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488025.D
Dilution: 2.5 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1741 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1741

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	2.5	U	1.6	2.5
Benzene	41		0.38	0.63
Bromobenzene	0.63	U	0.38	0.63
Bromochloromethane	0.63	U	0.38	0.63
Bromodichloromethane	0.63	U	0.38	0.63
Bromoform	0.63	U	0.38	0.63
2-Butanone (MEK)	2.5	U	0.38	2.5
Carbon disulfide	0.63	U	0.38	0.63
Bromomethane	0.63	U	0.38	0.63
Carbon tetrachloride	0.63	U	0.38	0.63
Chlorobenzene	0.63	U	0.38	0.63
Chloroethane	0.63	U	0.38	0.63
Chloroform	0.63	U	0.053	0.63
Chloromethane	0.63	U	0.38	0.63
2-Chlorotoluene	0.63	U	0.38	0.63
4-Chlorotoluene	0.63	U	0.38	0.63
Dibromochloromethane	0.63	U	0.098	0.63
Dibromomethane	0.63	U	0.38	0.63
1,2-Dibromo-3-Chloropropane	1.3	U	0.58	1.3
Ethylene Dibromide	0.63	U	0.38	0.63
1,2-Dichlorobenzene	0.63	U	0.38	0.63
1,3-Dichlorobenzene	0.63	U	0.38	0.63
Dichlorodifluoromethane	0.63	U	0.38	0.63
1,1-Dichloroethane	0.63	U	0.38	0.63
1,1-Dichloroethene	0.63	U	0.38	0.63
1,2-Dichloroethane	0.63	U	0.063	0.63
cis-1,2-Dichloroethene	0.63	U	0.38	0.63
trans-1,2-Dichloroethene	0.63	U	0.38	0.63
1,2-Dichloropropane	0.63	U	0.38	0.63
1,3-Dichloropropane	0.63	U	0.38	0.63
2,2-Dichloropropane	0.63	U	0.38	0.63
1,1-Dichloropropene	0.63	U	0.38	0.63
cis-1,3-Dichloropropene	0.63	U	0.38	0.63
trans-1,3-Dichloropropene	0.63	U	0.38	0.63
Ethylbenzene	1.5		0.38	0.63
Hexachlorobutadiene	0.63	U	0.38	0.63
2-Hexanone	2.5	U	0.38	2.5
Iodomethane	0.63	U *	0.38	0.63
Isopropylbenzene	15		0.38	0.63
Isopropyl ether	0.63	U	0.38	0.63
p-Cymene	0.80		0.38	0.63
Methylene Chloride	0.63	U *	0.38	0.63
Methyl tert-butyl ether	0.63	U	0.38	0.63

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW6-0305**

Lab Sample ID: 400-785-5 Date Sampled: 03/10/2005 1020
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488025.D
Dilution: 2.5 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1741 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1741

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	2.5	U	0.38	2.5
Naphthalene	79	E	0.38	0.63
n-Butylbenzene	4.7		0.38	0.63
sec-Butylbenzene	2.6		0.38	0.63
Styrene	0.63	U	0.38	0.63
tert-Butylbenzene	0.63	U	0.38	0.63
1,1,1,2-Tetrachloroethane	0.63	U	0.38	0.63
1,1,2,2-Tetrachloroethane	0.63	U	0.093	0.63
Tetrachloroethene	0.63	U	0.38	0.63
Toluene	0.71		0.38	0.63
1,1,1-Trichloroethane	0.63	U	0.38	0.63
1,1,2-Trichloroethane	0.63	U	0.38	0.63
1,2,3-Trichlorobenzene	0.63	U	0.38	0.63
1,2,4-Trichlorobenzene	0.63	U	0.38	0.63
Trichloroethene	0.63	U	0.38	0.63
Trichlorofluoromethane	0.63	U	0.38	0.63
1,2,3-Trichloropropane	0.63	U	0.055	0.63
1,2,4-Trimethylbenzene	6.8		0.38	0.63
1,3,5-Trimethylbenzene	42		0.38	0.63
Vinyl acetate	1.3	U	0.38	1.3
Vinyl chloride	0.63	U	0.38	0.63
N-Propylbenzene	2.3		0.38	0.63
o-Xylene	1.4		0.38	0.63
m-Xylene & p-Xylene	5.1		0.63	1.3
1,4-Dichlorobenzene	0.63	U	0.38	0.63

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	92	83 - 126
Dibromofluoromethane	91	69 - 130
Toluene-d8	96	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW6-0305**

Lab Sample ID: 400-785-5 Date Sampled: 03/10/2005 1020
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2555 Instrument ID: GC/MS
Preparation: Lab File ID: 3492033.D
Dilution: 10 Initial Weight/Volume: 10 mL
Date Analyzed: 03/21/2005 2341 Final Weight/Volume: 10 mL
Date Prepared: 03/21/2005 2341

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	24	B	6.4	10
Benzene	34		1.5	2.5
Bromobenzene	2.5	U	1.5	2.5
Bromochloromethane	2.5	U	1.5	2.5
Bromodichloromethane	2.5	U	1.5	2.5
Bromoform	2.5	U	1.5	2.5
2-Butanone (MEK)	10	U	1.5	10
Carbon disulfide	2.5	U	1.5	2.5
Bromomethane	2.5	U	1.5	2.5
Carbon tetrachloride	2.5	U	1.5	2.5
Chlorobenzene	2.5	U	1.5	2.5
Chloroethane	2.5	U	1.5	2.5
Chloroform	2.5	U	0.21	2.5
Chloromethane	2.5	U	1.5	2.5
2-Chlorotoluene	2.5	U	1.5	2.5
4-Chlorotoluene	2.4	J	1.5	2.5
Dibromochloromethane	2.5	U	0.39	2.5
Dibromomethane	2.5	U	1.5	2.5
1,2-Dibromo-3-Chloropropane	5.0	U	2.3	5.0
Ethylene Dibromide	2.5	U	1.5	2.5
1,2-Dichlorobenzene	2.5	U	1.5	2.5
1,3-Dichlorobenzene	2.5	U	1.5	2.5
Dichlorodifluoromethane	2.5	U	1.5	2.5
1,1-Dichloroethane	2.5	U	1.5	2.5
1,1-Dichloroethene	2.5	U	1.5	2.5
1,2-Dichloroethane	2.5	U	0.25	2.5
cis-1,2-Dichloroethene	2.5	U	1.5	2.5
trans-1,2-Dichloroethene	2.5	U	1.5	2.5
1,2-Dichloropropane	2.5	U	1.5	2.5
1,3-Dichloropropane	2.5	U	1.5	2.5
2,2-Dichloropropane	2.5	U	1.5	2.5
1,1-Dichloropropene	2.5	U	1.5	2.5
cis-1,3-Dichloropropene	2.5	U	1.5	2.5
trans-1,3-Dichloropropene	2.5	U	1.5	2.5
Ethylbenzene	2.5	U	1.5	2.5
Hexachlorobutadiene	2.5	U	1.5	2.5
2-Hexanone	10	U	1.5	10
Iodomethane	2.5	U	1.5	2.5
Isopropylbenzene	6.9		1.5	2.5
Isopropyl ether	2.5	U	1.5	2.5
p-Cymene	2.5	U	1.5	2.5
Methylene Chloride	2.5	J B	1.5	2.5
Methyl tert-butyl ether	2.5	U	1.5	2.5

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW6-0305**

Lab Sample ID: 400-785-5 Date Sampled: 03/10/2005 1020
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2555 Instrument ID: GC/MS
Preparation: Lab File ID: 3492033.D
Dilution: 10 Initial Weight/Volume: 10 mL
Date Analyzed: 03/21/2005 2341 Final Weight/Volume: 10 mL
Date Prepared: 03/21/2005 2341

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	10	U	1.5	10
Naphthalene	59		1.5	2.5
n-Butylbenzene	1.8	J	1.5	2.5
sec-Butylbenzene	2.5	U	1.5	2.5
Styrene	2.5	U	1.5	2.5
tert-Butylbenzene	2.5	U	1.5	2.5
1,1,1,2-Tetrachloroethane	2.5	U	1.5	2.5
1,1,2,2-Tetrachloroethane	2.5	U	0.37	2.5
Tetrachloroethene	2.5	U	1.5	2.5
Toluene	2.6		1.5	2.5
1,1,1-Trichloroethane	2.5	U	1.5	2.5
1,1,2-Trichloroethane	2.5	U	1.5	2.5
1,2,3-Trichlorobenzene	2.5	U	1.5	2.5
1,2,4-Trichlorobenzene	2.5	U	1.5	2.5
Trichloroethene	2.5	U	1.5	2.5
Trichlorofluoromethane	2.5	U	1.5	2.5
1,2,3-Trichloropropane	2.5	U	0.22	2.5
1,2,4-Trimethylbenzene	4.0		1.5	2.5
1,3,5-Trimethylbenzene	21		1.5	2.5
Vinyl acetate	5.0	U	1.5	5.0
Vinyl chloride	2.5	U	1.5	2.5
N-Propylbenzene	2.5	U	1.5	2.5
o-Xylene	2.5	U	1.5	2.5
m-Xylene & p-Xylene	4.1	J	2.5	5.0
1,4-Dichlorobenzene	2.5	U	1.5	2.5

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	89	83 - 126
Dibromofluoromethane	97	69 - 130
Toluene-d8	95	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW7-0305**

Lab Sample ID: 400-785-6 Date Sampled: 03/10/2005 0800
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488027.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1814 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1814

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.0	U	0.64	1.0
Benzene	0.25	U	0.15	0.25
Bromobenzene	0.25	U	0.15	0.25
Bromochloromethane	0.25	U	0.15	0.25
Bromodichloromethane	0.25	U	0.15	0.25
Bromoform	0.25	U	0.15	0.25
2-Butanone (MEK)	1.0	U	0.15	1.0
Carbon disulfide	0.25	U	0.15	0.25
Bromomethane	0.25	U	0.15	0.25
Carbon tetrachloride	0.25	U	0.15	0.25
Chlorobenzene	0.25	U	0.15	0.25
Chloroethane	0.25	U	0.15	0.25
Chloroform	0.25	U	0.021	0.25
Chloromethane	0.25	U	0.15	0.25
2-Chlorotoluene	0.25	U	0.15	0.25
4-Chlorotoluene	0.25	U	0.15	0.25
Dibromochloromethane	0.25	U	0.039	0.25
Dibromomethane	0.25	U	0.15	0.25
1,2-Dibromo-3-Chloropropane	0.50	U	0.23	0.50
Ethylene Dibromide	0.25	U	0.15	0.25
1,2-Dichlorobenzene	0.25	U	0.15	0.25
1,3-Dichlorobenzene	0.25	U	0.15	0.25
Dichlorodifluoromethane	0.25	U	0.15	0.25
1,1-Dichloroethane	0.25	U	0.15	0.25
1,1-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloroethane	0.25	U	0.025	0.25
cis-1,2-Dichloroethene	0.25	U	0.15	0.25
trans-1,2-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloropropane	0.25	U	0.15	0.25
1,3-Dichloropropane	0.25	U	0.15	0.25
2,2-Dichloropropane	0.25	U	0.15	0.25
1,1-Dichloropropene	0.25	U	0.15	0.25
cis-1,3-Dichloropropene	0.25	U	0.15	0.25
trans-1,3-Dichloropropene	0.25	U	0.15	0.25
Ethylbenzene	0.25	U	0.15	0.25
Hexachlorobutadiene	0.25	U	0.15	0.25
2-Hexanone	1.0	U	0.15	1.0
Iodomethane	0.25	U *	0.15	0.25
Isopropylbenzene	0.25	U	0.15	0.25
Isopropyl ether	0.25	U	0.15	0.25
p-Cymene	0.25	U	0.15	0.25
Methylene Chloride	0.25	U *	0.15	0.25
Methyl tert-butyl ether	0.25	U	0.15	0.25

