FINAL

WORK PLAN

with

QUALITY ASSURANCE PROJECT PLAN

for

GROUNDWATER SAMPLING

at

Upland OU, Bradford Island
CASCADE LOCKS, OREGON

Prepared by

U.S. ARMY CORPS OF ENGINEERS
Portland and Seattle Districts

March 2022

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TITLE AND APPROVAL SHEET
WORK PLAN WITH QUALITY ASSURANCE PROJECT PLAN (WP-QAPP)
GROUNDWATER SAMPLING
BRADFORD ISLAND, CASCADE LOCKS, OREGON

This Revised Work Plan with Quality Assurance Project Plan (WP-QAPP) describes sampling activities and Data Quality Objectives (DQOs) for groundwater sampling at the Sandblast area of potential concern (AOPC), Landfill AOPC, and reference area, Bradford Island, Cascade Locks, OR. The QAPP is based on the *Intergovernmental Data Quality Task Force Uniform Federal Policy for Quality Assurance Project Plans Guidance (EPA 2009)*.

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Alison M. Suess, Ph.D., Chemist, NWS — Date

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LIST OF ACRONYMS

AHA	Activity Hazard Analysis
AOPC	area of potential concern
btoc	below top of casing
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHMSA	current hazardous material storage area
CSM	conceptual site model
DL	detection limit
DoD ELAP	Department of Defense Environmental Laboratory Accreditation
DoD QSM	Department of Defense Quality Systems Manual
DQO	Data Quality Objective
EDD	electronic data deliverables
EMPC	estimated maximum possible concentration
EPA	United States Environmental Protection Agency
FS	Feasibility Study
GC-MS	gas chromatography mass spectrometry
HAZWOPER	Hazardous Waste Operations and Emergency Response
LCS	laboratory control sample
LOD	limit of detection
LOQ	limit of quantitation
MS	matrix spike
MSD	matrix spike duplicate
NAPL	non-aqueous phase liquid
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PSOHP	Project Safety and Occupational Health Plan
QC	quality control
RI	Remedial Investigation
SLV	screening level value
SOP	Standard Operating Procedure
SSHO	site safety and health officer
SSHP	Site Safety Health Plan
SVOC	semi-volatile organic compound
TPH-DRO	total petroleum hydrocarbons – diesel range organics
TPH-GRO	total petroleum hydrocarbons – gasoline range organics
USACE	United States Army Corps of Engineers
VOC	volatile organic compound
WP-QAPP	Work Plan with Quality Assurance Project Plan

1. PROJECT MANAGEMENT AND OBJECTIVES

1.1. Project Organization, Responsibilities and Authority

The Project Delivery Team for this Work Plan with Quality Assurance Project Plan (WP-QAPP) Amendment includes members from the United States Army Corps of Engineers (USACE) Portland and Seattle Districts.

The project team provides the overall framework for the data collection approach by defining project objectives and data quality requirements and ensuring that they are met during the execution of the project. USACE will obtain technical feedback from appropriate state and federal agencies and tribes and during ad hoc technical working group meeting(s), as needed. This section further describes the team project roles. Figure 1 and Table 1 present the project organization.

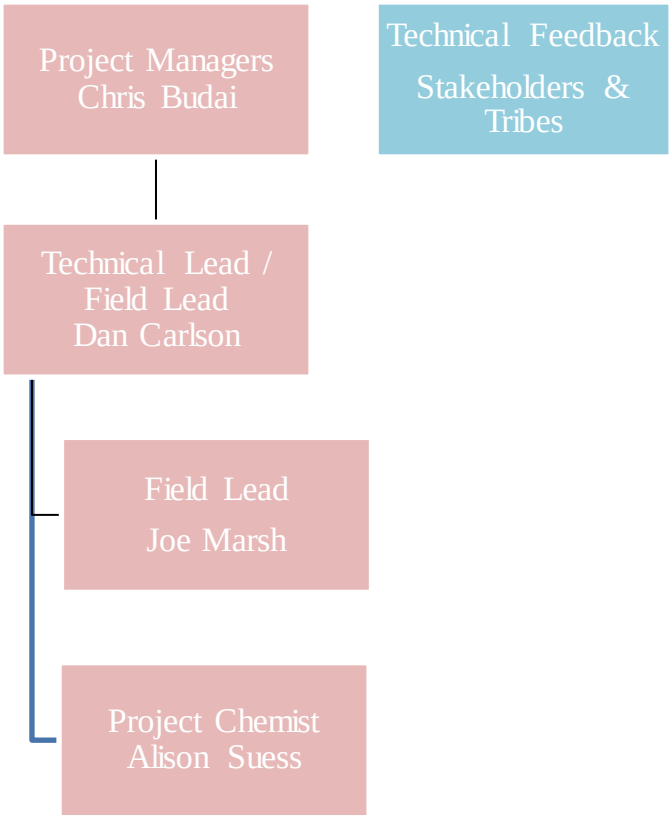

Figure 1. Project Organization Chart

Table 1. Project Organization and Distribution List

Personnel	Contact Information	Title
USACE		
Chris Budai	333 SW 1st Ave Portland, OR 97204 Phone: 503-808-4725 Email: Christine.M.Budai@usace.army.mil	Project Manager
Dan Carlson	735 E. Marginal Way S Seattle, WA 98134 Phone: 206-764-6899 Daniel.j.carlson@usace.army.mil	Technical Lead
Alison M. Suess, Ph.D.	735 E. Marginal Way S Seattle, WA 98134 phone: 206-764-3264 alison.m.suess@usace.army.mil	Project Chemist
Joe Marsh	735 E. Marginal Way S Seattle, WA 98134 Phone: 206-316-3847 Joseph.R.Marsh@usace.army.mil	Field Lead / Site Safety and Health Officer

1.1.1. Communication Pathways

Communication is a key to the success of this project. Communication pathways describe the points of contact for resolving sampling and analysis problems, for distributing data to users, soliciting concurrence and obtaining approval between project personnel and contractors. Communication pathways are summarized in Table 2.

Table 2. Communication Pathways

Communication Driver	Responsible Entity	Name Phone Number	Procedure (timing, pathway, etc.)
USACE management for this project Overall direction and Point of Contact for public and stakeholders	Project Manager	Chris Budai 503-808-4725	Assures that the overall direction of the project is consistent with USACE guidance Liaison with the public, state and federal agencies, and tribes.
WP-QAPP approval	Technical Lead	Dan Carlson 206-764-6899	Coordinates with Project Manager, Project Lead, Chemist and Field Lead on project technical issues
Schedule, budget and technical issues			Reports to USACE Project Manager regarding schedule, budget, and technical issues
Changes to schedule and budget			Notifies USACE Project Manager of significant changes in execution or schedule
Oversight of final report			Oversee USACE writing of final report and distribution to reviewers

Communication Driver	Responsible Entity	Name Phone Number	Procedure (timing, pathway, etc.)
Provides coordination among team members			Provides input to WP-QAPP and data reports
Writes WP-QAPP with input from technical team members. Laboratory and data validation	Project Chemist	Alison M. Suess, Ph.D. 206-764-3264	Oversees writing of WP-QAPP and Activity Hazard Analysis (AHA) and ensures revision approval within agreed timeframe Oversees laboratory work Writes data validation report Provides laboratory and data validation components of WP-QAPP
Provide direction to field teams on sample collections Delivery of samples to laboratory Sampling activities summary Ensures compliance with Project Safety and Occupational Health Plan (PSOHP) and AHA	Project Geologist / Field Lead	Joe Marsh 206-764-6899	Daily communication with team members during sampling events Coordinates with Project Chemist and laboratory for sample delivery Documents all field activities in Final Monitoring Report Briefs field team on PSOHP and AHA and documents noncompliance

1.1.2. USACE Personnel Responsibilities and Qualifications

USACE Project Manager

The Project Manager, Chris Budai, is responsible for the execution of the scope, schedule, and budget for the Bradford Island project, being managed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). She is the primary point of contact for communications with stakeholders. The USACE Project Manager also has the authority stop work of USACE staff. The USACE Project Manager is the primary document controller for the WP.

USACE Technical Lead

The Technical Lead, Dan Carlson, will oversee all activities of the USACE Project Delivery Team, including quality assurance reviews, and maintain regular coordination to ensure adequate and timely flow of information for all work.

USACE Project Chemist

The Project Chemist, Alison M. Suess, Ph.D. is directly responsible for laboratory coordination and matters related to chemistry. She is responsible for providing additional guidance to the Field Sampling Lead in any matters relating to project chemistry and data quality. She will also review analytical data as they become available to ensure conformance with quality standards, identify quality problems and verify

corrective actions, ensure that electronic data are accurate and complete, and serve as a point of contact for issues related to chemistry.

Field Sampling Lead/Site Safety and Health Officer

Joe Marsh is the designated field sampling lead and site safety and health officer (SSHO) for this effort. He is responsible for coordinating the sampling with relevant Bonneville Project staff, execution of sampling, and shipping of samples to the project laboratories. Joe has full stop work authority if conditions exist that are adverse to personnel health and safety. Joe ensures execution of the field activities per the AHA (**Appendix A**) and the WP-QAPP sampling tasks (Section 2.1). Joe may communicate directly with the Project Manager and Project Chemist as needed during the field sampling event.

Special Training Requirements and Certifications

Project staff shall be qualified to perform their assigned jobs. Field sampling personnel conducting or monitoring sampling activities are to be trained by the field sampling lead in accordance with established USACE protocols.

Field Staff

All project staff participating in on-site field activities shall have current Hazardous Waste Operations and Emergency Response (HAZWOPER) training in accordance with 29 Code of Federal Regulations Part 1910.120. The field sampling lead has HAZWOPER training in accordance with the same standard as well as a current certification in first aid and CPR.

Laboratory Contact

The analytical laboratories and applicable information that will be used for this project are listed below in Table 3.

Table 3. Analytical Laboratories, Contacts, and Analyses

Lab Name	Lab Address	Point of Contact	Contact Info	Role
Environmental Monitoring and Technologies, Inc (EMT)	Environmental Monitoring and Technologies, Inc. 509 N. 3rd Ave. Des Plaines, IL. 60016	Tim Witrzek Federal Program Manager	847-324-3320 twitrzek@emt.com	Prime contractor
Eurofins TestAmerica	5755 8th Street East, Tacoma, WA 98424			Subcontractor for select analyses

1.1.3. Additional Federal Agencies, State Agencies, and Tribes Personnel Responsibilities and Qualifications

Appropriate federal agencies, state agencies, and tribes represent their respective agencies and tribes and provide technical review of the QAPP.

1.2. Project Planning

1.2.1. Project Planning (Scoping)

USACE is currently preparing a Revised Feasibility Study (FS) for the Upland Operable Unit (OU) at Bradford Island (the Site). This will replace the FS completed for the Upland OU in 2017 (USACE 2017). Multiple groundwater investigations took place in the Upland OU as part of the Remedial Investigation (RI; URS 2012). Investigations included the installation and sampling of monitoring wells in the Landfill Area of Potential Concern (AOPC), the Sandblast Area AOPC, and a reference area. Contaminants were detected in groundwater above screening levels in the Landfill and Sandblast AOPC.

No further investigation of groundwater for either the Landfill AOPC or Sandblast Area AOPC was recommended in the RI. It was further concluded in the Baseline Human Health and Ecological Risk Assessment for the Upland OU that no further action or evaluation was warranted for groundwater at either the Landfill or Sandblast Area AOPC (URS 2016). An independent Optimization Review was completed for Bradford Island in September 2021 (HGL and USACE EMCX 2021). Upon request, a key part of that review included further evaluation of the linkage between the Upland and River OUs, including discharge of impacted groundwater to the river. The Optimization Review team concluded that the likelihood for significant impacts to the river via groundwater migration from the Upland OU appears relatively low. However, because groundwater data is over 10 years old, they recommended resampling the existing groundwater monitoring wells to assess current conditions prior to finalization of the Revised FS. They did not recommend redoing the risk assessment based on the newly collected data, assuming the concentrations are reasonably consistent with (or lower than) results from the RI. However, the sampling would indicate if there is some new observation that is vastly different from the previous groundwater data and/or is of sufficient concern such that a revised conceptual site model (CSM) is appropriate before the remedy decision is made.

The following sampling and analysis plan supports the collection of groundwater samples from the existing monitoring well network (include the Landfill AOPC, Sandblast Area AOPC, and reference area), and chemical analysis of those sampling to provide updated groundwater data to support completion of the Revised Upland FS. USACE proposes comparing current data to historical groundwater data to determine if conditions are similar to what they were historically and comparing results to current screening levels to determine if additional analytes exceed screening levels that did not historically. Data Quality Objectives (DQOs) are detailed in Table 4. The proposed analyte list is on Table 5 and the factors for considering analytes are listed in Step 3 of Table 4.

1.2.2. Problem Definition, Site History, and Background

USACE conducted a RI and initial FS for the eastern portion of Bradford Island, known as the Upland OU, in accordance with the CERCLA Executive Order 11988. USACE evaluated risk to human health

and the environment in four AOPCs: the landfill, sandblast, bulb slope, and pistol range areas (Figure 2). USACE is in the process of completing a Revised FS for the Upland OU, but because groundwater data is over 10 years old, collecting updated groundwater data from existing monitoring wells (Figures 3 and 4) is recommended to assess current groundwater conditions and further inform the Upland FS. The sampling events associated with this WP-QAPP focus on the Landfill AOPC and Sandblast AOPC, but also includes resampling the reference area well.

Landfill AOPC Groundwater Investigation History

The Landfill AOPC is a former waste disposal site at the Bonneville Lock and Dam Project occupying the northeastern portion of Bradford Island. The Landfill was used from the early 1940s until the early 1980s. A series of site inspections were conducted in the Landfill AOPC and results of these site inspections confirmed past disposal practices impacted soil in the landfill petroleum hydrocarbons, organochlorine pesticides, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals. Landfill debris encountered in the test pit excavations included mercury vapor lamps, electrical equipment, household waste, and asbestos-containing materials.

The initial Site Inspection completed at the landfill in 1998 included the installation and sampling of monitoring wells MW-1 through MW-4 (Tetra Tech 1998). Groundwater samples were analyzed for VOCs, SVOCs, pesticides, PCBs, chlorinated herbicides, total petroleum hydrocarbons (TPH), cyanide, and TAL metals. The only analytes detected in groundwater were VOCs, TPH, and metals. Preliminary remediation goals were exceeded for arsenic, lead, manganese, and tetrachloroethylene (PCE). The authors of the SI concluded that materials disposed within the landfill boundaries adversely impacted the shallow groundwater beneath the landfill. A visual survey for groundwater seeps was also completed along the sloped banks within the vicinity of the landfill, but no seeps were identified.

The Supplemental Site Inspection completed at the landfill during 1999 and 2000 included the installation of an additional monitoring well (MW-5) and three rounds of groundwater sampling (URS 2000). A groundwater seep was also identified during an additional visual survey and a seep water sample was collected from it. VOCs, SVOCs, TPH, and metals were detected in groundwater and metals were detected in the seep water sample. The DEQ and USACE agreed that additional investigation and analysis was necessary.

As part of the Phase II Supplemental Landfill Site Investigation in 2001 and 2002, four additional monitoring wells were installed (MW-6 through MW-9) and one round of groundwater samples was collected from all landfill monitoring wells (MW-1 through MW-9) (URS 2004a). VOCs, SVOCs, TPH, metals, butyltins, organochlorine pesticides, and chlorinated herbicides were detected in groundwater at low levels. A seep water sample was also collected from a seep north of the landfill, along the north shore of Bradford Island. Detectable levels of metals and one SVOC (benzoic acid) was detected in the seep water sample.

As part of sampling efforts to fill data gaps at the Landfill AOPC, four quarters of groundwater, seep water, and surface water immediately adjacent to each seep was completed in March 2008 through January 2009. Groundwater was collected each quarter from all nine monitoring wells. Seep water surveys were completed during each sampling event and seep water and adjacent surface water samples were collected wherever they were found. Two seeps were identified during the winter and spring sampling events and they were sampled along with adjacent surface water samples. No seeps were identified during the drier summer and fall sampling events. Metals, TPHs, and VOCs were detected in

groundwater throughout the Landfill AOPC, as well as in seep water, at concentrations exceeding the screening level values (SLVs). Butyltins, herbicides, pesticides, PAHs, and SVOCs had generally limited detections in groundwater and/or few exceedances of SLVs, and they were not detected in seep water.

During a site visit in July 2021, all landfill monitoring wells were located and gauged for depth to water and depth to bottom measurements. Well depth and groundwater elevation measurements were generally consistent with historical measurements. A significant deviation was in MW-1, where water elevation was approximately 19 feet higher than when it was last measured (2008 and 2009). Also of note was that MW-9 only had approximately 0.4 feet of water; however, this is consistent with measurements taken historically in the summer for MW-9. MW-9 typically has had up to 4 feet of water during winter months.

Sandblast Area AOPC Groundwater Investigation History

The Sandblast AOPC is that portion of Bradford Island surrounding the former sandblast building on the eastern end of the site and includes the equipment laydown area adjacent to the Columbia River and vegetated/forested areas adjacent to the current hazardous material storage area (CHMSA). A Preliminary Assessment and series of Site Inspections were conducted for the Sandblast AOPC from 2001 to 2006. Surface and subsurface soil samples were collected as part of these efforts. Results confirmed soil impacted by PCBs, VOCs, SVOCs, and metals. Supplemental fieldwork and data collection also took place between 2008 and 2012 to augment the existing dataset. Additional soil sampling was completed in August 2021 to further characterize and delineate the extent of soil contamination.

A Supplemental Site Inspection conducted between 2004 and 2006 identified low levels of petroleum hydrocarbons, VOCs, SVOCs, butyltins, and pesticides in several groundwater samples collected from direct-push borings in the Sandblast Area AOPC. As part of supplemental fieldwork and data collection between 2008 and 2012, five groundwater monitoring wells (MW-11 through MW-15) were installed in the Sandblast Area AOPC and four quarters of groundwater sampling were completed from all five wells between March 2008 and January 2009. There were generally limited detections of TPH, VOCs, SVOCs, PAHs and butyltins in groundwater. Two metals (arsenic and iron) and one PAH (Benzo(b)fluoranthene) exceeded SLVs during the first quarter of sampling in March 2008 but did not during the subsequent sampling events. Minor detections of VOCs consistently exceeded SLVs in the majority of Sandblast Area AOPC monitoring wells (excluding MW-11), with relatively high concentrations in MW-12 (immediately downgradient of the former sandblast building).

During a site visit in July 2021, sandblast monitoring wells MW-12, MW-14, and MW-15 were located and gauged for depth to water and depth to bottom measurements. Well depth and groundwater elevation measurements were consistent with historical measurements. MW-11 and MW-13 were not able to be located. In December 2021, USACE used a metal detector and located MW-11 and MW-13. MW-11 was underneath pavement that was placed in approximately 2015-2016, so USACE cut the asphalt to access it and reinstalled the well manway in a new concrete pad.

Reference Area Investigation History

The objective of the reference area sampling for groundwater for the RI was to provide site specific background concentrations of metals (URS 2008). The location chosen for a reference area monitoring well (MW-10) was near the end of an abandoned dirt road leading south from the eastern end of the landfill (Figure 3). The well location is hydrologically upgradient of both the Landfill and Sandblast Area AOPCs. Organic contaminants of interest from the Landfill and Sandblast Area AOPCs were also analyzed. Other than detections of naturally occurring metals in MW-10, there was an estimated detection

of benzo(b)fluoranthene (which was non-detect in it's associated duplicate sample) and an estimated detection of monobutylin (in both the primary and duplicate sample). All concentrations from MW-10 were below concentrations in Landfill and Sandblast AOPC wells.

Hydrogeology

Occurrences of shallow groundwater were evaluated as part of environmental investigations near the former landfill and the former sandblast building (eastern end of Bradford Island) (URS, 2012). Based on these investigations, two shallow stratigraphic units exist on the eastern end of Bradford Island:

1. **Fill/alluvium**. This unit consists of silty to clayey sands and ranges from 15 to 30 feet in thickness. At depth, there are increasing bedrock clasts. This unit occurs beneath the upland portion of the site and pinches out near the northern shore of Bradford Island.
2. **Bedrock**. The bedrock unit consists of a slide block emplaced from the Oregon side of the river. The block is composed of the Eagle Creek Formation, which consists primarily of sandstones and conglomerates. The uppermost 2 to 5 feet of this unit is fractured. In some locations there is weathered slide block between the alluvium and competent slide block. Where present, the weathered slide block includes silty sand and clayey sand, with angular gravel in some locations (URS, 2004).

Groundwater on the eastern end of Bradford Island appears to generally be perched in the alluvium above the less-permeable Eagle Creek Formation slide block. Where the fractured bedrock crops out on the north shore of the island, seeps form in the winter and last through the spring. The slide block forms the base of the river near the island, with no to little sediment thickness found on top of the slide block.

Based on the horizontal hydraulic gradient measured in the fill/alluvium, the direction of groundwater flow beneath the Landfill AOPC is to the north. At the Sandblast Area AOPC, groundwater flow is to the north and northwest.

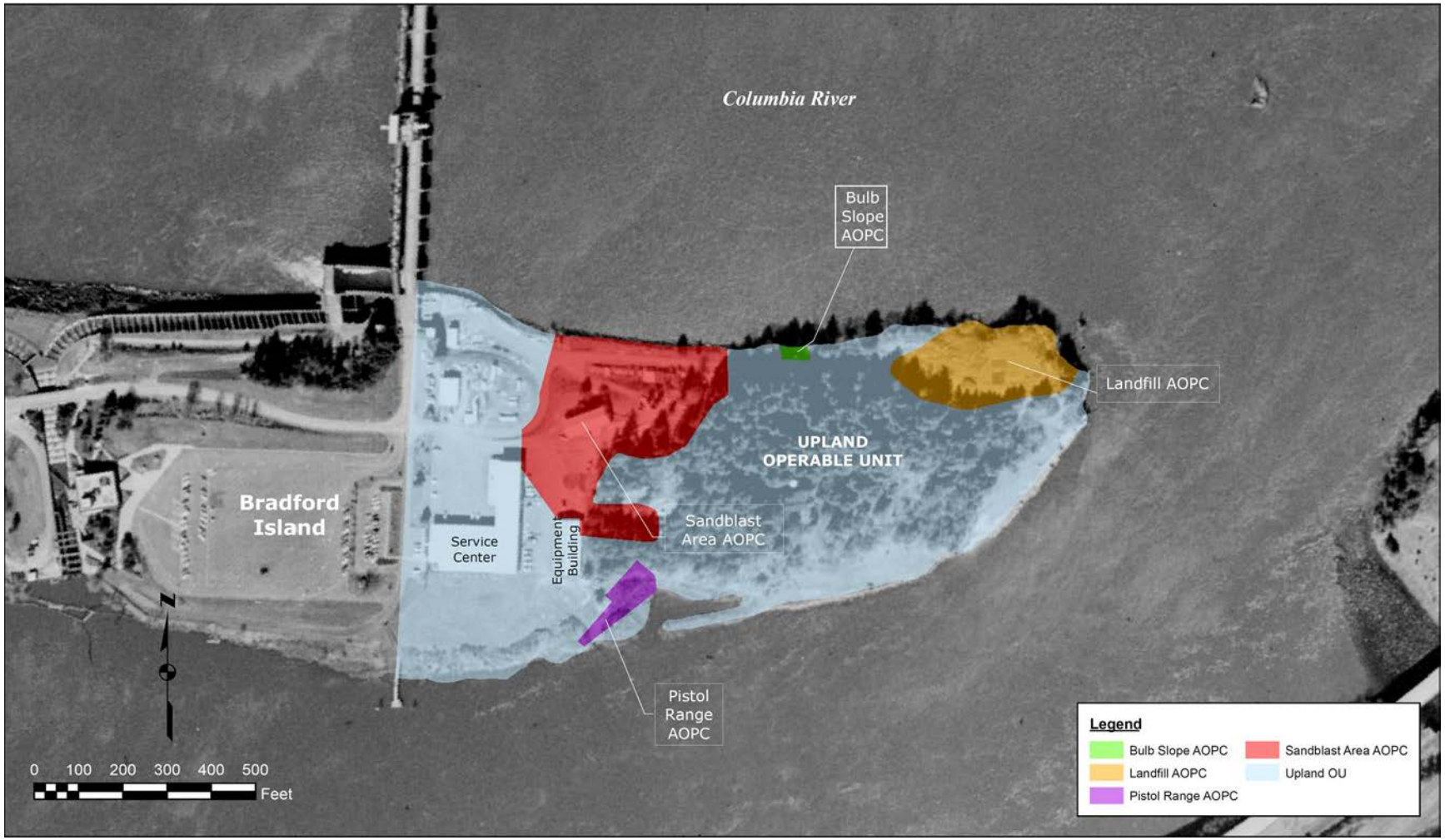

Figure 2. Bradford Island Upland OU
From Figure 2-3 of FS for Upland OU (USACE, 2017)

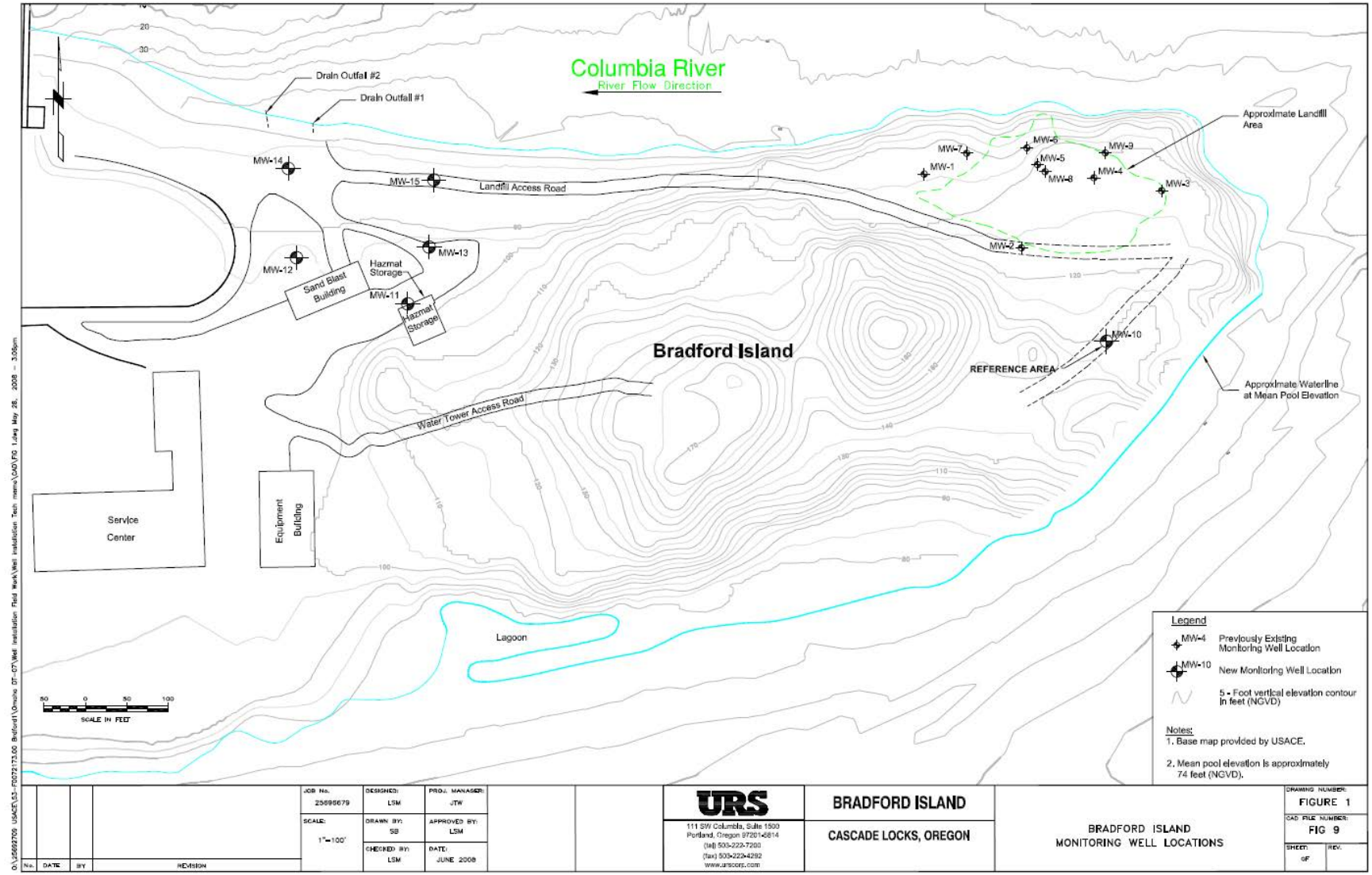

Figure 3. Locations of Existing Monitoring Wells and Site Features

From Figure 1 Groundwater Monitoring Well Installation Report (URS, 2008)

Figure 4. Aerial Photo with Locations of Existing Monitoring Wells

1.3. Data Quality Objectives and Measurement Performance Criteria

1.3.1. Development of Data Quality Objectives Using the Systematic Planning Process

DQOs are developed through the systematic planning process as described in the Uniform Federal Policy Quality Assurance Project Plan Guidance. They are used for determining the type, quantity, and quality of data as described in Table 4.

Table 4. Data Quality Objectives

Step 1 - State the Problem
Groundwater sampling and analysis is required to confirm current groundwater conditions and better inform the Upland OU remedy decision.
Step 2 - Identify the Objectives of the Study.
DQO-1: Compare current analytical concentrations for contaminants in groundwater at the Site to historical concentrations. DQO-2: Compare current analytical concentrations for contaminants in groundwater at the Site to current SLVs for human health and ecological risk. Include analytes of interest that may not have been consistently sampled historically to fill potential data gaps.
Step 3 - Identify Information Inputs.
DQO-1 and DQO-2: Current concentrations of contaminants in groundwater within all existing on-site monitoring wells. Factors considered in choosing the analytes for this study included: 1) contaminant groups recommended for sampling in the 2021 Optimization Review Report, 2) contaminants analyzed during the most recent quarterly groundwater sampling events in 2008-2009, 3) contaminants analyzed during the recent stormwater (2018-2020) and sandblast soil (2021) sampling events, 4) contaminants that had detection limits that exceeded screening levels at the time of the RI.
Step 4 - Define the Boundaries of the Study.
DQO-1 and DQO-2: The Site area encompassing the existing monitoring well network, which includes the Sandblast Area AOPC, the Landfill AOPC, and an area immediately south of the Landfill AOPC.
Step 5 - Develop the Analytic Approach.
DQO-1 and DQO-2: Groundwater samples will be collected from all existing on-site monitoring wells, using low-flow sampling methodology. Samples will be analyzed for select metals, select pesticides, select VOCs/SVOCs, PAHs (full scan), butyltins, and PCB congeners (full 209), following analytical methods outlined in Table 5. DQO-1: Comparison of historical groundwater analytical results to the updated groundwater analytical results from each monitoring well. DQO-2: Comparison of current groundwater analytical results to current SLVs for 1) ingestion and direct contact pathways, 2) discharge to surface water and bioaccumulation pathways, and 3) ecological pathways for chronic exposure to freshwater organisms. Twelve SLV sources are listed below, which were established in the RI. For screening purposes, the results will be initially compared to the most conservative SLV of the twelve sources. **Human Health SLVs** <u>Ingestion and Direct Contact Pathways</u> 1. DEQ's Groundwater Risk Based Concentrations (RBCs) (all groundwater RBCs) (DEQ, 2018)

2. EPA's Tapwater Regional Screening Levels (RSLs) (EPA, 2021c)
3. DEQ's Maximum Contaminant Levels (MCLs) (DEQ, 2019)

Discharge to Surface Water and Bioaccumulation Pathways

4. EPA's National Recommended Water Quality Criteria (NAWQC) – Human Health Criteria Table; Human Health for the consumption of Water + Organism (EPA, 2021b).
5. DEQ's Human Health-based Water Quality Criteria (WQC) for Toxic Pollutants; Table 40; Water + Organism (DEQ 2014).

Ecological SLVs

6. EPA's National Recommended Water Quality Criteria (NAWQC) – Aquatic Life Criteria Table; Freshwater, Criteria Continuous Concentration (CCC) (chronic) (EPA, 2021a).
7. DEQ's Aquatic Life Water Quality Criteria (WQC) for Toxic Pollutants; Table 30; Freshwater, Criteria Continuous Concentration (CCC) (chronic) (DEQ 2014)
8. DEQ's Table 2: RBCs for water; Freshwater; RBC Chronic-Wildlife (DEQ, 2020)
9. ORNL's toxicological benchmarks for freshwater protective of aquatic biota (Suter and Tsao 1996).
10. EPA's Freshwater Chronic Values for PAHs protective of aquatic life; Table 3-4 (2003)
11. Canadian Water Quality Guidelines for the Protection of Aquatic Life; Freshwater, Long Term (Canadian Council of Resource and Environment Ministers, 2021)
12. NOAA's Screening Quick Reference Tables (SQuiRTs) for freshwater, Chronic (Buchman, 2008)

If updated analytical data is significantly higher and/or if analytes exceed screening criteria that did not previously exceed screening criteria in the RI, then revaluation of the CSM will be considered; particularly, for revaluating the findings in the RI and Upland OU Baseline Human Health and Ecological Risk Assessment that groundwater does not pose a risk to Upland receptors and is a negligible pathway for contaminant migration from the Upland OU to the River OU.

Step 6 - Specify Performance or Acceptance Criteria.

Performance criteria for the analytical methods will be compliant with Department of Defense Quality Systems Manual (DoD QSM) 5.4 (or laboratory-accredited version) unless otherwise noted. Data Usability will be evaluated by the Project Chemist and discussed by the project team.

Step 7 - Develop the Detailed Plan for Obtaining Data.

The groundwater samples will be collected in the first quarter of calendar year 2022. Sections 2 and 3 of this QAPP address specific procedures that will be followed to obtain data.

Table 5. Sample Methods, Analytes of Interest, and Detection and Reporting Limits

Target Analyte	Units	Target Analytical Limit of Quantitation (LOQ)	Target Analytical Limit of Detection (LOD)	Target Analytical Detection Limit (DL)	Lowest 2012 RI SLV (and source) used for inclusion of analytes for sampling	2022 Selected Min. Potentially Applicable Direct Contact Water SLV[a]
Mercury (Total and Dissolved) – EPA 7470A – Water Matrix – EMT						
Mercury Total	µg/L	0.500	0.400	0.200	NA	6.00 (HH)
Mercury Dissolved	µg/L	0.500	0.250	0.100	NA	0.012* (Eco)
Metals (Total and Dissolved) – SW 6020D – Water Matrix – EMT						
Aluminum	µg/L	50.0	20.0	10.0	NA	20,000 (total)(HH) 320 (dissolved)(Eco)
Antimony	µg/L	10.0	4.00	1.20	NA	7.80 (total & dissolved) (HH)
Arsenic	µg/L	10.0	2.00	0.800	NA	0.052* (total & dissolved) (HH)
Barium	µg/L	10.0	2.00	0.800	NA	4,000 (total)(HH) 220 (dissolved)(Eco)
Beryllium	µg/L	1.00	0.800	0.200	NA	40.0 (total) (HH) 11.0 (dissolved)(Eco)
Cadmium	µg/L	1.00	0.800	0.200	NA	20.0 (total) (HH) 0.094 (dissolved)(Eco)
Calcium	µg/L	50.0	40.0	20.0	NA	120,000 (dissolved)(Eco)
Chromium	µg/L	10.0	4.00	1.00	NA	30,000 (total) (HH) 24.0 (dissolved)(Eco)
Cobalt	µg/L	10.0	4.00	1.20	NA	6.00 (total & dissolved) (HH)
Copper	µg/L	10.0	4.00	1.00	NA	800 (total)(HH)

Target Analyte	Units	Target Analytical Limit of Quantitation (LOQ)	Target Analytical Limit of Detection (LOD)	Target Analytical Detection Limit (DL)	Lowest 2012 RI SLV (and source) used for inclusion of analytes for sampling	2022 Selected Min. Potentially Applicable Direct Contact Water SLV[a]
						1.40 (dissolved)(Eco)
Iron	µg/L	50.0	40.0	20.0	NA	1,400 (total) (HH) 1,000 (dissolved)(Eco)
Lead	µg/L	10.0	2.00	0.600	NA	15.0 (total) (HH) 0.54* (dissolved)(Eco)
Magnesium	µg/L	50.0	20.0	8.00	NA	82,000 (dissolved)(Eco)
Manganese	µg/L	10.0	4.00	1.00	NA	480 (total) (HH) 93.0 (dissolved)(Eco)
Nickel	µg/L	10.0	4.00	1.00	NA	400 (total) (HH) 16.0 (dissolved)(Eco)
Potassium	µg/L	50.0	40.0	20.0	NA	53,000 (dissolved)(Eco)
Selenium	µg/L	10.0	4.00	1.20	NA	100 (total) (HH) 4.60 (dissolved)(Eco)
Silver	µg/L	1.00	0.400	0.160	NA	100 (total)(HH) 0.100* (dissolved)(Eco)
Sodium	µg/L	50.0	40.0	20.0	NA	680,000 (dissolved)(Eco)
Thallium	µg/L	10.0	0.400	0.160	NA	0.200 (total)(HH) 0.200 (dissolved)(HH)
Vanadium	µg/L	10.0	2.00	0.600	NA	86.0 (total)(HH) 27.0 (dissolved)(HH)
Zinc	µg/L	10.0	8.00	4.00	NA	6,000

Target Analyte	Units	Target Analytical Limit of Quantitation (LOQ)	Target Analytical Limit of Detection (LOD)	Target Analytical Detection Limit (DL)	Lowest 2012 RI SLV (and source) used for inclusion of analytes for sampling	2022 Selected Min. Potentially Applicable Direct Contact Water SLV[a]
						(total)(HH) 36.0 (dissolved)(Eco)
Organochlorine Pesticides – SW 8081B – Water Matrix – EMT						
2,4'-DDD	µg/L	0.0300	0.0100	0.00440	NA	--
2,4'-DDE	µg/L	0.0300	0.0100	0.00380	NA	--
2,4'-DDT	µg/L	0.0300	0.0100	0.00500	NA	--
4,4'-DDD	µg/L	0.0400	0.0100	0.00890	NA	0.01 (Eco)
4,4'-DDE	µg/L	0.0400	0.0200	0.00810	NA	0.046 (HH)
4,4'-DDT	µg/L	0.0800	0.0500	0.0169	NA	0.001* (Eco)
Aldrin	µg/L	0.0400	0.0200	0.0100	NA	0.000920* (HH)
Alpha-BHC	µg/L	0.0400	0.0200	0.00980	NA	0.00750* (HH)
Alpha-Chlordane (cis-Chlordane)	µg/L	0.0400	0.0250	0.0106	NA	0.00430* (Eco)
Beta-BHC	µg/L	0.0400	0.0200	0.00730	NA	0.0370 (HH)
Delta-BHC	µg/L	0.0400	0.0200	0.00930	NA	0.00750* (HH)
Dieldrin	µg/L	0.0400	0.0200	0.00870	NA	0.00170* (HH)
Endosulfan I	µg/L	0.0400	0.0200	0.00810	NA	0.0560 (Eco)
Endosulfan II	µg/L	0.0400	0.0200	0.00950	NA	0.0560 (Eco)
Endosulfan Sulfate	µg/L	0.0400	0.0250	0.0114	NA	0.0510 (Eco)
Endrin	µg/L	0.0400	0.0200	0.00880	NA	0.0360 (Eco)
Endrin Aldehyde	µg/L	0.0400	0.0250	0.0117	NA	0.150 (Eco)
Endrin Ketone	µg/L	0.0400	0.0200	0.00860	NA	1.90 (HH)

Target Analyte	Units	Target Analytical Limit of Quantitation (LOQ)	Target Analytical Limit of Detection (LOD)	Target Analytical Detection Limit (DL)	Lowest 2012 RI SLV (and source) used for inclusion of analytes for sampling	2022 Selected Min. Potentially Applicable Direct Contact Water SLV[a]
Gamma-BHC (Lindane)	µg/L	0.0400	0.0200	0.00970	NA	0.043 (HH)
Gamma-Chlordane (trans-Chlordane, Beta-Chordane)	µg/L	0.0400	0.0250	0.0110	NA	0.00430[c]* (Eco)
Heptachlor	µg/L	0.0400	0.0200	0.0100	NA	0.00140* (HH)
Heptachlor Epoxide	µg/L	0.0400	0.0200	0.00970	NA	0.00140* (HH)
Methoxychlor	µg/L	0.0800	0.0500	0.0242	NA	0.0300 (Eco)
Oxychlordane	µg/L	0.0300	0.0100	0.00420	NA	0.00430[c] (Eco)
Toxaphene	µg/L	2.00	1.00	0.423	0.000280 (EPA NRWQC, HH)	0.000200* (Eco)
Dibutyltin	µg/L	0.300	0.153	0.0560	NA	0.0630[d] (Eco)
Monobutyltin	µg/L	0.300	0.125	0.0610	NA	0.0630[d] (Eco)
Tetra-n-butyltin	µg/L	0.300	0.200	0.104	NA	0.0630[d]* (Eco)
Tributyltin	µg/L	0.300	0.178	0.0460	NA	0.0630 (Eco)
PCB Congeners (209)	ng/L	Varies; typically < 1.00 ng/L	Varies; typically < 0.100 ng/L	Varies; typically < 0.100 ng/L	NA	6.00 ng/L[e] (HH)
3,3'-Dichlorobenzidine	µg/L	20.0	10.0	3.16	0.0210 (EPA NRWQC, HH)	0.0170* (HH)
4-methylphenol (p-cresol)	µg/L	1.00	0.500	0.179	--[g]	53.0 (Eco)
4-Nitrophenol	µg/L	15.0	5.00	1.44	NA	58.0 (Eco)
Benzidine	µg/L	80.0	40.0	16.6	0.0000860 (EPA NRWQC, HH)	0.000110* (HH)

