FINAL
30 October 2013

Groundwater Monitoring Report

Area 303 and Former Power Plant, Building T-1451

Former Adak Naval Complex
Adak, Alaska

Department of the Navy
Naval Facilities Engineering Command Northwest
1101 Tautog Circle
Silverdale, WA 98315

FINAL GROUNDWATER MONITORING REPORT FOR AREA 303 AND FORMER POWER PLANT, BUILDING T-1451 FORMER ADAK NAVAL COMPLEX ADAK, ALASKA

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ABBREVIATIONS AND ACRONYMS

ADEC	Alaska Department of Environmental Conservation
AST	aboveground storage tank
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
°C	degree Celsius
CMP	Comprehensive Monitoring Plan
cm/s	centimeter per second
DO	dissolved oxygen
DRO	diesel-range organics
EPA	U.S. Environmental Protection Agency
GCI	General Communications, Inc.
GEM	Ground Electronics Maintenance
GRO	gasoline-range organics
JP-5	jet petroleum No. 5
LTM	long-term monitoring
MLLW	mean lower low water
µg/L	microgram per liter
mg/L	milligram per liter
MLLW	mean lower low water
mL/min	milliliter per minute
MNA	monitored natural attenuation
mS/cm	millisiemens per centimeter
mV	millivolt
MW	monitoring well
NAP	natural attenuation parameter
Navy	U.S. Navy
NAVFAC NW	Naval Facilities Engineering Command Northwest
NTU	nephelometric turbidity unit
ORP	oxidation-reduction potential
OU	operable unit
PAH	polycyclic aromatic hydrocarbons
PCE	tetrachloroethene
QA	quality assurance
RAO	Remedial Action Operation
ROD	record of decision
SA	source area
SAP	sampling and analysis plan

ABBREVIATIONS AND ACRONYMS (Continued)

SDF	sampling deviation form
SU	standard unit
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TAH	total aromatic hydrocarbon
TAqH	total aqueous hydrocarbon
URS	URS Group, Inc.
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound

1.0 INTRODUCTION

Pursuant to the Federal Facilities Agreement, the U.S. Navy, U.S. Environmental Protection Agency (EPA), and Alaska Department of Environmental Conservation (ADEC) have agreed to a process for determining remedial actions for petroleum-release sites at the former Adak Naval Complex on Adak Island, Alaska. As specified in the record of decision (ROD) for Operable Unit A (OU A), petroleum-release sites are evaluated and remediated under terms mutually agreed to by the Navy and the State of Alaska (U.S. Navy, ADEC, and USEPA 2000). The Navy and ADEC have agreed that the identification and selection of remedial actions, including applicable institutional controls, will follow the cleanup process established by Alaska State regulations.

The two sites included in this groundwater monitoring report are as follows:

- Area 303
- Former Power Plant, Building T-1451

The locations of these sites are shown on Figure 1-1.

The remedy selected for Area 303 was included in the related decision document (U.S. Navy 2012b). The selected remedy for Area 303 includes monitored natural attenuation (MNA), institutional controls, and free product recovery. Note that “free product” in this report refers to a light nonaqueous-phase liquid that is petroleum based. The remedy selected for Former Power Plant, Building T-1451 identified in the OU A ROD (U.S. Navy, ADEC, and USEPA 2000) was MNA and institutional controls. To protect downgradient surface water in East Canal, the Navy implemented a removal action and installed an MNA treatment area in 2012.

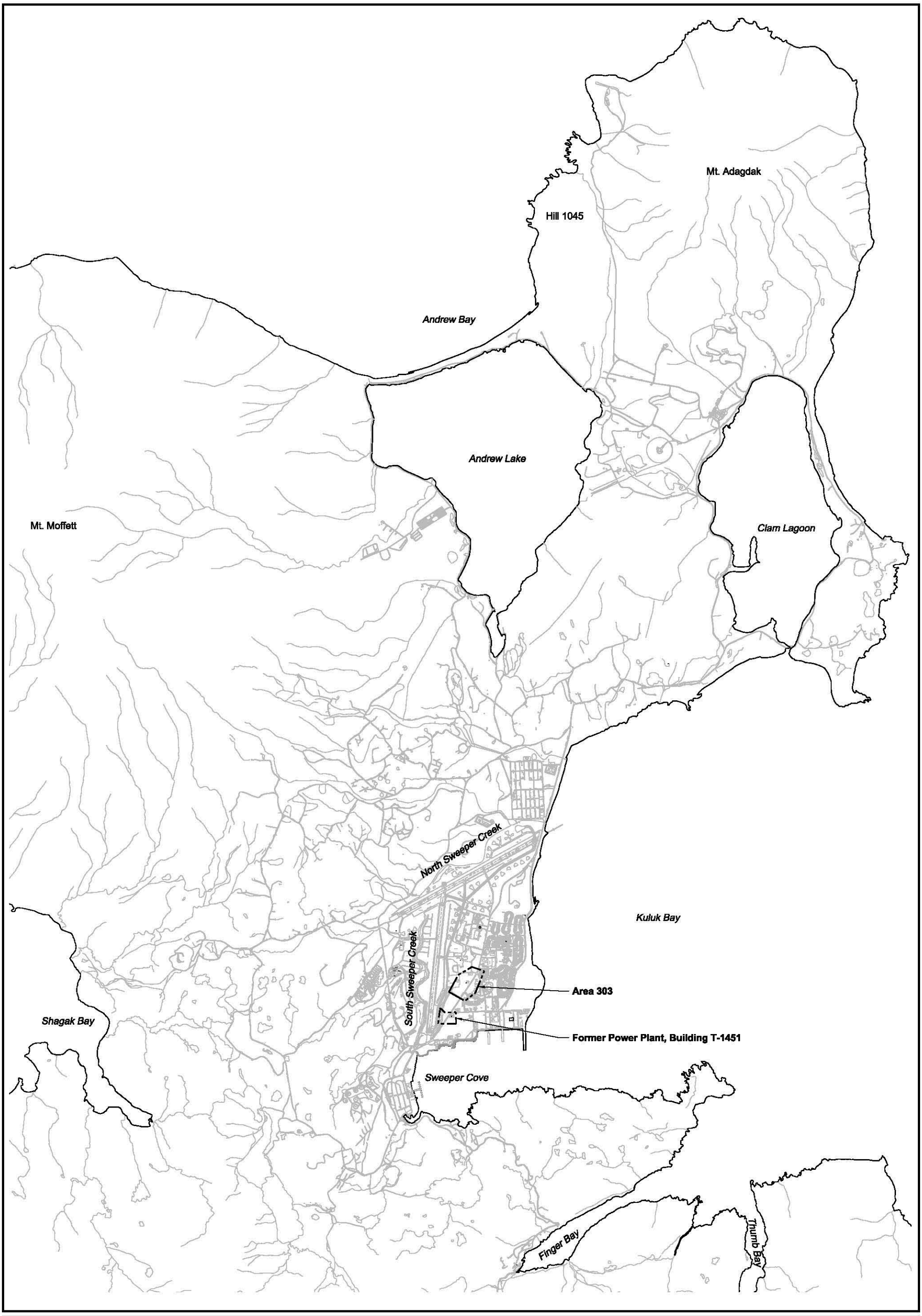
1.1 GENERAL PURPOSE

The purpose of this groundwater sampling effort is to report concentrations of chemicals of concern in groundwater at Area 303 and Former Power Plant, Building T-1451 in select existing and several new monitoring wells installed in 2012. Free-product recovery was also planned for wells containing more than 0.5 foot of free product (applicable to 2-inch-diameter wells).

1.2 REPORT ORGANIZATION

This site characterization report is organized as follows:

- Section 2 presents the general field investigation activities conducted in April 2013.
- Section 3 is an assessment of the data quality of the analytical results of the environmental samples collected for Area 303 and Former Power Plant, Building T-1451.
- Section 4 summarizes the purpose, site description, environmental history, April 2013 field activities, and results of the groundwater sampling activities at Area 303.
- Section 5 summarizes the purpose, site description, environmental history, April 2013 field activities, and results of the groundwater sampling activities at Former Power Plant, Building T-1451.



U.S. NAVY

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SCALE IN FEET

Figure 1-1
Locations of Area 303 and Former Power Plant, Building T-1451
Adak Island, Alaska

Delivery Order 0059
Adak Island, AK
GROUNDWATER
MONITORING REPORT

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2.0 GENERAL FIELD INVESTIGATION ACTIVITIES

This section provides descriptions of general field activities conducted during the April 2013 field effort. Specific field investigation details and applicable results for each site are provided in Sections 4 and 5.

2.1 VISUAL INSPECTION

Prior to collecting groundwater samples, the field crew documented the condition of each sampling location during sampling to ensure that representative samples were being collected. A Monitoring Well (Groundwater) Gauging Visual Inspection Checklist was completed for each location to document observations during these inspections. Inspection results for wells requiring maintenance are described in Sections 4 and 5.

2.2 GROUNDWATER SAMPLING

Groundwater samples were collected as described in Worksheet #17 of the project-specific sampling and analysis plan (SAP) (U.S. Navy 2013b). Water levels were measured prior to sampling to determine water level elevations and detect the possible presence of free product. If less than 0.02 foot of free product was present, a low-flow peristaltic pump was set up to intake water at the midpoint of the water column. Single-use tubing was used for both purging and sampling. Wells were purged at a rate of 100 to 200 mL/min according to Naval Facilities Engineering Command Northwest (NAVFAC NW) Standard Operating Procedure I-C-5. The depth to water was continually monitored throughout pumping processes to identify any low-producing wells.

Field parameters were monitored and recorded prior to sampling. The Horiba U-22 was calibrated using a standard solution for pH, specific conductance, and turbidity each day before sample collection. The pH, specific conductance, turbidity, dissolved oxygen (DO), temperature, and oxidation-reduction potential (ORP) were measured periodically during purging. A well was considered adequately purged for sample collection after the field parameters stabilized for the last three readings.

Following water quality parameter stabilization, the flow-through cell was bypassed and water samples were collected. Approved and pre-preserved laboratory containers were filled with groundwater and placed on ice in coolers until they were sent to the laboratory for analysis. Temperature blanks were included in each cooler, and chain-of-custody procedures were

followed. Coolers containing the samples were shipped overnight using Goldstreak to an airport near the laboratory (EMAX Laboratories, Inc.) for pickup.

During sampling, field test kits were used to measure concentrations of DO, carbon dioxide, and ferrous iron in groundwater from specific wells. Results of this testing were recorded in the field notebook (Appendix A).

2.3 FREE-PRODUCT RECOVERY

The presence or absence of free product was evaluated at each sampling location using a product-water interface probe. If present, product thickness, as well as the depth to groundwater surface, was documented in the field notebook (Appendix A).

The SAP indicated that if free product was measured at a thickness greater than or equal to 0.02 foot in a monitoring well, no sample would be collected. If greater than 0.5 foot of free product was measured in a 2-inch-diameter well, product recovery would be conducted. As explained in Sections 4 and 5, free product was detected at Former Power Plant, Building T-1451. However, because product thickness did not exceed 0.5 foot, according to the SAP, free product was not recovered as part of this field effort.

3.0 DATA USABILITY ASSESSMENT

Groundwater samples were analyzed by EMAX Laboratories, Inc. (Torrance, California) according to EPA Method 8260B for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and tetrachloroethene (PCE); EPA Method 8270D selected ion monitoring for polycyclic aromatic hydrocarbons (PAHs); Alaska Method AK 101 for gasoline-range organics (GRO); Alaska Method AK 102 for diesel-range organics (DRO) and EPA Method 6020A for total and dissolved lead; Standard Method 2320b for alkalinity; EPA Method 300.0 for sulfate; and EPA Method RSK 175 for dissolved methane. No data was rejected. The laboratory reports are presented in Appendix B.

Pyron Environmental performed a level IV data validation (Appendix C) using EPA Contract Laboratory Program functional guidelines (USEPA 2008 and 2010). The measurement performance criteria tables listed in Worksheet #12 of the SAP (U.S. Navy 2013b) were evaluated in the data validation report. Project-required quality control samples, including laboratory method blanks, trip blanks, surrogate spikes, matrix spikes, matrix spike duplicates, laboratory control samples, field duplicates, and project-requested quantitation limits met laboratory and project data quality objectives. No data qualifier was assigned to the laboratory-reported data values as a result of the validation review, the overall data quality objectives were met, and the data are acceptable for the intended purposes of the project.

All samples were collected and analyzed as planned in the project-specific SAP (U.S. Navy 2013b) except for a sample from one damaged well, MW-303-33. Based on the data validation report, the analytical data completeness is 100 percent because all laboratory data was acceptable with no rejections

4.0 AREA 303

This section describes the purpose of groundwater monitoring, site description, environmental history, April 2013 field activities, and results of the groundwater monitoring activities at Area 303. Conclusions and recommendations are provided at the end of this section.

4.1 PURPOSE

The purposes for one-time sampling under this project are the following:

- Collect baseline data for long-term monitoring (LTM).
- Determine PCE concentrations in wells around sampling location SV-303-02 where PCE was detected in soil vapor.
- Determine the concentrations of chemicals of concern in groundwater from newly installed upgradient monitoring wells MW-303-45, MW-303-46, and MW-303-47.

Results are evaluated to support revisions to the LTM requirements for Area 303, which will be incorporated into the annual update for the Comprehensive monitoring Plan (CMP) in 2013.

4.2 SITE DESCRIPTION AND ENVIRONMENTAL HISTORY

4.2.1 Location and Setting

Area 303 is located east of the air terminal area and west of the high school building in downtown Adak (Figure 4-1). The general topography of the site is relatively flat with surface drainage directed to the west. The ground surface at Area 303 consists of the asphalt-paved Main Road, multiple small gravel-covered lots in developed areas near existing structures, and an extensive level area covered with native grasses composing the less disturbed areas. Elevations of the ground surface in this area are generally 26 to 30 feet above mean lower low water (MLLW).

Prior to military use of Adak Island during World War II, the western portion of the downtown area was occupied by a back beach lagoon. The lagoon was separated from Kuluk Bay by a series of sand dunes. Military forces filled the lagoon with sand and rock to construct the airfield. The sand dunes were leveled to create the relatively flat area occupied by downtown

Adak today. Area 303 is believed to be situated near the eastern shoreline of the former lagoon, outside of the fill area.

4.2.2 Environmental History

During 2002, the U.S. Geological Survey (USGS) evaluated the Navy's groundwater monitoring program for OU A at the former Adak Naval Complex to determine how well the program was meeting the objectives specified in the ROD. The Navy then asked the USGS to conduct a field investigation on Adak to obtain information that would be the basis to modify the existing monitoring program such that it would better monitor the effectiveness of natural attenuation processes. The resulting field investigation was conducted during May and June 2003 (USGS 2005).

As part of that investigation, the USGS collected groundwater samples using a Geoprobe sample collection method from 10 locations between the General Communications, Inc. (GCI) Compound (Figure 4-1), a known petroleum-release site included in the OU A ROD, and East Canal. The chemical analyses conducted on these samples identified the presence of GRO at concentrations that greatly exceeded those obtained from the GCI source area. Based on the distribution of GRO concentrations in the primary aquifer in the vicinity of the GCI Compound, the USGS concluded that a second overlapping GRO plume existed in this area that had not previously been identified. The USGS further stated that the second GRO plume was emanating from an unidentified source somewhere south or southwest of the GCI source area along Main Road (USGS 2005). The area of contamination was defined as a result of the USGS investigation and identified as Area 303. The Navy subsequently investigated the newly identified GRO plume in Area 303 to characterize the release and prepared a focused feasibility study (U.S. Navy 2011a).

The following potential sources of the petroleum hydrocarbons present at Area 303 include portions of major fuel distribution pipelines located within Area 303:

- An aviation gasoline pipeline distribution system formerly used to provide fuel to truck-fuel stands along the airfield and transfer fuel from the former Fuel Dock No. 7 to Tank Farm B
- A diesel pipeline formerly used to transfer fuel from the former Fuel Dock No. 7 to Tank Farm C
- The jet petroleum No. 5 (JP-5) pipelines, including the Main Road Pipeline, formerly used to transfer fuel from the Fuels Facility to Steam Plant No. 4 and

various aboveground storage tanks (ASTs) that stored fuel for distribution to individual housing units at Solid Waste Management Unit (SWMU) 62

These pipelines are not currently active, and all pipelines within the vicinity of Area 303 have been decommissioned (U.S. Navy 2011a). Based on the results of the 2006 remedial investigation and the 2009 pipeline integrity testing performed as part of pipeline decommissioning, the source of GRO was likely the aviation gasoline pipeline distribution system. The diesel and JP-5 pipelines are not considered potential sources of the GRO compounds, because these pipelines were used to transport heavier petroleum hydrocarbon chemicals within the grouping commonly referred to as DRO.

Area 303 was investigated by the Navy in 2006 and 2010. In addition, several investigations were conducted at the petroleum-release sites located within the Area 303 boundaries or immediately adjacent to Area 303, which included the following:

- GCI Compound, Underground Storage Tank (UST) GCI-1 (within Area 303)
- Telephone Exchange Building, UST 10324-A, located near the eastern edge of Area 303
- Source Area (SA) 79, Main Road Pipeline
- SWMU 62, New Housing Fuel Leak, including the Sandy Cove and Eagle Bay Housing areas (south and east of Area 303)

These investigations indicated that petroleum-related chemicals, such as GRO, DRO, semivolatile organic compounds (SVOCs), volatile organic compounds (VOCs), and lead, were present in samples of subsurface soil, soil vapor, and groundwater collected from various locations near Area 303. Concentrations of petroleum-related chemicals in soil, groundwater, and soil vapor exceeded the applicable ADEC cleanup criteria or vapor intrusion target levels. During the soil vapor sampling in 2010, PCE was detected in soil vapors at levels of concern from one sample collected from location SV-303-2 at a depth of 15 feet below ground surface (bgs). SV-303-2 is located in the southern central part of Area 303. No previous groundwater sample from Area 303 had previously included analyses for PCE, because Area 303 is a petroleum site. Additionally, the extent of petroleum could be defined better in two areas: Eagle Bay Housing area and near the Telephone Exchange building.

Based on recommendations in the 2012 technical memorandum about LTM for Area 303 (U.S. Navy 2012a), the Navy installed 10 new wells in 2012. Four 4-inch-diameter recovery wells (MW-303-38 through MW-303-41) were installed in an area near where free product was

previously identified in MW-303-30 and MW-303-31. Additionally, six 2-inch-diameter monitoring wells (MW-303-42 through MW-303-47) were installed to better define the extent of petroleum impacts in groundwater at the Eagle Bay Housing area and near the Telephone Exchange Building (U.S. Navy 2013a). The locations of these wells are shown on Figure 4-1.

The selected cleanup remedy for Area 303 according to the Decision Document (U.S. Navy 2012b) is MNA, institutional controls, and free-product recovery.

4.2.3 Geology and Hydrogeology

The geology and hydrogeology at the site are characterized by sandy soils derived from stream, wind, and wave action. The subsurface soils have variable permeability and generally consist of sands and gravels with occasional layers of organic silt and clay. The saturated sands typical in the downtown portion of Adak Island have a high water-bearing capacity. The organic silts and clays have low water-bearing capacity and typically cause shallow water in the subsurface to pond above the primary aquifer as small perched groundwater zones.

Groundwater in the primary aquifer beneath the downtown area of Adak, situated west of Main Road, flows generally west toward the East Canal of the airport ditch system. During the 2006 characterization activities, groundwater in the primary aquifer was measured at depths ranging from 5 bgs to as much as 28 feet bgs, depending on the location. The hydraulic gradient appears to be fairly consistent across the site at 0.0027 foot/foot.

Layers of lower permeability material, such as organic silt and clay, were encountered within the sandy soils at several locations. These layers are believed to represent the position of either the former lagoon bottom, or small lakes that occurred within low-lying areas between the sand dunes that were present in the downtown area prior to military arrival on Adak. These lower permeability layers retard the downward percolation of groundwater, which may result in localized zones of perched groundwater. Perched groundwater has been found in two wells (MRP-MW3 and former well 03-708) in the northeast portion of Area 303. Therefore, the extent of the perched groundwater in Area 303 is limited. The depth to the perched water ranged from approximately 2 to 5 feet bgs.

The closest surface water body in the vicinity of Area 303 is the East Canal of the airport ditch system. A portion of the East Canal is located near the southwestern boundary of Area 303.

4.3 FIELD INVESTIGATION ACTIVITIES

Field activities were completed from April 8 through 13, 2013 and are summarized in Table 4-1. As part of the groundwater sampling effort, the sampling crew performed the following activities:

- Visually inspected each monitoring well
- Measured water levels in each well prior to sampling
- Measured field parameters in groundwater (pH, specific conductance, salinity, temperature, turbidity, DO, and ORP
- Used field test kits to estimate concentrations of carbon dioxide, DO, and ferrous iron in groundwater
- Collected groundwater samples into laboratory containers for chemical analyses

These activities were performed at 23 monitoring wells as planned in the project-specific SAP, with the exception of MW-303-33 as described in the following paragraph. Specific analyses performed on each groundwater sample are summarized in Table 4-2. The laboratory tested the samples for one or more of the following analyses: GRO, BTEX, benzene, PCE, DRO, lead (total and dissolved), PAHs, and natural attenuation parameters (NAPs) (alkalinity, sulfate, and dissolved methane). Dibenz(a,h)anthracene was the only PAH tested for in some wells because it is the only PAH that is a chemical of concern at the site. All PAHs were included tested for in samples where total aqueous hydrocarbon (TAqH) was required. Field test kits were performed on selected samples for the following NAP parameters: carbon dioxide, ferrous iron, and DO.

Samples were collected from each well as planned in the site-specific SAP, with the exception of a sample from well MW-303-33, which was damaged. A water-level probe would not fit down the casing, and when tubing was placed into the casing to obtain a groundwater sample, it continued to plug up with sediment. Sampling deviation form (SDF) No.1 (Appendix D) was prepared on April 11, 2013, and approved by the Navy on the following day. The SDF documents the project team's decision to not sample the well. The photograph of this well taken from above looking into the casing shows the damage to this well (Appendix D).

4.4 RESULTS OF GROUNDWATER SAMPLING

As an initial step to groundwater sampling, each well was visually inspected and water levels collected. The results of the inspections indicate that wells 03-107, MW-303-33, MW-303-37,

and MW-303-45 are in need of repair. Only well MW-303-33 was damaged such that a sample could not be collected. Monitoring well inspection checklists were completed and are in Appendix E.

Prior to pumping groundwater, depth to water (and free product if present) and total well depth were recorded. No free product was detected in wells at Area 303 during the April 2013 sampling event. Groundwater level measurements are summarized in Table 4-3. It should be noted that in early July 2013, Sealaska reported 0.32 foot of free product in well MW-303-28 as part of a monitoring effort for a different project.

Field parameters pH, specific conductance, turbidity, DO, temperature, and ORP were measured during groundwater sampling activities. Table 4-4 summarizes the final field parameter measurements collected just prior to sample collection. The measurements for pH, specific conductance, turbidity, DO, temperature, and ORP ranged from 5.3 to 6.58 standard units (SUs), 0.108 to 0.424 µS/cm, 0 to 227 nephelometric turbidity units (NTUs), 0.52 to 9.8 mg/L, 2.72 to 8.45°C, and −55 to 196 mV, respectively.

The results of the analytical testing are presented in Table 4-5 and on Figure 4-2. At each sampled location, concentrations are reported for each detected analyte, and for analytes that were not detected, the reporting limit is identified. Detected concentrations of the chemicals of concern at Area 303 were compared to their applicable endpoint criteria (based on ADEC cleanup levels). There was no exceedance of endpoint criteria for toluene, xylenes, PCE, PAHs, total aromatic hydrocarbon (TAH), and TAqH in samples from the wells tested.

Concentrations exceeding their applicable endpoint criteria are highlighted in Table 4-5 and in Figure 4-2. Total and dissolved lead concentrations exceeded the endpoint criteria of 15 µg/L in samples from four wells (03-107, MW-303-28, MW-303-30, and MW-303-39). Total lead concentrations above the endpoint ranged from 20.7 to 64.4 µg/L with the highest concentration measured in the sample from MW-303-28. Benzene concentrations exceeded its endpoint criterion of 5 µg/L in samples from wells MRP-MW2 and MW-303-32 at concentrations of 24 and 5.4 µg/L, respectively. Ethylbenzene was detected in excess of its endpoint criterion of 700 µg/L in one sample from well MW-303-30 (820 µg/L). GRO concentrations exceeded its endpoint criterion of 2,200 µg/L in samples from seven wells (03-107, 04-211, MRP-MW2, MW-303-28, MW-303-30, MW-303-38, and MW-303-42). GRO concentrations in excess of the endpoint criterion ranged from 4,200 to 17,000 µg/L with the highest concentration measured in the sample from MW-303-42. DRO was detected in excess of its endpoint criterion of 1,500 µg/L in one sample from well MW-303-32 (1,700 µg/L).

PCE concentrations were not detected above the reporting limit of 0.2 µg/L in samples from the wells (03-107, HMW-303-5, HMW-303-6, MW-303-28, MW-303-29, MW-303-30) surrounding

soil vapor location SV-303-02 (Figure 4-2). The possible presence of PCE was a concern because of a reported detection of PCE in a soil vapor sample from SV-303-02, as described in Section 4.2.2.

Dissolved oxygen levels appear to be depleted in a contiguous well grouping with MW-303-31 being the northern extent, HMW-303-6 the southern extent, MW-303-28 at the eastern edge, and MW-303-30 in the west. This would suggest that some natural attenuation has occurred in this area. As this is the first sampling event, time-dependent data is required to more comprehensively assess natural attenuation at this site.

No concentration of GRO or benzene was detected in wells MW-303-45 and MW-303-46 located near the southeast boundary of Area 303 at Eagle Bay Housing. Similarly, neither GRO nor benzene was detected in well MW-303-47 located in the northeast portion of Area 303 near the Telephone Exchange Building, upgradient of MRP-MW2. Total and dissolved lead may have been detected in these wells; however, the detected concentrations were approximately an order of magnitude below the applicable endpoint criterion of 15 µg/L.

4.5 CONCLUSION AND RECOMMENDATIONS

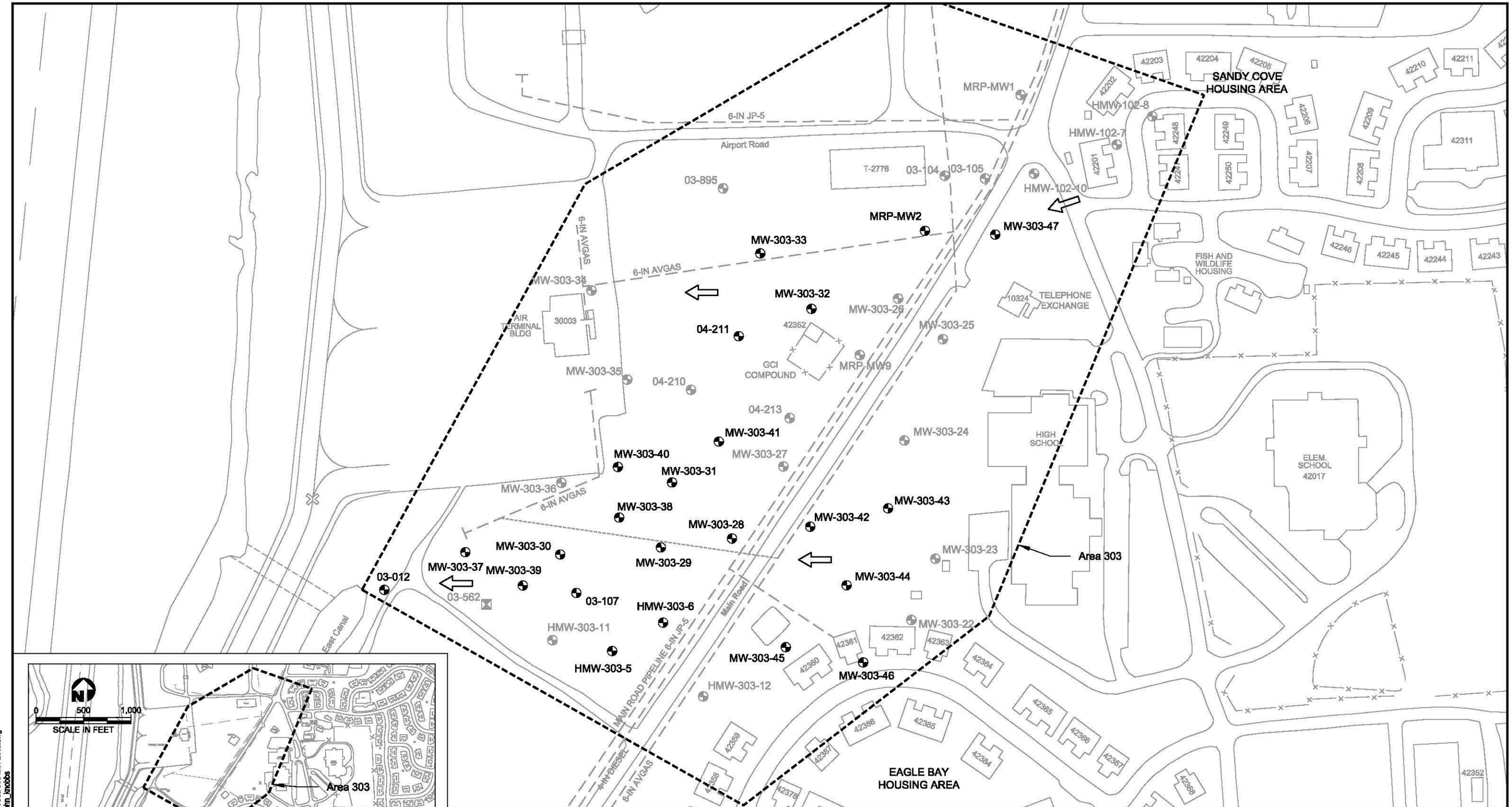
All field work was performed as planned, with the exception of one well (MW-303-33) that could not be sampled because it was damaged. Based on visual inspection, it is recommended that the following four wells be repaired: 03-107, MW-303-33, MW-303-37, and MW-303-45.

Concentrations of lead, benzene, ethylbenzene, GRO, and DRO were detected in one or more wells in excess of their respective endpoint criteria. Concentrations of other chemicals of concern at Area 303, including TAH, TAqH, toluene, total xylenes, and dibenz(a,h)anthracene, were not detected above their respective endpoint criteria. Because the April 2013 sampling effort is the first baseline sampling for LTM, the sampling frequency of monitoring wells designated for surface water protection or natural attenuation monitoring (Table 4-1) should not be reduced for the next round of LTM sampling. After evaluating the third round of LTM sampling, reducing the number of sampling locations and analytes should be considered for the monitoring wells that are identified for natural attenuation monitoring. Sampling should continue for the wells identified for surface water protection until after all upgradient site wells have met the applicable endpoint criteria.

No evidence of impacts from PCE was observed in the wells near the reported PCE detection in soil vapor. The samples from wells 03-107, HMW-303-5, HMW-303-6, MW-303-28, MW-303-29, and MW-303-30 confirmed that PCE is not present in groundwater above its reporting limit. No additional sampling for PCE is recommended for these wells.

The analytical results show that no petroleum impact was found in samples from wells MW-303-45 and MW-303-46 located near the southeast boundary of Area 303 at Eagle Bay Housing and in the sample from well MW-303-47 located in the northeast portion of Area 303 near the Telephone Exchange Building. The results from these wells confirm that the extent of petroleum impacts at Area 303 has been defined. Therefore, no additional sampling is recommended for these wells.

Based on the results of the April 2013 sampling effort, recommended groundwater sampling for the next round of LTM is shown in Table 4-6. Quality assurance (QA) samples (field duplicates and matrix spikes/matrix spike duplicates) should be selected in the updated CMP so that the entire sampling program, including sampling from other sites, can be considered. Therefore, QA samples are not identified in this table.