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW7-0305**

Lab Sample ID: 400-785-6 Date Sampled: 03/10/2005 0800
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488027.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1814 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1814

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	1.0	U	0.15	1.0
Naphthalene	0.25	U	0.15	0.25
n-Butylbenzene	0.25	U	0.15	0.25
sec-Butylbenzene	0.25	U	0.15	0.25
Styrene	0.25	U	0.15	0.25
tert-Butylbenzene	0.25	U	0.15	0.25
1,1,1,2-Tetrachloroethane	0.25	U	0.15	0.25
1,1,2,2-Tetrachloroethane	0.25	U	0.037	0.25
Tetrachloroethene	0.25	U	0.15	0.25
Toluene	0.25	U	0.15	0.25
1,1,1-Trichloroethane	0.25	U	0.15	0.25
1,1,2-Trichloroethane	0.25	U	0.15	0.25
1,2,3-Trichlorobenzene	0.25	U	0.15	0.25
1,2,4-Trichlorobenzene	0.25	U	0.15	0.25
Trichloroethene	0.25	U	0.15	0.25
Trichlorofluoromethane	0.25	U	0.15	0.25
1,2,3-Trichloropropane	0.25	U	0.022	0.25
1,2,4-Trimethylbenzene	0.25	U	0.15	0.25
1,3,5-Trimethylbenzene	0.25	U	0.15	0.25
Vinyl acetate	0.50	U	0.15	0.50
Vinyl chloride	0.25	U	0.15	0.25
N-Propylbenzene	0.25	U	0.15	0.25
o-Xylene	0.25	U	0.15	0.25
m-Xylene & p-Xylene	0.50	U	0.25	0.50
1,4-Dichlorobenzene	0.25	U	0.15	0.25

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	90	83 - 126
Dibromofluoromethane	96	69 - 130
Toluene-d8	94	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW8-0305**

Lab Sample ID: 400-785-7 Date Sampled: 03/10/2005 1130
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488029.D
Dilution: 25 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1848 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1848

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	25	U	16	25
Benzene	6.3	U	3.8	6.3
Bromobenzene	6.3	U	3.8	6.3
Bromochloromethane	6.3	U	3.8	6.3
Bromodichloromethane	6.3	U	3.8	6.3
Bromoform	6.3	U	3.8	6.3
2-Butanone (MEK)	25	U	3.8	25
Carbon disulfide	6.3	U	3.8	6.3
Bromomethane	6.3	U	3.8	6.3
Carbon tetrachloride	6.3	U	3.8	6.3
Chlorobenzene	6.3	U	3.8	6.3
Chloroethane	6.3	U	3.8	6.3
Chloroform	6.3	U	0.53	6.3
Chloromethane	6.3	U	3.8	6.3
2-Chlorotoluene	6.3	U	3.8	6.3
4-Chlorotoluene	6.3	U	3.8	6.3
Dibromochloromethane	6.3	U	0.98	6.3
Dibromomethane	6.3	U	3.8	6.3
1,2-Dibromo-3-Chloropropane	13	U	5.8	13
Ethylene Dibromide	6.3	U	3.8	6.3
1,2-Dichlorobenzene	6.3	U	3.8	6.3
1,3-Dichlorobenzene	6.3	U	3.8	6.3
Dichlorodifluoromethane	6.3	U	3.8	6.3
1,1-Dichloroethane	6.3	U	3.8	6.3
1,1-Dichloroethene	6.3	U	3.8	6.3
1,2-Dichloroethane	6.3	U	0.63	6.3
cis-1,2-Dichloroethene	11		3.8	6.3
trans-1,2-Dichloroethene	6.3	U	3.8	6.3
1,2-Dichloropropane	6.3	U	3.8	6.3
1,3-Dichloropropane	6.3	U	3.8	6.3
2,2-Dichloropropane	6.3	U	3.8	6.3
1,1-Dichloropropene	6.3	U	3.8	6.3
cis-1,3-Dichloropropene	6.3	U	3.8	6.3
trans-1,3-Dichloropropene	6.3	U	3.8	6.3
Ethylbenzene	6.3	U	3.8	6.3
Hexachlorobutadiene	6.3	U	3.8	6.3
2-Hexanone	25	U	3.8	25
Iodomethane	6.3	U *	3.8	6.3
Isopropylbenzene	6.3	U	3.8	6.3
Isopropyl ether	6.3	U	3.8	6.3
p-Cymene	6.3	U	3.8	6.3
Methylene Chloride	6.3	U *	3.8	6.3
Methyl tert-butyl ether	6.3	U	3.8	6.3

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW8-0305**

Lab Sample ID: 400-785-7 Date Sampled: 03/10/2005 1130
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488029.D
Dilution: 25 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1848 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1848

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	25	U	3.8	25
Naphthalene	6.3	U	3.8	6.3
n-Butylbenzene	6.3	U	3.8	6.3
sec-Butylbenzene	6.3	U	3.8	6.3
Styrene	6.3	U	3.8	6.3
tert-Butylbenzene	6.3	U	3.8	6.3
1,1,1,2-Tetrachloroethane	6.3	U	3.8	6.3
1,1,2,2-Tetrachloroethane	6.3	U	0.93	6.3
Tetrachloroethene	6.3	U	3.8	6.3
Toluene	6.3	U	3.8	6.3
1,1,1-Trichloroethane	6.3	U	3.8	6.3
1,1,2-Trichloroethane	6.3	U	3.8	6.3
1,2,3-Trichlorobenzene	6.3	U	3.8	6.3
1,2,4-Trichlorobenzene	6.3	U	3.8	6.3
Trichloroethene	460		3.8	6.3
Trichlorofluoromethane	6.3	U	3.8	6.3
1,2,3-Trichloropropane	6.3	U	0.55	6.3
1,2,4-Trimethylbenzene	6.3	U	3.8	6.3
1,3,5-Trimethylbenzene	6.3	U	3.8	6.3
Vinyl acetate	13	U	3.8	13
Vinyl chloride	6.3	U	3.8	6.3
N-Propylbenzene	6.3	U	3.8	6.3
o-Xylene	6.3	U	3.8	6.3
m-Xylene & p-Xylene	13	U	6.3	13
1,4-Dichlorobenzene	6.3	U	3.8	6.3

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	89	83 - 126
Dibromofluoromethane	97	69 - 130
Toluene-d8	95	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW8-0305B**

Lab Sample ID: 400-785-8 Date Sampled: 03/10/2005 1130
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488031.D
Dilution: 25 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1921 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1921

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	25	U	16	25
Benzene	6.3	U	3.8	6.3
Bromobenzene	6.3	U	3.8	6.3
Bromochloromethane	6.3	U	3.8	6.3
Bromodichloromethane	6.3	U	3.8	6.3
Bromoform	6.3	U	3.8	6.3
2-Butanone (MEK)	25	U	3.8	25
Carbon disulfide	6.3	U	3.8	6.3
Bromomethane	6.3	U	3.8	6.3
Carbon tetrachloride	6.3	U	3.8	6.3
Chlorobenzene	6.3	U	3.8	6.3
Chloroethane	6.3	U	3.8	6.3
Chloroform	6.3	U	0.53	6.3
Chloromethane	6.3	U	3.8	6.3
2-Chlorotoluene	6.3	U	3.8	6.3
4-Chlorotoluene	6.3	U	3.8	6.3
Dibromochloromethane	6.3	U	0.98	6.3
Dibromomethane	6.3	U	3.8	6.3
1,2-Dibromo-3-Chloropropane	13	U	5.8	13
Ethylene Dibromide	6.3	U	3.8	6.3
1,2-Dichlorobenzene	6.3	U	3.8	6.3
1,3-Dichlorobenzene	6.3	U	3.8	6.3
Dichlorodifluoromethane	6.3	U	3.8	6.3
1,1-Dichloroethane	6.3	U	3.8	6.3
1,1-Dichloroethene	6.3	U	3.8	6.3
1,2-Dichloroethane	6.3	U	0.63	6.3
cis-1,2-Dichloroethene	10		3.8	6.3
trans-1,2-Dichloroethene	6.3	U	3.8	6.3
1,2-Dichloropropane	6.3	U	3.8	6.3
1,3-Dichloropropane	6.3	U	3.8	6.3
2,2-Dichloropropane	6.3	U	3.8	6.3
1,1-Dichloropropene	6.3	U	3.8	6.3
cis-1,3-Dichloropropene	6.3	U	3.8	6.3
trans-1,3-Dichloropropene	6.3	U	3.8	6.3
Ethylbenzene	6.3	U	3.8	6.3
Hexachlorobutadiene	6.3	U	3.8	6.3
2-Hexanone	25	U	3.8	25
Iodomethane	6.3	U *	3.8	6.3
Isopropylbenzene	6.3	U	3.8	6.3
Isopropyl ether	6.3	U	3.8	6.3
p-Cymene	6.3	U	3.8	6.3
Methylene Chloride	6.3	U *	3.8	6.3
Methyl tert-butyl ether	6.3	U	3.8	6.3

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW8-0305B**

Lab Sample ID: 400-785-8 Date Sampled: 03/10/2005 1130
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488031.D
Dilution: 25 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1921 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1921

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	25	U	3.8	25
Naphthalene	6.3	U	3.8	6.3
n-Butylbenzene	6.3	U	3.8	6.3
sec-Butylbenzene	6.3	U	3.8	6.3
Styrene	6.3	U	3.8	6.3
tert-Butylbenzene	6.3	U	3.8	6.3
1,1,1,2-Tetrachloroethane	6.3	U	3.8	6.3
1,1,2,2-Tetrachloroethane	6.3	U	0.93	6.3
Tetrachloroethene	6.3	U	3.8	6.3
Toluene	6.3	U	3.8	6.3
1,1,1-Trichloroethane	6.3	U	3.8	6.3
1,1,2-Trichloroethane	6.3	U	3.8	6.3
1,2,3-Trichlorobenzene	6.3	U	3.8	6.3
1,2,4-Trichlorobenzene	6.3	U	3.8	6.3
Trichloroethene	430		3.8	6.3
Trichlorofluoromethane	6.3	U	3.8	6.3
1,2,3-Trichloropropane	6.3	U	0.55	6.3
1,2,4-Trimethylbenzene	6.3	U	3.8	6.3
1,3,5-Trimethylbenzene	6.3	U	3.8	6.3
Vinyl acetate	13	U	3.8	13
Vinyl chloride	6.3	U	3.8	6.3
N-Propylbenzene	6.3	U	3.8	6.3
o-Xylene	6.3	U	3.8	6.3
m-Xylene & p-Xylene	13	U	6.3	13
1,4-Dichlorobenzene	6.3	U	3.8	6.3

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	90	83 - 126
Dibromofluoromethane	98	69 - 130
Toluene-d8	95	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **TB**

Lab Sample ID: 400-785-9 Date Sampled: 03/10/2005 1530
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488033.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1954 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1954