Target Analyte	Units	Target Analytical Limit of Quantitation (LOQ)	Target Analytical Limit of Detection (LOD)	Target Analytical Detection Limit (DL)	Lowest 2012 RI SLV (and source) used for inclusion of analytes for sampling	2022 Selected Min. Potentially Applicable Direct Contact Water SLV[a]
Butylbenzylphthalate	µg/L	1.00	0.500	0.234	NA	16.0 (HH)
Carbazole	µg/L	1.00	0.500	0.173	NA	4.00 (HH)
Dibenzofuran	µg/L	0.600	0.300	0.123	NA	4.00 (Eco)
Di-n-butylphthalate	µg/L	10.0	6.00	2.88	NA	19.0 (Eco)
Di-n-octylphthalate (DNP)	µg/L	10.0	5.00	1.89	1.20 (EPA NRWQC, HH)	200 (HH)
N-Nitrosodimethylamine	µg/L	1.00	0.500	0.156	0.000690 (EPA NRWQC, HH)	0.000110* (HH)
N-Nitrosodi-n-propylamine	µg/L	2.00	1.00	0.319	0.00500 (EPA NRWQC, HH)	0.0110* (HH)
Phenol	µg/L	1.00	0.500	0.171	NA	160 (Eco)
2-Methylnaphthalene	µg/L	0.0600	0.0400	0.0171	NA	4.70 (Eco)
Acenaphthene	µg/L	0.0600	0.0400	0.0142	NA	15.0 (Eco)
Acenaphthylene	µg/L	0.0600	0.0400	0.0130	NA	0.17 (HH)
Anthracene	µg/L	0.0600	0.0400	0.0199	NA	0.0200 (Eco)
Benzo[a]anthracene	µg/L	0.120	0.0800	0.0322	NA	0.0300* (HH)
Benzo[a]pyrene	µg/L	0.0800	0.0600	0.0258	NA	0.0250* (HH)
Benzo[b]fluoranthene	µg/L	0.0800	0.0600	0.0289	NA	0.250 (HH)
Benzo[g,h,i]perylene	µg/L	0.120	0.0800	0.0306	NA	0.0120* (Eco)
Benzo[k]fluoranthene	µg/L	0.120	0.0800	0.0384	NA	0.0600 (Eco)

Target Analyte	Units	Target Analytical Limit of Quantitation (LOQ)	Target Analytical Limit of Detection (LOD)	Target Analytical Detection Limit (DL)	Lowest 2012 RI SLV (and source) used for inclusion of analytes for sampling	2022 Selected Min. Potentially Applicable Direct Contact Water SLV[a]
Bis(2-chloroethyl) Ether	µg/L	1.00	0.500	0.176	0.0120 (ODEQ RBCs, Residential Water)	0.0140* (HH)
Bis(2-ethylhexyl)phthalate	µg/L	2.00	1.00	0.169	NA	5.60 (HH)
Chrysene	µg/L	0.160	0.120	0.0446	NA	4.70 (Eco)
Dibenz(a,h)anthracene	µg/L	0.160	0.120	0.0416	NA	0.0120* (Eco)
Fluoranthene	µg/L	0.120	0.0800	0.0334	NA	0.800 (Eco)
Fluorene	µg/L	0.0600	0.0400	0.0169	NA	19.0 (Eco)
Hexachlorobenzene	µg/L	1.00	0.500	0.165	0.000280 (EPA NRWQC, HH)	0.00980* (HH)
Indeno[1,2,3-cd]pyrene	µg/L	0.120	0.0800	0.0349	NA	0.0120* (Eco)
Naphthalene	µg/L	0.120	0.0800	0.0140	NA	0.170 (HH)
Phenanthrene	µg/L	0.160	0.120	0.0571	NA	2.30 (Eco)
Pyrene	µg/L	0.0800	0.0600	0.0255	NA	4.60 (Eco)
VOCs – SW 8260D – Water Matrix – EMT						
1,1,1,2-Tetrachloroethane	µg/L	0.500	0.200	0.0650	NA	0.570 (HH)
1,1,2,2-Tetrachloroethane	µg/L	0.500	0.200	0.0621	NA	0.0760 (HH)
1,1,2-Trichloroethane	µg/L	0.500	0.200	0.0832	NA	0.280 (HH)
1,1-Dichloroethane	µg/L	0.500	0.200	0.0669	2.30 ug/L (ODEQ RBCs, Residential Water)	130 (Eco)
1,2,3-Trichloropropane	µg/L	0.500	0.200	0.0913	NA	0.000750* (HH)

Target Analyte	Units	Target Analytical Limit of Quantitation (LOQ)	Target Analytical Limit of Detection (LOD)	Target Analytical Detection Limit (DL)	Lowest 2012 RI SLV (and source) used for inclusion of analytes for sampling	2022 Selected Min. Potentially Applicable Direct Contact Water SLV[a]
1,2,4-Trimethylbenzene	µg/L	0.500	0.200	0.0661	NA	15.0 (Eco)
1,2-Dibromo-3-chloropropane	µg/L	1.00	0.500	0.130	NA	0.000330* (HH)
1,2-Dibromoethane (EDB)	µg/L	0.500	0.200	0.0531	NA	0.00750* (HH)
1,2-Dichloroethane (EDC)	µg/L	0.500	0.200	0.106	NA	0.170 (HH)
1,2-Dichloropropane	µg/L	0.500	0.200	0.102	NA	0.850 (HH)
1,4-Dichlorobenzene	µg/L	0.500	0.200	0.0920	NA	0.480 (HH)
2,2-dichloropropane	µg/L	0.500	0.200	0.0920	NA	0.850[f] (HH)
Benzene	µg/L	0.500	0.200	0.0507	NA	0.460 (HH)
Bromochloromethane	µg/L	0.500	0.200	0.0669	0.120 (ODEQ RBCs, Residential Water)	83.0 (HH)
Bromodichloromethane	µg/L	0.500	0.200	0.0531	0.120 (ODEQ RBCs, Residential Water)	0.130 (HH)
Carbon disulfide	µg/L	1.00	0.500	0.140	NA	15.0 (Eco)
Carbon Tetrachloride	µg/L	0.500	0.200	0.0844	NA	0.460 (HH)
chloroform	µg/L	0.500	0.200	0.101	NA	0.220 (HH)
cis-1,2-Dichloroethene	µg/L	0.500	0.200	0.103	NA	36.0 (HH)
cis-1,3-Dichloropropene	µg/L	0.500	0.200	0.0587	NA	0.055* (Eco)
Dibromochloromethane	µg/L	0.500	0.200	0.0759	NA	0.170 (HH)
Dibromomethane	µg/L	0.500	0.200	0.0817	8.20[b]	8.30

Target Analyte	Units	Target Analytical Limit of Quantitation (LOQ)	Target Analytical Limit of Detection (LOD)	Target Analytical Detection Limit (DL)	Lowest 2012 RI SLV (and source) used for inclusion of analytes for sampling	2022 Selected Min. Potentially Applicable Direct Contact Water SLV[a]
					(ODEQ RBCs, Residential Water)	(HH)
Hexachlorobutadiene	µg/L	0.500	0.200	0.100	NA	0.140 (HH)
isopropylbenzene	µg/L	0.500	0.200	0.0549	NA	4.80 (Eco)
n-propylbenzene	µg/L	0.500	0.200	0.0630	NA	61.0 (Eco)
trans-1,3-Dichloropropene	µg/L	0.500	0.200	0.0587	NA	0.055* (Eco)
Tetrachloroethene (PCE)	µg/L	0.500	0.200	0.178	NA	12.0 (HH)
Trichloroethene (TCE)	µg/L	0.500	0.200	0.0781	NA	0.490 (HH)
vinyl chloride	µg/L	1.00	0.500	0.129	NA	0.0270* (HH)
TPH-GRO	µg/L	250	200	100	NA	110 (HH)
TPH-DRO (C10-C24)	µg/L	110	100	65	NA	100 (HH)
TPH-RRO (>C24-C36)	µg/L	350	300	96	NA	300 (HH)

Notes:

1. Detection limits and reporting limits [reporting limits are also known as limit of quantitation (LOQ)] are estimated and may change due to specific laboratory conditions, for example, dilutions.
2. Additional cleanup steps such as sulfuric acid, copper, tetrabutylammonium sulfite, and mercury may be needed to achieve the provided LOQ/LOD/DL for PCB Congeners. The laboratory will perform the extraction for PCBs and then perform cleanup steps as necessary.
3. Total Petroleum Hydrocarbons analysis should not include silica gel or other cleanup that would remove polar metabolites from the sample.
4. * = 2022 SLVs that are lower than the detection limits used for those analytes.
5. NA = Not applicable because analyte was already chosen for analysis for reasons other than for comparing historical results and detection limits to the 2012 SLV.
6. HH = human health
7. Eco = Ecological
8. [a] = For organic analytes, most conservative of Human Health and Ecological Selected Water Screening Levels with Surrogates. For inorganic analytes, selected Human Health Selected Screening Level. For all analytes, most conservative of Human Health and Ecological Selected Water Screening Levels with Surrogates.

9. [b] = The SLV for Dibromomethane from the 2012 RI is 8.2 µg/L, and historically all results for this analyte have been non-detect, with detection limits below that SLV.
10. [c] = Chlordane (CAS # 57749) was used as a surrogate because there was no chemical specific SLV.
11. [d] = Tributyltin was used as a surrogate because there was no chemical specific SLV.
12. [e] = This SLV is for total PCBs.
13. [f] = 1,2- Dichloropropane was used as a surrogate because there was no chemical specific SLV.
14. [g] = There was no SLV for groundwater for p-cresol within the RI at that time.

1.3.2. Measurement Performance Criteria

Performance criteria specify the acceptable levels of uncertainty in measured data that can be used to support project decisions and achieve DQOs. Performance criteria for the analytical methods are specified in the laboratory procedures and are compliant with DoD QSM 5.3, or current laboratory-accredited version, unless otherwise noted. Any data which fall outside of these criteria must be justified, and the effects on decisions must be assessed. Laboratory method performance criteria and accreditations are provided in Appendix B.

1.4. Secondary Data Evaluation

Secondary data collection includes temperature, specific conductivity, dissolved oxygen, oxidation reduction potential, and turbidity during well purging. No other secondary data will be collected.

1.5. Project Overview and Schedule

Through project planning, the project team has agreed on the purpose of the project, the environmental questions that are being asked, and the environmental decisions that must be made. Project quality objectives have been developed specifying the type, quantity, and quality of data needed to ensure that project data can be used for the intended purpose to answer specific environmental questions, support environmental decisions, and determine technical activities that will be conducted. Table 6 provides a summary of the project tasks to be completed and Table 7 describes the estimated project schedule.

Table 6. Project Tasks

Plan, Prepare WP-QAPP & Obtain Laboratory Quote
• Prepare and finalize WP-QAPP; obtain laboratory quotes.
Sampling Tasks
• Collect groundwater samples as described in Section 2.1.
Analytical Tasks
• Analyze groundwater for selected analytes and methods presented in Table 5.
Quality Control Tasks
• Analytical methods quality control (QC) will comply with DoD QSM or laboratory Standard Operating Procedures (SOPs) as applicable.
Secondary Data
• No secondary data will be collected.
Data Management Tasks
• Project Chemist will review and store analytical data.
Documentation and Records
• Field notes will be recorded on field log sampling sheets, then scanned and electronically stored. • Field notes will contain both the general and specific sampling information specified in Section 2.1.6. • Laboratory analytical results will be stored electronically in both pdf and electronic data deliverable (EDD) formats.
Data Packages
• 100% of data packages will be validated through Stage 2A by a contracted data validator. All data packages will be delivered at the Stage 4 level in the event that more detailed data validation is required.
Data Review Tasks

- The laboratory performing analyses of samples will verify that all data are complete for samples received.
- Data will be validated using the principles of the DoD QSM 5.3, or current laboratory-accredited version.
- Validated data will be reviewed.
- Data usability will be assessed.
- Measurement perfomance criteria set in WP-QAPP checked.
- Data limitations will be determined.
- Data will be compared to Project Objectives.

Table 7. Estimated Project Schedule

Task #: Description	Start	Finish
Task #1: Plan, Prepare WP-QAPP and Obtain Laboratory Quotes		
Prepare Draft WP-QAPP	1 November 2021	14 January 2022
External Review analyte list	12 December 2021	05 January 2022
Obtain laboratory quote, finalize, and receive bottles	14 January 2022	11 February 2022
External Review WP-QAPP	14 January 2022	04 February 2022
Finalize WP-QAPP	04 February 2022	11 February 2022
Task #2: Field Work		
Monitoring Well Redevelopment	08 February 2022	11 February 2022
Monitoring Well Groundwater Sampling	7 March 2022	11 March 2022
Task #3: Review Lab Data and Prepare Report		
Review groundwater data and store electronically	Upon receipt	20 days after receipt
Prepare Data Report	After data review	20 days after final data review

2. DATA GENERATION AND ACQUISITION

2.1. Sampling Tasks

2.1.1. Sampling Process Design and Rationale

The Study Area is the existing monitoring well network within the Upland OU for Bradford Island, consisting of five (5) wells in the Sandblast AOPC, nine (9) wells in the Landfill AOPC, and one (1) reference well located south of the Landfill AOPC (Figures 3 and 4). Sampling all existing monitoring wells will provide updated conditions for groundwater, for consideration during evaluation of remedies for the Upland OU.

Well Redevelopment

Some of the monitoring wells at the site were installed as early as 1998 and none of the monitoring wells have been purged or sampled since 2009. Changes in groundwater elevation, decreased recharge during

purging, or excessive sedimentation are signs that a well screen may be clogged or that there may be structural problems with a well (Ohio EPA 2009). Well screens can be fouled (i.e. clogged) over time by chemical or bio-chemical precipitates. Examples of fouling include bacterial slimes or mineral scale. Biofouling can also result in biomass collecting within the water column of the well itself. Well redevelopment may be necessary based on those observations or conditions, to ensure adequate connection to the surrounding aquifer and/or to remove biomaterial that may have accumulated in a well. Barring those issues, monitoring well redevelopment is not strictly necessary as part of routine maintenance at all sites, and has been shown to not have a quantifiable or predictable effect on groundwater sample chemistry over short- and long-term periods (DOE 2016).

Monitoring well measurements from the most recent historical sampling events (2008 to 2009) and from a site visit in July 2021 are listed on Table 8. Monitoring well construction details are listed on Table 9. A well redevelopment event will be completed at least one week prior to groundwater sampling. The steps below may be performed at monitoring wells MW-2 through MW-15 to determine if well redevelopment is necessary. Information obtained from any one of the steps may be used as justification for proceeding with well redevelopment at a well. Each of the steps will be completed before deciding not to redevelop a well. Alternatively, the field team may decide to proceed directly with well redevelopment in lieu of any of the following evaluation steps.

1) Gauge depth to water and bottom of the monitoring well

   Any significant change to either measurement from historical measurements will be evaluated in the context of possible screen clogging or excessive sedimentation. Sediment that blocks more than 20% of the well screen will be cause for redevelopment (EPA 1988).

2) Purge the monitoring well with a submersible pump and measure purge rate and recharge

   The purge and recharge rate at the monitoring well can be measured and compared to historical purge rates and drawdown on sampling log forms from the January 2009 sampling event (Appendix C). Specific capacity can be calculated by dividing the purge rate by the drawdown over a set period of time, for both the January 2009 measurements and the new measurements to be collected. A decrease in specific capacity greater than 25% will indicate that the well needs to be redeveloped. If a well did not have measurable drawdown in January 2009 at a certain pumping rate but it does have drawdown now at the same pumping rate, that would also indicate that well redevelopment is needed.

3) Inspect the screen of the monitoring well with a downhole camera

   A downhole camera will be used in the monitoring well to inspect the well screen for fouling and to inspect for biofouling in the water column.

Monitoring wells will be redeveloped by the USACE field lead using well developer tools (Qwater 2” Well Developer) and submersible pump, as needed. The Qwater tools are sized differently for the schedule 80 and schedule 40 wells. The following steps will be taken for redeveloping a monitoring well:

1. Gauge monitoring well water level and well bottom

2. Use the Qwater Well Developer tool
    a. Attach the Qwater Well Developer tool to threaded pieces of 1/2 in. PVC pipe
    b. Lower the tool to the bottom of the well (bottom of the screened interval) while threading on more pipe as needed
    c. Attach valve assembly and tubing to the top of the PVC pipe
    d. With upper check valve closed, surge valve up and down five strokes
    e. Open the upper valve and surge (fast – down and slow – up) until water flows out of the tubing, and collect it into a bucket or directly into a 55-gallon drum
    f. Reposition the tool as needed to ensure the polyethylene wiper on the tool brushes and surges across all of the screened interval, for approximately 5-10 minutes per 5 feet of screen
    g. In low-producing wells, the valve can be turned to stop flow from coming up the well, to allow the muddy slurry remaining in the well to be used to surge fluid back and forth through the screen.
3. (Optional) -– A submersible pump may be used to purge water out of the well depending on the success of purging using the well developer tool
4. Monitor sediment discharge during purging and measure turbidity
5. Repeat steps 2-4 as needed
6. Wells will be considered adequately redeveloped when one of the following criteria is met:
    a. Turbidity is less than 10 NTU
    b. Less than a 25% decrease in turbidity after 3 consecutive turbidity readings
    c. Removal of 5 well volumes

Time spent on development, volume of water removed, depth of the well, groundwater elevation measurements, visual clarity, and turbidity will all be recorded. All purge water will be placed into labeled drums for later disposal by USACE. The water level meter, well developer tool, submersible pump (if used), and PVC pipe that enters the well will be decontaminated between wells, according to the procedures in section 2.1.3.

Groundwater Sampling

This supplemental groundwater investigation is intended to provide updated groundwater analytical data for existing monitoring wells. One groundwater sample will be collected from each monitoring well. A minimum of 1 week will elapse after well redevelopment before the monitoring wells are sampled. Groundwater samples will be collected using low-flow techniques in order to collect samples that are representative of the surrounding aquifer. Groundwater purging and sampling will be performed in accordance with the USACE Seattle District's SOP for Low-Flow Groundwater Purging and Sampling using Non-Dedicated Groundwater Sampling Pumps (Appendix D), with the exception of any differing instructions otherwise stated below in this WP-QAPP. Data generated during purging will be recorded on MicroPurge/Low-Flow Sampling Log forms (Appendix E).

Winter or early spring was determined to be the best time of year to collect a round of groundwater samples as part of confirming analytical concentrations in the monitoring wells. Groundwater elevation is typically highest in most of the monitoring wells at Bradford Island in the winter and early spring. Differences in groundwater elevation are typically between 1-5 feet in most wells, with greater differences seen historically in select wells (MW-8 and MW-10). The increased volume of water during

the wetter seasons will increase the chance of successful operation of submersible pumps for sampling (or with collecting a sample by any means) in wells with relatively shallow water columns and/or with slow recharge rates (e.g., MW-3, MW-9, and MW-12). For instance, MW-9 typically has less than a foot of water in the summer months but over four feet of water in the winter months (MW-9 had insufficient sample volume during the October 2008 and July 2008 sampling events). By operating in a longer column of water and reducing unnecessary drawdown, turbidity should be reduced and there will be less concern with breaking pump suction or entraining air into samples. Table 8 presents historical and recent water elevation and total depth measurements in each monitoring well.

Further evaluation of the effect of seasonality on analytical concentrations was completed by creating hydrographs comparing groundwater elevation to analytical concentrations in monitoring wells for the quarterly sampling events between April 2008 and January 2009 (Appendix F). Analytes were chosen for comparison that exceeded the screening levels used in the RI and based on the magnitude of the concentrations present. The hydrographs for MW-9 and MW-11 illustrate groundwater elevation only; MW-9 had insufficient sample volume during the July and October sampling events for analyzing samples and MW-11 did not have any screening level exceedances. Estimated concentrations were generally not used for the hydrographs, unless there was only one estimated value of the four values used, and it was needed to complete a trend line (e.g., the TCE concentration in October 2008 for MW-14). Given the low level of contaminant concentrations in many wells, the strength of drawing conclusions from apparent trends is weakened in those instances, where analytical variability or other factors may play a greater role in the difference of concentrations than any apparent seasonal variation. Where there are higher contaminant concentrations in wells, relatively high concentrations sometimes correlate with lower water elevation in summer and fall (e.g., cis-1,2-DCE in MW-12 or iron & manganese in MW-4 and MW-5), while other times they correlate with increased water elevation in the winter (e.g., iron & manganese in MW-6 and MW-7). The lithology of the screened intervals at wells (e.g., fill, alluvium, weathered slide block, competent slide block) may also influence groundwater elevation and analytical concentrations. All wells appear to be at least partly screened within the slide block (more frequently the weathered portion of the slide block). It has been suggested in past investigations and a recent data review that MW-14 and MW-15 have a relatively good hydraulic connection to the Columbia River, due to similar groundwater elevations to that of the forebay pool elevation and much higher hydraulic conductivity relative to other monitoring wells (URS 2012, HGL and USACE EMCX 2021). The hydrographs further illustrate evidence of this, by showing different seasonal groundwater elevation trends in comparison to the other monitoring wells, with higher groundwater typically seen in the fall instead of the winter or spring (when groundwater is relatively high due to increased precipitation rates).

For the primary purpose of this study, to confirm that analytical concentrations in monitoring wells are generally consistent with historical concentrations, one sampling event is considered sufficient and the season chosen for sampling has an insignificant role on determining the presence and magnitude of contaminants present in each well. The groundwater contaminant versus groundwater elevation hydrographs support this conclusion, where there is not a clear trend for increased concentrations during a particular season or at particular water elevations. Additionally, when there were exceedances of screening levels in wells, they tended to exceed for those contaminants regardless of the season sampled.

Table 8. Monitoring Well Measurements

Well ID	Total Depth (ft)		Water Elevation (ft msl)			Water Column (ft)	
	2009 (January)[1]	2021 (July)	2008 – 2009 Avg[2]	2021 (July)	2009 (January)	2021 July (Summer)	2009 January (Winter)
MW-1	31.5	30.4	78.12	97.5[3]	78.08	22.4[3]	4.4
MW-2	34.2	34.1	106.61	106.16	107.12	23.7	25.8
MW-3	22.8	22.5	99.88	97.11	102.73	4.4	10.2
MW-4	32.2	31.8	99.74	97.29	102.32	14.3	19.5
MW-5	36.9	36.4	95.54	93.97	97.26	16.3	20.0
MW-6	33.37	33.0	95.57	94.02	97.3	14.0	17.5
MW-7	33.2	32.5	97.93	96.92	98.59	22.5	24.9
MW-8	60.3	59.8	85.23	89.79	90.13	34.3	36.4
MW-9	16.7	16.4	100.61	99.16	102.56	0.4	3.9
MW-10	57.5	58.8	109.49	106	113.68	31.6	38.8
MW-11	36.5	--	90.89	--	91.06	--	30.8
MW-12	29.55	29.4	76.22	75.32	77.52	4.1	6.5
MW-13	36.05	--	81.02	--	81.93	--	20.5
MW-14	23.5	23.1	74.19	75.37	74.08	11.8	10.5
MW-15	22.1	21.8	74.23	75.36	74.1	10.3	9.1

Notes:
[1] = All depth to bottom measurements are from January 2009, with the exception of MW-3, MW-7, MW-10, MW-14, and MW-15, which had approximate measurements recorded in January 2009, and instead listed on the table are more accurate depth to bottom measurements collected in 2008.
[2] = average water elevation during the 4 quarters of sampling between April 2008 – January 2009
[3] = the water elevation and inferred water column were uncharacteristically high in July 2021 for MW-1. Throughout the quarterly sampling events in 2008 to 2009, water elevation varied by less than a foot between the seasons.
ft msl = feet above mean sea level
-- = no data

2.1.2. Sample Collection Procedures

Groundwater purging and sampling will be performed in accordance with the USACE Seattle District's SOP for Low-Flow Groundwater Purging and Sampling using Non-Dedicated Groundwater Sampling Pumps (Appendix D), with the exception of any differing instructions otherwise stated below in this WP-QAPP. Data generated during purging will be recorded on MicroPurge/Low-Flow Sampling Log forms (Appendix E). Samples will be collected from least to most contaminated in each AOPC, based on historical analytical concentrations.

Prior to beginning purging or sampling on the first day of sampling activities, all monitoring wells (MW-1 through MW-15) will be gauged for depth to water, to collect an undisturbed representation of the potentiometric surface.

A bladder pump will be used for purging and subsequent sampling at each monitoring well. The pump used will either be a QED Well Wizard® T1250 (approx. 1.25 feet long and 1.5 in. diameter) or a QED SamplePro (approx. 0.9 feet long and 0.75 in. diameter). The SamplePro may be utilized at wells where the water column is low or anticipated to be low following purging based on historical drawdown rates. As specified in the low-flow sampling SOP, all efforts will be made to keep the pump intake more than 2 feet from the bottom of the well (to minimize mobilization of bottom sediments) and to keep at least 2 feet of water above the pump intake (to prevent breaking pump suction or entrainment of air into the sample). A new Teflon-lined bladder will be installed before using either pump at the site. Teflon-lined polyethylene tubing will be used for purging and sampling monitoring wells. A dedicated set of Teflon-lined tubing will be used for sampling the monitoring wells in the Sandblast Area AOPC, Landfill AOPC, and reference area (at least three dedicated sets of tubing), and sampling equipment will be decontaminated between each monitoring well. Equipment rinsate blanks will be collected to confirm efficacy of decontamination procedures (see Section 2.3.1.3).

The submersible pump will be lowered into each well to where the pump intake is positioned at the approximate center of the screened interval or at the approximate center of the submerged portion of the screened interval if the well screen is not fully submerged. Two exceptions are MW-5 and MW-7, where due to long length of the well screens (25 ft) and variable lithology over the screened intervals at each well, the pump intake depth will be placed at the presumed most productive zones (32 ft btoc for MW-5 and 21 ft btoc for MW-7) based on interpretation of information within the boring logs (Appendix G), such as the material descriptions and blow counts.

Purging will be completed in accordance with the low-flow sampling SOP and until the stabilization criteria in the SOP have been met. Purge rates will generally be kept between 100 and 500 mL, with the exception of wells that may require lower purge rates to control drawdown. Historical field notes from the 2008 and 2009 quarterly sampling events will be referenced for optimal purge rates at each well. If a well is purged dry during purging prior to stabilization criteria being met (or the water column becomes too shallow to continue purging), then purging will stop and a groundwater sample will be collected as soon as the well recharges. If the water column in a well is too shallow for purging and sampling with a bladder pump, then a peristaltic pump will be used as a last resort, utilizing dedicated silicone tubing and Teflon-lined polyethylene tubing at the well.

Bottleware will not be opened until the sample is ready for collection. During sample collection, any presence of odor, sheen, and/or non-aqueous phase liquid (NAPL) that may be found in the monitoring wells will be documented in field notes. The sample analyses will be collected in the following order:

1. VOCs
2. Metals + Mercury (Total)
3. Metals + Mercury (Dissolved) (lab filtered)
4. TPH-GRO
5. SVOCs
6. SVOCs (SIM)
7. PCB congeners
8. Pesticides
9. Organotins (Total)
10. Organotins (Dissolved) (lab filtered)
11. TPH-DRO

Table 9. Monitoring Well Construction Details

Well ID	Installation Date	Material	Slot Size (in)	Well Diameter (in)	Measuring Point Elevation (ft msl)	Screened Interval (ft msl)
MW-1	8/17/1998	Sch. 80 PVC	0.010	2	105.5	83-73
MW-2	8/17/1998	Sch. 80 PVC	0.010	2	116.56	92–82
MW-3	8/17/1998	Sch. 80 PVC	0.010	2	115.21	102–92
MW-4	8/18/1998	Sch. 80 PVC	0.010	2	114.79	104.5–84.5
MW-5	9/30/1999	Sch. 80 PVC	0.010	2	114.07	102–77
MW-6	4/22/2002	Sch. 40 PVC	0.010	2	113.02	85–80
MW-7	4/22/2002	Sch. 40 PVC	0.010	2	106.92	99–74
MW-8	4/23/2002	Sch. 40 PVC	0.010	2	115.29	59.5–54.5
MW-9	4/23/2002	Sch. 40 PVC	0.010	2	115.16	102-97
MW-10	4/3-4/5/2008	Sch. 40 PVC	0.010	2	133.2	82–72
MW-11	4/3/2008	Sch. 40 PVC	0.010	2	98.12	73–63
MW-12	3/26/2008	Sch. 40 PVC	0.010	2	100.62	81–71
MW-13	4/2/2008	Sch. 40 PVC	0.010	2	97.55	72-62
MW-14	3/25/2008	Sch. 40 PVC	0.010	2	86.67	74–64
MW-15	3/24/2008	Sch. 40 PVC	0.010	2	86.86	75–65

Notes:
in = inch
ft msl = feet above mean sea level

Sample Containers

All analytical sample containers will be obtained from the laboratory that certifies them to be clean and performs appropriate QC analyses to ensure cleanliness. The analytical method, time, date, and sampler initials will be written on the sample label. Table 10 describes the required container, minimum sample volume, preservation technique, and holding times.

Sample Naming

All samples will be labeled and accompanied by a chain-of-custody form when delivered to the laboratory for analysis. All groundwater sample labels will first list the monitoring well number as "MW-#", then "GW" to indicate groundwater for the sample media. All samples designated for either matrix spike or matrix spike duplicate samples will end with either "MS" or "MSD." Field duplicates will be designated as "DUP-#" where the monitoring well number would be, including the number duplicate sample it is. Equipment rinsate blank samples will start with "RIN", then the sample number.

Examples:

MW-1-GW	groundwater sample from MW-1
MW-2-GW-MS	groundwater sample from MW-2 designated for matrix spike
MW-2-GW-MSD	groundwater sample from MW-2 designated for matrix spike duplicate
DUP-1-GW	first groundwater duplicate sample
RIN-1	first equipment rinsate blank sample

Table 10. Methods, Sample Containers, Quantities, Volumes, Preservation, and Holding Times for Groundwater Samples

Analytes	Analytical Method	Container Type/Quantity	Preservation (all 2-6 ºC)	Minimum volume per Sample[1] (ml)	Preparation / Analytical Holding Time
Mercury	7470A	One 250ml HDPE	HNO_3	50 ml	28 days
Metals	6020A			50 ml	180 days
Pesticides	8081	Two 1L amber glass	none	1,000 ml	7 days/ 40 days
SIM SVOCs	8270/ 8270 SIM	Two 250ml amber glass	none	250 ml	7 days/ 40 days
SVOCs	8270	Two 1L amber glass	none	1,000 ml	7 days/ 40 days
VOCs	8260B	Three 40 ml VOAs glass	HCl	40 ml	14 days
Organotins	PSEP	Two 1L amber glass	none	1,000 ml	7 days/ 40 days
PCB Congeners	EPA 1668C	Two 1L amber glass	none	1,000 ml	7 days/ 40 days
TPH-GRO	NWTPH-Gx	Three 40 ml VOAs glass	HCl	40 ml	14 days
TPH-DRO TPH-RRO	NWTPH-Dx	Two 250 ml amber glass	HCl	250 ml	7 days/ 40 days

Notes:

1. MS/MSD are not included in minimum sample size.

2.1.3. Decontamination Procedures

All non-dedicated sampling equipment will be decontaminated before sampling activities and between sampling each monitoring well. At least three sets of Teflon-lined tubing will be used, with each set dedicated to either the Landfill AOPC monitoring wells, Sandblast Area AOPC monitoring wells, or reference area monitoring well. Entirely non-dedicated equipment includes the bladder pumps and water level meter, which will be used between all monitoring wells. The following decontamination procedures will be followed:

1. The water level meter, the outside surfaces of the pump, and other components that come into contact with ground water will be hand washed with a scrubber sponge in potable tap water (from a faucet located at the Service Building) containing phosphate-free detergent (e.g., Liquinox®), thoroughly rinsed with tap water, then rinsed with distilled water.
2. The inside and outside surfaces of the pump will be flushed with phosphate-free detergent and tap water, then thoroughly flushed with tap water, then thoroughly flushed with distilled water.
3. The flow cell water quality indicator probes will be rinsed with tap water after use at each well. No other decontamination procedures are necessary or recommended for these instrument probes since they are very sensitive, and they will not come into contact with the sample matrix.
4. Air dry and wrap cleaned equipment in aluminum foil for storage and for transporting between wells.

Additionally, any equipment that will enter the wells for monitoring well redevelopment activities will be decontaminated prior to first use and between wells, using the same procedures as above. The well redevelopment equipment requiring decontamination will consist of Qwater Well Developers, sections of ½ inch threaded PVC pipe, a water level meter, and a submersible pump (if used).

Equipment rinsate blanks will be collected to confirm efficacy of decontamination procedures (see Section 2.3.1.3). New powder-free nitrile gloves will be donned for each sampling location. Water generated during decontamination procedures will containerized in 55-gallon drums and stored at the hazardous material storage area, for later disposal.

2.1.4. Field Equipment Calibration, Maintenance, Testing and Inspection Procedures

Prior to and following each day of sampling, all sampling device and monitoring equipment will be calibrated according to manufacturer's recommendations. Calibration documentation including date, time, and the initials of the person that performed the calibration will be recorded in the logbook. A MicroPurge® Flow Cell Model MP20 or equivalent and a LaMotte Turbidity Meter, Model 2008 or equivalent will be used during sampling activities. They will be calibrated in accordance with the calibration procedures in the Low Flow Sampling SOP (section 4.5).

2.1.5. Supply Inspection and Acceptance Procedures

Inspection and acceptance of supplies and consumables will be conducted prior to field work in order to ensure that the appropriate type and quantity of supplies are brought to the field. Any supplies and consumables used in the sample collection process or instrument calibration will be inspected.

2.1.6. Field Documentation Procedures

Field documentation provides a permanent record of field activities and can be used, if necessary, to trace possible introduction of field sampling error. Field notes will be recorded in a logbook, with measurements and notes recorded on the well development and low-flow sampling forms in Appendix D. After fieldwork is complete, electronic copies will be made of the field notes and the electronic copies will be stored in the project files. All information pertinent to the sampling effort will be recorded in the field notes. Documentation in the field notes will be at a level of detail sufficient to explain and reconstruct field activities without relying on recollection by the field team members. Photographs will also be collected during the well redevelopment and sample collection. The Field Sampling Lead has overall responsibility for accuracy and completeness of field notes. Each page/form will be consecutively numbered. All entries will be made in indelible ink and corrections will consist of lined-out deletions. All corrections will be initialed and dated by the person making the corrections. As a minimum, the applicable items for the entry into the field notes are listed below.

<u>General Information</u>

- Date
- Start and finish times of work
- Weather conditions
- Name and signature of person making entry

- Names of personnel present

Sampling Information

- Date and time of sample
- Location of sample
- Type of sample
- Sample identification number
- Associated QC samples
- Stabilization parameters during purging monitoring wells
- Odor, sheen, and/or presence of NAPL

2.1.7. Sample Delivery

Sample delivery procedures include packaging, labeling, and shipment to the laboratory. These procedures are designed (1) to preserve sample quality so that analyses will yield results representative of site conditions, (2) to protect and inform sample handlers, including shippers and laboratory personnel, and (3) to provide a paper trail to allow cross referencing of sample collection locations with analytical results. All samples will be labeled with their own sample identification number and all other applicable information as described in Section 2.1.2.

Samples will be shipped via overnight courier to the analytical laboratory. Samples will be shipped under chain-of-custody control in coolers with wet ice or blue ice sufficient to maintain a temperature of 4°C ±2°C.

2.1.8. Sample Custody

A sample is in "custody" if it is in the actual physical possession of authorized personnel or in a secure area that is restricted to authorized personnel. Custody procedures ensure data authenticity and defensibility. Chain of custody forms will accompany sample containers during transit to the laboratory and be checked by the laboratory upon receipt.

2.2. Analytical Tasks

Once samples have been collected, they will be analyzed by the laboratories. The Project Chemist will validate the analytical data.

The following sections address all components of project-specific analytical measurements; method and laboratory-specific QC measurements; acceptance criteria; corrective actions; calibration procedures; equipment and supply maintenance; testing; and inspection requirements. Modifications to approved procedures, alternate procedures, or additional procedures are to be pre-approved in writing by the Project Chemist.

2.2.1. Analytical Methods

See Table 5 for analytical methods that will be used for analysis of groundwater samples.

2.2.2. Analytical Instrument Calibration Procedures

Calibration procedures and instrumentation shall be consistent with the requirements of the methods.

2.2.3. Analytical Instrument and Equipment Maintenance, Testing, and Inspection Procedures

Maintenance, testing, and inspection procedures shall be consistent with the requirements of the methods.

2.3. Quality Control Samples

QC samples are collected and analyzed for the purpose of assessing the quality of the sampling and analysis performed by the field personnel and the primary laboratory. The Project Chemist will coordinate selection of QC samples prior to each sampling event.

2.3.1. Field Quality Control Samples

Field samples analyzed for the purpose of assessing the quality of sampling and analysis are to be submitted blind to the analytical laboratory and referred to as field QC samples.

2.3.1.1. Field Duplicates

Field duplicate samples will be sent for laboratory analysis to evaluate the ability of reproducing the sampling methods. Field duplicates will be obtained at a rate of one field duplicate per ten samples.

2.3.1.2. Trip Blanks

Trip blanks will be prepared by laboratory personnel and utilized for this sampling event due to aqueous sampling for volatile organic parameters. A trip blank is an aliquot of deionized (DI) water and sealed in 40-mL glass vials with Teflon-lined septum caps. Trip blanks are utilized at a frequency of one per day of aqueous VOC sampling, and stored with samples shipped to the lab. Analytical results of the trip blank samples are utilized during sample data validation to determine if any cross contamination has occurred between samples during shipment/storage, or if on-site atmospheric contaminants are seeping into the sample vials. These sealed bottles will be placed in a plastic cooler and will accompany field personnel to the sampling locations.

2.3.1.3. Field Blanks

A total of three equipment rinsate blank samples will be collected to assess the effectiveness of the equipment decontamination procedures. Each equipment rinsate blank will be collected on a separate day. One will be collected from the non-dedicated sampling equipment used for each of the three sampling areas (the Landfill AOPC, Sandblast Area AOPC, and reference area), to evaluate potential cross contamination resulting from inadequate decontamination of non-dedicated sampling equipment used at each of the three areas.

Equipment rinsate blanks will be collected from all non-dedicated sampling equipment that comes into contact with the sample media. Following the decontamination of non-dedicated sampling equipment used for sampling the monitoring wells, analyte-free DI water will be poured over and/or pumped through the equipment and collected into the appropriate sample containers. All analytes being analyzed in the groundwater samples will be analyzed for in the equipment rinsate blanks. DI water for rinsate blanks will be supplied by EMT Laboratory in Des Plaines, IL. Two types of DI water will be provided, 1) DI water to be used for all rinsate blank analyses except for VOCs, and 2) DI water to be used for the VOC analysis (which is additionally cleared of some common VOC lab contaminants, such as methylene chloride). Following the final decontamination step of non-dedicated sampling equipment with a rinse of distilled water, all the analyzes except VOCs will be collected first, with the first batch of DI water. Then the equipment will be rinsed again with distilled water to return it to it's original decontaminated state. Lastly, the VOC analysis will be collected using the separate batch of DI water reserved for the VOC analysis.

2.3.2. Analytical Method Quality Control Samples

Method QC includes the analyses and activities required to ensure that the analytical system is in control prior to and during an analytical run. Method QC requirements for this project include the following: method blanks, surrogate spikes, MS/MSD pairs, and laboratory control samples.

2.3.2.1. Method Blanks

Method blanks are composed of organic/analyte-free water processed simultaneously with and under the same conditions as samples through all steps of the analytical procedure. Method blanks verify that the measurement system is free of contamination.

2.3.2.2. Laboratory Control Samples (LCS)

Laboratory control sample (LCSs) are composed of organic/analyte-free water spiked with verified amounts of analytes. They are generally used to establish intra-laboratory or analyst-specific precision or to assess the performance of all or a portion of the measurement system. The LCS is analyzed in the same manner as a sample, including preservation.

2.3.2.3. Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD samples are used to evaluate matrix interference and to determine laboratory accuracy and precision. For methods that require MS/MSD, one MS/MSD pair will be taken for each twenty samples, at a location that is up to the discretion of the field sampling team.

2.3.2.4. Surrogates

Surrogates are substances with properties that mimic the analyte of interest. A surrogate is unlikely to be found in environmental samples and is therefore added to them for quality control purposes.

3. ASSESSMENT AND OVERSIGHT

Laboratory and field operations have established policies and procedures, and they designate authorities for implementing corrective action when nonconforming work or departures from the policies and

procedures in the quality system or technical operations have been identified. Both field and laboratory operations shall follow all corrective action requirements in methods and SOPs.

