Supplemental Phase II Environmental Site Assessment
Former Raincheck Cleaners – Offsite Area
18304 Bothell Way NE
Bothell, Washington

King County Solid Waste Division
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King County

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CDM

A Report Prepared For:
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SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT
FORMER RAINCHECK CLEANERS – OFFSITE AREA
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BOTHELL, WASHINGTON

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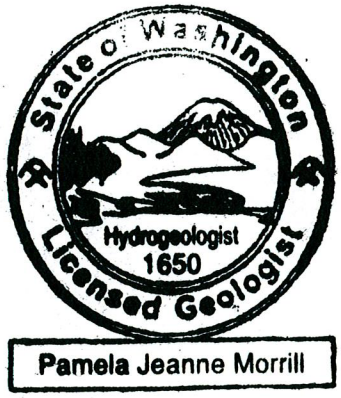

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Executive Summary

This report presents the results of a Supplemental Phase II Environmental Site Assessment (ESA) performed by Camp Dresser & McKee Inc. (CDM) to further investigate the nature and extent of contamination downgradient of the former Raincheck Laundry and Cleaners (Raincheck Cleaners) property (subject property) located in Bothell, Washington.

Raincheck Cleaners (also listed as Ultra Custom Care Cleaners, facility number 379891 on the Department of Ecology's Confirmed and Suspected Contaminated Sites List [CSCSL]), was a dry cleaner that operated from sometime in the 1950s until 1967 when the building was torn down and a small strip mall was constructed in the late 1960s. The new building was occupied by NuLife Cleaner, and apparently followed by the current occupant, Ultra Custom Dry Cleaning, which is located at the northern end of the strip mall.

In 2008 CDM completed a Phase I ESA on this site, which reported that a Phase II ESA performed in 2004 by others found chlorinated volatile organic compounds (cVOCs) associated with dry cleaning operations in the southern part of the property – the location of the former Raincheck Cleaners building. Concentrations of cVOCs, particularly the dry cleaning solvent tetrachloroethene (PCE), exceeded Model Toxics Control Act (MTCA) Method A cleanup levels. In 2009 CDM completed an area-wide investigation of the Bothell Crossroads area and found that contamination from this facility was apparently migrating southward down Bothell Way NE (formerly SR 527), possibly intermingling with contamination from one or more other downgradient sources. The inferred direction of groundwater flow in the area is toward the southeast and all borings were situated in a west or south-southwesterly direction of the facility – somewhat cross gradient - so the downgradient extent of the plume from Raincheck Cleaners was considered to be undetermined.

During this investigation, the downgradient extent of the cVOC plume associated with Raincheck Cleaners was investigated by advancing eleven soil borings on private properties that were anticipated to be hydraulically downgradient (south-southeast) of the former Raincheck Cleaners property. Groundwater samples were collected from all eleven borings and two existing monitoring wells and submitted for laboratory analysis. Soil samples were also collected from two borings were also analyzed because of apparent hydrocarbon contamination.

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This investigation determined that PCE originating from the former Raincheck Cleaners property is predominantly migrating southward along utility corridors on Bothell Way NE – the sewer utility being the most likely conduit. While a source appears to be the former Raincheck Cleaners facility, past and present dry cleaners who have occupied the Ultra Custom Cleaners facility cannot be ruled out, given the apparent releases that occurred to catch basins leading from this facility. Whatever the reason, the offsite source appears to begin within the intersection of Bothell Way NE and NE 183rd Street with the PCE migrating southward from that there. It is not known if PCE in groundwater from under the Former Raincheck Cleaners facility migrated to utility pipe bedding, or if a release occurred to sewer or storm lines and subsequently discharged from a breach in the line.

Impact to private properties in the inferred downgradient direction (south – southeast) of the former Raincheck Cleaners property is limited. While low concentrations of PCE and/or its daughter products were detected on private properties to a distance of approximately 200 feet south-southeast of the former Raincheck Cleaners property, only one compound at one location exceeded its Method A cleanup level. This was vinyl chloride (the last toxic daughter product of PCE before it degrades to non-toxic ethene and chloride), detected at a location close to Bothell Way NE.

While the PCE plume does not always exhibit a concentration gradient consistent with what would be expected coming from the former Raincheck Cleaners property, no additional sources of PCE contamination were identified during this investigation. In particular, there has been some speculation that a dry cleaner formerly located at 10029 Main Street (Bothell Cleaners) could be an additional contamination source. However, if this were the case, one would expect PCE to be present in the boring that was located in the inferred downgradient direction of this address, but PCE was not detected in groundwater sampled from this boring.

Soil impacted by hydrocarbons was identified at two locations and is consistent with the historical operation of gas stations at or near these locations. Further, it is consistent with prior data where hydrocarbon contamination was identified in soil and/or groundwater located within/just south of the SR52/ Bothell Way NE intersection.

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Section 1
Introduction

This report presents the results of a supplemental Phase II Environmental Site Assessment (ESA) performed by Camp Dresser & McKee Inc. (CDM) to further investigate the nature and extent of contamination downgradient of the former Raincheck Laundry and Cleaners (Raincheck Cleaners) property (subject property). Raincheck Cleaners was previously located at 18304 Bothell Way NE in Bothell, Washington (**Figure 1)**. CDM's services were performed for King County (the County) in accordance with our March 29, 2011 proposal, Work Order No. 10, under Contract No. E00196E10. In addition, CDM prepared a Quality Assurance Project Plan (QAPP) dated June 9, 2011 that was used to direct field activities.

1.1 Purpose and Scope

The City of Bothell is considering acquisition of the former Raincheck Cleaners property for an expansion of their municipal campus. The purpose of this study was to assess the nature and extent of the chlorinated solvent plume associated with the former Raincheck Cleaners. Assessment of the offsite solvent plume will help the City of Bothell in determining the magnitude of potential liability associated with this former dry cleaner.

CDM's scope of services included:

- Developing the project QAPP for review and approval by U.S. Environmental Protection Agency (EPA) Region 10 as part of Brownfields grant funding. The QAPP describes the project scope/objectives, field sampling procedures and analytical methods, and laboratory information (reporting limits, Quality Assurance/Quality Control (QA/QC) protocol, etc.). A health and safety plan was also prepared to mitigate potential exposure to hazardous substances during fieldwork activities.
- Performing a cultural resources assessment (CRA) consistent with the National Historic Preservation Act (NHPA) Section 106 process for the proposed Phase II ESA work. The CRA was performed for CDM by AMEC Earth and Environmental (AMEC).
- Coordinating with the City of Bothell for work that occurred within the Right-of-Way (ROW).
- Conducting a "call before you dig" utility locate, a private utility locate, and clearing one high-risk hole by vactoring prior to initiating drilling activities.
- Advancing eleven soil borings south-southeast (the inferred downgradient direction) of the former Raincheck Cleaners property using direct-push technology (DPT) methods and collecting soil and groundwater samples for laboratory analysis.

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- Collecting groundwater samples from two existing monitoring wells located within the exploration area.
- Submitting selected soil and water samples to an analytical laboratory for analysis of potential contaminants of concern.
- Preparing this report documenting the field activities, analytical laboratory sample results, and our evaluation of the data. The QAPP and CRA documents were submitted separately from this report.

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Section 2
Site Description and History

2.1 Site Location and Description

The former Raincheck Cleaners property is located in downtown Bothell on the east side of Bothell Way NE, about 300 feet north of the intersection of SR 522 and Bothell Way NE. The site location is shown on **Figure 1.** The property is currently occupied by a small strip mall that extends the length of the east side of the property (**Figure 2**). A dry cleaner, "Ultra Custom Dry Cleaning" currently occupies space at the north end of the strip mall. Raincheck Cleaners occupied a building previously located at the southwest corner of the subject property (**Figure 1**). Parking is located on the west side of the property. The surrounding area land use is primarily commercial and includes banks, various retail businesses, restaurants, and a grocery store.

2.2 Project Area Background

The intersection of SR 522 and Bothell Way NE has been a major commercial and transportation intersection for decades. Currently, major transformation of public transportation corridors within the project area is being undertaken in an effort to ease congestion. Through the acquisition of several properties, SR 522 will be realigned and Bothell Way NE will be extended farther south to meet the new SR 522 alignment.

Prior research of historical businesses in the project area by others identified several dry cleaners, gas stations, and other automotive facilities as potential sources of soil and groundwater contamination. Various environmental studies conducted in preparation for the road improvement construction activities, as well as by other consultants on two dry cleaner sites (including the former Raincheck Cleaners property), identified chlorinated solvents in soil and groundwater attributed to dry cleaning operations throughout the road improvement project area. Taken as a whole, these studies indicate extensive offsite migration of chlorinated solvents, comingled plumes, and possibly unknown contaminant sources. Suspected and confirmed hydrocarbon contamination resulting from historical gas stations and automotive repair facilities was also identified at several properties during some of these studies.

CDM completed an area-wide assessment of soil and groundwater conditions within the SR 522 and Bothell Way NE ROW realignment area in 2009. Among other findings, this investigation tracked PCE contamination in groundwater, apparently originating from the former Raincheck Cleaners property, migrating down Bothell Way NE from NW 183rd Street.

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2.2.1 Subject Property History and Background Information

According to a Phase 1 ESA of the subject property completed by CDM in 2008, it has been occupied by dry cleaners at two different locations. Raincheck Cleaners (1950s and 1960s) occupied a building formerly located at the southwest corner of the parcel (**Figure 1**). The building was demolished and a small strip mall was constructed in the late 1960s that was occupied by NuLife Cleaner, and apparently followed by the current occupant, Ultra Custom Dry Cleaning, which is located at the northern end of the strip mall.

A Phase II ESA performed in 2002 by Farallon Consulting (Farallon) identified various chlorinated volatile organic compounds (cVOCs), including the common dry cleaning solvent tetrachloroethene (PCE), in soil and groundwater, but not at concentrations exceeding the Model Toxics Control Act (MTCA) Method A cleanup levels in the immediate vicinity of Ultra Custom Cleaning's facility. However, concentrations of PCE as high as 800 micrograms per liter (µg/L) were measured in groundwater at the southern edge of the property, close to the demolished building historically occupied by Raincheck Cleaners (Farallon, 2002). The MTCA Method A cleanup level for PCE in groundwater is 5 µg/L. In addition, PCE-contaminated water was identified in two catch basins next to Ultra Custom Cleaners facility, indicating a release of PCE to the storm drain system by Ultra Custom Dry Cleaning.

Additional subsurface investigation performed by Environmental Partners Inc. (EPI) in 2004 further identified PCE and its associated degradation compounds in soil and groundwater in the vicinity of the former Raincheck Cleaners. PCE concentrations in groundwater ranged from 5 to 6,400 µg/L and PCE concentrations in soils ranged from 0.012 to 0.020 milligrams per kilogram (mg/kg) (EPI, 2004). PCE and other cVOCs were anticipated to be migrating offsite toward the south-southeast – the inferred direction of groundwater flow.

HWA Geosciences, Inc (HWA) has conducted various environmental and geotechnical investigations of the Bothell Crossroads redevelopment area. One of these investigations included installation and sampling of two monitoring wells (BB2 and BB3, see **Figure 2**) within the downgradient area potentially impacted by Raincheck Cleaners. BB3 is located at the southeast corner of NE 183rd Street and Bothell Way NE and BB2 is located on Main Street near the Bothell Way NE /SR 522 intersection. When these wells were sampled in September 2008 PCE was detected in BB2 at a concentration of 94 µg/L, but a concentration of only 0.51 µg/L PCE was detected at BB3.

CDM's 2009 investigation identified concentrations of PCE within Bothell Way NE, between NE 183rd Street and Main Street ranging between 49 and 57 µg/L. On Bothell Way NE north of NE 183rd Street and just north of the former Raincheck Cleaners facility the PCE concentration declined to only 0.37 µg/L, thus the primary contaminant source appeared to be the former Raincheck Cleaners business. **Figure 3** shows these historical sampling location and cVOC concentrations in groundwater at each location. Since this prior study did not extend east of Bothell Way NE, the nature of plume migration with the inferred groundwater flow direction of the subject property was not ascertained.

2.3 Topography and General Hydrogeology

The land elevation within the SR 522/ Bothell Way NE project area ranges between approximately 30 and 60 feet above mean sea level (MSL). The land surface along the Bothell Way NE north-south transect slopes gently down to the south. The land surface along the SR 522 east-west transect is

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generally flat. Beginning at the northeast corner of the project area outlined on **Figure 1,** the land surface slopes downward toward the west, southwest, and south. The subject property lies at an elevation between approximately 40 and 50 feet MSL. However, the back wall of the building is essentially a retaining wall and the elevation of the land immediately to the east is approximately 10 feet higher.