U.S. NAVY

Delivery Order 0059
Adak Island, AK
GROUNDWATER
MONITORING REPORT

Figure 4-1
Area 303 Monitoring Well Sampling Locations

T:\ADAK\IDIQ\Sub-Tasks\DO 59\GW Mon Report\FIG 4-1 Area 303 MW Locs.dwg
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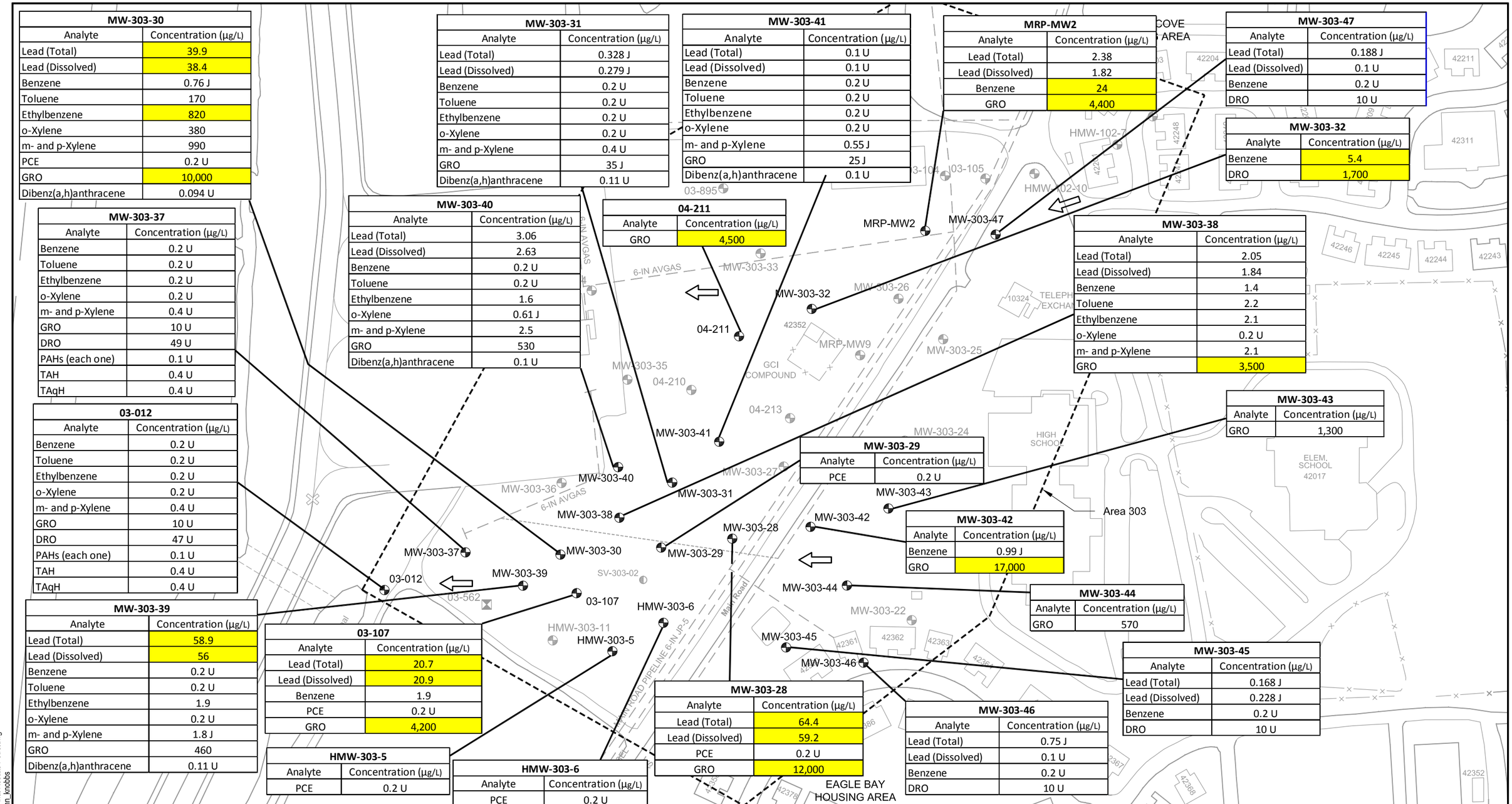

MW-303-30	
Analyte	Concentration (µg/L)
Lead (Total)	39.9
Lead (Dissolved)	38.4
Benzene	0.76 J
Toluene	170
Ethylbenzene	820
o-Xylene	380
m- and p-Xylene	990
PCE	0.2 U
GRO	10,000
Dibenz(a,h)anthracene	0.094 U

MW-303-31	
Analyte	Concentration (µg/L)
Lead (Total)	0.328 J
Lead (Dissolved)	0.279 J
Benzene	0.2 U
Toluene	0.2 U
Ethylbenzene	0.2 U
o-Xylene	0.2 U
m- and p-Xylene	0.4 U
GRO	35 J
Dibenz(a,h)anthracene	0.11 U

MW-303-41	
Analyte	Concentration (µg/L)
Lead (Total)	0.1 U
Lead (Dissolved)	0.1 U
Benzene	0.2 U
Toluene	0.2 U
Ethylbenzene	0.2 U
o-Xylene	0.2 U
m- and p-Xylene	0.55 J
GRO	25 J
Dibenz(a,h)anthracene	0.1 U

MRP-MW2	
Analyte	Concentration (µg/L)
Lead (Total)	2.38
Lead (Dissolved)	1.82
Benzene	24
GRO	4,400

MW-303-47	
Analyte	Concentration (µg/L)
Lead (Total)	0.188 J
Lead (Dissolved)	0.1 U
Benzene	0.2 U
DRO	10 U

MW-303-32	
Analyte	Concentration (µg/L)
Benzene	5.4
DRO	1,700

MW-303-40	
Analyte	Concentration (µg/L)
Lead (Total)	3.06
Lead (Dissolved)	2.63
Benzene	0.2 U
Toluene	0.2 U
Ethylbenzene	1.6
o-Xylene	0.61 J
m- and p-Xylene	2.5
GRO	530
Dibenz(a,h)anthracene	0.1 U

04-211	
Analyte	Concentration (µg/L)
GRO	4,500

MW-303-38	
Analyte	Concentration (µg/L)
Lead (Total)	2.05
Lead (Dissolved)	1.84
Benzene	1.4
Toluene	2.2
Ethylbenzene	2.1
o-Xylene	0.2 U
m- and p-Xylene	2.1
GRO	3,500

MW-303-37	
Analyte	Concentration (µg/L)
Benzene	0.2 U
Toluene	0.2 U
Ethylbenzene	0.2 U
o-Xylene	0.2 U
m- and p-Xylene	0.4 U
GRO	10 U
DRO	49 U
PAHs (each one)	0.1 U
TAH	0.4 U
TAqH	0.4 U

03-012	
Analyte	Concentration (µg/L)
Benzene	0.2 U
Toluene	0.2 U
Ethylbenzene	0.2 U
o-Xylene	0.2 U
m- and p-Xylene	0.4 U
GRO	10 U
DRO	47 U
PAHs (each one)	0.1 U
TAH	0.4 U
TAqH	0.4 U

MW-303-43	
Analyte	Concentration (µg/L)
GRO	1,300

MW-303-29	
Analyte	Concentration (µg/L)
PCE	0.2 U

MW-303-42	
Analyte	Concentration (µg/L)
Benzene	0.99 J
GRO	17,000

MW-303-44	
Analyte	Concentration (µg/L)
GRO	570

MW-303-39	
Analyte	Concentration (µg/L)
Lead (Total)	58.9
Lead (Dissolved)	56
Benzene	0.2 U
Toluene	0.2 U
Ethylbenzene	1.9
o-Xylene	0.2 U
m- and p-Xylene	1.8 J
GRO	460
Dibenz(a,h)anthracene	0.11 U

03-107	
Analyte	Concentration (µg/L)
Lead (Total)	20.7
Lead (Dissolved)	20.9
Benzene	1.9
PCE	0.2 U
GRO	4,200

MW-303-45	
Analyte	Concentration (µg/L)
Lead (Total)	0.168 J
Lead (Dissolved)	0.228 J
Benzene	0.2 U
DRO	10 U

MW-303-28	
Analyte	Concentration (µg/L)
Lead (Total)	64.4
Lead (Dissolved)	59.2
PCE	0.2 U
GRO	12,000

MW-303-46	
Analyte	Concentration (µg/L)
Lead (Total)	0.75 J
Lead (Dissolved)	0.1 U
Benzene	0.2 U
DRO	10 U

HMW-303-5	
Analyte	Concentration (µg/L)
PCE	0.2 U

HMW-303-6	
Analyte	Concentration (µg/L)
PCE	0.2 U

ADEC Groundwater Cleanup Levels for Chemicals of Concern (ug/L)	
Lead	15
Toluene	1,000
Ethybenzene	700
Xylenes (total)	10,000
PCE	5
GRO	2,200
DRO	1,500
Dibenz(a,h)anthracene	0.12
TAH	10
TAqH	15

Legend:

J Value Considered to be Estimated
U Not Detected Above Specified Reporting Limit
Monitoring Well
Monitoring Well Not Sampled
Geoprobe Well
Soil Vapor Probe
Pipeline Location as Traced
Pipeline Termination
Pipeline Location Not Found
Site Boundary
Inferred Groundwater Flow Direction

Notes:
1. Highlighted values exceed ADEC groundwater cleanup levels.
2. MW-303-33 could not be sampled because it was damaged.

U.S. NAVY

Delivery Order 0059
Adak Island, AK
GROUNDWATER
MONITORING REPORT

0 100 200
SCALE IN FEET

Figure 4-2
Analytical Results of Petroleum-Related Chemicals in 2013 Groundwater Samples, Area 303

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Table 4-1
Summary of Field Activities at Area 303 in April 2013

Location ID[a]	Gradient Relationship[b]	Monitoring Type	Field Measurement[c]	Water Level[d]	Test Kits[e]	Chemical Analysis	Visual Inspection
03-012	D	SWP	X	X	X	X	X
03-107	O	NAM	X	X	X	X	X
04-211	O	NAM	X	X	X	X	X
HMW-303-5	O	One time	X	X	X	X	X
HMW-303-6	O	One time	X	X	X	X	X
MRP-MW2	C	NAM	X	X	X	X	X
MW-303-28	O	NAM	X	X	X	X	X
MW-303-29	O	One time	X	X	X	X	X
MW-303-30	O	NAM	X	X	X	X	X
MW-303-31	O	NAM	X	X	X	X	X
MW-303-32	O	NAM	X	X	X	X	X
MW-303-33[f]	O	Not sampled	-	-	-	-	X
MW-303-37	D	SWP	X	X	X	X	X
MW-303-38	O	NAM	X	X	X	X	X
MW-303-39	O	NAM	X	X	X	X	X
MW-303-40	D	NAM	X	X	X	X	X
MW-303-41	O	NAM	X	X	X	X	X
MW-303-42	O	NAM	X	X	X	X	X
MW-303-43	O	NAM	X	X	X	X	X
MW-303-44	O	NAM	X	X	X	X	X
MW-303-45	C	One time (extent)	X	X	-	X	X
MW-303-46	U	One time (extent)	X	X	-	X	X
MW-303-47	U	One time (extent)	X	X	X	X	X

[a]All locations are monitoring wells.
[b]Gradient is in relation to the source, if known.
[c]Groundwater in monitoring wells with no free product were tested for the following field parameters: pH, specific conductance, salinity, temperature, turbidity, dissolved oxygen, and oxygen-reduction potential with a Horiba U-22.
[d]Measurement included product-thickness measurement if free product was present.
[e]Carbon dioxide, dissolved oxygen, and ferrous iron field tests were conducted at all indicated locations where natural attenuation parameters were required.
[f]Well was damaged and could not be sampled.

Notes:
C - crossgradient
D - downgradient
NAM - natural attenuation monitoring
O - on site
SWP - surface water protection
U - upgradient
X - indicates activity was performed

Table 4-2
Groundwater Sample Quantities and Laboratory Analytical Methods by Location at Area 303

Location ID	Sample ID	GRO (AK 101)	BTEX (EPA 8260C)	Benzene (EPA 8260C)	PCE (EPA 8260C)	DRO (AK102)	Total and Dissolved Lead (EPA 6020A)	PAHs (EPA 8270D SIM)	NAPs[a]
03-107	03-107-APR13	1	-	1	1	-	1	-	1
03-012	03-012-APR13	1	1	-	-	1	-	1	-
04-211	04-211-APR13	1	-	-	-	-	-	-	1
HMW-303-5	HMW-303-5-APR13	-	-	-	1	-	-	-	-
HMW-303-5	303-DUP3-APR13	-	-	-	FD	-	-	-	-
HMW-303-6	HMW-303-6-APR13	-	-	-	1	-	-	-	-
MRP-MW2	MRP-MW2-APR13	1	-	1	-	-	1	-	1
MRP-MW2	303-DUP1-APR13	-	-	-	-	-	FD	-	-
MW-303-28	303-28-APR13	1	-	-	1	-	1	-	1
MW-303-28	303-DUP2-APR13	FD	-	-	-	-	-	-	FD
MW-303-29	303-29-APR13	-	-	-	1	-	-	-	-
MW-303-30	303-30-APR13	1	1	-	1	-	1	1[b]	1
MW-303-31	303-31-APR13	1	1	-	-	-	1	1[b]	1
MW-303-32	303-32-APR13	-	-	1	-	1	-	-	1
MW-303-37	303-37-APR13	1	1	-	-	1	-	1	-
MW-303-38	303-38-APR13	1	1	-	-	-	1	1[b]	1
MW-303-39	303-39-APR13	1	1	-	-	-	1	1[b]	1
MW-303-40	303-40-APR13	1	1	-	-	-	1	1[b]	1
MW-303-41	303-41-APR13	1	1	-	-	-	1	1[b]	1
MW-303-42	303-42-APR13	1	-	1	-	-	-	-	1

Table 4-2 (Continued)
Groundwater Sample Quantities and Laboratory Analytical Methods by Location at Area 303

Location ID	Sample ID	GRO (AK 101)	BTEX (EPA 8260C)	Benzene (EPA 8260C)	PCE (EPA 8260C)	DRO (AK102)	Total and Dissolved Lead (EPA 6020A)	PAHs (EPA 8270D SIM)	NAPs[a]
MW-303-43	303-43-APR13	1	-	-	-	-	-	-	1
MW-303-44	303-44-APR13	1	-	-	-	-	-	-	1
MW-303-45	303-45-APR13	1	-	1	-	-	1	-	-
MW-303-46	303-46-APR13	1	-	1	-	-	1	-	-
MW-303-47	303-47-APR13	1	-	1	-	-	1	-	-

[a]NAPs include alkalinity, sulfate, and dissolved methane analyzed by the laboratory and carbon dioxide, ferrous iron, and dissolved oxygen by test kits.
[b]Dibenz(a,h)anthracene only

Notes:
All EPA methods referenced herein are SW846 methods.
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel-range organics
EPA - U.S. Environmental Protection Agency
FD - field duplicate
GRO - gasoline-range organics
NAPs - natural attenuation parameters
PAHs - polycyclic aromatic hydrocarbons
PCE - tetrachloroethene
SIM - selected ion monitoring

Table 4-3
Groundwater Level Measurements at Area 303

Well ID	Date	Top of Casing Elevation[a,b] (feet)	Depth to Free Product From Top of Casing (feet)	Depth to Bottom of Well (feet)	Depth to Water From Top of Casing (feet)	Depth of Water in Well (feet)	Elevation of Groundwater Surface[a] (feet)
03-012	4/10/13	9.27	NA	11.50	7.29	4.21	1.98
03-107	4/8/13	31.30	NA	32.90	25.90	7.00	5.40
04-211	4/11/13	28.45	NA	30.27	21.87	8.40	6.58
HMW-303-5	4/9/13	31.19	NA	33.76	25.58	8.18	5.61
HMW-303-6	4/9/13	32.54	NA	35.07	26.43	8.64	6.11
MRP-MW2	4/11/13	26.99	NA	26.92	19.03	7.89	7.96
MW-303-28	4/12/13	32.83	NA	33.98	26.33	7.65	6.50
MW-303-29	4/9/13	30.98	NA	32.03	24.94	7.09	6.04
MW-303-30	4/9/13	31.20	NA	35.05	26.02	9.03	5.18
MW-303-31	4/10/13	31.82	NA	34.14	25.77	8.37	6.05
MW-303-32	4/11/13	29.16	NA	31.20	22.07	9.13	7.09
MW-303-37	4/10/13	16.23	NA	18.48	12.01	6.47	4.22
MW-303-38	4/9/13	27.68	NA	30.55	23.48	7.07	4.20
MW-303-39	4/10/13	23.43	NA	28.78	19.99	8.79	3.44
MW-303-40	4/10/13	17.68	NA	17.82	5.63	12.19	12.05
MW-303-41	4/13/13	30.73	NA	25.68	18.35	7.33	12.38
MW-303-42	4/9/13	32.13	NA	33.28	26.44	6.84	5.69
MW-303-43	4/9/13	32.50	NA	33.87	26.32	7.55	6.18
MW-303-44	4/9/13	32.91	NA	33.34	26.65	6.69	6.26
MW-303-45	4/12/13	33.10	NA	30.05	27.66	2.39	5.44
MW-303-46	4/11/13	31.40	NA	30.05	24.53	5.52	6.87

Table 4-3 (Continued)
Groundwater Level Measurements at Area 303

Well ID	Date	Top of Casing Elevation[a,b] (feet)	Depth to Free Product From Top of Casing (feet)	Depth to Bottom of Well (feet)	Depth to Water From Top of Casing (feet)	Depth of Water in Well (feet)	Elevation of Groundwater Surface[a] (feet)
MW-303-47	4/9/13	27.13	NA	33.13	20.01	13.12	7.12

[a]Elevations are based on the North American Vertical Datum of 1988.
[b]Survey data for wells MW-303-38 through MW-303-47 were provided by CKY, Inc. of San Pedro, California.

Notes:
MLLW - mean lower low water
NA - not applicable

Table 4-4
Summary of Field Parameters Measured
During April 2013 Groundwater Sampling at Area 303

Location	pH (SU)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)
03-012	5.83	0.165	0.0	4.96	2.72	181
03-107	6.10	0.264	12.0	0.99	4.34	-26
04-211	6.58	0.424	63.0	0.81	5.92	-38
HMW-303-5	6.24	0.367	13.9	2.91	5.71	-34
HMW-303-6	5.92	0.260	5.5	1.15	5.91	3
MRP-MW2	6.4	0.409	38.1	0.73	5.37	-22
MW-303-28	6.33	0.394	10.4	0.52	5.29	8
MW-303-29	6.21	0.197	3.0	0.66	4.49	1
MW-303-30	6.22	0.280	26.7	0.70	4.06	13
MW-303-31	5.92	0.168	0.0	0.78	5.37	76
MW-303-32	6.58	0.384	5.7	3.47	6.60	-55
MW-303-37	5.99	0.108	1.5	9.8	5.0	196
MW-303-38	6.27	0.201	19.5	0.57	4.26	27
MW-303-39	5.80	0.237	3.4	8.6	5.39	74
MW-303-40	5.84	0.164	8.9	2.41	2.96	151
MW-303-41	6.47	0.239	4.0	4.17	4.15	-1
MW-303-42	6.38	0.368	17.4	1.92	5.93	5
MW-303-43	5.94	0.155	10.0	2.42	5.95	84
MW-303-44	5.96	0.192	10.8	3.24	5.82	116
MW-303-45	5.30	0.121	0.0	8.17	4.14	83
MW-303-46	6.00	0.250	227	6.11	8.45	58
MW-303-47	6.06	0.207	38.4	1.20	5.58	54

Notes:
°C - degree Celsius
mg/L - milligram per liter
mS/cm - millisiemens per centimeter
mV - millivolt
NTU - nephelometric turbidity unit
ORP - oxidization-reduction potential
SU - standard unit

Table 4-5
Summary of Analytical Results in April 2013 Groundwater Samples at Area 303

Analytes	Unit	Endpoint Criteria[a]	03-012	03-107	04-211	HMW-303-5	HMW-303-6	MRP-MW2	MW-303-28	MW-303-29	MW-303-30	MW-303-31	MW-303-32	MW-303-37	MW-303-38	MW-303-39	MW-303-40	MW-303-41	MW-303-42	MW-303-43	MW-303-44	MW-303-45	MW-303-46	MW-303-47
Metals																								
Lead (Total)	µg/L	15	-	**20.7**	-	-	-	**2.38**	**64.4**	-	**39.9**	**0.328 J**	-	-	**2.05**	**58.9**	**3.06**	0.1 U	-	-	-	**0.168 J**	**0.75 J**	**0.188 J**
Lead (Dissolved)	µg/L	15	-	**20.9**	-	-	-	**1.82**	**59.2**	-	**38.4**	**0.279 J**	-	-	**1.84**	**56**	**2.63**	0.1 U	-	-	-	**0.228 J**	0.1 U	0.1 U
Volatile Organic Compounds																								
Benzene	µg/L	5	0.2 U	**1.9**	-	-	-	**24**	-	-	**0.76 J**	0.2 U	**5.4**	0.2 U	**1.4**	0.2 U	0.2 U	0.2 U	**0.99 J**	-	-	0.2 U	0.2 U	0.2 U
Toluene	µg/L	1,000	0.2 U	-	-	-	-	-	-	-	**170**	0.2 U	-	0.2 U	**2.2**	0.2 U	0.2 U	0.2 U	-	-	-	-	-	-
Ethylbenzene	µg/L	700	0.2 U	-	-	-	-	-	-	-	**820**	0.2 U	-	0.2 U	**2.1**	**1.9**	**1.6**	0.2 U	-	-	-	-	-	-
o-Xylene	µg/L	10,000	0.2 U	-	-	-	-	-	-	-	**380**	0.2 U	-	0.2 U	0.2 U	0.2 U	**0.61 J**	0.2 U	-	-	-	-	-	-
m- and p-Xylene	µg/L	10,000	0.4 U	-	-	-	-	-	-	-	**990**	0.4 U	-	0.4 U	**2.1**	**1.8 J**	**2.5**	**0.55 J**	-	-	-	-	-	-
Tetrachloroethene	µg/L	5[b]	-	0.2 U	-	0.2 U	0.2 U	-	0.2 U	0.2 U	0.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbon																								
GRO	µg/L	2,200	10 U	**4,200**	**4,500**	-	-	**4,400**	**12,000**	-	**10,000**	**35 J**	-	10 U	**3,500**	**460**	**530**	**25 J**	**17,000**	**1,300**	**570**	10 U	10 U	10 U
DRO	µg/L	1,500	47 U	-	-	-	-	-	-	-	-	-	**1,700**	49 U	-	-	-	-	-	-	-	-	-	-
Polycyclic Aromatic Hydrocarbon																								
Acenaphthene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	µg/L	0.12	0.1 U	-	-	-	-	-	-	-	0.094 U	0.11 U	-	0.1 U	0.097 U	0.11 U	0.1 U	0.1 U	-	-	-	-	-	-
Fluoranthene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/L	NA	0.1 U	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-	-	-	-	-	-	-	-
Other																								
TAH	µg/L	10[c]	0.4 U	-	-	-	-	-	-	-	-	-	-	0.4 U	-	-	-	-	-	-	-	-	-	-
TAqH	µg/L	15[c]	0.4 U	-	-	-	-	-	-	-	-	-	-	0.4 U	-	-	-	-	-	-	-	-	-	-

Table 4-5 (Continued)
Summary of Analytical Results in April 2013 Groundwater Samples at Area 303

Analytes	Unit	Endpoint Criteria[a]	03-012	03-107	04-211	HMW-303-5	HMW-303-6	MRP-MW2	MW-303-28	MW-303-29	MW-303-30	MW-303-31	MW-303-32	MW-303-37	MW-303-38	MW-303-39	MW-303-40	MW-303-41	MW-303-42	MW-303-43	MW-303-44	MW-303-45	MW-303-46	MW-303-47
Natural Attenuation Parameters																								
Alkalinity, total	mg/L	NA	-	**72.1**	**111**	-	-	**91.5**	**131**	-	**61.7**	**35.2**	**118**	-	**57.6**	**71**	**24.9**	**48.4**	**165**	**39.5**	**47.8**	-	-	-
Sulfate	mg/L	NA	-	**0.345 J**	**0.319 J**	-	-	**3.26**	**0.276 J**	-	**0.312 J**	**2.87**	**1.36**	-	**2.04**	**1.61**	**3.12**	**3.08**	**2**	**5.99**	**7.84**	-	-	-
Methane	µg/L	NA	-	**1,100**	**2,300**	-	-	**1,500**	**250**	-	**210**	**57**	**2,800**	-	**670**	**370**	**6.6**	**1,100**	**150**	**23**	0.34 U	-	-	-
Carbon dioxide[d]	mg/L	NA	**14**	**35**	**50**	**70**	**70**	**5**	**125**	**20**	**100**	**40**	**50**	**18**	**19**	**25**	**20**	**40**	**25**	**25**	**23**	-	-	**30**
Ferrous iron[d]	mg/L	NA	0	**>10**	**>10**	**>10**	**>10**	**>10**	**>10**	**1**	**>10**	**1**	**>10**	0	**10**	**>10**	**>1**	**>10**	**25**	**6**	0	-	-	**5**
Dissolved oxygen[d]	mg/L	NA	**4**	**1**	**0.8**	**0.05**	**0.6**	**0.05**	**0.5**	**1**	**0.02**	**1**	**3**	**10**	**0.8**	**8**	**3**	**2**	**1**	**3**	**5**	-	-	**1**

[a]Endpoint criteria for Area 303 are based on groundwater cleanup levels established in the Decision Document for Area 303 (U.S. Navy 2012b) unless noted otherwise.
[b]ADEC groundwater cleanup levels for groundwater used as a drinking water source (18 AAC 75.345)
[c]ADEC water quality standards for the aquaculture water use category (18 AAC 70.020[b][5][A][iii])
[d]Analyzed using field test kits

Notes:
Bolded value indicates detected concentration.
Highlighted value indicates exceedance of groundwater endpoint criterion.
AAC - Alaska Administrative Code
ADEC - Alaska Department of Environmental Conservation
DRO - diesel-range organics
GRO - gasoline-range organics
J - estimated concentration
µg/L - microgram per liter
mg/L - milligram per liter
NA - not applicable
TAH - total aromatic hydrocarbon
TAqH - total aqueous hydrocarbon
U - not detected above the reported quantitation limit

Table 4-6
Recommended Sample Quantities and Laboratory Analytical Methods for Groundwater Samples by Location in Next Round of LTM at Area 303

Location ID	GRO (AK 101)	BTEX (EPA 8260C)	Benzene (EPA 8260C)	DRO (AK102)	Total and Dissolved Lead (EPA 6020A)	PAHs (EPA 8270D SIM)	NAPs[a]
03-107	1	-	1	-	1	-	1
03-012	1	1	-	1	-	1	-
04-211	1	-	-	-	-	-	1
MRP-MW2	1	-	1	-	1	-	1
MW-303-28	1[b]	-	-	-	1[b]	-	1[b]
MW-303-30	1	1	-	-	1	1[c]	1
MW-303-31	1	1	-	-	1	1[c]	1
MW-303-32	1	-	1	1	-	-	1
MW-303-33	1	-	1	-	-	-	1
MW-303-37	1	1	-	1	-	1	-
MW-303-38	1	1	-	-	1	1[c]	1
MW-303-39	1	1	-	-	1	1[c]	1
MW-303-40	1	1	-	-	1	1[c]	1
MW-303-41	1	1	-	-	1	1[c]	1
MW-303-42	1	-	1	-	-	-	1
MW-303-43	1	-	-	-	-	-	1
MW-303-44	1	-	-	-	-	-	1

[a]NAPs include alkalinity, sulfate, and dissolved methane analyzed by the laboratory and carbon dioxide, ferrous iron, and dissolved oxygen by test kits.
[b]Monitor only if free product is not present
[c]Dibenz(a,h)anthracene only

Notes:
All EPA methods referenced herein are SW846 methods.
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel-range organics
EPA - U.S. Environmental Protection Agency
GRO - gasoline-range organics
LTM - long-term monitoring
NAPs - natural attenuation parameters
PAHs - polycyclic aromatic hydrocarbons
SIM - selected ion monitoring

5.0 FORMER POWER PLANT, BUILDING T-1451

This section describes the purpose of groundwater monitoring, site description, environmental history, April 2013 field activities, and results of the groundwater monitoring activities at Former Power Plant, Building T-1451. Conclusions and recommendations are provided at the end of this section.

5.1 PURPOSE

The purposes for one-time sampling under this project are the following:

- Collect baseline data for remedial action operation (RAO).
- Determine which wells should be included in the CMP for RAO requirements for this site.

Results are evaluated to support revisions to the RAO requirements for Former Power Plant, Building T-1451, which will be incorporated into the annual update for the CMP in 2013.

5.2 SITE DESCRIPTION AND ENVIRONMENTAL HISTORY

5.2.1 Location and Setting

Former Power Plant, Building T-1451, is located on the corner of Main Road and Public Works Road (Figure 5-1). This building has also been referred to as Power House No. 4, Power Plant No. 4, or the main Ground Electronics Maintenance (GEM) building. The former power plant consisted of a power plant building, three fuel ASTs, a fuel pump shed, a water tank, and a septic tank (U.S. Navy 1995a). The existing building overlies much of the former location of the three ASTs. The site can be accessed directly from Main Road. Building T-1451 is bounded by Main Road to the west, Public Works Road to the north, and undeveloped land to the east and south. The Former Power Plant was included in the State-Adak Environmental Restoration Agreement process because soil samples collected during the 1996/1997 investigation contained concentrations of petroleum hydrocarbons above ADEC Method 2 soil cleanup levels.

The Former Power Plant site consists of a level gravel lot at an elevation of approximately 20 feet above MLLW and an area dominated by native grasses, which slopes down to the west toward the East Canal. Overhead power lines run along the roadways to the north and west of

the site. Underground utilities run along the roadways and in the area west of the GEM building (Building T-1451).

East Canal, the closest surface water body, lies approximately 500 feet west of the Former Power Plant, Building T-1451 site. The manmade canal's shoreline is lined with grasses and other soft-stemmed plants.

5.2.2 Environmental History

Several investigations have been conducted at or near the Former Power Plant site. These investigation were conducted in 1992 (U.S. Navy 1994), 1993 (U.S. Navy 1995a), and 1996/1997. Results of these investigations identified elevated DRO concentrations in soil and groundwater.

A corrective action was conducted in 1998. The objective of the corrective action was to cap petroleum-stained sediments along the eastern bank of East Airport Ditch while maintaining hydraulic continuity of the east airport drainage system. This area is approximately 500 feet due west of the Former Power Plant, Building T-1451 (U.S. Navy 1998).

The OU A ROD for the former Adak Naval Complex identified MNA as the selected remedy for the Former Power Plant, Building T-1451 site (U.S. Navy, ADEC, and USEPA 2000). Since that time, the ROD-specified groundwater monitoring has been performed in accordance with the CMP for OU A. As of 2012, three wells (01-118, 01-150, and 01-151) at the Former Power Plant site are monitored each year for DRO, with additional BTEX and PAH sampling at well 01-151 for surface water protection monitoring of the nearest well upgradient of East Canal. In addition, beginning in 2010, one surface water/sediment sample (NL-08) was collected from downgradient of the southernmost boom (Boom 11) in East Canal for surface water protection monitoring.

In 2007, a boom was installed to absorb the petroleum seeping from the bank of East Canal downgradient of Former Power Plant, Building T-1451. An additional boom was added approximately 85 feet downgradient of the existing boom in 2009 in response to the discovery of a new shoreline seep.

Based on concerns by ADEC in 2007 regarding increasing trends in groundwater contaminant levels at the Former Power Plant site, historical groundwater and soil data were reviewed and summarized (U.S. Navy 2008). Following completion and review of this report, ADEC requested that the Navy develop and install an interception/treatment barrier at this site to prevent migration of contaminants from groundwater to surface water. Source removal evaluation was also recommended together with monitoring to evaluate the adequacy of the remedial action.

Additional site characterization was performed in 2009 and 2010. Using additional site information, the Navy completed an engineering evaluation/cost analysis to evaluate potential removal action alternatives to protect East Canal, a surface water receptor, from being further impacted by petroleum hydrocarbons at the Former Power Plant, Building T-1451 in 2011 (U.S. Navy 2011b).

In 2012, the Navy excavated petroleum-impacted soil and installed an MNA treatment area adjacent to the seeps at East Canal within the Former Power Plant, Building T-1451 site. The treatment area is intended to prevent or minimize further impacts of surface water sheen and degradation of surface water quality by reducing the concentrations of free product and dissolved-phase petroleum hydrocarbons from seeping into East Canal. Also in 2012, nine 2-inch monitoring wells (MW-1451-1 through MW-1451-9) were installed at Former Power Plant, Building T-1451 to monitor the effectiveness of the MNA treatment area.

5.2.3 Geology and Hydrogeology

The geology and hydrogeology of the Former Power Plant area correspond to the profile for downtown soils developed in the Adak groundwater study (U.S. Navy 1995b) and used in the methodology report (U.S. Navy 1996). The profile is described as sandy soils derived from stream deposition, with wind and wave action. During World War II, this area was filled with sand from dune deposits along Kuluk Bay. The subsurface soils in this profile have variable permeability and generally consist of sands and gravels with varying portions of silt. The saturated soils have a high water-bearing capacity. Subsurface soil samples logged from the Building T-1451 area generally consisted of gray to brown silty sand and some gravel. The sand was fine to medium grained.

The depth to groundwater was measured in monitoring wells in the vicinity of Building T-1451 on numerous occasions. These data indicate that the groundwater flow is westerly, toward East Canal. The depth to groundwater varies from approximately 2 feet bgs near East Canal to approximately 16 to 18 feet bgs in the vicinity of existing Building T-1451. Groundwater is currently not a source for drinking water, and groundwater use restrictions have been implemented in the downtown area.