The following laboratory documentation is to be made accessible to the USACE Project Chemist. Corrective actions may be required, at the request of USACE, for the following conditions:

- Laboratory Procedures
- QC data outside the defined acceptance windows for precision or accuracy
- Blanks or LCSs that contain contaminants above acceptable levels stated in the Data Quality Objectives
- Undesirable trends in spike or surrogate recoveries or RPD between spiked duplicates
- Unusual changes in method detection limits
- Deficiencies identified during internal or external audits or from the results of performance

The following corrective actions should be taken for common problems:

Incoming Samples - Problems noted during sample receipt are to be documented. The USACE Project Chemist is to be notified for problem resolution.

Sample Holding Times - If a maximum holding time is or may be exceeded by the laboratory, the USACE Project Chemist must be notified for problem resolution. The USACE Project Chemist may require re-sampling for the requested parameters.

Instrument Calibration - Sample analysis may not proceed until initial calibrations meet method criteria. Calibrations must meet method time requirements or recalibration must be performed. Continuing calibrations that do not meet accuracy criteria should result in a review of the calibration, rerun of the appropriate calibration standards, and reanalysis of samples affected back to the previous acceptable calibration check.

Limit of Quantitation (LOQ) - Appropriate sample clean-up procedures must be employed to attempt to achieve the practical quantitation limits as stated in the method. If difficulties arise in achieving these limits due to a particular sample matrix, the laboratory should notify the USACE Project Chemist of the problem for resolution. Dilutions are to be documented in the case narrative along with the revised practical quantitation limits for those analytes directly affected. Analytes detected above the method detection limits (MDLs) but below the practical limit(s) of quantitation are to be reported as estimated values and qualified “J”.

Method Quality Control - Results related to method QC, including blank contamination, duplicate measurement reproducibility, MS/MSD recoveries, surrogate recoveries, LCS recoveries, and other method-specified QC measures are to meet the laboratory’s SOPs and project quality objectives specified in this plan. Otherwise, the affected samples may be reanalyzed and/or re-extracted and reanalyzed within method-required holding times to verify the presence or absence of matrix effects. The USACE Project Chemist should be notified as soon as possible to discuss appropriate corrective action.

Calculation Errors - Reports must be reissued if calculation and/or reporting errors are noted with any given data package. The case narrative is to state the reason(s) for re-issuance of a report.

4. DATA MANANGEMENT AND DOCUMENTATION

4.1. WP-QAPP

An electronic copy of the WP-QAPP (including appendices) will be stored in USACE project files and uploaded to the USACE project website for public access.

4.2. Final Data Report

Upon completion of the sampling event and receipt/review of the validated data, USACE will prepare a final data report. The report will include the following:

- Narrative and timeline of project activities
- Summary of sampling, chemical testing, and any deviations from the QAPP
- Analytical data summary
- Presentation of current data versus historic data
- Presentation of current data versus current SLVs
- Figures, tables, and appendices

The appendices will include field logs, laboratory analytical reports, data validation reports, and data summary tables with associated validation flags.

Further evaluation of the data will be included in the Revised Upland FS. This will include determining if current analytical data is significantly higher than historical data and determining the significance of any new SLV exceedances.

4.3. Laboratory Documentation (Data Package Deliverables)

4.3.1. Data Package Deliverables

The analytical data packages from the laboratories will be provided to the Project Chemist as Stage 4 deliverables. The analytical data packages will be validated to Stage 2A for 100% of all samples analyzed by the laboratory.

4.3.2. Electronic Data Reporting Formats

Laboratory data will be provided in both PDF format and as an EDD.

5. DATA REVIEW, VERIFICATION, AND VALIDATION

Data review is the process by which data are examined and evaluated to varying levels of detail and specificity by a variety of personnel who have different responsibilities within the data management process. It includes verification, validation, and usability assessment. This process ensures the review activities produce scientifically sound data that are of known and documented quality and meet project quality objectives used in making environmental decisions.

5.1. Review of Laboratory Data

All laboratory data packages will include raw data necessary for full validation. Analytical data packages will be validated to Stage 2A by a contracted data validator for 100% of all samples analyzed by the contracted laboratory, and additionally 10% of the samples will be validated to Stage 4.

Three distinct evaluative steps will be used to ensure that project-specific data quality needs are met:

- Data Verification (review for completeness) – Confirmation by examination and provision of objective evidence that the specified requirements (sampling and analytical) have been completed.

- Data Validation – Confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled. Validation is a sampling and analytical process that includes evaluating compliance with method, procedure, or contract requirements and extends to evaluating against criteria based on the quality objectives developed in the QAPP (e.g., the QAPP measurement performance criteria). The purpose of validation is to assess the performance of the sampling and analysis processes to determine the quality of specified data. Data Validation Reports will be generated for each sampling event.

- Data Usability Assessment – Determination of the adequacy of data, based on the results of validation and verification, and professional judgment by the project team for the decisions being made. The usability step involves assessing whether the process execution and resulting data meet project quality objectives documented in the QAPP.

Data review will be based on laboratory-specific SOPs conforming to the laboratory method and to the DoD QSM (DoD 2021b). If significant deviations arise as a result of initial verification and validation, the level of review will be elevated in order to determine the source and impact of deviations.

5.2. Data Verification and Validation Stages

Data validation and verification stages will be performed in accordance with the DoD QSM (DoD 2021b) and the Data Validation Guidelines (DoD 2019, 2020a, 2020b, 2021a).

5.3. Data Verification and Validation Qualifiers

Qualifiers will be added to data during the review as necessary. If professional judgment is applied, the rationale shall be provided. Qualifiers applied to the data as a result of the review are as follows:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit. The data are usable for decision-making purposes.

UJ Indicates the compound or analyte was analyzed for but not detected. Due to a quality control deficiency identified during data validation, the value reported may not accurately reflect the sample quantitation limit. The associated value is considered estimated, but the data are generally usable for decision-making purposes.

J Indicates the compound or analyte was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. False positives or false negatives are unlikely to have been reported and the data are generally usable for decision-making purposes.

J+ Data are qualified as estimated with a high bias. False positives are likely to occur but the data are generally usable for decision-making purposes.

J- Data are qualified as estimated with a low bias. False negatives are likely to occur but the data are generally usable for decision-making purposes.

X The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Note 1: It is possible that J-qualified data are not suitable for some purposes. For example, a J-qualified concentration with a low bias that is just below a screening value may not be usable to determine whether the analyte concentration is above or below the screening value. The effect of the use of qualified data on the decision-making process must be evaluated as part of the data usability assessment.

Note 2: Estimated maximum possible concentration (EMPC-qualified) values will be treated as detected concentrations and flagged by the laboratory. EMPC-qualification is used when mass spectrometry results meet all of the identification criteria in the method except the ion abundance ratio criteria. The results will be flagged J+ by the validator, to indicate that the reported concentration is detected and may be associated with a possible bias.

5.4. Usability Assessment

The Project Chemist will evaluate overall precision, accuracy, completeness, representativeness, comparability, and sensitivity of the sampling data; including an assessment of the overall usability of the data and describing any limitations on its use. The Project Chemist will summarize any audit information, indicating corrective actions taken. This information will be evaluated by the project team and included in the final data report.

5.4.1. Precision

Precision is defined as the degree of agreement between or among independent, similar, or repeated measures. Duplicate pairs such as MS/MSD, LCS/LCSD, laboratory duplicate, and field duplicate samples are evaluated as RPD. The relative percent difference (RPD) for these analyses is calculated as follows:

$$RPD = \frac{|S_1 - S_2|}{S_{avg}} \times 100\%$$

Where S_1 and S_2 are equal to the observed concentration of analyte in the sample and its duplicate, and S_{avg} equal the average of observed analyte concentration in the samples and its duplicate.

5.4.2. Accuracy

Accuracy is the amount of agreement between a measured value and the true value. Accuracy, expressed as %Recovery (%R), is assessed for each method, analyte, and matrix, by comparing MS/MSD, LCS/LCSD, and surrogate recoveries to the limits of the DoD QSM, if present, and then to the laboratory's method limits.

5.4.3. Completeness

Analytical completeness is expressed as the percentage of measurements that were judged to be valid, i.e., not rejected, and acceptable for all intended date use. The analytical completeness goal for this sampling event is 95%.

5.4.4. Representativeness

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. Requirements that affect sample representativeness are evaluated, including blank sample results, holding times, and holding temperatures.

5.4.5. Comparability

Comparability is a qualitative parameter that expresses the degree to which sample data are comparable to previously acquired data, achieved through the use of standard or similar sampling and analytical methods.

5.4.6. Sensitivity

Sensitivity is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. Sensitivity of the analytical methods will be evaluated according to the requirement of this QAPP.

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Appendix A

Health and Safety Documents

PROJECT SAFETY AND OCCUPATIONAL HEALTH PLAN

Bradford Island Upland Operable Unit Environmental Field Activities

Bonneville Project, Cascade Locks, Oregon

Plan Prepared: February 2019, Revised December 2021

Prepared By: Seattle District, Technical Services Branch
Work Planned in Cooperation with Portland District

US Army Corps of Engineers®
Seattle District

US Army Corps of Engineers®
Portland District

Date: February 19, 2019

Revision Number: 1

Revision Date: December 10, 2021

Project Name: Project SOH Plan, Bradford Island Upland OU Environmental Field Activities

Project Number:

Plan Prepared By:	Joseph Marsh, Seattle District, Engineering Division Safety Officer. Senior Environmental Field Lead	Date:	12-10-2021
Project Delivery Team Approval:		Date:	
Plan Concurrence:		Date:	

PROJECT SITE EMERGENCY CONTACT QUICK GUIDE

For EMERGENCIES, call the Bonneville Project Control Room Operator.
DO NOT call 911 as it will result in a delay in EMS response.
(Per CENWP-OD-B-Standing Safety Procedure 2.3, See Section 11 in this plan.)

Bonneville Project Control Room Operator
(541) 374-8338 Emergency Extension x2223.

The Control Room Operator will coordinate deployment of the Bonneville Emergency Response Team (BERT) and/or the Bonneville Rescue Team (BRT) and notification of Skamania County EMS for assistance to include transportation to a medical facility. The Site Safety and Health Officer (or Field Team Leader) will provide all known information to include; who they are, where they are, the type and cause of the emergency and the number of effected persons. They will notify additional individuals in the immediate area through verbal warnings, or telephone if possible.

Multnomah County Sheriff (503)-255-3600
Oregon State Police (503) 731-3131

Bonneville Project Contacts

Missy McBain, Environmental Specialist
Office: (541) 374-2504
Cell: (b)(6)

Maintenance Chief
Office: (541) 374-8307

Operations Project Manager
Office: (541) 374-4550

In addition to the instructions described on page ii above, the site safety and health officer (SSHO, or designated field team leader) will contact the Bonneville Project Control Room Operator at the number provided on page ii when an obvious critical incident is observed, unrelated to the environmental activities, that will likely impact the environmental field team and/or Bonneville Project operations (e.g. fire, vessel in distress on the river, criminal activity, etc.).

As previously noted, when communicating with the Project Control Room Operator during and emergency or incident, the SSHO will provide all known information to include; who they are, where they are, the type and cause of the emergency and the number of effected persons. They will notify additional individuals in the immediate area through verbal warnings, or telephone if possible.

Directions to Offsite Hospital from Bradford Island project site (may be superseded by revised directions/hospital selection at the direction of Bonneville staff):

After coordinating with Project personnel, depart in vehicle from work site, heading west, then south on Dam Road toward Star Route. Continue on Star Route across the locks, then turn right onto NE Bonneville Way. Pass through the project gate, and drive around the roundabout heading west to merge onto Westbound I-84/US 30 West. Drive west for 27.4 miles. Take Exit 16 and turn left onto NE 238th Drive. Continue on to NE 242nd Drive for 0.6 miles, then turn left onto SE Stark Street. In 0.3 miles, turn right to reach your destination at the Mount Hood Medical Center campus. Continue driving south past the parking lot toward the hospital. Turn right at the red emergency entrance sign.

1. EM 385-1-1 PROJECT SAFETY AND OCCUPATIONAL HEALTH PLAN CHECKLIST

The designated site safety and Health officer (SSHO - normally, the environmental field team leader) will present a project health and safety briefing (following the general format of this checklist shown below) prior to commencement of fieldwork. The site safety officer will brief site conditions, relevant weather observations, and planned activities for the day, while emphasizing the health and safety procedures associated with each of those activities. Daily "tailgate" safety meetings will summarize each item as needed based on site conditions and other factors determined by the site safety officer. At a minimum, the SSHO will brief the project Activity Hazard Analysis during the daily safety meetings.

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(3) Responsibilities and Lines of Authority	Page 8
(4) Training	Page 9
(5) Personal Protective Equipment	Page 10
(6) Basic Medical Equipment	Page 22
(7) Emergency Response and Contingency Procedures	Page 18

2. PROJECT SAFETY AND OCCUPATIONAL HEALTH PLAN ACKNOWLEDGMENT FORM

I have been informed and understand and will abide by the procedures set forth in the Project Safety and Occupational Health Plan (PSOHP) and any Amendments.

Print Name	Signature	Date	HAZWOPR 8-Hr. Refresher Current?

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1. PROJECT BACKGROUND, DESCRIPTION, AND OBJECTIVES

1.1. Project Background

USACE is currently preparing a Revised Feasibility Study (FS) for the Upland Operable Unit (OU) at Bradford Island, Bonneville Project, Cascade Locks, Oregon. This will replace the FS completed for the Upland OU in 2017.

USACE conducted a RI and initial FS for the eastern portion of Bradford Island, known as the Upland OU, in accordance with the CERCLA Executive Order 11988. USACE evaluated risk to human health and the environment in four AOPCs: the landfill, sandblast, bulb slope, and pistol range areas. USACE is in the process of completing a Revised FS for the Upland OU, but because groundwater data is over 10 years old, collecting updated groundwater data from existing monitoring wells is recommended to assess current groundwater conditions and further inform the Upland FS.

Previous site activities include installation of 15 groundwater monitoring wells. Groundwater samples were analyzed for VOCs, SVOCs, pesticides, PCBs, chlorinated herbicides, total petroleum hydrocarbons (TPH), cyanide, and TAL metals. The only analytes detected in groundwater were VOCs, TPH, and metals. Preliminary remediation goals were exceeded for arsenic, lead, manganese, and tetrachloroethylene (PCE). The most recent groundwater sampling event occurred more than 10 years ago.

Occurrences of shallow groundwater were evaluated as part of environmental investigations near the former landfill and the former sandblast building. Based on these investigations, two shallow stratigraphic units exist on the eastern end of Bradford Island: fill/alluvium and bedrock. Based on the horizontal hydraulic gradient measured in the fill/alluvium, the direction of groundwater flow beneath the Landfill AOPC is to the north.

The potential field activities supporting FS completion include site visits, contractor oversight, monitoring well maintenance, groundwater, surface water and sediment sampling within the Upland OU, Landfill AOPC and Sandblast AOPC.

1.1. Project Description

Environmental Field activities described in this plan will involve:

1. General Environmental field activities to include site visits and contractor oversight.
2. Monitoring well maintenance activities to include well redevelopment and pumping using hand tools and battery powered pumps.
3. Collection of groundwater samples from monitoring wells using air-powered submersible pumps and/or collection of surface water grab samples for laboratory analysis as required.

4. Collection of sediment samples for laboratory analysis as required.

1.2. Project Objectives

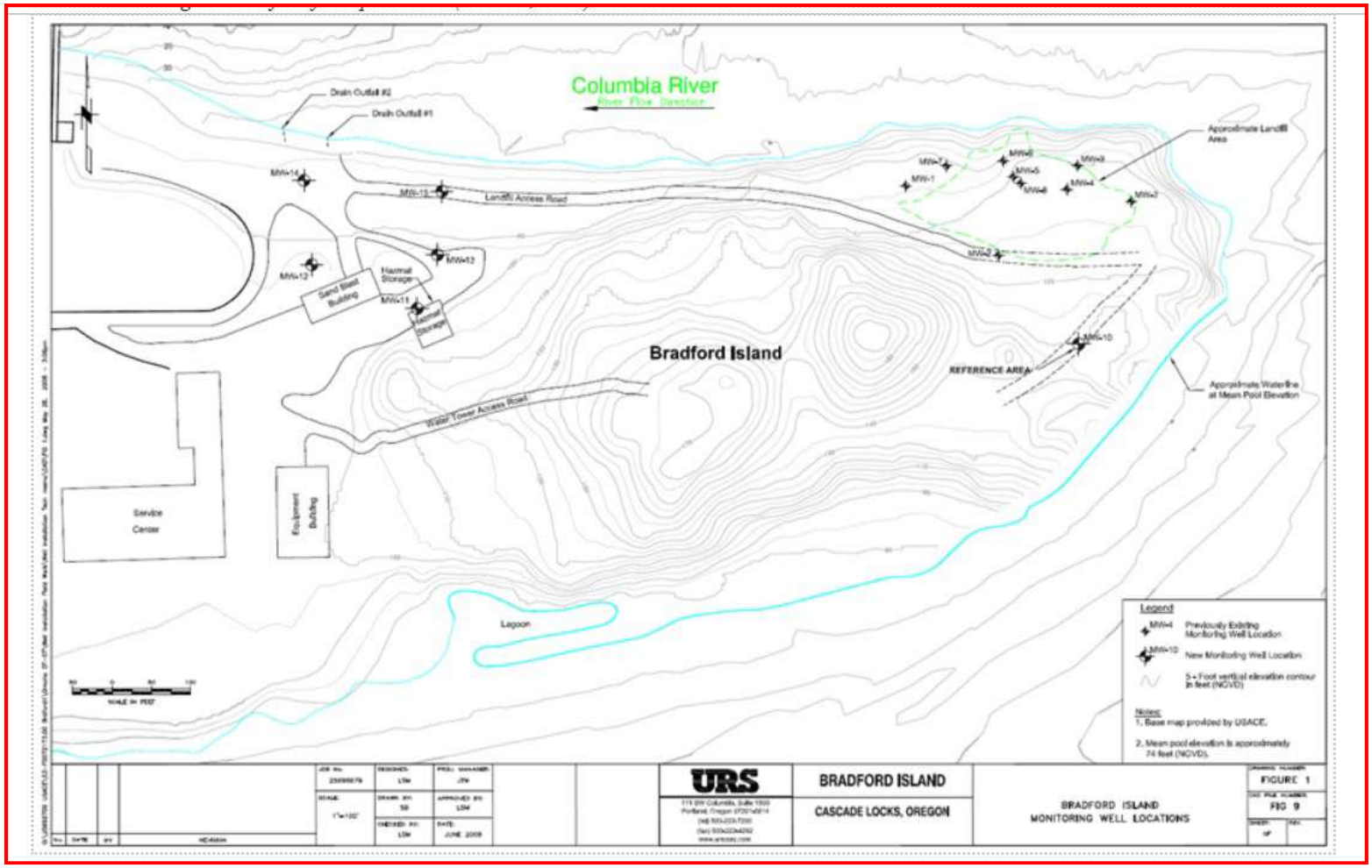
The objective of this PSOHP is to provide a mechanism for establishing safe working conditions at the Upland OU. Specifically, this plan is designed to support:

1. Conducting safe site visits, contractor oversight, monitoring well maintenance activities, groundwater and/or surface water sampling activities at the site to monitor remediation progress and/or contaminant nature and extent to inform the remedial investigation.
2. Conducting additional safe sediment sampling field operations (if required) at the site to monitor remediation progress and contaminant nature and extent to determine contaminant concentrations and assess source control.

The safety organization, procedures, and protective equipment have been established based upon an analysis of potential hazards. Specific hazard control methodologies have been evaluated and selected to minimize the potential of accident or injury.

The provisions of this plan are mandatory for all field personnel assigned to the project.

1.3. Site Map


Columbia River
River Flow Direction
Drain Outfall #2
Drain Outfall #1
Approximate Landfill Area
MW-14
MW-13
Landfill Access Road
MW-7
MW-1
MW-8
MW-5
MW-6
MW-9
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MW-3
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Sand Blast Building
Hazmat Storage
MW-11
Hazmat Storage
Bradford Island
REFERENCE AREA
MW-10
Approximate Waterline at Mean Pool Elevation
Water Tower Access Road
Service Center
Equipment Building
Lagoon
Legend
MW-4 Previously Existing Monitoring Well Location
MW-10 New Monitoring Well Location
5-Foot vertical elevation contour in feet (NGVD)
Notes:
1. Base map provided by USACE.
2. Mean pool elevation is approximately 74 feet (NGVD).
URS
BRADFORD ISLAND
CASCADE LOCKS, OREGON
BRADFORD ISLAND
MONITORING WELL LOCATIONS
FIGURE 1
FIG 9

2. SAFETY AND HEALTH POLICY STATEMENT

The Seattle District USACE is committed to providing a safe and healthy working environment on each of its projects, and will strive to help mitigate and control recognized safety and health hazards at all of the working sites and projects. Health and safety is also an individual responsibility of each person assigned to a field project. It is the responsibility of workers who feel unsure of the project work plan, protocols, Activity Hazard Analyses, or other onsite safety measures and practices to specifically state to the Site Safety and Health Officer (SSHO) that they are uncomfortable with site conditions. This is so that instructions can be clarified or so that changes can be made in the field activities as appropriate. If the workers concerns are not satisfied, the project manager should be consulted. If the worker still has concerns, then the District Health and Safety Officer should be contacted. No worker(s) shall subject themselves to an unsafe environment or working condition.

3. RESPONSIBILITIES AND LINES OF AUTHORITY

3.1. District and Management Responsibilities

a. **Darren Habel** is the Acting District Safety Manager and will act as the safety authority and arbitrator for any safety and health matters for this site. Mister Habel has general stop work authority for all field activities under this PSOHP that have been deemed unsafe.

b. **Joseph Marsh** is the Seattle District Engineering Division Collateral Duty Safety Officer, Project Site Safety and Health Officer (SSHO) and Environmental Team Leader responsible for ensuring completion and review of the PSOHP and AHA. The SSHO will have first line responsibility to ensure that all work is conducted in a safe manner and in accordance with this PSOHP and the AHA. The SSHO may designate an appropriately trained alternate SSHO to cover times he cannot be on site. The SSHO will present daily safety briefings in accordance with tasks described in the AHA. She will also report all accidents and incidents immediately and record all pertinent information using the prescribed methods. The SSHO will ensure that appropriate PPE is being used by the environmental field team. The SSHO will have stop work authority for any situation that presents imminent harm or injury to any project team member or employee.

c. **Environmental Field Team** (USACE Employees) are responsible for following the PSOHP and safe work practices.

4. TRAINING

4.1. Subjects to Be Discussed With Employees in Safety Indoctrination

- Project Scope of Work
- Known Site Hazards and Required PPE
- Location of First Aid kit and emergency coordination with Bonneville Project Staff
- Hospital Location and Route
- Emergency Signals and Assembly Area
- Review and Acknowledgment of this PSOHP

4.2. Applicable Mandatory Training

Training	Standards/ Regulations	Applicable To	Periodic Retraining/ Recertification
HAZWOPER 40HR	29 CFR 1910.120 EM 385-1-1 33.D-33.D.03	Field Staff	8 HR Refresher
HAZWOPER 8HR	29 CFR 1910.120	Field Staff	Annual

4.3. Emergency Response Training Requirements

Training	**Standards/ Regulations**	**Applicable To**	**Periodic Retraining/ Recertification**
First Aid	EM 385 1-1 03.A.02	At Least One Staff	Yes
CPR	EM 385 1-1 03.A.02	At Least One Staff	Yes

4.4. Daily Tool Box Safety Meetings

In addition to the initial project kick-off site safety and health briefing, all environmental field team members will attend a daily tailgate safety meeting before the start of work each day. Attendance to this meeting is mandatory and all attendees will sign the Daily Tool Box Safety Meeting form.

The Site Safety and Health Officer (SSHO) or designee will conduct the Tailgate Safety Meeting discussing appropriate areas of concern including the following topics:

- Review any changes or amendments to the current Site Specific Health & Safety Plan or AHAs.
- Discuss a specific health and safety topic related to the work to be performed (slip-trips-falls, vehicle traffic, heat and cold stress, contaminants of concern, etc.).
- Brief the weather forecast to determine changes in field procedures or PPE.

5. SAFETY AND HEALTH INSPECTIONS

5.1. Daily Equipment Inspection

To accomplish the bulk of the planned environmental field activities, the team will use a variety of hand tools and related sampling equipment to include pumps, flow cells, water level meters, scoops, containers, and extension rods. Each team member should inspect required tools and equipment to ensure these materials are free of defects and are clean or decontaminated before use.

5.2. Daily Site Safety Inspection

On a daily basis, the SSHO will tour and inspect the entire work area and denote any safety deficiencies, take appropriate action to correct the deficiencies, then document his/her daily inspection in the project field book.

6. ACCIDENT REPORTING

6.1. Accident, Injury Reporting

All injuries and illnesses, however minor, will be reported to the SSHO immediately. In coordination with a District Safety Manager, the SSHO will complete and submit an injury report to the Safety Manager within 24 hours. In the event of any accident, injury or suspected occupational illness, the reporting procedures outlined in AR-385-40, AR-385-40 (USACE Supplement) and ER-385-1-92 will be followed. The appropriate form(s) including ENG 3394 will be completed and forwarded to the Seattle District, and Portland District Safety Offices as required.

7. PERSONAL PROTECTIVE EQUIPMENT (PPE)

The following is a brief description of the personal protective equipment which may be required during various phases of this field project. OSHA and USEPA regulations define the specific requirements for PPE classified into four Worker Protection Levels: A, B, C and D. Selection of the appropriate PPE level by the Project Delivery Team depends on detected and assessed environmental contaminants, site hazards, and other

circumstances unique to this site. The purpose of establishing a PPE level for this site is to protect USACE employees involved in environmental field work against the hazardous or toxic chemical elements or compounds, and a variety of potentially hazardous field conditions that may be encountered while accomplishing the field work.

Respiratory protective equipment, if required,* shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Standard, and USACE Safety Manual EM 385-1-1 Section 05.G Respiratory Protection.

*Although, respiratory protection is not required at for environmental activities at this time, the voluntary use of N95 or KN95 face masks as protection against COVID-19 (currently recommended by the Centers for Disease Control and Protection (CDC)) is permissible under Section 05.G.02 of the USACE safety manual.

7.1. Level A Protection

Worker Protection Level A will not be required for this project. The environmental field team is not authorized to work in Level A under any circumstances.

7.2. Level B Protection

Worker Protection Level B will not be required for this project. The environmental field team is not authorized to work in Level B under any circumstances.

7.3. Level C and Level C-PAPR Modified Protection

The site and work conditions do not appear to warrant PPE upgrade to Worker Protection Level C at this time. If the requirement does arise due to a change in site conditions (e.g. presence of severe dust inhalation hazard), the team shall consult with the Bonneville Project safety personnel, or Seattle District Safety Manager for guidance before beginning work. It may be possible to implement engineering controls to mitigate the hazard before upgrading to Level C.

7.4. Level D Protection

All field activities on site will be performed by personnel outfitted at Modified Worker Protection Level D as described in this section.

Level D shall be used when:

- The atmosphere is demonstrated to be within OSHA permissible limits.
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

7.4.1. Level D Protection Equipment

Protective Gear - Level D	**List Required Type by Chemical or Task and Change Out Frequency**
Basic Field Safety Equipment	
Safety Shoes/Boots	Safety-toed Work Boots worn at all times.
Hard Hat	Not required unless overhead hazards are present.
Safety Glasses/ Face Shields	Safety Glasses to be worn during field work.
Hearing Protection	To be worn if site noise requires personnel to raise voice above normal speaking volume to be heard by other person.
Reflective Safety Vest	To be worn at all times while working on site.
Face Mask when inside buildings or outside unable to maintain social distancing.	N95 or KN95 recommended for COVID-19 protection per CDC.
Nitrile Gloves	Between sample collection points and when damaged during work.
Tyvek Suit	For protection against poison oak or poison ivy and other site contaminants at the discretion of each team member.

7.5. Decisions to Upgrade/Downgrade PPE

Decisions to upgrade or downgrade PPE/Worker Protection Level must be justified. The District Safety Officer must be advised of on-site decisions to upgrade or downgrade. Decisions must be documented with an Addendum to this Plan. The following conditions will necessitate reevaluation of PPE use:

a) Commencement of a new work activity not previously identified;
b) Change of job tasks during a work phase;
c) Change of season/weather;
d) Contaminants other than those identified in the QAPP and PSOHP;

e) Significant increase in contaminant levels as determined by laboratory analysis;
f) Change in work which affects degree of chemical contact.

8. SITE-SPECIFIC TASKS, HAZARDS, AND CONTROLS

8.1. Work Tasks

1. General Environmental field activities to include site visits and contractor oversight. Only basic Modified Protection Level D safety gear required. Primary Focus: comfortable safety toe work boots for walking across the site over various surface conditions.

2. Monitoring well maintenance activities to include well redevelopment and pumping using hand tools and battery powered pumps. Modified Protection Level D safety gear required. Primary Focus: Hard hat recommended along with eye protection and work gloves/Nitrile gloves for handling PVC pipe extensions, pumps, hoses and equipment. Buddy system required for transferring pumped water to storage drums.

3. Collection of groundwater samples from monitoring wells using submersible pump systems. Modified Protection Level D safety gear required. Primary Focus: Safety glasses and Nitrile gloves. Safety glasses will be worn for splash protection. Nitrile gloves shall be worn (and changed between sample points) for contamination prevention and prevention of cross-contamination. Hard hat recommended when handling pumps and tubing. Buddy system required for transferring pumped water to storage drums.

4. Surface water and sediment sampling activities if required.
   Surface water samples may be collected using a collection container with or without an extension rod, and the simple grab process. Sediment sample collection may involve the use of digging tools, or scoops with extension rods used to collect the target sediment material. Modified Protection Level D safety gear required. Primary Focus: Safety glasses, work gloves and/or Nitrile gloves. In addition, USCG-approved personal flotation devices (PFDs) (work vests) must be worn when working over water.

8.2. Physical Hazards/Controls

The physical hazards and controls to be addressed in this Environmental field project are detailed in the attached Activity Hazard Analysis (AHA), and presented in the subsections below.

8.2.1. Slips, trips, and falls

Environmental field activities conducted on rough, uneven, or wet terrain may result in slips, trips, and falls. Field personnel should not rush the work. Stay alert to site conditions, and inspect each sampling location for safe access. Use the buddy system – do not work alone.

8.2.2. Hand injuries, muscle strains/sprains, pinch points

Environmental field activities may result in skin abrasions, or muscle strains/sprains resulting from working on rough terrain, opening well covers and storage drums, reaching, digging, or carrying heavy sample coolers and water containers. Wear leather gloves and use the buddy system when lifting heavy objects and collecting samples. If possible, use sample collection tools designed to minimize bending, kneeling, and fatigue. Watch fingers and toes when lifting and lowering heavy objects.

8.2.3. Heat Stress Prevention

Wearing PPE may put site personnel at increased risk of heat stress. Heat stress effects range from transient heat fatigue to serious illness and death. Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, and the individual characteristics of the worker. Because heat stress is one of the most common and potentially serious illnesses during field operations, alertness to the symptoms and knowledge of preventive measures are vital.

Heat stress monitoring should commence when personnel are wearing impermeable PPE and the ambient temperature exceeds 78 degrees Fahrenheit (°F). If impermeable garments are not worn, heat stress monitoring should commence at 90 F. Table 2 should be used to determine protective measures during heat stress monitoring.

One or more of the following control measures can be used to help control heat stress and are mandatory if any site worker has a heart rate (measure as early as possible during rest period) exceeding 75 percent of the calculated maximum heart rate (MHR = 200 - age) or an oral temperature of 99.6 °F:

- Site workers will be encouraged to drink plenty of water and electrolyte replacement fluids throughout the day.
- On-site drinking water will be kept cool (50 to 60 °F) to encourage personnel to drink frequently.
- A work regimen that will provide adequate rest periods for cooling down

will be established, as required, but generally a one-third-work shift reduction until sustained heart rate is below 75 percent of their calculated maximum heart rate and oral temperatures are kept at or below 99.6 °F. Workers shall not be allowed to return to work if their sustained heart rate is above the 75 percent calculated maximum OR if their oral temperature exceeds 100.4 °F.

- All personnel will be advised of the dangers and symptoms of heat stroke, heat exhaustion, and heat cramps.
- Employees should be instructed to monitor themselves and coworkers for signs of heat stress and to take additional breaks as necessary.
- A shaded rest area must be provided. All breaks should take place in the shaded rest area.
- Employees must not be assigned to other tasks during breaks.
- Employees must remove impermeable garments during rest periods. This includes white Tyvek-type garments.
- All employees must be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress disorders.

Heat Cramps: heavy sweating and inadequate electrolyte replacement cause Heat cramps. Signs and symptoms include muscle spasms and pain in the hands, feet, and abdomen.
Heat Exhaustion: Heat exhaustion occurs from increased stress on various body organs. Signs and symptoms include: pale, cool, moist skin; heavy sweating; dizziness, nausea; and fainting.

Heat Stroke: Heat stroke is the most serious form of heat stress and should always be treated as a medical emergency. The body's temperature regulation system fails, and the body temperature rapidly rises to critical levels. Immediate action must be taken to cool the body before serious injury or death occurs. Signs and symptoms of heat stroke include: red, hot, usually dry skin; lack of, or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse and confusion; and coma.

8.2.4. Cold Stress Prevention

Cold and/or wet environmental conditions can place workers at risk of a cold-related illness. Hypothermia can occur whenever temperatures are below 45 °F, and is most common during wet, windy conditions, with temperatures between 30 to 40 °F. The principal cause of hypothermia in these conditions is loss of insulating properties of clothing due to moisture, coupled with heat loss due to wind and evaporation of moisture on the skin.

Frostbite, the other illness associated with cold exposure, is the freezing of body tissue, which ranges from superficial freezing of surface skin layers to deep freezing of underlying tissue. Frostbite will only occur when ambient temperatures are below 32 °F. The risk of frostbite increases as the temperature drops and wind speed increases.

Most cold-related worker fatalities have resulted from failure to escape low environmental air temperatures or from immersion in low temperature water. The single most important aspect of life-threatening hypothermia is a fall in the deep core temperature of the body.

Site workers should be protected from exposure to cold so that the deep core temperature does not fall below 96.8 °F. Lower body temperatures will very likely result in reduced mental alertness, reduction in rational decision-making, or loss of consciousness with the threat of fatal consequences. To prevent such occurrence, the following measures will be implemented:

- Site workers must wear warm clothing such as mittens, heavy socks, etc., when the air temperature is below 45 °F. Protective clothing, such as Tyvek or other disposable coveralls, may be used to shield employees from the wind.

- When the air temperature is below 35 °F, employees must wear clothing for warmth, in addition to chemical protective clothing. This will include:

  - Insulated suits, such as whole body thermal underwear
  - Wool socks or polypropylene socks to keep moisture off the feet
  - Insulated gloves
  - Insulated boots
  - Insulated head cover such as hard hat, winter liner, or knit cap
  - Insulated jacket, with wind and water-resistant outer layer.

- At air temperatures below 35 °F, the following work practices must

be implemented:

- If the clothing of a site worker might become wet on the job site, the outer layer of clothing must be water impermeable.
- If a site worker's underclothing becomes wet in any way, the worker must change into dry clothing immediately. If the clothing becomes wet from sweating (and the employee is not uncomfortable), the employee may finish the task at hand prior to changing into dry clothing.
- Site workers must have a warm (65 °F or above) break area.
- Hot liquids such as soups or warm, sweet drinks must be provided in the break area. The intake of coffee and tea should be limited, due to their circulatory and diuretic effects.
- The buddy system must be practiced at all times on site. Any site worker observed with severe shivering must leave the work area immediately.
- Site workers should dress in layers, with thinner lighter clothing worn next to the body.

8.2.5. Dust Control

Although there is no anticipated occupational exposure risk to airborne dust during project activities, dust will be controlled at all times with emphasis on times when individuals may be exposed to airborne dust. Activities likely to result in dust generation are generally limited to sediment sampling activities. The sediment sample matrix is expected to contain sufficient moisture to prevent release of airborne dust. However, if dust is observed, field personnel shall remain upwind of the observed dust release, or control the dust through the use of a distilled water spray. If these control measures are not adequate to suppress airborne dust, work will stop and not continue until appropriate dust control measures are employed.

8.2.6. Biological Hazards

Due to the nature of the planned environmental field activities, and site location, field personnel should remain observant for any biological hazards during work on the Bonneville Project. Biological hazards may include venomous snakes, arthropods (i.e., insects, spiders, ticks scorpions, and centipedes) and other pests such as ants, fleas, mosquitoes, and wasps; pathogens such as Hantavirus and rabies from bats that may

frequent abandoned mines. Exposure to blood-borne pathogens may result from contact with blood or other fluids during administration of first-aid.

Rattlesnakes can be found in the eastern side of the Cascade Mountains and eastern parts of the Columbia River Gorge. To minimize the threat of snakebites and insect hazards, all on-site personnel must be made aware (during training) of the potential for encountering snakes and will avoid actions potentiating encounters, such as turning over logs, etc.

Project personnel should remain alert for the presence of any rodents and to take precautions where rodents may have been. These precautions include avoiding rodents, rodent bedding or nests, and rodent droppings. Notify the Site Supervisor if any signs of rodents are encountered.

> **IMPORTANT NOTE:** If an individual has a history of allergic reactions to insect bites or is subject to attacks of hay fever or asthma, or if they are not promptly relieved of symptoms, call a physician or seek immediate emergency medical treatment. In a highly sensitive person, do not wait for symptoms to appear, since delay can be fatal. Any individual with a known allergy to wasps and bees must notify the SSHO and/or Project Manager/Leader prior to working at the project site.

8.2.7. Excessive Noise Control

Not anticipated due to location of the work sites and sampling points. However, the field team may wear hearing protection (ear plugs) at any time noise levels in the area are loud enough to require shouting to communicate between team members.

8.2.8. Other Hazards

The environmental field team should be observant for poison oak, and other poisonous plants that may be growing in or adjacent to the work area.

8.3. Chemical Hazards/Controls

Chemical hazards are generally limited to inadvertent contact with potential contaminants in sediments or water, and sample preservatives that mix with water samples during collection. No inhalation exposure hazard is anticipated for the duration of this project. Skin and eye contact with potentially contaminated sediment or water, or sample preservation chemicals may occur due to direct contact, or splashing. Contact with these chemical hazards can be prevented by using suitable hand and eye PPE as described in Section 7.

8.4. Activity Hazard Analysis

Refer to attachment. The SSHO will brief the Activity Hazard Analysis during each morning safety tailgate meeting.

9. EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

9.1. Pre-emergency Planning

Specific site conditions or hazards that emergency response personnel and medical facility staff need to be aware of before responding to an on-site emergency:

Category of Responders	Responsibilities During Emergency	Notified of Unusual Site Conditions or Hazards (date & person contacted)
On-site Personnel	Provide Basic First-Aid, CPR, call **CONTROL ROOM OPERATOR** in and EMERGENCY – not 911, secure area, and assist Emergency Response Personnel as directed.	Through Site Specific Training
Emergency Response Personnel (Fire Department, EMTs, etc.)	Provide rescue and lifesaving services, advance medical/trauma care, and transport to medical facility.	n/a
Emergency Medical Facility	Provide advanced trauma and medical care.	n/a

9.2. Lines of Authority for Safety and Emergency Situations

The Site Safety and Health Officer (Environmental Field Team Leader) has primary responsibility for responding to and correcting emergency situations. If the SSHO is not available to perform these duties the Site Supervisor or alternate Site Supervisor will fulfill these duties. These responsibilities include:

- Take appropriate measures to protect personnel including: pre-work site inspection and hazard identification, monitoring environmental activities for safety, conducting daily safety briefings, familiarization with emergency POC; communications in the event of an emergency or incident.
- Ensure that appropriate decontamination treatment or testing for exposed or injured personnel is obtained;

- Determine the cause of the incident and make recommendations to prevent the recurrence;
- Ensure that required reports have been prepared.

9.3. Emergency Recognition and Site Evacuation

9.3.1. Medical Emergencies

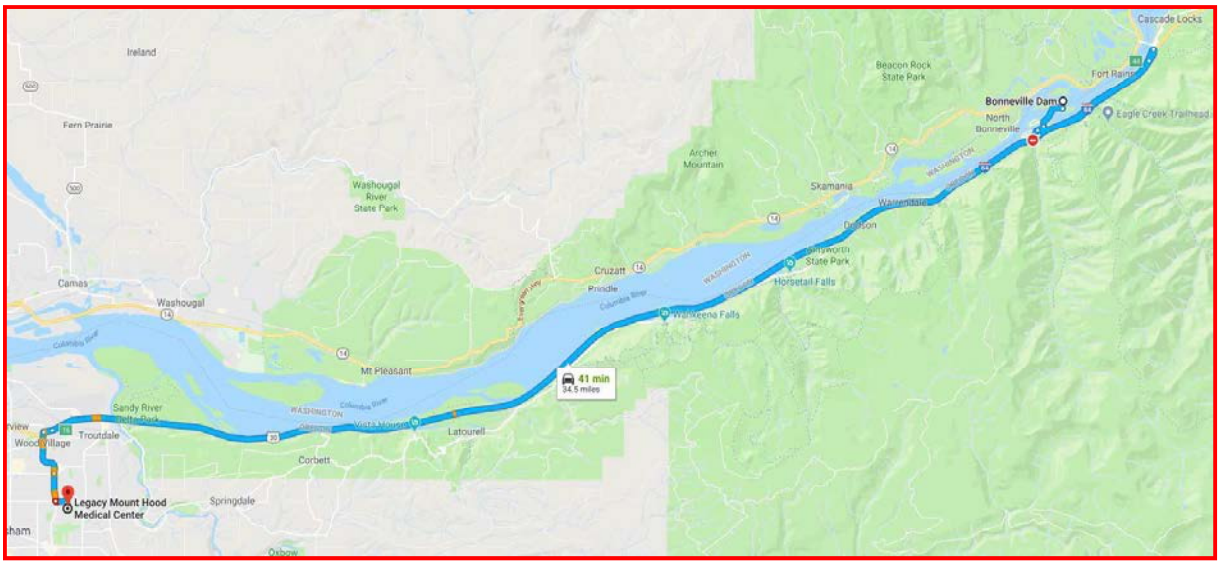
In the event of a medical emergency, the SSHO shall contact the Control Room Operator by phone as described in this Plan. First aid should be administered while awaiting an ambulance or paramedics. Injuries and illnesses must be promptly reported to the Portland and Seattle District Safety Managers.