The King County Soil Survey (SCS, 1973) and Geology and Ground-Water Resources of Northwestern King County (Liesch, et al.), indicate the near surface deposits in the project area are Vashon recessional outwash in origin. The more recent publication, a map titled *Composite Geologic Map of the Sno-King Area, Central Puget Lowland, Washington* (Booth, et al., 2004) indicates Vashon till mantles the central portion of the project area and is surrounded by recessional outwash. In the south end of the Bothell Crossroads area are surficial deposits are mapped as younger alluvium, associated with the adjacent Snohomish River, with areas of wetland deposits (Booth, et al, 2004.).

Vashon recessional deposits generally consist of moderate to well sorted sand and gravel, grading to silt. Vashon till generally consists of a dense, unsorted mixture of sand, silt, and clay containing gravel and occasional boulders. Alluvial deposits generally consist of fine to coarse sand with lenses of silt and gravel.

Depth to first encountered groundwater varies by topography, ranging between approximately 4 and 18 feet below ground surface (ft bgs). Studies by others completed in the project area have estimated the groundwater flow direction to be generally toward the south-southeast.

There are no surface water features within the area of investigation. The City storm drain system within the Bothell Crossroads area discharges to the storm drain system on Bothell Way NE and then southward, finally daylighting at a channel known as Horse Creek that begins approximately 175 feet south of SR 522. Horse Creek discharges to the Sammamish River. CDM understands that the Horse Creek itself has been confined to a culvert under the project.

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Section 3
Investigation Methods

CDM's field investigation was conducted between June 27 and 28, 2011 and consisted of extending eleven boreholes to collect subsurface groundwater samples for laboratory analysis, as well as sampling two existing groundwater monitoring wells located within the area of investigation. The work was conducted in accordance with the QAPP prepared for the project dated June 9, 2011 (CDM, 2011). The following sections summarize the field activities.

3.1 Subsurface Investigation Methods

Prior to drilling, potential soil boring locations were marked in the field and the locations were assessed for possible conflicts with underground utilities. The Utilities Underground Location Center (UULC) was notified prior to drilling. A private utility locator was also hired to check for conflicts between proposed borehole locations and underground utilities. Finally, because one boring was located in the street and adjacent to fiberoptic and other underground utility lines a vactor truck was used to remove soil at this location to a depth of 6 ft bgs prior to initiating DPT sampling to ensure that the boring would not damage underground utilities.

3.1.1 Drilling

A truck-mounted DPT drill rig was utilized to explore subsurface conditions and collect soil samples. Environmental Services Network Northwest (ESN) of Lacey, Washington was the drilling contractor. DPT sampling method utilizes a hydraulically powered percussion direct-push machine that drives a tool string connected to sample barrel containing a clear acetate liner directly into the ground with minimal sample disturbance.

A CDM geologist observed the soil borings and logged soil conditions. A total of eleven DPT borings were advanced at the locations shown on **Figure 2.** The borings were identified as B19 through B29 – successive numbering to borings B1 through B18, which were completed during CDM's 2009 Bothell Crossroads Redevelopment area investigation. The borings were terminated after they had extended into groundwater to a depth sufficient for sampling. Boring depths ranged between 8 and 22 ft bgs.

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Soil samples were collected continuously from the DPT borings using a 4-foot long, 1.5-inch inside diameter, Macro-Core sampler (manufactured by Geoprobe®) attached to the end of drive rods. The sampler contains a clear acetate liner to contain the soil samples. The liners are cut open to expose the soil cores. Each soil unit was logged according to the Unified Soil Classification System (USCS) as described on **Figure A1** in **Appendix A**. Boring logs are also provided in **Appendix A**. Soil in the sample cores was visually examined for indications of contamination (staining, noticeable odor). Selected soil samples were also field-screened for volatile organic compounds (VOCs) using an organic vapor meter equipped with a photoionization detector (OVM-PID).

The original scope of this investigation did not include analysis of soil samples. However, field screening indicated the presence of contaminants at borings B20 and B29 and selected soil samples were submitted for analysis. Soil samples were collected in laboratory supplied pre-cleaned 4-ounce jars for non-volatile analyses and dry weight determination, and pre-weighed 40-milliliter (mL) volatile organic analysis (VOA) vials pursuant to EPA Method 5035A. The EPA 5035 sampling method entailed collecting 5-gram core samples using disposable core samplers, which were then dispensed immediately into the VOA vials.

Sample bottles were labeled with an identification number, date and time of collection, and project number. Soil samples were packed in a chilled cooler and transported under chain-of-custody to CDM's Bellevue office for temporary storage. Samples were transported to the laboratory the following morning by a lab courier.

All of the DPT borings were abandoned after completion by backfilling the borehole with bentonite granules followed by asphalt cold-patch.

3.1.2 Groundwater Sampling

Groundwater samples were collected from each of the DPT borings. Groundwater samples were collected through the drill rods after pulling back the rods and exposing a telescoping stainless steel screen. The stainless steel well screen was decontaminated between each boring using a three-stage Alconox® wash and clean water rinse method. A peristaltic pump with dedicated tubing was used to withdraw the groundwater sample. Approximately a half gallon of groundwater was purged from each boring before the groundwater sample was collected. Groundwater samples were collected into a 40 mL glass VOA vials containing hydrochloric acid preservative. For Quality Assurance (QA) purposes, duplicate samples were collected at B28 and B29.

In addition to the groundwater samples collected from the DPT borings, two existing monitoring wells (BB2 and BB3) were sampled. Both monitoring wells are located in sidewalks. BB2 is located on the north side of Main Street, near the intersection of Bothell Way NE and SR 522. BB3 is located at the southeast corner of NE 183rd Street and Bothell Way NE. On June 27 both wells were purged using the same low flow sampling methods (purging at approximately 200 milliliters per minute) as used during the DPT sampling. BB2 was purged until field measured parameters (pH, temperature, specific conductance) stabilized. BB3 was a very low yielding well and ultimately purged dry in spite of the low purge rate. The well was allowed to recover over night and sampled the following morning without further purging, although the water level was still below the pre-purge level by 4.75 feet.

Sample bottles were labeled with an identification number, date, and time of collection, and project number. Groundwater samples were packed in a chilled cooler and transported under chain-of-custody

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to CDM's Bellevue office for temporary storage. Samples were then transported on the following business day to the laboratory by a lab courier.

3.2 Analytical Testing Methods

Soil and groundwater samples collected during the investigation were submitted for analytical testing to OnSite Environmental Inc. (OnSite) in Redmond, Washington. The analytical report is included in **Appendix B**. Groundwater samples were all analyzed for halogenated VOCs by EPA Method 8260B.

Soil samples were collected from B20 and B29 at a depth of 6 ft bgs. A sample the of drummed waste soils was also collected. These soil samples were analyzed as follows:

- Both samples from B20 and B29 were screened for petroleum hydrocarbons by Northwest Method NWTPH-HCID.
- The drummed soil sample was analyzed for gasoline-range total petroleum hydrocarbons (TPH-G) by Northwest Method NWTPH-Gx and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021.
- All three soil samples were analyzed for diesel and oil-range total petroleum hydrocarbons (TPH-D, TPH-O) by Northwest Method NWTPH-Dx.
- The sample collected from B29 was analyzed for total lead by EPA Method 6010B.
- Priority pollutant VOCs were analyzed in the sample collected from B29 and halogenated VOCs were analyzed in the drummed sample using EPA Method 86260B.

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Section 4
Findings

4.1 Observed Conditions

The subsurface deposits encountered appeared to be recessional outwash as identified in published documents. These materials generally consisted of interlayered silty sand and sand, occasionally with sandy silt and gravelly layers. The depth to groundwater was dependent upon the elevation at each location. At the north end, groundwater was encountered at 5 ft bgs in B19 located at the lower elevation and at approximately 14 ft bgs at B27 located directly to the east on the terrace. Groundwater was deepest at B23, up on the terrace and located at the furthest inferred downgradient direction.

During drilling, elevated OVM-PID readings and apparent hydrocarbon odors were detected at borings B20 and B29. It is noteworthy that gas stations formerly occupied both the property in which B29 was located (Mobile gas station 1967-1970s, now Speedy auto glass) and the small triangle park property at the corner of Main Street and SR 522 (Associated gas station 1914-1954). This is consistent with CDM's 2009 investigation where TPH-G, TPH-O and several of the BTEX compounds were detected in soil and/or groundwater sampled from B2 and B3 located immediately downgradient of the Associated gas station property. For this reason, a soil sample collected from each of these borings was also submitted for analysis of various potential contaminants of concern associated with gas stations.

The only other noteworthy condition observed during this investigation was a possible waste oil tank at the Speedy auto glass property where a flush steel monument, typical of those that would cover a fill cap, was observed off the north side of the building at the northwest corner. Its location by the former service bays and apart from where the fuel tanks would have been is typical for a waste oil tank location. Speedy auto glass presumably does not conduct oil changes, so a waste oil tank, if present, would likely be abandoned. B28 was located near this tank, but contamination was not apparent at this location.

4.2 Analytical Testing Results

Detected compounds are summarized in **Tables 1** and **2**. For purposes of this discussion, the analytical results are compared to MTCA Method A soil and groundwater cleanup levels. Method B cleanup levels were used for comparison when Method A cleanup levels were not available.

4.2.1 Quality Assurance Review

A QA review was conducted on the analytical data. A QA report is included in **Appendix B**. None of the data were flagged with qualifiers with the exception of soil sample RC-B29-6. Low concentrations of methylene chloride and acetone were detected in this sample. While neither compound was detected in the method blank, they are common laboratory solvents

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that may have been introduced during sample preparation. The sample result is flagged with an "H" qualifier to denote this probable bias in sample results.

Duplicate groundwater samples were collected at B28 and B29. The relative percent differences of VOC concentrations detected in each duplicate pair were all at or below 25 percent, which is an acceptable limit for field duplicate results.

4.2.2 Soil

Both soil samples collected from B20 and B29 were submitted for screening analysis of petroleum hydrocarbons and subsequently analyzed for TPH-D and TPH-O. The sample from B29 was also analyzed for total lead and VOCs. Analytical results are summarized in **Table 1**. The presence of TPH-D and TPH-O were confirmed in both samples. While TPH concentrations did not exceed their respective MTCA Method A cleanup levels, the concentration of TPH-O in the 6 foot sample collected from B29 (1,900 milligrams per kilogram [mg/kg]) was close to the Method A cleanup level of 2,000 mg/kg. Relatively low concentrations of a variety of petroleum related VOCs were also detected in the sample, none exceeding their respective cleanup levels.

The only compound detected in the drummed soil sample, collected for waste profiling purposes, was a relatively low concentration of TPH-O.

4.2.3 Groundwater

Groundwater analytical data are summarized in **Table 2** and shown on **Figure 3.** The only compounds detected were PCE, 1,2-dichloroethane (1,2-DCA), chloroform, cis-1,2-dichlorothene, (cis-1,2-DCE), and vinyl chloride (VC).

PCE was detected at four of the 13 sample locations. PCE concentrations in three of the samples (0.4 to 2.7 µg/L) were below the MTCA Method A cleanup level of 5 µg/L. At monitoring well BB2, located on the north side of Main Street, the PCE concentration of 76 µg/L was well above the cleanup level.

PCE concentrations at monitoring wells BB2 and BB3 are consistent with the historical data for these two wells. The concentration of PCE in BB3 was 0.51 µg/L in September 2008; PCE was non-detect (less than 0.2 µg/L) during the current sampling round. The concentration of PCE in BB2 was 94 µgL in September 2008; the PCE concentration was 76 µg/L during the current sampling round.

Cis-1,2-DCE, and VC were detected only at B29 and are daughter products of PCE. The cis-1,2-DCE concentration (0.32/0.30 µg/L, duplicate sample) is relatively low, well below the Method B cleanup level of 16 µg/L. The one detection of VC (2.7/2.3 µg/L, duplicate sample) exceeded its Method A cleanup level of 0.2 µg/L.

The reason for the presence of chloroform and 1,2-DCA are not obvious. As 1,2-DCA was only a single detection found at B29, it may be a daughter product of a chlorinated solvent (i.e., 1,1,2-trichloroethane) possibly used at the former gas station (now Speedy Auto Glass). Chloroform was detected at four sample locations at concentrations ranging between 0.82 and 2.6 µg/L. Chloroform is not a documented degradation product of PCE, but can be produced biotically or abiotically from a number of compounds, as opposed to having been a released compound. It is also commonly found in drinking water at low concentrations as a byproduct of chlorination. At any rate, chloroform

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concentrations are relatively low with respect to its Method B cleanup level, and not considered indicative of a specific release or area-wide issue.