Published hydraulic conductivity for the type of soil observed at the site (silty sand with fine to medium sand) ranges from 10^{-3} to 1 cm/s (Freeze and Cherry 1979). Assuming an effective porosity of 30 percent and a hydraulic conductivity of 10^{-2} cm/s, groundwater velocity at the site could range from 1×10^{-4} to 3×10^{-4} cm/s (0.28 to 0.85 foot per day).

5.3 FIELD INVESTIGATION ACTIVITIES

Field activities completed at each well location from April 12 through 16, 2013 are summarized in Table 5-1. As part of the groundwater sampling effort, the sampling crew performed the following activities:

- Visually inspected each monitoring well
- Measured water levels in each well prior to sampling
- Measured field parameters in groundwater (pH, specific conductance, salinity, temperature, turbidity, DO, and ORP)
- Used field test kits to estimate concentrations of carbon dioxide, DO, and ferrous iron in groundwater
- Collected groundwater samples into laboratory containers for chemical analyses

One or more of these activities were performed at nine monitoring wells according to the project-specific SAP, with the exception of MW-1451-1, MW-1451-6, and MW-1451-7, because these wells contained free product as described in the following paragraph. According to criteria in the SAP, no free-product recovery was performed, as explained in the last paragraph in this section.

Specific analyses performed on each groundwater sample are summarized in Table 5-2. The laboratory tested the samples for one or more of the following analyses: BTEX, DRO, PAHs, and NAPs (alkalinity, sulfate, and dissolved methane). Field test kits were performed on selected samples for the following NAP parameters: carbon dioxide, ferrous iron, and DO. Field test kit sampling was not performed on wells 01-118 and 01-150 during the sampling effort in April because of an oversight. Therefore, field test kit sampling was performed on these wells in July 2013. For evaluating changes in carbon dioxide, ferrous iron, and DO concentrations between April and July, field test kits were also performed on wells MW-1451-4 and MW-1451-5. Carbon dioxide measurements in the July 2013 samples from MW-1451-4 and MW-1451-5 were higher than April 2013 and ferrous iron measurements were the same (MW-1451-4) or slightly higher (MW-1451-5). Dissolved oxygen measurements were slightly lower in the July 2013 samples from MW-1451-4 and MW-1451-5 compared to April 2013. This would suggest that the July 2013 carbon dioxide measurements in samples from wells 01-118 and 01-150 are higher than would have been measured in April 2013 and the July 2013 ferrous iron measurements from these wells would have been slightly higher or similar to April 2013. It is inferred that dissolved oxygen would have been measured at slightly higher concentrations in April 2013 at wells 01-118 and 01-150 than that reported for July 2013.

Field work was performed in accordance with the site-specific SAP (U.S. Navy 2013b) with minimal deviations as explained in SDF Nos. 2 and 3. SDF No. 2 (Appendix D) provided a recommendation for collecting a sample from E-701 to document background NAPs concentrations. SDF No. 3 (Appendix D) explained that neither sampling nor free-product recovery was performed at wells MW-1451-1, MW-1451-6, and MW-1451-7 which contained 0.30, 0.18, and 0.30 foot of free product, respectively. No groundwater samples were collected from these wells because they contained greater than 0.02 foot of free product. Free product was not recovered from these wells, because the project-specific SAP indicated that free product recovery is not required if less than 0.5 foot of free product is present in 2-inch diameter wells. Both SDF Nos. 2 and 3 were submitted on April 16, 2013 and approved on April 17, 2013.

5.4 RESULTS OF GROUNDWATER SAMPLING

As an initial step to groundwater sampling, each well was visually inspected. The results of the inspections indicate that no well needs repair. Monitoring well inspection checklists completed in the field are in Appendix E.

Prior to pumping groundwater, depth to water (and free product if present) and total well depth were recorded. Monitoring wells MW-1451-1, MW-1451-6, and MW-1451-7 contained 0.30, 0.18, and 0.30 foot of free product. Groundwater level measurements are summarized in Table 5-3.

Field parameters pH, specific conductance, turbidity, DO, temperature, and ORP were measured during groundwater sampling activities. Table 5-4 summarizes the final field parameter measurements collected just prior to sample collection. The measurements for pH, specific conductance, turbidity, DO, temperature, and ORP ranged from 6.08 to 6.95 SUs, 0.138 to 1.22 µS/cm, 2.6 to 63.6 NTUs, 0.49 to 3.46 mg/L, 3.99 to 6.27°C, and −19 to 228 mV, respectively.

The results of the analytical testing are presented in Table 5-5 and on Figure 5-2. At each sampled location, concentrations are reported for each detected analyte, and for analytes that were not detected, the reporting limit is identified. Detected concentrations of the chemicals of concern at Former Power Plant, Building T-1451 were compared to their applicable endpoint criteria (based on ADEC cleanup levels). There was no exceedance of endpoint criteria for BTEX, PAHs, or TAH in samples from the wells tested. Concentrations exceeding their applicable endpoint criteria are highlighted in Table 5-5 and on Figure 5-2. DRO was detected in excess of its endpoint criterion of 1,500 µg/L in samples from wells 01-118, 01-150, MW-1451-2, MW-1451-8, and MW-1451-9. DRO concentrations in excess of the endpoint criterion ranged from 1,800 to 6,000 µg/L with the highest concentration in well 01-118. TAqH

concentrations exceeded the endpoint criterion in well MW-1451-2 at an estimated concentration of 19 µg/L.

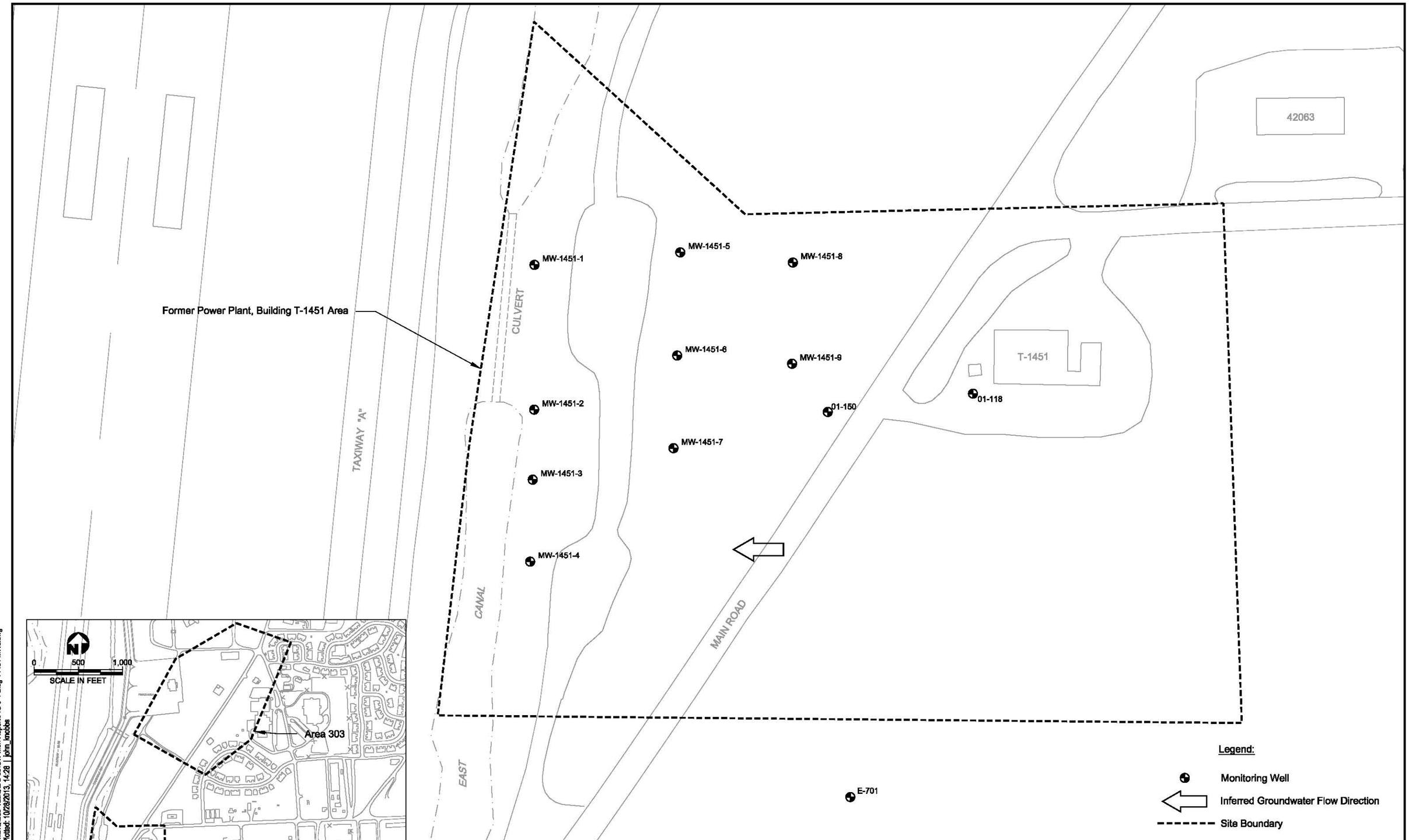
5.5 CONCLUSION AND RECOMMENDATIONS

Field work was performed in accordance with the site-specific SAP with minimal deviations. Groundwater samples were collected for analysis from nine wells. Wells MW-1451-1, MW-1451-6, and MW-1451-7 contained 0.30, 0.18, and 0.30 foot of free product, respectively. No groundwater samples were collected from these wells because they contained greater than 0.02 foot of free product. Free product was not recovered from these wells, because the project-specific SAP indicates no free product recovery is required if less than 0.5 foot of free product is present. Based on visual inspection, no well repair is recommended.

DRO was detected in excess of its endpoint criterion in samples from five of eight sampled locations. TAqH was detected in one well in excess of its endpoint criterion. Concentrations of the other chemical of concern, TAH, were not detected above its respective endpoint criterion. Because the April 2013 sampling effort is the first baseline sampling for LTM, it is recommended that the next two years of LTM sampling remain the same as identified in the site-specific SAP, with monitoring of free product in wells MW-1451-1, MW-1451-6, and MW-1451-7. After evaluating the third round of LTM sampling, reducing the number of sampling locations and analytes should be considered for the monitoring wells that are identified for natural attenuation monitoring (Table 5-1). Sampling should continue for the wells identified for surface water protection until after all upgradient site wells have met the applicable endpoint criteria.

This site has been sampled at least annually since 2000, and natural attenuation has been documented. Depleted dissolved oxygen and elevated dissolved methane concentrations indicate natural attenuation is occurring at least in the eastern (upgradient) portion of the site and within the engineered attenuation zone.

Based on the results of the April 2013 sampling effort, the next round of recommended groundwater sampling for LTM is shown in Table 5-6. QA samples (field duplicates and matrix spikes/matrix spike duplicates) should be selected in the updated CMP so that samples collected from other sites during the same period of the comprehensive sampling effort can be considered during the QA sample selection. Therefore, QA samples are not identified in this table.



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GROUNDWATER
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0 50 100
SCALE IN FEET

Figure 5-1
Monitoring Well Locations, Former Power Plant, Building T-1451

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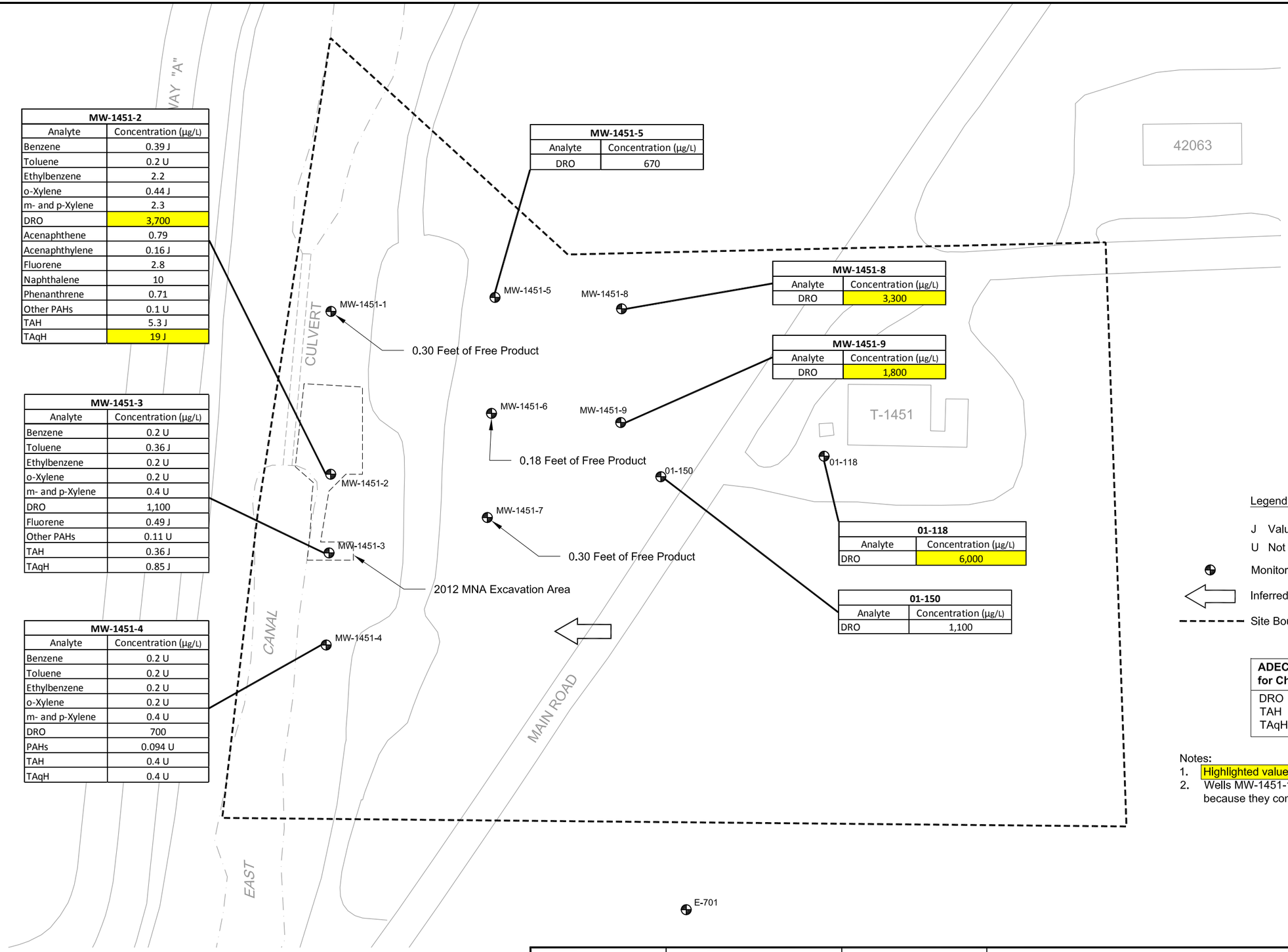

MW-1451-2	
Analyte	Concentration (µg/L)
Benzene	0.39 J
Toluene	0.2 U
Ethylbenzene	2.2
o-Xylene	0.44 J
m- and p-Xylene	2.3
DRO	3,700
Acenaphthene	0.79
Acenaphthylene	0.16 J
Fluorene	2.8
Naphthalene	10
Phenanthrene	0.71
Other PAHs	0.1 U
TAH	5.3 J
TAqH	19 J

MW-1451-3	
Analyte	Concentration (µg/L)
Benzene	0.2 U
Toluene	0.36 J
Ethylbenzene	0.2 U
o-Xylene	0.2 U
m- and p-Xylene	0.4 U
DRO	1,100
Fluorene	0.49 J
Other PAHs	0.11 U
TAH	0.36 J
TAqH	0.85 J

MW-1451-4	
Analyte	Concentration (µg/L)
Benzene	0.2 U
Toluene	0.2 U
Ethylbenzene	0.2 U
o-Xylene	0.2 U
m- and p-Xylene	0.4 U
DRO	700
PAHs	0.094 U
TAH	0.4 U
TAqH	0.4 U

MW-1451-5	
Analyte	Concentration (µg/L)
DRO	670

MW-1451-8	
Analyte	Concentration (µg/L)
DRO	3,300

MW-1451-9	
Analyte	Concentration (µg/L)
DRO	1,800

01-118	
Analyte	Concentration (µg/L)
DRO	6,000

01-150	
Analyte	Concentration (µg/L)
DRO	1,100

Legend:

J Value Considered to be Estimated

U Not Detected Above Specified Reporting Limit

Monitoring Well

Inferred Groundwater Flow Direction

Site Boundary

ADEC Groundwater Cleanup Levels for Chemicals of Concern (ug/L)	
DRO	1,500
TAH	10
TAqH	15

Notes:
1. Highlighted values exceed ADEC groundwater cleanup levels.
2. Wells MW-1451-1, MW-1451-6, and MW-1451-7 were not sampled because they contained free product.

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0 50 100
SCALE IN FEET

Figure 5-2
Analytical Results of Petroleum-Related Chemicals in 2013 Groundwater Samples, Building T-1451 Area

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Table 5-1
Summary of Field Activities at Former Power Plant, Building T-1451 in April 2013

Location ID[a]	Gradient Relationship[b]	Monitoring Type	Field Measurement[c]	Water Level[d]	Test Kits[e]	Chemical Analysis	Visual Inspection
01-118	O	NAM	X	X	X	X	X
01-150	D	NAM	X	X	X	X	X
E-701	U	NAM	X	X	X	X	X
MW-1451-1[f]	D	NAM	-	X	-	-	X
MW-1451-2	D	SWP/NAM	X	X	X	X	X
MW-1451-3	D	SWP/NAM	X	X	X	X	X
MW-1451-4	D	SWP/NAM	X	X	X	X	X
MW-1451-5	O	NAM	X	X	X	X	X
MW-1451-6[f]	O	SWP/NAM	-	X	-	-	X
MW-1451-7[f]	O	SWP/NAM	-	X	-	-	X
MW-1451-8	O	NAM	X	X	-	X	X
MW-1451-9	O	NAM	X	X	-	X	X

[a]All locations are monitoring wells.
[b]Gradient is in relation to the source, if known.
[c]Groundwater in monitoring wells with no free product were tested for the following field parameters: pH, specific conductance, salinity, temperature, turbidity, dissolved oxygen, and oxygen-reduction potential with a Horiba U-22.
[d]Measurement included product-thickness measurement if free product was present.
[e]Carbon dioxide, dissolved oxygen, and ferrous iron field tests were conducted at all indicated locations where natural attenuation parameters were required.
[f]Well contained free product in excess of 0.02 foot, and samples could not be collected for field measurements, testing using test kits, and chemical analyses.

Notes:
D - downgradient
NAM - natural attenuation monitoring
O - on site
SWP - surface water protection
U - upgradient
X - indicates activity was performed

Table 5-2
Groundwater Sample Quantities and Laboratory Analytical Methods by Location at Former Power Plant, Building T-1451

Location ID	Sample ID	BTEX (EPA 8260C)	DRO (AK102)	PAHs (EPA 8270D SIM)	NAPs[a]
01-118	01-118-APR13	-	1	-	1
01-118	1451-DUP1-APR13	-	FD	-	-
01-150	01-150-APR13	-	1	-	1
E-701	E-701-APR13	-	-	-	1
MW-1451-2	1451-2-APR13	1	1	1	1
MW-1451-3	1451-3-APR13	1	1	1	1
MW-1451-3	1451-DUP2-APR13	FD	-	FD	FD
MW-1451-4	1451-4-APR13	1	1	1	1
MW-1451-5	1451-5-APR13	-	1	-	1
MW-1451-8	1451-8-APR13	-	1	-	-
MW-1451-9	1451-9-APR13	-	1	-	-

[a]NAPs include alkalinity, sulfate, and dissolved methane analyzed by the laboratory and carbon dioxide, ferrous iron, and dissolved oxygen by test kits.

Notes:
MW-1451-1, MW-1451-6, and MW-1451-7 were not sampled, because they contained greater than 0.02 foot of free product.
All EPA methods referenced herein are SW846 methods.
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel-range organics
EPA - U.S. Environmental Protection Agency
FD - field duplicate
NAPs - natural attenuation parameters
PAHs - polycyclic aromatic hydrocarbons
SIM - selected ion monitoring

Table 5-3
Groundwater Level Measurements at Former Power Plant, Building T-1451

Well ID	Date	Top of Casing Elevation[a,b] (feet)	Depth to Free Product From Top of Casing (feet)	Depth to Bottom of Well (feet)	Depth to Water From Top of Casing (feet)	Depth of Water in Well (feet)	Elevation of Groundwater Surface[a] (feet)
01-118	4/12/13	19.68	NA	29.50	15.10	14.40	4.58
01-150	4/13/13	22.64	NA	27.08	18.82	8.26	3.82
E-701	4/16/13	Not available	NA	24.30	17.52	6.78	-
MW-1451-1	4/12/13	6.56	6.56	-	6.86	0.30[c]	-
MW-1451-2	4/13/13	6.24	NA	14.55	5.84	8.71	0.4
MW-1451-3	4/13/13	5.09	NA	13.65	5.07	8.58	0.02
MW-1451-4	4/13/13	5.99	NA	14.90	5.88	9.02	0.11
MW-1451-5	4/12/13	7.50	NA	15.80	6.42	9.38	1.08
MW-1451-6	4/12/13	6.15	4.84	-	5.02	0.18[c]	-
MW-1451-7	4/12/13	7.33	6.05	-	6.35	0.30[c]	-
MW-1451-8	4/12/13	8.07	NA	16.11	6.05	10.06	2.02
MW-1451-9	4/12/13	9.91	NA	16.18	7.98	8.20	1.93

[a]Elevations are based on the North American Vertical Datum of 1988.
[b]Survey data for wells MW-1451-1 through MW-1451-9 were provided by CKY, Inc. of San Pedro, California.
[c]Thickness of free product

Notes:
MLLW - mean lower low water
NA - not applicable

Table 5-4
Summary of Field Parameters Measured During
April 2013 Groundwater Sampling at Former Power Plant, Building T-1451

Location	pH (SU)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)
01-118	6.30	0.435	10.3	0.58	6.27	-19
01-150	6.42	0.360	27.0	0.72	5.44	-10
E-701	6.95	0.144	6.6	10.07	4.43	228
MW-1451-2	6.60	1.22	63.6	0.61	3.99	-19
MW-1451-3	6.71	0.590	12.8	0.59	4.08	20
MW-1451-4	6.27	0.234	2.6	3.46	4.42	46
MW-1451-5	6.09	0.159	50.3	1.8	4.20	109
MW-1451-8	6.08	0.138	19.8	.66	4.45	29
MW-1451-9	6.13	0.175	18.9	0.49	4.79	22

Notes:
°C - degree Celsius
µS/cm - microsiemens per centimeter
mg/L - milligram per liter
mV - millivolt
NTU - nephelometric turbidity unit
ORP - oxidization-reduction potential
SU - standard unit

Table 5-5
Summary of Analytical Results in April 2013 Groundwater Samples at Former Power Plant, Building T-1451

Analytes	Units	Endpoint Criteria[a]	01-118	01-150	E-701	MW-1451-2	MW-1451-3	MW-1451-4	MW-1451-5	MW-1451-8	MW-1451-9
Volatile Organic Compounds											
Benzene	µg/L	NA	-	-	-	**0.39 J**	0.2 U	0.2 U	-	-	-
Toluene	µg/L	NA	-	-	-	0.2 U	**0.36 J**	0.2 U	-	-	-
Ethylbenzene	µg/L	NA	-	-	-	**2.2**	0.2 U	0.2 U	-	-	-
o-Xylene	µg/L	NA	-	-	-	**0.44 J**	0.2 U	0.2 U	-	-	-
m- and p-Xylene	µg/L	NA	-	-	-	**2.3**	0.4 U	0.4 U	-	-	-
Total Petroleum Hydrocarbon											
DRO	µg/L	1,500	**6,000**	**1,100**	-	**3,700**	**1,100**	**700**	**670**	**3,300**	**1,800**
Polycyclic Aromatic Hydrocarbon											
Acenaphthene	µg/L	NA	-	-	-	**0.79**	0.11 U	0.094 U	-	-	-
Acenaphthylene	µg/L	NA	-	-	-	**0.16 J**	0.11 U	0.094 U	-	-	-
Anthracene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Benzo(a)anthracene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Benzo(a)pyrene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Benzo(b)fluoranthene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Benzo(g,h,i)perylene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Benzo(k)fluoranthene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Chrysene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Dibenz(a,h)anthracene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Fluoranthene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Fluorene	µg/L	NA	-	-	-	**2.8**	**0.49 J**	0.094 U	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-
Naphthalene	µg/L	NA	-	-	-	**10**	0.11 U	0.094 U	-	-	-
Phenanthrene	µg/L	NA	-	-	-	**0.71**	0.11 U	0.094 U	-	-	-
Pyrene	µg/L	NA	-	-	-	0.1 U	0.11 U	0.094 U	-	-	-

Table 5-5 (Continued)
Summary of Analytical Results in April 2013 Groundwater Samples at Former Power Plant, Building T-1451

Analytes	Units	Endpoint Criteria[a]	01-118	01-150	E-701	MW-1451-2	MW-1451-3	MW-1451-4	MW-1451-5	MW-1451-8	MW-1451-9
Other											
TAH	µg/L	10[b]	-	-	-	**5.3 J**	**0.36 J**	0.4 U	-	-	-
TAqH	µg/L	15[b]	-	-	-	**19 J**	**0.85 J**	0.4 U	-	-	-
Natural Attenuation Parameters											
Alkalinity, total	mg/L	NA	**157**	**154**	**23.2**	**194**	**166**	**64.4**	**24.2**	-	-
Sulfate	mg/L	NA	**0.628**	**0.618**	**3.41**	**253**	**79.9**	**8.01**	**2.02**	-	-
Methane	µg/L	NA	**4,900**	**11,000**	0.34 U	**5,700**	**4,300**	**5**	**590**	-	-
Carbon dioxide[c]	mg/L	NA	**100[d]**	**90[d]**	**100**	**45**	**50**	**15/23[e]**	**16/50[e]**	-	-
Ferrous iron[c]	mg/L	NA	**>10[d]**	**>10[d]**	0	**>10**	**8**	**0/0[e]**	**6/10[e]**	-	-
Dissolved oxygen[c]	mg/L	NA	**0.2[d]**	**0.6[d]**	**10**	**1**	**0.8**	**4/2[e]**	**1/0.2[e]**	-	-

[a]Endpoint criteria for Former Power Plant, Building T-1451 are based on groundwater cleanup levels established in the Operable Unit A Record of Decision (U.S. Navy, ADEC, and USEPA 2000), unless noted otherwise.
[b]Alaska Department of Environmental Conservation water quality standards for the aquaculture water use category (18 Alaska Administrative Code 70.020[b][5][A][iii])
[c]Analyzed using field test kits
[d]Field test kit performed on July 26, 2013
[e]The first value is field test kit results in April 2013 and the second is that measured using field test kits on July 26, 2013 for comparison purposes.

Notes:
Bolded value indicates detected concentration.
Highlighted value indicates exceedance of groundwater endpoint criterion.
DRO - diesel-range organics
J - estimated concentration
µg/L - microgram per liter
mg/L - milligram per liter
NA - not applicable
TAH - total aromatic hydrocarbon
TAqH - total aqueous hydrocarbon
U - not detected above the reported quantitation limit

Table 5-6
Recommended Sample Quantities and Laboratory Analytical Methods for Groundwater Samples by Location in Next Round of LTM at Former Power Plant, Building T-1451

Location ID	BTEX (EPA 8260C)	DRO (AK102)	PAHs (EPA 8270D SIM)	NAPs[a]
01-118	-	1	-	1
01-150	-	1	-	1
E-701	-	-	-	1
MW-1451-1	-	1[b]	-	1[b]
MW-1451-2	1	1	1	1
MW-1451-3	1	1	1	1
MW-1451-4	1	1	1	1
MW-1451-5	-	1	-	1
MW-1451-6	-	1[b]	-	1[b]
MW-1451-7	-	1[b]	-	1[b]
MW-1451-8	-	1	-	-
MW-1451-9	-	1	-	-

[a]NAPs include alkalinity, sulfate, and dissolved methane analyzed by the laboratory and carbon dioxide, ferrous iron, and dissolved oxygen by test kits.
[b]Monitor only if free product is not present.

Notes:
All EPA methods referenced herein are SW846 methods.
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel-range organics
LTM - long-term monitoring
PAHs - polycyclic aromatic hydrocarbons
SIM - selected ion monitoring

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APPENDIX A

Field Notes

ADAK

Rite in the Rain®

ALL-WEATHER

ENVIRONMENTAL FIELD BOOK

№ 550F

DO 59

AREA 303

3376 2109.03000

CONTENTS

PAGE	REFERENCE	DATE

Location D059 Date 4/8/13

Project / Client free product investigation

Glenn J Hegstrom Weather: 32° snow/flurries wind 15 mph

0800 met w/ John Pitts, H&S meeting
0830 Unpacking equipment + lab supplies.
0930 Bump test on PID, already calibrated from vendor
Calibrate zero
Calibrate span 100ppm isobutylene
reading: 104 ppm
1000 Starting free product investigation
No free product discovered
1130 Calibrating Horiba
auto-Cal: PH: 4.00
TURB: 0.0
Cond: 4.49 ms/cm
Measure: PH: 3.87
TURB: 0.0
Cond: 4.68
1200 eat lunch
1300 Back on site, setup at 03-107
1350 Sample # 03-107-Apr13
1430 Setup on HMW-303-5
1528 Sample # HMW-303-5-Apr13
Duplicate: 303-DUP3-Apr13

Location D059 Date 4/8/13

Project / Client GW Sampling

Dennis J Highstone

1555 Setup at HMW-303-6

1632 Sampled HMW-303-6 - APR13

1645 Vehicle stuck, Jabin went to get his truck.

1705 Setting up MW-303-29

1745 Sample MW-303-29 APR13

1805 Empty purge water at bunker, ~10 gal.

1830 Finished for day

4/8/13

DJ

Safety observation:
Holes + potholes in grass, walking & driving hazard.

Location D059 Date 4/8/13

Project / Client GW Sampling

Dennis J Highstone

03-107-APR13

SAMPLE LOG

03-107 - APR 13

DTW: 25.90 2" Steel Sample Depth: 29.5

TD: 32.90

Time	pH	Cond (mS/cm)	NTU	DO	Temp	ORP	DTW	Flo
1326	6.07	0.278	182	2.45	4.04	57	25.89	200
1329	6.17	0.264	17.9	1.70	4.10	11	25.90	200
1332	6.21	0.259	12.8	1.47	4.10	39	25.90	200
1335	6.08	0.259	10.2	1.37	4.21	-10	25.91	200
1338	6.07	0.261	13.0	1.30	4.23	-15	25.91	
1341	6.12	0.263	12.6	1.18	4.29	-21		
1344	6.10	0.264	12.0	0.99	4.34	-26	25.91	

SAMPLE TIME: 1350 SAMPLE #

DO: 1 mg/L CO_2: 35 ppm Fe: >10 mg/L

Location DO59 Date 4/8/13

Project / Client Gw sampling Lewis J Hydrotech

HMW-303-5-APR13

HMW-303-5--APR13 SAMPLE #6

DTW: 25.58 TD: 33.76 2" Stand Sample depth: 29.5

Time	pH	cond	NTU	DO	Temp	ORP	DTW	Flow
1454	6.25	0.375	18.7	19.0	5.24	-13	25.58	200 mL
1457	6.21	0.378	17.9	1.77	5.50	-19	25.59	
1500	6.20	0.377	16.5	1.60	5.54	-22	25.60	
1503	6.22	0.377	17.7	1.44	5.61	-25	25.61	200 mL
1506	6.23	0.376	16.3	1.22	5.68	-27		
1509	6.23	0.375	17.1	1.22	5.69	-30	25.61	200 mL
1512	6.23	0.373	14.8	2.33	5.75	-30		
1515	6.23	0.370	14.9	2.55	5.79	-31	25.62	
1518	6.23	0.370	13.2	3.16	5.78	-32		
1521	6.24	0.370	14.9	3.14	5.68	-33	25.62	200 mL
1524	6.24	0.367	13.9	2.91	5.71	-34	25.62	

SAMPLE # [HMW-303-5-Apr13] DUPLICATE

SAMPLE TIME 1528

DO: .05 mg/L CO_2: 70 ppm Fe: >10 mg/L

Location DO59 Date 4/8/13

Project / Client Gw sampling Lewis J Hydrotech

~~HMW-303-5~~ HMW-303-6-APR13

HMW-303-6-APR13 SAMPLE #6

DTW: 26.43 TD: 35.07 2" Stand Sample depth: 30

Time	pH	cond	NTU	DO	Temp	ORP	DTW	Flow
1616	5.92	0.244	13.2	2.13	5.55	8	26.43	200 mL
1619	5.86	0.249	9.6	1.57	5.66	8	26.47	
1621	5.88	0.252	7.4	1.37	5.72	8		
1624	5.89	0.256	5.9	1.24	5.79	6	26.47	200 mL
1627	5.90	0.259	5.7	1.26	5.83	4		
1630	5.92	0.260	5.5	1.15	5.91	3		

SAMPLE TIME: 1632

DO: 0.6 mg/L CO_2: 70 ppm Fe: >10 mg/L

Location D059 Date 4/8/13

Project / Client GW Sampling

D Lewis J Highstone

MW-303-29-APR13

MW-303-29-apr13 Sample log

DTW: 24.44 TD: 34.03 2" Sched 40 Sample depth: 30'

Time	pH	cond	NTU	DO	temp	ORP	DTW	Flow
1719	6.11	0.195	16.0	2.89	4.69	-6	24.94	200 mL
1722	6.16	0.195	10.3	2.28	4.51	6	24.94	200 mL
1725	6.18	0.196	14.3	1.71	4.48	4	24.94	200 mL
1728	6.16	0.196	13.7	1.37	4.39	4	24.94	200 mL
1731	6.18	0.196	10.4	1.00	4.39	5		
1734	6.16	0.196	8.0	0.87	4.45	4	24.95	200 mL
1737	6.19	0.196	5.3	0.70	4.49	4		
1740	6.19	0.196	4.0	0.65	4.53	2	24.95	200 mL
1743	6.21	0.197	3.0	0.66	4.49	1		

SAMPLE TIME: 1745

DO: 1 mg/L CO_2: 20 ppm Fe: 1 mg/L

Location D059 Date 4/9/13

Project / Client GW Sample

D Lewis J Highstone

Weather 34° overcast wind

0800 mob, calibrate Horiba + PID

Horiba reading pH 3.97
cond 4.67
NTU 0

PID reading 103 ppm

0815 H+S meeting

0835 Set up on MW-303-30

0920 Sample # 303-30-Apr13

1005 Set up at MW-303-38

1053 Sample # 303-38-Apr13

1130 Eat Lunch

1255 Set up at MW-303-43

1330 303-43-Apr13 collected

1350 MW-303-44 set up

~~1455 Set.~~

1430 Sample # 303-44-Apr13

1455 Set up on ~~MW-42 303-42~~
MW-303-42

~~1605~~ 1530 Sample # 303-42-Apr13

1605 Setup at MW-303-47

1648 Sample # 303-47-Apr13

1715 at Bunker emptying purgewater

Location D059 Date 4/9/13

Project / Client GW

D Lewis J Hightstone

1730 demobing, arranging blue ice in cooler, they are not freezing very fast.