9.3.2. Site Evacuation

Evacuation routes have been established by the Bonneville Project staff. Upon arrival on the Project, the environmental field team will contact their primary POC for a briefing on established evacuation procedures. This briefing will describe sirens, strobe lights, bells, evacuation routes, and assembly areas the team must be familiar with before beginning work on the Project.

9.4. Route Map to Emergency Medical Facilities

(As presented at the beginning of this PSOHP)



Offsite Medical Facility: Legacy Mount Hood Medical Center
24800 SE Stark St. Gresham, Oregon 97030
(503) 674-1122

For medical emergencies or emergency evacuation, always call the Bonneville Project Control Room Operator to coordinate any required Project response at (541) 374-8338 Emergency Extension x2223.

Directions to Offsite Hospital from Bradford Island project site:

After coordinating with Project personnel, depart in vehicle from work site, heading west, then south on Dam Road toward Star Route. Continue on Star Route across the locks, then turn right onto NE Bonneville Way. Pass through the project gate, and drive around the roundabout heading west to merge onto Westbound I-84/US 30 West. Drive west for 27.4 miles. Take Exit 16 and turn left onto NE 238th Drive. Continue on to NE 242nd Drive for 0.6 miles, then turn left onto SE Stark Street. In 0.3 miles, turn right to reach your destination at the Mount Hood Medical Center campus. Continue driving south past the parking lot toward the hospital. Turn right at the red emergency entrance sign (shown in photo below).

9.5. Phone Numbers for Emergency Responders

(As presented at the beginning of this PSOHP)

Multnomah County Sheriff: 503-255-3600
Oregon State Police: 503-731-3131
Hermiston Fire Department: 541-376-8580
Nearest Hospital with Emergency Room
Legacy Mount Hood Medical Center: (503) 674-1122

Bonneville Project Points of Contact

Emergency POC: Control Room Operator
(541) 374-8338 Emergency Extension x2223

Non-Emergency POC: Missy McBain, Environmental Specialist
Office: (541) 374-2504
Cell: (b)(6)

9.5.1. Basic Medical Equipment

First Aid Kits:	Located in field vehicles.
Stretcher/Backboard:	Not available.
Eye Wash Station:	In field vehicle.
Safety Shower:	Not required. Emergency shower facilities may be available on the Bonneville Project. Contact the main Bonneville Project POC.

9.5.2. Fire-Fighting Equipment

Fire Extinguishers:	There will be one A: B: C fire extinguisher in the field support vehicle.

10. PROJECT CONTROLS

10.1. General Field Safety Rules

- Adhere to COVID-19 precautions described in AHA and current USACE guidance.
- Administrative hazard controls for all site areas should be implemented by restricting entrance to work zones to essential personnel and by using operational SOPs.
- Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground unless clean plastic sheeting is laid down first.
- Eating and drinking is permitted only in designated areas.
- Personnel will only travel in vehicles where individual seats (for each occupant) are provided. Seat belts will be worn as required.
- A fire extinguisher will be kept in the support vehicle.
- A first aid kit shall be kept in the support vehicle parked on site.
- Visitors are not allowed in the work areas without authorization.
- Buddy System
  a) The buddy system is mandatory at all times during sample collection and site inspection activities.

b) A buddy system requires at least two trained/experienced people who work as a team and maintain at a minimum audible and/or visual contact while conducting field work.
c) Each environmental field team member shall be required to carry a cell phone on their person at all times.

10.2. Communication Procedures

Each team member shall have a working cellular telephone. The SSHO/Environmental Field Team Lead shall notify the main Bonneville Project POC when the team arrives on site, and upon departure each day for accountability, unless other arrangements are made with the POC. The SSHO/Environmental Field Team Lead shall ensure the field team is provided Project briefings and information required to work on the Upland OU before beginning work and shall be familiar with Bonneville Project emergency communications and contact procedures. The SSHO shall keep all critical emergency contact phone numbers available for immediate use if needed.

11. REFERENCES

This PSOHP complies with applicable Occupational Safety and Health Administration (OSHA), and US Army Corps of Engineers policies and procedures. This plan follows the guidelines established in the following:

- *Standard Operating Safety Guides*, EPA (Publication 9285.1-03, June 1992).
- *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, National Institute for Occupational Safety and Health (NIOSH), OSHA, U.S. Coast Guard (USCG), EPA (86-116, October 1985).
- Title 29 of the Code of Federal Regulations (CFR), Part 1910.120, *Hazardous Waste Operations and Emergency Response* (HAZWOPER).
- *Pocket Guide to Chemical Hazards*, Department of Health and Human Services, U.S. Public Health Service, Centers for Disease Control, NIOSH.
- Quick Selection Guide to Chemical Protective Clothing, Forsberg, K. and S.Z. Mansdorf, 3rd Ed.Army Regulation (AR) 385-40, Accident Reporting and Records, 1 November 1994 (http://www.usapa.army.mil/pdffiles/r385_40.pdf) and USACE Supplement to AR 385-40 http://www.usace.army.mil/inet/usace-docs/oce/ar385-40/toc.htm).
- Engineer Manual (EM) 385-1-1 Safety and Health Requirements Manual.
- Engineer Regulation (ER) 385-1-92 Safety and Occupational Health Requirements for HTRW Activities.
- Safety and Health Program, Seattle District, USACE, 2019.
- Bonneville Dam Safety and Occupational Health Program, Portland District, USACE, 2019.
- Standing Safety Procedure 2.3, Bonneville Project Safety Program, Employee Emergency Evacuation Notification Procedures, 11 June 2014.

12. PROJECT SAFETY AND OCCUPATIONAL HEALTH PLAN AMENDMENTS

PSOHP Amendment #	
Site Name:	
Date:	
Type of Amendment:	
Reason for Amendment:	
Alternate Safeguard Procedures:	
Required Changes in PPE:	

Seattle District, USACE Safety Officer or Designee (Date)

_____

USACE Project Site Safety and Health Officer (Date)

Joseph R. Marsh December 10, 2021

End of Project Safety and Occupational Health Plan

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

ACTIVITY HAZARDS ANALYSIS (AHA)

For use of this form, see EM 385-1-1 Section 01.A.15; the proponent agency is CENWS-SO

Overall Risk Assessment Code (RAC) (Use highest final RAC): L

Date Prepared: 4 January 2022

Project/Location: Bonneville Dam, Cascade Locks, Oregon

Activity/Work Task: Bradford Island environmental activities during COVID-19 Pandemic

Contract Number: NA

Prepared By (Name & Title): Amanda Pease, Seattle District IH / Joe Marsh CDSO

Reviewed By (Name & Title): Joseph Marsh, Collateral Duty Safety Officer

Risk Assessment Code * (RAC) Matrix

E = Extremely High Risk
H = High Risk
M = Moderate Risk
L = Low Risk

Severity	Probability: Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

USACE Risk Acceptance Authority (digital signature):
[For Acceptance of Risk Authority see Table 4-2, DA PAM 385-30, Risk Management]

MARSH.JOSEPH.R.1201777662 Digitally signed by MARSH.JOSEPH.R.1201777662 Date: 2022.01.04 11:13:17 -08'00'

Add Identified Hazards

	Job Steps	Hazards	Initial RAC *	Actions To Eliminate or Minimize Hazards	Final RAC *
X	1. Planning for Trip.	Note: This step is for information gathering purposes to better understand the controls needed for the upcoming travel/activities.		Personnel can and should continue to take measures to protect themselves from COVID-19 illness by getting vaccinated, continuing self-screening for signs/symptoms of COVID-19 before coming to work, and staying home if they are not well, maintaining social distance, as well as conducting regular cleaning procedures. ***Prior to traveling, review the current travel restrictions for areas traveling through and to. The link to the CDC Travelers Health page below can help you find information on traveling and COVID-19. https://wwwnc.cdc.gov/travel/	

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

ACTIVITY HAZARDS ANALYSIS (AHA)

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	Job Steps	Hazards	Initial RAC *	Actions To Eliminate or Minimize Hazards	Final RAC *
X	2. GOV / POV Vehicle Usage - Based on round trip. Prior to usage, en transit and stoppages, and return of vehicle. Note: Cleaning supplies can be obtained from the District Headquarters POC: Chris Garcia 206-764-3663(office) 206-406-6216(cell)	Exposure to potential COVID-19 droplets on vehicle surface Exposure to individuals with undocumented cases of COVID-19 or some variant who are asymptomatic and/or within the latency period before symptoms become identifiable (3-5 days). Exposure to surface with potential COVID-19 droplets outside of vehicle.	M	Wipe down inside of vehicle with CDC/EPA approved disinfectant wipes before use and after usage. Wear PPE specified by manufacturer of disinfectant. This could include Nitrile gloves, eye protection, etc. Wash (soap and water - 20 seconds minimum) or sanitize hands (alcohol based hand sanitizer with at least 60% ethyl alcohol content) after disinfecting vehicle. Until guidance is changed, personnel riding together in GSA vehicles will wear cloth face coverings (disposable surgical type mask recommended) or travel separately without cloth face coverings if practical to do so. Maintain social distancing of 6 feet for interactions outside of vehicle or wear cloth face covering if distancing cannot be maintained. Utilizing drive through, self-checkouts at grocery stores, and pay at the pump stations for fuel to minimize social contact with individuals. Research sites before travel to determine breaks in route with adequate hand washing facilities. Wash hands frequently while outside of vehicle. Refrain from shaking hands and avoid contact with sick individuals. Reduce need to minimize stops by bringing food and water from home. Wash hands or sanitize before re-entering the vehicle.	L

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

ACTIVITY HAZARDS ANALYSIS (AHA)

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	Job Steps	Hazards	Initial RAC *	Actions To Eliminate or Minimize Hazards	Final RAC *
X	2a. Transit in vehicle.	Motor Vehicle Accidents.	M	Obey traffic laws. Adjust vehicle operation to road and weather conditions. Employ defensive driving techniques. Complete defensive driver training once every 4 years.	L
X	3. Breaks en route.	Exposure to individuals with potential to have COVID-19 (outside of vehicle). Exposure to surface with potential COVID-19 droplets outside of vehicle.	M	Maintain social distancing of 6 feet for interactions longer than 10 minutes. Utilizing drive through, self-checkouts at grocery stores, and pay at the pump stations for fuel to minimize social contact with individuals. Research sites before travel to determine breaks in route with adequate hand washing facilities. Wash hands frequently while outside of vehicle. Refrain from shaking hands and avoid contact with sick individuals. Reduce need to minimize stops by bringing food and water from home. Wash hands or sanitize before re-entering the vehicle.	L

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

ACTIVITY HAZARDS ANALYSIS (AHA)

For use of this form, see EM 385-1-1 Section 01.A.15; the proponent agency is CENWS-SO

	Job Steps	Hazards	Initial RAC *	Actions To Eliminate or Minimize Hazards	Final RAC *
X	4. Hotel Stay and Project Site Check In.	Exposure to individuals with undocumented cases of COVID-19 or some variant who are asymptomatic and/or within the latency period before symptoms become identifiable (3-5 days).	M	Wear of cloth face covering (disposable surgical type mask recommended) inside common areas of hotel. Maintain social distancing of 6 feet for interactions longer than 10 minutes. Wash hands frequently. Refrain from shaking hands and avoid contact with sick individuals. Cloth face coverings are not required while working outside unless social distancing cannot be maintained. Current guidance on wear of cloth face covering indoors on DoD property: Department of Defense (DoD) guidance issued 28 July 21, states all federal employees, regardless of vaccination status, shall wear a mask in an indoor setting in installations and other facilities owned, leased or otherwise controlled by DoD.	L
X	5. Arrive at destination.	Exposure to individuals with undocumented cases of COVID-19 or some variant who are asymptomatic and/or within the latency period before symptoms become identifiable (3-5 days).	M	if possible, do not hand over identification for someone else to touch. If handing over is required, and disinfect id card and hands after ID card is returned. Minimize social contact by lowering the window the minimal amount necessary. Wear a cloth face mask at all times.	L

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

ACTIVITY HAZARDS ANALYSIS (AHA)

For use of this form, see EM 385-1-1 Section 01.A.15; the proponent agency is CENWS-SO

	Job Steps	Hazards	Initial RAC *	Actions To Eliminate or Minimize Hazards	Final RAC *
X	6. Environmental Sampling Related Field Activities (water, sediment, soil sampling, well redevelopment, site inspections).	Exposure to individuals with undocumented cases of COVID-19 or some variant who are asymptomatic and/or within the latency period before symptoms become identifiable (3-5 days). Slips, trips, falls. Lifting related injuries from loading/unloading vehicles. Carrying heavy sample coolers and equipment.	M	Wear of face coverings are mandatory for all personnel while working in close proximity to each other. Watch for debris on or protruding from ground surface. Be aware of surroundings and stay alert while walking on uneven terrain. Maintain a clean work area free of extraneous supplies and equipment. Wear safety toe boots during fieldwork in accordance with ASTM F2413-18. Warm up with stretching exercises before lifting heavy objects. Use proper lifting techniques. Center the load and lift using legs not back. If item weighs more than 50 lbs., two people should conduct the lift. Always use buddy system.	L
X	6a. Environmental Sampling Related Activities continued.	Exposure to low level contaminants in sample matrix during collection. Exposure to sample preservation chemicals. Exposure to poison oak/ivy. Working in off-road, overgrown areas	L	6a. Always work upwind of groundwater pumped from site wells. Wear Nitrile gloves and safety glasses with side shields or goggles for splash and impact protection during field activities. Learn to identify and avoid poison oak leaves and twigs that can cause skin itching; then dermatitis with inflammation, colorless bumps, severe itching, and blistering. Keep skin covered and use pre-contact and post-contact poison oak treatment towelettes or ointments as required. Do not climb obstacles or fences - always use access gates. Fieldworkers are not authorized to operate electrical breaker panel switches and should work away from electrical panels and wiring in well houses.	L

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

ACTIVITY HAZARDS ANALYSIS (AHA)

For use of this form, see EM 385-1-1 Section 01.A.15; the proponent agency is CENWS-SO

	Job Steps	Hazards	Initial RAC *	Actions To Eliminate or Minimize Hazards	Final RAC *
X	6b. Environmental Sampling Related Activities continued.	Biological hazards to include snakes, rodents, spiders, ticks, fleas, flying insects, to include corresponding Hantavirus (HPS) and West Nile Virus.	M	6b. Inspect padlock covers, well casings, and well houses for presence of snakes, rodents, spiders, ticks, fleas, flying insects. PPE to include long pants, light colored clothing, ankle high work boots. Use a flashlight to locate hazards in dark areas of work site. Do not attempt to perform pest control activities - contact project manager to acquire professional services if needed. Apply insect repellent as needed. Perform daily self inspection tick check during and after work. Back away from areas containing dead birds, rodents, or excessive animal feces. If mouse droppings and/or urine are detected within enclosed work areas, spray down area with a mixture of one part bleach, 9 parts water.	L
X	6c. GEnvironmental Sampling Related Activities continued.	Heat Stress.	M	6c. When hot/humid conditions are forecast for the project site, the site safety and health officer (SSHO) shall:brief signs, symptoms and first aid procedures for heat stress. Schedule work earlier or later in the day. Use work/rest schedules. Limit strenuous work (e.g., carrying heavy loads). Use relief workers when needed. Use buddy system to monitor team member symptoms. Field workers shall ensure sufficient drinking water is available at all times.	L
X	6d. Environmental Sampling Related Activities continued.	Cold Stress/hypothermia.	M	6d. In the event of forecast cold weather or wind chill warnings, the SSHO shall brief cold stress symptoms, monitoring, and first aid procedures. Use buddy system to monitor team member symptoms. Team leader shall ensure personnel wear appropriate PPE for cold weather, and establish warming breaks in heated vehicles or buildings as appropriate.	L
X	6e. Environmental Sampling Related Activities continued.	Severe weather: Storms and lightning.	M	6e. If lightning is observed during fieldwork, cease operations immediately and seek shelter. Work may resume 30 minutes after the last observed lightning strike. Personnel should monitor weather regularly by vehicle radio, or smartphone weather apps. Work will cease in the event of severe rainstorms, reported tornadoes in area, snowstorms, hail, and high winds.	L

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

ACTIVITY HAZARDS ANALYSIS (AHA)

For use of this form, see EM 385-1-1 Section 01.A.15; the proponent agency is CENWS-SO

	Job Steps	Hazards	Initial RAC *	Actions To Eliminate or Minimize Hazards	Final RAC *
X	6f. Environmental Sampling Related Activities continued.	Fire and Unforeseen Emergencies.	L	6f. First Aid Kits and fire extinguishers shall be loaded into field vehicle before departing for the project site. At least two fully charged cell phones will be available with field team at all times in case of fire or medical emergency (Call 911) then the Project Safety Officer. SSHO will brief directions to hospital before work begins. At least one person with current First Aid/CPR training shall be present on site during the work. If possible, do not park vehicles on tall, dry grass. Only fight very small fires with fire extinguishers. Otherwise, for larger fires, safely depart site and call 911 then the Project safety officer.	L
X	7. Return Trip.	Exposure to individuals with undocumented cases of COVID-19 or some variant who are asymptomatic and within the latency period before symptoms become identifiable (3-5 days). Exposure to surface with COVID-19 droplets outside of vehicle.		Follow steps 1-3 above relevant to vehicle transit.	
X	NOTE: THIS AHA IS INTENDED FOR 'HEALTHY' POPULATIONS. IT DOES NOT SPEAK TO HAZARDS AND MITIGATION STEPS FOR HIGH RISK OR SENSITITVE POPULATIONS. PLEASE CONTACT THE SAFETY DEPARTMENT FOR MORE INFOMRATION.			NOTE: THIS AHA IS INTENDED FOR 'HEALTHY' POPULATIONS. IT DOES NOT SPEAK TO HAZARDS AND MITIGATION STEPS FOR HIGH RISK OR SENSITITVE POPULATIONS. PLEASE CONTACT THE SAFETY DEPARTMENT FOR MORE INFOMRATION.	

Add Items

	Equipment	Training	Inspection
X	Hand sanitizer if hand washing facilities are not available	NA	NA
X	CDC/EPA-approved Disinfectant	NA	NA
X	PPE recommended by manufacturer of specific CDC/EPA-approved disinfectant used	Varies depending on PPE	Varies depending on PPE.

U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT

ACTIVITY HAZARDS ANALYSIS (AHA)

For use of this form, see EM 385-1-1 Section 01.A.15; the proponent agency is CENWS-SO

	Equipment	Training	Inspection
X	If headed to Environmental/Construction / Industrial / Vessel locations, ensure that you are wearing the proper PPE - Hard Hat, Steel Toed Boots, Safety Vest, Safety Glasses and Gloves. Be sure to check with site POC to verify PPE requirements.	Varies depending on PPE	Varies depending on PPE
X	Motor Vehicle	Defensive Drivers Certificate	Daily
X	Check for READY condition of vehicles, cell phone batteries, first aid kits, fire extinguisher, eye wash bottles, PPE, sampling equipment, drinking water, decontamination water, sanitation and hand wash facilities.	Current HAZWOPER training/refresher for all field employees, at least one person trained and current in First Aid/CPR, site specific training, equipment and procedures training, daily tailgate safety briefings.	Daily vehicle inspection. Continuous site observation for identified hazards. Daily inspection of PPE, sampling equipment (pump equipment and air lines), and tools.
X			

Add Name

	Involved Personnel (Initial & Date Beside Name)
X	
X	
X	
X	

Add Competent Person

	Competent Person	Area of Competency
X		
X		
X		

Appendix B

Laboratory Accreditations and Measurement Performance Criteria

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Environmental Monitoring & Technologies, Inc.

509 N. 3rd Avenue, Des Plaines, IL 60016

(Hereinafter called the Organization) and hereby declares that Organization has met the requirements of ISO/IEC 17025:2017 General Requirements for the competence of Testing and Calibration Laboratories and the United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP) requirements identified within the DoD/DOE Quality Systems Manual (DoD/DOE QSM) Version 5.3 May 2019 and is accredited is accordance with the:

United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP)

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

This accreditation demonstrates technical competence for the defined scope:

Environmental Testing

(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
January 13, 2013	March 26, 2020	March 31, 2022
Revision Date:	*Accreditation No.:*	*Certificate No.:*
August 9, 2021	75537	L20-164-R2

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact Name: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 120.1/SM 2510B	ISE	Specific Conductance
Aqueous	EPA 1664B	Gravimetric	Oil and Grease (HEM)
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Aluminum
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Antimony
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Arsenic
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Barium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Beryllium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Boron
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Cadmium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Calcium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Chromium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Cobalt
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Copper
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Iron
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Lead
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Magnesium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Manganese
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Molybdenum
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Nickel
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Potassium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Selenium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Silver
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Sodium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Strontium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Thallium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Tin
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Titanium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Total phosphorus as P
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Vanadium
Aqueous	EPA 200.7 Rev 4.4	ICP-AES	Zinc
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Aluminum
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Antimony
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Arsenic
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Barium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Beryllium

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Boron
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Cadmium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Calcium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Chromium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Cobalt
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Copper
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Iron
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Lead
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Magnesium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Manganese
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Molybdenum
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Nickel
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Potassium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Selenium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Silver
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Sodium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Thallium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Tin
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Titanium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Total phosphorus as P
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Vanadium
Aqueous	EPA 200.8 Rev 5.4	ICP-MS	Zinc
Aqueous	EPA 245.1 Rev 3.0	CVAA	Mercury
Aqueous	EPA 300.0	Ion Chromatography	Bromide
Aqueous	EPA 300.0	Ion Chromatography	Chloride
Aqueous	EPA 300.0	Ion Chromatography	Fluoride
Aqueous	EPA 300.0	Ion Chromatography	Nitrate + Nitrite
Aqueous	EPA 300.0	Ion Chromatography	Nitrate as N
Aqueous	EPA 300.0	Ion Chromatography	Ortho-phosphate as P
Aqueous	EPA 300.0	Ion Chromatography	Sulfate
Aqueous	EPA 300.0/EPA 9056A	Ion Chromatography	Nitrite as N
Aqueous	EPA 350.1	SFA Analyzer	Ammonia
Aqueous	EPA 420.1	Colorimetric	Total Phenolics
Aqueous	EPA 608.3	GC-ECD	4,4'-DDD
Aqueous	EPA 608.3	GC-ECD	4,4'-DDE

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 608.3	GC-ECD	4,4'-DDT
Aqueous	EPA 608.3	GC-ECD	Aldrin
Aqueous	EPA 608.3	GC-ECD	alpha-Chlordane
Aqueous	EPA 608.3	GC-ECD	alph-BHC
Aqueous	EPA 608.3	GC-ECD	Aroclor 1016
Aqueous	EPA 608.3	GC-ECD	Aroclor 1221
Aqueous	EPA 608.3	GC-ECD	Aroclor 1232
Aqueous	EPA 608.3	GC-ECD	Aroclor 1242
Aqueous	EPA 608.3	GC-ECD	Aroclor 1248
Aqueous	EPA 608.3	GC-ECD	Aroclor 1254
Aqueous	EPA 608.3	GC-ECD	Aroclor 1260
Aqueous	EPA 608.3	GC-ECD	Aroclor 1262
Aqueous	EPA 608.3	GC-ECD	Aroclor 1268
Aqueous	EPA 608.3	GC-ECD	beta-BHC
Aqueous	EPA 608.3	GC-ECD	Chlordane
Aqueous	EPA 608.3	GC-ECD	delta-BHC
Aqueous	EPA 608.3	GC-ECD	Dieldrin
Aqueous	EPA 608.3	GC-ECD	Endosulfan I
Aqueous	EPA 608.3	GC-ECD	Endosulfan II
Aqueous	EPA 608.3	GC-ECD	Endosulfan sulfate
Aqueous	EPA 608.3	GC-ECD	Endrin
Aqueous	EPA 608.3	GC-ECD	Endrin aldehyde
Aqueous	EPA 608.3	GC-ECD	Endrin ketone
Aqueous	EPA 608.3	GC-ECD	gamma-BHC (Lindane)
Aqueous	EPA 608.3	GC-ECD	gamma-Chlordane
Aqueous	EPA 608.3	GC-ECD	Heptachlor
Aqueous	EPA 608.3	GC-ECD	Heptachlor epoxide
Aqueous	EPA 608.3	GC-ECD	Methoxychlor
Aqueous	EPA 608.3	GC-ECD	Toxaphene
Aqueous	EPA 624.1	GC-MS	1,1,1-Trichloroethane
Aqueous	EPA 624.1	GC-MS	1,1,2,2-Tetrachloroethane
Aqueous	EPA 624.1	GC-MS	1,1,2-Trichlorethane
Aqueous	EPA 624.1	GC-MS	1,1-Dichloroethane
Aqueous	EPA 624.1	GC-MS	1,1-Dichloroethylene
Aqueous	EPA 624.1	GC-MS	1,2-Dichlorobenzene

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 624.1	GC-MS	1,2-Dichloroethane
Aqueous	EPA 624.1	GC-MS	1,2-Dichloropropane
Aqueous	EPA 624.1	GC-MS	1,3-Dichlorobenzene
Aqueous	EPA 624.1	GC-MS	1,4-Dichlorobenzene
Aqueous	EPA 624.1	GC-MS	2-Chloroethyl vinyl ether
Aqueous	EPA 624.1	GC-MS	Acrolein (Propenal)
Aqueous	EPA 624.1	GC-MS	Acrylonitrile
Aqueous	EPA 624.1	GC-MS	Benzene
Aqueous	EPA 624.1	GC-MS	Bromodichloromethane
Aqueous	EPA 624.1	GC-MS	Bromoform
Aqueous	EPA 624.1	GC-MS	Bromomethane
Aqueous	EPA 624.1	GC-MS	Carbon tetrachloride
Aqueous	EPA 624.1	GC-MS	Chlorobenzene
Aqueous	EPA 624.1	GC-MS	Chloroethane
Aqueous	EPA 624.1	GC-MS	Chloroform
Aqueous	EPA 624.1	GC-MS	Chloromethane
Aqueous	EPA 624.1	GC-MS	cis-1,2-Dichloroethylene
Aqueous	EPA 624.1	GC-MS	cis-1,3-Dichloropropylene
Aqueous	EPA 624.1	GC-MS	Dibromochloromethane
Aqueous	EPA 624.1	GC-MS	Ethylbenzene
Aqueous	EPA 624.1	GC-MS	Methyl tert-butyl ether (MTBE)
Aqueous	EPA 624.1	GC-MS	Methylene chloride
Aqueous	EPA 624.1	GC-MS	Tetrachloroethylene
Aqueous	EPA 624.1	GC-MS	Toluene
Aqueous	EPA 624.1	GC-MS	trans-1,2-Dichloroethylene
Aqueous	EPA 624.1	GC-MS	trans-1,3-Dichloropropylene
Aqueous	EPA 624.1	GC-MS	Trichlorethylene
Aqueous	EPA 624.1	GC-MS	Trichlorofluoromethane
Aqueous	EPA 624.1	GC-MS	Vinyl chloride
Aqueous	EPA 624.1	GC-MS	Xylenes, total
Aqueous	EPA 625.1	GC-MS	1,2,4-Trichlorobenzene
Aqueous	EPA 625.1	GC-MS	1,2-Dichlorobenzene
Aqueous	EPA 625.1	GC-MS	1,3-Dichlorobenzene
Aqueous	EPA 625.1	GC-MS	1,4-Dichlorobenzene
Aqueous	EPA 625.1	GC-MS	2,4,5-Trichlorophenol

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 625.1	GC-MS	2,4,6-Trichlorophenol
Aqueous	EPA 625.1	GC-MS	2,4-Dichlorophenol
Aqueous	EPA 625.1	GC-MS	2,4-Dimethylphenol
Aqueous	EPA 625.1	GC-MS	2,4-Dinitrophenol
Aqueous	EPA 625.1	GC-MS	2,4-Dinitrotoluene
Aqueous	EPA 625.1	GC-MS	2,6-Dinitrotoluene
Aqueous	EPA 625.1	GC-MS	2-Chloronaphthalene
Aqueous	EPA 625.1	GC-MS	2-Chlorophenol
Aqueous	EPA 625.1	GC-MS	2-Methyl-4,6-dinitrophenol
Aqueous	EPA 625.1	GC-MS	2-Nitrophenol
Aqueous	EPA 625.1	GC-MS	3,3'-Dichlorobenzidine
Aqueous	EPA 625.1	GC-MS	4-Bromophenyl-phenylether
Aqueous	EPA 625.1	GC-MS	4-Chloro-3-methylphenol
Aqueous	EPA 625.1	GC-MS	4-Chlorophenyl-phenylether
Aqueous	EPA 625.1	GC-MS	4-Nitrophenol
Aqueous	EPA 625.1	GC-MS	Acenaphthene
Aqueous	EPA 625.1	GC-MS	Acenaphthylene
Aqueous	EPA 625.1	GC-MS	Anthracene
Aqueous	EPA 625.1	GC-MS	Benzidine
Aqueous	EPA 625.1	GC-MS	Benzo(a)anthracene
Aqueous	EPA 625.1	GC-MS	Benzo(a)pyrene
Aqueous	EPA 625.1	GC-MS	Benzo(b)fluoranthene
Aqueous	EPA 625.1	GC-MS	Benzo(g,h,I)perylene
Aqueous	EPA 625.1	GC-MS	Benzo(k)fluoranthene
Aqueous	EPA 625.1	GC-MS	bis(2-Chloroethoxy)methane
Aqueous	EPA 625.1	GC-MS	bis(2-Chloroethyl)ether
Aqueous	EPA 625.1	GC-MS	bis(2-Chloroisopropyl)ether
Aqueous	EPA 625.1	GC-MS	Butylbenzylphthalate
Aqueous	EPA 625.1	GC-MS	Chrysene
Aqueous	EPA 625.1	GC-MS	Dibenz(a,h)anthracene
Aqueous	EPA 625.1	GC-MS	Diethylphthalate
Aqueous	EPA 625.1	GC-MS	Dimethylphthalate
Aqueous	EPA 625.1	GC-MS	Di-n-butylphthalate
Aqueous	EPA 625.1	GC-MS	Di-n-octylphthalate
Aqueous	EPA 625.1	GC-MS	Fluorene

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 625.1	GC-MS	Fluoroanthene
Aqueous	EPA 625.1	GC-MS	Hexachlorobenzene
Aqueous	EPA 625.1	GC-MS	Hexachlorobutadiene
Aqueous	EPA 625.1	GC-MS	Hexachlorocyclopentadiene
Aqueous	EPA 625.1	GC-MS	Hexachloroethane
Aqueous	EPA 625.1	GC-MS	Indeno(1,2,3-cd)pyrene
Aqueous	EPA 625.1	GC-MS	Isophorone
Aqueous	EPA 625.1	GC-MS	Naphthalene
Aqueous	EPA 625.1	GC-MS	Nitrobenzene
Aqueous	EPA 625.1	GC-MS	N-Nitro-di-n-propylamine
Aqueous	EPA 625.1	GC-MS	N-Nitrosodimethylamine
Aqueous	EPA 625.1	GC-MS	N-Nitrosodiphenylamine
Aqueous	EPA 625.1	GC-MS	Pentachlorophenol
Aqueous	EPA 625.1	GC-MS	Phenanthrene
Aqueous	EPA 625.1	GC-MS	Phenol
Aqueous	EPA 625.1	GC-MS	Pyrene
Aqueous	EPA 7470A	CVAA	Mercury
Aqueous	EPA 8260B/ EPA 8260D	GC-MS	cis-1, 2- Dichloroethene
Aqueous	EPA 8260B/ EPA 8260D	GC-MS	Diethyl ether
Aqueous	EPA 8260B/ EPA 8260D	GC-MS	Hexachlorobutadiene
Aqueous	EPA 8260B/ EPA 8260D	GC-MS	trans-1, 2- Dichloroethene
Aqueous	EPA 8260B SIM	GC-MS	1,4-Dioxane
Aqueous	EPA 9040C	ISE	pH Meter
Aqueous	HACH 8000	Colorimetric	COD
Aqueous	SM 2310B	Titrimetric	Acidity
Aqueous	SM 2320B	Titrimetric	Alkalinity as CaCO3
Aqueous	SM 2340B	ICP-AES	Calcium hardness (CaCO3)
Aqueous	SM 2340B	ICP-AES	Total Hardness (CaCO3)
Aqueous	SM 2540B	Gravimetric	Total Solids at 105C
Aqueous	SM 2540C	Gravimetric	Total Dissolved Solids
Aqueous	SM 2540D	Gravimetric	Total Suspended Solids
Aqueous	SM 2540E/SM 2540G/EPA 160.4	Gravimetric	Volatile Solid
Aqueous	SM 2540F	Gravimetric	Settleable Solids
Aqueous	SM 4500- CL C	Titrimetric	Chloride

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	SM 4500- F C	ISE	Fluoride
Aqueous	SM 4500-CL G	ISE	Chlorine, Residual
Aqueous	SM 4500-CN E	Colorimetric	Cyanide, total
Aqueous	SM 4500-CN G	Colorimetric	Cyanide, Amenable to Chlorination
Aqueous	SM 4500-NH3 B	ISE	TKN
Aqueous	SM 4500-NH3 C	ISE	Ammonia as N
Aqueous	SM 4500-NO2 B	Colorimetric	Nitrite as N
Aqueous	SM 4500-NO3 E	ISE	Nitrate+Nitrite as N
Aqueous	SM 4500-P E	Colorimetric	Ortho-phosphate as P
Aqueous	SM 4500-P E	Colorimetric	Total phosphorus as P
Aqueous	SM 4500-P F	Colorimetric	Ortho-phosphate as P
Aqueous	SM 4500-P F	Colorimetric	Total phosphorus as P
Aqueous	SM 4500-S D	Colorimetric	Sulfide
Aqueous	SM 4500S-F	Titrimetric	Sulfide
Aqueous	SM 4500 D, E	Discrete Analyzer	Silica
Aqueous	SM 5210B	UV-Vis	BOD
Aqueous	SM 5210B	UV-Vis	CBOD
Aqueous	SM 5310C/9060A	UV-Vis	TOC
Drinking water	EPA 524.3	GC-MS	1,1,1-Trichloroethane
Drinking water	EPA 524.3	GC-MS	1,1-Dichloroethane
Drinking water	EPA 524.3	GC-MS	1,1-Dichloroethene
Drinking water	EPA 524.3	GC-MS	1,2-Dichloroethane
Drinking water	EPA 524.3	GC-MS	cis-1,2-Dichloroethene
Drinking water	EPA 524.3	GC-MS	trans-1,2-Dichloroethene
Drinking water	EPA 524.3	GC-MS	Trichloroethene
Drinking water	EPA 524.3	GC-MS	Vinyl chloride
Solid	EPA 1030	Physical Property	Ignitability
Solid	EPA 7471B	CVAA	Mercury
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,1,1,2-Tetrachloroethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,1,1-Trichloroethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,1,2,2-Tetrachloroethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,1-Dichloroethane

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,2-Dibromo-3-chloropropane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,2-Dibromoethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,2-Dichlorobenzene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,2-Dichloroethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,3-Dichlorobenzene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	1,4-Dichlorobenzene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	2-Hexanone
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	4-Methyl-2-pentanone
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Benzene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Bromodichloromethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Bromoform
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Bromomethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Chloroform
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	cis-1,2-Dichloroethene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Dibromochloromethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Dibromomethane
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Hexachlorobutadiene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Naphthalene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Tetrachloroethene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Total 1,2-Dichloroethene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Total 1,3-Dichloropropene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	trans-1,2-Dichloroethene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	trans-1,3-Dichloropropene

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Trichloroethene
Solid	EPA 8260B SIM/ EPA 8260D SIM	GC-MS	Vinyl chloride
Solid	EPA 9056A	Ion Chromatography	Bromide
Solid	EPA 9056A	Ion Chromatography	Chloride
Solid	EPA 9056A	Ion Chromatography	Fluoride
Solid	EPA 9056A	Ion Chromatography	Nitrate as N
Solid	EPA 9056A	Ion Chromatography	Ortho-phosphate as P
Solid	EPA 9056A	Ion Chromatography	Sulfate
Solid	EPA 9065	Colorimetric	Total Phenolics
Aqueous/Solid	AK 101	GC-FID	GRO
Aqueous/Solid	AK 102	GC-FID	DRO
Aqueous/Solid	AK 103	GC-FID	RRO
Aqueous/Solid	EPA 6010D	ICP-AES	Aluminum
Aqueous/Solid	EPA 6010D	ICP-AES	Antimony
Aqueous/Solid	EPA 6010D	ICP-AES	Arsenic
Aqueous/Solid	EPA 6010D	ICP-AES	Barium
Aqueous/Solid	EPA 6010D	ICP-AES	Beryllium
Aqueous/Solid	EPA 6010D	ICP-AES	Boron
Aqueous/Solid	EPA 6010D	ICP-AES	Cadmium
Aqueous/Solid	EPA 6010D	ICP-AES	Calcium
Aqueous/Solid	EPA 6010D	ICP-AES	Chromium
Aqueous/Solid	EPA 6010D	ICP-AES	Cobalt
Aqueous/Solid	EPA 6010D	ICP-AES	Copper
Aqueous/Solid	EPA 6010D	ICP-AES	Iron
Aqueous/Solid	EPA 6010D	ICP-AES	Lead
Aqueous/Solid	EPA 6010D	ICP-AES	Magnesium
Aqueous/Solid	EPA 6010D	ICP-AES	Manganese
Aqueous/Solid	EPA 6010D	ICP-AES	Molybdenum
Aqueous/Solid	EPA 6010D	ICP-AES	Nickel
Aqueous/Solid	EPA 6010D	ICP-AES	Phosphorus
Aqueous/Solid	EPA 6010D	ICP-AES	Potassium
Aqueous/Solid	EPA 6010D	ICP-AES	Selenium
Aqueous/Solid	EPA 6010D	ICP-AES	Silver
Aqueous/Solid	EPA 6010D	ICP-AES	Sodium

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 6010D	ICP-AES	Strontium
Aqueous/Solid	EPA 6010D	ICP-AES	Thallium
Aqueous/Solid	EPA 6010D	ICP-AES	Tin
Aqueous/Solid	EPA 6010D	ICP-AES	Titanium
Aqueous/Solid	EPA 6010D	ICP-AES	Total Phosphorus
Aqueous/Solid	EPA 6010D	ICP-AES	Vanadium
Aqueous/Solid	EPA 6010D	ICP-AES	Zinc
Aqueous/Solid	EPA 6020B	ICP-MS	Aluminum
Aqueous/Solid	EPA 6020B	ICP-MS	Antimony
Aqueous/Solid	EPA 6020B	ICP-MS	Arsenic
Aqueous/Solid	EPA 6020B	ICP-MS	Barium
Aqueous/Solid	EPA 6020B	ICP-MS	Beryllium
Aqueous/Solid	EPA 6020B	ICP-MS	Boron
Aqueous/Solid	EPA 6020B	ICP-MS	Cadmium
Aqueous/Solid	EPA 6020B	ICP-MS	Calcium
Aqueous/Solid	EPA 6020B	ICP-MS	Chromium
Aqueous/Solid	EPA 6020B	ICP-MS	Cobalt
Aqueous/Solid	EPA 6020B	ICP-MS	Copper
Aqueous/Solid	EPA 6020B	ICP-MS	Iron
Aqueous/Solid	EPA 6020B	ICP-MS	Lead
Aqueous/Solid	EPA 6020B	ICP-MS	Magnesium
Aqueous/Solid	EPA 6020B	ICP-MS	Manganese
Aqueous/Solid	EPA 6020B	ICP-MS	Molybdenum
Aqueous/Solid	EPA 6020B	ICP-MS	Nickel
Aqueous/Solid	EPA 6020B	ICP-MS	Phosphorous
Aqueous/Solid	EPA 6020B	ICP-MS	Potassium
Aqueous/Solid	EPA 6020B	ICP-MS	Selenium
Aqueous/Solid	EPA 6020B	ICP-MS	Silver
Aqueous/Solid	EPA 6020B	ICP-MS	Sodium
Aqueous/Solid	EPA 6020B	ICP-MS	Thallium
Aqueous/Solid	EPA 6020B	ICP-MS	Tin
Aqueous/Solid	EPA 6020B	ICP-MS	Titanium
Aqueous/Solid	EPA 6020B	ICP-MS	Vanadium
Aqueous/Solid	EPA 6020B	ICP-MS	Zinc
Aqueous/Solid	EPA 8011	GC-ECD	DBCP