Figure 3 shows both the current groundwater data and the groundwater cVOC data from CDM's 2009 Bothell Crossroads area-wide study, as applicable to the former Raincheck Cleaners release. As is shown on the figure, PCE concentrations are highest within the road corridor areas. Within Bothell Way NE, between NE 183rd Street and Main Street, PCE concentrations ranged between 49 and 57 µg/L. At BB2 on Main Street, the PCE concentration was 76 µg/L. PCE concentrations progressively decline farther south beyond the SR 522/ Bothell Way NE intersection.

Appendix C contains a map of underground utilities for the area as provided by the City of Bothell. The map indicates a sewer line extends down Bothell Way NE. There appears to be a spur of the sewer line with two manholes that extends a short distance up Main Street (on the north side) and then turns into the Speedy Auto Glass property very close to BB2.

Judging by the substantial decline in PCE concentrations that occurs over such short distances and the proximity of underground utilities where PCE concentrations are highest, it is clear that PCE is migrating primarily along utility corridors – most likely the sewer corridor. This is best observed at the following locations:

- BB2 (76 µg/L PCE) versus B13 and B20 (<2 µg/L PCE)
- B10 and B11 (approximately 50 µg/L PCE) versus B29 (<0.2 µg/L PCE)
- Former Raincheck Cleaners (up to 8,000 µg/L) versus BB3 and B19 (<2 µg/L PCE)

It is interesting that the PCE concentration at BB2 is higher than at B10 through B12, located in Bothell Way NE , closer to the former Raincheck Cleaners property. The apparent discrepancy may be due to the proximity of the boring locations to a source underground utility. It may also indicate a historical release to the sewer by the former gas station at this location. In our experience PCE is more commonly associated with dry cleaners, but it is not improbable for it to have been used as a degreasing solvent by a mechanic.

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Section 5
Conclusions

This investigation determined that PCE originating from the former Raincheck Cleaners property is predominantly migrating southward along utility corridors in Bothell Way NE – the sewer utility being the most likely conduit. While the source appears to be the former Raincheck Cleaners facility, past and present dry cleaners who have occupied the Ultra Custom Cleaners facility cannot be ruled out, given the apparent releases that occurred to catch basins leading from this facility. Whatever the reason, the offsite source appears to begin within the intersection of Bothell Way NE and NE 183rd Street with the PCE migrating southward from that there. It is not known if PCE in groundwater from under the Former Raincheck Cleaners facility migrated to utility pipe bedding, or if a release occurred to sewer or storm lines and subsequently discharged from a breach in the line.

Impact to private properties in the inferred downgradient direction (south – southeast) of the former Raincheck Cleaners property is limited. While low concentrations of PCE and/or its daughter products were detected on private properties to a distance of approximately 200 feet south-southeast of the former Raincheck Cleaners property, only one compound at one location exceeded its Method A cleanup level. This was vinyl chloride (the last toxic daughter product of PCE before it degrades to non-toxic ethene and chloride) detected at a location close to Bothell Way NE.

While the PCE plume does not always exhibit a concentration gradient consistent with what would be expected coming from the former Raincheck Cleaners property, no additional sources of PCE contamination were identified during this investigation. In particular, there has been some speculation that a dry cleaner formerly located at 10029 Main Street (Bothell Cleaners, documented in ECOSS 2008) could be an additional contamination source. However, if this were the case, one would expect PCE to be present in the boring that was located in the inferred downgradient direction of this address (B23), but PCE was not detected in groundwater sampled from this boring.

Soil impacted by hydrocarbons was identified at two locations and is consistent with the historical operation of gas stations at or near these locations. Further, it is consistent with hydrocarbon contamination identified in soil and/or groundwater located within/just south of the SR52/ Bothell Way NE intersection.

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Section 6
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Camp Dresser & McKee Inc.

Tables

Table 1
Soil Anlytical Summary
King County/Former Raincheck Cleaners
Solvent Plume Delineation
Bothell Crossroads Area
Bothell, Washington

Analyte	Method A Cleanup Levels [a]	Sample I.D. Depth, and Date Sampled		
		RC-B20-6	RC-B29-6	RC-Drum-0
		6 ft	6ft	N/A
		6/27/2011	6/28/2011	6/28/2011
NWTPH-HCID (mg/kg)				
Gasoline Range Organics	NA	ND	ND	--
Diesel Fuel #2	NA	D	D	--
Lube Oil	NA	D	D	--
NWTPH-Dx (mg/kg)				
Diesel Fuel #2	2,000	**780**	**200** [b]	<27
Lube Oil	2,000	**530**	**1,900**	**320**
NWTPH-Gx/EPA 8021 (mg/kg)				
Gasoline	30/100 [c]	--	--	<6.0
Benzene	0.03	--	--	<0.020
Toluene	7	--	--	<0.060
Ethylbenzene	600	--	--	<0.060
m,p-Xylene	9 [d]	--	--	<0.060
o-Xylene		--	--	<0.060
EPA 6010B (mg/kg)				
Lead	250	--	**30**	--
Volatile Organic Compounds EPA 8260B (mg/kg)[e]				
Acetone	72,000 [f]	--	**0.11** [g]	--
Methylene Chloride	0.02	--	**0.12** [g]	<0.0052
Benzene	0.03	--	**0.0016**	--
m,p-Xylene	9 [d]	--	**0.012**	--
o-Xylene		--	**0.0022**	--
Isopropylbenzene	8,000 [f]	--	**0.019**	--
n-Propylbenzene	8,000 [f]	--	**0.028**	--
1,2,4-Trimethylbenzene	NE	--	**0.14**	--
sec-Butylbenzene	NE	--	**0.014**	--
p-Isopropyltoluene	NE	--	**0.0063**	--
n-Butylbenzene	NE	--	**0.0077**	--
Naphthalene	5	--	**0.022**	--

Notes:

Bold value indicates concentration at or above the method detection limit.
Boxed values exceed cleanup level.

a) Washington Administrative Code Chapter 173-340, Model Toxics Control Act Cleanup Regulation, Method A suggested soil cleanup level for unrestricted land uses; Cleanup Levels and Risk Calculations (CLARC) online database available on Ecology's website at https://fortress.wa.gov/clarc/CLARCHome.aspx. Retrieved July 27, 2011.

b) Hydrocarbons in the lube oil range are impacting the diesel range result.

c) 30 mg/kg if benzene is present; 100 mg/kg if no detectable benzene.

d) Cleanup level for total xylenes.

e) Only compounds detected in one or more samples are shown.

f) Method B Cleanup Level

g) The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

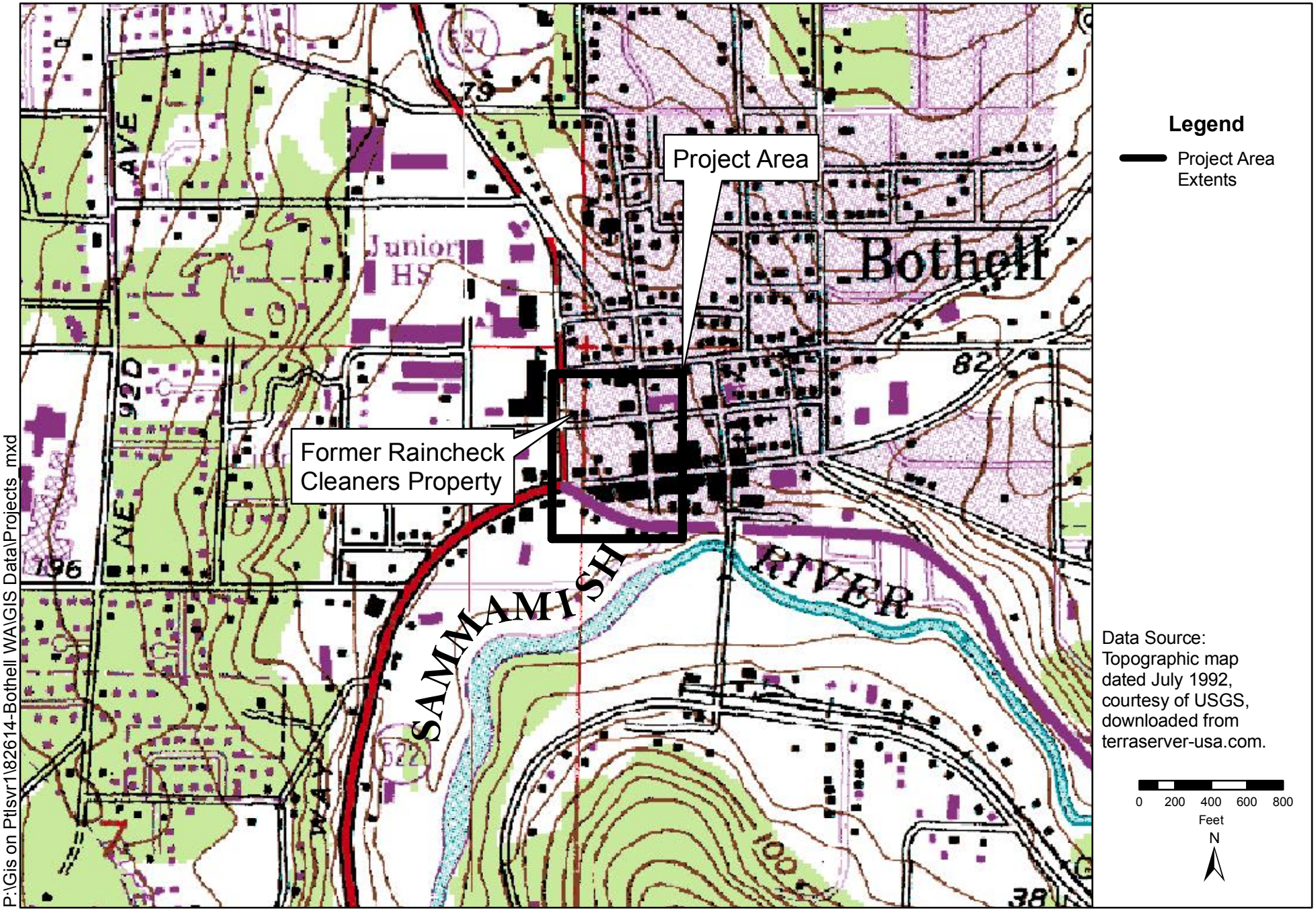
mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram.
NA - not applicable.
-- not analyzed.
< - analyte not detected at or greater than the listed concentration.

Table 2
Groundwater Analytical Summary
King County/Former Raincheck Cleaners
Solvent Plume Delineation
Bothell Crossroads Area
Bothell, Washington

Analyte	Method A Cleanup Levels [a]	Sample I.D. and Date Sampled														
		RC-B19-06/27	RC-B20-06/27	RC-B21-06/27	RC-B22-06/27	RC-B23-06/27	RC-B24-06/27	RC-B25-06/27	RC-B26-06/27	RC-B27-06/28	RC-B28-06/28*		RC-B29-06/28**		RC-BB2-06/27	RC-BB3-06/28
		6/27/2011	6/27/2011	6/27/2011	6/27/2011	6/27/2011	6/27/2011	6/27/2011	6/27/2011	6/28/2011	6/28/2011		6/28/2011		6/27/2011	6/28/2011
Volatile Organic Compounds (µg/L)																
EPA 8260B (µg/L) [b]																
Vinyl Chloride	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	**2.7**	**2.3**	<0.40	<0.20
cis-1,2-Dichloroethene	16 [c]	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	**0.32**	**0.30**	<0.40	<0.20
Chloroform	80 [d]	**2.4**	<0.20	**2.6**	<0.20	<0.20	<0.20	<0.20	<0.20	**0.82**	**1.0**	**1.1**	<0.20	<0.20	<0.40	**0.21**
1,2-Dichloroethane	5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	**0.58**	**0.56**	<0.40	<0.20
Tetrachloroethene	5	**1.4**	<0.20	<0.20	<0.20	<0.20	<0.20	**0.40**	<0.20	<0.20	**2.1**	**2.7**	<0.20	<0.20	**76**	<0.20

Notes:
Bold value indicates concentration at or above the method detection limit.
Boxed values exceed cleanup level.
a) Washington Administrative Code Chapter 173-340, Model Toxics Control Act Cleanup Regulation, Method A suggested groundwater cleanup level from the Department of Ecology, Cleanup Levels and Risk Calculations (CLARC) online database available on Ecology's website at https://fortress.wa.gov/clarc/CLARCHome.aspx. Retrieved July 27, 2011.
b) Only compounds detected in one or more samples are shown.
c) Method B formula value (direct contact pathway as a carcinogen or noncarcinogen) from the Department of Ecology, Cleanup Levels and Risk Calculations (CLARC) online database available on Ecology's website at https://fortress.wa.gov/clarc/CLARCHome.aspx. Retrieved July 26, 2011.
d) Method B Cleanup Level
*RC-B0-06/28 is a duplicate of RC-B28-6/28.
**RC-B00-06/28 is a duplicate of RC-B29-6/28.
µg/L - micrograms per liter.
< - analyte not detected at or greater than the listed concentration.