Safety Observation: There is traffic on ADAK, don't take it for granted

Location D059 Date 4/9/13

Project / Client GW

D Lewis

MW-303-30 Apr 13

MW-303-30 Apr 13 SAMPLE LOG

DTW: 26.02 TD: 35.05 2" stand Sample depth: 30'

TIME	pH	COND µM	DO	TEMP	ORP	DTW	Fe
854	5.50	0.354	46.2	2.44	3.67	91	26.02	200
857	6.06	0.326	44.3	1.50	3.93	51		
900	6.14	0.309	42.2	1.12	4.03	40	26.02	200
903	6.14	0.295	37.6	0.93	3.99	34		
906	6.15	0.289	37.0	0.83	4.00	29	26.03	200
909	6.17	0.283	35.2	0.77	4.01	23		
912	6.19	0.280	31.1	0.74	4.03	21	26.03	200
915	6.20	0.280	28.5	0.72	4.02	16		
918	6.22	0.280	26.7	0.70	4.06	13	26.03	

SAMPLE TIME 920

DO: 0 mg/L CO_2: 100 ppm Fe: 710 mg/L

MW-303-38-Apr13 Sample Log

DTW: 23.48 TD: 30.55 4" steel Sample depth 27'

TIME	PH	COND	NTU	DO	TEMP	ORP	DTW	Fe
1027	6.29	0.204	32.2	2.33	3.72	2		200
1030	6.28	0.201	31.4	1.70	3.91	12		
1033	6.31	0.199	28.1	1.34	4.00	17		200
1036	6.22	0.198	24.4	1.04	4.09	21		
1039	6.23	0.198	25.8	0.85	4.14	26		200
1042	6.24	0.199	24.2	0.69	4.13	25		
1045	6.25	0.200	20.6	0.64	4.17	26		200
1048	6.27	0.200	19.2	0.60	4.22	27		
1051	6.27	0.201	19.5	0.57	4.26	27		200

Zip tie tubing to water level meter to lower to depth, no DTW readings

SAMPLE TIME 1053

DO: 0.8 mg/L CO2: 19ppm Fe: 10 mg/L

Location DO59 Date 4/9/13
Project / Client Crw
Jesus J Hughstone
MW-303-38-Apr13
12

MW-303-43-Apr13 SAMPLE LOG

DTW: 26.32 TD: 33.87 2" steel SAMPLE DEPTH: 30'

TIME	PH	COND	NTU	DO	TEMP	ORP	DTW	Fe
1309	6.10	0.141	13.4	3.46	5.23	82	26.32	200
1312	6.01	0.143	14.8	3.01	5.46	87		
1315	6.01	0.147	11.7	2.72	5.67	86	26.34	200
1318	5.99	0.147	12.0	2.43	5.73	87		
1321	5.99	0.151	10.9	2.65	5.89	86	26.34	200
1324	5.98	0.154	10.4	2.88	5.92	86		
1327	5.94	0.155	10.0	2.42	5.95	84	26.34	200

~~Zip tie tubing to water level meter to lower to depth - no DTW readings~~

SAMPLE TIME 1330

DO: 3 mg/L CO2: 25ppm Fe: 6 mg/L

Location DO59 Date 4/9/13
Project / Client Crw
Jesus J Hughstone
MW-303-43-Apr13
13

Location D059

Project / Client GW

Date 4/9/13

Lewis J Highstreet

MW-303-44 Apr 13

MW-303-44-Apr13 SAMPLE LOG

DTW: 26.65 TD: 33.34 2" Stand SAMPLE DEPTH: 30'

TIME	PH	COND	NTU	DO	TEMP	ORP	DTW	FLO
1408	5.94	0.187	12.7	5.15	5.59	73	26.65	200
1411	5.92	0.189	13.4	4.10	5.70	89		
1414	5.96	0.190	13.4	3.92	5.76	96	26.66	200
1417	5.96	0.192	11.7	3.53	5.81	103		
1420	5.96	0.192	11.4	3.66	5.81	107	26.66	200
1423	5.96	0.193	11.2	3.64	5.84	111		
1426	5.97	0.193	11.2	3.39	5.79	115	26.67	
1429	5.96	0.192	10.8	3.24	5.82	116	26.67	200

SAMPLE TIME: 1430

DO: 5 mg/L CO_2: 23 ppm Fe: 0 mg/L

Location D059

Project / Client GW

Date 4/9/13

D Lewis J Highstreet

MW-303-42 Apr 13

MW-303-42-Apr13 SAMPLE LOG

DTW: 26.44 TD: 33.28 2" Stand Sample Depth: 30

TIME	PH	COND	NTU	DO	TEMP	ORP	DTW	FLO
1511	6.09	0.355	22.5	2.34	5.86	57	26.45	200
1514	6.27	0.363	21.7	2.39	5.90	31		
1517	6.34	0.369	18.8	2.20	5.96	15	26.46	200
1520	6.38	0.368	18.3	2.27	5.96	10		
1523	6.38	0.368	18.2	2.14	5.97	7	26.46	200
1526	6.38	0.367	17.8	2.02	5.99	6		
1529	6.38	0.368	17.4	1.92	5.93	5	26.47	200

SAMPLE TIME: 1530

DO: 1 mg/L CO2: 25 ppm Fe: 25 mg/L

Location D059 Date 4/9/13

Project / Client Cw

Lewis J Highstone MW-303-47-Apr13

MW-303-47-Apr13 Sample Log Sample depth: 28'

DTW: 20.01 TD: 33.13

Time	pH	cond	NTU	DO	Temp	ORP	DTW	FLO
1624	6.25	0.184	50.7	3.94	5.18	-1	20.01	200
1627	6.00	0.182	44.6	3.03	5.34	39		
1630	6.00	0.182	50.9	2.57	5.39	50	20.02	200
1633	5.99	0.185	56.8	2.38	5.37	54		
1636	6.03	0.193	51.2	1.93	5.45	54	20.02	200
1639	6.03	0.199	47.0	1.67	5.41	55		
1642	6.05	0.203	41.7	1.34	5.45	55		
1645	6.06	0.207	38.4	1.20	5.58	54	20.02	200

SAMPLE TIME: 1648

DO: 1mg/L CO2: 30ppm FE: 5mg/L

Location D059 Date 4/10/13

Project / Client Cw

Lewis J Highstone

Weather: 32° snow

0800 Meeting, calibrating Horiba + PID.

Horiba pH: 3.95

cond: 4.65

NTU: 0.0

PID: 100.0 ppm

0845 H&S meeting

0934 Sample # 303-40 APR13

1020 Setup at 03-012

~~1200~~ 1057 Sample # 03-012 Apr13

1200 Eat Lunch

1300 Back on site set up at MW-303-37

1342 Sample # 303-37-Apr13

1415 Setup at MW-303-39

1454 Sample # 303-39-Apr13

1535 Set up on MW-303-31

1608 Sample # 303-31-Apr13

1700 At further dumping purge water, ~~to~~ down

Safety observation: lifting ~~300~~ purge water - square up, don't twist

MW-303-40apr13

Sample Log

DTW: 5.63 TD: 17.82 4" Stand Sampledepth: 13'

Time	pH	Cond	NTU	DO	Temp	ORP	DTW	FLO
0910	4.87	~~7.66~~ 0.193	~~0.193~~ 43.6	5.86	2.99	266	5.89	200 ml/min
0913	5.02	0.190	28.7	3.25	3.07	213	5.97	
0916	5.52	0.184	19.2	2.86	3.00	198	5.98	
0919	5.74	0.178	17.6	2.63	2.97	178	6.03	200 ML MIN
0922	5.81	0.174	16.9	2.51	2.95	166	6.04	
0925	5.82	0.169	10.4	2.58	2.95	160	6.04	200 ML MIN
0928	5.78	0.166	12.3	2.46	2.97	155	6.04	
0931	5.84	0.164	8.9	2.41	2.96	151	6.04	200 ML MIN

SAMPLE TIME: 0934

DO: 3 mg/L CO2: 20 ppm FE: >1 mg/L

Location D059

Project / Client GW Alliance Highlands

Date 4/10/13

MW-303-40-apr13

18

03-012-APR13

Sample Log

DTW: 7.29 TD: 11.50 2" stand Sampledepth: 9'

TIME	pH	COND	NTU	DO	TEMP	ORP	DTW	FLO
1037	6.16	0.167	9.6	7.58	2.73	168	7.29	200ml/MIN
1040	6.01	0.165	2.0	6.50	2.77	179	7.32	
1043	5.91	0.165	0.3	5.52	2.77	184	7.32	200ml/MIN
1046	5.83	0.167	0.6	5.31	2.76	186	7.33	
1049	5.83	0.166	0.0	5.16	2.73	183	7.33	200 ml/MIN
1052	5.82	0.166	0.0	5.12	2.74	182	7.33	
1055	5.83	0.165	0.0	4.96	2.72	181	7.34	200 ml/MIN

SAMPLE TIME: 1057

DO: 4 mg/L CO2: 14 ppm FE: 0 mg/L

Location D059

Project / Client GW Alliance Highlands

Date 4/10/13

03-012-APR13

19

Location: DO59
Project / Client: Lewis Alfaro Grv
Date: 4/10/13

303-37-Apr13 Sample Log

DTW: 12.01 TD: 18.48 2" stand Sample depth 15'

Time	pH	Cond	NTU	DO	Temp	ORP	DTW	Flow
1325	6.31	0.112	8.4	11.45	5.10	148	12.01	200 mL MIN
1328	6.12	0.111	7.3	10.18	5.05	172	12.02	
1331	6.04	0.108	6.5	9.99	4.98	184	12.02	200 mL MIN
1334	6.00	0.108	4.1	9.93	4.94	191	12.02	
1337	5.99	0.109	2.5	9.88	4.96	194	12.03	200 mL MIN
1340	5.99	0.108	1.5	9.80	5.00	196	12.03	200 mL MIN

SAMPLE TIME: 1342

DO: 10 mg/L CO_2: 18 ppm Fe: 0 mg/L

Location: DO59
Project / Client: Lewis Alfaro Grv
Date: 4/10/13

303-39-Apr13 Sample Log

DTW: 19.99 TD: 28.78 2" stand Sample depth: 25'

Time	pH	Cond	NTU	DO	Temp	ORP	DTW	Flow
1434	6.02	0.225	5.4	11.71	6.02	118	–	200 mL
1437	5.84	0.231	4.9	10.26	5.91	100	–	
1440	5.78	0.232	4.4	9.63	5.85	91	–	200 mL MIN
1443	5.78	0.234	3.9	9.28	5.64	84	–	
1446	5.78	0.236	3.7	9.02	5.51	80		200 mL MIN
1449	5.79	0.236	3.2	8.75	5.49	76		
1452	5.80	0.237	3.4	8.61	5.39	74		200 mL MIN

had to jiggle the tubing to water level ~~No~~ after DTW measure

SAMPLE TIME: 1454

DO: 8 mg/L CO_2: 25 ppm Fe: > 10 mg/L

Location D059 Date 4/10/13

Project / Client GW

DLewis J Highstone 303-31-Apr13

303-31-Apr13 Sample Log 2" Steel Sample depth: 30'

DTW: 25.77 TD: 34.14

Time	pH	Cond	NTU	DO	Temp	ORP	DTW	Vol
1553	6.08	0.169	0.3	3.78	5.31	60	25.77	200 mL MEW
1556	5.96	0.169	0.3	1.62	5.31	73	25.78	
1559	5.92	0.168	0.0	0.49	5.35	78	25.79	200 mL MEW
1602	5.91	0.168	0.0	0.50	5.37	76	25.79	
1605	5.92	0.168	0.0	0.78	5.37	76	25.79	200 mL MEW

SAMPLE TIME: 1605

DO: 1mg/L CO2: 40ppm Fe: 1mg/L

Location D059 Date 4/11/13

Project / Client GW

DLewis J Highstone weather: 32° cloudy

0800 Pack 4 coolers for shipment

0930 Met for sampling

Calibrate PID & Horiba

PID: 101 ppm

Horiba pH: 3.95

Cond: 4.67

Turb: 0.0

0955 Set up at MRP-MW2

1052 Sample # MRP-MW2-Apr13

303-DUP1-Apr13

1130 Eat Lunch

1300 at airport delivering 4 coolers to Gold Streak for shipment. John Mathes, working @ airport

1340 Set up at MW-303-32

1425 Sample # 303-32-Apr13

1505 Set up at MW-303-33

Casing is bent, can't get water level down, tubing only. Well is dry, sludge on bottom, no sample

MRP-MW2-Apr-13 SAMPLE LOG- Sample DEPTH: 23'

DTW: 19.03 TD: 26.92 2" Stand

Time	PH	Cond	NTU	DO	Temp	ORP	DTW	Flow	
1034	5.41	0.384	77.4	4.00	4.93	130	—	200 ml	HAD TO ZIP TIE TUBING TO WATER LEVEL. NO DTW MEASUREMENT
1037	5.95	0.388	43.0	1.08	5.14	27	—		
1040	6.20	0.397	50.3	0.89	5.14	1	—	200 ml	
1043	6.34	0.405	42.0	0.82	5.19	-10	—		
1046	6.39	0.408	42.2	0.77	5.27	-19	—	200 ml/min	
1049	6.40	0.409	38.1	0.73	5.37	-22	—	200 ml	

SAMPLE TIME 1052

DO: 0.05 mg/L CO2: 5ppm FE: > 10mg/L

Location D059 Project / Client GW Date 4/11/13

MRP-MW2-Apr13

24

MW-303-32 apr 13 Sample Log

DTW: 22.07 TD: 31.20 2" stand Sample depth: 27'

Time	PH	Cond	NTU	DO	Temp	ORP	DTW	Flow
1402	6.50	0.376	5.9	6.93	6.49	6	22.08	200ml/min
1405	6.52	0.380	7.5	5.32	6.35	-23	22.08	200ml
1408	6.52	0.383	7.2	5.57	6.33	-32		
1411	6.53	0.386	6.2	4.80	6.33	-40	22.08	200ml
1414	6.55	0.386	6.0	4.11	6.39	-47		
1417	6.57	0.386	5.9	3.71	6.49	-53	22.08	200ml
1420	6.58	0.385	5.9	3.62	6.54	-54		
1423	6.58	0.384	5.7	3.47	6.60	-55		

Sample time: 1425

DO: 3mg/L CO2: 50ppm Fe: > 10mg/L

Location D059 Project / Client GW Date 4/11/13

MW-303-32-Apr13

25

Location D059

Project / Client GW

Date 4/11/13

303-33-Apr13

303-33-apr13

SAMPLE LOG

DTW: — TD: — 2" Sand

SAMPLE DEPTH:

TIME	pH	cond	NTU	DO	Temp	ORP	DTW	Flo
1543	4.65	0.342	126	8.70	8.51	-62	—	

casing bent, can't get water level down. Water very turbid, organic material, reddish brown. Well dry, sludge on bottom

No sample

Location D059

Project / Client GW

Date 4/11/13

04-211-Apr13

04-211-Apr13

Sample Log

DTW: 21.87 TD: 30.27 2" flush Sample depth: 26'

Time	pH	cond	NTU	DO	Temp	ORP	DTW	Flo
1638	6.72	0.416	62.3	2.32	10.24	-8	21.87	200 ml/min
1641	6.48	0.441	44.1	1.27	6.21	-16	21.87	200
1644	6.50	0.443	48.0	1.10	6.06	-25	21.87	200
1647	6.51	0.440	52.5	1.03	6.02	-29	21.87	200
1650	6.52	0.433	56.7	0.93	5.95	-34	21.87	200
1653	6.55	0.426	63.1	0.86	5.93	-36		
1656	6.58	0.424	63.0	0.81	5.92	-38		

Sample time: 1700

DO: 0.8 mg/L CO_2: 50ppm Fe: >10mg/L

Location D059 Date 4/11/13

Project / Client GW

DLewis

1610 Setup on 04-211
1700 Sample # 04-211-apr13
1730 Setup on MW-303-46
1835 Sample 303-46-apr13

safety observation: make room in back of truck to access purge water drum, don't step over equipment.

Location D059 Date 4/11/13

Project / Client GW

MW-303-46-apr13

Sample Log

MW-303-46-APR13

DTW: 24.53 TD: 30.05 2" Screened Sampled depth: 27

Time	pH	cond	ntu	DO	Temp	ORP	DTW	flow
1805	6.03	0.000	689	8.65	9.92	-43	25.00	200 ml/min
1808	6.41	0.251	>1000	3.64	9.71	0	25.30	150
1811	6.19	0.252	>1000	5.72	9.40	19	25.43	100
1814	6.10	0.251	>1000	6.16	9.15	20	25.43	100
1817	6.05	0.248	645	6.13	8.92	38	25.43	100
1820	6.03	0.246	363	6.14	8.71	45	25.43	
1823	6.02	0.247	241	6.14	8.56	50	25.43	100
1826	6.02	0.247	238	6.13	8.50	53		
1829	6.01	0.248	230	6.12	8.47	57		
1832	6.00	0.50	227	6.11	8.45	58		

Sample time: 1835

field not filtered kit required

Location D059 Date 4/12/13

Project / Client GW

Drew J Highstone weather: 32°, cloudy

0800 mob, calibrate PID & Horiba

PID: 101 ppm

Horiba PH: 3.94

cond: 4.60

NTU: 0.0

0910 Sample # 303-28-apr13

Duplicate 303-DUP2-apr13

Duplicate was supposed to be collected at MW-303-33 but was unable to sample. Changed ~~request to~~ analysis from benzene to PCE to match MW-303-28

0955 going to Barber to empty purge water.

1025 Set up at MW-303-45

1100 SAMPLE # 303-45-APR13

1130 Eat lunch

1250 Set up at MW-1451-1

.30 ft. product DTP: 6.56 DTW: 6.86

~~at~~ 1300 Checking 1451-2, 1451-3, 1451-4

TD: 14.47	1451-2	DTP: —	DTW: 6.04
TD: 13.63	1451-3	DTP: —	DTW: 5.29
TD: 14.55	1451-3	DTP: —	DTW: 6.08

Location D059 Date 4/12/13

Project / Client GW

MW-303-28-APR13

MW-303-28-Apr 13 SAMPLE LOG

DTW: 26.33 TD: 33.48 2" Stained SAMPLE DEPTH: 27'

Time	PH	Cond.	NTU	DO	Temp	ORP	DTW	Flo	
0847	5.45	0.372	7.4	1.29	5.04	123	26.33	200 mL MIN	
0850	6.11	0.381	2.6	0.78	5.22	48	26.33		
0853	6.15	0.389	4.7	0.64	5.28	46	26.33	200 mL MIN	
0856	6.23	0.394	8.2	0.62	5.28	30	26.34		
0859	6.28	0.394	23.7	0.58	5.26	19	26.34	200 mL MIN	
0902	6.31	0.394	10.0	0.55	5.23	12	26.34		
0905	6.35	0.393	10.2	0.53	5.25	10	26.34	200 mL MIN	
0908	6.33	0.394	10.4	0.52	5.24	8	26.35	200 mL MIN	

SAMPLE TIME: 0910

DO: 0.5 mg/L CO_2: 125 ppm Fe: > 10 mg/L

Location DOS9 Date 4/12/13

Project / Client GW

MW-303-45-apr13

MW-303-45-apr13 SAMPLE LOG

DTW: 27.66 TD: 30.05 2" ~~too it tough~~ stand SAMPLE DEPTH: 29.0 29.5

TIME	pH	cond	NTU	DO	Temp	ORP	DTW	FLO
1046	6.01	0.147	0.0	8.74	4.04	16	—	100 ML MIN
1049	5.80	0.139	0.0	8.39	4.07	46	—	
1052	5.69	0.131	0.0	8.32	4.10	62	—	100 ML MIN
1055	5.63	0.125	0.0	8.24	4.14	76	—	
1058	5.63	0.121	0.0	8.17	4.14	83	—	

Sample time: 1100

no field test kit required

Location DOS-9 Date 4/12/13

Project / Client GW

MW-1451-5-apr13

MW-1451-5-apr13 SAMPLE LOG

DTW: 6.42 TD: 15.80 2" ~~too it tough~~ stand SAMPLE DEPTH: 10'

Time	pH	cond	NTU	DO	Temp	ORP	DTW	FLO
1329	6.09	0.106	0.0	4.34	4.40	137	6.45	200 ML MIN
1332	5.97	0.107	0.0	2.62	4.41	142	6.45	
1335	5.97	0.110	0.0	2.30	4.35	136	6.45	200 ml
1338	5.97	0.113	134	2.39	4.28	133	6.45	
1341	6.05	0.148	51.3	2.05	4.23	113	6.45	200 ML MIN
1344	6.09	0.159	50.3	1.80	4.20	109	6.45	

CONTINUOUS FLOW OF RUST COLORED ORGANIC MATERIAL IN WATER

SAMPLE TIME: 1347

DO: 1mg/L CO2: 16ppm FE: 6mg/L

Location D059 Date 4/12/13

Project / Client GW

Lewis J Hughstone

MW-1451-5 DTP: dkeen — DTW 6.42 TD: 15.80

1320 Set up at MW-1451-5 vent
colour organic material

1347 Sample # 1451-5-apr13

1410 Set up at MW-1451-6
.18' product
DTP: 4.84 DTW: 5.02

1420 Set up on MW-1451-7
.30' product DTP: 6.35 DTW: 6.55

1430 Set up at MW-1451-9

1458 Sample # ~~MW~~ 1451-9-apr13

1515 Set up at MW-1451-8

1541 Sample # 1451-8-apr13

1610 Set up at 01-118

1639 Sample # 01-118-apr13
duplicate 1451-DUP1-apr13

1725 at Burker dropping purge water

1740 Backed cars - leaving

Safety observation - using vehicle to block wind while sampling.

Location D059 Date 4/12/13

Project / Client GW

MW-1451-9-apr13

MW-1451-9 apr13

DTW: 7.98 TD: 16.18 Screened Sample depth: 12'

time	pH	cond. mS/cm	DO	Temp	ORP	DTW	Flow
1444	6.28	0.150	57.2	1.50	5.07	34	7.98	200 ml MIN
1447	6.09	0.162	28.0	0.63	4.80	34	8.01
1450	6.10	0.164	23.4	0.58	4.79	31	8.01	200 ml MIN
1453	6.12	0.171	19.3	0.52	4.78	28	8.01
1456	6.13	0.175	18.9	0.49	4.79	22	8.01	200 ml MIN

SAMPLE TIME: 1458

no field test kit required

Location D059 Date 4/12/13

Project / Client Grw

Louis A Hightower

MW-1451-8-apr13

1451-8-apr 13 Sample Log

DTW: 6.05 TD: 16.11 2" stand Sample depth: 11'

Time	PH	Cond	NTU	DO	Temp	ORP	DTW	Flow
1527	6.32	0.127	72.0	3.69	4.53	-6	6.08	200 ML MIN
1530	6.13	0.131	35.5	0.87	4.46	20	6.09	
1533	6.07	0.136	27.1	.73	4.47	26	6.09	200 ML MIN
1536	6.08	0.137	20.8	.67	4.48	28	6.09	
1539	6.08	0.138	19.8	.66	4.45	29	6.09	200 ML MIN

SAMPLE TIME: 1541

no field test kit required

Location D059 Date 4/12/13

Project / Client Grw

01-118-apr13

01-118-apr 13 Sample Log

DTW: 15.10 TD: 29.50 SAMPLE DEPTH: 24'

Time	PH	Cond	NTU	DO	Temp	ORP	DTW	Flow
1625	6.29	0.406	28.1	1.84	6.76	7	15.10	200 ML MIN
1628	6.26	0.415	56.1	0.81	6.46	0	15.11	
1631	6.25	0.423	11.9	0.67	6.34	-8	15.13	200 ML MIN
1634	6.27	0.433	11.8	0.61	6.29	-15	15.13	
1637	6.30	0.435	10.3	0.58	6.27	-19	15.14	200 ML MIN

SAMPLE TIME: 1639

no field test kit required

Location D059 Date 4/13/13

Project / Client GW

D Lewis J Hightstone Weather, 34° overcast wind

0800 meet, calibrate Horiba + PID

PID: 98 ppm

Horiba: pH: 3.97

cond: 4.66

Turb: 0.0

0825 H+S meeting

0840 Set up at MW-303-41

0923 Sample # 303-41-Apr13

1005 Set up at MW-1451-4

1036 Sample # 1451-4-APR13

1110 Eat Lunch

1240 Set up on MW-1451-3

1310 Sample # 1451-3-apr13

DUPLICATE 1451-DUP2-APR13

1350 Set up at MW-1451-2

1432 Sample 1451-2-apr13

1500 Set up at 01-150

1532 Sample # 01-150-apr13

1600 at Bunker emptying purge water

1615 demobing

Safety observation: parked on shoulder of Mangi Road to do 01-150, wore safety vest & kept careful eyes on traffic.

Location D059 Date 4/13/13

Project / Client GW

MW-303-41-APR13

MW-303-41-APR13 DTW: 18.35 TD: 25.68 4" STAND Sample Long Sample depth: 22'

TIME	pH	COND	ATM	DO	TEMP	ORP	DTW	PID
0857	5.33	0.300	93.7	3.58	3.94	190	18.36	200 ml MIN
0900	5.94	0.245	59.4	3.91	4.00	106	18.42	
0903	6.11	0.253	37.4	3.00	4.03	70	18.42	200 ml MIN
0906	6.23	0.247	18.5	1.80	4.09	43	18.42	
0909	6.29	0.243	11.7	2.90	4.09	28	18.43	200 ml MIN
0912	6.35	0.241	6.7	3.67	4.09	18	18.50	
0915	6.40	0.241	3.4	3.04	4.08	10	18.61	200 ml MIN
0918	6.45	0.240	3.3	3.24	4.13	2	18.77	
0921	6.47	0.239	4.0	4.17	4.15	-1	18.85	

SAMPLE TIME: 0923

DO: 2mg/L CO2: 40 ppm FE: >10 mg/L

Location D059

Project / Client GW

Date 4/13/13

MW-1451-4-APR13

~~MW~~ MW-1451-4-APR13 Sample Log

DTW: 5.88 TD: 14.90 2" Stand Sampledepth: 11

Time	pH	cond	NTU	DO	Temp	ORP	DTW	Flo
1020	6.25	0.233	6.5	5.20	4.43	-1	5.88	200 ml min
1023	6.26	0.231	5.0	4.05	4.57	21	5.88	
1026	6.27	0.231	4.0	3.76	4.63	29	5.88	200 ml min
1029	6.28	0.231	2.8	3.61	4.64	38	5.88	
1031	6.24	0.232	2.4	3.55	4.66	43	5.88	200 ml min
1034	6.27	0.234	2.6	3.46	4.42	46	5.89	200 ml min

SAMPLE TIME: 1036

DO: 4 mg/L CO2: 15 ppm Fe: 0 mg/L

Location D059

Project / Client GW

Date 4/13/13

MW-1457-3-APR13

MW-1457-3-apr13 Sample Log

DTW: 5.07 TD: 13.65 2" Stand SAMPLEDEPTH: 10'

TIME	pH	cond	NTU	DO	TEMP	ORP	DTW	Flo
1253	6.37	0.816	18.7	3.29	3.83	108	5.13	200 ml min
1256	6.64	0.792	12.9	1.91	4.00	82	5.14	
1259	6.68	0.702	11.2	1.31	4.02	61	5.14	200 ml min
1302	6.70	0.629	12.3	0.72	4.03	42	5.14	
1305	6.71	0.606	12.2	0.60	4.05	29	5.15	200 ml min
1308	6.71	0.590	12.8	0.59	4.08	20	5.15	

SAMPLE TIME 1310

DO: 0.8 mg/L CO2: 50 ppm Fe: 8 mg/L

Location D059

Project / Client GW

Date 4/13/13

MW-1451-2-apr13

MW-1451-2-apr13 Sample Log

DTW: 5.84 TD: 14.55 2" stand sample depth: 10'

Time	pH	Cond	NTU	DO	Temp	ORP	DTW	Flo
1400	6.46	2.20	364	2.07	4.19	4	5.89	200 ML MIN
1409	6.55	2.06	267	1.58	4.09	0	5.90	
1412	6.56	1.92	209	1.16	4.05	-3	5.90	200 ML MIN
1415	6.57	1.73	163	0.89	4.04	-6	5.90	
1418	6.58	1.61	130	0.62	4.04	-9	5.90	200 ML MIN
1421	6.58	1.48	101	0.84	4.03	-11	5.91	
1424	6.59	1.39	86.8	0.73	4.01	-14	5.91	200
1427	6.60	1.28	74.6	0.68	3.98	-17	5.91	
1430	6.60	1.22	65.6	0.61	3.99	-19	5.91	

SAMPLE TIME: 1432

DO: 1mg/L CO2: 45ppm Fe: > 10mg/L

Location D059

Project / Client GW

Date 4/13/13

01-150-apr13

01-150-apr13 Sample Log

DTW: 18.82 TD: 27.08 SAMPLE DEPTH: 23'

Time	pH	Cond	NTU	DO	Temp	ORP	DTW	Flo
1515	6.74	0.235	55.1	3.01	4.94	-23	19.43	200 ML MIN
1518	6.23	0.244	35.4	1.49	5.16	2	19.43	
1521	6.32	0.264	37.6	0.99	5.29	-2	19.45	200 ML MIN
1524	6.39	0.332	28.2	0.85	5.34	-6	19.46	
1527	6.41	0.357	27.3	0.79	5.42	-9	19.47	200 ML MIN
1530	6.42	0.360	27.0	0.72	5.44	-10	19.48	200 ML MIN

SAMPLE TIME: 1532

no field test kit required

Location D059 Date 4/15/13

Project / Client GW

Lewis J Highsmith Weather: high mid 34°, rain/snow

0800 Tubing
PID: 100.0 ppm
Horiba PH: 3.98
Cond: 4.45
NTU: 0.0

0845 Set up on MW-303-33 to try again to get sample. Hit solid sludge at approx 23' (measured tubing stuck down well.) Water level at MW-303-32 nearby is approximately 22', so raising tubing ~~at~~ out of sludge would be part of water level.

0900 Taking pictures of T-1451 area to show remediated site conditions. Area looks good + level, no sheen on water.

0930 Back at condo doing a little packing.

Safety observation: slip tripping traffic (or lack thereof) for granted. Need to check just

Location D059 Date 4/15/13

Project / Client GW

like at home.

Location D059 Date 4/16/13

Project / Client GW

DLewis Weather: 34°, rain, wind

0800 Mob to do E-701, calibrate
PID: 102 ppm
Horiba: pH: 4.02
Cond: 4.52
NTU: 0.0

0900 at Alaska petroleum checking on amount left on fuel account - card # 76.
$30.00 left, put it in vehicle.