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.0	U	0.64	1.0
Benzene	0.25	U	0.15	0.25
Bromobenzene	0.25	U	0.15	0.25
Bromochloromethane	0.25	U	0.15	0.25
Bromodichloromethane	0.25	U	0.15	0.25
Bromoform	0.25	U	0.15	0.25
2-Butanone (MEK)	1.0	U	0.15	1.0
Carbon disulfide	0.25	U	0.15	0.25
Bromomethane	0.25	U	0.15	0.25
Carbon tetrachloride	0.25	U	0.15	0.25
Chlorobenzene	0.25	U	0.15	0.25
Chloroethane	0.25	U	0.15	0.25
Chloroform	0.25	U	0.021	0.25
Chloromethane	0.25	U	0.15	0.25
2-Chlorotoluene	0.25	U	0.15	0.25
4-Chlorotoluene	0.25	U	0.15	0.25
Dibromochloromethane	0.25	U	0.039	0.25
Dibromomethane	0.25	U	0.15	0.25
1,2-Dibromo-3-Chloropropane	0.50	U	0.23	0.50
Ethylene Dibromide	0.25	U	0.15	0.25
1,2-Dichlorobenzene	0.25	U	0.15	0.25
1,3-Dichlorobenzene	0.25	U	0.15	0.25
Dichlorodifluoromethane	0.25	U	0.15	0.25
1,1-Dichloroethane	0.25	U	0.15	0.25
1,1-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloroethane	0.25	U	0.025	0.25
cis-1,2-Dichloroethene	0.25	U	0.15	0.25
trans-1,2-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloropropane	0.25	U	0.15	0.25
1,3-Dichloropropane	0.25	U	0.15	0.25
2,2-Dichloropropane	0.25	U	0.15	0.25
1,1-Dichloropropene	0.25	U	0.15	0.25
cis-1,3-Dichloropropene	0.25	U	0.15	0.25
trans-1,3-Dichloropropene	0.25	U	0.15	0.25
Ethylbenzene	0.25	U	0.15	0.25
Hexachlorobutadiene	0.25	U	0.15	0.25
2-Hexanone	1.0	U	0.15	1.0
Iodomethane	0.25	U *	0.15	0.25
Isopropylbenzene	0.25	U	0.15	0.25
Isopropyl ether	0.25	U	0.15	0.25
p-Cymene	0.25	U	0.15	0.25
Methylene Chloride	0.25	U *	0.15	0.25
Methyl tert-butyl ether	0.25	U	0.15	0.25

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **TB**

Lab Sample ID: 400-785-9 Date Sampled: 03/10/2005 1530
Client Matrix: Water Date Received: 03/11/2005 0925

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B Analysis Batch: 400-2376 Instrument ID: GC/MS
Preparation: Lab File ID: 3488033.D
Dilution: 1.0 Initial Weight/Volume: 10 mL
Date Analyzed: 03/15/2005 1954 Final Weight/Volume: 10 mL
Date Prepared: 03/15/2005 1954

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Methyl-2-pentanone (MIBK)	1.0	U	0.15	1.0
Naphthalene	0.25	U	0.15	0.25
n-Butylbenzene	0.25	U	0.15	0.25
sec-Butylbenzene	0.25	U	0.15	0.25
Styrene	0.25	U	0.15	0.25
tert-Butylbenzene	0.25	U	0.15	0.25
1,1,1,2-Tetrachloroethane	0.25	U	0.15	0.25
1,1,2,2-Tetrachloroethane	0.25	U	0.037	0.25
Tetrachloroethene	0.25	U	0.15	0.25
Toluene	0.25	U	0.15	0.25
1,1,1-Trichloroethane	0.25	U	0.15	0.25
1,1,2-Trichloroethane	0.25	U	0.15	0.25
1,2,3-Trichlorobenzene	0.25	U	0.15	0.25
1,2,4-Trichlorobenzene	0.25	U	0.15	0.25
Trichloroethene	0.25	U	0.15	0.25
Trichlorofluoromethane	0.25	U	0.15	0.25
1,2,3-Trichloropropane	0.25	U	0.022	0.25
1,2,4-Trimethylbenzene	0.25	U	0.15	0.25
1,3,5-Trimethylbenzene	0.25	U	0.15	0.25
Vinyl acetate	0.50	U	0.15	0.50
Vinyl chloride	0.25	U	0.15	0.25
N-Propylbenzene	0.25	U	0.15	0.25
o-Xylene	0.25	U	0.15	0.25
m-Xylene & p-Xylene	0.50	U	0.25	0.50
1,4-Dichlorobenzene	0.25	U	0.15	0.25

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	90	83 - 126
Dibromofluoromethane	97	69 - 130
Toluene-d8	96	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW1-0305**

Lab Sample ID: 400-785-1 Date Sampled: 03/10/2005 1245
Client Matrix: Water Date Received: 03/11/2005 0925

8310 Polynuclear Aromatic Hydrocarbons

Method: 8310 Analysis Batch: 400-2556 Instrument ID: HPLC/UV/FLUOR
Preparation: 3520C Prep Batch: 400-2196 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1000 mL
Date Analyzed: 03/22/2005 1028 Final Weight/Volume: 1.0 mL
Date Prepared: 03/16/2005 1416 Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	130		0.089	1.0
Acenaphthylene	12		0.098	1.0
1-Methylnaphthalene	29		0.11	1.0
2-Methylnaphthalene	56		0.076	1.0
Acenaphthene	1.0	U	0.075	1.0
Fluorene	1.0	U	0.072	1.0
Phenanthrene	1.0	U	0.069	1.0
Anthracene	1.0	U	0.063	1.0
Fluoranthene	1.0	U	0.070	1.0
Pyrene	1.0	U	0.059	1.0
Benzo[a]anthracene	0.20	U	0.057	0.20
Chrysene	1.0	U	0.065	1.0
Benzo[b]fluoranthene	0.20	U	0.064	0.20
Benzo[k]fluoranthene	0.50	U	0.079	0.50
Benzo[a]pyrene	0.20	U	0.076	0.20
Dibenz(a,h)anthracene	0.20	U	0.14	0.20
Benzo[g,h,i]perylene	1.0	U	0.088	1.0
Indeno[1,2,3-cd]pyrene	0.20	U	0.083	0.20

Surrogate	%Rec	Acceptance Limits
2-Chloroanthracene	70	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW2-0305**

Lab Sample ID: 400-785-2 Date Sampled: 03/09/2005 1645
Client Matrix: Water Date Received: 03/11/2005 0925

8310 Polynuclear Aromatic Hydrocarbons (Continued)

Method: 8310 Analysis Batch: 400-2556 Instrument ID: HPLC/UV/FLUOR
Preparation: 3520C Prep Batch: 400-2196 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1000 mL
Date Analyzed: 03/22/2005 1028 Final Weight/Volume: 1.0 mL
Date Prepared: 03/16/2005 1416 Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	1.0	U	0.089	1.0
Acenaphthylene	1.0	U	0.098	1.0
1-Methylnaphthalene	1.0	U	0.11	1.0
2-Methylnaphthalene	1.0	U	0.076	1.0
Acenaphthene	1.0	U	0.075	1.0
Fluorene	1.0	U	0.072	1.0
Phenanthrene	1.0	U	0.069	1.0
Anthracene	1.0	U	0.063	1.0
Fluoranthene	1.0	U	0.070	1.0
Pyrene	1.0	U	0.059	1.0
Benzo[a]anthracene	0.20	U	0.057	0.20
Chrysene	1.0	U	0.065	1.0
Benzo[b]fluoranthene	0.20	U	0.064	0.20
Benzo[k]fluoranthene	0.50	U	0.079	0.50
Benzo[a]pyrene	0.20	U	0.076	0.20
Dibenz(a,h)anthracene	0.20	U	0.14	0.20
Benzo[g,h,i]perylene	1.0	U	0.088	1.0
Indeno[1,2,3-cd]pyrene	0.20	U	0.083	0.20

Surrogate	%Rec	Acceptance Limits
2-Chloroanthracene	68	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW3-0305**

Lab Sample ID: 400-785-3 Date Sampled: 03/09/2005 1740
Client Matrix: Water Date Received: 03/11/2005 0925

8310 Polynuclear Aromatic Hydrocarbons (Continued)

Method: 8310 Analysis Batch: 400-2556 Instrument ID: HPLC/UV/FLUOR
Preparation: 3520C Prep Batch: 400-2196 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1000 mL
Date Analyzed: 03/22/2005 1028 Final Weight/Volume: 1.0 mL
Date Prepared: 03/16/2005 1416 Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	1.0	U	0.089	1.0
Acenaphthylene	1.0	U	0.098	1.0
1-Methylnaphthalene	1.0	U	0.11	1.0
2-Methylnaphthalene	1.0	U	0.076	1.0
Acenaphthene	1.0	U	0.075	1.0
Fluorene	1.0	U	0.072	1.0
Phenanthrene	1.0	U	0.069	1.0
Anthracene	1.0	U	0.063	1.0
Fluoranthene	1.0	U	0.070	1.0
Pyrene	1.0	U	0.059	1.0
Benzo[a]anthracene	0.20	U	0.057	0.20
Chrysene	1.0	U	0.065	1.0
Benzo[b]fluoranthene	0.20	U	0.064	0.20
Benzo[k]fluoranthene	0.50	U	0.079	0.50
Benzo[a]pyrene	0.20	U	0.076	0.20
Dibenz(a,h)anthracene	0.20	U	0.14	0.20
Benzo[g,h,i]perylene	1.0	U	0.088	1.0
Indeno[1,2,3-cd]pyrene	0.20	U	0.083	0.20

Surrogate	%Rec	Acceptance Limits
2-Chloroanthracene	68	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW5-0305**

Lab Sample ID: 400-785-4 Date Sampled: 03/10/2005 0925
Client Matrix: Water Date Received: 03/11/2005 0925

8310 Polynuclear Aromatic Hydrocarbons (Continued)

Method: 8310 Analysis Batch: 400-2556 Instrument ID: HPLC/UV/FLUOR
Preparation: 3520C Prep Batch: 400-2196 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1000 mL
Date Analyzed: 03/22/2005 1028 Final Weight/Volume: 1.0 mL
Date Prepared: 03/16/2005 1416 Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	1.0	U	0.089	1.0
Acenaphthylene	1.0	U	0.098	1.0
1-Methylnaphthalene	1.0	U	0.11	1.0
2-Methylnaphthalene	1.0	U	0.076	1.0
Acenaphthene	1.0	U	0.075	1.0
Fluorene	1.0	U	0.072	1.0
Phenanthrene	1.0	U	0.069	1.0
Anthracene	1.0	U	0.063	1.0
Fluoranthene	1.0	U	0.070	1.0
Pyrene	1.0	U	0.059	1.0
Benzo[a]anthracene	0.20	U	0.057	0.20
Chrysene	1.0	U	0.065	1.0
Benzo[b]fluoranthene	0.20	U	0.064	0.20
Benzo[k]fluoranthene	0.50	U	0.079	0.50
Benzo[a]pyrene	0.20	U	0.076	0.20
Dibenz(a,h)anthracene	0.20	U	0.14	0.20
Benzo[g,h,i]perylene	1.0	U	0.088	1.0
Indeno[1,2,3-cd]pyrene	0.20	U	0.083	0.20

Surrogate	%Rec	Acceptance Limits
2-Chloroanthracene	72	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW6-0305**

Lab Sample ID: 400-785-5 Date Sampled: 03/10/2005 1020
Client Matrix: Water Date Received: 03/11/2005 0925

8310 Polynuclear Aromatic Hydrocarbons (Continued)

Method: 8310 Analysis Batch: 400-2556 Instrument ID: HPLC/UV/FLUOR
Preparation: 3520C Prep Batch: 400-2196 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1000 mL
Date Analyzed: 03/22/2005 1028 Final Weight/Volume: 1.0 mL
Date Prepared: 03/16/2005 1416 Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	45		0.089	1.0
Acenaphthylene	1.0	U	0.098	1.0
1-Methylnaphthalene	21		0.11	1.0
2-Methylnaphthalene	29		0.076	1.0
Acenaphthene	1.0	U	0.075	1.0
Fluorene	1.0	U	0.072	1.0
Phenanthrene	1.0	U	0.069	1.0
Anthracene	1.0	U	0.063	1.0
Fluoranthene	1.0	U	0.070	1.0
Pyrene	1.0	U	0.059	1.0
Benzo[a]anthracene	0.20	U	0.057	0.20
Chrysene	1.0	U	0.065	1.0
Benzo[b]fluoranthene	0.20	U	0.064	0.20
Benzo[k]fluoranthene	0.50	U	0.079	0.50
Benzo[a]pyrene	0.20	U	0.076	0.20
Dibenz(a,h)anthracene	0.20	U	0.14	0.20
Benzo[g,h,i]perylene	1.0	U	0.088	1.0
Indeno[1,2,3-cd]pyrene	0.20	U	0.083	0.20