Figures



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Former Raincheck Cleaners
Solvent Plume Delineation
Bothell, Washington

Figure 1
Site Location Map

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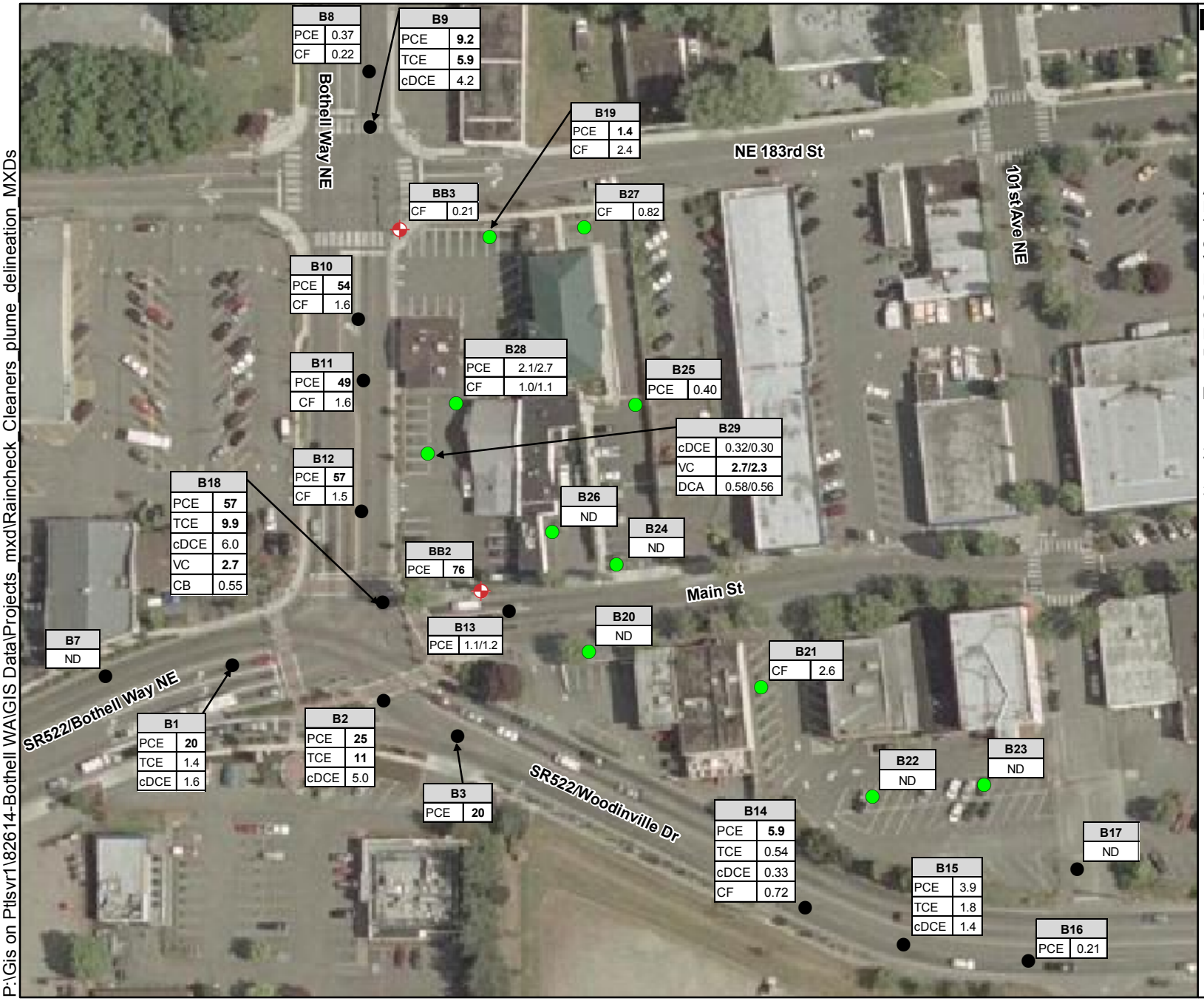
Former Raincheck Cleaners
Solvent Plume Delineation
Bothell, Washington

Figure 2
Boring Locations



Legend

- Monitoring Well Location with June 2011 Data
- Boring Location With June 2011 Data
- Boring Location With March/April 2009 Data

Abbreviations:

PCE	Tetrachloroethene
TCE	Trichlorethene
cDCE	(cis) 1,2-Dichloroethene
VC	Vinyl Chloride
DCA	1,2-Dichloroethane
CF	Chloroform
CB	Chlorobenzene
ND	All Analytes Non Detect
ug/L	microgram per liter

Notes:

1. Boring locations are approximate.
2. B13, B28 & B29 have duplicate samples.
3. Values in bold exceed MTCA Method A cleanup levels for groundwater.

MTCA Method A Cleanup Levels (ug/L):

PCE	5.0
TCE	5.0
cDCE	Not Established
VC	0.2
CF	Not Established
CB	Not Established

Data Sources:
Aerial dated July 2002, courtesy of USGS. Downloaded from terraserver-usa.com.

0 50 100
Feet

N

P:\Gis on Ptlsvr1\82614-Bothell WA\GIS Data\Projects_mxd\Raincheck_Cleaners_plume_delineation_MXDs

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Former Raincheck Cleaners
Solvent Plume Delineation
Bothell, Washington

Figure 3
Summary of Chlorinated VOCs in Groundwater

Appendix A
Boring Logs

SOIL CLASSIFICATION LEGEND

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS More than half is larger than No. 200 sieve	GRAVELS More than half coarse fraction is larger than No. 4 sieve size	Clean gravels with little or no fines	GW	Well graded gravels, gravel-sand mixtures
			GP	Poorly graded gravels, gravel-sand mixtures
		Gravel with over 12% fines	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than half coarse fraction is smaller than No. 4 sieve size	Clean sands with little or no fines	SW	Well graded sands, gravelly sands
			SP	Poorly graded sands, gravelly sands
		Sands with over 12% fines	SM	Silty sand, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS More than half is smaller than No. 200 sieve	SILTS AND CLAYS Liquid limit less than 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic clays and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils

SAMPLE TYPE SYMBOLS

- Disturbed bag or jar sample
- Std. Penetration Test (2.0" OD)
- Type U Ring Sampler (3.25" OD)
- California Sampler (3.0" OD)
- Undisturbed Tube Sample
- Grab Sample
- Core Run
- Non-standard Penetration Test (with split spoon sampler)

CONTACT BETWEEN UNITS

- Change in geologic unit
- Soil type change within geologic unit
- Obscure or gradational change

DESCRIPTORS FOR SOIL STRATA AND STRUCTURE (ENGLISH/METRIC)

General Thickness or Spacing		Structure		General Attitude	
Parting:	less than 1/16 in. (1/6 cm)	Pocket:	Erratic, discontinuous deposit of limited extent	Near horizontal:	0 to 10 deg.
Seam:	1/16 to 1/2 in. (1/6 to 1 1/4 cm)	Lens:	Lenticular deposit	Low angle:	10 to 45 deg.
Layer:	1/2 to 12 in. (1 1/4 to 30 1/2 cm)	Varved:	Alternating seams of silt and clay	High angle:	45 to 80 deg.
Stratum:	> 12 in. (30 1/2 cm)	Laminated:	Alternating seams	Near Vertical:	80 to 90 deg.
Scattered:	< 1 per ft. (30 1/2 cm)	Interbedded:	Alternating layers		
Numerous:	> 1 per ft. (30 1/2 cm)				

MOISTURE DESCRIPTION

Dry - Free of moisture, dusty

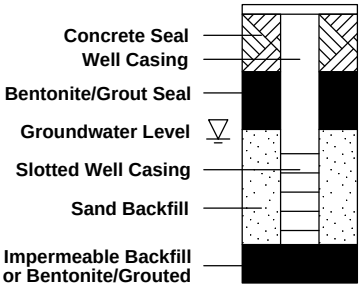
Moist - Damp but no visible free water

Wet - Visible free water, saturated

STRUCTURE DESCRIPTION (cont.)

Fractured	Breaks easily along definite fractured planes
Slickensided	Polished, glossy, fractured planes
Blocky, Diced	Breaks easily into small angular lumps
Sheared	Disturbed texture, mix of strengths
Homogeneous	Same color and appearance throughout

WELL COMPLETIONS



RELATIVE DENSITY OR CONSISTENCY VS. SPT N-VALUE

COARSE GRAINED			FINE GRAINED		
Density	N (blows/ft)	Approx. Relative Density (%)	Consistency	N (blows/ft)	Approx. Undrained Shear Str. (psf)
Very Loose	0 to 4	0 - 15	Very Soft	0 to 2	<250
Loose	4 to 10	15 - 35	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	35 - 65	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	65 - 85	Stiff	8 to 15	1000 - 2000
Very Dense	Over 50	85 - 100	Very Stiff	15 to 30	2000 - 4000
			Hard	over 30	>4000

PHYSICAL PROPERTY TEST

AL -	Atterberg Limits
FC -	Fines Content
GSD -	Grain Size Distribution
MC -	Moisture Content
MD -	Moisture Content/Dry Density
Comp -	Compaction Test (Proctor)
SG -	Specific Gravity
CBR -	California Bearing Ratio
RM -	Resilient Modulus
Perm -	Permeability
TXP -	Triaxial Permeability
Cons -	Consolidation
Chem -	Analytical Chemical Analysis
Corr -	Corrosion
VS -	Vane Shear
DS -	Direct Shear
UC -	Unconfined Compression
TX -	Triaxial Compression
UU -	Unconsolidated, Undrained
CU -	Consolidated, Undrained
CD -	Consolidated, Drained

Notes:

1. Sample descriptions in this report are based on visual field and laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates, and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual classification methods in accordance with ASTM D 2488 were used as an identification guide. Where laboratory data are available, soil classifications are in general accordance with ASTM D 2487.

2. Dual symbols are used to indicate gravel and sand units with 5 to 12 percent fines.

3. WOR = weight of rod.

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Project No: 19897.82614 Figure: A1

SOIL CLASSIFICATION/LEGEND 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B19

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
								GM		Asphalt. Silty, Sandy gravel, black (Base Course).	
						2		SM		Gravelly, silty SAND (SM), brown, fine sand, fine subangular gravel, 20% silt, dense, moist.	
								ML		Sandy SILT (ML), brown, fine sand, trace fine gravel.	
				1		4		SM		Silty SAND (SM), brown, fine sand, some fine subrounded gravel, 20% silt, dense, moist.	
				1		6		SM		Slightly Silty SAND (SM), dark gray, well graded sand, medium dense, saturated.	
								ML		Sandy SILT (ML), brown, fine sand (30%), dense, saturated.	
						8		SM		Silty SAND (SM), olive-gray, fine sand, 15% silt, dense, saturated.	
										Boring terminated at 8 ft bgs. Groundwater encountered at 5 ft bgs.	
						10					
						12					
						14					
						16					
						18					
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-27-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B19 Figure: A2

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 8/1/11 REV.