0945 Set up at E-701

1100 Sample # E-701-Apr13

1110 at Condo, demobing, packing stuff up.

Safety observation: debris can be hidden in brush while driving across field.

Location D059 Date 4/16/13

Project / Client GW

E-701-Apr13

SAMPLE LOG

E-701-Apr13

DTW: 17.52 TD: 24.30

Sample depth: 31'

Time	pH	cond	NTU	DO	Temp	ORP	DTW	Flow
1007	7.96	0.152	7.4	11.55	4.32	179	17.52	200 ml/min
1010	7.62	0.152	7.2	10.59	4.35	197	17.52	200
1013	7.43	0.149	7.3	10.30	4.37	204		
1016	7.18	0.146	7.3	10.49	4.40	221	17.52	200
1019	7.06	0.145	7.2	10.16	4.41	224		
1022	6.97	0.144	6.8	10.10	4.42	226		
1025	6.95	0.141	6.6	10.07	4.43	228		

Sample time: 1100

DO: 10 mg/L CO_2: 100 ppm Fe: 0 mg/L

Location D059 Date 4/17/13

Project / Client GW sampling

Lewis J Highstone 37°, rain

0800 Mob to sample 1DW

0900 Sample # 303-1DW-Apr13

1010 at house demobing

Location Date

Project / Client

AREA 303 | T-1451 7-19-13

0800 - HEALTH + SAFETY PHONE MEETING WITH A. LEWIS.

0815 - REVIEW ORIGINAL SAP AND FIELD NOTES

0845 - AT GAS STATION FOR FUEL

0910 - AT BUNKERS FOR SUPPLIES

0940 - AT 111A TO CALIBRATE HORIBA AND PID AND REVIEW TEST KITS FOR PROCEDURES.

PID CALIBRATION : 100.0

HORIBA CALIBRATION : PH - 3.74
TURB - 0.0
COND - 4.51
MG/L DO - 0.0
% DO - 0.0

1100 - LUNCH

1210 - SET UP AT WELL 01-150

PID: 0.0 AT WELL HEAD, DTW: 19.74, DTB: 27.05

SAMPLE DEPTH AT MID SCREEN

1257 - START METER PARAMETERS - NO DO READINGS.

1315 - BREAK DOWN HORIBA AND CLEAN

1339 - START METER PARAMETERS - NO DO

1350 - AT 111A TO CLEAN AND RECALIBRATE HORIBA. PH - 3.83, TURB - 0.1, COND - 4.54, MGL/DO - 11.06, % DO - 113.0

[signature] 7-19-13

AREA 303 | T-1451 7-19-13

1420 - RESET UP AT WELL 01-150
1434 - START METER PARAMETERS - NO DO
1545 - SET UP AT WELL 01-118
1610 - START METER PARAMETERS - NO DO
NOTE PREVIOUS FIELD NOTES NOTATED LOW DO AT WELLS 01-150, 01-118. TO TROUBLESHOOT HORIBA METER, I MOVED TO WELL MW-1451-4 WHICH HAD HIGH PREVIOUS DO.
1640 - SET UP AT WELL MW-1451-4 NO DO READINGS.
1700 - AT 111A TO TROUBLESHOOT HORIBA CONTACTED HORIBA DISTRIBUTOR. WAS DETERMINED THAT THERE WAS FAULTY DO SENSOR. DISTRIBUTOR TO SEND REPLACEMENT METER TO MAKE THE 7/21/13 FLIGHT TO ADAK.
1800 - END OF DAY

7-19-13

AREA 303 / T-1451 7-21-13

CHECKED ALASKA AIRLINES CARGO. NO REPLACEMENT HORIBA METER ON FLIGHT. WILL CALL MONDAY 7-22-13 TO LOCATE METER.

7-21-13

AREA 303 | T-1451 7-22-13

CONTACTED HORIBA DISTRIBUTOR. METER DID NOT MAKE THE 7-21-13 FLIGHT DUE TO CLERICAL ERRORS ON THIER END. METER TO MAKE THURSDAYS FLIGHT (7-25-13) TO ADAK

7-22-13

AREA 303 | T-1451 7-26-13

0800 - PICK UP HORIBA METER AT ALASK AIR CARGO.

0815 - AT 11A TO CALIBRATE HORIBA AND PID.

PID CALIBRATION: 100.0

HORIBA CALIBRATION: PH - 3.99
TURB - 0.0
COND - 4.52
DO - 11.26

0845 - HEALTH + SAFETY PHONE MEETING WITH A. LEWIS.

0900 - SET UP AT WELL MW-1451-4

PID: 0.0 AT WELLHEAD, DTW: 6.23, DTB: 14.90

SAMPLE DEPTH AT MIDSCREEN, FLOW RATE: 200 mL/MIN

TIME	PH	COND	NTU	DO	TEMP	ORP	DTW	FLOW
0937	5.66	.242	0.0	2.85	7.33	141	6.25	200 mL/MIN
0940	5.93	.192	0.0	2.39	6.76	94	6.25	
0943	5.95	.181	0.0	2.50	6.66	85	6.26	
0946	5.95	.177	0.0	2.73	6.63	84	6.26	
0949	5.88	.176	0.0	2.92	6.65	83	6.26	
0952	5.88	.176	0.0	3.03	6.61	72	6.27	
0955	5.88	.176	0.0	3.03	6.57	70	6.27	
0958	5.87	.177	0.0	6.54	6.54	60	6.27	
1001	5.86	.177	0.0	6.56	6.56	55	6.28	
1004	5.86	.177	0.0	6.58	6.58	54	6.28	

7-26-13

AREA 303/T-1451 7-26-13

MW-1451-4 CONT.

DO: 2 mg/L CO2: 23 ppm FE: 0 mg/L

1100 - SET UP AT WELL 01-118

PID: 0.0 AT WELLHEAD, DTW: 16.55, DTB: 29.5

SAMPLE DEPTH AT MID SCREEN

TIME	PH	COND	NTU	DO	TEMP	ORP	DTW	FLOW
1116	6.08	.504	20.3	3.18	7.72	-72	16.56	200 ml/mn
1119	6.10	.509	20.8	2.18	7.36	-78	16.57	
1122	6.09	.510	21.2	1.48	7.19	-81	16.57	
1125	6.08	.510	21.9	1.18	7.11	-82	16.58	
1128	6.08	.510	22.3	1.10	7.07	-84	16.58	
1131	6.08	.510	22.3	1.04	7.04	-84	16.59	
1134	6.07	.506	21.9	1.03	7.07	-85	16.59	
1137	6.07	.508	22.1	1.11	7.08	-85	16.60	

SAMPLE TIME: 1138

DO: 0.2 mg/L CO2: 100 ppm FE: >10 mg/L

1350 - SET UP AT WELL 01-150

PID: 0.0 AT WELLHEAD, DTW: 19.94, DTB: 27.08

TIME	TEMP	PH	ORP	COND	NTU	DO	DTW	FLOW
1412	12.28	6.16	-2	.342	11.3	1.90	19.94	200 ml/mn
1415	11.84	6.16	-10	.339	10.8	1.18	19.96	
1418	11.51	6.15	-15	.339	11.5	0.94	19.98	
1421	11.35	6.16	-16	.340	11.2	0.92	20.10	
1424	11.22	6.15	-15	.341	11.5	0.99	20.28	125 ml/mn
1427	11.16	6.15	-15	.342	11.1	1.38	20.45	

AREA 303/T-1451 7-26-13

01-150 CONT.

TIME	TEMP	PH	ORP	COND	NTU	DO	DTW	FLOW
1430	11.15	6.15	-15	.343	11.2	1.15	20.52	125 ml/mn
1433	11.13	6.14	-16	.344	11.2	0.97	20.54	

SAMPLE TIME: 1434

DO: 0.6 mg/L CO2: 40 ppm FE: >10 mg/L

1450 - SET UP AT WELL MW-1451-5

PID: 0.0 AT WELLHEAD DTW: 7.01 DTB: 15.80

SAMPLE DEPTH AT MIDSCREEN

TIME	TEMP	PH	ORP	COND	NTU	DO	DTW	FLOW
1508	8.69	6.10	-9	.199	800	3.02	7.03	200 ml/mn
1511	8.14	6.02	3	.198	111	1.98	7.03	
1514	8.04	5.98	3	.197	102	1.23	7.04	
1517	8.09	5.98	3	.195	121	1.08	7.04	
1520	8.03	6.00	-3	.197	109	0.97	7.04	
1523	7.93	5.99	-5	.199	114	0.87	7.05	
1526	7.99	5.99	-5	.201	108	0.84	7.05	
1529	7.94	6.00	-7	.202	106	0.87	7.06	

SAMPLE TIME: 1530

DO: 0.2 mg/L CO2: 50 ppm FE: 10 mg/L

1550 - AT UNIT FOR PAPERWORK

1700 - END OF DAY

John A Lyhst 7-26-13

AREA 303 / T-1451 7-27-13

1000 - AT 11A TO PREP AND PACK EQUIPMENT FOR SHIPPING OUT ON 7-28-13 FLIGHT

1055 - AT BUNKERS TO DEMOBE MATERIALS AND PURGE WATER.

1115 - AT UNIT FOR PAPERWORK

1130 - END OF DAY

7-27-13

AREA 303 / T-1451 7-28-13

1300 - AT ALASKA AIR CARGO TO SHIP EQUIPMENT BACK TO VENDOR.

1400 - END OF DAY

7-28-13

APPENDIX B

Analytical Data, Forms 1

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13D072

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 17:20
Sample ID:	03-107-APR13	Date Analyzed:	04/15/13 17:20
Lab Samp ID:	D072-01	Dilution Factor:	1
Lab File ID:	RDW271	Matrix :	WATER
Ext Btch ID:	VO06D11	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	1.9	1.0	0.20	0.20
TETRACHLOROETHENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	12.7	10.00	127*	70-120
4-BROMOFLUOROBENZENE	13.7	10.00	137*	75-120
TOLUENE-D8	10.9	10.00	109	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 17:51
Sample ID:	303-42-APR13	Date Analyzed:	04/15/13 17:51
Lab Samp ID:	D072-02	Dilution Factor:	1
Lab File ID:	RDW272	Matrix :	WATER
Ext Btch ID:	V006D11	% Moisture :	NA
Calib. Ref.:	R8W214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	0.99J	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	15.9	10.00	159*	70-120
4-BROMOFLUOROBENZENE	11.0	10.00	110	75-120
TOLUENE-D8	11.5	10.00	115	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 15:20
Sample ID:	03-012-APR13	Date Analyzed:	04/16/13 15:20
Lab Samp ID:	D072-05R	Dilution Factor:	1
Lab File ID:	RDW298	Matrix :	WATER
Ext Btch ID:	V006D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.72	10.00	97.2	70-120
4-BROMOFLUOROBENZENE	10.9	10.00	109	75-120
TOLUENE-D8	11.0	10.00	110	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 18:21
Sample ID:	303-37-APR13	Date Analyzed:	04/16/13 18:21
Lab Samp ID:	D072-06R	Dilution Factor:	1
Lab File ID:	RDW304	Matrix :	WATER
Ext Btch ID:	VO06D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LDD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	10.8	10.00	108	75-120
TOLUENE-D8	11.0	10.00	110	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : URS GROUP, INC.	Date Collected: 04/09/13
Project : D059 ADAK AREA 303 ROM	Date Received: 04/12/13
Batch No. : 13D072	Date Extracted: 04/15/13 18:50 # 04/16/13 17:51
Sample ID: 303-30-APR13	Date Analyzed: 04/15/13 18:50 # 04/16/13 17:51
Lab Samp ID: D072-07 #D072-07T	Dilution Factor: 1 # 25
Lab File ID: RDW274 #RDW303	Matrix : WATER
Ext Btch ID: V006D11 #V006D12	% Moisture : NA
Calib. Ref.: RBW214 #RBW214	Instrument ID : 06

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	BENZENE	0.76J	1.0	0.20	0.20
#	ETHYLBENZENE	820	25	5.0	5.0
#	M,P-XYLENES	990	50	10	10
#	O-XYLENE	380	25	5.0	5.0
	TETRACHLOROETHENE	NO	1.0	0.20	0.20
#	TOLUENE	170	1.0	0.20	0.20

	SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
	1,2-DICHLOROETHANE-D4	15.7	10.00	157*	70-120
	4-BROMOFLUOROBENZENE	12.7	10.00	127*	75-120
	TOLUENE-D8	11.2	10.00	112	85-120
	DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115
#	1,2-DICHLOROETHANE-D4	246	250.0	98.5	70-120
#	4-BROMOFLUOROBENZENE	271	250.0	108	75-120
#	TOLUENE-D8	266	250.0	106	85-120
#	DIBROMOFLUOROMETHANE	267	250.0	107	85-115

Members of the Associated File

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 18:50
Sample ID	: 303-30-APR13	Date Analyzed:	04/15/13 18:50
Lab Samp ID	: D072-07	Dilution Factor:	1
Lab File ID	: RDW274	Matrix	: WATER
Ext Btch ID	: VO06D11	% Moisture	: NA
Calib. Ref.	: RBW214	Instrument ID	: 06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	0.76J	1.0	0.20	0.20
ETHYLBENZENE	120E	1.0	0.20	0.20
M,P-XYLENES	160E	2.0	0.40	0.40
O-XYLENE	130E	1.0	0.20	0.20
TETRACHLOROETHENE	ND	1.0	0.20	0.20
TOLUENE	89E	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	15.7	10.00	157*	70-120
4-BROMOFLUOROBENZENE	12.7	10.00	127*	75-120
TOLUENE-D8	11.2	10.00	112	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 17:51
Sample ID:	303-30-APR13DL	Date Analyzed:	04/16/13 17:51
Lab Samp ID:	D072-07T	Dilution Factor:	25
Lab File ID:	RDW303	Matrix :	WATER
Ext Btch ID:	V006D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	25	5.0	5.0
ETHYLBENZENE	820	25	5.0	5.0
M,P-XYLENES	990	50	10	10
O-XYLENE	380	25	5.0	5.0
TETRACHLOROETHENE	ND	25	5.0	5.0
TOLUENE	170	25	5.0	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	246	250.0	98.5	70-120
4-BROMOFLUOROBENZENE	271	250.0	108	75-120
TOLUENE-D8	266	250.0	106	85-120
DIBROMOFLUOROMETHANE	267	250.0	107	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 18:51
Sample ID:	303-31-APR13	Date Analyzed:	04/16/13 18:51
Lab Samp ID:	D072-08R	Dilution Factor:	1
Lab File ID:	RDW305	Matrix :	WATER
Ext Btch ID:	VD06D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.8	10.00	108	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 21:20
Sample ID:	303-38-APR13	Date Analyzed:	04/15/13 21:20
Lab Samp ID:	D072-09	Dilution Factor:	1
Lab File ID:	RDW279	Matrix :	WATER
Ext Btch ID:	VO06D11	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	1.4	1.0	0.20	0.20
ETHYLBENZENE	2.1	1.0	0.20	0.20
M,P-XYLENES	2.1	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	2.2	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	16.0	10.00	160*	70-120
4-BROMOFLUOROBENZENE	10.8	10.00	108	75-120
TOLUENE-D8	10.7	10.00	107	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 AOAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 21:50
Sample ID:	303-39-APR13	Date Analyzed:	04/15/13 21:50
Lab Samp ID:	D072-10	Dilution Factor:	1
Lab File ID:	RDW280	Matrix :	WATER
Ext Btch ID:	VO06D11	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	1.9	1.0	0.20	0.20
M,P-XYLENES	1.8J	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.96	10.00	99.6	70-120
4-BROMOFLUOROBENZENE	11.6	10.00	116	75-120
TOLUENE-D8	10.6	10.00	106	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 22:20
Sample ID	: 303-40-APR13	Date Analyzed:	04/15/13 22:20
Lab Samp ID	: D072-11	Dilution Factor:	1
Lab File ID	: RDW281	Matrix :	WATER
Ext Btch ID	: V006D11	% Moisture :	NA
Calib. Ref.	: RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	1.6	1.0	0.20	0.20
M,P-XYLENES	2.5	2.0	0.40	0.40
O-XYLENE	0.61J	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.7	10.00	107	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 19:21
Sample ID:	HMW-303-5-APR13	Date Analyzed:	04/16/13 19:21
Lab Samp ID:	D072-12R	Dilution Factor:	1
Lab File ID:	RDW306	Matrix :	WATER
Ext Btch ID:	V006D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
TETRACHLOROETHENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	11.6	10.00	116	75-120
TOLUENE-D8	11.0	10.00	110	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: DD59 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 19:51
Sample ID:	303-DUP3-APR13	Date Analyzed:	04/16/13 19:51
Lab Samp ID:	D072-13	Dilution Factor:	1
Lab File ID:	RDW307	Matrix :	WATER
Ext Btch ID:	VO06D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
TETRACHLOROETHENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.93	10.00	99.3	70-120
4-BROMOFLUOROBENZENE	11.5	10.00	115	75-120
TOLUENE-D8	11.1	10.00	111	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 20:21
Sample ID:	HMW-303-6-APR13	Date Analyzed:	04/16/13 20:21
Lab Samp ID:	D072-14	Dilution Factor:	1
Lab File ID:	RDW30B	Matrix :	WATER
Ext Btch ID:	VO06D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
TETRACHLOROETHENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLORDETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	11.8	10.00	118	75-120
TOLUENE-D8	10.7	10.00	107	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 15:50
Sample ID:	303-29-APR13	Date Analyzed:	04/16/13 15:50
Lab Samp ID:	D072-15	Dilution Factor:	1
Lab File ID:	RDW299	Matrix :	WATER
Ext Btch ID:	VD06D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
TETRACHLOROETHENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	10.9	10.00	109	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 16:21
Sample ID:	303-47-APR13	Date Analyzed:	04/16/13 16:21
Lab Samp ID:	D072-16	Dilution Factor:	1
Lab File ID:	RDW300	Matrix :	WATER
Ext Btch ID:	V006D12	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LDQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	10.5	10.00	105	75-120
TOLUENE-D8	11.1	10.00	111	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD SW5030B/B260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/18/13 14:21
Sample ID:	TRIP BLANK 1	Date Analyzed:	04/18/13 14:21
Lab Samp ID:	D072-17	Dilution Factor:	1
Lab File ID:	RDW346	Matrix :	WATER
Ext Btch ID:	V006D14	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TETRACHLOROETHENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLDROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	11.0	10.00	110	85-120
DIBROMOFLUOROMETHANE	11.1	10.00	111	B5-115

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 3520C/8270D SIM
PAH BY GC/MS SIM

SDG#: 13D072

METHOD SW3520C/8270D SIM
PAH BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 17:15
Sample ID:	03-012-APR13	Date Analyzed:	04/17/13 16:08
Lab Samp ID:	D072-05	Dilution Factor:	1.01
Lab File ID:	RDH163	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ACENAPHTHENE	ND	0.51	0.10	0.10
ACENAPHTHYLENE	ND	0.51	0.10	0.10
ANTHRACENE	ND	0.51	0.10	0.10
BENZO(A)ANTHRACENE	ND	0.51	0.10	0.10
BENZO(A)PYRENE	ND	0.51	0.10	0.10
BENZO(B)FLUORANTHENE	ND	0.51	0.10	0.10
BENZO(K)FLUORANTHENE	ND	0.51	0.10	0.10
BENZO(G,H,I)PERYLENE	ND	0.51	0.10	0.10
CHRYSENE	ND	0.51	0.10	0.10
DIBENZ(A,H)ANTHRACENE	ND	0.51	0.10	0.10
FLUORANTHENE	ND	0.51	0.10	0.10
FLUORENE	ND	0.51	0.10	0.10
INDENO(1,2,3-CD)PYRENE	ND	0.51	0.10	0.10
NAPHTHALENE	ND	0.51	0.10	0.10
PHENANTHRENE	ND	0.51	0.10	0.10
PYRENE	ND	0.51	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	16.7	20.20	82.7	40-135

METHOD SW3520C/8270D SIM
PAH BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 17:15
Sample ID:	303-37-APR13	Date Analyzed:	04/17/13 16:27
Lab Samp ID:	D072-06	Dilution Factor:	1
Lab File ID:	RDH164	Matrix	: WATER
Ext Btch ID:	SVD023W	% Moisture	: NA
Calib. Ref.:	RCH011	Instrument ID	: T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ACENAPHTHENE	ND	0.50	0.10	0.10
ACENAPHTHYLENE	ND	0.50	0.10	0.10
ANTHRACENE	ND	0.50	0.10	0.10
BENZO(A)ANTHRACENE	ND	0.50	0.10	0.10
BENZO(A)PYRENE	ND	0.50	0.10	0.10
BENZO(B)FLUORANTHENE	ND	0.50	0.10	0.10
BENZO(K)FLUORANTHENE	ND	0.50	0.10	0.10
BENZO(G,H,I)PERYLENE	ND	0.50	0.10	0.10
CHRYSENE	ND	0.50	0.10	0.10
DIBENZ(A,H)ANTHRACENE	ND	0.50	0.10	0.10
FLUORANTHENE	ND	0.50	0.10	0.10
FLUORENE	ND	0.50	0.10	0.10
INDENO(1,2,3-CD)PYRENE	ND	0.50	0.10	0.10
NAPHTHALENE	ND	0.50	0.10	0.10
PHENANTHRENE	ND	0.50	0.10	0.10
PYRENE	ND	0.50	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	20.3	20.00	101	40-135

METHOD SW3520C/8270D SIM
DIBENZ(A,H)ANTHRACENE BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 17:15
Sample ID	: 303-30-APR13	Date Analyzed:	04/17/13 16:46
Lab Samp ID	: D072-07	Dilution Factor:	.94
Lab File ID	: RDH165	Matrix :	WATER
Ext Btch ID	: SVD023W	% Moisture :	NA
Calib. Ref.	: RCH011	Instrument ID :	T-DE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIBENZ(A,H)ANTHRACENE	ND	0.47	0.094	0.094

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	8.53	18.80	45.4	40-135

METHOD SW3520C/8270D SIM
DIBENZ(A,H)ANTHRACENE BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 17:15
Sample ID:	303-31-APR13	Date Analyzed:	04/17/13 17:05
Lab Samp ID:	D072-08	Dilution Factor:	1.11
Lab File ID:	RDH166	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-QE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIBENZ(A,H)ANTHRACENE	ND	0.56	0.11	0.11

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	19.8	22.20	89.1	40-135

METHOD SW3520C/8270D SIM
DIBENZ(A,H)ANTHRACENE BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 17:15
Sample ID:	303-38-APR13	Date Analyzed:	04/17/13 17:25
Lab Samp ID:	D072-09	Dilution Factor:	.97
Lab File ID:	RDH167	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIBENZ(A,H)ANTHRACENE	ND	0.49	0.097	0.097

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	16.0	19.40	82.5	40-135

METHOD SW3520C/8270D SIM
DIBENZ(A,H)ANTHRACENE BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 17:15
Sample ID:	303-39-APR13	Date Analyzed:	04/17/13 17:44
Lab Samp ID:	D072-10	Dilution Factor:	1.06
Lab File ID:	RDH168	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIBENZ(A,H)ANTHRACENE	ND	0.53	0.11	0.11

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	19.8	21.20	93.6	40-135

METHOD SW3520C/8270D SIM
DIBENZ(A,H)ANTHRACENE BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 130072	Date Extracted:	04/15/13 17:15
Sample ID:	303-40-APR13	Date Analyzed:	04/17/13 18:03
Lab Samp ID:	D072-11	Dilution Factor:	1.01
Lab File ID:	RDH169	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIBENZ(A,H)ANTHRACENE	ND	0.51	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	19.2	20.20	95.2	40-135

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 13D072

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 14:41
Sample ID:	03-107-APR13	Date Analyzed:	04/15/13 14:41
Lab Samp ID:	D072-01I	Dilution Factor:	10
Lab File ID:	UD15010A	Matrix :	WATER
Ext Btch ID:	VG55D07	% Moisture :	NA
Calib. Ref.:	UD15003A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	4.2	1.0	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	1.67	0.4000	416*	50-150
1,1,1-TRIFLUOROTOLUENE	0.365	0.4000	91.1	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

* : Out of QC limit due to matrix interference.

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 22:41
Sample ID:	303-42-APR13	Date Analyzed:	04/15/13 22:41
Lab Samp ID:	D072-02I	Dilution Factor:	20
Lab File ID:	UD15025A	Matrix :	WATER
Ext Btch ID:	VG55D07	% Moisture :	NA
Calib. Ref.:	UD15015A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	17	2.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	10.2	0.8000	1280*	50-150
1,1,1-TRIFLUOROTOLUENE	0.749	0.8000	93.6	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

* : Out of QC limit due to matrix interference.

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 00:16
Sample ID:	303-43-APR13	Date Analyzed:	04/16/13 00:16
Lab Samp ID:	D072-03I	Dilution Factor:	5
Lab File ID:	UD15028A	Matrix :	WATER
Ext Btch ID:	VG55D07	% Moisture :	NA
Calib. Ref.:	UD15026A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	1.3	0.50	0.050	0.050

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	2.31	0.2000	1150*	50-150
1,1,1-TRIFLUOROTOLUENE	0.182	0.2000	91.0	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

* : Out of QC limit due to matrix interference.

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 21:07
Sample ID:	303-44-APR13	Date Analyzed:	04/16/13 21:07
Lab Samp ID:	D072-04	Dilution Factor:	1
Lab File ID:	UD15067A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15059A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	0.57	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.431	0.04000	1080*	50-150
1,1,1-TRIFLUOROTOLUENE	0.0376	0.04000	93.9	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

* : Out of QC limit due to matrix interference.

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 21:39
Sample ID:	03-012-APR13	Date Analyzed:	04/16/13 21:39
Lab Samp ID:	D072-05	Dilution Factor:	1
Lab File ID:	UD15068A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15059A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	ND	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0347	0.04000	86.7	50-150
1,1,1-TRIFLUOROTOLUENE	0.0341	0.04000	85.3	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/17/13 13:26
Sample ID:	303-37-APR13	Date Analyzed:	04/17/13 13:26
Lab Samp ID:	D072-06	Dilution Factor:	1
Lab File ID:	UD15094A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15085A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	NO	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0378	0.04000	94.4	50-150
1,1,1-TRIFLUOROTOLUENE	0.0343	0.04000	85.8	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 20:01
Sample ID:	3D3-30-APR13	Date Analyzed:	04/15/13 20:01
Lab Samp ID:	D072-07I	Dilution Factor:	10
Lab File ID:	UD15020A	Matrix :	WATER
Ext Btch ID:	VG55D07	% Moisture :	NA
Calib. Ref.:	UD15015A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	10	1.0	0.1D	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	5.39	0.4000	1350*	50-150
1,1,1-TRIFLUOROTOLUENE	0.383	0.4000	95.8	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

* : Out of QC limit due to matrix interference.

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 22:43
Sample ID:	303-31-APR13	Date Analyzed:	04/16/13 22:43
Lab Samp ID:	D072-08	Dilution Factor:	1
Lab File ID:	UD15070A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15059A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	0.035J	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0370	0.04000	92.5	50-150
1,1,1-TRIFLUOROTOLUENE	0.0361	0.04000	90.2	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 21:05
Sample ID:	303-38-APR13	Date Analyzed:	04/15/13 21:05
Lab Samp ID:	D072-09I	Dilution Factor:	10
Lab File ID:	UD15022A	Matrix :	WATER
Ext Btch ID:	VG55D07	% Moisture :	NA
Calib. Ref.:	UD15015A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	3.5	1.0	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.386	0.4000	96.6	50-150
1,1,1-TRIFLUOROTOLUENE	0.331	0.4000	82.9	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 23:15
Sample ID:	303-39-APR13	Date Analyzed:	04/16/13 23:15
Lab Samp ID:	D072-10	Dilution Factor:	1
Lab File ID:	UD15071A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15059A	Instrument ID :	

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	0.46	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.318	0.04000	795*	50-150
1,1,1-TRIFLUOROTOLUENE	0.0387	0.04000	96.7	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/17/13 00:19
Sample ID:	303-40-APR13	Date Analyzed:	04/17/13 00:19
Lab Samp ID:	D072-11	Dilution Factor:	1
Lab File ID:	UD15073A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15072A	Instrument ID :	

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	0.53	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.136	0.04000	340*	50-150
1,1,1-TRIFLUOROTOLUENE	0.0375	0.04000	93.8	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/17/13 00:51
Sample ID:	303-47-APR13	Date Analyzed:	04/17/13 00:51
Lab Samp ID:	D072-16	Dilution Factor:	1
Lab File ID:	UD15074A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15072A	Instrument ID :	

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	ND	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0373	0.04000	93.3	50-150
1,1,1-TRIFLUOROTOLUENE	0.0335	0.04000	83.7	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD RSK-175
DISSOLVED GASES

SDG#: 13D072

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	03-107-APR13	Date Analyzed:	04/16/13 13:55
Lab Samp ID:	D072-01I	Dilution Factor:	100
Lab File ID:	FD16029A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16022A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	1100	200	34	34

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	303-42-APR13	Date Analyzed:	04/16/13 14:16
Lab Samp ID:	D072-02I	Dilution Factor:	10
Lab File ID:	FD16031A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16022A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	150	20	3.4	3.4

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	303-43-APR13	Date Analyzed:	04/16/13 14:27
Lab Samp ID:	D072-03	Dilution Factor:	1
Lab File ID:	FD16032A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16022A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	23	2.0	0.34	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	303-44-APR13	Date Analyzed:	04/16/13 14:37
Lab Samp ID:	D072-04	Dilution Factor:	1
Lab File ID:	FD16033A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16022A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	ND	2.0	0.34	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	303-30-APR13	Date Analyzed:	04/16/13 15:09
Lab Samp ID:	D072-07I	Dilution Factor:	20
Lab File ID:	FD16036A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16034A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	210	40	6.8	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	303-31-APR13	Date Analyzed:	04/16/13 15:31
Lab Samp ID:	D072-08I	Dilution Factor:	5
Lab File ID:	FD16D38A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16034A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	57	10	1.7	1.7

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	303-38-APR13	Date Analyzed:	04/16/13 15:51
Lab Samp ID:	D072-09I	Dilution Factor:	20
Lab File ID:	FD16040A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16034A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	670	40	6.8	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	303-39-APR13	Date Analyzed:	04/16/13 16:27
Lab Samp ID:	D072-10I	Dilution Factor:	20
Lab File ID:	FD16043A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16034A	Instrument ID :	GCTD10

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	370	40	6.8	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/16/13 08:00
Sample ID:	303-40-APR13	Date Analyzed:	04/16/13 16:16
Lab Samp ID:	D072-11	Dilution Factor:	1
Lab File ID:	FD16042A	Matrix :	WATER
Ext Btch ID:	DGD013W	% Moisture :	NA
Calib. Ref.:	FD16034A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	6.6	2.0	0.34	0.34

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 13D072

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 16:30
Sample ID:	03-012-APR13	Date Analyzed:	04/16/13 19:09
Lab Samp ID:	D072-05	Dilution Factor:	0.94
Lab File ID:	LD16023A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16018A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	ND	0.47	0.047	0.047

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.177	0.1880	93.9	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
Batch No.	: 13D072	Date Extracted:	04/15/13 16:30
Sample ID:	303-37-APR13	Date Analyzed:	04/16/13 19:59
Lab Samp ID:	D072-06	Dilution Factor:	0.97
Lab File ID:	LD16026A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16018A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	ND	0.49	0.049	0.049

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.192	0.1940	99.1	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 6020A
LEAD BY ICP-MS