Surrogate	%Rec	Acceptance Limits
2-Chloroanthracene	80	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW7-0305**

Lab Sample ID: 400-785-6 Date Sampled: 03/10/2005 0800
Client Matrix: Water Date Received: 03/11/2005 0925

8310 Polynuclear Aromatic Hydrocarbons (Continued)

Method: 8310 Analysis Batch: 400-2556 Instrument ID: HPLC/UV/FLUOR
Preparation: 3520C Prep Batch: 400-2196 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 850 mL
Date Analyzed: 03/22/2005 1028 Final Weight/Volume: 1.0 mL
Date Prepared: 03/16/2005 1416 Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	1.2	U	0.10	1.2
Acenaphthylene	1.2	U	0.12	1.2
1-Methylnaphthalene	1.2	U	0.13	1.2
2-Methylnaphthalene	1.2	U	0.089	1.2
Acenaphthene	1.2	U	0.088	1.2
Fluorene	1.2	U	0.085	1.2
Phenanthrene	1.2	U	0.081	1.2
Anthracene	1.2	U	0.074	1.2
Fluoranthene	1.2	U	0.082	1.2
Pyrene	1.2	U	0.069	1.2
Benzo[a]anthracene	0.24	U	0.067	0.24
Chrysene	1.2	U	0.076	1.2
Benzo[b]fluoranthene	0.24	U	0.075	0.24
Benzo[k]fluoranthene	0.59	U	0.093	0.59
Benzo[a]pyrene	0.24	U	0.089	0.24
Dibenz(a,h)anthracene	0.24	U	0.16	0.24
Benzo[g,h,i]perylene	1.2	U	0.10	1.2
Indeno[1,2,3-cd]pyrene	0.24	U	0.098	0.24

Surrogate	%Rec	Acceptance Limits
2-Chloroanthracene	80	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW8-0305**

Lab Sample ID: 400-785-7 Date Sampled: 03/10/2005 1130
Client Matrix: Water Date Received: 03/11/2005 0925

8310 Polynuclear Aromatic Hydrocarbons (Continued)

Method: 8310 Analysis Batch: 400-2556 Instrument ID: HPLC/UV/FLUOR
Preparation: 3520C Prep Batch: 400-2196 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1000 mL
Date Analyzed: 03/22/2005 1028 Final Weight/Volume: 1.0 mL
Date Prepared: 03/16/2005 1416 Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	1.0	U	0.089	1.0
Acenaphthylene	1.0	U	0.098	1.0
1-Methylnaphthalene	1.0	U	0.11	1.0
2-Methylnaphthalene	1.0	U	0.076	1.0
Acenaphthene	1.0	U	0.075	1.0
Fluorene	1.0	U	0.072	1.0
Phenanthrene	1.0	U	0.069	1.0
Anthracene	1.0	U	0.063	1.0
Fluoranthene	1.0	U	0.070	1.0
Pyrene	1.0	U	0.059	1.0
Benzo[a]anthracene	0.20	U	0.057	0.20
Chrysene	1.0	U	0.065	1.0
Benzo[b]fluoranthene	0.20	U	0.064	0.20
Benzo[k]fluoranthene	0.50	U	0.079	0.50
Benzo[a]pyrene	0.20	U	0.076	0.20
Dibenz(a,h)anthracene	0.20	U	0.14	0.20
Benzo[g,h,i]perylene	1.0	U	0.088	1.0
Indeno[1,2,3-cd]pyrene	0.20	U	0.083	0.20

Surrogate	%Rec	Acceptance Limits
2-Chloroanthracene	81	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: **OMS28-MW8-0305B**

Lab Sample ID: 400-785-8 Date Sampled: 03/10/2005 1130
Client Matrix: Water Date Received: 03/11/2005 0925

8310 Polynuclear Aromatic Hydrocarbons (Continued)

Method: 8310 Analysis Batch: 400-2556 Instrument ID: HPLC/UV/FLUOR
Preparation: 3520C Prep Batch: 400-2196 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1000 mL
Date Analyzed: 03/22/2005 1028 Final Weight/Volume: 1.0 mL
Date Prepared: 03/16/2005 1416 Injection Volume:

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	1.0	U	0.089	1.0
Acenaphthylene	1.0	U	0.098	1.0
1-Methylnaphthalene	1.0	U	0.11	1.0
2-Methylnaphthalene	1.0	U	0.076	1.0
Acenaphthene	1.0	U	0.075	1.0
Fluorene	1.0	U	0.072	1.0
Phenanthrene	1.0	U	0.069	1.0
Anthracene	1.0	U	0.063	1.0
Fluoranthene	1.0	U	0.070	1.0
Pyrene	1.0	U	0.059	1.0
Benzo[a]anthracene	0.20	U	0.057	0.20
Chrysene	1.0	U	0.065	1.0
Benzo[b]fluoranthene	0.20	U	0.064	0.20
Benzo[k]fluoranthene	0.50	U	0.079	0.50
Benzo[a]pyrene	0.20	U	0.076	0.20
Dibenz(a,h)anthracene	0.20	U	0.14	0.20
Benzo[g,h,i]perylene	1.0	U	0.088	1.0
Indeno[1,2,3-cd]pyrene	0.20	U	0.083	0.20

Surrogate	%Rec	Acceptance Limits
2-Chloroanthracene	76	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: OMS28-MW1-0305

Lab Sample ID: 400-785-1
Client Matrix: Water

Date Sampled: 03/10/2005 1245
Date Received: 03/11/2005 0925

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B
Preparation: 3010A
Dilution: 1.0
Date Analyzed: 03/21/2005 1949
Date Prepared: 03/18/2005 1424

Analysis Batch: 400-2533
Prep Batch: 400-2412

Instrument ID: ICP-AES
Lab File ID: MAR21A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Lead	0.0026	J	0.0020	0.0050

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: OMS28-MW2-0305

Lab Sample ID: 400-785-2
Client Matrix: Water

Date Sampled: 03/09/2005 1645
Date Received: 03/11/2005 0925

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B
Preparation: 3010A
Dilution: 1.0
Date Analyzed: 03/21/2005 1955
Date Prepared: 03/18/2005 1424

Analysis Batch: 400-2533
Prep Batch: 400-2412

Instrument ID: ICP-AES
Lab File ID: MAR21A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Lead	0.0030	J	0.0020	0.0050

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: OMS28-MW3-0305

Lab Sample ID: 400-785-3
Client Matrix: Water

Date Sampled: 03/09/2005 1740
Date Received: 03/11/2005 0925

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B
Preparation: 3010A
Dilution: 1.0
Date Analyzed: 03/21/2005 1926
Date Prepared: 03/18/2005 1424

Analysis Batch: 400-2533
Prep Batch: 400-2412

Instrument ID: ICP-AES
Lab File ID: MAR21A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Lead	0.0054		0.0020	0.0050

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: OMS28-MW5-0305

Lab Sample ID: 400-785-4
Client Matrix: Water

Date Sampled: 03/10/2005 0925
Date Received: 03/11/2005 0925

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B
Preparation: 3010A
Dilution: 1.0
Date Analyzed: 03/21/2005 2000
Date Prepared: 03/18/2005 1424

Analysis Batch: 400-2533
Prep Batch: 400-2412

Instrument ID: ICP-AES
Lab File ID: MAR21A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Lead	0.0044	J	0.0020	0.0050

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: OMS28-MW6-0305

Lab Sample ID: 400-785-5
Client Matrix: Water

Date Sampled: 03/10/2005 1020
Date Received: 03/11/2005 0925

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B
Preparation: 3010A
Dilution: 1.0
Date Analyzed: 03/21/2005 2006
Date Prepared: 03/18/2005 1424

Analysis Batch: 400-2533
Prep Batch: 400-2412

Instrument ID: ICP-AES
Lab File ID: MAR21A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Lead	0.0027	J	0.0020	0.0050

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: OMS28-MW7-0305

Lab Sample ID: 400-785-6
Client Matrix: Water

Date Sampled: 03/10/2005 0800
Date Received: 03/11/2005 0925

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B
Preparation: 3010A
Dilution: 1.0
Date Analyzed: 03/21/2005 2026
Date Prepared: 03/18/2005 1424

Analysis Batch: 400-2533
Prep Batch: 400-2412

Instrument ID: ICP-AES
Lab File ID: MAR21A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Lead	0.0037	J	0.0020	0.0050

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: OMS28-MW8-0305

Lab Sample ID: 400-785-7
Client Matrix: Water

Date Sampled: 03/10/2005 1130
Date Received: 03/11/2005 0925

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B
Preparation: 3010A
Dilution: 1.0
Date Analyzed: 03/21/2005 2031
Date Prepared: 03/18/2005 1424

Analysis Batch: 400-2533
Prep Batch: 400-2412

Instrument ID: ICP-AES
Lab File ID: MAR21A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Lead	0.0022	J	0.0020	0.0050

Client: Bechtel S Corporation Job Number: 400-785.1

Client Sample ID: OMS28-MW8-0305B

Lab Sample ID: 400-785-8
Client Matrix: Water

Date Sampled: 03/10/2005 1130
Date Received: 03/11/2005 0925

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B
Preparation: 3010A
Dilution: 1.0
Date Analyzed: 03/21/2005 2037
Date Prepared: 03/18/2005 1424

Analysis Batch: 400-2533
Prep Batch: 400-2412

Instrument ID: ICP-AES
Lab File ID: MAR21A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Lead	0.0030	J	0.0020	0.0050

DATA REPORTING QUALIFIERS

Client: Bechtel S Corporation Job Number: 400-785.1

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyte was not detected at or above the reporting limit.
	B	Compound was found in the blank and sample.
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits
	E	Result exceeded calibration range, secondary dilution required .
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
HPLC		
	U	Analyte was not detected at or above the reporting limit.
Metals		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

QUALITY CONTROL RESULTS

Client: Bechtel S Corporation Job Number: 400-785.1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS VOA				
Analysis Batch:400-2376				
LCS 400-2376/13	Lab Control Spike	Water	8260B	
MB 400-2376/12	Method Blank	Water	8260B	
400-785-D-1	OMS28-MW1-0305	Water	8260B	
400-785-F-2	OMS28-MW2-0305	Water	8260B	
400-785-F-3	OMS28-MW3-0305	Water	8260B	
400-785-F-3 MS	Matrix Spike	Water	8260B	
400-785-F-3 MSD	Matrix Spike Duplicate	Water	8260B	
400-785-F-4	OMS28-MW5-0305	Water	8260B	
400-785-F-5	OMS28-MW6-0305	Water	8260B	
400-785-F-6	OMS28-MW7-0305	Water	8260B	
400-785-D-7	OMS28-MW8-0305	Water	8260B	
400-785-D-8	OMS28-MW8-0305B	Water	8260B	
400-785-D-9	TB	Water	8260B	
Analysis Batch:400-2555				
LCS 400-2555/2	Lab Control Spike	Water	8260B	
MB 400-2555/1	Method Blank	Water	8260B	
400-785-F-5	OMS28-MW6-0305	Water	8260B	