Boring Log B20

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										Cleared to 6 ft bgs with vac truck.	
										Silty SAND (SM), brown, some fine to coarse, subangular gravel (15%), fine sand, 20% silt, dense, moist.	
						2					
						4				Sand grain size increasing, becomes moderately well graded, fine to medium, becomes wet, gravel becomes absent, odor.	
	RC-B20-6			20.8		6		SM			
						8				Becomes saturated.	
				1							
						10					
										Becomes wet, increasing silt (25%).	
				1		12				Boring terminated at 12 ft bgs. Groundwater encountered at 8 ft bgs.	
						14					
						16					
						18					
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-27-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B20 Figure: A3

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B21

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
								GM		Silty, Sandy GRAVEL, black (Base Course).	
						2		SM		Silty SAND (SM), brown, fine sand, 20% silt, some fine gravel (10%), dense, moist. Becomes dark brown to red-brown, increasing silt to 30-40%.	
				1		4					
						6		SP		SAND (SP), olive-gray, medium sand, some fine to coarse subangular gravel, trace silt, dense, moist.	
						8		SM		Silty SAND (SM), olive-gray, sand becomes fine, 15% silt.	
				1		10		SP		SAND (SP), light brown, trace fine gravel, trace silt, dense, moist, appears bedded with partings of oxidized sand.	
						12		SM		Silty SAND (SM), light brown, becomes fine grained. 6-inch-thick lens of brown, silty sand with some coarse gravel.	
				1		14				Increasing silt (30%), becomes saturated.	
						16				Boring terminated at 16 ft bgs. Groundwater encountered at 15 ft bgs.	
						18					
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-27-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B21 Figure: A4

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B22

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
								SM		Silty SAND (SM), red-brown, fine sand, 20% silt, trace fine gravel, dense, moist.	
				1		2					
						4		SP		SAND (SP), salt and pepper color, medium sand.	
								SM		Silty SAND (SM), brown, fine sand, dense, moist.	
						6		SP		SAND (SP), salt and pepper color, medium sand, trace fine gravel, trace silt, dense, moist.	
				1							
						8				Silty SAND (SM), light brown, fine sand, 15% silt, 10% fine to coarse subrounded gravel, dense, moist.	
						10					
				1		12		SM			
						14					
				1		16				Becomes saturated, some fine partings (1/16 inch) are visible in the sample at 15-16 ft bgs.	
						18				Boring terminated at 18 ft bgs. Groundwater encountered at 15 ft bgs.	
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-27-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B22 Figure: A5

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B23

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
								GM		Silty, Sandy GRAVEL (GM), black (Base Course).	
								SM		Slightly Silty SAND (SM), brown-yellow, fine sand, 10% silt, trace fine gravel, dense, moist.	
				1		2					
						4				Becomes light brown.	
				1		6					
						8					
						10		SP		SAND (SP), light brown, fine sand, trace silt, trace fine gravel, dense, moist, partings of oxidized sand.	
				1		12		SM		Gravelly, Slightly Silty SAND (SM), light brown, fine sand, fine to coarse rounded gravel to 1-1/2" diameter, 25% gravel, 10% silt, dense, moist.	
						14		SP		SAND (SP), olive-gray, fine sand, trace silt, dense, moist.	
				1		16		SM		Silty SAND (SM), olive-gray, with silt partings and 1/4" seams of sand. Increasing silt (40%). Decreasing silt (10%). Increasing silt (20%).	
				1		18				Becomes saturated.	
						20					
						22				Boring terminated at 22 ft bgs. Groundwater encountered at 18.5 ft bgs.	

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-27-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B23 Figure: A6

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B24

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
						2		SM		Silty SAND (SM), red-brown, fine sand, 30% silt, trace fine gravel, dense, moist.	
				1		4		SP		SAND (SP), light brown, fine sand, trace silt, dense, moist.	
						6		SW		SAND (SW), light brown, well graded with fine rounded gravel.	
				1		8		SM		Slightly Silty SAND (SM), brown, 10% silt, trace fine gravel, fine sand.	
						10				Increasing silt (15%), sand becomes moderately well graded, fine to medium, becomes saturated.	
				1		12				Boring terminated at 12 ft bgs. Groundwater encountered at 9 ft bgs.	
						14					
						16					
						18					
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-27-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B24 Figure: A7

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B25

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
								GM		Silty Sandy GRAVEL (GM), black (Base Course).	
								SM		Gravelly, Silty SAND (SM), brown, fine sand, fine to coarse subrounded gravel, 25% gravel, 20% silt, dense, moist.	
				1		2					
						4				Decreasing gravel (15%).	
				1		6					
						8					
						10		SM		Slightly Silty SAND (SM), brown-yellow, fine sand, 10% silt, trace gravel, dense, moist.	
				1						Becomes saturated at 11 ft bgs.	
						12					
										Boring terminated at 13 ft bgs. Groundwater encountered at 11 ft bgs.	
						14					
						16					
						18					
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-27-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B25 Figure: A8

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B26

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										Slightly Silty SAND (SM), brown-yellow, fine sand, 10% silt, trace fine to coarse gravel, dense, moist.	
				1		2					
						4		SM			
						6				Increasing silt (15%), sand becomes moderately well graded, fine to medium grained, with some coarse sand, wet at 5 ft bgs, becomes saturated at 6 ft bgs.	
				1							
						8				Boring terminated at 8 ft bgs. Groundwater encountered at 5.5 ft bgs.	
						10					
						12					
						14					
						16					
						18					
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-27-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B26 Figure: A9

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B27

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										Gravelly, Silty SAND (SM), olive-gray, well graded fine to coarse sand, fine to coarse subrounded gravel, 20% silt, medium dense, moist (Fill).	
				1		2					
						4					
						6		SM			
				1		8					
						10					
				1		12					
										Silty SAND (SM), red-brown, medium sand, 15% silt, dense, wet.	
						14					
						16		SM			
						18					
										Boring terminated at 19 ft bgs. Groundwater encountered at 14 ft bgs.	
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-28-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B27 Figure: A10

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B28

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
								SM		Silty SAND (SM), brown, fine to medium sand, some fine to coarse subangular gravel, 25% silt, dense, wet.	
						2					
										Becomes moist.	
						4					
								SM		Silty SAND (SM), brown, well graded fine to coarse sand, with some fine gravel, 15% silt, wet, dense.	
						6				Silty SAND (SM), red-brown, fine sand, saturated.	
								SM		Becomes medium sand, red.	
										Becomes fine sand, olive-gray/brown, increasing silt (20%).	
						8				Boring terminated at 8 ft bgs. Groundwater encountered at 4.5 ft bgs.	
						10					
						12					
						14					
						16					
						18					
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-28-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B28 Figure: A11

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Boring Log B29

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										Gravelly, Silty SAND (SM), light brown, fine sand, fine to coarse subangular gravel (20%), 25% silt, dense, moist.	
				54.2		2				Becomes gray, odor.	
										Becomes dark gray, odor.	
						4		SM		Decreasing gravel (15%).	
				20.2		6				Becomes wet.	
										Becomes saturated.	
						8				Boring terminated at 8 ft bgs. Groundwater encountered at 5.5 ft bgs.	
						10					
						12					
						14					
						16					
						18					
						20					
						22					

Station: _____ Drill Rig: Power Probe 9630

Surface Elevation: _____ Equipment/Hammer: Core Barrel/NA

Logged By: AW Date Completed: 6-28-11

Former Raincheck Cleaners
Contaminant Plume Delineation
Bothell, Washington

CDM

Boring Log B29 Figure: A12

Project No: 19897.82614 1 of 1

NEIS_BORING_LOG 19897-82614-BL JUNE 2011.GPJ CDM_BLLV.GDT 7/28/11 REV.

Appendix B
Quality Assurance Report and Analytical Laboratory Reports

Data Validation Report

Project and Sample Information

Project Name: Former Raincheck Cleaners – Offsite Area Assessment Project
Project No.: 19897-82614
Lab Names: OnSite Environmental, Inc., Redmond, Washington
Lab Numbers: 1106-228
Sample Nos.:

RC-B19-06/27	RC-B24-06/27	RC-B29-06/28	RC-B20-6
RC-B20-06/27	RC-B25-06/27	RC-B0-06/28	RC-B29-6
RC-B21-06/27	RC-B26-06/27	RC-B00-06/28	RC-Drum-0
RC-B22-06/27	RC-B27-06/28	RC-BB2-06/27	Trip Blank
RC-B23-06/27	RC-B28-06/28	RC-BB3-06/28	

Matrix: Water and Soil

1.0 Analytical Data Package Validation Stage Summary

All sample results in the referenced laboratory analytical data package (No. 1106-228) have the following label: Stage_2A_Validation_Manual (S2AVM).

2.0 Quality Assurance Summary

This Data Validation Report provides a summary of quality assurance (QA) findings regarding data quality and usability. This review of the project data was performed using control limit criteria specified in the Quality Assurance Project Plan (QAPP) (CDM, 2011), Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (U.S. EPA, 2009), and Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (U.S. EPA, 2004).

This report includes a review of the following QA elements:

- Documentation
- Completeness
- Holding times
- Blanks
- Analytical accuracy (matrix spike recoveries, laboratory control sample spike recoveries, and surrogate compound recoveries)
- Analytical precision (sample duplicate data and duplicate spike results)
- Reported detection limits

Detection limits for several samples exceeded either the limits specified in the QAPP or in the applicable analytical method. Minor exceedances occurred in soil samples due to moisture content, which inherently raises the detection limit slightly, or from matrix interference. In groundwater sample RC-BB2-06/27 the detection limits were raised due to necessary dilution prior to analysis. Results from those analyses were non-detect at the elevated detection limits. No data were qualified on the basis of elevated detection limits.

All data are of known quality and are acceptable for use without qualification, other than acetone and methylene chloride detected in one sample and possibly introduced during sample preparation as they are both common laboratory solvents.

2.0 Analytical Methods

Water samples were analyzed for Halogenated Volatile Organic Compounds (VOCs), and selected soil samples for Halogenated VOCs, VOCs, TPH-HCID, TPH-Gx/BTEX, TPH-Dx, and Lead. The following methods were used to analyze the samples:

Parameter	Method
Halogenated VOCs	EPA 8260B
VOCs	EPA 8260B
TPH-HCID	NWTPH-HCID
TPH-Gx/BTEX	NWTPH-Gx/BTEX
TPH-Dx	NWTPH-Dx
Lead	EPA 6010B

3.0 Documentation

Field chain-of-custody forms were completed, signed, and dated. No issues with sample receipt conditions were indicated on the chain-of-custody forms, cooler receipt forms, or in the Case Narrative section of the laboratory reports.

4.0 Completeness

All samples were analyzed and results were reported as requested.

5.0 Holding Times

Halogenated VOCs and VOCs: The recommended holding time for halogenated VOCs and VOCs by EPA Method 8260B in preserved water is 14 days; in soil, samples must be analyzed or frozen within 48 hours of receipt at the laboratory. All samples were prepared and analyzed within the recommended holding time. See Tables D-1 and D-2 for holding times per sample.

TPH-HCID: The maximum holding time for TPH-HCID by NWTPH-HCID in soil is 14 days. All samples were prepared and analyzed within the recommended holding time. See Table D-3 for holding times per sample.

TPH-Gx/BTEX: The recommended holding time for TPH-Gx/BTEX by NW-TPH-Gx/BTEX in soil is 14 days. The sample analyzed for TPH-Gx/BTEX was prepared and analyzed within the recommended holding time. See Table D-4 for holding times per sample.

TPH-Dx: The recommended holding time for TPH-Dx by NWTPH-Dx in soil is 14 days from sample collection to extraction. All samples were prepared and analyzed within the recommended holding time. See Table D-5 for holding times per water sample.

Lead: The recommended holding time for Lead by EPA method 6010B is 6 months for soils. The sample analyzed for lead was prepared and analyzed within the recommended holding time. See Table D-6 for holding times per sample.

6.0 Blanks

Method Blanks: Method blanks were analyzed for each of the analytical methods used. No target analytes were detected at or above the reporting limits in any of the method blanks associated with the analysis of these samples. However, common laboratory contaminants (acetone and methylene chloride) were detected in one sample (RC-B29-6) at low concentrations and were noted by the laboratory as having been possibly introduced during sample preparation and were flagged as such.

Field Blanks: No field blanks were collected during the June 2011 sampling event.

Trip Blank: One trip blank was analyzed for Halogenated VOCs. No target analytes were detected at or above the reporting limits in the trip blank.

7.0 Analytical Accuracy and Precision – Halogenated VOCs

7.1 Analytical Accuracy

Analytical accuracy was evaluated through analysis of surrogate spikes and blank spikes. Results of these analyses are summarized below:

Surrogate Spikes: The percent recoveries of all surrogate spikes were within the laboratory's control limits.

Blank Spikes: The percent recoveries of all blank spikes were within the laboratory's control limits.

7.2 Analytical Precision

Analytical precision was evaluated through analysis of field duplicates and blank spike duplicates, the results of which are summarized below:

Field Duplicates: Two field duplicates of water samples were collected during the June 2011 sampling event. Sample RC-B0-06/28 is a field duplicate of Sample RC-B28-06/28, and Sample RC-B00-06/28 is a field duplicate of Sample RC-B29-06/28. The relative percent differences of Halogenated VOC concentrations detected in each

duplicate pair were all at or below 25 percent, which is an acceptable limit for field duplicate results.

Blank Spike Duplicates: The relative percent differences of all blank spike duplicates were within the laboratory's control limits.