SDG#: 13D072

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: 0059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	014/16/13 12:30
Sample ID:	03-107-APR13	Date Analyzed:	04/26/13 18:24
Lab Samp ID:	D072-01	Dilution Factor:	1
Lab File ID:	F6D21066	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21056	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	20.7	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	014/16/13 12:30
Sample ID:	303-30-APR13	Date Analyzed:	04/26/13 18:41
Lab Samp ID:	D072-07	Dilution Factor:	1
Lab File ID:	F6D21070	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	39.9	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	014/16/13 12:30
Sample ID:	303-31-APR13	Date Analyzed:	04/26/13 18:45
Lab Samp ID:	D072-08	Dilution Factor:	1
Lab File ID:	F6D21071	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	0.328J	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	014/16/13 12:30
Sample ID:	303-38-APR13	Date Analyzed:	04/26/13 18:49
Lab Samp ID:	D072-09	Dilution Factor:	1
Lab File ID:	F6D21072	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	2.05	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	014/16/13 12:30
Sample ID:	303-39-APR13	Date Analyzed:	04/26/13 18:54
Lab Samp ID:	D072-10	Dilution Factor:	1
Lab File ID:	F6D21073	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	58.9	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	014/16/13 12:30
Sample ID:	303-40-APR13	Date Analyzed:	04/26/13 18:58
Lab Samp ID:	D072-11	Dilution Factor:	1
Lab File ID:	F6D21074	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	3.06	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 RDM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	014/16/13 12:30
Sample ID:	303-47-APR13	Date Analyzed:	04/26/13 18:16
Lab Samp ID:	D072-16	Dilution Factor:	1
Lab File ID:	F6D21064	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21056	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LDD (ug/L)
Lead	0.188J	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/08/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	04/16/13 12:30
Sample ID:	03-107-APR13	Date Analyzed:	04/26/13 19:02
Lab Samp ID:	D072-01	Dilution Factor:	1
Lab File ID:	F6D21075	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	20.9	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	04/16/13 12:30
Sample ID:	303-30-APR13	Date Analyzed:	04/26/13 19:06
Lab Samp ID:	D072-07	Dilution Factor:	1
Lab File ID:	F6D21076	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	38.4	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	04/16/13 12:30
Sample ID:	303-31-APR13	Date Analyzed:	04/26/13 19:10
Lab Samp ID:	D072-08	Dilution Factor:	1
Lab File ID:	F6D21077	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	0.279J	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	04/16/13 12:30
Sample ID:	303-3B-APR13	Date Analyzed:	04/26/13 19:15
Lab Samp ID:	D072-09	Dilution Factor:	1
Lab File ID:	F6D21078	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	1.84	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/10/13
Project	: DD59 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	04/16/13 12:30
Sample ID:	303-39-APR13	Date Analyzed:	04/26/13 19:32
Lab Samp ID:	D072-10	Dilution Factor:	1
Lab File ID:	F6D21082	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21080	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	56.0	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP. INC.	Date Collected:	04/10/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	04/16/13 12:30
Sample ID:	303-40-APR13	Date Analyzed:	04/26/13 19:36
Lab Samp ID:	D072-11	Dilution Factor:	1
Lab File ID:	F6D21083	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21080	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	2.63	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/09/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/12/13
SDG NO.	: 13D072	Date Extracted:	04/16/13 12:30
Sample ID:	303-47-APR13	Date Analyzed:	04/26/13 19:40
Lab Samp ID:	D072-16	Dilution Factor:	1
Lab File ID:	F6D21084	Matrix :	WATER
Ext Btch ID:	IMD016W	% Moisture :	NA
Calib. Ref.:	F6D21080	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	ND	1.00	0.100	0.100

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

WET CHEMICAL ANALYSES

SDG#: 13D072

METHOD E300.0
SULFATE

Client : URS GROUP, INC.
Project : D059 ADAK AREA 303 ROM
Batch No. : 13D072

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Coll DATETIME	Rec DATE
MBLK1W	ICD025WB	ND	1	NA	0.500	0.250	0.250	04/16/1310:34	NA	AD17-03	AD17-01	ICD025W	NA	NA
LCS1W	ICD025WL	4.67	1	NA	0.500	0.250	0.250	04/16/1310:50	NA	AD17-04	AD17-01	ICD025W	NA	NA
LCD1W	ICD025WC	4.67	1	NA	0.500	0.250	0.250	04/16/1311:06	NA	AD17-05	AD17-01	ICD025W	NA	NA
03-107-APR13	D072-01	0.345J	1	NA	0.500	0.250	0.250	04/16/1311:22	NA	AD17-06	AD17-01	ICD025W	04/08/1313:50	04/12/13
303-42-APR13	D072-02	2.00	1	NA	0.500	0.250	0.250	04/16/1311:38	NA	AD17-07	AD17-01	ICD025W	04/09/1315:30	04/12/13
303-43-APR13	D072-03	5.99	1	NA	0.500	0.250	0.250	04/16/1311:55	NA	AD17-08	AD17-01	ICD025W	04/09/1313:30	04/12/13
303-44-APR13	D072-04	7.84	1	NA	0.500	0.250	0.250	04/16/1312:11	NA	AD17-09	AD17-01	ICD025W	04/09/1314:30	04/12/13
303-30-APR13	D072-07	0.312J	1	NA	0.500	0.250	0.250	04/16/1312:27	NA	AD17-10	AD17-01	ICD025W	04/09/1309:20	04/12/13
303-31-APR13	D072-08	2.87	1	NA	0.500	0.250	0.250	04/16/1312:43	NA	AD17-11	AD17-01	ICD025W	04/10/1316:08	04/12/13
303-38-APR13	D072-09	2.04	1	NA	0.500	0.250	0.250	04/16/1312:59	NA	AD17-12	AD17-01	ICD025W	04/09/1310:53	04/12/13
303-39-APR13	D072-10	1.61	1	NA	0.500	0.250	0.250	04/16/1313:48	NA	AD17-15	AD17-13	ICD025W	04/10/1314:54	04/12/13
303-40-APR13	D072-11	3.12	1	NA	0.500	0.250	0.250	04/16/1317:02	NA	AD17-27	AD17-25	ICD025W	04/10/1309:34	04/12/13

METHOD SM2320B
TOTAL ALKALINITY

Client : URS GROUP, INC.
Project : D059 ADAK AREA 303 ROM
Batch No. : 13D072

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	LOQ (mg/L)	LOD (mg/L)	DL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALD014WB	ND	1	NA	5	5	5	04/18/1320:29	NA	13E5D0524	13E5D05	ALD014W	NA	NA
LCS1W	ALD014WL	162	1	NA	5	5	5	04/18/1320:36	NA	13E5D0525	13E5D05	ALD014W	NA	NA
LCD1W	ALD014WC	163	1	NA	5	5	5	04/18/1320:43	NA	13E5D0526	13E5D05	ALD014W	NA	NA
03-107-APR13	D072-01	72.1	1	NA	5	5	5	04/18/1320:48	NA	13E5D0527	13E5D05	ALD014W	04/08/1313:50	04/12/13
303-42-APR13	D072-02	165	1	NA	5	5	5	04/18/1320:56	NA	13E5D0528	13E5D05	ALD014W	04/09/1315:30	04/12/13
303-43-APR13	D072-03	39.5	1	NA	5	5	5	04/18/1321:01	NA	13E5D0529	13E5D05	ALD014W	04/09/1313:30	04/12/13
303-44-APR13	D072-04	47.8	1	NA	5	5	5	04/18/1321:07	NA	13E5D0530	13E5D05	ALD014W	04/09/1314:30	04/12/13
303-30-APR13	D072-07	61.7	1	NA	5	5	5	04/18/1321:12	NA	13E5D0531	13E5D05	ALD014W	04/09/1309:20	04/12/13
303-31-APR13	D072-08	35.2	1	NA	5	5	5	04/18/1321:17	NA	13E5D0532	13E5D05	ALD014W	04/10/1316:08	04/12/13
303-38-APR13	D072-09	57.6	1	NA	5	5	5	04/18/1321:23	NA	13E5D0533	13E5D05	ALD014W	04/09/1310:53	04/12/13
303-39-APR13	D072-10	71.0	1	NA	5	5	5	04/18/1321:28	NA	13E5D0534	13E5D05	ALD014W	04/10/1314:54	04/12/13
303-40-APR13	D072-11	24.9	1	NA	5	5	5	04/18/1321:34	NA	13E5D0535	13E5D05	ALD014W	04/10/1309:34	04/12/13

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13D078

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 14:29
Sample ID:	MRP-MW2-APR13	Date Analyzed:	04/16/13 14:29
Lab Samp ID:	D078-01	Dilution Factor:	1
Lab File ID:	RDC200	Matrix :	WATER
Ext Btch ID:	V067D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	24	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	14.4	10.00	144*	70-120
4-BROMOFLUOROBENZENE	11.6	10.00	116	75-120
TOLUENE-D8	10.4	10.00	104	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 15:32
Sample ID:	303-28-APR13	Date Analyzed:	04/16/13 15:32
Lab Samp ID:	D078-04	Dilution Factor:	1
Lab File ID:	RDC202	Matrix :	WATER
Ext Btch ID:	VO67D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
TETRACHLOROETHENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	24.0	10.00	240*	70-120
4-BROMOFLUOROBENZENE	10.8	10.00	108	75-120
TOLUENE-D8	10.9	10.00	109	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 15:01
Sample ID:	303-32-APR13	Date Analyzed:	04/16/13 15:01
Lab Samp ID:	D078-05	Dilution Factor:	1
Lab File ID:	RDC201	Matrix :	WATER
Ext Btch ID:	VO67D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	5.4	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-120
4-BROMOFLUOROBENZENE	11.5	10.00	115	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 18:35
Sample ID:	303-41-APR13	Date Analyzed:	04/16/13 18:35
Lab Samp ID:	D078-07	Dilution Factor:	1
Lab File ID:	RDC208	Matrix :	WATER
Ext Btch ID:	V067D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	0.55J	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.01	10.00	90.1	70-120
4-BROMOFLUOROBENZENE	8.87	10.00	88.7	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	9.85	10.00	98.5	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 19:05
Sample ID:	303-45-APR13	Date Analyzed:	04/16/13 19:05
Lab Samp ID:	D078-08	Dilution Factor:	1
Lab File ID:	RDC209	Matrix :	WATER
Ext Btch ID:	V067D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.95	10.00	99.5	70-120
4-BROMOFLUOROBENZENE	9.17	10.00	91.7	75-120
TOLUENE-D8	9.82	10.00	98.2	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 19:37
Sample ID:	303-46-APR13	Date Analyzed:	04/16/13 19:37
Lab Samp ID:	D078-09	Dilution Factor:	1
Lab File ID:	RDC210	Matrix :	WATER
Ext Btch ID:	V067D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.60	10.00	96.0	70-120
4-BROMOFLUOROBENZENE	9.00	10.00	90.0	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 20:07
Sample ID:	1451-2-APR13	Date Analyzed:	04/16/13 20:07
Lab Samp ID:	D078-16	Dilution Factor:	1
Lab File ID:	RDC211	Matrix :	WATER
Ext Btch ID:	VO67D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	0.39J	1.0	0.20	0.20
ETHYLBENZENE	2.2	1.0	0.20	0.20
M,P-XYLENES	2.3	2.0	0.40	0.40
O-XYLENE	0.44J	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.34	10.00	93.4	70-120
4-BROMOFLUOROBENZENE	8.80	10.00	88.0	75-120
TOLUENE-D8	9.91	10.00	99.1	85-120
DIBROMOFLUOROMETHANE	9.88	10.00	98.8	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 20:38
Sample ID:	1451-3-APR13	Date Analyzed:	04/16/13 20:38
Lab Samp ID:	D078-17	Dilution Factor:	1
Lab File ID:	RDC212	Matrix :	WATER
Ext Btch ID:	V067D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	0.36J	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.64	10.00	96.4	70-120
4-BROMOFLUOROBENZENE	9.20	10.00	92.0	75-120
TOLUENE-D8	9.85	10.00	98.5	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 15:05
Sample ID:	1451-DUP2-APR13	Date Analyzed:	04/17/13 15:05
Lab Samp ID:	D078-18	Dilution Factor:	1
Lab File ID:	RDC224	Matrix :	WATER
Ext Btch ID:	V067D11	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	0.33J	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.95	10.00	99.5	70-120
4-BROMOFLUOROBENZENE	8.69	10.00	86.9	75-120
TOLUENE-D8	9.83	10.00	98.3	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 15:35
Sample ID:	1451-4-APR13	Date Analyzed:	04/17/13 15:35
Lab Samp ID:	D078-19	Dilution Factor:	1
Lab File ID:	RDC225	Matrix :	WATER
Ext Btch ID:	V067D11	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.73	10.00	97.3	70-120
4-BROMOFLUOROBENZENE	8.80	10.00	88.0	75-120
TOLUENE-D8	9.75	10.00	97.5	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/16/13 13:59
Sample ID:	TRIP BLANK 2	Date Analyzed:	04/16/13 13:59
Lab Samp ID:	D078-20	Dilution Factor:	1
Lab File ID:	RDC199	Matrix :	WATER
Ext Btch ID:	V067D10	% Moisture :	NA
Calib. Ref.:	RDC019	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TETRACHLOROETHENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.15	10.00	91.5	70-120
4-BROMOFLUOROBENZENE	9.49	10.00	94.9	75-120
TOLUENE-D8	10.5	10.00	105	85-120
DIBROMOFLUOROMETHANE	9.94	10.00	99.4	85-115

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 3520C/8270D SIM
PAH BY GC/MS SIM

SDG#: 13D078

METHOD SW3520C/8270D SIM
DIBENZ(A,H)ANTHRACENE BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 17:15
Sample ID:	303-41-APR13	Date Analyzed:	04/17/13 18:22
Lab Samp ID:	D078-07	Dilution Factor:	1.01
Lab File ID:	RDH170	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
DIBENZ(A,H)ANTHRACENE	ND	0.51	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	15.7	20.20	77.9	40-135

METHOD SW3520C/8270D SIM
PAH BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 17:15
Sample ID:	1451-2-APR13	Date Analyzed:	04/17/13 18:41
Lab Samp ID:	D078-16	Dilution Factor:	1.04
Lab File ID:	RDH171	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ACENAPHTHENE	0.79	0.52	0.10	0.10
ACENAPHTHYLENE	0.16J	0.52	0.10	0.10
ANTHRACENE	ND	0.52	0.10	0.10
BENZO(A)ANTHRACENE	ND	0.52	0.10	0.10
BENZO(A)PYRENE	ND	0.52	0.10	0.10
BENZO(B)FLUORANTHENE	ND	0.52	0.10	0.10
BENZO(K)FLUORANTHENE	ND	0.52	0.10	0.10
BENZO(G,H,I)PERYLENE	ND	0.52	0.10	0.10
CHRYSENE	ND	0.52	0.10	0.10
DIBENZ(A,H)ANTHRACENE	ND	0.52	0.10	0.10
FLUORANTHENE	ND	0.52	0.10	0.10
FLUORENE	2.8	0.52	0.10	0.10
INDENO(1,2,3-CD)PYRENE	ND	0.52	0.10	0.10
NAPHTHALENE	10	0.52	0.10	0.10
PHENANTHRENE	0.71	0.52	0.10	0.10
PYRENE	ND	0.52	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	11.7	20.80	56.3	40-135

METHOD SW3520C/8270D SIM
PAH BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 17:15
Sample ID	: 1451-3-APR13	Date Analyzed:	04/17/13 19:00
Lab Samp ID	: D078-17	Dilution Factor:	1.06
Lab File ID	: RDH172	Matrix :	WATER
Ext Btch ID	: SVD023W	% Moisture :	NA
Calib. Ref.	: RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ACENAPHTHENE	ND	0.53	0.11	0.11
ACENAPHTHYLENE	ND	0.53	0.11	0.11
ANTHRACENE	ND	0.53	0.11	0.11
BENZO(A)ANTHRACENE	ND	0.53	0.11	0.11
BENZO(A)PYRENE	ND	0.53	0.11	0.11
BENZO(B)FLUORANTHENE	ND	0.53	0.11	0.11
BENZO(K)FLUORANTHENE	ND	0.53	0.11	0.11
BENZO(G,H,I)PERYLENE	ND	0.53	0.11	0.11
CHRYSENE	ND	0.53	0.11	0.11
DIBENZ(A,H)ANTHRACENE	ND	0.53	0.11	0.11
FLUORANTHENE	ND	0.53	0.11	0.11
FLUORENE	0.49J	0.53	0.11	0.11
INDENO(1,2,3-CD)PYRENE	ND	0.53	0.11	0.11
NAPHTHALENE	ND	0.53	0.11	0.11
PHENANTHRENE	ND	0.53	0.11	0.11
PYRENE	ND	0.53	0.11	0.11

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	17.4	21.20	82.3	40-135

METHOD SW3520C/8270D SIM
PAH BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 17:15
Sample ID:	1451-DUP2-APR13	Date Analyzed:	04/17/13 19:19
Lab Samp ID:	D078-18	Dilution Factor:	1.04
Lab File ID:	RDH173	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ACENAPHTHENE	ND	0.52	0.10	0.10
ACENAPHTHYLENE	ND	0.52	0.10	0.10
ANTHRACENE	ND	0.52	0.10	0.10
BENZO(A)ANTHRACENE	ND	0.52	0.10	0.10
BENZO(A)PYRENE	ND	0.52	0.10	0.10
BENZO(B)FLUORANTHENE	ND	0.52	0.10	0.10
BENZO(K)FLUORANTHENE	ND	0.52	0.10	0.10
BENZO(G,H,I)PERYLENE	ND	0.52	0.10	0.10
CHRYSENE	ND	0.52	0.10	0.10
DIBENZ(A,H)ANTHRACENE	ND	0.52	0.10	0.10
FLUORANTHENE	ND	0.52	0.10	0.10
FLUORENE	0.42J	0.52	0.10	0.10
INDENO(1,2,3-CD)PYRENE	ND	0.52	0.10	0.10
NAPHTHALENE	ND	0.52	0.10	0.10
PHENANTHRENE	ND	0.52	0.10	0.10
PYRENE	ND	0.52	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	17.5	20.80	84.4	40-135

METHOD SW3520C/8270D SIM
PAH BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 17:15
Sample ID:	1451-4-APR13	Date Analyzed:	04/17/13 19:39
Lab Samp ID:	D078-19	Dilution Factor:	.94
Lab File ID:	RDH174	Matrix :	WATER
Ext Btch ID:	SVD023W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ACENAPHTHENE	ND	0.47	0.094	0.094
ACENAPHTHYLENE	ND	0.47	0.094	0.094
ANTHRACENE	ND	0.47	0.094	0.094
BENZO(A)ANTHRACENE	ND	0.47	0.094	0.094
BENZO(A)PYRENE	ND	0.47	0.094	0.094
BENZO(B)FLUORANTHENE	ND	0.47	0.094	0.094
BENZO(K)FLUORANTHENE	ND	0.47	0.094	0.094
BENZO(G,H,I)PERYLENE	ND	0.47	0.094	0.094
CHRYSENE	ND	0.47	0.094	0.094
DIBENZ(A,H)ANTHRACENE	ND	0.47	0.094	0.094
FLUORANTHENE	ND	0.47	0.094	0.094
FLUORENE	ND	0.47	0.094	0.094
INDENO(1,2,3-CD)PYRENE	ND	0.47	0.094	0.094
NAPHTHALENE	ND	0.47	0.094	0.094
PHENANTHRENE	ND	0.47	0.094	0.094
PYRENE	ND	0.47	0.094	0.094

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	15.6	18.80	83.1	40-135

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD RSK-175
DISSOLVED GASES

SDG#: 13D078

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	MRP-MW2-APR13	Date Analyzed:	04/17/13 14:07
Lab Samp ID:	D078-01I	Dilution Factor:	100
Lab File ID:	FD17018A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17014A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	1500	200	34	34

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	04-211-APR13	Date Analyzed:	04/17/13 13:28
Lab Samp ID:	D078-03I	Dilution Factor:	200
Lab File ID:	FD17015A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17014A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	2300	400	68	68

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	303-28-APR13DL	Date Analyzed:	04/17/13 13:49
Lab Samp ID:	D078-04I	Dilution Factor:	20
Lab File ID:	FD17017A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17014A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	200	40	6.8	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	303-32-APR13	Date Analyzed:	04/17/13 15:21
Lab Samp ID:	D078-05I	Dilution Factor:	200
Lab File ID:	FD17024A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17014A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	2800	400	68	68

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	303-DUP2-APR13	Date Analyzed:	04/17/13 16:25
Lab Samp ID:	D078-06I	Dilution Factor:	10
Lab File ID:	FD17030A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17028A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	250	20	3.4	3.4

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	303-41-APR13	Date Analyzed:	04/17/13 15:10
Lab Samp ID:	D078-07I	Dilution Factor:	50
Lab File ID:	FD17023A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17014A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	1100	100	17	17

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	01-118-APR13DL	Date Analyzed:	04/17/13 16:49
Lab Samp ID:	D078-10I	Dilution Factor:	400
Lab File ID:	FD17031A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17028A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	4900	800	140	140

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	01-150-APR13	Date Analyzed:	04/17/13 17:41
Lab Samp ID:	D078-12I	Dilution Factor:	500
Lab File ID:	FD17036A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17028A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	11000	1000	170	170

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	1451-5-APR13	Date Analyzed:	04/17/13 17:51
Lab Samp ID:	D078-13I	Dilution Factor:	20
Lab File ID:	FD17037A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17028A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	590	40	6.8	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	1451-2-APR13	Date Analyzed:	04/17/13 18:01
Lab Samp ID:	D078-16I	Dilution Factor:	400
Lab File ID:	FD17038A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17028A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	5700	800	140	140

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	1451-3-APR13	Date Analyzed:	04/17/13 18:21
Lab Samp ID:	D078-17I	Dilution Factor:	250
Lab File ID:	FD17040A	Matrix :	WATER
Ext Btch ID:	DGD014W	% Moisture :	NA
Calib. Ref.:	FD17039A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	4300	500	85	85

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/18/13 08:00
Sample ID:	1451-DUP2-APR13	Date Analyzed:	04/18/13 09:19
Lab Samp ID:	D078-18I	Dilution Factor:	200
Lab File ID:	FD18009A	Matrix :	WATER
Ext Btch ID:	DGD015W	% Moisture :	NA
Calib. Ref.:	FD18002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	3400	400	68	68

METHOD RSK-175
DISSOLVED GASES

Client : URS GROUP, INC.	Date Collected: 04/13/13
Project : D059 ADAK AREA 303 ROM	Date Received: 04/15/13
Batch No. : 13D078	Date Extracted: 04/18/13 08:00
Sample ID: 1451-4-APR13	Date Analyzed: 04/18/13 09:08
Lab Samp ID: D078-19	Dilution Factor: 1
Lab File ID: FD18008A	Matrix : WATER
Ext Btch ID: DGD015W	% Moisture : NA
Calib. Ref.: FD18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	5.0	2.0	0.34	0.34

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 13D078

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 12:22
Sample ID	: MRP-MW2-APR13	Date Analyzed:	04/17/13 12:22
Lab Samp ID	: D078-01I	Dilution Factor:	10
Lab File ID	: UD15092A	Matrix :	WATER
Ext Btch ID	: VG55D08	% Moisture :	NA
Calib. Ref.	: UD15085A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	4.4	1.0	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	1.37	0.4000	342*	50-150
1,1,1-TRIFLUOROTOLUENE	0.379	0.4000	94.7	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

* : Out of QC limit due to matrix interderence

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 12:54
Sample ID:	04-211-APR13	Date Analyzed:	04/17/13 12:54
Lab Samp ID:	D078-03I	Dilution Factor:	10
Lab File ID:	UD15093A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15085A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	4.5	1.0	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.434	0.4000	109	50-150
1,1,1-TRIFLUOROTOLUENE	0.389	0.4000	97.2	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 10:15
Sample ID:	303-28-APR13	Date Analyzed:	04/17/13 10:15
Lab Samp ID:	D078-04I	Dilution Factor:	50
Lab File ID:	UD15088A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15085A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	10	5.0	0.50	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	8.55	2.000	428*	50-150
1,1,1-TRIFLUOROTOLUENE	1.94	2.000	96.9	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

* : Out of QC limit due to matrix interderence

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 11:51
Sample ID:	303-DUP2-APR13	Date Analyzed:	04/17/13 11:51
Lab Samp ID:	D078-06I	Dilution Factor:	25
Lab File ID:	UD15091A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15085A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	12	2.5	0.25	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	8.18	1.000	818*	50-150
1,1,1-TRIFLUOROTOLUENE	0.924	1.000	92.4	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

* : Out of QC limit due to matrix interderence

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : URS GROUP, INC.	Date Collected: 04/13/13
Project : D059 ADAK AREA 303 ROM	Date Received: 04/15/13
Batch No. : 13D078	Date Extracted: 04/17/13 09:43
Sample ID: 303-41-APR13	Date Analyzed: 04/17/13 09:43
Lab Samp ID: D078-07R	Dilution Factor: 1
Lab File ID: UD15087A	Matrix : WATER
Ext Btch ID: VG55D08	% Moisture : NA
Calib. Ref.: UD15085A	Instrument ID : GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	0.025J	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0412	0.04000	103	50-150
1,1,1-TRIFLUOROTOLUENE	0.0301	0.04000	75.2	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 05:07
Sample ID:	303-45-APR13	Date Analyzed:	04/17/13 05:07
Lab Samp ID:	D078-08	Dilution Factor:	1
Lab File ID:	UD15082A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15072A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	ND	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0417	0.04000	104	50-150
1,1,1-TRIFLUOROTOLUENE	0.0330	0.04000	82.4	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/17/13 05:39
Sample ID:	303-46-APR13	Date Analyzed:	04/17/13 05:39
Lab Samp ID:	D078-09	Dilution Factor:	1
Lab File ID:	UD15083A	Matrix :	WATER
Ext Btch ID:	VG55D08	% Moisture :	NA
Calib. Ref.:	UD15072A	Instrument ID :	GCT055

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	ND	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0389	0.04000	97.3	50-150
1,1,1-TRIFLUOROTOLUENE	0.0353	0.04000	88.3	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 13D078

METHOD AK102

TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	303-32-APR13	Date Analyzed:	04/16/13 20:16
Lab Samp ID:	D078-05	Dilution Factor:	0.97
Lab File ID:	LD16027A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16018A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	1.7	0.49	0.049	0.049

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.185	0.1940	95.5	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	01-118-APR13	Date Analyzed:	04/16/13 20:33
Lab Samp ID:	D078-10	Dilution Factor:	1.01
Lab File ID:	LD16028A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16018A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	6.0	0.51	0.051	0.051

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.116	0.2020	57.4	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	1451-DUP1-APR13	Date Analyzed:	04/16/13 20:50
Lab Samp ID:	D078-11	Dilution Factor:	0.95
Lab File ID:	LD16029A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16018A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	5.8	0.48	0.048	0.048

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.110	0.1900	58.1	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	01-150-APR13	Date Analyzed:	04/16/13 21:40
Lab Samp ID:	D078-12	Dilution Factor:	1.03
Lab File ID:	LD16032A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16030A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	1.1	0.52	0.052	0.052

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.145	0.2060	70.2	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	1451-5-APR13	Date Analyzed:	04/16/13 21:57
Lab Samp ID:	D078-13	Dilution Factor:	0.98
Lab File ID:	LD16033A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16030A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	0.67	0.49	0.049	0.049

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.154	0.1960	78.3	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID	: 1451-8-APR13	Date Analyzed:	04/16/13 22:48
Lab Samp ID	: D078-14	Dilution Factor:	0.97
Lab File ID	: LD16036A	Matrix :	WATER
Ext Btch ID	: DSD018W	% Moisture :	NA
Calib. Ref.	: LD16030A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	3.3	0.49	0.049	0.049

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.123	0.1940	63.6	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	1451-9-APR13	Date Analyzed:	04/16/13 23:05
Lab Samp ID:	D078-15	Dilution Factor:	0.98
Lab File ID:	LD16037A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16030A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	1.8	0.49	0.049	0.049

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.117	0.1960	59.7	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	1451-2-APR13	Date Analyzed:	04/16/13 23:22
Lab Samp ID:	D078-16	Dilution Factor:	0.95
Lab File ID:	LD16038A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16030A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	3.7	0.48	0.048	0.048

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.160	0.1900	84.0	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	1451-3-APR13	Date Analyzed:	04/16/13 22:14
Lab Samp ID:	D078-17	Dilution Factor:	0.95
Lab File ID:	LD16034A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16030A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	1.1	0.48	0.048	0.048

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.155	0.1900	81.8	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
Batch No.	: 13D078	Date Extracted:	04/15/13 16:30
Sample ID:	1451-4-APR13	Date Analyzed:	04/16/13 22:31
Lab Samp ID:	D078-19	Dilution Factor:	0.98
Lab File ID:	LD16035A	Matrix :	WATER
Ext Btch ID:	DSD018W	% Moisture :	NA
Calib. Ref.:	LD16030A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	0.70	0.49	0.049	0.049

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.189	0.1960	96.3	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 6020A
LEAD BY ICP-MS

SDG#: 13D078

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	MRP-MW2-APR13	Date Analyzed:	04/29/13 19:53
Lab Samp ID:	D078-01	Dilution Factor:	1
Lab File ID:	98D11055	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11053	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	2.38	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-DUP1-APR13	Date Analyzed:	04/29/13 19:58
Lab Samp ID:	D078-02	Dilution Factor:	1
Lab File ID:	98D11056	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11053	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	2.13	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client : URS GROUP, INC.	Date Collected: 04/12/13
Project : D059 ADAK AREA 303 ROM	Date Received: 04/15/13
SDG NO. : 13D078	Date Extracted: 04/18/13 10:00
Sample ID: 303-28-APR13	Date Analyzed: 04/29/13 19:30
Lab Samp ID: D078-04	Dilution Factor: 1
Lab File ID: 98D11050	Matrix : WATER
Ext Btch ID: IMD019W	% Moisture : NA
Calib. Ref.: 98D11041	Instrument ID : T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	64.4	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-41-APR13	Date Analyzed:	04/29/13 20:02
Lab Samp ID:	D078-07	Dilution Factor:	1
Lab File ID:	98D11057	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11053	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	ND	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-45-APR13	Date Analyzed:	04/29/13 20:07
Lab Samp ID:	D078-08	Dilution Factor:	1
Lab File ID:	98D11058	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11053	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	0.168J	1.00	0.100	0.100

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-46-APR13	Date Analyzed:	04/29/13 20:11
Lab Samp ID:	D078-09	Dilution Factor:	1
Lab File ID:	98D11059	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11053	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	0.750J	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	MRP-MW2-APR13	Date Analyzed:	04/29/13 20:52
Lab Samp ID:	D078-01	Dilution Factor:	1
Lab File ID:	98D11068	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11065	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	1.77	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-DUP1-APR13	Date Analyzed:	04/29/13 20:57
Lab Samp ID:	D078-02	Dilution Factor:	1
Lab File ID:	98D11069	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11065	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	1.82	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-28-APR13	Date Analyzed:	04/29/13 20:29
Lab Samp ID:	D078-04	Dilution Factor:	1
Lab File ID:	98D11063	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11053	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	59.2	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/13/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-41-APR13	Date Analyzed:	04/29/13 21:02
Lab Samp ID:	D078-07	Dilution Factor:	1
Lab File ID:	98D11070	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11065	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	ND	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/12/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-45-APR13	Date Analyzed:	04/29/13 21:06
Lab Samp ID:	D078-08	Dilution Factor:	1
Lab File ID:	98D11071	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11065	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	0.228J	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/11/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/15/13
SDG NO.	: 13D078	Date Extracted:	04/18/13 10:00
Sample ID:	303-46-APR13	Date Analyzed:	04/29/13 21:11
Lab Samp ID:	D078-09	Dilution Factor:	1
Lab File ID:	98D11072	Matrix :	WATER
Ext Btch ID:	IMD019W	% Moisture :	NA
Calib. Ref.:	98D11065	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	ND	1.00	0.100	0.100

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

WET CHEMICAL ANALYSES

SDG#: 13D078

METHOD E300.0
SULFATE

Client : URS GROUP, INC.
Project : D059 ADAK AREA 303 ROM
Batch No. : 13D078

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Coll DATETIME	Rec DATE
MBLK1W	ICD029WB	ND	1	NA	0.500	0.250	0.250	04/17/1310:50	NA	AD19-03	AD19-01	ICD029W	NA	NA
LCS1W	ICD029WL	4.65	1	NA	0.500	0.250	0.250	04/17/1311:06	NA	AD19-04	AD19-01	ICD029W	NA	NA
LCD1W	ICD029WC	4.67	1	NA	0.500	0.250	0.250	04/17/1311:22	NA	AD19-05	AD19-01	ICD029W	NA	NA
MRP-MW2-APR13	D078-01	3.26	1	NA	0.500	0.250	0.250	04/17/1311:38	NA	AD19-06	AD19-01	ICD029W	04/11/1310:52	04/15/13
04-211-APR13	D078-03	0.319J	1	NA	0.500	0.250	0.250	04/17/1311:54	NA	AD19-07	AD19-01	ICD029W	04/11/1317:00	04/15/13
303-28-APR13	D078-04	0.276J	1	NA	0.500	0.250	0.250	04/17/1312:10	NA	AD19-08	AD19-01	ICD029W	04/12/1309:10	04/15/13
303-28-APR13DUP	D078-04D	0.283J	1	NA	0.500	0.250	0.250	04/17/1312:26	NA	AD19-09	AD19-01	ICD029W	04/12/1309:10	04/15/13
303-28-APR13MS	D078-04M	5.02	1	NA	0.500	0.250	0.250	04/17/1312:43	NA	AD19-10	AD19-01	ICD029W	04/12/1309:10	04/15/13
303-32-APR13	D078-05	1.36	1	NA	0.500	0.250	0.250	04/17/1312:59	NA	AD19-11	AD19-01	ICD029W	04/11/1314:25	04/15/13
303-DUP2-APR13	D078-06	0.340J	1	NA	0.500	0.250	0.250	04/17/1313:15	NA	AD19-12	AD19-01	ICD029W	04/12/1309:10	04/15/13
303-41-APR13	D078-07I	3.08	5	NA	2.50	1.25	1.25	04/17/1314:03	NA	AD19-15	AD19-13	ICD029W	04/13/1309:23	04/15/13
01-150-APR13	D078-12	0.618	1	NA	0.500	0.250	0.250	04/17/1314:20	NA	AD19-16	AD19-13	ICD029W	04/13/1315:32	04/15/13
1451-5-APR13	D078-13	2.02	1	NA	0.500	0.250	0.250	04/17/1314:36	NA	AD19-17	AD19-13	ICD029W	04/12/1313:47	04/15/13
MBLK2W	ICD035WB	ND	1	NA	0.500	0.250	0.250	04/18/1310:20	NA	AD21-03	AD21-01	ICD035W	NA	NA
LCS2W	ICD035WL	4.73	1	NA	0.500	0.250	0.250	04/18/1310:36	NA	AD21-04	AD21-01	ICD035W	NA	NA
LCD2W	ICD035WC	4.74	1	NA	0.500	0.250	0.250	04/18/1310:52	NA	AD21-05	AD21-01	ICD035W	NA	NA
1451-4-APR13	D078-19	8.01	1	NA	0.500	0.250	0.250	04/18/1315:59	NA	AD21-24	AD21-13	ICD035W	04/13/1310:36	04/15/13
01-118-APR13	D078-10	0.628	1	NA	0.500	0.250	0.250	04/18/1316:48	NA	AD21-27	AD21-25	ICD035W	04/12/1316:39	04/15/13
01-118-APR13DUP	D078-10D	0.607	1	NA	0.500	0.250	0.250	04/18/1317:04	NA	AD21-28	AD21-25	ICD035W	04/12/1316:39	04/15/13
01-118-APR13MS	D078-10M	5.45	1	NA	0.500	0.250	0.250	04/18/1317:20	NA	AD21-29	AD21-25	ICD035W	04/12/1316:39	04/15/13
1451-3-APR13	D078-17I	79.9	5	NA	2.50	1.25	1.25	04/18/1317:36	NA	AD21-30	AD21-25	ICD035W	04/13/1313:10	04/15/13
1451-DUP2-APR13	D078-18I	66.8	5	NA	2.50	1.25	1.25	04/18/1317:52	NA	AD21-31	AD21-25	ICD035W	04/13/1313:10	04/15/13
1451-2-APR13	D078-16I	253	20	NA	10.0	5.00	5.00	04/18/1318:09	NA	AD21-32	AD21-25	ICD035W	04/13/1314:32	04/15/13