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509 N. 3rd Avenue, Des Plaines, IL 60016
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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8011	GC-ECD	EDB
Aqueous/Solid	EPA 8011	GC-ECD	TCP
Aqueous/Solid	EPA 8015B/EPA 8015D	GC-FID	DRO
Aqueous/Solid	EPA 8015B/EPA 8015D	GC-FID	Ethanol
Aqueous/Solid	EPA 8015B/EPA 8015D	GC-FID	Ethylene Glycol
Aqueous/Solid	EPA 8015B/EPA 8015D	GC-FID	GRO
Aqueous/Solid	EPA 8015B/EPA 8015D	GC-FID	Methanol
Aqueous/Solid	EPA 8081B	GC-ECD	2,4'-DDD
Aqueous/Solid	EPA 8081B	GC-ECD	2,4'-DDE
Aqueous/Solid	EPA 8081B	GC-ECD	2,4'-DDT
Aqueous/Solid	EPA 8081B	GC-ECD	Oxychlordane
Aqueous/Solid	EPA 8081B	GC-ECD	cis-Nonachlor
Aqueous/Solid	EPA 8081B	GC-ECD	trans-Nonachlor
Aqueous/Solid	EPA 8081B	GC-ECD	4,4'-DDD
Aqueous/Solid	EPA 8081B	GC-ECD	4,4'-DDE
Aqueous/Solid	EPA 8081B	GC-ECD	4,4'-DDT
Aqueous/Solid	EPA 8081B	GC-ECD	Aldrin
Aqueous/Solid	EPA 8081B	GC-ECD	alpha-Chlordane
Aqueous/Solid	EPA 8081B	GC-ECD	alpha-BHC
Aqueous/Solid	EPA 8081B	GC-ECD	beta-BHC
Aqueous/Solid	EPA 8081B	GC-ECD	Chlordane
Aqueous/Solid	EPA 8081B	GC-ECD	delta-BHC
Aqueous/Solid	EPA 8081B	GC-ECD	Dieldrin
Aqueous/Solid	EPA 8081B	GC-ECD	Endosulfan I
Aqueous/Solid	EPA 8081B	GC-ECD	Endosulfan II
Aqueous/Solid	EPA 8081B	GC-ECD	Endosulfan sulfate
Aqueous/Solid	EPA 8081B	GC-ECD	Endrin
Aqueous/Solid	EPA 8081B	GC-ECD	Endrin aldehyde
Aqueous/Solid	EPA 8081B	GC-ECD	Endrin ketone
Aqueous/Solid	EPA 8081B	GC-ECD	gamma-BHC (Lindane)
Aqueous/Solid	EPA 8081B	GC-ECD	gamma-Chlordane
Aqueous/Solid	EPA 8081B	GC-ECD	Heptachlor
Aqueous/Solid	EPA 8081B	GC-ECD	Heptachlor epoxide
Aqueous/Solid	EPA 8081B	GC-ECD	Methoxychlor
Aqueous/Solid	EPA 8081B	GC-ECD	Toxaphene

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Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1262
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1268
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1016
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1221
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1232
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1242
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1248
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1254
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor 1260
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,1,1,2-Tetrachloroethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,1,1-Trichloroethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,1,2,2-Tetrachloroethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,1,2-Trichlorethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,1-Dichloroethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,1-Dichloroethylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,1-Dichloropropene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2- Dichloroethene (total)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2,3-Trichlorobenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2,3-Trichloropropane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2,4-Trichlorobenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2,4-Trimethylbenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2-Dibromo-3-chloropropane (DBCP)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2-Dibromoethane (EDB)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2-Dichlorobenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2-Dichloroethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,2-Dichloropropane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,3,5-Trimethylbenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,3-Dichlorobenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,3-Dichloropropane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,4-Dichlorobenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1,4-Dioxane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	1-Propanol
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	2,2-Dichloropropane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	2-Butanone (MEK)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	2-Chloroethyl vinyl ether

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ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	2-Chlorotoluene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	2-Hexanone
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	4-Chlorotoluene (p-Chlorotoluene)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	4-Isopropyltoluene (p-Isopropyltoluene)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Acetone
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Acetonitrile
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Acrolein (Propenal)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Acrylonitrile
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Benzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Bromobenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Bromochloromethane (from Bromochloroethane)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Bromodichloromethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Bromoform
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Bromomethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Carbon disulfide
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Carbon tetrachloride
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Chlorobenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Chloroethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Chloroform
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Chloromethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	cis-1,2-Dichloroethylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	cis-1,3-Dichloropropylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Cyclohexane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Dibromochloromethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Dibromomethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Dichlorodifluoromethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Ethylbenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Isobutanol (2-Methyl-1-propanol, Isobutyl OH)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Isopropanol (2-Propanol, Isopropyl OH)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Isopropylbenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	m,p-Xylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Methyl tert-butyl ether (MTBE)
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Methylene chloride
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	MIBK

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Naphthalene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	n-Butylbenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	n-Propylbenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	o-Xylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	sec-Butylbenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Styrene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	tert-Butylbenzene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Tetrachloroethylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Tetrahydrofuran
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Toluene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	trans-1,2-Dichloroethylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	trans-1,3-Dichloropropylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Trichlorethylene
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Trichlorofluoromethane
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Vinyl acetate
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Vinyl chloride
Aqueous/Solid	EPA 8260B/ EPA 8260D	GC-MS	Xylenes, total
Aqueous/Solid	EPA 8260D	GC-MS	Methyl methacrylate
Aqueous/Solid	EPA 8260D	GC-MS	Ethyl methacrylate
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	1,2,4-Trichlorobenzene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	1,2-Dichlorobenzene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	1,3-Dichlorobenzene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	1,4-Dichlorobenzene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	1-Methylnaphthalene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2,4,5-Trichlorophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2,4,6-Trichlorophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2,4-Dichlorophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2,4-Dimethylphenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2,4-Dinitrophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2,4-Dinitrotoluene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2,6-Dichlorophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2,6-Dinitrotoluene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2-Chloronaphthalene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2-Chlorophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2-Methyl-4,6-dinitrophenol

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2-Methylnaphthalene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2-Methylphenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2-Nitroaniline
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	2-Nitrophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	3 & 4-Methylphenol (or 4-methylphenol)
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	3,3'-Dichlorobenzidine
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	3-Nitroaniline
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	4-Bromophenyl-phenylether
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	4-Chloro-3-methylphenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	4-Chloroaniline
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	4-Chlorophenyl-phenylether
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	4-Nitroaniline
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	4-Nitrophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Acenaphthene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Acenaphthylene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Alachlor
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Aniline
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Anthracene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Azobenzene as 1,2-Diphenylhydrazine
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Benzidine
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Benzo(a)anthracene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Benzo(a)pyrene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Benzo(b)fluoranthene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Benzo(g,h,I)perylene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Benzo(k)fluoranthene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Benzoic acid
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Benzyl alcohol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	bis(2-Chloroethoxy)methane
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	bis(2-Chloroethyl)ether
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	bis(2-Chloroisopropyl)ether
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	bis(2-ethylhexyl)phthalate
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Butylbenzylphthalate
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Carbazole
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Chrysene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Cresols (total)

Certificate of Accreditation: Supplement

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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Dibenz(a,h)anthracene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Dibenzofuran
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Diethylphthalate
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Dimethylphthalate
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Di-n-butylphthalate
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Di-n-octylphthalate
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Fluorene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Fluoroanthene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Hexachlorobenzene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Hexachlorobutadiene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Hexachlorocyclopentadiene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Hexachloroethane
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Indeno(1,2,3-cd)pyrene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Isophorone
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Naphthalene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Nitrobenzene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	N-Nitro-di-n-propylamine
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	N-Nitrosodimethylamine
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	N-Nitrosodiphenylamine
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	N-nitrosopyrrolidine
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Pentachlorophenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Phenanthrene
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Phenol
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Phorate
Aqueous/Solid	EPA 8270D/ EPA 8270E	GC-MS	Pyrene
Aqueous/Solid	EPA 8270D/EPA 8270E	GC-MS	Pyridine
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	1-Methylnaphthalene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	2-Methylnaphthalene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Acenaphthene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Acenaphthylene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Anthracene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Benzo(a)anthracene

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Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Benzo(a)pyrene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Benzo(b)fluoranthene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Benzo(g,h,I)perylene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Benzo(k)fluoranthene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Bis(2-ethylhexyl)phthalate
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Chrysene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Dibenz(a,h)anthracene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Fluoranthene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Fluorene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Indeno(1,2,3-cd)pyrene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Naphthalene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Phenathrene
Aqueous/Solid	EPA 8270D SIM/EPA 8270E SIM	GC-MS	Pyrene
Aqueous/Solid	EPA 8318A	HPLC	3-Hydroxycarbofuran
Aqueous/Solid	EPA 8318A	HPLC	Aldicarb (Temik)
Aqueous/Solid	EPA 8318A	HPLC	Aldicarb sulfone
Aqueous/Solid	EPA 8318A	HPLC	Aldicarb sulfoxide
Aqueous/Solid	EPA 8318A	HPLC	Baygon (Propxur)
Aqueous/Solid	EPA 8318A	HPLC	Carbaryl (Sevin)
Aqueous/Solid	EPA 8318A	HPLC	Carbofuran (Furaden)
Aqueous/Solid	EPA 8318A	HPLC	Methiocarb (Mesurol)
Aqueous/Solid	EPA 8318A	HPLC	Methomyl (Lannate)
Aqueous/Solid	EPA 8318A	HPLC	Oxamyl
Aqueous/Solid	EPA 8321B	HPLC	2,4,5-T
Aqueous/Solid	EPA 8321B	HPLC	2,4,5-TP (Silvex)
Aqueous/Solid	EPA 8321B	HPLC	2,4-D
Aqueous/Solid	EPA 8321B	HPLC	2,4-DB
Aqueous/Solid	EPA 8321B	HPLC	Dalapon

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Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8321B	HPLC	Dicamba
Aqueous/Solid	EPA 8321B	HPLC	Dichloroprop
Aqueous/Solid	EPA 8321B	HPLC	Dinoseb
Aqueous/Solid	EPA 8321B	HPLC	MCPA
Aqueous/Solid	EPA 8321B	HPLC	MCPP
Aqueous/Solid	EPA 8330B	HPLC	Nitroguianidine~~DNX, MNX, TNX.~~
Aqueous/Solid	EPA 8330B	HPLC	DNX
Aqueous/Solid	EPA 8330B	HPLC	MNX
Aqueous/Solid	EPA 8330B	HPLC	TNX
Aqueous/Solid	EPA 8330B	HPLC	1,3,5-Trinitrobenzene
Aqueous/Solid	EPA 8330B	HPLC	1,3-Dinitrobenzene
Aqueous/Solid	EPA 8330B	HPLC	2,4,6-Trinitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	2,4-Dinitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	2,6-Dinitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	2-amino-4,6-dinitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	2-Nitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	3,5-Dinitroaniline
Aqueous/Solid	EPA 8330B	HPLC	3-Nitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	4-amino-2,6-dinitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	4-Nitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	HMX
Aqueous/Solid	EPA 8330B	HPLC	Nitrobenzene
Aqueous/Solid	EPA 8330B	HPLC	Nitroglycerin
Aqueous/Solid	EPA 8330B	HPLC	PETN
Aqueous/Solid	EPA 8330B	HPLC	RDX
Aqueous/Solid	EPA 8330B	HPLC	Tertyl
Aqueous/Solid	EPA 9030/EPA 9034	Titrimetric	Sulfide
Aqueous/Solid	EPA 9095	Physical Property	Paint Filter Test
Aqueous/Solid	SM 3500-CrD/EPA 7196A	Colorimetric	Hexavalent Chromium
Aqueous/Solid	SM 4500-CN C /SW9014	Colorimetric	Cyanide, total
Aqueous/Solid	SM 4500H+B/EPA 9045C	ISE	pH
Aqueous/Solid	WI DRO	GC-FID	WI DRO
Aqueous/Solid	WI GRO	GC-FID	WI GRO

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

Environmental Monitoring & Technologies, Inc.
509 N. 3rd Avenue, Des Plaines, IL 60016
Contact Name: Sabina Stankevicius Phone: 847-324-3334

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 3015A	Preparation	Metals Digestion
Aqueous	EPA 3510C	Preparation	Separatory Funnel Extraction
Aqueous	EPA 3535A	Preparation	Solid-Phase Extraction (SPE)
Solid	EPA 1010	Pensky-Martin	Ignitability
Solid	EPA 3050B	Preparation	Metals Digestion
Solid	EPA 3051	Preparation	Microwave Digestion for Metals
Solid	EPA 3540C	Preparation	Soxhlet Extraction
Solid	EPA 3550C	Preparation	Sonication Extraction
Solid	EPA 5035A	Preparation	Purge and Trap-Volatiles
Solid	EPA 9071B	Gravimetric	Grease & Oil (Gravimetric)
Aqueous/Solid	EPA 1311	Preparation	TCLP
Aqueous/Solid	EPA 1312	Preparation	SPLP
Aqueous/Solid	EPA 3546	Preparation	Microwave Digestion
Aqueous/Solid	EPA 3620C	Clean Up	Florisil Clean Up
Aqueous/Solid	EPA 3660B	Clean Up	Sulfur Clean Up
Aqueous/Solid	EPA 3665A	Clean Up	Sulfuric Acid Clean Up
Aqueous/Solid	EPA 5030B	Preparation	Purge and Trap-Volatiles
Aqueous/Solid	EPA 5050	Preparation	Oxygen Bomb

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Eurofins TestAmerica Sacramento

880 Riverside Parkway
West Sacramento, CA 95605

Fulfills the requirements of

ISO/IEC 17025:2017

and

U.S. Department of Defense (DoD) Quality Systems Manual for Environmental Laboratories (DoD QSM V5.3)

In the field of

TESTING

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 20 January 2024
Certificate Number: L2468

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017 AND U.S. DEPARTMENT OF DEFENSE (DOD) QUALITY SYSTEMS MANUAL FOR ENVIRONMENTAL LABORATORIES (DOD QSM V5.3)

Eurofins TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Ms. Lisa Stafford
916-373-5600

TESTING

Valid to: **January 20, 2024** Certificate Number: **L2468**

Environmental

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP-AES	EPA 6010B/6010C	Aluminum
ICP-AES	EPA 6010B/6010C	Antimony
ICP-AES	EPA 6010B/6010C	Arsenic
ICP-AES	EPA 6010B/6010C	Barium
ICP-AES	EPA 6010B/6010C	Beryllium
ICP-AES	EPA 6010B/6010C	Boron
ICP-AES	EPA 6010B/6010C	Cadmium
ICP-AES	EPA 6010B/6010C	Calcium
ICP-AES	EPA 6010B/6010C	Chromium (Total)
ICP-AES	EPA 6010B/6010C	Cobalt
ICP-AES	EPA 6010B/6010C	Copper
ICP-AES	EPA 6010B/6010C	Iron
ICP-AES	EPA 6010B/6010C	Lead
ICP-AES	EPA 6010B/6010C	Magnesium
ICP-AES	EPA 6010B/6010C	Manganese
ICP-AES	EPA 6010B/6010C	Molybdenum
ICP-AES	EPA 6010B/6010C	Nickel
ICP-AES	EPA 6010B/6010C	Potassium
ICP-AES	EPA 6010B/6010C	Selenium

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP-AES	EPA 6010B/6010C	Silica
ICP-AES	EPA 6010B/6010C	Silicon
ICP-AES	EPA 6010B/6010C	Silver
ICP-AES	EPA 6010B/6010C	Sodium
ICP-AES	EPA 6010B/6010C	Thallium
ICP-AES	EPA 6010B/6010C	Tin
ICP-AES	EPA 6010B/6010C	Titanium
ICP-AES	EPA 6010B/6010C	Vanadium
ICP-AES	EPA 6010B/6010C	Zinc
ICP-MS	EPA 6020/6020A	Aluminum
ICP-MS	EPA 6020/6020A	Antimony
ICP-MS	EPA 6020/6020A	Arsenic
ICP-MS	EPA 6020/6020A	Barium
ICP-MS	EPA 6020/6020A	Beryllium
ICP-MS	EPA 6020/6020A	Cadmium
ICP-MS	EPA 6020/6020A	Calcium
ICP-MS	EPA 6020/6020A	Chromium (Total)
ICP-MS	EPA 6020/6020A	Cobalt
ICP-MS	EPA 6020/6020A	Copper
ICP-MS	EPA 6020/6020A	Iron
ICP-MS	EPA 6020/6020A	Lead
ICP-MS	EPA 6020/6020A	Magnesium
ICP-MS	EPA 6020/6020A	Manganese
ICP-MS	EPA 6020/6020A	Molybdenum
ICP-MS	EPA 6020/6020A	Nickel
ICP-MS	EPA 6020/6020A	Phosphorus
ICP-MS	EPA 6020/6020A	Potassium
ICP-MS	EPA 6020/6020A	Selenium
ICP-MS	EPA 6020/6020A	Silver
ICP-MS	EPA 6020/6020A	Sodium
ICP-MS	EPA 6020/6020A	Strontium
ICP-MS	EPA 6020/6020A	Thallium
ICP-MS	EPA 6020/6020A	Tin
ICP-MS	EPA 6020/6020A	Titanium
ICP-MS	EPA 6020/6020A	Uranium

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP-MS	EPA 6020/6020A	Vanadium
ICP-MS	EPA 6020/6020A	Zinc
CVAAS	EPA 7470A	Mercury
Colorimetric	EPA 353.2	Nitrate
Colorimetric	EPA 353.2	Nitrate-nitrite
Colorimetric	EPA 353.2	Nitrite
Colorimetric	EPA 410.4	Chemical Oxygen Demand (COD)
LC/MS/MS	EPA 6850	Perchlorate
Colorimetric	EPA 7196A	Chromium (Hexavalent)
Probe	EPA 9040B/9040C	pH
Ion Chromatography	EPA 9056A/300.0	Bromide
Ion Chromatography	EPA 9056A/300.0	Chloride
Ion Chromatography	EPA 9056A/300.0	Fluoride
Ion Chromatography	EPA 9056A/300.0	Nitrate
Ion Chromatography	EPA 9056A/300.0	Nitrite
Ion Chromatography	EPA 9056A/300.0	Orthophosphate
Ion Chromatography	EPA 9056A/300.0	Sulfate
Titration	SM 2320B	Alkalinity
Gravimetric	SM 2540B	Solids, Total
Gravimetric	SM 2540C	Solids, Total Dissolved
Gravimetric	SM 2540D	Solids, Total Suspended
Colorimetric/Hydrolysis	EPA 353.2 Modified WS-WC-0050	Nitrocellulose
GC/MS	EPA 8260B/8260C	1,1,1,2-Tetrachloroethane
GC/MS	EPA 8260B/8260C	1,1,1-Trichloroethane
GC/MS	EPA 8260B/8260C	1,1,2,2-Tetrachloroethane
GC/MS	EPA 8260B/8260C	1,1,2-Trichloroethane
GC/MS	EPA 8260B/8260C	1,1,2-Trichloro-1,2,2-trifluoroethane
GC/MS	EPA 8260B/8260C	1,1-Dichloroethane
GC/MS	EPA 8260B/8260C	1,1-Dichloroethene
GC/MS	EPA 8260B/8260C	1,1-Dichloropropene
GC/MS	EPA 8260B/8260C	1,2,3-Trichlorobenzene
GC/MS	EPA 8260B/8260C	1,2,3-Trichloropropane
GC/MS	EPA 8260B/8260C	1,2,4-Trichlorobenzene
GC/MS	EPA 8260B/8260C	1,2,4-Trimethylbenzene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260C	1,2-Dibromo-3-chloropropane
GC/MS	EPA 8260B/8260C	1,2-Dibromoethane
GC/MS	EPA 8260B/8260C	1,2-Dichlorobenzene
GC/MS	EPA 8260B/8260C	1,2-Dichloroethane
GC/MS	EPA 8260B/8260C	1,2-Dichloropropane
GC/MS	EPA 8260B/8260C	1,3,5-Trimethylbenzene
GC/MS	EPA 8260B/8260C	1,3-Dichlorobenzene
GC/MS	EPA 8260B/8260C	1,3-Dichloropropane
GC/MS	EPA 8260B/8260C	1,4-Dichlorobenzene
GC/MS	EPA 8260B/8260C	1-Chlorohexane
GC/MS	EPA 8260B/8260C	2,2-Dichloropropane
GC/MS	EPA 8260B/8260C	2-Butanone (MEK)
GC/MS	EPA 8260B/8260C	2-Chlorotoluene
GC/MS	EPA 8260B/8260C	2-Hexanone (MBK)
GC/MS	EPA 8260B/8260C	2-Methyl-2-propanol (tert- Butyl Alcohol, TBA)
GC/MS	EPA 8260B/8260C	4-Chlorotoluene
GC/MS	EPA 8260B/8260C	4-Isopropyltoluene
GC/MS	EPA 8260B/8260C	4-Methyl-2-pentanone (MIBK)
GC/MS	EPA 8260B/8260C	Acetone
GC/MS	EPA 8260B/8260C	Allyl Chloride
GC/MS	EPA 8260B/8260C	Benzene
GC/MS	EPA 8260B/8260C	Bromobenzene
GC/MS	EPA 8260B/8260C	Bromochloromethane
GC/MS	EPA 8260B/8260C	Bromodichloromethane
GC/MS	EPA 8260B/8260C	Bromoform
GC/MS	EPA 8260B/8260C	Bromomethane
GC/MS	EPA 8260B/8260C	Carbon Disulfide
GC/MS	EPA 8260B/8260C	Carbon Tetrachloride
GC/MS	EPA 8260B/8260C	Chlorobenzene
GC/MS	EPA 8260B/8260C	Chloroethane
GC/MS	EPA 8260B/8260C	Chloroform
GC/MS	EPA 8260B/8260C	Chloromethane
GC/MS	EPA 8260B/8260C	cis-1,2-Dichloroethene
GC/MS	EPA 8260B/8260C	cis-1,3-Dichloropropene
GC/MS	EPA 8260B/8260C	Cyclohexane

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260C	Dibromochloromethane
GC/MS	EPA 8260B/8260C	Dibromomethane
GC/MS	EPA 8260B/8260C	Dichlorodifluoromethane
GC/MS	EPA 8260B/8260C	Diisopropyl Ether (DIPE)
GC/MS	EPA 8260B/8260C	Ethylbenzene
GC/MS	EPA 8260B/8260C	Ethylmethacrylate
GC/MS	EPA 8260B/8260C	Ethyl tert-butyl Ether (ETBE)
GC/MS	EPA 8260B/8260C	Hexachlorobutadiene
GC/MS	EPA 8260B/8260C	Hexane
GC/MS	EPA 8260B/8260C	Iodomethane
GC/MS	EPA 8260B/8260C	Isobutanol (2-Methyl-1-propanol)
GC/MS	EPA 8260B/8260C	Isopropylbenzene
GC/MS	EPA 8260B/8260C	m & p Xylene
GC/MS	EPA 8260B/8260C	Methyl tert-butyl Ether (MTBE)
GC/MS	EPA 8260B/8260C	Methylene Chloride
GC/MS	EPA 8260B/8260C	Naphthalene
GC/MS	EPA 8260B/8260C	n-Butylbenzene
GC/MS	EPA 8260B/8260C	n-Propylbenzene
GC/MS	EPA 8260B/8260C	o-Xylene
GC/MS	EPA 8260B/8260C	sec-Butylbenzene
GC/MS	EPA 8260B/8260C	Styrene
GC/MS	EPA 8260B/8260C	t-Amyl methyl Ether (TAME)
GC/MS	EPA 8260B/8260C	t-1,4-Dichloro-2-Butene
GC/MS	EPA 8260B/8260C	tert-Butylbenzene
GC/MS	EPA 8260B/8260C	Tetrachloroethene
GC/MS	EPA 8260B/8260C	Toluene
GC/MS	EPA 8260B/8260C	trans-1,2-Dichloroethene
GC/MS	EPA 8260B/8260C	trans-1,3-Dichloropropene
GC/MS	EPA 8260B/8260C	Trichloroethene
GC/MS	EPA 8260B/8260C	Trichlorofluoromethane
GC/MS	EPA 8260B/8260C	Vinyl Acetate
GC/MS	EPA 8260B/8260C	Vinyl Chloride
GC/MS	EPA 8260B/8260C	Xylenes, Total
GC/MS	EPA 8260B/AK101MS	Gasoline (GRO)
GC/MS	EPA 8270C/8270D	1,2,4,5-Tetrachlorobenzene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270D	1,2,4-Trichlorobenzene
GC/MS	EPA 8270C/8270D	1,2-Dichlorobenzene
GC/MS	EPA 8270C/8270D	1,2-Diphenylhydrazine (as Azobenzene)
GC/MS	EPA 8270C/8270D	1,3-Dichlorobenzene
GC/MS	EPA 8270C/8270D	1,3-Dinitrobenzene
GC/MS	EPA 8270C/8270D	1,4-Dichlorobenzene
GC/MS	EPA 8270C/8270D	1-Methylnaphthalene
GC/MS	EPA 8270C/8270D	2,3,4,6-Tetrachlorophenol
GC/MS	EPA 8270C/8270D	2,4,5-Trichlorophenol
GC/MS	EPA 8270C/8270D	2,4,6-Trichlorophenol
GC/MS	EPA 8270C/8270D	2,4-Dichlorophenol
GC/MS	EPA 8270C/8270D	2,4-Dimethylphenol
GC/MS	EPA 8270C/8270D	2,4-Dinitrophenol
GC/MS	EPA 8270C/8270D	2,4-Dinitrotoluene
GC/MS	EPA 8270C/8270D	2,6-Dichlorophenol
GC/MS	EPA 8270C/8270D	2,6-Dinitrotoluene
GC/MS	EPA 8270C/8270D	2-Chloronaphthalene
GC/MS	EPA 8270C/8270D	2-Chlorophenol
GC/MS	EPA 8270C/8270D	2-Methylnaphthalene
GC/MS	EPA 8270C/8270D	2-Methylphenol
GC/MS	EPA 8270C/8270D	2-Nitroaniline
GC/MS	EPA 8270C/8270D	2-Nitrophenol
GC/MS	EPA 8270C/8270D	3&4-Methylphenol
GC/MS	EPA 8270C/8270D	3,3'-Dichlorobenzidine
GC/MS	EPA 8270C/8270D	3-Nitroaniline
GC/MS	EPA 8270C/8270D	4,6-Dinitro-2-methylphenol
GC/MS	EPA 8270C/8270D	4-Bromophenyl phenyl ether
GC/MS	EPA 8270C/8270D	4-Chloro-3-methylphenol
GC/MS	EPA 8270C/8270D	4-Chloroaniline
GC/MS	EPA 8270C/8270D	4-Chlorophenyl phenyl ether
GC/MS	EPA 8270C/8270D	4-Nitroaniline
GC/MS	EPA 8270C/8270D	4-Nitrophenol
GC/MS	EPA 8270C/8270D	Acenaphthene
GC/MS	EPA 8270C/8270D	Acenaphthylene
GC/MS	EPA 8270C/8270D	Aniline

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270D	Anthracene
GC/MS	EPA 8270C/8270D	Benzo(a)anthracene
GC/MS	EPA 8270C/8270D	Benzo(a)pyrene
GC/MS	EPA 8270C/8270D	Benzo(b)fluoranthene
GC/MS	EPA 8270C/8270D	Benzo(g,h,i)perylene
GC/MS	EPA 8270C/8270D	Benzo(k)fluoranthene
GC/MS	EPA 8270C/8270D	Benzoic Acid
GC/MS	EPA 8270C/8270D	Benzyl Alcohol
GC/MS	EPA 8270C/8270D	Benzyl butyl Phthalate
GC/MS	EPA 8270C/8270D	Biphenyl
GC/MS	EPA 8270C/8270D	Bis(2-chloroethoxy) Methane
GC/MS	EPA 8270C/8270D	Bis(2-chloroethyl) Ether
GC/MS	EPA 8270C/8270D	Bis(2-chloroisopropyl) Ether
GC/MS	EPA 8270C/8270D	Carbazole
GC/MS	EPA 8270C/8270D	Chrysene
GC/MS	EPA 8270C/8270D	Bis (2-ethylhexyl) Phthalate
GC/MS	EPA 8270C/8270D	Dibenz(a,h)anthracene
GC/MS	EPA 8270C/8270D	Dibenzofuran
GC/MS	EPA 8270C/8270D	Diethyl Phthalate
GC/MS	EPA 8270C/8270D	Dimethyl Phthalate
GC/MS	EPA 8270C/8270D	Di-n-butyl Phthalate
GC/MS	EPA 8270C/8270D	Di-n-octyl Phthalate
GC/MS	EPA 8270C/8270D	Fluoranthene
GC/MS	EPA 8270C/8270D	Fluorene
GC/MS	EPA 8270C/8270D	Hexachlorobenzene
GC/MS	EPA 8270C/8270D	Hexachlorobutadiene
GC/MS	EPA 8270C/8270D	Hexachlorocyclopentadiene
GC/MS	EPA 8270C/8270D	Hexachloroethane
GC/MS	EPA 8270C/8270D	Indeno(1,2,3-c,d) Pyrene
GC/MS	EPA 8270C/8270D	Isophorone
GC/MS	EPA 8270C/8270D	Naphthalene
GC/MS	EPA 8270C/8270D	Nitrobenzene
GC/MS	EPA 8270C/8270D	n-Nitrosodimethylamine
GC/MS	EPA 8270C/8270D	n-Nitrosodi-n-propylamine
GC/MS	EPA 8270C/8270D	n-Nitrosodiphenylamine

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270D	Pentachlorophenol
GC/MS	EPA 8270C/8270D	Phenanthrene
GC/MS	EPA 8270C/8270D	Phenol
GC/MS	EPA 8270C/8270D	Pyrene
GC/MS	EPA 8270C/8270D	Pyridine
GC/MS SIM	EPA 8260C-SIM	1,1,2-Trichloroethane
GC/MS SIM	EPA 8260C-SIM	1,1,2,2-Tetrachloroethane
GC/MS SIM	EPA 8260C-SIM	1,2,3-Trichloropropane
GC/MS SIM	EPA 8260C-SIM	1,2-Dibromoethane
GC/MS SIM	EPA 8260C-SIM	1,2-Dichloroethane
GC/MS SIM	EPA 8260C-SIM	1,3-Butadiene
GC/MS SIM	EPA 8260C-SIM	1,4-Dichlorobenzene
GC/MS SIM	EPA 8260C-SIM	Benzene
GC/MS SIM	EPA 8260C-SIM	Bromodichloromethane
GC/MS SIM	EPA 8260C-SIM	Bromoform
GC/MS SIM	EPA 8260C-SIM	Bromomethane
GC/MS SIM	EPA 8260C-SIM	Chloroform
GC/MS SIM	EPA 8260C-SIM	Dibromochloromethane
GC/MS SIM	EPA 8260C-SIM	Hexachlorobutadiene
GC/MS SIM	EPA 8260C-SIM	Naphthalene
GC/MS SIM	EPA 8260C-SIM	Tetrachloroethene
GC/MS SIM	EPA 8260C-SIM	Trichloroethene
GC/MS SIM	EPA 8260C-SIM	Vinyl Chloride
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	1-Methylnaphthalene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	2-Methylnaphthalene
GC/MS SIM	EPA 8270D-SIM	3,3'-Dichlorobenzidine
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Acenaphthene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Acenaphthylene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Anthracene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(a)anthracene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(a)pyrene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(b)fluoranthene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(g,h,i)perylene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(k)fluoranthene
GC/MS SIM	EPA 8270D-SIM	Bis(2-chloroethyl) Ether
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Chrysene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Dibenz(a,h)anthracene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Fluoranthene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Fluorene
GC/MS SIM	EPA 8270D-SIM	Hexachlorobenzene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Indeno(1,2,3-c,d) Pyrene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Naphthalene
GC/MS SIM	EPA 8270D-SIM	n-Nitrosodimethylamine
GC/MS SIM	EPA 8270D-SIM	n-Nitrosodi-n-propylamine
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Phenanthrene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Pyrene
GC/MS SIM	EPA 8270C-SIM Modified WS-MS-0011	1,4-Dioxane
GC-IT/MS	EPA 521 Modified WS-MS-0012	N-Nitrosodimethyl amine (NDMA)
GC-FID	EPA 8015B/8015C/8015D AK102	Diesel Range Organics (DRO)
GC-FID	AK103	Residual Range Organics
GC-FID	EPA 8015B/8015C/8015D	Motor Oil Range Organics (MRO)
GC-ECD	EPA 8081A/8081B	Aldrin
GC-ECD	EPA 8081A/8081B	a-BHC
GC-ECD	EPA 8081A/8081B	b-BHC

Non-Potable Water		
Technology	**Method**	**Analyte**
GC-ECD	EPA 8081A/8081B	d-BHC
GC-ECD	EPA 8081A/8081B	g-BHC (Lindane)
GC-ECD	EPA 8081A/8081B	a-Chlordane
GC-ECD	EPA 8081A/8081B	g-Chlordane
GC-ECD	EPA 8081A/8081B	4,4'-DDD
GC-ECD	EPA 8081A/8081B	4,4'-DDE
GC-ECD	EPA 8081A/8081B	4,4'-DDT
GC-ECD	EPA 8081A/8081B	Dieldrin
GC-ECD	EPA 8081A/8081B	Endosulfan I
GC-ECD	EPA 8081A/8081B	Endosulfan II
GC-ECD	EPA 8081A/8081B	Endosulfan sulfate
GC-ECD	EPA 8081A/8081B	Endrin
GC-ECD	EPA 8081A/8081B	Endrin Aldehyde
GC-ECD	EPA 8081A/8081B	Endrin Ketone
GC-ECD	EPA 8081A/8081B	Heptachlor
GC-ECD	EPA 8081A/8081B	Heptachlor Epoxide
GC-ECD	EPA 8081A/8081B	Methoxychlor
GC-ECD	EPA 8081A/8081B	Toxaphene
GC-ECD	EPA 8081A/8081B	Chlordane (technical)
GC-ECD	EPA 8082/8082A	PCB-1016
GC-ECD	EPA 8082/8082A	PCB-1221
GC-ECD	EPA 8082/8082A	PCB-1232
GC-ECD	EPA 8082/8082A	PCB-1242
GC-ECD	EPA 8082/8082A	PCB-1248
GC-ECD	EPA 8082/8082A	PCB-1254
GC-ECD	EPA 8082/8082A	PCB-1260
GC-ECD	EPA 8082/8082A	PCB-1262
GC-ECD	EPA 8082/8082A	PCB-1268
GC/MS	EPA 8280A/8280B	2,3,7,8-TeCDD
GC/MS	EPA 8280A/8280B	1,2,3,7,8-PeCDD
GC/MS	EPA 8280A/8280B	1,2,3,4,7,8-HxCDD
GC/MS	EPA 8280A/8280B	1,2,3,6,7,8-HxCDD
GC/MS	EPA 8280A/8280B	1,2,3,7,8,9-HxCDD
GC/MS	EPA 8280A/8280B	1,2,3,4,6,7,8-HpCDD
GC/MS	EPA 8280A/8280B	OCDD

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8280A/8280B	2,3,7,8-TeCDF
GC/MS	EPA 8280A/8280B	1,2,3,7,8-PeCDF
GC/MS	EPA 8280A/8280B	2,3,4,7,8-PeCDF
GC/MS	EPA 8280A/8280B	1,2,3,4,7,8-HxCDF
GC/MS	EPA 8280A/8280B	1,2,3,6,7,8-HxCDF
GC/MS	EPA 8280A/8280B	1,2,3,7,8,9-HxCDF
GC/MS	EPA 8280A/8280B	2,3,4,6,7,8-HxCDF
GC/MS	EPA 8280A/8280B	1,2,3,4,6,7,8-HpCDF
GC/MS	EPA 8280A/8280B	1,2,3,4,7,8,9-HpCDF
GC/MS	EPA 8280A/8280B	OCDF
GC/MS	EPA 8280A/8280B	Total TCDD
GC/MS	EPA 8280A/8280B	Total PeCDD
GC/MS	EPA 8280A/8280B	Total HxCDD
GC/MS	EPA 8280A/8280B	Total HeptaCDD
GC/MS	EPA 8280A/8280B	Total TCDF
GC/MS	EPA 8280A/8280B	Total PeCDF
GC/MS	EPA 8280A/8280B	Total HxCDF
GC/MS	EPA 8280A/8280B	Total HpCDF
GC/HRMS	EPA 8290/8290A/1613B	2,3,7,8-TeCDD
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,7,8-PeCDD
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,4,7,8-HxCDD
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,6,7,8-HxCDD
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,7,8,9-HxCDD
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,4,6,7,8-HpCDD
GC/HRMS	EPA 8290/8290A/1613B	OCDD
GC/HRMS	EPA 8290/8290A/1613B	2,3,7,8-TeCDF
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,7,8-PeCDF
GC/HRMS	EPA 8290/8290A/1613B	2,3,4,7,8-PeCDF
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,4,7,8-HxCDF
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,6,7,8-HxCDF
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,7,8,9-HxCDF
GC/HRMS	EPA 8290/8290A/1613B	2,3,4,6,7,8-HxCDF
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,4,6,7,8-HpCDF
GC/HRMS	EPA 8290/8290A/1613B	1,2,3,4,7,8,9-HpCDF
GC/HRMS	EPA 8290/8290A/1613B	OCDF

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 8290/8290A/1613B	Total TCDD
GC/HRMS	EPA 8290/8290A/1613B	Total PeCDD
GC/HRMS	EPA 8290/8290A/1613B	Total HxCDD
GC/HRMS	EPA 8290/8290A/1613B	Total HpCDD
GC/HRMS	EPA 8290/8290A/1613B	Total TCDF
GC/HRMS	EPA 8290/8290A/1613B	Total PeCDF
GC/HRMS	EPA 8290/8290A/1613B	Total HxCDF
GC/HRMS	EPA 8290/8290A/1613B	Total HpCDF
HPLC/UV	EPA 8330A Modified WS-LC-0010	Nitroguanidine
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	6:2 Fluorotelomer sulfonic acid (1H,1H,2H,2H-perfluorooctane sulfonic acid) (6:2 FTS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	8:2 Fluorotelomer sulfonic acid (1H,1H,2H,2H-perfluorodecane sulfonic acid) (8:2 FTS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Ethyl perfluorooctanesulfon amidacetic acid (EtFOSAA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Methyl perfluorooctanesulfon amidoacetic acid (MeFOSAA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorooctanoic acid (PFOA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorooctane Sulfonic Acid (PFOS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorobutyric acid (PFBA)

Non-Potable Water		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoropentanoic acid (PFPA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorohexanoic acid (PFHxA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoroheptanoic acid (PFHpA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorononanoic acid (PFNA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorodecanoic acid (PFDA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoroundecanoic acid (PFUDA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorododecanoic acid (PFDoDA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorotridecanoic acid (PFTriA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorotetradecanoic acid (PDTeA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorobutane Sulfonic Acid (PFBS)

Non-Potable Water		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorohexane Sulfonic Acid (PFHxS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoroheptane Sulfonic Acid (PFHpS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorodecane Sulfonic Acid (PFDS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorooctane Sulfonamide (FOSA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	4:2 Fluorotelomer sulfonic acid (1H, 1H,2H,H-perfluorohexane sulfonic acid) (4:2 FTS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	10:2 Fluorotelomer sulfonic acid (1H, 1H,2H,H-perfluorododecane sulfonic acid) (10:2 FTS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorohexadecanoic acid (PFHxDA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoropentane Sulfonic acid (PFPS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorononane Sulfonic acid (PFNS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	4,8-Dioxa-3H-perfluorononanoic acid (DONA)

Non-Potable Water		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-2-propoxypropionic acid (GenX Parent Acid)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11C1-PF3OUdS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorododecanesulfonic acid (PFDoS
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorooctadecanoic acid (PFODA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-4-ethylcyclohexanesulfonic acid (PFecHS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-1-propanesulfonic acid (PFPrS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Ethylperfluorooctane sulfonamide (EtFOSA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Methylperfluorooctane sulfonamide (MeFOSA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)

Non-Potable Water		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	4,4,5,5,6,6-Heptafluorohexanoic acid (3:3 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2-Perfluorohexylethanoic acid (6:2 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2-Perfluorooctylethanoic acid (8:2 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2-Perfluorodecylethanoic acid (10:2 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoropropionic acid (PPF Acid, PFPrA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3-methoxypropanoic acid (PFMPA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-4-methoxybutanoic acid (PFMBA)

Non-Potable Water		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Difluoro(perfluoromethoxy)acetic acid (PFMOAA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-4-isopropoxybutanoic acid (PFECA G, PFPE-1)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3,5,7,9-butaoxadecanoic acid (PFO4DA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3,5,7-trioxaoctanoic acid (PFO3OA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3,5-dioxahexanoic acid (PFO2HXA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-2-{[perfluoro-3-(perfluoroethoxy)-2-propanyl]oxy}ethanesulfonic acid (Hydro-PS Acid)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid (PFO5DoA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-2-(perfluoromethoxy)propanoic acid (PMPA)