8.0 Analytical Accuracy and Precision - VOCs

8.1 Analytical Accuracy

Analytical accuracy was evaluated through analysis of surrogates spikes and blank spikes. Results of these analyses are summarized below:

Surrogate Spikes: The percent recoveries of all surrogate spikes were within the laboratory's control limits.

Blank Spikes: The percent recoveries of all blank spikes were within the laboratory's control limits.

8.2 Analytical Precision

Analytical precision was evaluated through analysis of blank spike duplicates, the results of which are summarized below:

Blank Spike Duplicates: The relative percent differences of all blank spike duplicates were within the laboratory's control limits.

9.0 Analytical Accuracy and Precision – TPH-HCID

9.1 Analytical Accuracy

The TPH-HCID analysis is a semi-quantitative screening procedure and, besides method blank results, the only QC data reported is for surrogate spike recoveries, which are used to evaluate analytical accuracy. Results of the surrogate spike analysis are summarized below:

Surrogate Spikes: The percent recoveries of all surrogate spikes were within the laboratory's control limits.

10.0 Analytical Accuracy and Precision – TPH-Gx/BTEX

10.1 Analytical Accuracy

Analytical accuracy was evaluated through analysis of surrogate spikes and blank spikes, the results of which are summarized below:

Surrogate Spikes: The percent recoveries of all surrogate spikes were within the laboratory's control limits.

Blank Spikes: The percent recoveries of all blank spikes were within the laboratory's control limits.

10.2 Analytical Precision

Analytical precision was evaluated through analysis of laboratory duplicates and blank spike duplicates. The results of these analyses are summarized below:

Laboratory Duplicates: The relative percent differences of all laboratory duplicate pairs were within the laboratory's control limit.

Blank Spike Duplicates: The relative percent differences of all blank spike duplicates were within the laboratory's control limits.

11.0 Analytical Accuracy and Precision – TPH-Dx

11.1 Analytical Accuracy

Analytical accuracy was evaluated through analysis of surrogate spikes, the results of which are summarized below:

Surrogate Spikes: The percent recoveries of all surrogate spikes were within the laboratory's control limits.

11.2 Analytical Precision

Analytical precision was evaluated through analysis of laboratory duplicates, the results of which are summarized below:

Laboratory Duplicates: The relative percent difference of one laboratory duplicate pair was 21 (for the diesel-range fraction) and in another laboratory duplicate pair was 41 percent (for the lube oil fraction). No laboratory control limit was specified, and these results were from soil samples, which commonly exhibit variability. Therefore, no data are qualified on the basis of these laboratory duplicate results.

12.0 Analytical Accuracy and Precision - Lead

12.1 Analytical Accuracy

Analytical accuracy was evaluated through analysis of a matrix spike sample. The result for the matrix spike sample is summarized below:

Matrix Spike: A control limit for matrix spike recovery was not provided by the laboratory; however, the percent recovery of the matrix spike was 100 percent and is, therefore, acceptable.

12.2 Analytical Precision

Analytical precision was evaluated through analysis of a laboratory duplicate and a matrix spike duplicate, the results of which are summarized below:

Laboratory Duplicates: The results of a duplicate pair analysis were both non-detect. These results are, therefore, acceptable.

Matrix Spike Duplicate: A control limit for matrix spike/matrix spike duplicate relative percent difference was not provided by the laboratory. However, the relative percent difference for the matrix spike/matrix spike duplicate pair was 1 percent and is, therefore, acceptable.

13.0 Reported Detection Limits

Halogenated VOCs: Practical Quantitation Limits **(**PQLs) for Halogenated VOCs in water samples met the levels specified in the QAPP, with the exception of Sample RC-BB2-06/27. The PQLs for Sample RC-BB2-06/27 are all reported at twice the requested levels, and all results are non-detect. The detection limits for this sample were raised because initial screening of the sample showed it contained a relatively high concentration of VOCs (specifically, tetrachloroethylene) and thus required dilution before analysis, which in turn raised the detection limits. Therefore, no data were qualified.

PQLs for Halogenated VOCs for the one soil sample that was analyzed for these compounds (Sample RC-Drum-0) met the levels specified in the QAPP, with the exception of slight exceedances for several compounds (i.e., 5.2 µg/kg versus the 5.0 µg/kg that was specified). The reason for this is because the PQLs are based on a dry weight method blank sample. The PQLs in soil tend to be raised slightly due to soil moisture. No data were qualified on the basis of these minor exceedances.

VOCs: Detection limits were not specified in the QAPP for VOC analyses; however, many compounds appear on both the VOC and Halogenated VOC analyte lists and the PQLs for the VOC results are comparable to those specified for Halogenated VOCs. These detection limits are, therefore, considered acceptable.

TPH-HCID: Detection limits were not specified in the QAPP for TPH-HCID analysis. The PQLs reported by the laboratory were compared to the reporting limits specified in the method. Both soil samples analyzed for TPH-HCID (RC-B20-6 and RC-B29-6) were reported as non-detect for gasoline-range organics at elevated PQLs (71 and 42 mg/kg, respectively), which the lab identified as being due to interference present in the sample. No data were qualified on the basis of these elevated PQLs.

TPH-Gx: Detection limits for TPH-Gx were not specified in the QAPP. The PQL reported by the laboratory was compared to the reporting limit specified in the method and was found to be acceptable.

BTEX: Detection limits for BTEX were not specified in the QAPP and are not specified in the method for soils. The reported limits are presumed to be acceptable.

TPH-Dx: Detection limits for TPH-Dx were not specified in the QAPP. The PQLs reported by the laboratory were compared to the reporting limits specified in the method and were found to be acceptable.

Lead: A detection limit for lead was not specified in the QAPP and is not specified in the method for soils. The PQL reported by the laboratory is presumed to be acceptable.

Signatures

Prepared by: _____ Date: July 28, 2011

Checked by: _____ Date: August 1, 2011

References:

Camp Dresser & McKee (CDM). 2011. Quality Assurance Project Plan, Supplemental Phase II Environmental Site Assessment, Former Raincheck Cleaners – Offsite area, 18304 Bothell Way NE, Bothell, Washington. June 9.

U.S. EPA, 2004. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. EPA-540-R-04-004. October 2004.

U.S. EPA, 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. EPA 540-R-08-005. January 13.

Table D-1
Sample Holding Times - Halogenated VOCs
Former Raincheck Cleaners
Bothell, Washington

Sample ID	Matrix	Date Sampled	Date Analyzed	Holding Time (days from sampling to analysis)
RC-B19-06/27	Water	6/27/2011	7/5/2011	8
RC-B20-06/27	Water	6/27/2011	7/5/2011	8
RC-B21-06/27	Water	6/27/2011	7/5/2011	8
RC-B22-06/27	Water	6/27/2011	7/5/2011	8
RC-B23-06/27	Water	6/27/2011	7/5/2011	8
RC-B24-06/27	Water	6/27/2011	7/5/2011	8
RC-B25-06/27	Water	6/27/2011	7/5/2011	8
RC-B26-06/27	Water	6/27/2011	7/5/2011	8
RC-B27-06/28	Water	6/28/2011	7/5/2011	7
RC-B28-06/28	Water	6/28/2011	7/5/2011	7
RC-B29-06/28	Water	6/28/2011	7/5/2011	7
RC-B0-06/28	Water	6/28/2011	7/5/2011	7
RC-B00-06/28	Water	6/28/2011	7/5/2011	7
RC-BB2-06/27	Water	6/27/2011	7/5/2011	8
RC-BB3-06/28	Water	6/28/2011	7/5/2011	7
RC-Drum-0	Soil	6/28/2011	6/30/2011	2
Trip Blank	Water	N/A	7/5/2011	N/A

Note:
Recommended holding time for Halogenated VOCs by EPA method 8260B in preserved water is 14 days; in soil, samples must be analyzed or frozen within 48 hours of receipt at the lab.

Table D-2
Sample Holding Times - VOCs
Former Raincheck Cleaners
Bothell, Washington

Sample ID	Matrix	Date Sampled	Date Analyzed	Holding Time (days from sampling to analysis)
RC-B29-6	Soil	6/28/2011	6/30/2011	2
RC-Drum-0	Soil	6/28/2011	6/30/2011	2

Note:
Recommended holding time for VOCs by EPA method 8260B is 14 days for preserved water; in soil, samples must be frozen within 48 hours of receipt at the laboratory.

Table D-3
Sample Holding Times - TPH-HCID
Former Raincheck Cleaners
Bothell, Washington

Sample ID	Matrix	Date Sampled	Date Analyzed	Holding Time (days from sampling to analysis)
RC-B20-6	Soil	6/27/2011	7/1/2011	4
RC-B29-6	Soil	6/28/2011	7/1/2011	3

Note:
Recommended holding time for TPH-HCID by NWTPH-HCID is 14 days for soil.

Table D-4
Sample Holding Times - TPH-Gx/BTEX
Former Raincheck Cleaners
Bothell, Washington

Sample ID	Matrix	Date Sampled	Date Analyzed	Holding Time (days from sampling to analysis)
RC-Drum-0	Soil	6/28/2011	7/1/2011	3

Note:
Recommended holding time for TPH-Gx/BTEX by NWTPH-Gx/BTEX is 14 days for soil.

Table D-5
Sample Holding Times - TPH-Dx
Former Raincheck Cleaners
Bothell, Washington

Sample ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Holding Time (days from sampling to extraction)
RC-B20-6	Soil	6/27/2011	7/8/2011	7/8/2011	11
RC-B29-6	Soil	6/28/2011	7/8/2011	7/11/2011	10
RC-Drum-0	Soil	6/28/2011	6/29/2011	6/29/2011	1

Note:
Recommended holding time for TPH-Dx by NWTPH-Dx in soil is 14 days to extraction.

Table D-6
Sample Holding Times - Total Lead
Former Raincheck Cleaners
Bothell, Washington

Sample ID	Matrix	Date Sampled	Date Analyzed	Holding Time (days from sampling to analysis)
RC-B29-6	Soil	6/28/2011	7/6/2011	8

Note:
Recommended holding time for total metals by EPA methods 6010B is 180 days for soil.

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

July 12, 2011

Pam Morrill
CDM
14432 SE Eastgate Way, Suite 100
Bellevue, WA 98007-6493

Re: Analytical Data for Project 19897.82614
Laboratory Reference No. 1106-228

Dear Pam:

Enclosed are the analytical results and associated quality control data for samples submitted on June 28, 2011.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

Case Narrative

Samples were collected on June 27 and 28, 2011 and received by the laboratory on June 28, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX (soil) Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Volatiles EPA 8260B (soil) Analysis

Method 5035A low-level VOAs containing stir bars were not provided for sample RC-B29-6. The sample was therefore extracted from a 4-ounce jar for analysis.

Acetone and Methylene Chloride are common laboratory solvents that may have been introduced during sample preparation for sample RC-B29-6 and thereby be impacting the sample results.