Client: Bechtel S Corporation Job Number: 400-785.1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
HPLC				
Prep Batch: 400-2196				
LCS 400-2196/18-B	Lab Control Spike	Water	3520C	
MB 400-2196/17-B	Method Blank	Water	3520C	
400-785-B-1-B	OMS28-MW1-0305	Water	3520C	
400-785-B-2-B	OMS28-MW2-0305	Water	3520C	
400-785-B-3-B	OMS28-MW3-0305	Water	3520C	
400-785-B-3-B MS	Matrix Spike	Water	3520C	
400-785-B-3-B MSD	Matrix Spike Duplicate	Water	3520C	
400-785-B-4-B	OMS28-MW5-0305	Water	3520C	
400-785-B-5-B	OMS28-MW6-0305	Water	3520C	
400-785-B-6-B	OMS28-MW7-0305	Water	3520C	
400-785-B-7-B	OMS28-MW8-0305	Water	3520C	
400-785-B-8-B	OMS28-MW8-0305B	Water	3520C	
Analysis Batch:400-2556				
LCS 400-2196/18-B	Lab Control Spike	Water	8310	400-2196
MB 400-2196/17-B	Method Blank	Water	8310	400-2196
400-785-B-1-B	OMS28-MW1-0305	Water	8310	400-2196
400-785-B-2-B	OMS28-MW2-0305	Water	8310	400-2196
400-785-B-3-B	OMS28-MW3-0305	Water	8310	400-2196
400-785-B-3-B MS	Matrix Spike	Water	8310	400-2196
400-785-B-3-B MSD	Matrix Spike Duplicate	Water	8310	400-2196
400-785-B-4-B	OMS28-MW5-0305	Water	8310	400-2196
400-785-B-5-B	OMS28-MW6-0305	Water	8310	400-2196
400-785-B-6-B	OMS28-MW7-0305	Water	8310	400-2196
400-785-B-7-B	OMS28-MW8-0305	Water	8310	400-2196
400-785-B-8-B	OMS28-MW8-0305B	Water	8310	400-2196

Client: Bechtel S Corporation Job Number: 400-785.1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
Metals				
Prep Batch: 400-2412				
LCS 400-2412/16-A	Lab Control Spike	Water	3010A	
MB 400-2412/15-A	Method Blank	Water	3010A	
400-785-A-1-A	OMS28-MW1-0305	Water	3010A	
400-785-A-2-A	OMS28-MW2-0305	Water	3010A	
400-785-A-3-A	OMS28-MW3-0305	Water	3010A	
400-785-A-3-A MS	Matrix Spike	Water	3010A	
400-785-A-3-A MSD	Matrix Spike Duplicate	Water	3010A	
400-785-A-4-A	OMS28-MW5-0305	Water	3010A	
400-785-A-5-A	OMS28-MW6-0305	Water	3010A	
400-785-A-6-A	OMS28-MW7-0305	Water	3010A	
400-785-A-7-A	OMS28-MW8-0305	Water	3010A	
400-785-A-8-A	OMS28-MW8-0305B	Water	3010A	
Analysis Batch:400-2533				
LCS 400-2412/16-A	Lab Control Spike	Water	6010B	400-2412
MB 400-2412/15-A	Method Blank	Water	6010B	400-2412
400-785-A-1-A	OMS28-MW1-0305	Water	6010B	400-2412
400-785-A-2-A	OMS28-MW2-0305	Water	6010B	400-2412
400-785-A-3-A	OMS28-MW3-0305	Water	6010B	400-2412
400-785-A-3-A MS	Matrix Spike	Water	6010B	400-2412
400-785-A-3-A MSD	Matrix Spike Duplicate	Water	6010B	400-2412
400-785-A-4-A	OMS28-MW5-0305	Water	6010B	400-2412
400-785-A-5-A	OMS28-MW6-0305	Water	6010B	400-2412
400-785-A-6-A	OMS28-MW7-0305	Water	6010B	400-2412
400-785-A-7-A	OMS28-MW8-0305	Water	6010B	400-2412
400-785-A-8-A	OMS28-MW8-0305B	Water	6010B	400-2412

Client: Bechtel S Corporation Job Number: 400-785.1

Surrogate Recovery Report

8260B Volatile Organic Compounds by GC/MS

Client Matrix: Water

Lab Sample ID	Client Sample ID	(BFB) (%Rec)	(DBFM) (%Rec)	(TOL) (%Rec)
400-785-1	OMS28-MW1-0305	92	97	95
400-785-2	OMS28-MW2-0305	90	98	95
400-785-3	OMS28-MW3-0305	90	98	95
400-785-3MS	OMS28-MW3-0305	95	97	96
400-785-3MSD	OMS28-MW3-0305	95	97	96
400-785-4	OMS28-MW5-0305	90	96	95
400-785-5	OMS28-MW6-0305	92	91	96
400-785-5 DIL	OMS28-MW6-0305	89	97	95
400-785-6	OMS28-MW7-0305	90	96	94
400-785-7	OMS28-MW8-0305	89	97	95
400-785-8	OMS28-MW8-0305	90	98	95
400-785-9	TB	90	97	96
LCS 400-2376/13LCS	LCS	94	96	96
LCS 400-2555/2LCS	LCS	94	96	96
MB 400-2376/12MB	MB	89	97	95
MB 400-2555/1MB	MB	89	98	95

Surrogate		Acceptance Limits
(BFB)	4-Bromofluorobenzene	83 - 126
(DBFM)	Dibromofluoromethane	69 - 130
(TOL)	Toluene-d8	86 - 116

Client: Bechtel S Corporation Job Number: 400-785.1

Surrogate Recovery Report

8310 Polynuclear Aromatic Hydrocarbons

Client Matrix: Water

Lab Sample ID	Client Sample ID	2-Chloroa
400-785-1	OMS28-MW1-0305	70
400-785-2	OMS28-MW2-0305	68
400-785-3	OMS28-MW3-0305	68
400-785-3MS	OMS28-MW3-0305	79
400-785-3MSD	OMS28-MW3-0305	72
400-785-4	OMS28-MW5-0305	72
400-785-5	OMS28-MW6-0305	80
400-785-6	OMS28-MW7-0305	80
400-785-7	OMS28-MW8-0305	81
400-785-8	OMS28-MW8-0305	76
LCS 400-2196/18-BLCS	LCS	78
MB 400-2196/17-BMB	MB	80

Surrogate		Acceptance Limits
2-	2-Chloroanthracene	28 - 138

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Method Blank - Batch: 400-2376

Lab ID: MB 400-2376/12 Date Analyzed: 03/15/2005 1239 Dilution: 1.0
Matrix: Water Units: ug/L

Analyte	Result	Qualifier	MDL	RL
Acetone	1.0	U	0.64	1.0
Benzene	0.25	U	0.15	0.25
Bromobenzene	0.25	U	0.15	0.25
Bromochloromethane	0.25	U	0.15	0.25
Bromodichloromethane	0.25	U	0.15	0.25
Bromoform	0.25	U	0.15	0.25
2-Butanone (MEK)	1.0	U	0.15	1.0
Carbon disulfide	0.25	U	0.15	0.25
Bromomethane	0.25	U	0.15	0.25
Carbon tetrachloride	0.25	U	0.15	0.25
Chlorobenzene	0.25	U	0.15	0.25
Chloroethane	0.25	U	0.15	0.25
Chloroform	0.25	U	0.021	0.25
Chloromethane	0.25	U	0.15	0.25
2-Chlorotoluene	0.25	U	0.15	0.25
4-Chlorotoluene	0.25	U	0.15	0.25
Dibromochloromethane	0.25	U	0.039	0.25
Dibromomethane	0.25	U	0.15	0.25
1,2-Dibromo-3-Chloropropane	0.50	U	0.23	0.50
Ethylene Dibromide	0.25	U	0.15	0.25
1,2-Dichlorobenzene	0.25	U	0.15	0.25
1,3-Dichlorobenzene	0.25	U	0.15	0.25
Dichlorodifluoromethane	0.25	U	0.15	0.25
1,1-Dichloroethane	0.25	U	0.15	0.25
1,1-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloroethane	0.25	U	0.025	0.25
cis-1,2-Dichloroethene	0.25	U	0.15	0.25
trans-1,2-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloropropane	0.25	U	0.15	0.25
1,3-Dichloropropane	0.25	U	0.15	0.25
2,2-Dichloropropane	0.25	U	0.15	0.25
1,1-Dichloropropene	0.25	U	0.15	0.25
cis-1,3-Dichloropropene	0.25	U	0.15	0.25
trans-1,3-Dichloropropene	0.25	U	0.15	0.25
Ethylbenzene	0.25	U	0.15	0.25
Hexachlorobutadiene	0.25	U	0.15	0.25
2-Hexanone	1.0	U	0.15	1.0
Iodomethane	0.25	U	0.15	0.25
Isopropylbenzene	0.25	U	0.15	0.25
Isopropyl ether	0.25	U	0.15	0.25
p-Cymene	0.25	U	0.15	0.25
Methylene Chloride	0.25	U	0.15	0.25
Methyl tert-butyl ether	0.25	U	0.15	0.25
4-Methyl-2-pentanone (MIBK)	1.0	U	0.15	1.0
Naphthalene	0.25	U	0.15	0.25

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Method Blank - Batch: 400-2376

Lab ID: MB 400-2376/12 Date Analyzed: 03/15/2005 1239 Dilution: 1.0
Matrix: Water Units: ug/L

Analyte	Result	Qualifier	MDL	RL
n-Butylbenzene	0.25	U	0.15	0.25
sec-Butylbenzene	0.25	U	0.15	0.25
Styrene	0.25	U	0.15	0.25
tert-Butylbenzene	0.25	U	0.15	0.25
1,1,1,2-Tetrachloroethane	0.25	U	0.15	0.25
1,1,2,2-Tetrachloroethane	0.25	U	0.037	0.25
Tetrachloroethene	0.25	U	0.15	0.25
Toluene	0.25	U	0.15	0.25
1,1,1-Trichloroethane	0.25	U	0.15	0.25
1,1,2-Trichloroethane	0.25	U	0.15	0.25
1,2,3-Trichlorobenzene	0.25	U	0.15	0.25
1,2,4-Trichlorobenzene	0.25	U	0.15	0.25
Trichloroethene	0.25	U	0.15	0.25
Trichlorofluoromethane	0.25	U	0.15	0.25
1,2,3-Trichloropropane	0.25	U	0.022	0.25
1,2,4-Trimethylbenzene	0.25	U	0.15	0.25
1,3,5-Trimethylbenzene	0.25	U	0.15	0.25
Vinyl acetate	0.50	U	0.15	0.50
Vinyl chloride	0.25	U	0.15	0.25
N-Propylbenzene	0.25	U	0.15	0.25
o-Xylene	0.25	U	0.15	0.25
m-Xylene & p-Xylene	0.50	U	0.25	0.50
1,4-Dichlorobenzene	0.25	U	0.15	0.25

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Laboratory Control Sample - Batch: 400-2376

Lab ID: LCS 400-2376/13 Date Analyzed: 03/15/2005 1313 Dilution: 1.0
Matrix: Water Units: ug/L

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Acetone	20.0	21	105	21 - 201	
Benzene	5.00	4.7	94	83 - 110	
Bromobenzene	5.00	4.9	98	77 - 124	
Bromochloromethane	5.00	4.9	98	87 - 119	
Bromodichloromethane	5.00	4.7	94	79 - 124	
Bromoform	5.00	5.2	104	80 - 124	
2-Butanone (MEK)	20.0	20	101	1 - 187	
Carbon disulfide	5.00	4.8	97	64 - 139	
Bromomethane	5.00	5.0	100	63 - 119	
Carbon tetrachloride	5.00	4.7	94	62 - 124	
Chlorobenzene	5.00	5.0	99	79 - 122	
Chloroethane	5.00	4.6	93	67 - 127	
Chloroform	5.00	4.7	94	83 - 120	
Chloromethane	5.00	4.5	89	53 - 124	
2-Chlorotoluene	5.00	4.7	95	66 - 136	
4-Chlorotoluene	5.00	4.8	96	62 - 141	
Dibromochloromethane	5.00	4.8	96	82 - 124	
Dibromomethane	5.00	5.0	99	84 - 126	
1,2-Dibromo-3-Chloropropane	5.00	4.1	83	66 - 134	
Ethylene Dibromide	5.00	4.7	94	88 - 124	
1,2-Dichlorobenzene	5.00	5.0	100	66 - 133	
1,3-Dichlorobenzene	5.00	5.0	100	67 - 134	
Dichlorodifluoromethane	5.00	6.1	122	28 - 127	
1,1-Dichloroethane	5.00	4.4	89	81 - 121	
1,1-Dichloroethene	5.00	4.8	96	82 - 113	
1,2-Dichloroethane	5.00	4.7	94	76 - 131	
cis-1,2-Dichloroethene	5.00	4.7	94	85 - 115	
trans-1,2-Dichloroethene	5.00	4.7	94	81 - 111	
1,2-Dichloropropane	5.00	4.5	90	86 - 112	
1,3-Dichloropropane	5.00	4.7	93	88 - 126	
2,2-Dichloropropane	5.00	4.2	85	43 - 139	
1,1-Dichloropropene	5.00	4.8	95	76 - 126	
cis-1,3-Dichloropropene	5.00	4.4	87	83 - 120	
trans-1,3-Dichloropropene	5.00	4.3	86	66 - 136	
Ethylbenzene	5.00	4.9	98	76 - 123	
Hexachlorobutadiene	5.00	4.8	96	1 - 195	
2-Hexanone	20.0	21	103	1 - 191	
Iodomethane	5.00	3.5	70	71 - 129	*
Isopropylbenzene	5.00	5.0	99	61 - 134	
Isopropyl ether	5.00	4.0	80	69 - 132	
p-Cymene	5.00	4.9	98	50 - 140	
Methylene Chloride	5.00	4.2	84	86 - 119	*
Methyl tert-butyl ether	5.00	4.1	82	71 - 123	
4-Methyl-2-pentanone (MIBK)	20.0	17	86	1 - 187	

Calculations are performed before rounding to avoid round-off errors in calculated results.