Non-Potable Water		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2,3,3,3-Tetrafluoro-2-(pentafluoroethoxy)propanoic acid (PEPA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	4-(2-carboxy-1,1,2,2-tetrafluoroethoxy)-2,2,3,3,4,5,5,5-octafluoro-pentanoic acid (R-EVE)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	1,1,2,2-Tetrafluoro-2-(1,2,2,2-tetrafluoroethoxy)ethane-1-sulfonic acid (NVHOS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2,2,3,3-Tetrafluoro-3-{[1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy}propanoic acid (Hydro-EVE Acid)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	1,1,2,2-tetrafluoro-2-[1,2,2,3,3-pentafluoro-1-(trifluoromethyl)propoxy]ethanesulfonic acid (R-PSDCA)
GC/HRMS	EPA 1668A/1668C	PCB 1
GC/HRMS	EPA 1668A/1668C	PCB 2
GC/HRMS	EPA 1668A/1668C	PCB 3
GC/HRMS	EPA 1668A/1668C	PCB 4
GC/HRMS	EPA 1668A/1668C	PCB 5
GC/HRMS	EPA 1668A/1668C	PCB 6
GC/HRMS	EPA 1668A/1668C	PCB 7
GC/HRMS	EPA 1668A/1668C	PCB 8
GC/HRMS	EPA 1668A/1668C	PCB 9
GC/HRMS	EPA 1668A/1668C	PCB 10
GC/HRMS	EPA 1668A/1668C	PCB 11
GC/HRMS	EPA 1668A/1668C	PCB 12
GC/HRMS	EPA 1668A/1668C	PCB 13
GC/HRMS	EPA 1668A/1668C	PCB 14
GC/HRMS	EPA 1668A/1668C	PCB 15
GC/HRMS	EPA 1668A/1668C	PCB 16
GC/HRMS	EPA 1668A/1668C	PCB 17
GC/HRMS	EPA 1668A/1668C	PCB 18

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 19
GC/HRMS	EPA 1668A/1668C	PCB 20
GC/HRMS	EPA 1668A/1668C	PCB 21
GC/HRMS	EPA 1668A/1668C	PCB 22
GC/HRMS	EPA 1668A/1668C	PCB 23
GC/HRMS	EPA 1668A/1668C	PCB 24
GC/HRMS	EPA 1668A/1668C	PCB 25
GC/HRMS	EPA 1668A/1668C	PCB 26
GC/HRMS	EPA 1668A/1668C	PCB 27
GC/HRMS	EPA 1668A/1668C	PCB 28
GC/HRMS	EPA 1668A/1668C	PCB 29
GC/HRMS	EPA 1668A/1668C	PCB 30
GC/HRMS	EPA 1668A/1668C	PCB 32
GC/HRMS	EPA 1668A/1668C	PCB 31
GC/HRMS	EPA 1668A/1668C	PCB 33
GC/HRMS	EPA 1668A/1668C	PCB 34
GC/HRMS	EPA 1668A/1668C	PCB 35
GC/HRMS	EPA 1668A/1668C	PCB 36
GC/HRMS	EPA 1668A/1668C	PCB 37
GC/HRMS	EPA 1668A/1668C	PCB 38
GC/HRMS	EPA 1668A/1668C	PCB 39
GC/HRMS	EPA 1668A/1668C	PCB 40
GC/HRMS	EPA 1668A/1668C	PCB 41
GC/HRMS	EPA 1668A/1668C	PCB 42
GC/HRMS	EPA 1668A/1668C	PCB 43
GC/HRMS	EPA 1668A/1668C	PCB 44
GC/HRMS	EPA 1668A/1668C	PCB 45
GC/HRMS	EPA 1668A/1668C	PCB 46
GC/HRMS	EPA 1668A/1668C	PCB 47
GC/HRMS	EPA 1668A/1668C	PCB 48
GC/HRMS	EPA 1668A/1668C	PCB 49
GC/HRMS	EPA 1668A/1668C	PCB 50
GC/HRMS	EPA 1668A/1668C	PCB 51
GC/HRMS	EPA 1668A/1668C	PCB 52
GC/HRMS	EPA 1668A/1668C	PCB 53

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 54
GC/HRMS	EPA 1668A/1668C	PCB 55
GC/HRMS	EPA 1668A/1668C	PCB 56
GC/HRMS	EPA 1668A/1668C	PCB 57
GC/HRMS	EPA 1668A/1668C	PCB 58
GC/HRMS	EPA 1668A/1668C	PCB 59
GC/HRMS	EPA 1668A/1668C	PCB 60
GC/HRMS	EPA 1668A/1668C	PCB 61
GC/HRMS	EPA 1668A/1668C	PCB 62
GC/HRMS	EPA 1668A/1668C	PCB 63
GC/HRMS	EPA 1668A/1668C	PCB 64
GC/HRMS	EPA 1668A/1668C	PCB 65
GC/HRMS	EPA 1668A/1668C	PCB 66
GC/HRMS	EPA 1668A/1668C	PCB 67
GC/HRMS	EPA 1668A/1668C	PCB 68
GC/HRMS	EPA 1668A/1668C	PCB 69
GC/HRMS	EPA 1668A/1668C	PCB 70
GC/HRMS	EPA 1668A/1668C	PCB 71
GC/HRMS	EPA 1668A/1668C	PCB 72
GC/HRMS	EPA 1668A/1668C	PCB 73
GC/HRMS	EPA 1668A/1668C	PCB 74
GC/HRMS	EPA 1668A/1668C	PCB 75
GC/HRMS	EPA 1668A/1668C	PCB 76
GC/HRMS	EPA 1668A/1668C	PCB 77
GC/HRMS	EPA 1668A/1668C	PCB 78
GC/HRMS	EPA 1668A/1668C	PCB 79
GC/HRMS	EPA 1668A/1668C	PCB 80
GC/HRMS	EPA 1668A/1668C	PCB 81
GC/HRMS	EPA 1668A/1668C	PCB 82
GC/HRMS	EPA 1668A/1668C	PCB 83
GC/HRMS	EPA 1668A/1668C	PCB 84
GC/HRMS	EPA 1668A/1668C	PCB 85
GC/HRMS	EPA 1668A/1668C	PCB 86
GC/HRMS	EPA 1668A/1668C	PCB 87
GC/HRMS	EPA 1668A/1668C	PCB 88

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 89
GC/HRMS	EPA 1668A/1668C	PCB 90
GC/HRMS	EPA 1668A/1668C	PCB 91
GC/HRMS	EPA 1668A/1668C	PCB 92
GC/HRMS	EPA 1668A/1668C	PCB 93
GC/HRMS	EPA 1668A/1668C	PCB 94
GC/HRMS	EPA 1668A/1668C	PCB 95
GC/HRMS	EPA 1668A/1668C	PCB 96
GC/HRMS	EPA 1668A/1668C	PCB 97
GC/HRMS	EPA 1668A/1668C	PCB 98
GC/HRMS	EPA 1668A/1668C	PCB 99
GC/HRMS	EPA 1668A/1668C	PCB 100
GC/HRMS	EPA 1668A/1668C	PCB 101
GC/HRMS	EPA 1668A/1668C	PCB 102
GC/HRMS	EPA 1668A/1668C	PCB 103
GC/HRMS	EPA 1668A/1668C	PCB 104
GC/HRMS	EPA 1668A/1668C	PCB 105
GC/HRMS	EPA 1668A/1668C	PCB 106
GC/HRMS	EPA 1668A/1668C	PCB 107
GC/HRMS	EPA 1668A/1668C	PCB 108
GC/HRMS	EPA 1668A/1668C	PCB 109
GC/HRMS	EPA 1668A/1668C	PCB 110
GC/HRMS	EPA 1668A/1668C	PCB 111
GC/HRMS	EPA 1668A/1668C	PCB 112
GC/HRMS	EPA 1668A/1668C	PCB 113
GC/HRMS	EPA 1668A/1668C	PCB 114
GC/HRMS	EPA 1668A/1668C	PCB 115
GC/HRMS	EPA 1668A/1668C	PCB 116
GC/HRMS	EPA 1668A/1668C	PCB 117
GC/HRMS	EPA 1668A/1668C	PCB 118
GC/HRMS	EPA 1668A/1668C	PCB 119
GC/HRMS	EPA 1668A/1668C	PCB 120
GC/HRMS	EPA 1668A/1668C	PCB 121
GC/HRMS	EPA 1668A/1668C	PCB 122
GC/HRMS	EPA 1668A/1668C	PCB 123

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 124
GC/HRMS	EPA 1668A/1668C	PCB 125
GC/HRMS	EPA 1668A/1668C	PCB 126
GC/HRMS	EPA 1668A/1668C	PCB 127
GC/HRMS	EPA 1668A/1668C	PCB 128
GC/HRMS	EPA 1668A/1668C	PCB 129
GC/HRMS	EPA 1668A/1668C	PCB 130
GC/HRMS	EPA 1668A/1668C	PCB 131
GC/HRMS	EPA 1668A/1668C	PCB 132
GC/HRMS	EPA 1668A/1668C	PCB 133
GC/HRMS	EPA 1668A/1668C	PCB 134
GC/HRMS	EPA 1668A/1668C	PCB 135
GC/HRMS	EPA 1668A/1668C	PCB 136
GC/HRMS	EPA 1668A/1668C	PCB 137
GC/HRMS	EPA 1668A/1668C	PCB 138
GC/HRMS	EPA 1668A/1668C	PCB 139
GC/HRMS	EPA 1668A/1668C	PCB 140
GC/HRMS	EPA 1668A/1668C	PCB 141
GC/HRMS	EPA 1668A/1668C	PCB 142
GC/HRMS	EPA 1668A/1668C	PCB 143
GC/HRMS	EPA 1668A/1668C	PCB 144
GC/HRMS	EPA 1668A/1668C	PCB 145
GC/HRMS	EPA 1668A/1668C	PCB 146
GC/HRMS	EPA 1668A/1668C	PCB 147
GC/HRMS	EPA 1668A/1668C	PCB 148
GC/HRMS	EPA 1668A/1668C	PCB 149
GC/HRMS	EPA 1668A/1668C	PCB 150
GC/HRMS	EPA 1668A/1668C	PCB 151
GC/HRMS	EPA 1668A/1668C	PCB 152
GC/HRMS	EPA 1668A/1668C	PCB 153
GC/HRMS	EPA 1668A/1668C	PCB 154
GC/HRMS	EPA 1668A/1668C	PCB 155
GC/HRMS	EPA 1668A/1668C	PCB 156
GC/HRMS	EPA 1668A/1668C	PCB 157
GC/HRMS	EPA 1668A/1668C	PCB 158

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 159
GC/HRMS	EPA 1668A/1668C	PCB 160
GC/HRMS	EPA 1668A/1668C	PCB 161
GC/HRMS	EPA 1668A/1668C	PCB 162
GC/HRMS	EPA 1668A/1668C	PCB 163
GC/HRMS	EPA 1668A/1668C	PCB 164
GC/HRMS	EPA 1668A/1668C	PCB 165
GC/HRMS	EPA 1668A/1668C	PCB 166
GC/HRMS	EPA 1668A/1668C	PCB 167
GC/HRMS	EPA 1668A/1668C	PCB 168
GC/HRMS	EPA 1668A/1668C	PCB 169
GC/HRMS	EPA 1668A/1668C	PCB 170
GC/HRMS	EPA 1668A/1668C	PCB 171
GC/HRMS	EPA 1668A/1668C	PCB 172
GC/HRMS	EPA 1668A/1668C	PCB 173
GC/HRMS	EPA 1668A/1668C	PCB 174
GC/HRMS	EPA 1668A/1668C	PCB 175
GC/HRMS	EPA 1668A/1668C	PCB 176
GC/HRMS	EPA 1668A/1668C	PCB 177
GC/HRMS	EPA 1668A/1668C	PCB 178
GC/HRMS	EPA 1668A/1668C	PCB 179
GC/HRMS	EPA 1668A/1668C	PCB 180
GC/HRMS	EPA 1668A/1668C	PCB 181
GC/HRMS	EPA 1668A/1668C	PCB 182
GC/HRMS	EPA 1668A/1668C	PCB 183
GC/HRMS	EPA 1668A/1668C	PCB 184
GC/HRMS	EPA 1668A/1668C	PCB 185
GC/HRMS	EPA 1668A/1668C	PCB 186
GC/HRMS	EPA 1668A/1668C	PCB 187
GC/HRMS	EPA 1668A/1668C	PCB 188
GC/HRMS	EPA 1668A/1668C	PCB 189
GC/HRMS	EPA 1668A/1668C	PCB 190
GC/HRMS	EPA 1668A/1668C	PCB 191
GC/HRMS	EPA 1668A/1668C	PCB 192
GC/HRMS	EPA 1668A/1668C	PCB 193

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 194
GC/HRMS	EPA 1668A/1668C	PCB 195
GC/HRMS	EPA 1668A/1668C	PCB 196
GC/HRMS	EPA 1668A/1668C	PCB 197
GC/HRMS	EPA 1668A/1668C	PCB 198
GC/HRMS	EPA 1668A/1668C	PCB 199
GC/HRMS	EPA 1668A/1668C	PCB 200
GC/HRMS	EPA 1668A/1668C	PCB 201
GC/HRMS	EPA 1668A/1668C	PCB 202
GC/HRMS	EPA 1668A/1668C	PCB 203
GC/HRMS	EPA 1668A/1668C	PCB 204
GC/HRMS	EPA 1668A/1668C	PCB 205
GC/HRMS	EPA 1668A/1668C	PCB 206
GC/HRMS	EPA 1668A/1668C	PCB 207
GC/HRMS	EPA 1668A/1668C	PCB 208
GC/HRMS	EPA 1668A/1668C	PCB 209
Preparation	**Method**	**Type**
Acid Digestion (Aqueous)	EPA 3005A/3010A	Inorganics
Separatory Funnel Liquid-Liquid Extraction	EPA 3510C	Semivolatile and Non-Volatile Organics
Solid Phase Extraction	EPA 3535A	Semivolatile and Non-Volatile Organics
Purge and Trap	EPA 5030B/5030C	Volatile Organic Compounds
Florisil Cleanup	EPA 3620B/3620C	Cleanup of pesticide residues and other chlorinated hydrocarbons
Sulfur Cleanup	EPA 3660A	Sulfur Cleanup
Sulfuric Acid Cleanup	EPA 3665A	Sulfuric Acid Cleanup for PCBs
Silica Gel Cleanup	EPA 3630C	Column Cleanup

Drinking Water		
Technology	**Method**	**Analyte**
LC/MS/MS	EPA 537	Perfluorobutane Sulfonic Acid (PFBS)
LC/MS/MS	EPA 537	Perfluoroheptanoic acid (PFHpA)
LC/MS/MS	EPA 537	Perfluorohexane Sulfonic Acid (PFHxS)
LC/MS/MS	EPA 537	Perfluorononanoic acid (PFNA)
LC/MS/MS	EPA 537	Perfluorooctanoic acid (PFOA)

Drinking Water		
Technology	**Method**	**Analyte**
LC/MS/MS	EPA 537	Perfluorooctane Sulfonic Acid (PFOS)
LC/MS/MS	EPA 537	Perfluorodecanoic acid (PFDA)
LC/MS/MS	EPA 537	Perfluorododecanoic acid (PFDoDA)
LC/MS/MS	EPA 537	Perfluorohexanoic acid (PFHxA)
LC/MS/MS	EPA 537	Perfluorotetradecanoic acid (PDTeA)
LC/MS/MS	EPA 537	Perfluorotridecanoic acid (PFTriA)
LC/MS/MS	EPA 537	Perfluoroundecanoic acid (PFUDA)
LC/MS/MS	EPA 537	N-Ethyl perfluorooctanesulfon amidoacetic acid (EtFOSAA)
LC/MS/MS	EPA 537	N-Methyl perfluorooctanesulfon amidoacetic acid (MeFOSAA)
LC/MS/MS	EPA 537.1	Perfluorodecanoic acid (PFDA)
LC/MS/MS	EPA 537.1	Perfluorododecanoic acid (PFDoDA)
LC/MS/MS	EPA 537.1	Perfluorohexanoic acid (PFHxA)
LC/MS/MS	EPA 537.1	Perfluorotetradecanoic acid (PDTeA)
LC/MS/MS	EPA 537.1	Perfluorotridecanoic acid (PFTriA)
LC/MS/MS	EPA 537.1	Perfluoroundecanoic acid (PFUDA)
LC/MS/MS	EPA 537.1	N-Ethyl perfluorooctanesulfon amidacetic acid (EtFOSAA)
LC/MS/MS	EPA 537.1	N-Methyl perfluorooctanesulfon amidoacetic acid (MeFOSAA)
LC/MS/MS	EPA 537.1	Perfluoroheptanoic acid (PFHpA)
LC/MS/MS	EPA 537.1	Perfluorooctanoic acid (PFOA)
LC/MS/MS	EPA 537.1	Perfluorononanoic acid (PFNA)
LC/MS/MS	EPA 537.1	Perfluorobutanesulfonic acid (PFBS)
LC/MS/MS	EPA 537.1	Perfluorohexanesulfonic acid (PFHxS)
LC/MS/MS	EPA 537.1	Perfluorooctanesulfonic acid (PFOS)
LC/MS/MS	EPA 537.1	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)
LC/MS/MS	EPA 537.1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)
LC/MS/MS	EPA 537.1	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11C1-PF3OUdS)
LC/MS/MS	EPA 537.1	4,8-Dioxa-3H-perfluoronanoic Acid (ADONA)
LC/MS/MS	EPA 533	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11C1-PF3OUdS)

Drinking Water		
Technology	**Method**	**Analyte**
LC/MS/MS	EPA 533	8:2 Fluorotelomer sulfonic acid (1H,1H,2H,2H-perfluorodecane sulfonic acid) (8:2 FTS)
LC/MS/MS	EPA 533	4:2 Fluorotelomer sulfonic acid (1H, 1H,2H,H-perfluorohexane sulfonic acid) (4:2 FTS)
LC/MS/MS	EPA 533	6:2 Fluorotelomer sulfonic acid (1H,1H,2H,2H-perfluorooctane sulfonic acid) (6:2 FTS)
LC/MS/MS	EPA 533	4,8-Dioxa-3H-perfluorononanoic acid (DONA)
LC/MS/MS	EPA 533	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)
LC/MS/MS	EPA 533	Perfluoro-2-propoxypropionic acid (HFPO-DA)
LC/MS/MS	EPA 533	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
LC/MS/MS	EPA 533	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)
LC/MS/MS	EPA 533	Perfluoro-3-methoxypropanoic acid (PFMPA)
LC/MS/MS	EPA 533	Perfluoro-4-methoxybutanoic acid (PFMBA)
LC/MS/MS	EPA 533	Perfluorobutane Sulfonic Acid (PFBS)
LC/MS/MS	EPA 533	Perfluorobutanoic acid (PFBA)
LC/MS/MS	EPA 533	Perfluorodecanoic acid (PFDA)
LC/MS/MS	EPA 533	Perfluorododecanoic acid (PFDoDA)
LC/MS/MS	EPA 533	Perfluoroheptane Sulfonic Acid (PFHpS)
LC/MS/MS	EPA 533	Perfluoroheptanoic acid (PFHpA)
LC/MS/MS	EPA 533	Perfluorohexane Sulfonic Acid (PFHxS)
LC/MS/MS	EPA 533	Perfluorohexanoic acid (PFHxA)
LC/MS/MS	EPA 533	Perfluorononanoic acid (PFNA)
LC/MS/MS	EPA 533	Perfluorooctane Sulfonic Acid (PFOS)
LC/MS/MS	EPA 533	Perfluorooctanoic acid (PFOA)
LC/MS/MS	EPA 533	Perfluoropentane Sulfonic acid (PFPeS)
LC/MS/MS	EPA 533	Perfluoropentanoic acid (PFPeA)
LC/MS/MS	EPA 533	Perfluoroundecanoic acid (PFUDA)
Preparation	**Method**	**Type**
Solid Phase Extraction	EPA 537/537.1/533	Perfluoro compounds in Drinking Water

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
ICP-AES	EPA 6010B/6010C	Aluminum
ICP-AES	EPA 6010B/6010C	Antimony
ICP-AES	EPA 6010B/6010C	Arsenic
ICP-AES	EPA 6010B/6010C	Barium
ICP-AES	EPA 6010B/6010C	Beryllium
ICP-AES	EPA 6010B/6010C	Boron
ICP-AES	EPA 6010B/6010C	Cadmium
ICP-AES	EPA 6010B/6010C	Calcium
ICP-AES	EPA 6010B/6010C	Chromium (Total)
ICP-AES	EPA 6010B/6010C	Cobalt
ICP-AES	EPA 6010B/6010C	Copper
ICP-AES	EPA 6010B/6010C	Iron
ICP-AES	EPA 6010B/6010C	Lead
ICP-AES	EPA 6010B/6010C	Magnesium
ICP-AES	EPA 6010B/6010C	Manganese
ICP-AES	EPA 6010B/6010C	Molybdenum
ICP-AES	EPA 6010B/6010C	Nickel
ICP-AES	EPA 6010B/6010C	Potassium
ICP-AES	EPA 6010B/6010C	Selenium
ICP-AES	EPA 6010B/6010C	Silver
ICP-AES	EPA 6010B/6010C	Sodium
ICP-AES	EPA 6010B/6010C	Thallium
ICP-AES	EPA 6010B/6010C	Tin
ICP-AES	EPA 6010B/6010C	Titanium
ICP-AES	EPA 6010B/6010C	Vanadium
ICP-AES	EPA 6010B/6010C	Zinc
ICP-MS	EPA 6020/6020A	Aluminum
ICP-MS	EPA 6020/6020A	Antimony
ICP-MS	EPA 6020/6020A	Arsenic
ICP-MS	EPA 6020/6020A	Barium
ICP-MS	EPA 6020/6020A	Beryllium
ICP-MS	EPA 6020/6020A	Cadmium
ICP-MS	EPA 6020/6020A	Calcium
ICP-MS	EPA 6020/6020A	Chromium (Total)

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
ICP-MS	EPA 6020/6020A	Cobalt
ICP-MS	EPA 6020/6020A	Copper
ICP-MS	EPA 6020/6020A	Iron
ICP-MS	EPA 6020/6020A	Lead
ICP-MS	EPA 6020/6020A	Magnesium
ICP-MS	EPA 6020/6020A	Manganese
ICP-MS	EPA 6020/6020A	Molybdenum
ICP-MS	EPA 6020/6020A	Nickel
ICP-MS	EPA 6020/6020A	Phosphorus
ICP-MS	EPA 6020/6020A	Potassium
ICP-MS	EPA 6020/6020A	Selenium
ICP-MS	EPA 6020/6020A	Silver
ICP-MS	EPA 6020/6020A	Sodium
ICP-MS	EPA 6020/6020A	Strontium
ICP-MS	EPA 6020/6020A	Thallium
ICP-MS	EPA 6020/6020A	Tin
ICP-MS	EPA 6020/6020A	Titanium
ICP-MS	EPA 6020/6020A	Uranium
ICP-MS	EPA 6020/6020A	Vanadium
ICP-MS	EPA 6020/6020A	Zinc
CVAAS	EPA 7470A/7471A/7471B	Mercury
Colorimetric/Hydrolysis	EPA 353.2 Modified WS-WC-0050	Nitrocellulose
LC/MS/MS	EPA 6850	Perchlorate
Probe	EPA 9045C/9045D	pH
Ion Chromatography	EPA 9056A/300.0	Bromide
Ion Chromatography	EPA 9056A/300.0	Chloride
Ion Chromatography	EPA 9056A/300.0	Fluoride
Ion Chromatography	EPA 9056A/300.0	Sulfate
Ion Chromatography	EPA 9056A/300.0	Nitrate
Ion Chromatography	EPA 9056A/300.0	Nitrite
Gravimetric	ASTM D2216	%Moisture
GC/MS	EPA 8260B/8260C	1,1,1,2-Tetrachloroethane
GC/MS	EPA 8260B/8260C	1,1,1-Trichloroethane
GC/MS	EPA 8260B/8260C	1,1,2,2-Tetrachloroethane

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260C	1,1,2-Trichloroethane
GC/MS	EPA 8260B/8260C	1,1,2-Trichloro-1,2,2-trifluoroethane
GC/MS	EPA 8260B/8260C	1,1-Dichloroethane
GC/MS	EPA 8260B/8260C	1,1-Dichloroethene
GC/MS	EPA 8260B/8260C	1,1-Dichloropropene
GC/MS	EPA 8260B/8260C	1,2,3-Trichlorobenzene
GC/MS	EPA 8260B/8260C	1,2,3-Trichloropropane
GC/MS	EPA 8260B/8260C	1,2,4-Trichlorobenzene
GC/MS	EPA 8260B/8260C	1,2,4-Trimethylbenzene
GC/MS	EPA 8260B/8260C	1,2-Dibromo-3-chloropropane
GC/MS	EPA 8260B/8260C	1,2-Dibromoethane
GC/MS	EPA 8260B/8260C	1,2-Dichlorobenzene
GC/MS	EPA 8260B/8260C	1,2-Dichloroethane
GC/MS	EPA 8260B/8260C	1,2-Dichloropropane
GC/MS	EPA 8260B/8260C	1,3,5-Trimethylbenzene
GC/MS	EPA 8260B/8260C	1,3-Dichlorobenzene
GC/MS	EPA 8260B/8260C	1,3-Dichloropropane
GC/MS	EPA 8260B/8260C	1,4-Dichlorobenzene
GC/MS	EPA 8260B/8260C	1-Chlorohexane
GC/MS	EPA 8260B/8260C	2,2-Dichloropropane
GC/MS	EPA 8260B/8260C	2-Butanone (MEK)
GC/MS	EPA 8260B/8260C	2-Chlorotoluene
GC/MS	EPA 8260B/8260C	2-Hexanone (MBK)
GC/MS	EPA 8260B/8260C	2-Methyl-2-propanol (tert- Butyl Alcohol, TBA)
GC/MS	EPA 8260B/8260C	4-Chlorotoluene
GC/MS	EPA 8260B/8260C	4-Isopropyltoluene
GC/MS	EPA 8260B/8260C	4-Methyl-2-pentanone (MIBK)
GC/MS	EPA 8260B/8260C	Acetone
GC/MS	EPA 8260B/8260C	Allyl Chloride
GC/MS	EPA 8260B/8260C	Benzene
GC/MS	EPA 8260B/8260C	Bromobenzene
GC/MS	EPA 8260B/8260C	Bromochloromethane
GC/MS	EPA 8260B/8260C	Bromodichloromethane
GC/MS	EPA 8260B/8260C	Bromoform
GC/MS	EPA 8260B/8260C	Bromomethane

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260C	Carbon Disulfide
GC/MS	EPA 8260B/8260C	Carbon Tetrachloride
GC/MS	EPA 8260B/8260C	Chlorobenzene
GC/MS	EPA 8260B/8260C	Chloroethane
GC/MS	EPA 8260B/8260C	Chloroform
GC/MS	EPA 8260B/8260C	Chloromethane
GC/MS	EPA 8260B/8260C	cis-1,2-Dichloroethene
GC/MS	EPA 8260B/8260C	cis-1,3-Dichloropropene
GC/MS	EPA 8260B/8260C	Cyclohexane
GC/MS	EPA 8260B/8260C	Dibromochloromethane
GC/MS	EPA 8260B/8260C	Dibromomethane
GC/MS	EPA 8260B/8260C	Dichlorodifluoromethane
GC/MS	EPA 8260B/8260C	Diisopropyl Ether (DIPE)
GC/MS	EPA 8260B/8260C	Ethylbenzene
GC/MS	EPA 8260B/8260C	Ethylmethacrylate
GC/MS	EPA 8260B/8260C	Ethyl tert-butyl Ether (ETBE)
GC/MS	EPA 8260B/8260C	Hexachlorobutadiene
GC/MS	EPA 8260B/8260C	Hexane
GC/MS	EPA 8260B/8260C	Iodomethane
GC/MS	EPA 8260B/8260C	Isobutanol (2-Methyl-1-propanol)
GC/MS	EPA 8260B/8260C	Isopropylbenzene
GC/MS	EPA 8260B/8260C	m & p Xylene
GC/MS	EPA 8260B/8260C	Methyl tert-butyl Ether (MTBE)
GC/MS	EPA 8260B/8260C	Methylene Chloride
GC/MS	EPA 8260B/8260C	Naphthalene
GC/MS	EPA 8260B/8260C	n-Butylbenzene
GC/MS	EPA 8260B/8260C	n-Propylbenzene
GC/MS	EPA 8260B/8260C	o-Xylene
GC/MS	EPA 8260B/8260C	sec-Butylbenzene
GC/MS	EPA 8260B/8260C	Styrene
GC/MS	EPA 8260B/8260C	t-Amyl methyl Ether (TAME)
GC/MS	EPA 8260B/8260C	t-1,4-Dichloro-2-Butene
GC/MS	EPA 8260B/8260C	tert-Butylbenzene
GC/MS	EPA 8260B/8260C	Tetrachloroethene
GC/MS	EPA 8260B/8260C	Toluene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260C	trans-1,2-Dichloroethene
GC/MS	EPA 8260B/8260C	trans-1,3-Dichloropropene
GC/MS	EPA 8260B/8260C	Trichloroethene
GC/MS	EPA 8260B/8260C	Trichlorofluoromethane
GC/MS	EPA 8260B/8260C	Vinyl Acetate
GC/MS	EPA 8260B/8260C	Vinyl Chloride
GC/MS	EPA 8260B/8260C	Xylenes, Total
GC/MS	EPA 8260B/AK101MS	Gasoline Range Organics (GRO)
GC/MS	EPA 8270C/8270D	1,2,4,5-Tetrachlorobenzene
GC/MS	EPA 8270C/8270D	1,2,4-Trichlorobenzene
GC/MS	EPA 8270C/8270D	1,2-Dichlorobenzene
GC/MS	EPA 8270C/8270D	1,2-Diphenylhydrazine (as Azobenzene)
GC/MS	EPA 8270C/8270D	1,3-Dichlorobenzene
GC/MS	EPA 8270C/8270D	1,3-Dinitrobenzene
GC/MS	EPA 8270C/8270D	1,4-Dichlorobenzene
GC/MS	EPA 8270C/8270D	1-Methylnaphthalene
GC/MS	EPA 8270C/8270D	2,3,4,6-Tetrachlorophenol
GC/MS	EPA 8270C/8270D	2,4,5-Trichlorophenol
GC/MS	EPA 8270C/8270D	2,4,6-Trichlorophenol
GC/MS	EPA 8270C/8270D	2,4-Dichlorophenol
GC/MS	EPA 8270C/8270D	2,4-Dimethylphenol
GC/MS	EPA 8270C/8270D	2,4-Dinitrophenol
GC/MS	EPA 8270C/8270D	2,4-Dinitrotoluene
GC/MS	EPA 8270C/8270D	2,6-Dichlorophenol
GC/MS	EPA 8270C/8270D	2,6-Dinitrotoluene
GC/MS	EPA 8270C/8270D	2-Chloronaphthalene
GC/MS	EPA 8270C/8270D	2-Chlorophenol
GC/MS	EPA 8270C/8270D	2-Methylnaphthalene
GC/MS	EPA 8270C/8270D	2-Methylphenol
GC/MS	EPA 8270C/8270D	2-Nitroaniline
GC/MS	EPA 8270C/8270D	2-Nitrophenol
GC/MS	EPA 8270C/8270D	3&4-Methylphenol
GC/MS	EPA 8270C/8270D	3,3'-Dichlorobenzidine
GC/MS	EPA 8270C/8270D	3-Nitroaniline
GC/MS	EPA 8270C/8270D	4,6-Dinitro-2-methylphenol

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270D	4-Bromophenyl phenyl ether
GC/MS	EPA 8270C/8270D	4-Chloro-3-methylphenol
GC/MS	EPA 8270C/8270D	4-Chloroaniline
GC/MS	EPA 8270C/8270D	4-Chlorophenyl phenyl ether
GC/MS	EPA 8270C/8270D	4-Nitroaniline
GC/MS	EPA 8270C/8270D	4-Nitrophenol
GC/MS	EPA 8270C/8270D	Acenaphthene
GC/MS	EPA 8270C/8270D	Acenaphthylene
GC/MS	EPA 8270C/8270D	Aniline
GC/MS	EPA 8270C/8270D	Anthracene
GC/MS	EPA 8270C/8270D	Benzo(a)anthracene
GC/MS	EPA 8270C/8270D	Benzo(a)pyrene
GC/MS	EPA 8270C/8270D	Benzo(b)fluoranthene
GC/MS	EPA 8270C/8270D	Benzo(g,h,i)perylene
GC/MS	EPA 8270C/8270D	Benzo(k)fluoranthene
GC/MS	EPA 8270C/8270D	Benzoic Acid
GC/MS	EPA 8270C/8270D	Benzyl Alcohol
GC/MS	EPA 8270C/8270D	Benzyl butyl Phthalate
GC/MS	EPA 8270C/8270D	Biphenyl
GC/MS	EPA 8270C/8270D	Bis(2-chloroethoxy) Methane
GC/MS	EPA 8270C/8270D	Bis(2-chloroethyl) Ether
GC/MS	EPA 8270C/8270D	Bis(2-chloroisopropyl) Ether
GC/MS	EPA 8270C/8270D	Carbazole
GC/MS	EPA 8270C/8270D	Chrysene
GC/MS	EPA 8270C/8270D	Bis (2-ethylhexyl) Phthalate
GC/MS	EPA 8270C/8270D	Dibenz(a,h)anthracene
GC/MS	EPA 8270C/8270D	Dibenzofuran
GC/MS	EPA 8270C/8270D	Diethyl Phthalate
GC/MS	EPA 8270C/8270D	Dimethyl Phthalate
GC/MS	EPA 8270C/8270D	Di-n-butyl Phthalate
GC/MS	EPA 8270C/8270D	Di-n-octyl Phthalate
GC/MS	EPA 8270C/8270D	Fluoranthene
GC/MS	EPA 8270C/8270D	Fluorene
GC/MS	EPA 8270C/8270D	Hexachlorobenzene
GC/MS	EPA 8270C/8270D	Hexachlorobutadiene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270D	Hexachlorocyclopentadiene
GC/MS	EPA 8270C/8270D	Hexachloroethane
GC/MS	EPA 8270C/8270D	Indeno(1,2,3-c,d) Pyrene
GC/MS	EPA 8270C/8270D	Isophorone
GC/MS	EPA 8270C/8270D	Naphthalene
GC/MS	EPA 8270C/8270D	Nitrobenzene
GC/MS	EPA 8270C/8270D	n-Nitrosodimethylamine
GC/MS	EPA 8270C/8270D	n-Nitrosodi-n-propylamine
GC/MS	EPA 8270C/8270D	n-Nitrosodiphenylamine
GC/MS	EPA 8270C/8270D	Pentachlorophenol
GC/MS	EPA 8270C/8270D	Phenanthrene
GC/MS	EPA 8270C/8270D	Phenol
GC/MS	EPA 8270C/8270D	Pyrene
GC/MS	EPA 8270C/8270D	Pyridine
GC/MS SIM	EPA 8260C-SIM	1,1,2-Trichloroethane
GC/MS SIM	EPA 8260C-SIM	1,1,2,2-Tetrachloroethane
GC/MS SIM	EPA 8260C-SIM	1,2,3-Trichloropropane
GC/MS SIM	EPA 8260C-SIM	1,2-Dibromoethane
GC/MS SIM	EPA 8260C-SIM	1,2-Dichloroethane
GC/MS SIM	EPA 8260C-SIM	1,3-Butadiene
GC/MS SIM	EPA 8260C-SIM	1,4-Dichlorobenzene
GC/MS SIM	EPA 8260C-SIM	Benzene
GC/MS SIM	EPA 8260C-SIM	Bromodichloromethane
GC/MS SIM	EPA 8260C-SIM	Bromoform
GC/MS SIM	EPA 8260C-SIM	Bromomethane
GC/MS SIM	EPA 8260C-SIM	Chloroform
GC/MS SIM	EPA 8260C-SIM	Dibromochloromethane
GC/MS SIM	EPA 8260C-SIM	Dibromomethane
GC/MS SIM	EPA 8260C-SIM	Hexachlorobutadiene
GC/MS SIM	EPA 8260C-SIM	Naphthalene
GC/MS SIM	EPA 8260C-SIM	Tetrachloroethene
GC/MS SIM	EPA 8260C-SIM	Trichloroethene
GC/MS SIM	EPA 8260C-SIM	Vinyl Chloride
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	1-Methylnaphthalene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	2-Methylnaphthalene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Acenaphthene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Acenaphthylene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Anthracene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(a)anthracene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(a)pyrene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(b)fluoranthene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(g,h,i)perylene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Benzo(k)fluoranthene
GC/MS SIM	EPA 8270D-SIM	Bis(2-chloroethyl) Ether
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Chrysene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Dibenz(a,h)anthracene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Fluoranthene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Fluorene
GC/MS SIM	EPA 8270D-SIM	Hexachlorobenzene
GC/MS SIM	EPA 8270D-SIM	Hexachlorocyclopentadiene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Indeno(1,2,3-c,d) Pyrene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Naphthalene
GC/MS SIM	EPA 8270D-SIM	n-Nitrosodi-n-propylamine
GC/MS SIM	EPA 8270D-SIM	Pentachlorophenol
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Phenanthrene
GC/MS SIM	EPA 8270C-SIM EPA 8270D-SIM	Pyrene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC-FID	EPA 8015B/8015C/8015D AK102	Diesel Range Organics (DRO)
GC-FID	AK103	Residual Range Organics
GC-FID	EPA 8015B/8015C/8015D	Motor Oil Range Organics (MRO)
GC-ECD	EPA 8081A/8081B	Aldrin
GC-ECD	EPA 8081A/8081B	a-BHC
GC-ECD	EPA 8081A/8081B	b-BHC
GC-ECD	EPA 8081A/8081B	d-BHC
GC-ECD	EPA 8081A/8081B	g-BHC (Lindane)
GC-ECD	EPA 8081A/8081B	a-Chlordane
GC-ECD	EPA 8081A/8081B	g-Chlordane
GC-ECD	EPA 8081A/8081B	4,4'-DDD
GC-ECD	EPA 8081A/8081B	4,4'-DDE
GC-ECD	EPA 8081A/8081B	4,4'-DDT
GC-ECD	EPA 8081A/8081B	Dieldrin
GC-ECD	EPA 8081A/8081B	Endosulfan I
GC-ECD	EPA 8081A/8081B	Endosulfan II
GC-ECD	EPA 8081A/8081B	Endosulfan sulfate
GC-ECD	EPA 8081A/8081B	Endrin
GC-ECD	EPA 8081A/8081B	Endrin Aldehyde
GC-ECD	EPA 8081A/8081B	Endrin Ketone
GC-ECD	EPA 8081A/8081B	Heptachlor
GC-ECD	EPA 8081A/8081B	Heptachlor Epoxide
GC-ECD	EPA 8081A/8081B	Methoxychlor
GC-ECD	EPA 8081A/8081B	Toxaphene
GC-ECD	EPA 8081A/8081B	Chlordane (technical)
GC-ECD	EPA 8082/8082A	PCB-1016
GC-ECD	EPA 8082/8082A	PCB-1221
GC-ECD	EPA 8082/8082A	PCB-1232
GC-ECD	EPA 8082/8082A	PCB-1242
GC-ECD	EPA 8082/8082A	PCB-1248
GC-ECD	EPA 8082/8082A	PCB-1254
GC-ECD	EPA 8082/8082A	PCB-1260
GC-ECD	EPA 8082/8082A	PCB-1262
GC-ECD	EPA 8082/8082A	PCB-1268

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8280A/8280B	2,3,7,8-TeCDD
GC/MS	EPA 8280A/8280B	1,2,3,7,8-PeCDD
GC/MS	EPA 8280A/8280B	1,2,3,4,7,8-HxCDD
GC/MS	EPA 8280A/8280B	1,2,3,6,7,8-HxCDD
GC/MS	EPA 8280A/8280B	1,2,3,7,8,9-HxCDD
GC/MS	EPA 8280A/8280B	1,2,3,4,6,7,8-HpCDD
GC/MS	EPA 8280A/8280B	OCDD
GC/MS	EPA 8280A/8280B	2,3,7,8-TeCDF
GC/MS	EPA 8280A/8280B	1,2,3,7,8-PeCDF
GC/MS	EPA 8280A/8280B	2,3,4,7,8-PeCDF
GC/MS	EPA 8280A/8280B	1,2,3,4,7,8-HxCDF
GC/MS	EPA 8280A/8280B	1,2,3,6,7,8-HxCDF
GC/MS	EPA 8280A/8280B	1,2,3,7,8,9-HxCDF
GC/MS	EPA 8280A/8280B	2,3,4,6,7,8-HxCDF
GC/MS	EPA 8280A/8280B	1,2,3,4,6,7,8-HpCDF
GC/MS	EPA 8280A/8280B	1,2,3,4,7,8,9-HpCDF
GC/MS	EPA 8280A/8280B	OCDF
GC/MS	EPA 8280A/8280B	Total TCDD
GC/MS	EPA 8280A/8280B	Total PeCDD
GC/MS	EPA 8280A/8280B	Total HxCDD
GC/MS	EPA 8280A/8280B	Total HeptaCDD
GC/MS	EPA 8280A/8280B	Total TCDF
GC/MS	EPA 8280A/8280B	Total PeCDF
GC/MS	EPA 8280A/8280B	Total HxCDF
GC/MS	EPA 8280A/8280B	Total HpCDF
GC/HRMS	EPA 8290/ 8290A/1613B	2,3,7,8-TeCDD
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,7,8-PeCDD
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,4,7,8-HxCDD
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,6,7,8-HxCDD
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,7,8,9-HxCDD
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,4,6,7,8-HpCDD
GC/HRMS	EPA 8290/ 8290A/1613B	OCDD
GC/HRMS	EPA 8290/ 8290A/1613B	2,3,7,8-TeCDF
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,7,8-PeCDF
GC/HRMS	EPA 8290/ 8290A/1613B	2,3,4,7,8-PeCDF