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B19-06/27**					
Laboratory ID:	06-228-01					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	2.4	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B19-06/27**					
Laboratory ID:	06-228-01					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	1.4	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*116*	*68-120*				
Toluene-d8	*108*	*73-120*				
4-Bromofluorobenzene	*104*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B20-06/27**					
Laboratory ID:	06-228-02					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B20-06/27**					
Laboratory ID:	06-228-02					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*113*	*68-120*				
Toluene-d8	*108*	*73-120*				
4-Bromofluorobenzene	*104*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B21-06/27**					
Laboratory ID:	06-228-03					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	2.6	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B21-06/27**					
Laboratory ID:	06-228-03					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*68-120*				
Toluene-d8	*109*	*73-120*				
4-Bromofluorobenzene	*107*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B22-06/27**					
Laboratory ID:	06-228-04					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B22-06/27**					
Laboratory ID:	06-228-04					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*114*	*68-120*				
Toluene-d8	*108*	*73-120*				
4-Bromofluorobenzene	*105*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B23-06/27**					
Laboratory ID:	06-228-05					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B23-06/27**					
Laboratory ID:	06-228-05					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*111*	*68-120*				
Toluene-d8	*107*	*73-120*				
4-Bromofluorobenzene	*104*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B24-06/27**					
Laboratory ID:	06-228-06					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B24-06/27**					
Laboratory ID:	06-228-06					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*113*	*68-120*				
Toluene-d8	*105*	*73-120*				
4-Bromofluorobenzene	*102*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B25-06/27**					
Laboratory ID:	06-228-07					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B25-06/27**					
Laboratory ID:	06-228-07					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	0.40	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*115*	*68-120*				
Toluene-d8	*107*	*73-120*				
4-Bromofluorobenzene	*105*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B26-06/27**					
Laboratory ID:	06-228-08					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B26-06/27**					
Laboratory ID:	06-228-08					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*68-120*				
Toluene-d8	*105*	*73-120*				
4-Bromofluorobenzene	*103*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B27-06/28**					
Laboratory ID:	06-228-09					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	0.82	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B27-06/28**					
Laboratory ID:	06-228-09					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*114*	*68-120*				
Toluene-d8	*109*	*73-120*				
4-Bromofluorobenzene	*107*	*65-120*				

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Project: 19897.82614

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B28-06/28**					
Laboratory ID:	06-228-10					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	1.0	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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HALOGENATED VOLATILES by EPA 8260B
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B28-06/28**					
Laboratory ID:	06-228-10					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	2.1	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*68-120*				
Toluene-d8	*108*	*73-120*				
4-Bromofluorobenzene	*106*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B29-06/28**					
Laboratory ID:	06-228-11					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	2.7	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	0.32	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	0.58	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B29-06/28**					
Laboratory ID:	06-228-11					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*112*	*68-120*				
Toluene-d8	*108*	*73-120*				
4-Bromofluorobenzene	*103*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B0-06/28**					
Laboratory ID:	06-228-12					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	1.1	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B0-06/28**					
Laboratory ID:	06-228-12					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	2.7	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*68-120*				
Toluene-d8	*104*	*73-120*				
4-Bromofluorobenzene	*102*	*65-120*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-BB2-06/27**					
Laboratory ID:	06-228-14					
Dichlorodifluoromethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	2.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.40	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	2.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.40	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	2.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	2.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.40	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.40	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	2.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.40	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.40	EPA 8260	7-5-11	7-5-11	

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HALOGENATED VOLATILES by EPA 8260B
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-BB2-06/27**					
Laboratory ID:	06-228-14					
1,1,2-Trichloroethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	76	0.40	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	2.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.40	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.40	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	2.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.40	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.40	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.40	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*92*	*68-120*				
Toluene-d8	*89*	*73-120*				
4-Bromofluorobenzene	*79*	*65-120*				

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-BB3-06/28**					
Laboratory ID:	06-228-15					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	0.21	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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HALOGENATED VOLATILES by EPA 8260B
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-BB3-06/28**					
Laboratory ID:	06-228-15					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*68-120*				
Toluene-d8	*106*	*73-120*				
4-Bromofluorobenzene	*104*	*65-120*				

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
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Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**Trip Blank**					
Laboratory ID:	06-228-19					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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HALOGENATED VOLATILES by EPA 8260B
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**Trip Blank**					
Laboratory ID:	06-228-19					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*68-120*				
Toluene-d8	*103*	*73-120*				
4-Bromofluorobenzene	*98*	*65-120*				

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0705W2					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0705W2					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*68-120*				
Toluene-d8	*104*	*73-120*				
4-Bromofluorobenzene	*101*	*65-120*				

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Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0705W2									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**9.38**	**9.47**	10.0	10.0	94	95	70-130	1	11	
Benzene	**8.32**	**8.65**	10.0	10.0	83	87	75-123	4	8	
Trichloroethene	**8.76**	**8.71**	10.0	10.0	88	87	80-113	1	9	
Toluene	**8.51**	**8.66**	10.0	10.0	85	87	80-113	2	8	
Chlorobenzene	**8.96**	**8.79**	10.0	10.0	90	88	80-111	2	8	
Surrogate:										
Dibromofluoromethane					*95*	*101*	*68-120*			
Toluene-d8					*100*	*102*	*73-120*			
4-Bromofluorobenzene					*98*	*102*	*65-120*			

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

NWTPH-HCID
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B20-6**					
Laboratory ID:	06-228-16					
Gasoline Range Organics	**ND**	71	NWTPH-HCID	6-29-11	7-1-11	U1
Diesel Fuel #2	**Detected**	56	NWTPH-HCID	6-29-11	7-1-11	
Lube Oil	**Detected**	110	NWTPH-HCID	6-29-11	7-1-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*140*	*50-150*				
Client ID:	**RC-B29-6**					
Laboratory ID:	06-228-17					
Gasoline Range Organics	**ND**	42	NWTPH-HCID	6-29-11	7-1-11	U1
Diesel Range Organics	**Detected**	56	NWTPH-HCID	6-29-11	7-1-11	N
Lube Oil	**Detected**	110	NWTPH-HCID	6-29-11	7-1-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*143*	*50-150*				

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Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

NWTPH-HCID
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0629S1					
Gasoline Range Organics	**ND**	20	NWTPH-HCID	6-29-11	7-1-11	
Diesel Range Organics	**ND**	50	NWTPH-HCID	6-29-11	7-1-11	
Lube Oil Range Organics	**ND**	100	NWTPH-HCID	6-29-11	7-1-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*141*	*50-150*				

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Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-Drum-0**					
Laboratory ID:	06-228-18					
Benzene	**ND**	0.020	EPA 8021	7-1-11	7-1-11	
Toluene	**ND**	0.060	EPA 8021	7-1-11	7-1-11	
Ethyl Benzene	**ND**	0.060	EPA 8021	7-1-11	7-1-11	
m,p-Xylene	**ND**	0.060	EPA 8021	7-1-11	7-1-11	
o-Xylene	**ND**	0.060	EPA 8021	7-1-11	7-1-11	
Gasoline	**ND**	6.0	NWTPH-Gx	7-1-11	7-1-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*111*	*68-124*				

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Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0701S1					
Benzene	**ND**	0.020	EPA 8021	7-1-11	7-1-11	
Toluene	**ND**	0.050	EPA 8021	7-1-11	7-1-11	
Ethyl Benzene	**ND**	0.050	EPA 8021	7-1-11	7-1-11	
m,p-Xylene	**ND**	0.050	EPA 8021	7-1-11	7-1-11	
o-Xylene	**ND**	0.050	EPA 8021	7-1-11	7-1-11	
Gasoline	**ND**	5.0	NWTPH-Gx	7-1-11	7-1-11	
Surrogate:	*Percent Recovery*	*Control Limits*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-262-03										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*113*	*116*	*68-124*			
SPIKE BLANKS											
Laboratory ID:	SB0701S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.897**	**0.917**	1.00	1.00		**90**	**92**	77-114	2	9	
Toluene	**0.985**	**1.04**	1.00	1.00		**99**	**104**	80-115	5	9	
Ethyl Benzene	**0.990**	**1.01**	1.00	1.00		**99**	**101**	80-118	2	9	
m,p-Xylene	**1.01**	**1.05**	1.00	1.00		**101**	**105**	82-118	4	9	
o-Xylene	**1.01**	**1.03**	1.00	1.00		**101**	**103**	82-116	2	9	
Surrogate:											
Fluorobenzene						*100*	*101*	*68-124*			

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-Drum-0**					
Laboratory ID:	06-228-18					
Diesel Range Organics	**ND**	27	NWTPH-Dx	6-29-11	6-29-11	
Lube Oil	**320**	55	NWTPH-Dx	6-29-11	6-29-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0629S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	6-29-11	6-29-11	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	6-29-11	6-29-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*114*	*50-150*				

Analyte	Result		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	06-228-18							
	ORIG	DUP						
Diesel Range Organics	**ND**	**ND**				NA	NA	
Lube Oil	**290**	**191**				41	NA	
Surrogate:								
o-Terphenyl			*105*	*105*	*50-150*			

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B00-06/28**					
Laboratory ID:	06-228-13					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	2.3	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	0.30	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	0.56	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B00-06/28**					
Laboratory ID:	06-228-13					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*68-120*				
Toluene-d8	*106*	*73-120*				
4-Bromofluorobenzene	*98*	*65-120*				

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Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0705W2					
Dichlorodifluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloromethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Vinyl Chloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Iodomethane	ND	1.0	EPA 8260	7-5-11	7-5-11	
Methylene Chloride	ND	1.0	EPA 8260	7-5-11	7-5-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chloroform	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Trichloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromomethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromodichloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	7-5-11	7-5-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	7-5-11	7-5-11	

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0705W2					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Tetrachloroethene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Dibromochloromethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Chlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
Bromoform	ND	1.0	EPA 8260	7-5-11	7-5-11	
Bromobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	7-5-11	7-5-11	
2-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
4-Chlorotoluene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	7-5-11	7-5-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	7-5-11	7-5-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	7-5-11	7-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*68-120*				
Toluene-d8	*104*	*73-120*				
4-Bromofluorobenzene	*101*	*65-120*				

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Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0705W2									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**9.38**	**9.47**	10.0	10.0	94	95	70-130	1	11	
Benzene	**8.32**	**8.65**	10.0	10.0	83	87	75-123	4	8	
Trichloroethene	**8.76**	**8.71**	10.0	10.0	88	87	80-113	1	9	
Toluene	**8.51**	**8.66**	10.0	10.0	85	87	80-113	2	8	
Chlorobenzene	**8.96**	**8.79**	10.0	10.0	90	88	80-111	2	8	
Surrogate:										
Dibromofluoromethane					*95*	*101*	*68-120*			
Toluene-d8					*100*	*102*	*73-120*			
4-Bromofluorobenzene					*98*	*102*	*65-120*			

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Laboratory Reference: 1106-228
Project: 19897.82614

VOLATILES by EPA 8260B
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B29-6**					
Laboratory ID:	06-228-17					
Dichlorodifluoromethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Chloromethane	ND	0.0056	EPA 8260	6-30-11	6-30-11	
Vinyl Chloride	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Bromomethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Chloroethane	ND	0.0056	EPA 8260	6-30-11	6-30-11	
Trichlorofluoromethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,1-Dichloroethene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Acetone	0.11	0.0056	EPA 8260	6-30-11	6-30-11	H
Iodomethane	ND	0.0056	EPA 8260	6-30-11	6-30-11	
Carbon Disulfide	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Methylene Chloride	0.12	0.0056	EPA 8260	6-30-11	6-30-11	H
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,1-Dichloroethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Vinyl Acetate	ND	0.0056	EPA 8260	6-30-11	6-30-11	
2,2-Dichloropropane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
2-Butanone	ND	0.0056	EPA 8260	6-30-11	6-30-11	
Bromochloromethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Chloroform	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Carbon Tetrachloride	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,1-Dichloropropene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Benzene	0.0016	0.0011	EPA 8260	6-30-11	6-30-11	
1,2-Dichloroethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Trichloroethene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,2-Dichloropropane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Dibromomethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Bromodichloromethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
2-Chloroethyl Vinyl Ether	ND	0.0056	EPA 8260	6-30-11	6-30-11	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Methyl Isobutyl Ketone	ND	0.0056	EPA 8260	6-30-11	6-30-11	
Toluene	ND	0.0056	EPA 8260	6-30-11	6-30-11	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260	6-30-11	6-30-11	

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Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

VOLATILES by EPA 8260B
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B29-6**					
Laboratory ID:	06-228-17					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Tetrachloroethene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,3-Dichloropropane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
2-Hexanone	ND	0.0056	EPA 8260	6-30-11	6-30-11	
Dibromochloromethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,2-Dibromoethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Chlorobenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Ethylbenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
m,p-Xylene	0.012	0.0022	EPA 8260	6-30-11	6-30-11	
o-Xylene	0.0022	0.0011	EPA 8260	6-30-11	6-30-11	
Styrene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Bromoform	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Isopropylbenzene	0.019	0.0011	EPA 8260	6-30-11	6-30-11	
Bromobenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260	6-30-11	6-30-11	
n-Propylbenzene	0.028	0.0011	EPA 8260	6-30-11	6-30-11	
2-Chlorotoluene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
4-Chlorotoluene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,3,5-Trimethylbenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
tert-Butylbenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,2,4-Trimethylbenzene	0.14	0.0011	EPA 8260	6-30-11	6-30-11	
sec-Butylbenzene	0.014	0.0011	EPA 8260	6-30-11	6-30-11	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
p-Isopropyltoluene	0.0063	0.0011	EPA 8260	6-30-11	6-30-11	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
n-Butylbenzene	0.0077	0.0011	EPA 8260	6-30-11	6-30-11	
1,2-Dibromo-3-chloropropane	ND	0.0056	EPA 8260	6-30-11	6-30-11	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Hexachlorobutadiene	ND	0.0056	EPA 8260	6-30-11	6-30-11	
Naphthalene	0.022	0.0011	EPA 8260	6-30-11	6-30-11	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260	6-30-11	6-30-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*73*	*63-127*				
Toluene-d8	*69*	*65-129*				
4-Bromofluorobenzene	*67*	*55-121*				