METHOD SM2320B
TOTAL ALKALINITY

Client : URS GROUP, INC.
Project : D059 ADAK AREA 303 ROM
Batch No. : 13D078

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	LOQ (mg/L)	LOD (mg/L)	DL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALD013WB	ND	1	NA	5	5	5	04/18/1318:28	NA	13E5D0504	13E5D05	ALD013W	NA	NA
LCS1W	ALD013WL	161	1	NA	5	5	5	04/18/1318:35	NA	13E5D0505	13E5D05	ALD013W	NA	NA
LCD1W	ALD013WC	161	1	NA	5	5	5	04/18/1318:42	NA	13E5D0506	13E5D05	ALD013W	NA	NA
MRP-MW2-APR13	D078-01	91.5	1	NA	5	5	5	04/18/1318:48	NA	13E5D0507	13E5D05	ALD013W	04/11/1310:52	04/15/13
04-211-APR13	D078-03	111	1	NA	5	5	5	04/18/1318:53	NA	13E5D0508	13E5D05	ALD013W	04/11/1317:00	04/15/13
303-28-APR13	D078-04	131	1	NA	5	5	5	04/18/1318:59	NA	13E5D0509	13E5D05	ALD013W	04/12/1309:10	04/15/13
303-28-APR13DUP	D078-04D	138	1	NA	5	5	5	04/18/1319:06	NA	13E5D0510	13E5D05	ALD013W	04/12/1309:10	04/15/13
303-32-APR13	D078-05	118	1	NA	5	5	5	04/18/1319:12	NA	13E5D0511	13E5D05	ALD013W	04/11/1314:25	04/15/13
303-DUP2-APR13	D078-06	131	1	NA	5	5	5	04/18/1319:18	NA	13E5D0512	13E5D05	ALD013W	04/12/1309:10	04/15/13
303-41-APR13	D078-07	48.4	1	NA	5	5	5	04/18/1319:23	NA	13E5D0513	13E5D05	ALD013W	04/13/1309:23	04/15/13
01-118-APR13	D078-10	157	1	NA	5	5	5	04/18/1319:29	NA	13E5D0514	13E5D05	ALD013W	04/12/1316:39	04/15/13
01-118-APR13DUP	D078-10D	158	1	NA	5	5	5	04/18/1319:35	NA	13E5D0515	13E5D05	ALD013W	04/12/1316:39	04/15/13
01-150-APR13	D078-12	154	1	NA	5	5	5	04/18/1319:40	NA	13E5D0516	13E5D05	ALD013W	04/13/1315:32	04/15/13
1451-5-APR13	D078-13	24.2	1	NA	5	5	5	04/18/1319:46	NA	13E5D0517	13E5D05	ALD013W	04/12/1313:47	04/15/13
1451-2-APR13	D078-16	194	1	NA	5	5	5	04/18/1319:54	NA	13E5D0518	13E5D05	ALD013W	04/13/1314:32	04/15/13
1451-3-APR13	D078-17	166	1	NA	5	5	5	04/18/1320:00	NA	13E5D0519	13E5D05	ALD013W	04/13/1313:10	04/15/13
1451-DUP2-APR13	D078-18	157	1	NA	5	5	5	04/18/1320:06	NA	13E5D0520	13E5D05	ALD013W	04/13/1313:10	04/15/13
1451-4-APR13	D078-19	64.4	1	NA	5	5	5	04/18/1320:12	NA	13E5D0521	13E5D05	ALD013W	04/13/1310:36	04/15/13

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13D119

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/19/13
Batch No.	: 13D119	Date Extracted:	04/23/13 15:41
Sample ID:	303-IDW-APR13	Date Analyzed:	04/23/13 15:41
Lab Samp ID:	D119-01	Dilution Factor:	1
Lab File ID:	RDD205	Matrix :	WATER
Ext Btch ID:	V094D11	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	0.75J	1.0	0.20	0.20
M,P-XYLENES	1.4J	2.0	0.40	0.40
O-XYLENE	0.52J	1.0	0.20	0.20
TETRACHLOROETHENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.85	10.00	98.5	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	10.8	10.00	108	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: DD59 ADAK AREA 303 ROM	Date Received:	04/19/13
Batch No.	: 13D119	Date Extracted:	04/23/13 16:17
Sample ID:	TRIP BLANK 3	Date Analyzed:	04/23/13 16:17
Lab Samp ID:	D119-03	Dilution Factor:	1
Lab File ID:	RDD206	Matrix :	WATER
Ext Btch ID:	V094D11	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-D94

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
BENZENE	ND	1.0	0.20	0.20
ETHYLBENZENE	ND	1.0	0.20	0.20
M,P-XYLENES	ND	2.0	0.40	0.40
O-XYLENE	ND	1.0	0.20	0.20
TETRACHLOROETHENE	ND	1.0	0.20	0.20
TOLUENE	ND	1.0	0.20	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.64	10.00	96.4	70-120
4-BROMOFLUOROBENZENE	10.5	10.00	105	75-120
TOLUENE-D8	10.9	10.00	109	85-120
DIBROMOFLUOROMETHANE	11.0	10.00	110	85-115

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 3520C/8270D SIM
PAH BY GC/MS SIM

SDG#: 13D119

METHOD SW3520C/8270D SIM
PAH BY GC/MS SIM

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/19/13
Batch No.	: 13D119	Date Extracted:	04/22/13 10:15
Sample ID:	303-IDW-APR13	Date Analyzed:	04/24/13 21:53
Lab Samp ID:	D119-01	Dilution Factor:	1
Lab File ID:	RDH345	Matrix :	WATER
Ext Btch ID:	SVD032W	% Moisture :	NA
Calib. Ref.:	RCH011	Instrument ID :	T-OE7

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ACENAPHTHENE	ND	0.50	0.10	0.10
ACENAPHTHYLENE	ND	0.50	0.10	0.10
ANTHRACENE	ND	0.50	0.10	0.10
BENZO(A)ANTHRACENE	ND	0.50	0.10	0.10
BENZO(A)PYRENE	ND	0.50	0.10	0.10
BENZO(B)FLUORANTHENE	ND	0.50	0.10	0.10
BENZO(K)FLUORANTHENE	ND	0.50	0.10	0.10
BENZO(G,H,I)PERYLENE	ND	0.50	0.10	0.10
CHRYSENE	ND	0.50	0.10	0.10
DIBENZ(A,H)ANTHRACENE	ND	0.50	0.10	0.10
FLUORANTHENE	ND	0.50	0.10	0.10
FLUORENE	ND	0.50	0.10	0.10
INDENO(1,2,3-CD)PYRENE	ND	0.50	0.10	0.10
NAPHTHALENE	0.41J	0.50	0.10	0.10
PHENANTHRENE	ND	0.50	0.10	0.10
PYRENE	ND	0.50	0.10	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	15.7	20.00	78.5	40-135

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD RSK-175
DISSOLVED GASES

SDG#: 13D119

METHOD RSK-175
DISSOLVED GASES

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/19/13
Batch No.	: 13D119	Date Extracted:	04/25/13 07:30
Sample ID:	303-IDW-APR13	Date Analyzed:	04/25/13 11:28
Lab Samp ID:	D119-01I	Dilution Factor:	10
Lab File ID:	FD25012A	Matrix :	WATER
Ext Btch ID:	DGD017W	% Moisture :	NA
Calib. Ref.:	FD25011A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	21D	20	3.4	3.4

METHOD RSK-175
DISSOLVED GASES

Client : URS GROUP, INC.	Date Collected: 04/16/13
Project : D059 ADAK AREA 303 ROM	Date Received: 04/19/13
Batch No. : 13D119	Date Extracted: 04/25/13 07:30
Sample ID: E-701-APR13	Date Analyzed: 04/25/13 09:42
Lab Samp ID: D119-02	Dilution Factor: 1
Lab File ID: FD25008A	Matrix : WATER
Ext Btch ID: DGD017W	% Moisture : NA
Calib. Ref.: FD25002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
METHANE	ND	2.0	0.34	0.34

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 13D119

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/19/13
Batch No.	: 13D119	Date Extracted:	04/22/13 12:28
Sample ID:	303-IDW-APR13	Date Analyzed:	04/22/13 12:28
Lab Samp ID:	D119-01	Dilution Factor:	1
Lab File ID:	UD22007A	Matrix :	WATER
Ext Btch ID:	VG55D09	% Moisture :	NA
Calib. Ref.:	UD22D03A	Instrument ID :	

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	0.017J	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0454	0.04000	114	50-150
1,1,1-TRIFLUOROTOLUENE	0.0375	0.04000	93.8	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

METHOD AK101
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/19/13
Batch No.	: 13D119	Date Extracted:	04/22/13 13:00
Sample ID:	TRIP BLANK 3	Date Analyzed:	04/22/13 13:00
Lab Samp ID:	D119-03	Dilution Factor:	1
Lab File ID:	UD22008A	Matrix :	WATER
Ext Btch ID:	VG55D09	% Moisture :	NA
Calib. Ref.:	UD22003A	Instrument ID :	

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
GRO	ND	0.10	0.010	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
4-BROMOFLUOROBENZENE	0.0335	0.04000	83.9	50-150
1,1,1-TRIFLUOROTOLUENE	0.0314	0.04000	78.5	50-150

Parameter	H-C Range
GRO: Gasoline Range Organics	C6-C10

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 13D119

METHOD AK102
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/19/13
Batch No.	: 13D119	Date Extracted:	04/22/13 09:30
Sample ID:	303-IDW-APR13	Date Analyzed:	04/23/13 14:11
Lab Samp ID:	D119-01	Dilution Factor:	1
Lab File ID:	LD23007A	Matrix :	WATER
Ext Btch ID:	DSD025W	% Moisture :	NA
Calib. Ref.:	LD23002A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	0.33J	0.50	0.050	0.050

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
O-TERPHENYL	0.178	0.2000	88.9	50-150

Parameter	H-C Range
DRO: Diesel Range Organics	C10-C25

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

METHOD 6020A
LEAD BY ICP-MS

SDG#: 13D119

METHOD SW6020A
LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/19/13
SDG NO.	: 13D119	Date Extracted:	04/26/13 11:45
Sample ID:	303-IDW-APR13	Date Analyzed:	05/01/13 19:22
Lab Samp ID:	D119-01	Dilution Factor:	1
Lab File ID:	F6E01104	Matrix :	WATER
Ext Btch ID:	IMD035W	% Moisture :	NA
Calib. Ref.:	F6E01096	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	3.64	1.00	0.100	0.100

METHOD SW6020A
DISSOLVED LEAD BY ICP-MS

Client	: URS GROUP, INC.	Date Collected:	04/17/13
Project	: D059 ADAK AREA 303 ROM	Date Received:	04/19/13
SDG NO.	: 13D119	Date Extracted:	04/26/13 11:45
Sample ID:	303-IDW-APR13	Date Analyzed:	05/01/13 19:30
Lab Samp ID:	D119-01	Dilution Factor:	1
Lab File ID:	F6E01106	Matrix :	WATER
Ext Btch ID:	IMD035W	% Moisture :	NA
Calib. Ref.:	F6E01096	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
Lead	3.25	1.00	0.100	0.100

LABORATORY REPORT FOR

URS GROUP, INC.

DO59 ADAK AREA 303 ROM

WET CHEMICAL ANALYSES

SDG#: 13D119

METHOD E300.0
SULFATE

Client : URS GROUP, INC.
Project : D059 ADAK AREA 303 ROM
Batch No. : 13D119

Matrix : WATER
Instrument ID : DO

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Coll DATETIME	Rec DATE
MBLK1W	ICD041WB	ND	1	NA	0.500	0.250	0.250	04/23/1310:34	NA	AD25-03	AD25-01	ICD041W	NA	NA
LCS1W	ICD041WL	4.70	1	NA	0.500	0.250	0.250	04/23/1310:51	NA	AD25-04	AD25-01	ICD041W	NA	NA
LCD1W	ICD041WC	4.70	1	NA	0.500	0.250	0.250	04/23/1311:07	NA	AD25-05	AD25-01	ICD041W	NA	NA
E-701-APR13	D119-02	3.41	1	NA	0.500	0.250	0.250	04/23/1311:55	NA	AD25-08	AD25-01	ICD041W	04/16/1311:00	04/19/13
E-701-APR13DUP	D119-02D	3.42	1	NA	0.500	0.250	0.250	04/23/1312:11	NA	AD25-09	AD25-01	ICD041W	04/16/1311:00	04/19/13
E-701-APR13MS	D119-02M	8.62	1	NA	0.500	0.250	0.250	04/23/1312:28	NA	AD25-10	AD25-01	ICD041W	04/16/1311:00	04/19/13
E-701-APR13MSD	D119-02S	8.66	1	NA	0.500	0.250	0.250	04/23/1312:44	NA	AD25-11	AD25-01	ICD041W	04/16/1311:00	04/19/13
303-IDW-APR13	D119-D11	32.9	5	NA	2.50	1.25	1.25	04/23/1313:00	NA	AD25-12	AD25-01	ICD041W	04/17/1309:00	04/19/13

METHOD SM2320B
TOTAL ALKALINITY

Client : URS GROUP, INC.
Project : D059 ADAK AREA 303 ROM
Batch No. : 130119

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	LOQ (mg/L)	LOD (mg/L)	DL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALD018WB	ND	1	NA	5	5	5	04/26/1312:03	NA	13E5D1005	13E5D10	ALD018W	NA	NA
LCS1W	ALD018WL	161	1	NA	5	5	5	04/26/1312:10	NA	13E5D1006	13E5D10	ALD018W	NA	NA
LCD1W	ALD018WC	163	1	NA	5	5	5	04/26/1312:16	NA	13E5D1007	13E5D10	ALD018W	NA	NA
303-IDW-APR13	D119-01	66.7	1	NA	5	5	5	04/26/1312:22	NA	13E5D1008	13E5D10	ALD018W	04/17/1309:00	04/19/13
E-701-APR13	D119-02	23.2	1	NA	5	5	5	04/26/1312:28	NA	13E5D1009	13E5D10	ALD018W	04/16/1311:00	04/19/13
E-701-APR13DUP	D119-02D	23.0	1	NA	5	5	5	04/26/1312:34	NA	13E5D1010	13E5D10	ALD018W	04/16/1311:00	04/19/13

APPENDIX C

Data Validation Report and ADEC Checklist

Data Validation Report

Area 303 Remedy O&M Development
Adak Island, Alaska

URS Project Number: 33762109

Laboratory SDGs:

13D072
13D078
13D119

Prepared for:

URS Corporation
1501 Fourth Avenue, Suite 1400
Seattle, WA 98101-1616

Prepared by:

Pyron Environmental, Inc.
3530 32nd Way NW
Olympia, WA 98502

June 13, 2013

ACRONYMS

%D	Percent difference
%R	Percent recovery
%RSD	Percent relative standard deviation
BFB	Bromofluorobenzene
CCC	Calibration check compound
CCV	Continuing calibration verification
CF	Calibration factor
CLP	U.S. EPA Contract Laboratory Program
COC	Chain-of-custody
DFTPP	Decafluorotriphenylphosphine
DRO	Diesel range organics
EPA	U.S. Environmental Protection Agency
GC/FID	Gas chromatograph/flame ionization detector
GC/MS	Gas chromatograph/mass spectrometer
GRO	Gasoline range organics
ICAL	Initial calibration
ICP/MS	Inductively coupled plasma/mass spectrometer
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
LOD	Limit of detection
LOQ	Limit of quantitation
µg/L	Microgram per liter
mg/L	Milligram per liter
MDL	Method detection limit
MS	Matrix spike
MSD	Matrix spike duplicate
PAH	Polycyclic aromatic hydrocarbon
QA/QC	Quality assurance/quality control
RF	Response factor
RL	reporting limit
RPD	Relative percent difference
RRT	Relative retention time

SDG Sample delivery group

VOCs Volatile organic compounds

INTRODUCTION

This report presents and discusses findings of the data validation performed on analytical data for samples collected during April 2013 for the referenced project. Laboratory reports validated herein were submitted by EMAX Laboratories, Inc. (ARI) in three sample delivery groups (SDGs): 13D072, 13D078, and 13D119.

A level IV data validation was performed on this laboratory report. The validation followed the procedures specified in USEPA CLP Functional Guidelines (EPA 2008 – Organics; EPA 2010 – Inorganics), with modifications to accommodate analytical method requirements. The numerical quality assurance/quality control (QA/QC) criteria applied to the validation were in accordance with the current performance-based control limits established by the laboratory (laboratory control limits). Instrument calibration, frequency of QC analyses, and analytical sequence requirements were evaluated against the respective analytical methods.

Validation findings are discussed in each section pertinent to the QC parameter for each type of analysis. Qualified data with applied data qualifiers are summarized in the **Summary** section at the end of this report. As part of the level IV validation, 10 percent of the calibration, laboratory QC analyses, and sample results were verified via re-calculation checks. Samples and the associated analyses validated herein are summarized as follows:

Field Sample ID	Laboratory Sample ID	Sampling Date	Matrix	Analysis						
				VOC	PAH	ME	GRO	DRO	Pb	GEN
03-107-APR13	D072-01	04/08/13	Water	X		X	X		X	X
303-42-APR13	D072-02	04/09/13	Water	X		X	X			X
303-43-APR13	D072-03	04/09/13	Water			X	X			X
303-44-APR13	D072-04	04/09/13	Water			X	X			X
03-012-APR13	D072-05	04/10/13	Water	X	X		X	X		
303-37-APR13	D072-06	04/10/13	Water	X	X		X	X		
303-30-APR13	D072-07	04/09/13	Water	X	X	X	X		X	X
303-31-APR13	D072-08	04/10/13	Water	X	X	X	X		X	X
303-38-APR13	D072-09	04/09/13	Water	X	X	X	X		X	X
303-39-APR13	D072-10	04/10/13	Water	X	X	X	X		X	X
303-40-APR13	D072-11	04/10/13	Water	X	X	X	X		X	X
HMW-303-5-APR13	D072-12	04/08/13	Water	X						
303-DUP3-APR13	D072-13	04/08/13	Water	X						
HMW-303-6-APR13	D072-14	04/08/13	Water	X						
303-29-APR13	D072-15	04/08/13	Water	X						

Field Sample ID	Laboratory Sample ID	Sampling Date	Matrix	Analysis						
				VOC	PAH	ME	GRO	DRO	Pb	GEN
303-47-APR13	D072-16	04/09/13	Water	X			X		X	
TRIP BLANK 1	D072-17	04/08/13	Water	X						
MRP-MW2-APR13	D078-01	04/11/13	Water	X		X	X		X	X
303-DUP1-APR13	D078-02	04/11/13	Water						X	
04-211-APR13	D078-03	04/11/13	Water			X	X			X
303-28-APR13	D078-04	04/12/13	Water	X		X	X		X	X
303-32-APR13	D078-05	04/11/13	Water	X		X		X		X
303-DUP2-APR13	D078-06	04/12/13	Water			X	X			X
303-41-APR13	D078-07	04/13/13	Water	X	X	X	X		X	X
303-45-APR13	D078-08	04/12/13	Water	X			X		X	
303-46-APR13	D078-09	04/11/13	Water	X			X		X	
01-118-APR13	D078-10	04/12/13	Water			X		X		X
1451-DUP1-APR13	D078-11	04/12/13	Water					X		
01-150-APR13	D078-12	04/13/13	Water			X		X		X
1451-5-APR13	D078-13	04/12/13	Water			X		X		X
1451-8-APR13	D078-14	04/12/13	Water					X		
1451-9-APR13	D078-15	04/12/13	Water					X		
1451-2-APR13	D078-16	04/13/13	Water	X	X	X		X		X
1451-3-APR13	D078-17	04/13/13	Water	X	X	X		X		X
1451-DUP2-APR13	D078-18	04/13/13	Water	X	X	X				X
1451-4-APR13	D078-19	04/13/13	Water	X	X	X		X		X
TRIP BLANK 2	D078-20	04/11/13	Water	X						
303-IDW-APR13	D119-01	04/17/13	Water	X	X	X	X	X	X	X
E-701-APR13	D119-02	04/16/13	Water			X				X
TRIP BLANK 3	D119-03	04/17/13	Water	X			X			

Notes:

X - The analysis was requested and performed on the sample
VOC – Volatile organic compound
PAH – Polycyclic aromatic hydrocarbon
ME – Methane
GRO – Gasoline range organics
DRO – Diesel range organics
Pb – Total and dissolved lead
GEN – General chemistry (sulfate and total alkalinity)

Analytical methods in respect to analytical parameters validated herein and the laboratory performing the analysis are summarized below:

Parameter	Analytical Method	Laboratory
VOCs	SW846 Method 8260C	EMAX Laboratories, Inc. Torrance, CA 90501
PAHs	SW846 Method 8270D-SIM	
Methane	EPA RSKSOP175/Laboratory SOP	
GRO	Alaska Method AK101	
DRO	Alaska Method AK102	
Total and Dissolved Lead	SW846 Method 6020A	
Sulfate	EPA Method 300.0	
Total Alkalinity	SM Method 2320B	

Notes:

(1) SW846 Methods - *USEPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third Edition, December 1996.

(2) AK Methods – Underground Storage Tanks Procedures Manual, Appendix D, Sate of Alaska, Department of Environmental Conservation, November 7, 2002.

(3) EPA Methods - USEPA Methods for Chemical Analysis of Water and Wastes, EPA–600/4-79-020, March 1983 Revision.

(4) SM – Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

DATA VALIDATION FINDINGS

1. Volatile Organic Compounds (VOCs) by GC/MS (EPA Method SW8260C)

1.1 Sample Management and Holding Times

Samples were received in the laboratory intact and in consistence with the accompanying chain-of-custody (COC) documentation. No anomalies were identified in relation to sample preservation, handling, and transport.

Water samples should be analyzed within 14 days of collection. All samples were analyzed within the required holding time.

1.2 GC/MS Instrument Performance Check

Bromofluorobenzene (BFB) tuning was performed within each 12-hour interval. All required ion abundance ratios met the method requirements.

1.3 Initial Calibration (ICAL)

The method requires that (1) if linear average RFs is chosen as the quantitation option, the %RSD of RFs be ≤20% for the analyte, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be ≥0.99, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be ≥0.99, and (4) the average RF should meet the method requirement. The initial calibrations either met the method criteria, or the outliers had no adverse effects on data usability (*e.g.,* %RSD >20% for a compound not detected in samples).

A second source standard (ICV) was analyzed immediately after the initial calibration. The percent difference (%D) values were within ±30% for all target compounds. The initial calibration was acceptable.

1.4 Continuing Calibration Verification (CCV)

The Functional Guidelines and method criteria require that (1) continuing calibrations be analyzed at the beginning of each 12-hour analysis period prior to the analysis of method blank and samples, (2) the %D value be within ±20%, and (3) the average RF meet the method requirement for all target and surrogate compounds.

Calibration verification analyses were performed at the required frequency. The %D values in all CCVs met the ±20% criterion.

1.5 Blanks

Method Blanks: Method blanks were prepared and analyzed as required. Target compounds were not detected at or above the limit of detection (LODs) in the method blanks.

Trip Blanks: Three trip blanks (one for each sample shipment) was submitted for VOCs analyses. Target compounds were not detected at or above the LODs in these trip blanks.

1.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. All percent recovery (%R) and relative percent difference (RPD) values were either within the laboratory control limits or the outliers had no adverse effects on data usability (*e.g.,* %R or RPD values biased high for a compound not detected in samples).

1.7 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. The %R values for one or two spikes, 1,2-dichloroethane-d_4 and/or 4-bromofluorobenzene, were greater than the upper laboratory control limits in a number of samples due to matrix interference. The %R values for other surrogate spikes in these samples were within the control limits; no data qualifying action was taken.

1.8 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were performed on project samples as requested. The %R and RPD values were within the laboratory control limits.

1.9 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria.

1.10 Method Reporting Limits and Compound Quantitation

The reporting limits (RLs) were supported with adequate ICAL calibration concentrations and met the QAPP requirements. Re-calculation was performed on 10% of the

instrument calibration and reported QC and sample analyses. No anomalies were found via the verification calculation.

1.11 Target Compound Identification

Target compound identification was evaluated by examining if (1) the RRT is within ±0.06 RRT units of the standard RRT for a positively identified compound, (2) the characteristic ion intensity of a positively identified compound is within ±30% in comparison with the reference spectrum, and (3) ions of a positively identified compound with >10% relative abundance should be present. No anomalies were found in relation to target compound identification.

1.12 System Performance

The system performance and stability over an analytical sequence was evaluated by examining chromatograms for abrupt baseline shifting, excessive baseline rise at elevated temperature, progressing peak tailing, or loss of resolution. In addition, the internal standard retention times and response areas are checked for trends of shifting. No anomaly was observed.

1.13 Field Duplicate

Two pairs of field duplicates were submitted for VOCs analyses. The results, RPD (or concentration difference) values for detected target compounds and data qualification were presented in **Appendix A**.

1.14 Overall Assessment of VOCs Data Usability

VOCs data are of known quality and acceptable for use, as qualified.

2. Polycyclic Aromatic Hydrocarbons (PAHs) by GC/MS (EPA Method SW8270D-SIM)

2.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be extracted within seven days of collection. Extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

2.2 GC/MS Instrument Performance Check

Decafluorotriphenylphosphine (DFTPP) tuning was performed within each 12-hour interval. All required ion abundance ratios met the method requirements.

2.3 Initial Calibration (ICAL)

The initial calibration should (1) consist of at least five calibration standards at different concentrations, (2) if linear average RFs is chosen as the quantitation option, the %RSD of average RFs be <20%, (3) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) be >0.995, and (4) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) be >0.99.

A second source standard (ICV) should be analyzed immediately after the last initial calibration standard; the %D values for target and surrogate compounds should be within ±30%. The initial calibration met the criteria.

2.4 Continuing Calibration Verification (CCV)

The method requires that (1) the initial calibration be verified prior to any analysis for each 12-hour analysis sequence, and (2) the %D be within ±20%.

Calibration verification was performed at the required frequency. The %D values for all target compounds were within the control limits.

2.5 Method Blanks

Method blanks were prepared and analyzed as required. Target compounds were either not detected at or above the LODs in the method blanks.

2.6 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. The %R values were either within control limits, or the outliers had no adverse effects on data usability (*e.g.,* %R value biased high for a compound not detected in samples).

2.7 Matrix Spike and Matrix Spike Duplicate

MS/MSD analyses were performed on project samples as requested. The %R and RPD values were either within control limits.

2.8 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. The %R and RPD values were either within the laboratory control limits.

2.9 Internal Standards

The method requires that (1) internal standard retention time be within ±30 seconds from that of the associated 12-hour calibration standard, and (2) the area counts of all internal standards be within –50% to +100% of the associated 12-hour calibration standard. All internal standards in the sample and associated QC analyses met the criteria.

2.10 Field Duplicates

One field duplicate pair was submitted for PAHs analyses. The results, RPD (or concentration difference) values for detected target compounds and data qualification were presented in **Appendix A**.

2.11 Target Compound Identification

Target compound identification is evaluated by examining if (1) the RRT is within ±0.06 RRT units of the standard RRT for a positively identified compound, (2) the relative intensity of characteristic ions are within ±30% in comparison with the reference spectrum, and (3) ions of a positively identified compound with >10% relative abundance should be present. No anomalies were found.

2.12 Target Compound Quantitation and Method Reporting Limits

The sample-specific MDLs and reporting limits (RLs) were adjusted with sample amount extracted and moisture content. RLs were supported with adequate initial calibration concentrations and achieved the project target quantitation limits.

Verification calculations were performed on 10% of the instrument calibration, calibration verifications, and reported QC and sample analyses. No anomalies were found. Sample quantitation and reporting was correctly performed.

2.13 System Performance

The system performance and stability over an analytical sequence was evaluated by examining chromatograms for abrupt baseline shifting, excessive baseline rise at elevated temperature, progressing peak tailing, or loss of resolution. In addition, the

internal standard retention times and response areas were checked for trends of shifting. No anomalies were observed.

2.14 Overall Assessment of PAHs Data Usability

PAHs data are of known quality and acceptable for use, as qualified.

3. Methane by GC/FID (EPA Method RSK175)

3.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be analyzed within 14 days. All samples were analyzed within the required holding times.

3.2 Initial Calibration (ICAL)

A minimum of 5-point calibration was performed. The average response factor %RSD value was ≤20%, as required by the method.

In cases where the linear regression approach was applied, the coefficients of determination (R^2) were all ≥0.995, as required by the method.

A second source standard (ICV) was analyzed immediately after the initial calibration. The %D values were within ±15% for target compounds. The initial calibration was acceptable.

3.3 Calibration Verification (CCV)

Calibration verification was performed at the required frequency for all analytical sequences. The %D values for the calibration verifications met the method criterion (±15%).

3.4 Method Blank

Method blanks were prepared and analyzed as required. Methane not detected at or above the LOD in the method blanks.

3.5 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were performed on project samples 303-28-APR13 and 01-118-APR13 as requested. Methane concentrations both samples were significantly (>4x) greater than the spiking levels; the results for the MS/MSD performed on these sample were not applicable for data quality assessment. Analytical accuracy and precision was evaluated against LCS/LCSD results.

3.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required. All %R and RPD values met the laboratory control criteria.

3.7 Field Duplicates

Two pairs of field duplicates were submitted for methane analyses. The field precision met the project advisory criteria; no data were qualified. The results and data qualification are presented in **Appendix A**.

3.8 Target Compound Identification

No anomalies in relation to target compound identification were found.

3.9 Target Compound Quantitation and Method Reporting Limits

Re-calculation was performed on 10% of the instrument calibration and reported QC and sample analyses. No anomalies were found via the verification calculation.

Sample results were reported from the quantitation within the linear ICAL range. The reported LOQ was supported with adequate ICAL concentrations.

3.10 Overall Assessment of Methane Data Usability

Methane data are of known quality and acceptable for use, as qualified.

4. GRO by GC/FID (Alaska State Method AK101)

4.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be analyzed within 14 days. All samples were analyzed within the required holding times.

4.2 Initial Calibration (ICAL)

A minimum of 5-point calibration was performed. The average response factor %RSD value was ≤20%, as required by the method.

In cases where the linear regression approach was applied, the coefficients of determination (R^2) were all ≥0.995, as required by the method.

A second source standard (ICV) was analyzed immediately after the initial calibration. The %D values were within ±15% for target compounds. The initial calibration was acceptable.

4.3 Calibration Verification (CCV)

Calibration verification was performed at the required frequency for all analytical sequences. The %D values for the calibration verifications met the method criterion (±15%).

4.4 Blanks

Method Blank: Method blanks were prepared and analyzed as required. DRO and RRO were not detected at or above the MDLs in the method blanks.

Trip Blanks: One trip blank was submitted for GRO analysis. GRO was not detected at or above the LODs in the trip blank.