8260B Volatile Organic Compounds by GC/MS

Naphthalene	5.00	3.7	75	64 - 138
n-Butylbenzene	5.00	4.9	98	32 - 167
sec-Butylbenzene	5.00	4.8	96	52 - 139
Styrene	5.00	5.2	104	80 - 123
tert-Butylbenzene	5.00	4.6	91	57 - 133
1,1,1,2-Tetrachloroethane	5.00	4.9	98	65 - 132
1,1,2,2-Tetrachloroethane	5.00	4.8	95	85 - 127
Tetrachloroethene	5.00	5.1	102	65 - 126
Toluene	5.00	4.7	94	82 - 117
1,1,1-Trichloroethane	5.00	4.7	93	67 - 142
1,1,2-Trichloroethane	5.00	4.7	95	88 - 123
1,2,3-Trichlorobenzene	5.00	4.3	86	33 - 159
1,2,4-Trichlorobenzene	5.00	4.3	87	36 - 165
Trichloroethene	5.00	4.8	96	77 - 116
Trichlorofluoromethane	5.00	5.0	100	62 - 126
1,2,3-Trichloropropane	5.00	4.4	87	84 - 132
1,2,4-Trimethylbenzene	5.00	4.9	98	63 - 135
1,3,5-Trimethylbenzene	5.00	4.8	96	61 - 134
Vinyl acetate	10.0	8.8	88	24 - 166
Vinyl chloride	5.00	4.7	93	65 - 126
N-Propylbenzene	5.00	4.8	96	53 - 148
o-Xylene	5.00	4.9	99	76 - 126
m-Xylene & p-Xylene	10.0	10	102	69 - 130
1,4-Dichlorobenzene	5.00	5.0	99	65 - 134

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Bechtel S Corporation

Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Matrix Spike/Spike Duplicate - Batch: 400-2376

MS Lab ID: 400-785-F-3 MS
Date Analyzed: 03/15/2005 1346
Dilution: 1.0

MSD Lab ID: 400-785-F-3 MSD
Date Analyzed: 03/15/2005 1420
Dilution: 1.0

Matrix: Water

Analyte	% Recovery MS	% Recovery MSD	Recovery Limits	RPD	RPD Limit	Qualifier	
Acetone	58	57	13 - 221	1	45		
Benzene	95	95	85 - 116	0	11		
Bromobenzene	100	99	82 - 125	1	14		
Bromochloromethane	99	101	76 - 132	2	16		
Bromodichloromethane	98	98	87 - 129	0	13		
Bromoform	113	116	72 - 144	3	18		
2-Butanone (MEK)	78	79	46 - 158	2	31		
Carbon disulfide	95	95	74 - 143	0	17		
Bromomethane	92	93	60 - 134	1	21		
Carbon tetrachloride	96	96	78 - 136	1	12		
Chlorobenzene	102	102	87 - 123	1	11		
Chloroethane	91	91	60 - 147	0	20		
Chloroform	95	96	77 - 134	1	14		
Chloromethane	91	91	41 - 134	1	23		
2-Chlorotoluene	99	98	71 - 139	1	24		
4-Chlorotoluene	97	95	66 - 147	1	22		
Dibromochloromethane	104	105	80 - 137	1	13		
Dibromomethane	100	103	73 - 141	3	16		
1,2-Dibromo-3-Chloropropane	97	98	68 - 155	1	24		
Ethylene Dibromide	103	103	75 - 138	0	18		
1,2-Dichlorobenzene	107	106	84 - 129	1	15		
1,3-Dichlorobenzene	104	103	81 - 128	1	16		
Dichlorodifluoromethane	119	117	28 - 135	1	20		
1,1-Dichloroethane	89	91	66 - 139	2	14		
1,1-Dichloroethene	88	86	71 - 125	3	20		
1,2-Dichloroethane	95	98	73 - 143	2	12		
cis-1,2-Dichloroethene	98	99	77 - 128	1	14		
trans-1,2-Dichloroethene	94	92	78 - 122	2	15		
1,2-Dichloropropane	91	91	83 - 121	0	12		
1,3-Dichloropropane	99	99	83 - 134	0	15		
2,2-Dichloropropane	87	88	40 - 154	1	37		
1,1-Dichloropropene	92	92	82 - 131	1	11		
cis-1,3-Dichloropropene	92	93	87 - 121	0	12		
trans-1,3-Dichloropropene	93	93	70 - 128	0	14		
Ethylbenzene	100	99	83 - 121	0	18		
Hexachlorobutadiene	112	109	36 - 183	3	32		
2-Hexanone	79	80	41 - 158	1	29		
Iodomethane	79	81	70 - 142	2	19	*	*
Isopropylbenzene	104	103	82 - 125	1	17		
Isopropyl ether	85	86	61 - 143	1	15		
p-Cymene	100	95	76 - 129	5	23		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Matrix Spike/Spike Duplicate - Batch: 400-2376

MS Lab ID: 400-785-F-3 MS Date Analyzed: 03/15/2005 1346 Dilution: 1.0
MSD Lab ID: 400-785-F-3 MSD Date Analyzed: 03/15/2005 1420 Dilution: 1.0
Matrix: Water

Analyte	% Recovery MS	% Recovery MSD	Recovery Limits	RPD	RPD Limit	Qualifier	
Methylene Chloride	85	86	67 - 142	1	21	*	*
Methyl tert-butyl ether	89	91	51 - 152	1	20		
4-Methyl-2-pentanone (MIBK)	96	98	35 - 155	2	25		
Naphthalene	90	84	62 - 153	7	23		
n-Butylbenzene	110	106	66 - 145	3	29		
sec-Butylbenzene	101	100	80 - 127	1	21		
Styrene	47	36	77 - 128	26	16	*	*
tert-Butylbenzene	99	98	81 - 123	1	18		
1,1,1,2-Tetrachloroethane	103	104	87 - 130	1	11		
1,1,2,2-Tetrachloroethane	102	101	62 - 147	1	20		
Tetrachloroethene	103	103	83 - 121	0	15		
Toluene	95	94	84 - 119	1	14		
1,1,1-Trichloroethane	93	95	81 - 128	2	11		
1,1,2-Trichloroethane	99	102	81 - 134	2	14		
1,2,3-Trichlorobenzene	103	98	71 - 143	5	19		
1,2,4-Trichlorobenzene	102	99	64 - 150	3	21		
Trichloroethene	97	97	86 - 118	0	12		
Trichlorofluoromethane	98	99	60 - 139	1	21		
1,2,3-Trichloropropane	95	95	54 - 157	0	24		
1,2,4-Trimethylbenzene	65	55	79 - 129	17	20	*	*
1,3,5-Trimethylbenzene	78	72	79 - 128	9	19	*	*
Vinyl acetate	83	81	1 - 165	3	28		
Vinyl chloride	95	94	57 - 144	1	17		
N-Propylbenzene	99	96	74 - 134	3	22		
o-Xylene	97	97	83 - 126	0	15		
m-Xylene & p-Xylene	95	93	82 - 126	3	18		
1,4-Dichlorobenzene	103	102	79 - 129	1	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

8260B Volatile Organic Compounds by GC/MS

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Method Blank - Batch: 400-2555

Lab ID: MB 400-2555/1 Date Analyzed: 03/21/2005 1627 Dilution: 1.0
Matrix: Water Units: ug/L

Analyte	Result	Qualifier	MDL	RL
Acetone	2.2		0.64	1.0
Benzene	0.25	U	0.15	0.25
Bromobenzene	0.25	U	0.15	0.25
Bromochloromethane	0.25	U	0.15	0.25
Bromodichloromethane	0.25	U	0.15	0.25
Bromoform	0.25	U	0.15	0.25
2-Butanone (MEK)	1.0	U	0.15	1.0
Carbon disulfide	0.25	U	0.15	0.25
Bromomethane	0.25	U	0.15	0.25
Carbon tetrachloride	0.25	U	0.15	0.25
Chlorobenzene	0.25	U	0.15	0.25
Chloroethane	0.25	U	0.15	0.25
Chloroform	0.25	U	0.021	0.25
Chloromethane	0.25	U	0.15	0.25
2-Chlorotoluene	0.25	U	0.15	0.25
4-Chlorotoluene	0.25	U	0.15	0.25
Dibromochloromethane	0.25	U	0.039	0.25
Dibromomethane	0.25	U	0.15	0.25
1,2-Dibromo-3-Chloropropane	0.50	U	0.23	0.50
Ethylene Dibromide	0.25	U	0.15	0.25
1,2-Dichlorobenzene	0.25	U	0.15	0.25
1,3-Dichlorobenzene	0.25	U	0.15	0.25
Dichlorodifluoromethane	0.25	U	0.15	0.25
1,1-Dichloroethane	0.25	U	0.15	0.25
1,1-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloroethane	0.25	U	0.025	0.25
cis-1,2-Dichloroethene	0.25	U	0.15	0.25
trans-1,2-Dichloroethene	0.25	U	0.15	0.25
1,2-Dichloropropane	0.25	U	0.15	0.25
1,3-Dichloropropane	0.25	U	0.15	0.25
2,2-Dichloropropane	0.25	U	0.15	0.25
1,1-Dichloropropene	0.25	U	0.15	0.25
cis-1,3-Dichloropropene	0.25	U	0.15	0.25
trans-1,3-Dichloropropene	0.25	U	0.15	0.25
Ethylbenzene	0.25	U	0.15	0.25
Hexachlorobutadiene	0.25	U	0.15	0.25
2-Hexanone	1.0	U	0.15	1.0
Iodomethane	0.25	U	0.15	0.25
Isopropylbenzene	0.25	U	0.15	0.25
Isopropyl ether	0.25	U	0.15	0.25
p-Cymene	0.25	U	0.15	0.25
Methylene Chloride	0.30		0.15	0.25
Methyl tert-butyl ether	0.25	U	0.15	0.25
4-Methyl-2-pentanone (MIBK)	1.0	U	0.15	1.0
Naphthalene	0.25	U	0.15	0.25

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Method Blank - Batch: 400-2555

Lab ID: MB 400-2555/1 Date Analyzed: 03/21/2005 1627 Dilution: 1.0
Matrix: Water Units: ug/L