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,4,7,8-HxCDF
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,6,7,8-HxCDF
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,7,8,9-HxCDF
GC/HRMS	EPA 8290/ 8290A/1613B	2,3,4,6,7,8-HxCDF
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,4,6,7,8-HpCDF
GC/HRMS	EPA 8290/ 8290A/1613B	1,2,3,4,7,8,9-HpCDF
GC/HRMS	EPA 8290/ 8290A/1613B	OCDF
GC/HRMS	EPA 8290/ 8290A/1613B	Total TCDD
GC/HRMS	EPA 8290/ 8290A/1613B	Total PeCDD
GC/HRMS	EPA 8290/ 8290A/1613B	Total HxCDD
GC/HRMS	EPA 8290/ 8290A/1613B	Total HpCDD
GC/HRMS	EPA 8290/ 8290A/1613B	Total TCDF
GC/HRMS	EPA 8290/ 8290A/1613B	Total PeCDF
GC/HRMS	EPA 8290/ 8290A/1613B	Total HxCDF
GC/HRMS	EPA 8290/ 8290A/1613B	Total HpCDF
HPLC/UV	EPA 8330A Modified WS-LC-0010	Nitroguanidine
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	6:2 Fluorotelomer sulfonic acid (1H,1H,2H,2H-perfluorooctane sulfonic acid) (6:2 FTS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	8:2 Fluorotelomer sulfonic acid (1H,1H,2H,2H-perfluorodecane sulfonic acid) (8:2 FTS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Ethyl perfluorooctanesulfon amidacetic acid (EtFOSAA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Methyl perfluorooctanesulfon amidoacetic acide (MeFOSAA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorooctanoic acid (PFOA)

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorooctane Sulfonic Acid (PFOS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorobutyric acid (PFBA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoropentanoic acid (PFPA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorohexanoic acid (PFHxA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoroheptanoic acid (PFHpA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorononanoic acid (PFNA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorodecanoic acid (PFDA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoroundecanoic acid (PFUDA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorododecanoic acid (PFDoDA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorotridecanoic acid (PFTriA)

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorotetradecanoic acid (PDTeA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorobutane Sulfonic Acid (PFBS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorohexane Sulfonic Acid (PFHxS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoroheptane Sulfonic Acid (PFHpS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorodecane Sulfonic Acid (PFDS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorooctane Sulfonamide (FOSA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	4:2 Fluorotelomer sulfonic acid (1H, 1H,2H,H-perfluorohexane sulfonic acid) (4:2 FTS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	10:2 Fluorotelomer sulfonic acid (1H, 1H,2H,H-perfluorododecane sulfonic acid) (10:2 FTS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorohexadecanoic acid (PFHxDA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoropentane Sulfonic acid (PFPS)

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorononane Sulfonic acid (PFNS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	4,8-Dioxa-3H-perfluorononanoic acid (DONA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-2-propoxypropionic acid (GenX Parent Acid) (HFPO-DA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11C1-PF3OUdS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorododecanesulfonic acid (PFDoS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluorooctadecanoic acid (PFODA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-4-ethylcyclohexanesulfonic acid (PFecHS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-1-propanesulfonic acid (PFPrS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Ethylperfluorooctane sulfonamide (EtFOSA)

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Methylperfluorooctane sulfonamide (MeFOSA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	4,4,5,5,6,6-Heptafluorohexanoic acid (3:3 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2-Perfluorohexylethanoic acid (6:2 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2-Perfluorooctylethanoic acid (8:2 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2-Perfluorodecylethanoic acid (10:2 FTCA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoropropionic acid (PPF Acid, PFPrA)

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3-methoxypropanoic acid (PFMPA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-4-methoxybutanoic acid (PFMBA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Difluoro(perfluoromethoxy)acetic acid (PFMOAA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-4-isopropoxybutanoic acid (PFECA G, PFPE-1)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3,5,7,9-butaoxadecanoic acid (PFO4DA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3,5,7-trioxaoctanoic acid (PFO3OA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3,5-dioxahexanoic acid (PFO2HXA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-2-{[perfluoro-3-(perfluoroethoxy)-2-propanyl]oxy}ethanesulfonic acid (Hydro-PS Acid)

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid (PFO5DoA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	Perfluoro-2-(perfluoromethoxy)propanoic acid (PMPA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2,3,3,3-Tetrafluoro-2-(pentafluoroethoxy)propanoic acid (PEPA)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	4-(2-carboxy-1,1,2,2-tetrafluoroethoxy)-2,2,3,3,4,5,5,5-octafluoro-pentanoic acid (R-EVE)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	,1,2,2-Tetrafluoro-2-(1,2,2,2-tetrafluoroethoxy)ethane-1-sulfonic acid (NVHOS)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	2,2,3,3-Tetrafluoro-3-{[1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy}propanoic acid (Hydro-EVE Acid)
LC/MS/MS	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15 WS-LC-0025	1,1,2,2-tetrafluoro-2-[1,2,2,3,3-pentafluoro-1-(trifluoromethyl)propoxy]ethanesulfonic acid (R-PSDCA)
GC/HRMS	EPA 1668A/1668C	PCB 1
GC/HRMS	EPA 1668A/1668C	PCB 2
GC/HRMS	EPA 1668A/1668C	PCB 3
GC/HRMS	EPA 1668A/1668C	PCB 4
GC/HRMS	EPA 1668A/1668C	PCB 5
GC/HRMS	EPA 1668A/1668C	PCB 6
GC/HRMS	EPA 1668A/1668C	PCB 7
GC/HRMS	EPA 1668A/1668C	PCB 8
GC/HRMS	EPA 1668A/1668C	PCB 9
GC/HRMS	EPA 1668A/1668C	PCB 10
GC/HRMS	EPA 1668A/1668C	PCB 11

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 12
GC/HRMS	EPA 1668A/1668C	PCB 13
GC/HRMS	EPA 1668A/1668C	PCB 14
GC/HRMS	EPA 1668A/1668C	PCB 15
GC/HRMS	EPA 1668A/1668C	PCB 16
GC/HRMS	EPA 1668A/1668C	PCB 17
GC/HRMS	EPA 1668A/1668C	PCB 18
GC/HRMS	EPA 1668A/1668C	PCB 19
GC/HRMS	EPA 1668A/1668C	PCB 20
GC/HRMS	EPA 1668A/1668C	PCB 21
GC/HRMS	EPA 1668A/1668C	PCB 22
GC/HRMS	EPA 1668A/1668C	PCB 23
GC/HRMS	EPA 1668A/1668C	PCB 24
GC/HRMS	EPA 1668A/1668C	PCB 25
GC/HRMS	EPA 1668A/1668C	PCB 26
GC/HRMS	EPA 1668A/1668C	PCB 27
GC/HRMS	EPA 1668A/1668C	PCB 28
GC/HRMS	EPA 1668A/1668C	PCB 29
GC/HRMS	EPA 1668A/1668C	PCB 30
GC/HRMS	EPA 1668A/1668C	PCB 32
GC/HRMS	EPA 1668A/1668C	PCB 31
GC/HRMS	EPA 1668A/1668C	PCB 33
GC/HRMS	EPA 1668A/1668C	PCB 34
GC/HRMS	EPA 1668A/1668C	PCB 35
GC/HRMS	EPA 1668A/1668C	PCB 36
GC/HRMS	EPA 1668A/1668C	PCB 37
GC/HRMS	EPA 1668A/1668C	PCB 38
GC/HRMS	EPA 1668A/1668C	PCB 39
GC/HRMS	EPA 1668A/1668C	PCB 40
GC/HRMS	EPA 1668A/1668C	PCB 41
GC/HRMS	EPA 1668A/1668C	PCB 42
GC/HRMS	EPA 1668A/1668C	PCB 43
GC/HRMS	EPA 1668A/1668C	PCB 44
GC/HRMS	EPA 1668A/1668C	PCB 45
GC/HRMS	EPA 1668A/1668C	PCB 46

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 47
GC/HRMS	EPA 1668A/1668C	PCB 48
GC/HRMS	EPA 1668A/1668C	PCB 49
GC/HRMS	EPA 1668A/1668C	PCB 50
GC/HRMS	EPA 1668A/1668C	PCB 51
GC/HRMS	EPA 1668A/1668C	PCB 52
GC/HRMS	EPA 1668A/1668C	PCB 53
GC/HRMS	EPA 1668A/1668C	PCB 54
GC/HRMS	EPA 1668A/1668C	PCB 55
GC/HRMS	EPA 1668A/1668C	PCB 56
GC/HRMS	EPA 1668A/1668C	PCB 57
GC/HRMS	EPA 1668A/1668C	PCB 58
GC/HRMS	EPA 1668A/1668C	PCB 59
GC/HRMS	EPA 1668A/1668C	PCB 60
GC/HRMS	EPA 1668A/1668C	PCB 61
GC/HRMS	EPA 1668A/1668C	PCB 62
GC/HRMS	EPA 1668A/1668C	PCB 63
GC/HRMS	EPA 1668A/1668C	PCB 64
GC/HRMS	EPA 1668A/1668C	PCB 65
GC/HRMS	EPA 1668A/1668C	PCB 66
GC/HRMS	EPA 1668A/1668C	PCB 67
GC/HRMS	EPA 1668A/1668C	PCB 68
GC/HRMS	EPA 1668A/1668C	PCB 69
GC/HRMS	EPA 1668A/1668C	PCB 70
GC/HRMS	EPA 1668A/1668C	PCB 71
GC/HRMS	EPA 1668A/1668C	PCB 72
GC/HRMS	EPA 1668A/1668C	PCB 73
GC/HRMS	EPA 1668A/1668C	PCB 74
GC/HRMS	EPA 1668A/1668C	PCB 75
GC/HRMS	EPA 1668A/1668C	PCB 76
GC/HRMS	EPA 1668A/1668C	PCB 77
GC/HRMS	EPA 1668A/1668C	PCB 78
GC/HRMS	EPA 1668A/1668C	PCB 79
GC/HRMS	EPA 1668A/1668C	PCB 80
GC/HRMS	EPA 1668A/1668C	PCB 81

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 82
GC/HRMS	EPA 1668A/1668C	PCB 83
GC/HRMS	EPA 1668A/1668C	PCB 84
GC/HRMS	EPA 1668A/1668C	PCB 85
GC/HRMS	EPA 1668A/1668C	PCB 86
GC/HRMS	EPA 1668A/1668C	PCB 87
GC/HRMS	EPA 1668A/1668C	PCB 88
GC/HRMS	EPA 1668A/1668C	PCB 89
GC/HRMS	EPA 1668A/1668C	PCB 90
GC/HRMS	EPA 1668A/1668C	PCB 91
GC/HRMS	EPA 1668A/1668C	PCB 92
GC/HRMS	EPA 1668A/1668C	PCB 93
GC/HRMS	EPA 1668A/1668C	PCB 94
GC/HRMS	EPA 1668A/1668C	PCB 95
GC/HRMS	EPA 1668A/1668C	PCB 96
GC/HRMS	EPA 1668A/1668C	PCB 97
GC/HRMS	EPA 1668A/1668C	PCB 98
GC/HRMS	EPA 1668A/1668C	PCB 99
GC/HRMS	EPA 1668A/1668C	PCB 100
GC/HRMS	EPA 1668A/1668C	PCB 101
GC/HRMS	EPA 1668A/1668C	PCB 102
GC/HRMS	EPA 1668A/1668C	PCB 103
GC/HRMS	EPA 1668A/1668C	PCB 104
GC/HRMS	EPA 1668A/1668C	PCB 105
GC/HRMS	EPA 1668A/1668C	PCB 106
GC/HRMS	EPA 1668A/1668C	PCB 107
GC/HRMS	EPA 1668A/1668C	PCB 108
GC/HRMS	EPA 1668A/1668C	PCB 109
GC/HRMS	EPA 1668A/1668C	PCB 110
GC/HRMS	EPA 1668A/1668C	PCB 111
GC/HRMS	EPA 1668A/1668C	PCB 112
GC/HRMS	EPA 1668A/1668C	PCB 113
GC/HRMS	EPA 1668A/1668C	PCB 114
GC/HRMS	EPA 1668A/1668C	PCB 115
GC/HRMS	EPA 1668A/1668C	PCB 116

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 117
GC/HRMS	EPA 1668A/1668C	PCB 118
GC/HRMS	EPA 1668A/1668C	PCB 119
GC/HRMS	EPA 1668A/1668C	PCB 120
GC/HRMS	EPA 1668A/1668C	PCB 121
GC/HRMS	EPA 1668A/1668C	PCB 122
GC/HRMS	EPA 1668A/1668C	PCB 123
GC/HRMS	EPA 1668A/1668C	PCB 124
GC/HRMS	EPA 1668A/1668C	PCB 125
GC/HRMS	EPA 1668A/1668C	PCB 126
GC/HRMS	EPA 1668A/1668C	PCB 127
GC/HRMS	EPA 1668A/1668C	PCB 128
GC/HRMS	EPA 1668A/1668C	PCB 129
GC/HRMS	EPA 1668A/1668C	PCB 130
GC/HRMS	EPA 1668A/1668C	PCB 131
GC/HRMS	EPA 1668A/1668C	PCB 132
GC/HRMS	EPA 1668A/1668C	PCB 133
GC/HRMS	EPA 1668A/1668C	PCB 134
GC/HRMS	EPA 1668A/1668C	PCB 135
GC/HRMS	EPA 1668A/1668C	PCB 136
GC/HRMS	EPA 1668A/1668C	PCB 137
GC/HRMS	EPA 1668A/1668C	PCB 138
GC/HRMS	EPA 1668A/1668C	PCB 139
GC/HRMS	EPA 1668A/1668C	PCB 140
GC/HRMS	EPA 1668A/1668C	PCB 141
GC/HRMS	EPA 1668A/1668C	PCB 142
GC/HRMS	EPA 1668A/1668C	PCB 143
GC/HRMS	EPA 1668A/1668C	PCB 144
GC/HRMS	EPA 1668A/1668C	PCB 145
GC/HRMS	EPA 1668A/1668C	PCB 146
GC/HRMS	EPA 1668A/1668C	PCB 147
GC/HRMS	EPA 1668A/1668C	PCB 148
GC/HRMS	EPA 1668A/1668C	PCB 149
GC/HRMS	EPA 1668A/1668C	PCB 150
GC/HRMS	EPA 1668A/1668C	PCB 151

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 152
GC/HRMS	EPA 1668A/1668C	PCB 153
GC/HRMS	EPA 1668A/1668C	PCB 154
GC/HRMS	EPA 1668A/1668C	PCB 155
GC/HRMS	EPA 1668A/1668C	PCB 156
GC/HRMS	EPA 1668A/1668C	PCB 157
GC/HRMS	EPA 1668A/1668C	PCB 158
GC/HRMS	EPA 1668A/1668C	PCB 159
GC/HRMS	EPA 1668A/1668C	PCB 160
GC/HRMS	EPA 1668A/1668C	PCB 161
GC/HRMS	EPA 1668A/1668C	PCB 162
GC/HRMS	EPA 1668A/1668C	PCB 163
GC/HRMS	EPA 1668A/1668C	PCB 164
GC/HRMS	EPA 1668A/1668C	PCB 165
GC/HRMS	EPA 1668A/1668C	PCB 166
GC/HRMS	EPA 1668A/1668C	PCB 167
GC/HRMS	EPA 1668A/1668C	PCB 168
GC/HRMS	EPA 1668A/1668C	PCB 169
GC/HRMS	EPA 1668A/1668C	PCB 170
GC/HRMS	EPA 1668A/1668C	PCB 171
GC/HRMS	EPA 1668A/1668C	PCB 172
GC/HRMS	EPA 1668A/1668C	PCB 173
GC/HRMS	EPA 1668A/1668C	PCB 174
GC/HRMS	EPA 1668A/1668C	PCB 175
GC/HRMS	EPA 1668A/1668C	PCB 176
GC/HRMS	EPA 1668A/1668C	PCB 177
GC/HRMS	EPA 1668A/1668C	PCB 178
GC/HRMS	EPA 1668A/1668C	PCB 179
GC/HRMS	EPA 1668A/1668C	PCB 180
GC/HRMS	EPA 1668A/1668C	PCB 181
GC/HRMS	EPA 1668A/1668C	PCB 182
GC/HRMS	EPA 1668A/1668C	PCB 183
GC/HRMS	EPA 1668A/1668C	PCB 184
GC/HRMS	EPA 1668A/1668C	PCB 185
GC/HRMS	EPA 1668A/1668C	PCB 186

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/HRMS	EPA 1668A/1668C	PCB 187
GC/HRMS	EPA 1668A/1668C	PCB 188
GC/HRMS	EPA 1668A/1668C	PCB 189
GC/HRMS	EPA 1668A/1668C	PCB 190
GC/HRMS	EPA 1668A/1668C	PCB 191
GC/HRMS	EPA 1668A/1668C	PCB 192
GC/HRMS	EPA 1668A/1668C	PCB 193
GC/HRMS	EPA 1668A/1668C	PCB 194
GC/HRMS	EPA 1668A/1668C	PCB 195
GC/HRMS	EPA 1668A/1668C	PCB 196
GC/HRMS	EPA 1668A/1668C	PCB 197
GC/HRMS	EPA 1668A/1668C	PCB 198
GC/HRMS	EPA 1668A/1668C	PCB 199
GC/HRMS	EPA 1668A/1668C	PCB 200
GC/HRMS	EPA 1668A/1668C	PCB 201
GC/HRMS	EPA 1668A/1668C	PCB 202
GC/HRMS	EPA 1668A/1668C	PCB 203
GC/HRMS	EPA 1668A/1668C	PCB 204
GC/HRMS	EPA 1668A/1668C	PCB 205
GC/HRMS	EPA 1668A/1668C	PCB 206
GC/HRMS	EPA 1668A/1668C	PCB 207
GC/HRMS	EPA 1668A/1668C	PCB 208
GC/HRMS	EPA 1668A/1668C	PCB 209
Preparation	**Method**	**Type**
Acid Digestion (Aqueous)	EPA 3005A/3010A	Inorganics
Acid Digestion (Solid)	EPA 3050B	Inorganics
Separatory Funnel Liquid-Liquid Extraction	EPA 3510C	Semivolatile and Non-Volatile Organics
Ultrasonic Extraction	EPA 3550B/3550C	Semivolatile and Non-Volatile Organics
Solvent Dilution	EPA 3580A	Semivolatile and Non-Volatile Organics
Purge and Trap	EPA 5030B	Volatile Organic Compounds
Purge and Trap	EPA 5035/5035A	Volatile Organic Compounds
Microwave Extraction	EPA 3546	Semivolatile and Non-Volatile Organics
Florisil Cleanup	EPA 3620B/3620C	Cleanup of pesticide residues and other chlorinated hydrocarbons

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
Sulfur Cleanup	EPA 3660A	Sulfur Cleanup
Sulfuric Acid Cleanup	EPA 3665A	Sulfuric Acid Cleanup for PCBs
Silica Gel Cleanup	EPA 3630C	Column Cleanup
TCLP Extraction	EPA 1311	Toxicity Characteristic Leaching Procedure
SPLP Extraction	EPA 1312	Synthetic Precipitation Leaching Procedure
STLC Extraction	CA-WET	California Waste Extraction Test

Air and Emissions		
Technology	**Method**	**Analyte**
ICP-MS	EPA 6020/6020A	Aluminum
ICP-MS	EPA 6020/6020A	Antimony
ICP-MS	EPA 6020/6020A	Arsenic
ICP-MS	EPA 6020/6020A	Barium
ICP-MS	EPA 6020/6020A	Beryllium
ICP-MS	EPA 6020/6020A	Cadmium
ICP-MS	EPA 6020/6020A	Calcium
ICP-MS	EPA 6020/6020A	Chromium (Total)
ICP-MS	EPA 6020/6020A	Cobalt
ICP-MS	EPA 6020/6020A	Copper
ICP-MS	EPA 6020/6020A	Iron
ICP-MS	EPA 6020/6020A	Lead
ICP-MS	EPA 6020/6020A	Magnesium
ICP-MS	EPA 6020/6020A	Manganese
ICP-MS	EPA 6020/6020A	Molybdenum
ICP-MS	EPA 6020/6020A	Nickel
ICP-MS	EPA 6020/6020A	Potassium
ICP-MS	EPA 6020/6020A	Selenium
ICP-MS	EPA 6020/6020A	Silver
ICP-MS	EPA 6020/6020A	Sodium
ICP-MS	EPA 6020/6020A	Thallium
ICP-MS	EPA 6020/6020A	Vanadium
ICP-MS	EPA 6020/6020A	Zinc
Gravimetric	40CFR Part 50 App B	TSP (Total Suspended Particulate)
Gravimetric	40CFR Part 50 App J	PM10

Air and Emissions		
Technology	**Method**	**Analyte**
GC/MS	EPA TO-13A	1,2,4-Trichlorobenzene
GC/MS	EPA TO-13A	1,2-Dichlorobenzene
GC/MS	EPA TO-13A	1,3-Dichlorobenzene
GC/MS	EPA TO-13A	1,4-Dichlorobenzene
GC/MS	EPA TO-13A	2,4,5-Trichlorophenol
GC/MS	EPA TO-13A	2,4,6-Trichlorophenol
GC/MS	EPA TO-13A	2,4-Dichlorophenol
GC/MS	EPA TO-13A	2,4-Dimethylphenol
GC/MS	EPA TO-13A	2,4-Dinitrophenol
GC/MS	EPA TO-13A	2,4-Dinitrotoluene
GC/MS	EPA TO-13A	2,6-Dinitrotoluene
GC/MS	EPA TO-13A	2-Chloronaphthalene
GC/MS	EPA TO-13A	2-Chlorophenol
GC/MS	EPA TO-13A	2-Methylnaphthalene
GC/MS	EPA TO-13A	2-Methylphenol
GC/MS	EPA TO-13A	2-Nitroaniline
GC/MS	EPA TO-13A	2-Nitrophenol
GC/MS	EPA TO-13A	3&4-Methylphenol
GC/MS	EPA TO-13A	3,3'-Dichlorobenzidine
GC/MS	EPA TO-13A	3-Nitroaniline
GC/MS	EPA TO-13A	4,6-Dinitro-2-methylphenol
GC/MS	EPA TO-13A	4-Bromophenyl phenyl ether
GC/MS	EPA TO-13A	4-Chloro-3-methylphenol
GC/MS	EPA TO-13A	4-Chloroaniline
GC/MS	EPA TO-13A	4-Chlorophenyl phenyl ether
GC/MS	EPA TO-13A	4-Nitroaniline
GC/MS	EPA TO-13A	4-Nitrophenol
GC/MS	EPA TO-13A	Acenaphthene
GC/MS	EPA TO-13A	Acenaphthylene
GC/MS	EPA TO-13A	Aniline
GC/MS	EPA TO-13A	Anthracene
GC/MS	EPA TO-13A	Benzo(a)anthracene
GC/MS	EPA TO-13A	Benzo(a)pyrene
GC/MS	EPA TO-13A	Benzo(b)fluoranthene
GC/MS	EPA TO-13A	Benzo(g,h,i)perylene

Air and Emissions		
Technology	**Method**	**Analyte**
GC/MS	EPA TO-13A	Benzo(k)fluoranthene
GC/MS	EPA TO-13A	Benzoic Acid
GC/MS	EPA TO-13A	Benzyl Alcohol
GC/MS	EPA TO-13A	Benzyl butyl Phthalate
GC/MS	EPA TO-13A	Biphenyl
GC/MS	EPA TO-13A	Bis(2-chloroethoxy) Methane
GC/MS	EPA TO-13A	Bis(2-chloroethyl) Ether
GC/MS	EPA TO-13A	Bis(2-chloroisopropyl) Ether
GC/MS	EPA TO-13A	Carbazole
GC/MS	EPA TO-13A	Chrysene
GC/MS	EPA TO-13A	Bis (2-ethylhexyl) Phthalate
GC/MS	EPA TO-13A	Dibenz(a,h)anthracene
GC/MS	EPA TO-13A	Dibenzofuran
GC/MS	EPA TO-13A	Diethyl Phthalate
GC/MS	EPA TO-13A	Dimethyl Phthalate
GC/MS	EPA TO-13A	Di-n-butyl Phthalate
GC/MS	EPA TO-13A	Di-n-octyl Phthalate
GC/MS	EPA TO-13A	Fluoranthene
GC/MS	EPA TO-13A	Fluorene
GC/MS	EPA TO-13A	Hexachlorobenzene
GC/MS	EPA TO-13A	Hexachlorobutadiene
GC/MS	EPA TO-13A	Hexachlorocyclopentadiene
GC/MS	EPA TO-13A	Hexachloroethane
GC/MS	EPA TO-13A	Indeno(1,2,3-c,d) Pyrene
GC/MS	EPA TO-13A	Isophorone
GC/MS	EPA TO-13A	Naphthalene
GC/MS	EPA TO-13A	Nitrobenzene
GC/MS	EPA TO-13A	n-Nitrosodimethylamine
GC/MS	EPA TO-13A	n-Nitrosodi-n-propylamine
GC/MS	EPA TO-13A	n-Nitrosodiphenylamine
GC/MS	EPA TO-13A	Pentachlorophenol
GC/MS	EPA TO-13A	Phenanthrene
GC/MS	EPA TO-13A	Phenol
GC/MS	EPA TO-13A	Pyrene
GC/MS SIM	EPA TO-13A SIM	1-Methylnaphthalene

Air and Emissions		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA TO-13A SIM	2-Methylnaphthalene
GC/MS SIM	EPA TO-13A SIM	Acenaphthene
GC/MS SIM	EPA TO-13A SIM	Acenaphthylene
GC/MS SIM	EPA TO-13A SIM	Anthracene
GC/MS SIM	EPA TO-13A SIM	Benzo(a)anthracene
GC/MS SIM	EPA TO-13A SIM	Benzo(a)pyrene
GC/MS SIM	EPA TO-13A SIM	Benzo(b)fluoranthene
GC/MS SIM	EPA TO-13A SIM	Benzo(g,h,i)perylene
GC/MS SIM	EPA TO-13A SIM	Benzo(k)fluoranthene
GC/MS SIM	EPA TO-13A SIM	Chrysene
GC/MS SIM	EPA TO-13A SIM	Fluoranthene
GC/MS SIM	EPA TO-13A SIM	Fluorene
GC/MS SIM	EPA TO-13A SIM	Indeno(1,2,3-c,d) Pyrene
GC/MS SIM	EPA TO-13A SIM	Naphthalene
GC/MS SIM	EPA TO-13A SIM	Phenanthrene
GC/MS SIM	EPA TO-13A SIM	Pyrene
GC-ECD	EPA TO-4A/TO-10A	PCB-1016
GC-ECD	EPA TO-4A/TO-10A	PCB-1221
GC-ECD	EPA TO-4A/TO-10A	PCB-1232
GC-ECD	EPA TO-4A/TO-10A	PCB-1242
GC-ECD	EPA TO-4A/TO-10A	PCB-1248
GC-ECD	EPA TO-4A/TO-10A	PCB-1254
GC-ECD	EPA TO-4A/TO-10A	PCB-1260
GC-ECD	EPA TO-4A/TO-10A	PCB-1262
GC-ECD	EPA TO-4A/TO-10A	PCB-1268
Preparation	**Method**	**Type**
Acid Digestion (Filters, Solid)	EPA 3050B	Inorganics
Soxhlet extraction of PUF	TO-4A/TO-10A	PCBs in Air
Soxhlet extraction of PUF/XAD	TO-13	Semivolatiles in Air
Florisil Cleanup	EPA 3620B/3620C	Cleanup of pesticide residues and other chlorinated hydrocarbons
Sulfur Cleanup	EPA 3660A	Sulfur Cleanup
Sulfuric Acid Cleanup	EPA 3665A	Sulfuric Acid Cleanup for PCBs

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. L2468.

R. Douglas Leonard Jr., VP, PILR SBU

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Eurofins Seattle

5755 8th Street East
Tacoma, WA 98424

Fulfills the requirements of

ISO/IEC 17025:2017

and

U.S. Department of Defense (DoD) Quality Systems Manual for Environmental Laboratories (DoD QSM V5.4)

In the field of

TESTING

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 19 January 2025
Certificate Number: L2236

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

and

U.S. Department of Defense (DoD) Quality Systems Manual for Environmental Laboratories (DoD QSM V5.4)

Eurofins Seattle

5755 8th Street East
Tacoma, WA 98424
Terri Torres
253-922-2310

TESTING

Valid to: **January 19, 2025** Certificate Number: **L2236**

Environmental

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP-AES	EPA 6010B/6010D/200.7	Silver
ICP-AES	EPA 6010B/6010D/200.7	Aluminum
ICP-AES	EPA 6010B/6010D/200.7	Arsenic
ICP-AES	EPA 6010B/6010D/200.7	Boron
ICP-AES	EPA 6010B/6010D/200.7	Barium
ICP-AES	EPA 6010B/6010D/200.7	Beryllium
ICP-AES	EPA 6010B/6010D/200.7	Calcium
ICP-AES	EPA 6010B/6010D/200.7	Cadmium
ICP-AES	EPA 6010B/6010D/200.7	Cobalt
ICP-AES	EPA 6010B/6010D/200.7	Chromium
ICP-AES	EPA 6010B/6010D/200.7	Copper
ICP-AES	EPA 6010B/6010D/200.7	Iron
ICP-AES	EPA 6010B/6010D/200.7	Potassium
ICP-AES	EPA 6010B/6010D/200.7	Magnesium
ICP-AES	EPA 6010B/6010D/200.7	Manganese

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP-AES	EPA 6010B/6010D/200.7	Molybdenum
ICP-AES	EPA 6010B/6010D/200.7	Sodium
ICP-AES	EPA 6010B/6010D/200.7	Nickel
ICP-AES	EPA 6010B/6010D/200.7	Lead
ICP-AES	EPA 6010B/6010D/200.7	Antimony
ICP-AES	EPA 6010B/6010D/200.7	Selenium
ICP-AES	EPA 6010B/6010D/200.7	Silicon
ICP-AES	EPA 6010B/6010D/200.7	Tin
ICP-AES	EPA 6010B/6010D/200.7	Titanium
ICP-AES	EPA 6010B/6010D/200.7	Strontium
ICP-AES	EPA 6010B/6010D/200.7	Thallium
ICP-AES	EPA 6010B/6010D/200.7	Vanadium
ICP-AES	EPA 6010B/6010D/200.7	Zinc
ICP-MS	EPA 6020/6020B/200.8	Silver
ICP-MS	EPA 6020/6020B/200.8	Aluminum
ICP-MS	EPA 6020/6020B/200.8	Arsenic
ICP-MS	EPA 6020/6020B/200.8	Barium
ICP-MS	EPA 6020/6020B/200.8	Beryllium
ICP-MS	EPA 6020/6020B/200.8	Cadmium
ICP-MS	EPA 6020/6020B/200.8	Cobalt
ICP-MS	EPA 6020/6020B/200.8	Chromium
ICP-MS	EPA 6020/6020B/200.8	Copper
ICP-MS	EPA 6020/6020B/200.8	Iron
ICP-MS	EPA 6020/6020B/200.8	Manganese
ICP-MS	EPA 6020/6020B/200.8	Molybdenum
ICP-MS	EPA 6020/6020B/200.8	Nickel
ICP-MS	EPA 6020/6020B/200.8	Lead
ICP-MS	EPA 6020/6020B/200.8	Antimony
ICP-MS	EPA 6020/6020B/200.8	Selenium
ICP-MS	EPA 6020/6020B/200.8	Thallium
ICP-MS	EPA 6020/6020B/200.8	Uranium
ICP-MS	EPA 6020/6020B/200.8	Vanadium
ICP-MS	EPA 6020/6020B/200.8	Zinc
CVAAS	EPA 7470A/245.1	Mercury
GC/MS	EPA 8260B/8260D/624.1	1,1,1,2-Tetrachloroethane

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260D/624.1	1,1,1-Trichloroethane
GC/MS	EPA 8260B/8260D/624.1	1,1,2,2-Tetrachloroethane
GC/MS	EPA 8260B/8260D/624.1	1,1,2-Trichloro-1,2,2-trifluoroethane
GC/MS	EPA 8260B/8260D/624.1	1,1,2-Trichloroethane
GC/MS	EPA 8260B/8260D/624.1	1,1-Dichloroethane
GC/MS	EPA 8260B/8260D/624.1	1,1-Dichloroethene
GC/MS	EPA 8260B/8260D/624.1	1,1-Dichloropropene
GC/MS	EPA 8260B/8260D/624.1	1,2,3-Trichlorobenzene
GC/MS	EPA 8260B/8260D/624.1	1,2,3-Trichloropropane
GC/MS	EPA 8260B/8260D/624.1	1,2,3-Trimethylbenzene
GC/MS	EPA 8260B/8260D/624.1	1,2,4-Trichlorobenzene
GC/MS	EPA 8260B/8260D/624.1	1,2,4-Trimethylbenzene
GC/MS	EPA 8260B/8260D/624.1	1,2-Dibromo-3-Chloropropane
GC/MS	EPA 8260B/8260D/624.1	1,2-Dichlorobenzene
GC/MS	EPA 8260B/8260D/624.1	1,2-Dichloroethane
GC/MS	EPA 8260B/8260D/624.1	1,2-Dichloropropane
GC/MS	EPA 8260B/8260D/624.1	1,3-Dichloropropene, Total
GC/MS	EPA 8260B/8260D/624.1	1,3,5-Trimethylbenzene
GC/MS	EPA 8260B/8260D/624.1	1,3-Dichlorobenzene
GC/MS	EPA 8260B/8260D/624.1	1,3-Dichloropropane
GC/MS	EPA 8260B/8260D/624.1	1,4-Dichlorobenzene
GC/MS	EPA 8260B/8260D/624.1	2,2-Dichloropropane
GC/MS	EPA 8260B/8260D/624.1	2-Chloroethylvinylether
GC/MS	EPA 8260B/8260D/624.1	2-Chlorotoluene
GC/MS	EPA 8260B/8260D/624.1	2-Hexanone
GC/MS	EPA 8260B/8260D/624.1	2-Methyl-2-Propanol
GC/MS	EPA 8260B/8260D/624.1	4-Chlorotoluene
GC/MS	EPA 8260B/8260D/624.1	4-Isopropyltoluene
GC/MS	EPA 8260B/8260D/624.1	Acetone
GC/MS	EPA 8260B/8260D/624.1	Acetonitrile
GC/MS	EPA 8260B/8260D/624.1	Acrolein
GC/MS	EPA 8260B/8260D/624.1	Acrylonitrile
GC/MS	EPA 8260B/8260D/624.1	Benzene
GC/MS	EPA 8260B/8260D/624.1	Bromobenzene
GC/MS	EPA 8260B/8260D/624.1	Bromodichloromethane

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260D/624.1	Bromoform
GC/MS	EPA 8260B/8260D/624.1	Bromomethane
GC/MS	EPA 8260B/8260D/624.1	Carbon disulfide
GC/MS	EPA 8260B/8260D/624.1	Carbon tetrachloride
GC/MS	EPA 8260B/8260D/624.1	Chlorobenzene
GC/MS	EPA 8260B/8260D/624.1	Chlorobromomethane
GC/MS	EPA 8260B/8260D/624.1	Chlorodibromomethane
GC/MS	EPA 8260B/8260D/624.1	Chloroethane
GC/MS	EPA 8260B/8260D/624.1	Chloroform
GC/MS	EPA 8260B/8260D/624.1	Chloromethane
GC/MS	EPA 8260B/8260D/624.1	cis-1,2-Dichloroethene
GC/MS	EPA 8260B/8260D/624.1	cis-1,3-Dichloropropene
GC/MS	EPA 8260B/8260D/624.1	Cyclohexane
GC/MS	EPA 8260B/8260D/624.1	Dibromomethane
GC/MS	EPA 8260B/8260D/624.1	Dichlorodifluoromethane
GC/MS	EPA 8260B/8260D/624.1	Ethylbenzene
GC/MS	EPA 8260B/8260D/624.1	Ethylene Dibromide
GC/MS	EPA 8260B/8260D/624.1	Ethyl ether
GC/MS	EPA 8260B/8260D/624.1	Hexachlorobutadiene
GC/MS	EPA 8260B/8260D/624.1	Isopropylbenzene
GC/MS	EPA 8260B/8260D/624.1	Iodomethane
GC/MS	EPA 8260B/8260D/624.1	Isopropyl ether
GC/MS	EPA 8260B/8260D/624.1	Methacrylonitrile
GC/MS	EPA 8260B/8260D/624.1	Methyl acetate
GC/MS	EPA 8260B/8260D/624.1	Methyl Ethyl Ketone
GC/MS	EPA 8260B/8260D/624.1	Methyl Isobutyl Ketone
GC/MS	EPA 8260B/8260D/624.1	Methyl tert-butyl ether
GC/MS	EPA 8260B/8260D/624.1	Methylcyclohexane
GC/MS	EPA 8260B/8260D/624.1	Methylene Chloride
GC/MS	EPA 8260B/8260D/624.1	m-Xylene & p-Xylene
GC/MS	EPA 8260B/8260D/624.1	Naphthalene
GC/MS	EPA 8260B/8260D/624.1	n-Butanol
GC/MS	EPA 8260B/8260D/624.1	n-Butylbenzene
GC/MS	EPA 8260B/8260D/624.1	n-Hexane
GC/MS	EPA 8260B/8260D/624.1	N-Propylbenzene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260D/624.1	o-Xylene
GC/MS	EPA 8260B/8260D/624.1	sec-Butylbenzene
GC/MS	EPA 8260B/8260D/624.1	Styrene
GC/MS	EPA 8260B/8260D/624.1	tert-Butylbenzene
GC/MS	EPA 8260B/8260D/624.1	Tert-amyl methyl ether
GC/MS	EPA 8260B/8260D/624.1	Tert-butyl ethyl ether
GC/MS	EPA 8260B/8260D/624.1	Tetrachloroethene
GC/MS	EPA 8260B/8260D/624.1	Tetrahydrofuran
GC/MS	EPA 8260B/8260D/624.1	Toluene
GC/MS	EPA 8260B/8260D/624.1	Total Xylenes
GC/MS	EPA 8260B/8260D/624.1	trans-1,2-Dichloroethene
GC/MS	EPA 8260B/8260D/624.1	trans-1,3-Dichloropropene
GC/MS	EPA 8260B/8260D/624.1	trans-1,4-Dichloro-2-butene
GC/MS	EPA 8260B/8260D/624.1	Trichloroethene
GC/MS	EPA 8260B/8260D/624.1	Trichlorofluoromethane
GC/MS	EPA 8260B/8260D/624.1	Vinyl Acetate
GC/MS	EPA 8260B/8260D/624.1	Vinyl chloride
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,1,1,2-Tetrachloroethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,1,2,2-Tetrachloroethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,1,2-Trichloroethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,1-Dichloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,2,4-Trimethylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,2-Dichloroethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,3,5-Trimethylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,4-Dichlorobenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	2-Hexanone
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Benzene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Bromoform
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Bromomethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Butadiene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Chlorodibromomethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Chloroform
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	cis-1,2-Dichloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	cis-1,3-Dichloropropene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Ethylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Dibromomethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Bromodichloromethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Ethylene Dibromide
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Hexachlorobutadiene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Isopropylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Isopropyl alcohol
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	m&p-Xylene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Methyl tert-Butyl Ether
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Naphthalene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	n-Butylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	o-Xylene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Sec-Butylbenzene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Tert-Butylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Tetrachloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Toluene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	trans-1,3-Dichloropropene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Trichloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Vinyl chloride
GC/MS	EPA 8270C/8270E/625.1	1-Methylnaphthalene
GC/MS	EPA 8270C/8270E/625.1	1,2,4-Trichlorobenzene
GC/MS	EPA 8270C/8270E/625.1	1,2,4,5-Tetrachlorobenzene
GC/MS	EPA 8270C/8270E/625.1	1,2-Dichlorobenzene
GC/MS	EPA 8270C/8270E/625.1	1,3-Dichlorobenzene
GC/MS	EPA 8270C/8270E/625.1	1,4-Dichlorobenzene
GC/MS	EPA 8270C/8270E/625.1	bis(2-chloroisopropyl)ether
GC/MS	EPA 8270C/8270E/625.1	2,3,4,6-Tetrachlorophenol
GC/MS	EPA 8270C/8270E/625.1	2,4,5-Trichlorophenol
GC/MS	EPA 8270C/8270E/625.1	2,4,6-Trichlorophenol
GC/MS	EPA 8270C/8270E/625.1	2,4-Dichlorophenol
GC/MS	EPA 8270C/8270E/625.1	2,4-Dimethylphenol
GC/MS	EPA 8270C/8270E/625.1	2,4-Dinitrophenol
GC/MS	EPA 8270C/8270E/625.1	2,4-Dinitrotoluene
GC/MS	EPA 8270C/8270E/625.1	2,6-Dinitrotoluene
GC/MS	EPA 8270C/8270E/625.1	2-Chloronaphthalene
GC/MS	EPA 8270C/8270E/625.1	2-Chlorophenol
GC/MS	EPA 8270C/8270E/625.1	2-Methylnaphthalene
GC/MS	EPA 8270C/8270E/625.1	2-Methylphenol
GC/MS	EPA 8270C/8270E/625.1	2-Nitroaniline
GC/MS	EPA 8270C/8270E/625.1	2-Nitrophenol
GC/MS	EPA 8270C/8270E/625.1	3 & 4 Methylphenol
GC/MS	EPA 8270C/8270E/625.1	3,3'-Dichlorobenzidine
GC/MS	EPA 8270C/8270E/625.1	3-Nitroaniline
GC/MS	EPA 8270C/8270E/625.1	4,6-Dinitro-2-methylphenol