4.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. The %R values for one of the two spikes, 4-bromofluorobenzene, were greater than the upper laboratory control limits in a number of samples due to matrix interference. The %R values for the second surrogate spike in these samples were within the control limits; no data qualifying action was taken.

4.6 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were performed on project samples as requested. The %R and RPD values were within the control limits.

4.7 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required. All %R and RPD values met the laboratory control criteria.

4.8 Field Duplicates

One field duplicate pair was submitted for GRO analyses. The field precision met the project advisory criteria; no data were qualified. The results and data qualification are presented in **Appendix A**.

4.9 Target Compound Identification

The laboratory reported GRO (C6 – C10) results as required by the method. No anomalies in relation to target compound identification were found.

4.10 Target Compound Quantitation and Method Reporting Limits

Re-calculation was performed on 10% of the instrument calibration and reported QC and sample analyses. No anomalies were found via the verification calculation.

Sample results were reported from the quantitation within the linear ICAL ranges. The reported RLs were supported with adequate ICAL concentrations.

4.11 Overall Assessment of GRO Data Usability

GRO data are of known quality and acceptable for use, as qualified.

5. DRO by GC/FID (Alaska State Method AK102)

5.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be extracted within 14 days and the extracts analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

5.2 Initial Calibration (ICAL)

A minimum of 5-point calibration was performed. The average response factor %RSD value was ≤20%, as required by the method.

In cases where the linear regression approach was applied, the coefficients of determination (R^2) were all ≥0.995, as required by the method.

A second source standard (ICV) was analyzed immediately after the initial calibration. The %D values were within ±20% for target compounds. The initial calibration was acceptable.

5.3 Calibration Verification (CCV)

Calibration verification was performed at the required frequency for all analytical sequences. The %D values for the calibration verifications met the method criterion (±20%).

5.4 Method Blanks

Method blanks were prepared and analyzed as required. DRO and RRO were not detected at or above the MDLs in the method blanks.

5.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the laboratory control limits.

5.6 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were performed on project samples as requested. The %R and RPD values were within the laboratory control limits.

5.7 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required. All %R and RPD values met the laboratory control criteria.

5.8 Field Duplicates

One field duplicate pair was submitted for DRO analyses. The field precision met the project advisory criteria; no data were qualified. The results and data qualification are presented in **Appendix A**.

5.9 Target Compound Identification

The laboratory reported DRO (C10 - C25) and RRO (C25 - C36) results as required by the method. DRO and RRO were detected at lower levels (below the RLs) in majority of the samples; chromatographic patterns of the detected petroleum hydrocarbons were not distinctively observed on the reported chromatograms, except sample GW-7A-003-01-180. The RRO detection reported in this sample resembled heavy motor oil fingerprints.

5.10 Target Compound Quantitation and Method Reporting Limits

Re-calculation was performed on 10% of the instrument calibration and reported QC and sample analyses. No anomalies were found via the verification calculation.

Sample results were reported from the quantitation within the linear ICAL ranges for DRO and RRO. The reported RLs were supported with adequate ICAL concentrations. All sample-specific RLs met the QAPP requirements.

5.11 Overall Assessment of DRO Data Usability

DRO data are of known quality and acceptable for use, as qualified.

6. Total and Dissolved Lead by ICP/MS (EPA Method SW6020A)

6.1 Sample Management and Holding Times

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Sediment and water samples should be analyzed within 180 days for lead. Samples were analyzed within the required holding time.

6.2 ICP/MS Tuning

Instrument tuning was performed at the required frequency. The stability check (%RSD <5%), mass calibration (mass difference <0.1 AMU), and resolution check (peak width <0.9 AMU at 5% peak height) met the NFG and method criteria.

6.3 Initial Calibration

The ICP methods requires that (1) a blank and one calibration standard be used in establishing the analytical curve, and (2) the average of replicate exposures be reported for all standards, QC, and sample analyses.

6.4 Calibration Verification (ICV and CCV)

Initial calibration verifications (ICVs) and continuing calibration verifications (CCVs) were analyzed at the required frequency. The %R values met the control criteria (90 – 110%).

6.5 Blanks

Calibration Blanks: Initial calibration blanks (ICBs) and continuing calibration blanks (CCBs) were analyzed at required frequency. Lead was not detected in ICBs/CCBs at or above the LOD.

Negative detections found in ICB and selected CCBs at levels where their absolute values were between those of MDLs and MRLs were evaluated and determined to have no significant effects on samples results.

Preparation Blanks: Method blanks were prepared and analyzed as required. Lead was not detected in the method blanks at or above the LOD.

6.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. All %R and RPD values were within the project control limits.

6.7 Matrix Spike (MS) and MS Duplicate (MSD)

MS and MSD analyses were performed on project samples as requested. All %R and RPD values met the laboratory control limits.

6.8 Internal Standards

At least three internal standards were added to all field and QC samples for ICP/MS analyses. All percent relative intensity values were within the method criteria (60 - 125% of those for the associated calibration blank).

6.9 ICP Serial Dilution

Serial dilution analyses were performed on project samples in each preparation batch. The %D values for positive results greater than 50X MDL were within 10%.

6.10 Method Reporting Limits and Analyte Quantitation

Verification calculations were performed on 10% of the instrument calibration, calibration verifications, and reported QC and sample analyses. No anomalies were found. Sample quantitation and reporting was correctly performed.

6.11 Field Duplicates

One field duplicate pair was submitted for total and dissolved lead analyses. Sample results, RPD (or concentration difference) values, and data qualification was summarized in **Appendix A**.

6.12 Overall Assessment of Total and Dissolved Lead Data Usability

Total and dissolved lead data are of known quality and acceptable for use, as qualified.

7. Sulfate and Alkalinity (EPA Method 300.0 and SM2320B)

7.1 Sample Management and Holding Time

No anomalies were identified in relation to sample preservation, handling, and transport, as discussed in Section 1.1.

Water samples should be analyzed within 28 days of collection for sulfate and 14 days for total alkalinity. All samples were analyzed within the required holding times.

7.2 Instrument Calibration

The initial calibrations were established as required by the methods. The correlation coefficients (r) of the initial calibration curves were >0.995, and met the method criteria.

7.3 Calibration Verification

ICV and CCV analyses were performed as required by the methods. All ICV and CCV %R values were within the laboratory control limits (90 – 110%).

7.4 Blanks

Calibration Blanks: ICBs and CCBs were analyzed for sulfate as required by the methods. Sulfate was not detected in ICBs and CCBs at or above the LOD.

Method Blanks: Method blanks were prepared and analyzed as required by the methods. No target analytes were detected at or above the LODs in method blanks.

7.5 Laboratory Duplicate Analyses

Laboratory duplicate analyses were performed for sulfate and alkalinity on project samples as requested. The RPD values were within the laboratory control limits.

7.6 Matrix Spike (MS)

MS analyses were formed for sulfate on project samples as requested. The %R values were within the laboratory control limits.

7.7 Laboratory Control Samples (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed for sulfate and alkalinity as required by the methods. The %R and RPD values were within the laboratory control limits.

7.8 Method Reporting Limits

The LOQs were supported with adequate initial calibration concentrations. Sample-specific RLs achieved the project requirements for quantitation limits.

7.9 Field Duplicates

Two field duplicate pairs were submitted for sulfate and alkalinity analyses. Sample results, RPD (or concentration difference) values, and data qualification was summarized in **Appendix A**. Field duplicate results met the project evaluation criteria for conventional parameters.

7.10 Overall Assessment of Sulfate and Alkalinity Data Usability

Sulfate and alkalinity data are of known quality and acceptable for use, as qualified.

SUMMARY

Data qualification is summarized as follows:

Sample ID	Analyte	Data Qualifier	Reason	Report Section
No data qualifiers were assigned to data in these SDGs.				

Data Qualifiers are defined as follows:

Data Qualifier	Definition
J	The analyte was detected above the reported quantitation limit, and the reported concentration was approximate.
R	The result was rejected and could not be used.
U	The analyte was analyzed for, but was considered not detected at the reporting limit or reported value.
UJ	The analyte was analyzed for, and the associated quantitation limit was approximate.

Approved By: _____ Date: ***June 13, 2013***

Mingta Lin

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USEPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency, June 2008, EPA-540-R-08-01.

USEPA *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third Edition, December 1996.

Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.

Appendix A

Field duplicate RPD is indicative of field and laboratory precision and sample homogeneity in combination. The Functional Guidelines or *Work Plan* do not specify criteria for field duplicate evaluation. An advisory criterion of 25% was applied to evaluating the RPD values of soil field duplicate results that are ≥5xRL. For results that are <5xRL, an advisory criterion of ±RL was applied to evaluating the concentration differences. The RPD (or concentration difference as applicable) values and data qualification for detected compounds in field duplicates are presented as follows:

Analytes	Unit	RL	Sample ID & Results		RPD	Difference	Data Qualifier
			MRP-MW2-APR13	**303-DUP1-APR13**			
Total Lead	µg/L	1	2.38	2.13	-	0.25	
Diss. Lead	µg/L	1	1.77	1.82	-	0.05	
			303-28-APR13	**303-DUP2-APR13**		0.01	
Alkalinity, Total	mg/L	5	131	131	0%	-	
Sulfate	mg/L	0.5	0.276	0.34	-	0.06	
GRO	mg/L	5	10	12	-	2.00	
Methane	µg/L	40	200	250	22%	-	
			HMW-303-5-APR13	**303-DUP3-APR13**			
Tetrachloroethene	µg/L	1	ND	ND	-	-	
			01-118-APR13	**1451-DUP1-APR13**			
DRO	mg/L	0.51	6	5.8	3%	-	
			1451-3-APR13	**1451-DUP2-APR13**			
Alkalinity, Total	mg/L	5	166	157	6%	-	
Sulfate	mg/L	2.5	79.9	66.8	18%	-	
Benzene	µg/L	0.2	ND	ND	-	-	
Ethylbenzene	µg/L	0.2	ND	ND	-	-	
m-, p-Xylene	µg/L	0.4	ND	ND	-	-	
o-Xylene	µg/L	0.2	ND	ND	-	-	
Toluene	µg/L	1	0.36	0.33	-	0.03	
Acenaphthene	µg/L	0.53	ND	ND	-	-	
Acenaphthylene	µg/L	0.53	ND	ND	-	-	
Anthracene	µg/L	0.53	ND	ND	-	-	
Benzo[a]anthracene	µg/L	0.53	ND	ND	-	-	
Benzo[a]pyrene	µg/L	0.53	ND	ND	-	-	
Benzo[b]fluoranthene	µg/L	0.53	ND	ND	-	-	
Benzo[g,h,i]perylene	µg/L	0.53	ND	ND	-	-	
Benzo[k]fluoranthene	µg/L	0.53	ND	ND	-	-	

Analytes	Unit	RL	Sample ID & Results		RPD	Difference	Data Qualifier
Chrysene	µg/L	0.53	ND	ND	-	-	
Dibenz[a,h]anthracene	µg/L	0.53	ND	ND	-	-	
Fluoranthene	µg/L	0.53	ND	ND	-	-	
Fluorene	µg/L	0.53	0.49	0.42	-	0.07	
Indeno[1,2,3-cd]Pyrene	µg/L	0.53	ND	ND	-	-	
Naphthalene	µg/L	0.53	ND	ND	-	-	
Phenanthrene	µg/L	0.53	ND	ND	-	-	
Pyrene	µg/L	0.53	ND	ND	-	-	
Methane	µg/L	500	4300	3400	23%	-	

Note:
µg/L – microgram per liter
Difference – Concentration difference between the parent sample and the field duplicate
mg/L – milligram per liter
ND – The analyte was not detected at or above the RL
RL – Reporting limit
RPD – Relative percent difference

Laboratory Data Review Checklist

Completed by: **Mingta Lin**

Title: **Senior Project Chemist** Date: **June 13, 2013**

CS Report Name: Report Date:

Consultant Firm: **URS Group – Seattle, WA**

Laboratory Name: **EMAX Laboratories, Inc. – Torrance, CA**

Laboratory Report Number: **13D073, 13D078, 13D119**

ADEC File Number: ADEC RecKey:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☐ ☒ Yes ☐ ☐ No ☐ NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ ☐ Yes ☐ ☐ No ☐ ☒ NA (Please explain.) Comments:

   All analyses were performed at one laboratory facility.

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ☐ ☒ Yes ☐ ☐ No ☐ ☐ NA (Please explain.) Comments:

   b. Correct analyses requested?

   ☐ ☒ Yes ☐ ☐ No ☐ ☐ NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

e. Data quality or usability affected? (Please explain.)

Comments:

No.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

c. Were all corrective actions documented?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

QC outliers stated in the case narrative as well as those identified via the data validation were evaluated and data qualified accordingly and documented in the Data Validation Report (DVR).

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

b. All applicable holding times met?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?

☐ Yes ☐ No ☒ NA (Please explain.) Comments:

All samples in this SDG were water samples.

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

e. Data quality or usability affected?

Comments:

No.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

ii. All method blank results less than PQL?

☐☒ Yes ☐ ☐ No ☐☐ NA (Please explain.) Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

☐☒ Yes ☐ ☐ No ☐☐ NA (Please explain.) Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

No.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☐☒ Yes ☐ ☐ No ☐☐ NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐☒ Yes ☐ ☐ No ☐☐ NA (Please explain.) Comments:

LCS/LCSD were performed for metals as well.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☐☒ Yes ☐ ☐ No ☐☐ NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☐☒ Yes ☐ ☐ No ☐☐ NA (Please explain.) Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

None.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐☒ Yes ☐ ☐ No ☐☐ NA (Please explain.) Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☐☐ Yes ☐ ☒ No ☐☐ NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☐ ☒ No ☐ NA (Please explain.) Comments:

(1) The %R values for one or two of the spikes, 1,2-dichloroethane-d4 and 4-bromofluorobenzene, for VOCs analyses were greater than the upper laboratory control limits in a number of samples due to matrix interference.
(2) The %R values for one of the surrogate spikes, 4-bromofluorobenzene, were greater than the upper laboratory control limits in a number of samples due to matrix interference.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ ☒ Yes ☐ ☐ No ☐ NA (Please explain.) Comments:

iv. Data quality or usability affected? (Use the comment box to explain.)
Comments:

No. The outlying %R values appeared to be results of matrix interference and the %R values for other surrogate spikes in these samples were within the control limits; no data qualifying action was taken.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

☐ ☒ Yes ☐ ☐ No ☐ NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ ☒ Yes ☐ ☐ No ☐ NA (Please explain.) Comments:

iii. All results less than PQL?

☐☒ Yes ☐☐ No ☐☐ NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

No.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☐☒ Yes ☐☐ No ☐☐ NA (Please explain.) Comments:

ii. Submitted blind to lab?

☐☒ Yes ☐☐ No ☐☒ NA (Please explain.) Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐☒ Yes ☐☐ No ☐☐ NA (Please explain.) Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

No.

f. Decontamination or Equipment Blank (If not used explain why).

☐☐ Yes ☐☒ No ☐☐ NA (Please explain.) Comments:

i. All results less than PQL?

☐ Yes ☐ No ☒ NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

None.

iii. Data quality or usability affected? (Please explain.)

Comments:

No.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

APPENDIX D

Sampling Deviation Forms

SAMPLING DEVIATION FORM No. 1

Project Name:	DO 59 – Area 303 and Building T-1451 GW Monitoring	Contract No.:	N44255-09-D-4001
Location:	Adak Island, Alaska	Task No.:	DO 59
Site Name:	Area 303	Location:	MW-303-33
Inspector(s):	Dave Lewis/John Highstone	Date/Time:	4/11/13 1505
Company:	URS		
Weather/Temperature:	Breezy, cloudy, 32 degrees F		

Material to Be Sampled:
Groundwater

Measurement Parameter:
Analytes identified in Table 18-1 (GRO, Benzene, NAPs) in the project SAP

Reason for Change in Field Procedure or Analytical Variation:
Well was damaged. Casing appears bent or broken. A water level probe could not be inserted down the casing. Tubing was placed in the casing, but sediment continued to plug the tubing while attempting to sample groundwater.

Variation From Field or Analytical Procedure:
No water could be collected from MW-303-33. The duplicate sample that could not be collected for QA purposes from this well was collected from MW-303-28.

Special Equipment, Materials, or Personnel Required:
NA

Initiator's Name:	Tom Abbott	Date:	4/16/13
NAVFAC NW RPM:	[illegible]	Date:	4/17/13
Project Manager:	Tom Abbott	Date:	4/16/13
QA Officer/Reviewer:	[illegible]	Date	4/16/13

Well MW-303-33 as viewed from above on April 11, 2013. Damage to the upper portion of the 2-inch diameter PVC casing is evident.

SAMPLING DEVIATION FORM NO. 2

Project Name:	DO 59 – Area 303 and Building T-1451 GW Monitoring	Contract No.:	N44255-09-D-4001
Location:	Adak Island, Alaska	Task No.:	DO 59
Site Name:	Former Power Plant, Building T-1451	Location:	E-701
Inspector(s):	Dave Lewis/John Highstone	Date/Time:	4/16/13 1100
Company:	URS		
Weather/Temperature:	Windy, rainy, 37 degrees F		

Material to Be Sampled:
Groundwater

Measurement Parameter:
Natural attenuation parameters

Reason for Change in Field Procedure or Analytical Variation:
This well was not identified for sampling in Table 17-1 or in Table 18-1 in the project SAP. This well is identified for sampling in Table 10-1. This well is identified for the collection of background sampling for NAPs in 2014.

Variation From Field or Analytical Procedure:
Rather than not collecting a sample from well E-701, collecting a sample for NAPs is recommended. Field measurements, and water levels will also be collected per Table 10-1. The additional data will provide concurrent background NAP concentrations.

Special Equipment, Materials, or Personnel Required:
NA

Initiator's Name:	Tom Abbott	Date:	4/16/13
NAVFAC NW RPM:	[illegible]	Date:	4/17/13
Project Manager:	Tom Abbott	Date:	4/16/13
QA Officer/Reviewer:	[illegible]	Date	4/16/13

SAMPLING DEVIATION FORM NO. 3

Project Name:	DO 59 – Area 303 and Building T-1451 GW Monitoring	Contract No.:	N44255-09-D-4001
Location:	Adak Island, Alaska	Task No.:	DO 59
Site Name:	Former Power Plant, Building T-1451	Location:	MW-1451-1, -6, and -7
Inspector(s):	Dave Lewis/John Highstone	Date/Time:	4/12/13
Company:	URS		
Weather/Temperature:	Breezy, Cloudy, 32 degrees F		

Material to Be Sampled:
Groundwater (or free product removal)

Measurement Parameter:
DRO and natural attenuation parameters

Reason for Change in Field Procedure or Analytical Variation:
Wells MW-1451-1, MW-1451-6, and MW-1451-7 were to be sampled if free product was present less than 0.02 feet thick or were to have free product removed if free product was present at greater than 0.5 feet thick. These wells had free product ranging from 0.18 and 0.30 feet thick.

Variation From Field or Analytical Procedure:
Neither sampling nor free product removal was completed for these three wells. Although this situation was addressed in accordance with page 62 of the SAP, the SAP requires that a sampling deviation is prepared for documentation.

Special Equipment, Materials, or Personnel Required:
NA

Initiator's Name:	Tom Abbott	Date:	4/16/13
NAVFAC NW RPM:	[illegible]	Date:	4/17/13
Project Manager:	Tom Abbott	Date:	4/16/13
QA Officer/Reviewer:	[illegible]	Date	4/16/13

APPENDIX E

Monitoring Well Inspection Checklists

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: DO 59 Project No.: 33762109

Site Name: Area 303 Adak Well No.: 03-012

Inspector(s): Dlewis Date/Time: 4/10/13 1025

Company: URS

Weather/Temperature: 32° snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" TWIST		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: BOLLARDS	☒	☐

16. Previous well depth: _____. Current well depth: 11.50.

17. Depth to water: 7.29

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 adak Well No.: 03-107

Inspector(s): D Lewis Date/Time: 4/8/13 1300

Company: URS

Weather/Temperature: wind 32° snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" end caps ~~twist~~		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☐	☒
8. Is the casing in good condition?	☐	☒
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☐
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☒

16. Previous well depth: _____. Current well depth: 32.90.

17. Depth to water: 25.90

18. PID reading at wellhead: 26 Breathing Zone: 0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: area 303 adak Well No.: 04-211

Inspector(s): Lewis Date/Time: 4-11-13 1615

Company: URS

Weather/Temperature: 32° Cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap: 3 9/16" Stripped		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: Bollards	☒	☐

16. Previous well depth: _____. Current well depth: 30.27.

17. Depth to water: 21.87

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 Adak Well No.: HMW-303-5

Inspector(s): D Lewis Date/Time: 4/8/13 1450

Company: URS

Weather/Temperature: 32° windy, snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☒	☒
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☒

16. Previous well depth: _____. Current well depth: 33.76.

17. Depth to water: 25.58

18. PID reading at wellhead: 2.6 Breathing Zone: 0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: DO 59 Project No.: 33762109

Site Name: Area 303 Adak Well No.: HMW-303-6

Inspector(s): J Lewis Date/Time: 4/8/13 1600

Company: URS

Weather/Temperature: 32° wind snowflurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" end cap		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☒

16. Previous well depth: _____. Current well depth: 35.07.

17. Depth to water: 26.43

18. PID reading at wellhead: 0.1 Breathing Zone: 0.2

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: area 303 adapt Well No.: MRP-MW2

Inspector(s): DLewis Date/Time: 4/11/13 1000

Company: URS

Weather/Temperature: 32° Cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" end cap		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☒	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: Bollards	☒	☐

16. Previous well depth: ~~8.6~~. Current well depth: 26.92

17. Depth to water: 19.03

18. PID reading at wellhead: 8.6 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-28

Inspector(s): DLewis Date/Time: 4/12/13 0830

Company: URS

Weather/Temperature: 32° cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" TWIST		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity: slight petroleum	☒	☐
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☐

16. Previous well depth: _____. Current well depth: 33.98.

17. Depth to water: 26.33

18. PID reading at wellhead: 34.9 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: DO 59 Project No.: 33762109

Site Name: Area 303 adalt Well No.: MW-303-29

Inspector(s): D Lewis Date/Time: 4/8/13 1700

Company: URS

Weather/Temperature: Snow wind 32°

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist lock		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☒

16. Previous well depth: _____. Current well depth: 34.03.

17. Depth to water: 24.94

18. PID reading at wellhead: 0.4 Breathing Zone: 0.1

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-30

Inspector(s): DLewis Date/Time: 4/9/13 0835

Company: URS

Weather/Temperature: 32° overcast windy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☒

16. Previous well depth: _____. Current well depth: 35.05.

17. Depth to water: 26.02

18. PID reading at wellhead: 0 Breathing Zone: 0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: DO 59 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-31

Inspector(s): D Lewis Date/Time: 4/10/13 1535

Company: URS

Weather/Temperature: 32° Snow, wind

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☐

16. Previous well depth: _____. Current well depth: 34.14.

17. Depth to water: 25.77

18. PID reading at wellhead: 0.1 ppm Breathing Zone: 0.0 ppm

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-32

Inspector(s): D Lewis Date/Time: 4/11/13 1340

Company: URS

Weather/Temperature: 32° Cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity. Slight petroleum	☒	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: Bollards	☒	☐

16. Previous well depth: _____. Current well depth: 31.20.

17. Depth to water: 22.07

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: area 303 Adak Well No.: MW-303-33

Inspector(s): DLewis Date/Time: 4/11/13 1505

Company: URS

Weather/Temperature: 32° cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well? 2" Twist	☒	☐
4. Specify type of cap:		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition? bent casing, can't get water level down	☐	☒
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry? sludge on bottom	☒	☐
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: ?.

17. Depth to water: ?

18. PID reading at wellhead: _____ Breathing Zone: _____

Additional notes: Can't get water level down past bent casing. Well dry, sludge on bottom

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: area 303 adak Well No.: MW-303-37

Inspector(s): D Lewis Date/Time: 4/10/13 1375

Company: URS

Weather/Temperature: 32° snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well? 2" Twist	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition? no monument cap	☐	☒
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☒

16. Previous well depth: _____. Current well depth: 18.48.

17. Depth to water: 12.01

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-38

Inspector(s): D Lewis Date/Time: 4/9/13 1005

Company: URS

Weather/Temperature: 32° overcast breezy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 4" TWIST		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☒	☒
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: Bollard	☒	☐

16. Previous well depth: _____. Current well depth: 30.55.

17. Depth to water: 23.43

18. PID reading at wellhead: 0 Breathing Zone: 0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: DO 59 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-39

Inspector(s): D Lewis Date/Time: 4/10/13 1400

Company: URS

Weather/Temperature: 32° Snow, wind

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 4" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☐

16. Previous well depth: _____. Current well depth: 28.78.

17. Depth to water: 19.99

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: DO 59 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-40

Inspector(s): Lewis Date/Time: 4/10/13 0900

Company: URS

Weather/Temperature: Snow 37°, overcast

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 4" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity: mild petroleum	☒	☐
10. Is there an oily sheen on the water?	☒	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☐

16. Previous well depth: _____. Current well depth: _____.

17. Depth to water: 5.63

18. PID reading at wellhead: 89 Breathing Zone: 1.9

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-41

Inspector(s): D Lewis Date/Time: 4/13/13 0840

Company: URS

Weather/Temperature: 32° snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity. mod. petroleum	☒	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: Bollard	☒	☐

16. Previous well depth: _____. Current well depth: 25.68.

17. Depth to water: 18.35

18. PID reading at wellhead: 0.3 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: DO 59 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-42

Inspector(s): D Lewis Date/Time: 4/9/13 1455

Company: URS

Weather/Temperature: 32° windy, Cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well? 2" Twist	☐	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity petroleum (strong)	☒	☐
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: Bollards	☒	☐

16. Previous well depth: _____. Current well depth: 33.28.

17. Depth to water: 26.44

18. PID reading at wellhead: 500 Breathing Zone: 6.8

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: ~~Area~~ DOST Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-43

Inspector(s): D Lewis Date/Time: 4/9/13 1305

Company: URS

Weather/Temperature: windy 32° overcast

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" TWIST		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: Bollards	☒	☒

16. Previous well depth: _____. Current well depth: 33.87.

17. Depth to water: 26.32

18. PID reading at wellhead: 126 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-~~330~~ 303-44

Inspector(s): D Lewis Date/Time: 4/9/13 1300

Company: URS

Weather/Temperature: 32° windy cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: BOLLARDS	☒	☐

16. Previous well depth: _____. Current well depth: 33.34.

17. Depth to water: 26.65

18. PID reading at wellhead: 0.1 Breathing Zone: 0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 adak Well No.: MW-303-45

Inspector(s): D Lewis Date/Time: 4/12/13 1025

Company: URS

Weather/Temperature: 32° overcast, breeze

	Yes	No
1. Was the monitoring well located?	☒	☒
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☒
8. Is the casing in good condition? caved sides	☐	☒
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity slight petroleum	☒	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: 30.05.

17. Depth to water: 27.66

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes:

sides of casing caved in, room for water level + tubing.

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: Area 303 Adak Well No.: MW-303-46

Inspector(s): D Lewis Date/Time: 4-11-13 1730

Company: URS

Weather/Temperature: 32° cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☐

16. Previous well depth: _____. Current well depth: 30.05.

17. Depth to water: 24.53

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: area 303 adak Well No.: MW-303-4Y

Inspector(s): Dlewis Date/Time: 4/9/13 1605

Company: URS

Weather/Temperature: 32° wind cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☒	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollard	☒	☐

16. Previous well depth: ~~20.01~~. Current well depth: 33.13.

17. Depth to water: 20.01

18. PID reading at wellhead: 0 Breathing Zone: 0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 Adak Well No.: 01-118

Inspector(s): Lewis Date/Time: 4/12/13 1610

Company: URS

Weather/Temperature: 32° windy, snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" end cap		
5. Specify size and number of bolts on flush-mount cap: 3 9/16"		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity: light petroleum	☒	☐
10. Is there an oily sheen on the water? yes	☒	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: no	☐	☒

16. Previous well depth: _____. Current well depth: 29.50.

17. Depth to water: 15.10

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 Adak Well No.: 01-150

Inspector(s): D Lewis Date/Time: 4/13/13 1500

Company: URS

Weather/Temperature: 32° wind, cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☒

16. Previous well depth: _____. Current well depth: 27.08.

17. Depth to water: 18.82

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 Adak Well No.: E-701

Inspector(s): Lewis Date/Time: 4/16/13 1000

Company: URS

Weather/Temperature: 37°, wind, rain

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" end cap		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: _____	☐	☒

16. Previous well depth: _____. Current well depth: 24.30.

17. Depth to water: 17.52

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 ~~Area 303~~ Adak Well No.: MW-1451-1

Inspector(s): D Lewis Date/Time: 4/12/13 1250

Company: URS

Weather/Temperature: 32° snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" twist lock		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☒	☐
13. If so, product thickness .30		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type:	☐	☐

16. Previous well depth: _____. Current well depth: _____.

17. Depth to water: 6.86 product at 6.56

18. PID reading at wellhead: 0.2 Breathing Zone: 0.0

Additional notes:

6.86
6.56
.30"

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 adak Well No.: MW-1451-2

Inspector(s): DLewis Date/Time: 4/13/13 1400

Company: URS

Weather/Temperature: 32°, wind, cloudy

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: 14.55.

17. Depth to water: 5.84

18. PID reading at wellhead:_____ Breathing Zone:_____

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 Adak Well No.: MW-1451-3

Inspector(s): D Lewis Date/Time: 4/13/12 1250

Company: URS

Weather/Temperature: 32° windy, overcast

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☒	☐
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: 13.65.

17. Depth to water: 5.07

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 Adak Well No.: MW-1451-4

Inspector(s): N Lewis Date/Time: 4/13/13 1005

Company: URS

Weather/Temperature: 34° overcast, wind

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" TWIST		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☒
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity	☐	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: 14.90.

17. Depth to water: 5.88

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 Adak Well No.: MW-1451-5

Inspector(s): Dlewis Date/Time: 4/12/13 1320

Company: URS

Weather/Temperature: 32° snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☒
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity slight petroleum	☐	☐
10. Is there an oily sheen on the water?	☒	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: 15.80.

17. Depth to water: 6.42

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: ~~Adak Area 303~~ T-1451 Adak Well No.: MW-1451-6

Inspector(s): DLewis Date/Time: 4/12/13 1410

Company: URS

Weather/Temperature: 32° Snow Flurries wind

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity mod. petroleum	☒	☐
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☒	☐
13. If so, product thickness .18		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: _____.

17. Depth to water: 5.02

18. PID reading at wellhead: 1.2 Breathing Zone: 0.0

Additional notes:

5.02
4.84
.18

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 ~~Area 303~~ Adak Well No.: MW-1451-7

Inspector(s): DLewis Date/Time: 4/12/13 1415

Company: URS

Weather/Temperature: 34° windy, snow flurries

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 4" ~~4~~ " lock		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity: strong petroleum	☒	☐
10. Is there an oily sheen on the water?	☐	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☒	☐
13. If so, product thickness .30.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: _____.

17. Depth to water: 6.35

18. PID reading at wellhead: 0.4 Breathing Zone: 0.0

Additional notes:

6.35
6.05
.30

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: D059 Project No.: 33762109

Site Name: T-1451 Adak Well No.: MW-1451-8

Inspector(s): D Lewis Date/Time: 4/12/13 1515

Company: URS

Weather/Temperature: 36° windy, overcast

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" twist lock		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity: slight petroleum	☒	☒
10. Is there an oily sheen on the water?	☐	☒
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: bollards	☒	☐

16. Previous well depth: _____. Current well depth: 16.11.

17. Depth to water: 6.05

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____

Monitoring Well (Groundwater) Gauging
Visual Inspection Checklist

Project Name: DO 59 Project No.: 33762109

Site Name: T-1451 Adak Well No.: MW-1451-9

Inspector(s): D Lewis Date/Time: 4/12/13 1430

Company: URS

Weather/Temperature: 34° wind

	Yes	No
1. Was the monitoring well located?	☒	☐
2. Is the well clearly labeled? If not, please re-label.	☐	☒
3. Is there a cap on the monitoring well?	☒	☐
4. Specify type of cap: 2" Twist		
5. Specify size and number of bolts on flush-mount cap:		
6. Is there any evidence of tampering with the cap or well casing?	☐	☒
7. Is the monument in good condition?	☒	☐
8. Is the casing in good condition?	☒	☐
9. Are there any odors (e.g., petroleum or sulfide/rotten egg)? If yes, describe the odor and intensity: light petroleum	☒	☐
10. Is there an oily sheen on the water?	☒	☐
11. Is the well dry?	☐	☒
12. Is there product in the well?	☐	☒
13. If so, product thickness _____.		
14. Is the well depth consistent with past depth measurements?	☐	☐
15. Are there well protections? Type: Bollards	☒	☐

16. Previous well depth: _____. Current well depth: 16.18.

17. Depth to water: 7.98

18. PID reading at wellhead: 0.0 Breathing Zone: 0.0

Additional notes: _____