Analyte	Result	Qualifier	MDL	RL
n-Butylbenzene	0.25	U	0.15	0.25
sec-Butylbenzene	0.25	U	0.15	0.25
Styrene	0.25	U	0.15	0.25
tert-Butylbenzene	0.25	U	0.15	0.25
1,1,1,2-Tetrachloroethane	0.25	U	0.15	0.25
1,1,2,2-Tetrachloroethane	0.25	U	0.037	0.25
Tetrachloroethene	0.25	U	0.15	0.25
Toluene	0.25	U	0.15	0.25
1,1,1-Trichloroethane	0.25	U	0.15	0.25
1,1,2-Trichloroethane	0.25	U	0.15	0.25
1,2,3-Trichlorobenzene	0.25	U	0.15	0.25
1,2,4-Trichlorobenzene	0.25	U	0.15	0.25
Trichloroethene	0.25	U	0.15	0.25
Trichlorofluoromethane	0.25	U	0.15	0.25
1,2,3-Trichloropropane	0.25	U	0.022	0.25
1,2,4-Trimethylbenzene	0.25	U	0.15	0.25
1,3,5-Trimethylbenzene	0.25	U	0.15	0.25
Vinyl acetate	0.50	U	0.15	0.50
Vinyl chloride	0.25	U	0.15	0.25
N-Propylbenzene	0.25	U	0.15	0.25
o-Xylene	0.25	U	0.15	0.25
m-Xylene & p-Xylene	0.50	U	0.25	0.50
1,4-Dichlorobenzene	0.25	U	0.15	0.25

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Laboratory Control Sample - Batch: 400-2555

Lab ID: LCS 400-2555/2 Date Analyzed: 03/21/2005 1701 Dilution: 1.0
Matrix: Water Units: ug/L

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Acetone	20.0	22	108	21 - 201	
Benzene	5.00	4.7	93	83 - 110	
Bromobenzene	5.00	4.8	96	77 - 124	
Bromochloromethane	5.00	4.9	99	87 - 119	
Bromodichloromethane	5.00	4.8	96	79 - 124	
Bromoform	5.00	5.2	104	80 - 124	
2-Butanone (MEK)	20.0	19	95	1 - 187	
Carbon disulfide	5.00	4.5	90	64 - 139	
Bromomethane	5.00	4.8	96	63 - 119	
Carbon tetrachloride	5.00	4.5	90	62 - 124	
Chlorobenzene	5.00	4.9	99	79 - 122	
Chloroethane	5.00	4.5	89	67 - 127	
Chloroform	5.00	4.7	94	83 - 120	
Chloromethane	5.00	4.3	85	53 - 124	
2-Chlorotoluene	5.00	4.6	92	66 - 136	
4-Chlorotoluene	5.00	4.6	93	62 - 141	
Dibromochloromethane	5.00	4.9	99	82 - 124	
Dibromomethane	5.00	4.9	98	84 - 126	
1,2-Dibromo-3-Chloropropane	5.00	3.9	79	66 - 134	
Ethylene Dibromide	5.00	4.9	97	88 - 124	
1,2-Dichlorobenzene	5.00	5.1	102	66 - 133	
1,3-Dichlorobenzene	5.00	5.0	99	67 - 134	
Dichlorodifluoromethane	5.00	5.8	115	28 - 127	
1,1-Dichloroethane	5.00	4.4	88	81 - 121	
1,1-Dichloroethene	5.00	4.8	95	82 - 113	
1,2-Dichloroethane	5.00	4.8	95	76 - 131	
cis-1,2-Dichloroethene	5.00	4.7	93	85 - 115	
trans-1,2-Dichloroethene	5.00	4.7	94	81 - 111	
1,2-Dichloropropane	5.00	4.4	88	86 - 112	
1,3-Dichloropropane	5.00	4.8	96	88 - 126	
2,2-Dichloropropane	5.00	3.9	79	43 - 139	
1,1-Dichloropropene	5.00	4.7	93	76 - 126	
cis-1,3-Dichloropropene	5.00	4.3	87	83 - 120	
trans-1,3-Dichloropropene	5.00	4.2	84	66 - 136	
Ethylbenzene	5.00	4.8	96	76 - 123	
Hexachlorobutadiene	5.00	4.8	96	1 - 195	
2-Hexanone	20.0	19	94	1 - 191	
Iodomethane	5.00	3.6	71	71 - 129	
Isopropylbenzene	5.00	4.9	98	61 - 134	
Isopropyl ether	5.00	4.0	79	69 - 132	
p-Cymene	5.00	4.7	94	50 - 140	
Methylene Chloride	5.00	4.5	90	86 - 119	
Methyl tert-butyl ether	5.00	4.2	84	71 - 123	
4-Methyl-2-pentanone (MIBK)	20.0	17	87	1 - 187	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8260B Volatile Organic Compounds by GC/MS

Naphthalene	5.00	3.7	75	64 - 138
n-Butylbenzene	5.00	4.7	94	32 - 167
sec-Butylbenzene	5.00	4.6	92	52 - 139
Styrene	5.00	5.1	103	80 - 123
tert-Butylbenzene	5.00	4.5	89	57 - 133
1,1,1,2-Tetrachloroethane	5.00	4.8	97	65 - 132
1,1,2,2-Tetrachloroethane	5.00	4.8	96	85 - 127
Tetrachloroethene	5.00	5.1	101	65 - 126
Toluene	5.00	4.7	94	82 - 117
1,1,1-Trichloroethane	5.00	4.6	91	67 - 142
1,1,2-Trichloroethane	5.00	4.8	96	88 - 123
1,2,3-Trichlorobenzene	5.00	4.4	87	33 - 159
1,2,4-Trichlorobenzene	5.00	4.4	87	36 - 165
Trichloroethene	5.00	4.8	96	77 - 116
Trichlorofluoromethane	5.00	4.9	98	62 - 126
1,2,3-Trichloropropane	5.00	4.4	89	84 - 132
1,2,4-Trimethylbenzene	5.00	4.7	94	63 - 135
1,3,5-Trimethylbenzene	5.00	4.6	92	61 - 134
Vinyl acetate	10.0	8.5	85	24 - 166
Vinyl chloride	5.00	4.5	89	65 - 126
N-Propylbenzene	5.00	4.5	91	53 - 148
o-Xylene	5.00	4.9	98	76 - 126
m-Xylene & p-Xylene	10.0	9.9	99	69 - 130
1,4-Dichlorobenzene	5.00	4.9	98	65 - 134

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8310 Polynuclear Aromatic Hydrocarbons

Method Blank - Batch: 400-2196

Lab ID: MB 400-2196/17-B Date Analyzed: 03/22/2005 1028 Dilution: 1.0
Matrix: Water Units: ug/L

Analyte	Result	Qualifier	MDL	RL
Naphthalene	1.0	U	0.089	1.0
Acenaphthylene	1.0	U	0.098	1.0
1-Methylnaphthalene	1.0	U	0.11	1.0
2-Methylnaphthalene	1.0	U	0.076	1.0
Acenaphthene	1.0	U	0.075	1.0
Fluorene	1.0	U	0.072	1.0
Phenanthrene	1.0	U	0.069	1.0
Anthracene	1.0	U	0.063	1.0
Fluoranthene	1.0	U	0.070	1.0
Pyrene	1.0	U	0.059	1.0
Benzo[a]anthracene	0.20	U	0.057	0.20
Chrysene	1.0	U	0.065	1.0
Benzo[b]fluoranthene	0.20	U	0.064	0.20
Benzo[k]fluoranthene	0.50	U	0.079	0.50
Benzo[a]pyrene	0.20	U	0.076	0.20
Dibenz(a,h)anthracene	0.20	U	0.14	0.20
Benzo[g,h,i]perylene	1.0	U	0.088	1.0
Indeno[1,2,3-cd]pyrene	0.20	U	0.083	0.20

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8310 Polynuclear Aromatic Hydrocarbons

Laboratory Control Sample - Batch: 400-2196

Lab ID: LCS 400-2196/18-B Date Analyzed: 03/22/2005 1028 Dilution: 1.0
Matrix: Water Units: ug/L

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Naphthalene	10.0	8.2	82	19 - 102	
Acenaphthylene	10.0	8.5	85	24 - 108	
1-Methylnaphthalene	10.0	8.6	86	14 - 129	
2-Methylnaphthalene	10.0	8.5	85	19 - 115	
Acenaphthene	10.0	9.0	90	8 - 149	
Fluorene	10.0	8.9	89	26 - 115	
Phenanthrene	10.0	9.0	90	35 - 132	
Anthracene	10.0	9.8	98	43 - 143	
Fluoranthene	10.0	10	101	40 - 119	
Pyrene	10.0	9.9	99	40 - 130	
Benzo[a]anthracene	10.0	8.4	84	42 - 128	
Chrysene	10.0	8.5	85	47 - 135	
Benzo[b]fluoranthene	10.0	7.7	77	44 - 132	
Benzo[k]fluoranthene	10.0	7.0	70	41 - 136	
Benzo[a]pyrene	10.0	7.5	75	33 - 114	
Dibenz(a,h)anthracene	10.0	6.4	64	22 - 147	
Benzo[g,h,i]perylene	10.0	6.6	66	21 - 140	
Indeno[1,2,3-cd]pyrene	10.0	6.5	65	34 - 142	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

8310 Polynuclear Aromatic Hydrocarbons

Matrix Spike/Spike Duplicate - Batch: 400-2196

MS Lab ID: 400-785-B-3-B MS Date Analyzed: 03/22/2005 1028 Dilution: 1.0
MSD Lab ID: 400-785-B-3-B MSD Date Analyzed: 03/22/2005 1028 Dilution: 1.0
Matrix: Water

Analyte	% Recovery MS	% Recovery MSD	Recovery Limits	RPD	RPD Limit	Qualifier
Naphthalene	82	79	2 - 108	8	93	
Acenaphthylene	90	85	1 - 126	10	93	
1-Methylnaphthalene	87	83	1 - 145	10	95	
2-Methylnaphthalene	86	83	3 - 129	9	81	
Acenaphthene	94	88	0 - 142	11	107	
Fluorene	95	89	19 - 113	11	79	
Phenanthrene	96	89	26 - 136	12	70	
Anthracene	99	93	33 - 145	12	68	
Fluoranthene	99	88	22 - 139	17	73	
Pyrene	101	93	26 - 142	14	68	
Benzo[a]anthracene	83	76	34 - 139	14	52	
Chrysene	83	76	31 - 144	14	61	
Benzo[b]fluoranthene	77	71	30 - 140	13	59	
Benzo[k]fluoranthene	71	66	31 - 142	14	47	
Benzo[a]pyrene	76	67	27 - 117	18	47	
Dibenz(a,h)anthracene	66	62	14 - 152	13	54	
Benzo[g,h,i]perylene	69	63	19 - 141	14	51	
Indeno[1,2,3-cd]pyrene	68	62	25 - 148	14	45	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Bechtel S Corporation Job Number: 400-785.1

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method Blank - Batch: 400-2412

Lab ID: MB 400-2412/15-A Date Analyzed: 03/21/2005 1914 Dilution: 1.0
Matrix: Water Units: mg/L

Analyte	Result	Qualifier	MDL	RL
Lead	0.0029	J	0.0020	0.0050

Laboratory Control Sample - Batch: 400-2412

Lab ID: LCS 400-2412/16-A Date Analyzed: 03/21/2005 1920 Dilution: 1.0
Matrix: Water Units: mg/L

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Lead	1.00	0.98	98	80 - 120	

Matrix Spike/Spike Duplicate - Batch: 400-2412

MS Lab ID: 400-785-A-3-A MS Date Analyzed: 03/21/2005 1937 Dilution: 1.0
MSD Lab ID: 400-785-A-3-A MSD Date Analyzed: 03/21/2005 1943 Dilution: 1.0
Matrix: Water

Analyte	% Recovery MS	% Recovery MSD	Recovery Limits	RPD	RPD Limit	Qualifier
Lead	97	98	75 - 125	1	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

STL PENSACOLA
Certifications, Memberships & Affiliations

Alabama *Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL), expires 06/30/05*

Arizona *Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater), expires 01/11/05*

Arkansas *Department of Pollution Control and Ecology, (88-0689) (Environmental), expires 07/01/05*

California *Department of Health Services,* ***ELAP*** *Laboratory ID No. 2510 (Hazardous Waste and Wastewater), expires 03/31/06*