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-Drum-0**					
Laboratory ID:	06-228-18					
Dichlorodifluoromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Chloromethane	ND	0.0052	EPA 8260	6-30-11	6-30-11	
Vinyl Chloride	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromomethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Chloroethane	ND	0.0052	EPA 8260	6-30-11	6-30-11	
Trichlorofluoromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1-Dichloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Iodomethane	ND	0.0052	EPA 8260	6-30-11	6-30-11	
Methylene Chloride	ND	0.0052	EPA 8260	6-30-11	6-30-11	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1-Dichloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
2,2-Dichloropropane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromochloromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Chloroform	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Carbon Tetrachloride	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1-Dichloropropene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dichloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Trichloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dichloropropane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Dibromomethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromodichloromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
2-Chloroethyl Vinyl Ether	ND	0.0052	EPA 8260	6-30-11	6-30-11	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260	6-30-11	6-30-11	

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-Drum-0**					
Laboratory ID:	06-228-18					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Tetrachloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,3-Dichloropropane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Dibromochloromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dibromoethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Chlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromoform	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
2-Chlorotoluene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
4-Chlorotoluene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dibromo-3-chloropropane	ND	0.0052	EPA 8260	6-30-11	6-30-11	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Hexachlorobutadiene	ND	0.0052	EPA 8260	6-30-11	6-30-11	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*79*	*63-127*				
Toluene-d8	*81*	*65-129*				
4-Bromofluorobenzene	*82*	*55-121*				

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0630S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Chloromethane	ND	0.0050	EPA 8260	6-30-11	6-30-11	
Vinyl Chloride	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromomethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Chloroethane	ND	0.0050	EPA 8260	6-30-11	6-30-11	
Trichlorofluoromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1-Dichloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Acetone	ND	0.0050	EPA 8260	6-30-11	6-30-11	
Iodomethane	ND	0.0050	EPA 8260	6-30-11	6-30-11	
Carbon Disulfide	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Methylene Chloride	ND	0.0050	EPA 8260	6-30-11	6-30-11	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1-Dichloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Vinyl Acetate	ND	0.0050	EPA 8260	6-30-11	6-30-11	
2,2-Dichloropropane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
2-Butanone	ND	0.0050	EPA 8260	6-30-11	6-30-11	
Bromochloromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Chloroform	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Carbon Tetrachloride	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1-Dichloropropene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Benzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dichloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Trichloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dichloropropane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Dibromomethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromodichloromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260	6-30-11	6-30-11	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260	6-30-11	6-30-11	
Toluene	ND	0.0050	EPA 8260	6-30-11	6-30-11	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260	6-30-11	6-30-11	

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0630S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Tetrachloroethene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,3-Dichloropropane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
2-Hexanone	ND	0.0050	EPA 8260	6-30-11	6-30-11	
Dibromochloromethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dibromoethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Chlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Ethylbenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
m,p-Xylene	ND	0.0020	EPA 8260	6-30-11	6-30-11	
o-Xylene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Styrene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromoform	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Isopropylbenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Bromobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260	6-30-11	6-30-11	
n-Propylbenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
2-Chlorotoluene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
4-Chlorotoluene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
tert-Butylbenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
sec-Butylbenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
p-Isopropyltoluene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
n-Butylbenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260	6-30-11	6-30-11	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Hexachlorobutadiene	ND	0.0050	EPA 8260	6-30-11	6-30-11	
Naphthalene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260	6-30-11	6-30-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*81*	*63-127*				
Toluene-d8	*83*	*65-129*				
4-Bromofluorobenzene	*84*	*55-121*				

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0630S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0566**	**0.0576**	0.0500	0.0500	113	115	70-130	2	19	
Benzene	**0.0471**	**0.0481**	0.0500	0.0500	94	96	70-125	2	15	
Trichloroethene	**0.0494**	**0.0493**	0.0500	0.0500	99	99	70-122	0	14	
Toluene	**0.0487**	**0.0473**	0.0500	0.0500	97	95	73-120	3	16	
Chlorobenzene	**0.0515**	**0.0483**	0.0500	0.0500	103	97	74-109	6	12	
Surrogate:										
Dibromofluoromethane					*72*	*72*	*63-127*			
Toluene-d8					*73*	*75*	*65-129*			
4-Bromofluorobenzene					*77*	*77*	*55-121*			

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

TOTAL LEAD
EPA 6010B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	06-228-17					
Client ID:	**RC-B29-6**					
Lead	**30**	5.6	6010B	7-6-11	7-6-11	

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	7-6-11
Date Analyzed:	7-6-11
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0706S2

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 7-6-11
Date Analyzed: 7-6-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 06-214-25

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	5.0	

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 7-6-11
Date Analyzed: 7-6-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 06-214-25

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**251**	100	**249**	100	1	

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**RC-B20-6**					
Laboratory ID:	06-228-16					
Diesel Fuel #2	**780**	28	NWTPH-Dx	7-8-11	7-8-11	
Lube Oil	**530**	56	NWTPH-Dx	7-8-11	7-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				
Client ID:	**RC-B29-6**					
Laboratory ID:	06-228-17					
Diesel Range Organics	**200**	28	NWTPH-Dx	7-8-11	7-11-11	N
Lube Oil	**1900**	56	NWTPH-Dx	7-8-11	7-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0708S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	7-8-11	7-8-11	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	7-8-11	7-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*101*	*50-150*				

Analyte	Result		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-039-02							
	ORIG	DUP						
Diesel Fuel #2	**111**	**89.7**				21	NA	N
Lube Oil	**369**	**321**				14	NA	
Surrogate:								
o-Terphenyl			*81*	*88*	*50-150*			

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Date of Report: July 12, 2011
Samples Submitted: June 28, 2011
Laboratory Reference: 1106-228
Project: 19897.82614

% MOISTURE

Date Analyzed: 6-29-11

Client ID	Lab ID	% Moisture
RC-B20-6	06-228-16	10
RC-B29-6	06-228-17	10
RC-Drum-0	06-228-18	8

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

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

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: CDM
Project Number: 19897.82614
Project Name: Former Raincheck Cleaners
Project Manager: Pam Morrill
Sampled by: August Welch

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 06-228

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	% Moisture
1	RC-B19-06/27	6/27/11	0855	W	3						X										
2	RC-B20-06/27		0940								X										
3	RC-B21-06/27		1040								X										
4	RC-B22-06/27		1120								X										
5	RC-B23-06/27		1220								X										
6	RC-B24-06/27		1300								X										
7	RC-B25-06/27		1400								X										
8	RC-B26-06/27	6/27/11	1435								X										
9	RC-B27-06/28	6/28/11	0900								X										
10	RC-B28-06/28	6/28/11	0935	W							X										

	Signature	Company	Date	Time
Relinquished	August Welch	CDM	6/28/11	1342
Received	[signature]	OSE	6/28/11	1342
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
Added 6/28/11 - DB

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: CDM
Project Number: 19897.82614
Project Name: Former Raindrock Cleaners
Project Manager: Pam Morrill
Sampled by: August Welch

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 06-228

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Lead					HOLD	% Moisture
11	RC-B29-06/28	6/28/11	1000	W	3						X																	
12	RC-B0-06/28	6/28/11	0940	W	3						X																	
13	RC-B00-06/28	6/28/11	1005	W	3						⊗															~~X~~ NO		
14	RC-BB2-06/27	6/27/11	1150	W	3						X																	
15	RC-BB3-06/28	6/28/11	0715	W	3						X																	
16	RC-B20-6	6/27/11	950	S	5	⊗			O																	~~X~~ NO	⊗	
17	RC-B29-6	6/28/11	0955	S	2	⊗			O	⊗											⊗					NO ~~X~~	⊗	
18	RC-Drum-Ø	6/28/11	1100	S	5		X		X		⊗																	X
19	Trip Blank	—	—	W	3						X																	

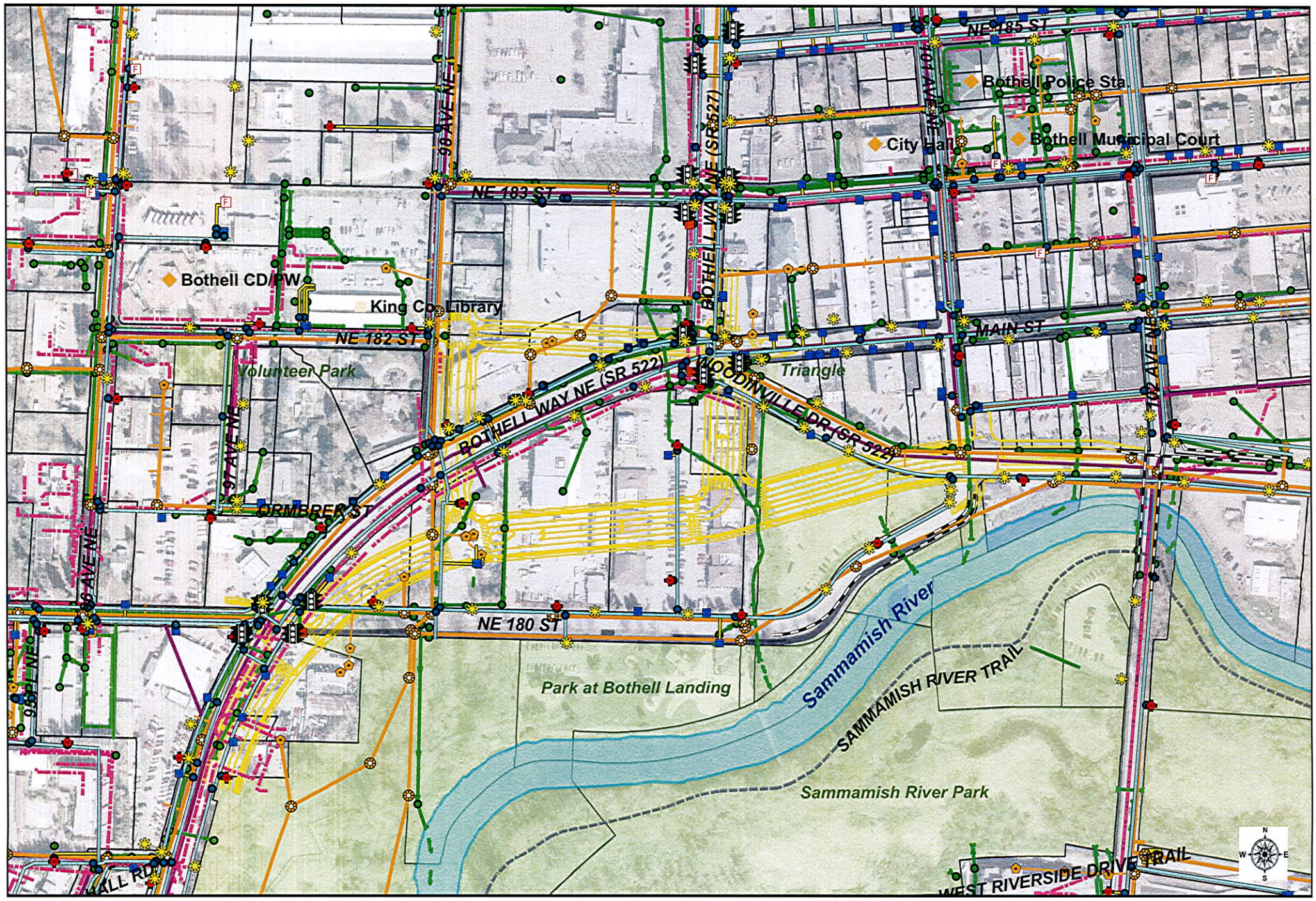
	Signature	Company	Date	Time
Relinquished	August Welch	CDM	6/28/11	1342
Received	[signature]	OSE	6/28/11	1342
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
⊗ Added 6/28/11. PB (STA)
O Added 7/5/11. PB (STA)

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

Appendix C
City of Bothell Crossroads Area Underground Utility Map



Bothell Public Facilities - Legend

- Gateway Proposed Roadway Alignment
- Sewer Pipe
- Sewer Manhole
- Sewer Cleanout
- Water Pipe
- Water Meter
- Fire Hydrant
- Storm Line
- Storm Catchbasin
- AT&T Cable
- Verizon Wireless
- TrafficSignal
- StreetLight
- ControlBox
- Sidewalk
- GuardRail
- Local Government
- School
- Service Organization
- Commuter Trail
- Property Line
- Parks

100 50 0 100 Feet

Data Sources:
Washington State Department of Transportation
Verizon
AT&T
Bothell GIS Division

City of Bothell
GIS Services
Map Production Date: October 18, 2006

City of Bothell - Public Facilities

CDM

www.cdm.com