Connecticut *Department of Health Services, Connecticut Lab Approval No. PH-0697 (D W, H W and Wastewater), expires 09/30/05*

Florida *DOH,* ***NELAP*** *Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater), expires 06/30/05*

Florida *DEP/DOH CompQAP # 980156*

Illinois *Environmental Laboratory Accreditation Program (ELAP),* ***NELAP*** *Laboratory ID No. 200041 (Wastewater and Hazardous Waste), expires 10/09/04*

Iowa *Department of Natural Resources, Laboratory ID No. 367 (Wastewater, UST, Solid Waste, & Contaminated Sites), expires 08/01/04*

Kansas *Department of Health & Environment,* ***NELAP*** *Laboratory ID No. E10253 (Wastewater and Hazardous Waste), expires 10/31/04*

Kentucky *NR&EPC, Laboratory ID No. 90043 (Drinking Water), expires 12/31/04*

Kentucky *Petroleum Storage Tank Env Assurance Fund, Laboratory ID No. 0053 (UST), expires 11/7/05.*

Louisiana *DEQ, LELAP,* ***NELAP*** *Laboratory ID No. 02075, Agency Interest ID 30748. Environmental, expires 6/30/05*

Maryland *DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida), expires 12/31/04*

Massachusetts *DEP, Laboratory ID No. M-FL094 (Wastewater), expires 06/30/05*

Michigan *Bureau of E&OccH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida), expires 06/30/05*

New Hampshire *DES ELAP,* ***NELAP*** *Laboratory ID No. 250502 (Drinking Water & Wastewater), expires 08/16/05*

New Jersey *DEP&E,* ***NELAP*** *Laboratory ID No. FL006 (Wastewater and Hazardous Waster), expires 06/30/05.*

North Carolina *DENR, Laboratory ID No. 314 (Hazardous Waste and Wastewater), expires 12/31/04.*

North Dakota *DH&Consol Labs, Laboratory ID No. R-108 Wastewater and Hazardous Waste by Reciprocity with Arizona), expires 06/30/04*

Oklahoma *Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater), expires 08/31/05*

Pennsylvania *Department of Environmental Resources,* ***NELAP*** *Laboratory ID No. 68-467 (Drinking Water & Wastewater), expires 12/01/04*

South Carolina *DH&EC, Laboratory ID No. 96026 (Wastewater & Solids/Hazardous Waste by Reciprocity with FL), expires 06/30/05*

Tennessee *Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water), expires 08/03/04*

Virginia *Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL), expires 06/30/05*

West Virginia *DOE, Office of Water Resources, Laboratory ID No. 136 (Haz Waste and Wastewater), expires 04/30/05.*

EPA ICR *(Information Collection Rule) Approved Laboratory, Laboratory ID No. ICRFL031*

NFESC *(Naval Facilities Engineering Services Center), expires September 7, 2004.*

USACE *(United States Army Corps. of Engineers), MRD, expires July 16, 2005.*

STL Pensacola also has a foreign soil permit to accept soils from locations other than the continental United States. Permit No. S-37599

certlist\condcert.lst revised 9/29/04

Attachment E
EcoVac Services Vacuum Extraction Report

January 7, 2005

Mr. Andrew Weinberg
Bechtel Corporation
203 E. Milton Street
Austin, Texas 78704
aweinberg@austin.rr.com

Subject: **Enhanced Fluid Recovery (EFR®) Results**
Event No. 1
Alabama National Guard OMS Pit #2
1622 Broad Street
Mobile, Alabama

Dear Mr. Weinberg:

Please find attached the data summary for the initial EFR® event conducted at the subject site on December 10, 2004. The following summarizes the results of EFR® at this site.

SUMMARY OF RESULTS

This EFR® event was performed for eight hours at one extraction point, consisting of monitor well MW-1. A measurable layer of separate phase hydrocarbons (SPH) was not detected in the extraction well prior to or upon completion of this event.

A calculated total of 5.6 pounds of petroleum hydrocarbons (approximately 0.9 equivalent gallon of gasoline) was removed during this EFR® event. The hydrocarbon removal rate ranged from 0.4 to 0.8 pounds per hour during the event. Removal rates increased from 0.4 to 0.8 pound per hour during the initial two hours of extraction and decreased to 0.7 pound per during the final six hours of this event.

Vapor concentrations ranged from 500 to 800 parts per million by volume (PPM_V) during this EFR® event. Vapors were treated with a dual internal combustion engine unit (DICE) and analyzed for hydrocarbon content. A calculated total of 0.07 pound of hydrocarbons was released to the atmosphere. The DICE achieved a destruction efficiency of 98.85%.

Flow rates ranged from 54 to 68 actual cubic feet per minute (ACFM) during this event. Vacuum readings recorded at extraction well MW-1 ranged from 20 to 21 inches of mercury throughout this EFR® event as detailed in the attached EFR® Field Data Sheet.

Differential pressures were recorded during this event to assess the vacuum influence induced by EFR® in the vadose zone. The differential pressure data are detailed in the attached data table and summarized below:

Monitor Well	Maximum Change	Approximate Distance from MW-1
MW-3	0.00 inch of water	28 feet
MW-2	0.00 inch of water	30 feet
MW-6	0.00 inch of water	96 feet
MW-5	0.00 inch of water	105 feet

Groundwater levels were recorded during the event to assess the groundwater drawdown induced by EFR®. The drawdown data are detailed in the attached table and summarized below:

Monitor Well	Maximum Change	Approximate Distance from MW-1
MW-3	-0.80 feet	28 feet
MW-2	-0.62 feet	30 feet
MW-6	+0.78 feet	96 feet
MW-5	+0.02 feet	105 feet

Approximately 547 gallons of liquid were removed during this EFR® event and transported to Industrial Water Service's treatment facility (Mobile, Alabama) for disposal. SPH was not detected in the vacuum truck tank upon completion of the event.

Thank you for the opportunity to team with Bechtel Corporation in serving the environmental needs of your clients. We look forward to working with you again in the future to provide innovative and cost effective environmental solutions at this and other sites.

Sincerely,

EcoVac Services

David M. Goodrich

David M. Goodrich, P.G.

Attachment F. Waste Disposal Manifests

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

042884

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. . . . . | Manifest Document No. 42884 | 2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
x OMS 28 1622 S Broad ST

Job # 36150

4. Generator's Phone ( )

5. Transporter 1 Company Name
x ALARUS OMS 28

6. US EPA ID Number . . . . . | A. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number . . . . . | B. Transporter's Phone

9. Designated Facility Name and Site Address
IWS, INC.
1980 AVENUE A
MOBILE, AL 36615

10. US EPA ID Number
A.L.0.0.0.0.8.5.9.4.2.1

C. Facility's Phone
(334) 694-7500

11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. x Petroleum Contact Water	4	Bucket	20	GA
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
(4) 5gallon bucket of Water

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
x Andrew Weinberg	x	11	10	04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
x Ernest Gulf Coast Schx		11	10	04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

IWS, INC.

Printed/Typed Name	Signature	Month	Day	Year
Michael Curtis	Michael Curtis	11	10	04

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

TRANSPORTER #1

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

042884

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. . . . . | Manifest Document No. 42884 | 2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
ORS 25 1622 S Broad ST
Job # 36150

4. Generator's Phone ( )

5. Transporter 1 Company Name: ATLANTIC ORS 25 | 6. US EPA ID Number | A. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number | B. Transporter's Phone

9. Designated Facility Name and Site Address
IWS, INC.
1980 AVENUE A
MOBILE, AL 36615

10. US EPA ID Number
A.L.0.0.0.0.8.5.9.4.2.1

C. Facility's Phone
(334) 694-7500

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Petroleum Contact Water	4	BBL	20	G
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
(4) 5gallon bucket of Water

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Andrew Weinberg		11	10	04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
		11	10	04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Michael Curtis	IWS, INC. Michael Curtis	11	10	04

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

GENERATOR'S COPY

IN RECV TREAT OUT

FOR DRIVER USE**

Transporter X [illegible] 28 Manifest No. 42981

Truck/Trailer No. X 1 Gallons X 20

Total Miles _____ Site Time _____ Driver X [illegible]

Vac Truck: Depart Yard _____ Arrive Destination _____ Depart Destination _____

Vac Tanker/Truck:

Pump Time On-Site Start _____ Stop _____

Driver/Customer Comments _____

Driver does / does not request a washout. Drivers Initials _____

**Give ticket to rack operator prior to unloading. Return ticket to receiving station prior to departure.

FOR LAB USE PROFILE # [illegible]

Generator Alabama Army National Guard Job No. 36150

Destination Tank # T1-21 Oil % 0 TOH: _____ Classifier? Yes X No ___

Sample Color: Clear pH 7.75 Sludge/Solids: _____ Inches

Special Instructions/Precautions _____

Comments _____

Lab Technician mc TS= 0.00 CWT Category: Metals

FOR PROCESS USE

Classifier? _____ Gallons directly to hopper/rolloff: _____ (Shoveled, from Classifier, or Strainers)

Unload Tk # _____ Measurement before _____ after _____

Unload Tk # _____ Measurement before _____ after _____

Estimated gallons left in truck before washout _____ after _____

Washout tank # _____ Measurement before _____ after _____

Washout tank # _____ Measurement before _____ after _____

Water used, gallons _____ (if no washout measurement)

Start time _____ Stop time _____

Comments: _____

Operator Initials _____

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

043298

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1
	43298	

GENERATOR

3. Generator's Name and Mailing Address
X OHS #28 1622 S. Broad St.
Mobile AL

Job # 39294

4. Generator's Phone ( )

5. Transporter 1 Company Name	6. US EPA ID Number	A. Transporter's Phone
X Bechtel-S		X 512-626-6019
7. Transporter 2 Company Name	8. US EPA ID Number	B. Transporter's Phone
9. Designated Facility Name and Site Address	10. US EPA ID Number	C. Facility's Phone
IWS, INC. **1980 AVENUE A** **MOBILE, AL 36615**	**A.L.0.0.0.0.8.5.9.4.2.1**	**(334) 694-7500**

11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. Waste Water			20	GAL
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above	E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
X Andrew Weinbeop	X Andrew Weinbeop	3	10	05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
X Andrew Weinbeop	X Andrew Weinbeop	3	10	05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

IWS, INC. Mobile, AL

Printed/Typed Name	Signature	Month	Day	Year
Michael Curtis	Michael Curtis	3	10	05

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

TRANSPORTER #1

IN **RECV** **TREAT** **OUT**

FOR DRIVER USE**

Transporter X Bedrock Manifest No. 43298

Truck/Trailer No. X Neutral Gallons X 20

Total Miles _____ Site Time _____ Driver X Adam Woolsey

Vac Truck: Depart Yard _____ Arrive Destination _____ Depart Destination _____

Vac Tanker/Truck:

Pump Time On-Site Start _____ Stop _____

Driver/Customer Comments _____

Driver does / does not request a washout. Drivers Initials _____

**Give ticket to rack operator prior to unloading. Return ticket to receiving station prior to departure.

FOR LAB USE PROFILE # 07427-9

Generator OMS # 28 Job No. 29994

Destination Tank # TR-21 Oil % 0 TOH: _____ Classifier? Yes X No ___

Sample Color: Clear pH 7.24 Sludge/Solids: _____ Inches

Special Instructions/Precautions _____

Comments _____

Lab Technician MC TS CWT Category: Metals

FOR PROCESS USE

Classifier? _____ Gallons directly to hopper/rolloff: _____ (Shoveled, from Classifier, or Strainers)

Unload Tk # TR-21 Measurement before 46" after 46"

Unload Tk # NH Measurement before NH after NH

Estimated gallons left in truck before washout NH after NH

Washout tank # NH Measurement before NH after NH

Washout tank # NH Measurement before NH after NH

Water used, gallons NH (if no washout measurement)

Start time 2016 Stop time _____

Comments: _____

Operator Initials N.J