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270E/625.1	4-Bromophenyl phenyl ether
GC/MS	EPA 8270C/8270E/625.1	4-Chloro-3-methylphenol
GC/MS	EPA 8270C/8270E/625.1	4-Chloroaniline
GC/MS	EPA 8270C/8270E/625.1	4-Chlorophenyl phenyl ether
GC/MS	EPA 8270C/8270E/625.1	4-Nitroaniline
GC/MS	EPA 8270C/8270E/625.1	4-Nitrophenol
GC/MS	EPA 8270C/8270E/625.1	Acenaphthene
GC/MS	EPA 8270C/8270E/625.1	Acenaphthylene
GC/MS	EPA 8270C/8270E/625.1	Aniline
GC/MS	EPA 8270C/8270E/625.1	Anthracene
GC/MS	EPA 8270C/8270E/625.1	1,2-Diphenylhydrazine as Azobenzene
GC/MS	EPA 8270C/8270E/625.1	Benzo[a]anthracene
GC/MS	EPA 8270C/8270E/625.1	Benzo[a]pyrene
GC/MS	EPA 8270C/8270E/625.1	Benzo[b]fluoranthene
GC/MS	EPA 8270C/8270E/625.1	Benzo[g,h,i]perylene
GC/MS	EPA 8270C/8270E/625.1	Benzo[k]fluoranthene
GC/MS	EPA 8270C/8270E/625.1	Benzoic acid
GC/MS	EPA 8270C/8270E/625.1	Benzyl alcohol
GC/MS	EPA 8270C/8270E/625.1	Bis(2-chloroethoxy)methane
GC/MS	EPA 8270C/8270E/625.1	Bis(2-chloroethyl)ether
GC/MS	EPA 8270C/8270E/625.1	Bis(2-ethylhexyl) phthalate
GC/MS	EPA 8270C/8270E/625.1	Butyl benzyl phthalate
GC/MS	EPA 8270C/8270E/625.1	Carbazole
GC/MS	EPA 8270C/8270E/625.1	Chrysene
GC/MS	EPA 8270C/8270E/625.1	Dibenz(a,h)anthracene
GC/MS	EPA 8270C/8270E/625.1	Dibenzofuran
GC/MS	EPA 8270C/8270E/625.1	Diethyl phthalate
GC/MS	EPA 8270C/8270E/625.1	Dimethyl phthalate
GC/MS	EPA 8270C/8270E/625.1	Di-n-butyl phthalate
GC/MS	EPA 8270C/8270E/625.1	Di-n-octyl phthalate
GC/MS	EPA 8270C/8270E/625.1	Fluoranthene
GC/MS	EPA 8270C/8270E/625.1	Fluorene
GC/MS	EPA 8270C/8270E/625.1	Hexachlorobenzene
GC/MS	EPA 8270C/8270E/625.1	Hexachlorobutadiene
GC/MS	EPA 8270C/8270E/625.1	Hexachlorocyclopentadiene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270E/625.1	Hexachloroethane
GC/MS	EPA 8270C/8270E/625.1	Indeno[1,2,3-cd]pyrene
GC/MS	EPA 8270C/8270E/625.1	Isophorone
GC/MS	EPA 8270C/8270E/625.1	Naphthalene
GC/MS	EPA 8270C/8270E/625.1	Nitrobenzene
GC/MS	EPA 8270C/8270E/625.1	N-Nitrosodimethylamine
GC/MS	EPA 8270C/8270E/625.1	N-Nitrosodi-n-propylamine
GC/MS	EPA 8270C/8270E/625.1	N-Nitrosodiphenylamine
GC/MS	EPA 8270C/8270E/625.1	Pentachlorophenol
GC/MS	EPA 8270C/8270E/625.1	Phenanthrene
GC/MS	EPA 8270C/8270E/625.1	Phenol
GC/MS	EPA 8270C/8270E/625.1	Pyrene
GC/MS	EPA 8270C/8270E/625.1	Pyridine
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	1-Methylnaphthalene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	1,4-Dioxane
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	2-Methylnaphthalene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Acenaphthene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Acenaphthylene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Anthracene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[a]anthracene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[a]pyrene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[b]fluoranthene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[g,h,i]perylene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[k]fluoranthene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Bis(2-ethylhexyl) phthalate

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Chrysene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Dibenz(a,h)anthracene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Fluoranthene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Fluorene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Indeno[1,2,3-cd]pyrene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Naphthalene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Pentachlorophenol
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Phenanthrene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Pyrene
GC-ECD	EPA 8011/504.1	1,2-Dibromoethane
GC-ECD	EPA 8011/504.1	1,2-Dibromo-3-Chloropropane
GC-ECD	EPA 8011/504.1	1,2,3-Trichloropropane
GC-ECD	EPA 8081A/8081B/608.3	2,4'-DDD
GC-ECD	EPA 8081A/8081B/608.3	2,4'-DDE
GC-ECD	EPA 8081A/8081B/608.3	2,4'-DDT
GC-ECD	EPA 8081A/8081B/608.3	Aldrin
GC-ECD	EPA 8081A/8081B/608.3	alpha-BHC
GC-ECD	EPA 8081A/8081B/608.3	beta-BHC
GC-ECD	EPA 8081A/8081B/608.3	Cis-Nonachlor
GC-ECD	EPA 8081A/8081B/608.3	delta-BHC
GC-ECD	EPA 8081A/8081B/608.3	Dieldrin
GC-ECD	EPA 8081A/8081B/608.3	Endosulfan I
GC-ECD	EPA 8081A/8081B/608.3	Endosulfan II
GC-ECD	EPA 8081A/8081B/608.3	Endosulfan sulfate
GC-ECD	EPA 8081A/8081B/608.3	Endrin
GC-ECD	EPA 8081A/8081B/608.3	Endrin aldehyde
GC-ECD	EPA 8081A/8081B/608.3	Endrin ketone
GC-ECD	EPA 8081A/8081B/608.3	gamma-BHC (Lindane)
GC-ECD	EPA 8081A/8081B/608.3	Heptachlor

Non-Potable Water		
Technology	**Method**	**Analyte**
GC-ECD	EPA 8081A/8081B/608.3	Hexachlorobenzene
GC-ECD	EPA 8081A/8081B/608.3	Hexachlorobutadiene
GC-ECD	EPA 8081A/8081B/608.3	Methoxychlor
GC-ECD	EPA 8081A/8081B/608.3	Mirex
GC-ECD	EPA 8081A/8081B/608.3	Oxy-Chlordane
GC-ECD	EPA 8081A/8081B/608.3	Technical Chlordane
GC-ECD	EPA 8081A/8081B/608.3	Toxaphene
GC-ECD	EPA 8081A/8081B/608.3	Trans-Nonachlor
GC-ECD	EPA 8081A/8081B/608.3	4,4'-DDD
GC-ECD	EPA 8081A/8081B/608.3	4,4'-DDE
GC-ECD	EPA 8081A/8081B/608.3	4,4'-DDT
GC-ECD	EPA 8081A/8081B/608.3	alpha-Chlordane
GC-ECD	EPA 8081A/8081B/608.3	gamma-Chlordane
GC-ECD	EPA 8081A/8081B/608.3	Heptachlor epoxide
GC-ECD	EPA 8082/8082A/608.3	PCB-1016
GC-ECD	EPA 8082/8082A/608.3	PCB-1221
GC-ECD	EPA 8082/8082A/608.3	PCB-1232
GC-ECD	EPA 8082/8082A/608.3	PCB-1242
GC-ECD	EPA 8082/8082A/608.3	PCB-1248
GC-ECD	EPA 8082/8082A/608.3	PCB-1254
GC-ECD	EPA 8082/8082A/608.3	PCB-1260
GC-ECD	EPA 8082/8082A/608.3	PCB-1262
GC-ECD	EPA 8082/8082A/608.3	PCB-1268
GC-FID	EPA 8015B/8015D	Gasoline
GC/MS	EPA 8260B	Gasoline
GC-FID	AK101	Gasoline
GC/MS	AK101	Gasoline
GC-FID	NWTPH-Gx	Gasoline
GC/MS	NWTPH-Gx	Gasoline
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aliphatic HCs >C5-C6)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aliphatic HCs >C6-C8)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aliphatic HCs >C8-C10)

Non-Potable Water		
Technology	**Method**	**Analyte**
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aliphatic HCs >C10-C12)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aromatic HCs >C8-C10)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aromatic HCs >C10-C12)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aromatic HCs >C12-C13)
GC-FID	EPA 8015B/8015D	Diesel
GC-FID	AK102	Diesel
GC-FID	NWTPH-Dx	Diesel
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic C8-C10)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic >C10-C12)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic >C12-C16)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic >C16-C21)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic >C21-C34)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic C8-C10)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic >C10-C12)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic >C12-C16)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic >C16-C21)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic >C21-C34)
GC-FID	EPA 8015B/8015D	Motor Oil
GC-FID	AK103	Motor Oil
GC-FID	NWTPH-Dx	Motor Oil
GC/MS	Organotins	Dibutyltin
GC/MS	Organotins	Monobutyltin
GC/MS	Organotins	Tetra-n-butyltin
GC/MS	Organotins	Tributyltin

Non-Potable Water		
Technology	**Method**	**Analyte**
Titration	EPA 310.1 / SM 2320B	Alkalinity
Titration	EPA 310.1 / SM 2320B	Carbonate Alkalinity
Titration	EPA 310.1 / SM 2320B	Bicarbonate Alkalinity
Colorimetric/ RFA	EPA 350.1/ SM 4500-NH3-G	Ammonia
Colorimetric / RFA	EPA 353.2	Nitrate + Nitrite
Probe	EPA 405.1 / SM 5210B	BOD
Titration	EPA 410.2 SM 5220C	COD
Colorimetric / RFA	SM 5220D 22nd Ed	COD
Gravimetric	EPA 1664A	Oil & Grease
Colorimetric/RFA	EPA 9012A	Total Cyanides
Colorimetric/RFA	EPA 9012B	Total Cyanides
Ion Chromatography	EPA 300.0/9056A	Bromide
Ion Chromatography	EPA 300.0/9056A	Chloride
Ion Chromatography	EPA 300.0/9056A	Fluoride
Ion Chromatography	EPA 300.0/9056A	Sulfate
Ion Chromatography	EPA 300.0/9056A	Nitrate
Ion Chromatography	EPA 300.0/9056A	Nitrite
TOC Analyzer (Combustion)	EPA 415.1/9060/9060A SM 5310B	TOC
TOC Analyzer (Combustion)	EPA 415.1/9060/9060A SM 5310B	DOC
Probe	EPA 9040B/9045C/150.1	pH
Gravimetric	EPA 160.1 SM 2540C	Total Dissolved Solids
Gravimetric	EPA 160.2 SM 2540D	Total Suspended Solids
Conductivity meter	EPA 120.1 SM 2510B	Specific Conductance
Setaflash	EPA 1020A	Flashpoint
CVGCAFS	EPA 1630	Methyl Mercury
CVAFS	EPA 1631E	Mercury
CVGCAA	EPA 1632A	Arsenite
CVGCAA	EPA 1632A	Inorganic Arsenic

Non-Potable Water		
Preparation	**Method**	**Type**
Separatory Funnel Liquid-Liquid Extraction	EPA 3510C	Semivolatile and Nonvolatile Organics
Purge and Trap	EPA 5030B	Volatile Organic Compounds
Acid Digestion (Aqueous)	EPA 3005A/3010A	Inorganics
TCLP Extraction	EPA 1311	Toxicity Characteristic Leaching Procedure
Florisil Cleanup	EPA 3620B	Cleanup of pesticide residues and other chlorinated hydrocarbons
Silica Gel Cleanup	EPA 3630C	Column Cleanup
Sulfur Cleanup	EPA 3660B	Sulfur Cleanup Reagent
Sulfuric Acid Cleanup	EPA 3665A	Cleanup for Quantization of PCBs

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
ICP-AES	EPA 6010B/6010D	Silver
ICP-AES	EPA 6010B/6010D	Aluminum
ICP-AES	EPA 6010B/6010D	Arsenic
ICP-AES	EPA 6010B/6010D	Boron
ICP-AES	EPA 6010B/6010D	Barium
ICP-AES	EPA 6010B/6010D	Beryllium
ICP-AES	EPA 6010B/6010D	Calcium
ICP-AES	EPA 6010B/6010D	Cadmium
ICP-AES	EPA 6010B/6010D	Cobalt
ICP-AES	EPA 6010B/6010D	Chromium
ICP-AES	EPA 6010B/6010D	Copper
ICP-AES	EPA 6010B/6010D	Iron
ICP-AES	EPA 6010B/6010D	Potassium
ICP-AES	EPA 6010B/6010D	Magnesium
ICP-AES	EPA 6010B/6010D	Manganese
ICP-AES	EPA 6010B/6010D	Molybdenum
ICP-AES	EPA 6010B/6010D	Sodium
ICP-AES	EPA 6010B/6010D	Nickel
ICP-AES	EPA 6010B/6010D	Lead
ICP-AES	EPA 6010B/6010D	Antimony
ICP-AES	EPA 6010B/6010D	Selenium
ICP-AES	EPA 6010B/6010D	Silicon

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
ICP-AES	EPA 6010B/6010D	Tin
ICP-AES	EPA 6010B/6010D	Titanium
ICP-AES	EPA 6010B/6010D	Strontium
ICP-AES	EPA 6010B/6010D	Thallium
ICP-AES	EPA 6010B/6010D	Vanadium
ICP-AES	EPA 6010B/6010D	Zinc
ICP-MS	EPA 6020/6020B	Silver
ICP-MS	EPA 6020/6020B	Aluminum
ICP-MS	EPA 6020/6020B	Arsenic
ICP-MS	EPA 6020/6020B	Barium
ICP-MS	EPA 6020/6020B	Beryllium
ICP-MS	EPA 6020/6020B	Cadmium
ICP-MS	EPA 6020/6020B	Cobalt
ICP-MS	EPA 6020/6020B	Chromium
ICP-MS	EPA 6020/6020B	Copper
ICP-MS	EPA 6020/6020B	Iron
ICP-MS	EPA 6020/6020B	Manganese
ICP-MS	EPA 6020/6020B	Molybdenum
ICP-MS	EPA 6020/6020B	Nickel
ICP-MS	EPA 6020/6020B	Lead
ICP-MS	EPA 6020/6020B	Antimony
ICP-MS	EPA 6020/6020B	Selenium
ICP-MS	EPA 6020/6020B	Thallium
ICP-MS	EPA 6020/6020B	Uranium
ICP-MS	EPA 6020/6020B	Vanadium
ICP-MS	EPA 6020/6020B	Zinc
CVAAS	EPA 7471A/7471B	Mercury
GC/MS	EPA 8260B/8260D	1,1,1,2-Tetrachloroethane
GC/MS	EPA 8260B/8260D	1,1,1-Trichloroethane
GC/MS	EPA 8260B/8260D	1,1,2,2-Tetrachloroethane
GC/MS	EPA 8260B/8260D	1,1,2-Trichloro-1,2,2-trifluoroethane
GC/MS	EPA 8260B/8260D	1,1,2-Trichloroethane
GC/MS	EPA 8260B/8260D	1,1-Dichloroethane
GC/MS	EPA 8260B/8260D	1,1-Dichloroethene
GC/MS	EPA 8260B/8260D	1,1-Dichloropropene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260D	1,2,3-Trichlorobenzene
GC/MS	EPA 8260B/8260D	1,2,3-Trichloropropane
GC/MS	EPA 8260B/8260D	1,2,3-Trimethylbenzene
GC/MS	EPA 8260B/8260D	1,2,4-Trichlorobenzene
GC/MS	EPA 8260B/8260D	1,2,4-Trimethylbenzene
GC/MS	EPA 8260B/8260D	1,2-Dibromo-3-Chloropropane
GC/MS	EPA 8260B/8260D	1,2-Dichlorobenzene
GC/MS	EPA 8260B/8260D	1,2-Dichloroethane
GC/MS	EPA 8260B/8260D	1,2-Dichloropropane
GC/MS	EPA 8260B/8260D	1,3-Dichloropropene, Total
GC/MS	EPA 8260B/8260D	1,3,5-Trimethylbenzene
GC/MS	EPA 8260B/8260D	1,3-Dichlorobenzene
GC/MS	EPA 8260B/8260D	1,3-Dichloropropane
GC/MS	EPA 8260B/8260D	1,4-Dichlorobenzene
GC/MS	EPA 8260B/8260D	2,2-Dichloropropane
GC/MS	EPA 8260B/8260D	2-Chloroethylvinylether
GC/MS	EPA 8260B/8260D	2-Chlorotoluene
GC/MS	EPA 8260B/8260D	2-Hexanone
GC/MS	EPA 8260B/8260D	2-Methyl-2-Propanol
GC/MS	EPA 8260B/8260D	4-Chlorotoluene
GC/MS	EPA 8260B/8260D	4-Isopropyltoluene
GC/MS	EPA 8260B/8260D	Acetone
GC/MS	EPA 8260B/8260D	Acetonitrile
GC/MS	EPA 8260B/8260D	Acrolein
GC/MS	EPA 8260B/8260D	Acrylonitrile
GC/MS	EPA 8260B/8260D	Benzene
GC/MS	EPA 8260B/8260D	Bromobenzene
GC/MS	EPA 8260B/8260D	Bromodichloromethane
GC/MS	EPA 8260B/8260D	Bromoform
GC/MS	EPA 8260B/8260D	Bromomethane
GC/MS	EPA 8260B/8260D	Carbon disulfide
GC/MS	EPA 8260B/8260D	Carbon tetrachloride
GC/MS	EPA 8260B/8260D	Chlorobenzene
GC/MS	EPA 8260B/8260D	Chlorobromomethane
GC/MS	EPA 8260B/8260D	Chlorodibromomethane

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260D	Chloroethane
GC/MS	EPA 8260B/8260D	Chloroform
GC/MS	EPA 8260B/8260D	Chloromethane
GC/MS	EPA 8260B/8260D	cis-1,2-Dichloroethene
GC/MS	EPA 8260B/8260D	cis-1,3-Dichloropropene
GC/MS	EPA 8260B/8260D	Cyclohexane
GC/MS	EPA 8260B/8260D	Dibromomethane
GC/MS	EPA 8260B/8260D	Dichlorodifluoromethane
GC/MS	EPA 8260B/8260D	Ethylbenzene
GC/MS	EPA 8260B/8260D	Ethylene Dibromide
GC/MS	EPA 8260B/8260D	Ethyl ether
GC/MS	EPA 8260B/8260D	Hexachlorobutadiene
GC/MS	EPA 8260B/8260D	Isopropylbenzene
GC/MS	EPA 8260B/8260D	Iodomethane
GC/MS	EPA 8260B/8260D	Isopropyl ether
GC/MS	EPA 8260B/8260D	Methacrylonitrile
GC/MS	EPA 8260B/8260D	Methyl acetate
GC/MS	EPA 8260B/8260D	Methyl Ethyl Ketone
GC/MS	EPA 8260B/8260D	Methyl Isobutyl Ketone
GC/MS	EPA 8260B/8260D	Methyl tert-butyl ether
GC/MS	EPA 8260B/8260D	Methylcyclohexane
GC/MS	EPA 8260B/8260D	Methylene Chloride
GC/MS	EPA 8260B/8260D	m-Xylene & p-Xylene
GC/MS	EPA 8260B/8260D	Naphthalene
GC/MS	EPA 8260B/8260D	n-Butanol
GC/MS	EPA 8260B/8260D	n-Butylbenzene
GC/MS	EPA 8260B/8260D	n-Hexane
GC/MS	EPA 8260B/8260D	N-Propylbenzene
GC/MS	EPA 8260B/8260D	o-Xylene
GC/MS	EPA 8260B/8260D	sec-Butylbenzene
GC/MS	EPA 8260B/8260D	Styrene
GC/MS	EPA 8260B/8260D	tert-Butylbenzene
GC/MS	EPA 8260B/8260D	Tert-amyl methyl ether
GC/MS	EPA 8260B/8260D	Tert-butyl ethyl ether
GC/MS	EPA 8260B/8260D	Tetrachloroethene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260B/8260D	Tetrahydrofuran
GC/MS	EPA 8260B/8260D	Toluene
GC/MS	EPA 8260B/8260D	Total Xylenes
GC/MS	EPA 8260B/8260D	trans-1,2-Dichloroethene
GC/MS	EPA 8260B/8260D	trans-1,3-Dichloropropene
GC/MS	EPA 8260B/8260D	trans-1,4-Dichloro-2-butene
GC/MS	EPA 8260B/8260D	Trichloroethene
GC/MS	EPA 8260B/8260D	Trichlorofluoromethane
GC/MS	EPA 8260B/8260D	Vinyl Acetate
GC/MS	EPA 8260B/8260D	Vinyl chloride
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,1,1,2-Tetrachloroethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,1,2,2-Tetrachloroethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,1,2-Trichloroethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,2,4-Trimethylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1, 2-Dibromoethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,1-Dichloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,2-Dichloroethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,3,5-Trimethylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	1,4-Dichlorobenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	2-Hexanone
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Benzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Bromoform
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Bromomethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Butadiene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Chlorodibromomethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Chloroform
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	cis-1,2-Dichloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	cis-1,3-Dichloropropene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Dibromomethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Ethylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Bromodichloromethane
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Ethylene Dibromide
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Hexachlorobutadiene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Isopropylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Isopropyl alcohol
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	m&p-Xylene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Methyl tert-Butyl Ether
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Naphthalene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	n-Butylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	o-Xylene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Sec-Butylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Tert-Butylbenzene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Tetrachloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Toluene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Trans-1,2-Dichloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	trans-1,3-Dichloropropene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Trichloroethene
GC/MS SIM	EPA 8260B SIM EPA 8260D SIM	Vinyl chloride
GC/MS	EPA 8270C/8270E	1-Methylnaphthalene
GC/MS	EPA 8270C/8270E	1,2,4-Trichlorobenzene
GC/MS	EPA 8270C/8270E	1,2,4,5-Tetrachlorobenzene
GC/MS	EPA 8270C/8270E	1,2-Dichlorobenzene
GC/MS	EPA 8270C/8270E	1,3-Dichlorobenzene
GC/MS	EPA 8270C/8270E	1,4-Dichlorobenzene
GC/MS	EPA 8270C/8270E	bis(2-chloroisopropyl)ether
GC/MS	EPA 8270C/8270E	2,3,4,6-Tetrachlorophenol
GC/MS	EPA 8270C/8270E	2,4,5-Trichlorophenol
GC/MS	EPA 8270C/8270E	2,4,6-Trichlorophenol
GC/MS	EPA 8270C/8270E	2,4-Dichlorophenol
GC/MS	EPA 8270C/8270E	2,4-Dimethylphenol
GC/MS	EPA 8270C/8270E	2,4-Dinitrophenol
GC/MS	EPA 8270C/8270E	2,4-Dinitrotoluene
GC/MS	EPA 8270C/8270E	2,6-Dinitrotoluene
GC/MS	EPA 8270C/8270E	2-Chloronaphthalene
GC/MS	EPA 8270C/8270E	2-Chlorophenol
GC/MS	EPA 8270C/8270E	2-Methylnaphthalene
GC/MS	EPA 8270C/8270E	2-Methylphenol
GC/MS	EPA 8270C/8270E	2-Nitroaniline
GC/MS	EPA 8270C/8270E	2-Nitrophenol
GC/MS	EPA 8270C/8270E	3 & 4 Methylphenol
GC/MS	EPA 8270C/8270E	3,3'-Dichlorobenzidine
GC/MS	EPA 8270C/8270E	3-Nitroaniline
GC/MS	EPA 8270C/8270E	4,6-Dinitro-2-methylphenol
GC/MS	EPA 8270C/8270E	4-Bromophenyl phenyl ether
GC/MS	EPA 8270C/8270E	4-Chloro-3-methylphenol
GC/MS	EPA 8270C/8270E	4-Chloroaniline

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270E	4-Chlorophenyl phenyl ether
GC/MS	EPA 8270C/8270E	4-Nitroaniline
GC/MS	EPA 8270C/8270E	4-Nitrophenol
GC/MS	EPA 8270C/8270E	Acenaphthene
GC/MS	EPA 8270C/8270E	Acenaphthylene
GC/MS	EPA 8270C/8270E	Aniline
GC/MS	EPA 8270C/8270E	Anthracene
GC/MS	EPA 8270C/8270E	1,2-Diphenylhydrazine as Azobenzene
GC/MS	EPA 8270C/8270E	Benzo[a]anthracene
GC/MS	EPA 8270C/8270E	Benzo[a]pyrene
GC/MS	EPA 8270C/8270E	Benzo[b]fluoranthene
GC/MS	EPA 8270C/8270E	Benzo[g,h,i]perylene
GC/MS	EPA 8270C/8270E	Benzo[k]fluoranthene
GC/MS	EPA 8270C/8270E	Benzoic acid
GC/MS	EPA 8270C/8270E	Benzyl alcohol
GC/MS	EPA 8270C/8270E	Bis(2-chloroethoxy)methane
GC/MS	EPA 8270C/8270E	Bis(2-chloroethyl)ether
GC/MS	EPA 8270C/8270E	Bis(2-ethylhexyl) phthalate
GC/MS	EPA 8270C/8270E	Butyl benzyl phthalate
GC/MS	EPA 8270C/8270E	Carbazole
GC/MS	EPA 8270C/8270E	Chrysene
GC/MS	EPA 8270C/8270E	Dibenz(a,h)anthracene
GC/MS	EPA 8270C/8270E	Dibenzofuran
GC/MS	EPA 8270C/8270E	Diethyl phthalate
GC/MS	EPA 8270C/8270E	Dimethyl phthalate
GC/MS	EPA 8270C/8270E	Di-n-butyl phthalate
GC/MS	EPA 8270C/8270E	Di-n-octyl phthalate
GC/MS	EPA 8270C/8270E	Fluoranthene
GC/MS	EPA 8270C/8270E	Fluorene
GC/MS	EPA 8270C/8270E	Hexachlorobenzene
GC/MS	EPA 8270C/8270E	Hexachlorobutadiene
GC/MS	EPA 8270C/8270E	Hexachlorocyclopentadiene
GC/MS	EPA 8270C/8270E	Hexachloroethane
GC/MS	EPA 8270C/8270E	Indeno[1,2,3-cd]pyrene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270C/8270E	Isophorone
GC/MS	EPA 8270C/8270E	Naphthalene
GC/MS	EPA 8270C/8270E	Nitrobenzene
GC/MS	EPA 8270C/8270E	N-Nitrosodimethylamine
GC/MS	EPA 8270C/8270E	N-Nitrosodi-n-propylamine
GC/MS	EPA 8270C/8270E	N-Nitrosodiphenylamine
GC/MS	EPA 8270C/8270E	Pentachlorophenol
GC/MS	EPA 8270C/8270E	Phenanthrene
GC/MS	EPA 8270C/8270E	Phenol
GC/MS	EPA 8270C/8270E	Pyrene
GC/MS	EPA 8270C/8270E	Pyridine
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	1-Methylnaphthalene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	1,4-Dioxane
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	2-Methylnaphthalene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Acenaphthene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Acenaphthylene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Anthracene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[a]anthracene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[a]pyrene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[b]fluoranthene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[g,h,i]perylene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Benzo[k]fluoranthene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Bis(2-ethylhexyl) phthalate
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Chrysene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Dibenz(a,h)anthracene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Fluoranthene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Fluorene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Indeno[1,2,3-cd]pyrene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Naphthalene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Pentachlorophenol
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Phenanthrene
GC/MS SIM	EPA 8270C SIM EPA 8270E SIM	Pyrene
GC-ECD	EPA 8011	1,2-Dibromoethane
GC-ECD	EPA 8011	1,2-Dibromo-3-Chloropropane
GC-ECD	EPA 8011	1,2,3-Trichloropropane
GC-ECD	EPA 8081A/8081B	2,4'-DDD
GC-ECD	EPA 8081A/8081B	2,4'-DDE
GC-ECD	EPA 8081A/8081B	2,4'-DDT
GC-ECD	EPA 8081A/8081B	4,4'-DDD
GC-ECD	EPA 8081A/8081B	4,4'-DDE
GC-ECD	EPA 8081A/8081B	4,4'-DDT
GC-ECD	EPA 8081A/8081B	Aldrin
GC-ECD	EPA 8081A/8081B	alpha-BHC
GC-ECD	EPA 8081A/8081B	alpha-Chlordane
GC-ECD	EPA 8081A/8081B	beta-BHC
GC-ECD	EPA 8081A/8081B	delta-BHC
GC-ECD	EPA 8081A/8081B	Cis-Nonchlor
GC-ECD	EPA 8081A/8081B	Dieldrin
GC-ECD	EPA 8081A/8081B	Endosulfan I
GC-ECD	EPA 8081A/8081B	Endosulfan II
GC-ECD	EPA 8081A/8081B	Endosulfan sulfate
GC-ECD	EPA 8081A/8081B	Endrin

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC-ECD	EPA 8081A/8081B	Endrin aldehyde
GC-ECD	EPA 8081A/8081B	Endrin ketone
GC-ECD	EPA 8081A/8081B	gamma-BHC (Lindane)
GC-ECD	EPA 8081A/8081B	gamma-Chlordane
GC-ECD	EPA 8081A/8081B	Heptachlor
GC-ECD	EPA 8081A/8081B	Heptachlor epoxide
GC-ECD	EPA 8081A/8081B	Hexachlorobenzene
GC-ECD	EPA 8081A/8081B	Hexachlorobutadiene
GC-ECD	EPA 8081A/8081B	Methoxychlor
GC-ECD	EPA 8081A/8081B	Mirex
GC-ECD	EPA 8081A/8081B	Oxy-Chlordane
GC-ECD	EPA 8081A/8081B	Technical Chlordane
GC-ECD	EPA 8081A/8081B	Toxaphene
GC-ECD	EPA 8081A/8081B	Trans-Nonachlor
GC-ECD	EPA 8082/8082A	PCB-1016
GC-ECD	EPA 8082/8082A	PCB-1221
GC-ECD	EPA 8082/8082A	PCB-1232
GC-ECD	EPA 8082/8082A	PCB-1242
GC-ECD	EPA 8082/8082A	PCB-1248
GC-ECD	EPA 8082/8082A	PCB-1254
GC-ECD	EPA 8082/8082A	PCB-1260
GC-ECD	EPA 8082/8082A	PCB-1262
GC-ECD	EPA 8082/8082A	PCB-1268
GC-FID	EPA 8015B/8015D	Gasoline
GC/MS	EPA 8260B	Gasoline
GC-FID	AK101	Gasoline
GC/MS	AK101	Gasoline
GC-FID	NWTPH-Gx	Gasoline
GC/MS	NWTPH-Gx	Gasoline
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aliphatic HCs >C5-C6)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aliphatic HCs >C6-C8)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aliphatic HCs >C8-C10)

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aliphatic HCs >C10-C12)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aromatic HCs >C8-C10)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aromatic HCs >C10-C12)
GC-FID	NWVPH	Volatile Petroleum Hydrocarbons (aromatic HCs >C12-C13)
GC-FID	EPA 8015B/8015D	Diesel
GC-FID	AK102	Diesel
GC-FID	NWTPH-Dx	Diesel
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic C8-C10)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic >C10-C12)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic >C12-C16)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic >C16-C21)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aliphatic >C21-C34)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic 8-C10)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic >C10-C12)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic >C12-C16)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic >C16-C21)
GC-FID	NWEPH	Extractable Petroleum Hydrocarbons (aromatic >C21-C34)
GC-FID	EPA 8015B/8015D	Motor Oil
GC-FID	AK103	Motor Oil
GC-FID	NWTPH-Dx	Motor Oil
GC/MS	Organotins	Dibutyltin
GC/MS	Organotins	Monobutyltin
GC/MS	Organotins	Tetra-n-butyltin

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	Organotins	Tributyltin
Gravimetric	ASTM D422-63/D7928/D6913	Grain Size
Colorimetric/RFA	EPA 9012A	Total Cyanides
Colorimetric/RFA	EPA 9012B	Total Cyanides
Colorimetric/RFA	EPA 350.1	Ammonia
Ion Chromatography	EPA 300.0/9056A	Bromide
Ion Chromatography	EPA 300.0/9056A	Chloride
Ion Chromatography	EPA 300.0/9056A	Fluoride
Ion Chromatography	EPA 300.0/9056A	Sulfate
Ion Chromatography	EPA 300.0/9056A	Nitrate
Ion Chromatography	EPA 300.0/9056A	Nitrite
CVGCAFS	EPA 1630 MOD/SOP 2808	Methyl Mercury
CVAFS	EPA 1631B	Mercury
CVGCAA	EPA 1632A MOD	Arsenite
CVGCAA	EPA 1632A MOD	Inorganic Arsenic
TOC Analyzer (Combustion)	EPA 9060/9060A	TOC
Probe	EPA 9040B/9045C	pH/Corrosivity
Setaflash	EPA 1020A	Flashpoint
Separatory Funnel Liquid-Liquid Extraction	EPA 3510C	Semivolatile and Nonvolatile Organics in leachates
Microwave Extraction	EPA 3546	Semivolatile and Nonvolatile Organics
Solvent Dilution	EPA 3580A	Semivolatile and Nonvolatile Organics
Waste Dilution	EPA 3585	Volatile Organic Compounds
Purge and Trap	EPA 5030B	Volatile Organic Compounds
Purge and Trap	EPA 5035A	Volatile Organic Compounds
Acid Digestion (Aqueous)	EPA 3005A/3010A	Inorganics in leachates
Acid Digestion (Sediments, Sludges, Soils)	EPA 3050B	Inorganics
TCLP Extraction	EPA 1311	Toxicity Characteristic Leaching Procedure
Florisil Cleanup	EPA 3620B	Cleanup of pesticide residues and other chlorinated hydrocarbons
Silica Gel Cleanup	EPA 3630C	Column Cleanup
Sulfur Cleanup	EPA 3660B	Sulfur Cleanup Reagent
Sulfuric Acid Cleanup	EPA 3665A	Cleanup for Quantitation of PCBs

Air and Emissions		
Technology	**Method**	**Analyte**
CVAFS	EPA 30B EPA 12B SOP5143	Total Gaseous Mercury

Biological Tissue		
Technology	**Method**	**Analyte**
CVGCAFS	EPA 1630 MOD/SOP2808	Methyl Mercury
CVAFS	EPA 1631B	Mercury
CVGCAA	EPA 1632A	Arsenite
CVGCAA	EPA 1632A	Inorganic Arsenic

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. L2236.

R. Douglas Leonard Jr., VP, PILR SBU

Oregon
Environmental Laboratory
Accreditation Program

NELAP Recognized

Eurofins Frontier Global Sciences, LLC

4167

5755 8th Street East

Tacoma, WA 98424

IS GRANTED APPROVAL BY ORELAP UNDER THE 2016 TNI STANDARDS, TO PERFORM ANALYSES ON ENVIRONMENTAL SAMPLES IN MATRICES AS LISTED BELOW :

Air	Drinking Water	Non-Potable Water	Solids and Chemical Waste	Tissue
Chemistry	Chemistry	Chemistry	Chemistry	Chemistry

AND AS RECORDED IN THE LIST OF APPROVED ANALYTES, METHODS, ANALYTICAL TECHNIQUES, AND FIELDS OF TESTING ISSUED CONCURRENTLY WITH THIS CERTIFICATE AND REVISED AS NECESSARY.

ACCREDITED STATUS DEPENDS ON SUCCESSFUL ONGOING PARTICIPATION IN THE PROGRAM AND CONTINUED COMPLIANCE WITH THE STANDARDS.

CUSTOMERS ARE URGED TO VERIFY THE LABORATORY'S CURRENT ACCREDITATION STATUS IN OREGON.

Travis Bartholomew
Oregon State Public Health Laboratory
ORELAP Program Manager
7202 NE Evergreen Parkway, Suite 100
Hillsboro, OR 97124

EFFECTIVE DATE : **7/8/2021**
EXPIRATION DATE : **7/7/2022**
Certificate No : **4167 - 001**

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Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

Eurofins Frontier Global Sciences, LLC
5755 8th Street East
Tacoma, WA 98424

ORELAP ID: 4167
EPA CODE: WA01273
Certificate: 4167 - 001

Issue Date: 7/8/2021 Expiration Date: 7/7/2022

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
Air					
	EPA Method 30B			10404203	Determination of Total Vapor Phase Mercury Emissions from Coal-Fired Combustion Sources Using Carbon Sorbent Traps
		1095	Mercury		
		3974	Total Vapor Phase Mercury		
Biological Tissue					
	EPA 1630			10122608	Methyl Mercury by Purge & Trap Cold Vapor Atomic Fluorescence Spectrometry
		1205	Methyl Mercury		
	EPA 1631B			10123009	Mercury in Water by Oxidation, Purge & Trap, and Cold Vapor Atomic Fluorescence
		1095	Mercury		
	EPA 1632A			10123407	Chemical Speciation of Arsenic in Water and Tissue by Hydride Generation Quartz Furnace Atomic Absorption Spectrometry
		1010	Arsenic		
	EPA 1638			10124002	Trace Elements by ICP/MS
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
Drinking Water					
	EPA 504.1 1.1			10082801	EDB/DBCP/TCP micro-extraction, GC/ECD
		5180	1,2,3-Trichloropropane		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
	EPA 8011			10173009	1,2-Dibromoethane and 1,2-Dibromo-3-chloropropane by Microextraction and GC/ECD
		5180	1,2,3-Trichloropropane		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
Non-Potable Water					
	AK101 GRO			90015002	Determination of Gasoline Range Organics - Alaska Department of Environmental Conservation
		9408	Gasoline range organics (GRO)		
	AK101 GRO-MS			90015159	Determination of Gasoline Range Organics by GC/MS - Alaska Department of Environmental Conservation
		9408	Gasoline range organics (GRO)		
	AK102 DRO			90015206	Determination of Diesel Range Organics - Alaska Department of Environmental Conservation
		9369	Diesel range organics (DRO)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	AK102 DRO-SV			90015228	Determination of Diesel Range Organics Small Volume - Alaska DEC
		9369	Diesel range organics (DRO)		
	AK103 RRO			90015400	Determination of Residual Range Organics - Alaska Department of Environmental Conservation
		9499	Motor Oil		
	EPA 1020A			10117007	Ignitability Setaflash Closed-cup Method
		1780	Ignitability		
	EPA 120.1			10006209	Conductance - Specific @ 25 C
		1610	Conductivity		
	EPA 130.2 1978			10255604	Hardness - Titrimetric, EDTA
		1755	Total hardness as CaCO3		
	EPA 1311			10118806	Toxicity Characteristic Leaching Procedure
		1466	Toxicity Characteristic Leaching Procedure (TCLP)		
	EPA 1312			10119003	Synthetic Precipitation Leaching Procedure
		1460	Synthetic Precipitation Leaching Procedure (SPLP)		
	EPA 150.1			10008409	pH - Electrometric Measurement
		1900	pH		
	EPA 160.1			10009208	Total Dissolved Solids, dried @ 180 C.
		1955	Residue-filterable (TDS)		
	EPA 160.2			10256403	Total Suspended Solids, 0.2um dried @105C
		1960	Residue-nonfilterable (TSS)		
	EPA 160.3			10010001	Total Solids, dried @ 103-105 C.
		1950	Residue-total		
	EPA 160.5			10010603	Settleable solids
		1965	Residue-settleable		
	EPA 1630			10122608	Methyl Mercury by Purge & Trap Cold Vapor Atomic Fluorescence Spectrometry
		1205	Methyl Mercury		
	EPA 1631E			10237204	Mercury in Water by Oxidation, Purge & Trap, and Cold Vapor Atomic Fluorescence

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1095	Mercury		
	EPA 1632A			10123407	Chemical Speciation of Arsenic in Water and Tissue by Hydride Generation Quartz Furnace Atomic Absorption Spectrometry
		1010	Arsenic		
	EPA 1638			10124002	Trace Elements by ICP/MS
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 1640			10124400	Trace Elements by Chelation Preconcentration and ICP/MS
		1010	Arsenic		
		1030	Cadmium		
		1040	Chromium		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1050	Cobalt		
		1055	Copper		
		1075	Lead		
		1105	Nickel		
		1150	Silver		
		1190	Zinc		
	EPA 1664A (HEM)			10127807	N-Hexane Extractable Material (Oil and Grease) by Extraction and Gravimetry
		1860	Oil & Grease		
		1935	Total recoverable petroleum hydrocarbons (TRPH)		
	EPA 1664A (SGT-HEM)			10261606	Silica Gen Treated N-Hexane Extractable Material (Oil and Grease)
		1860	Oil & Grease		
	EPA 180.1 2			10011800	Turbidity - Nephelometric
		2055	Turbidity		
	EPA 200.7 4.4			10013806	ICP - metals
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1550	Calcium hardness as CaCO3		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1085	Magnesium		
		1090	Manganese		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1100	Molybdenum		
		1105	Nickel		
		1125	Potassium		
		1140	Selenium		
		1990	Silica as SiO2		
		1145	Silicon		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1755	Total hardness as CaCO3		
		1185	Vanadium		
		1190	Zinc		
	EPA 200.7 5			10014003	ICP - metals
		1760	Hardness (calc.)		
	EPA 200.8 5.4			10014605	Metals by ICP-MS
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1180	Titanium		
		3055	Uranium (activity)		
		1185	Vanadium		
		1190	Zinc		
	EPA 200.8 5.5			10014809	Metals by ICP-MS
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1184	Uranium (mass)		
		1185	Vanadium		
		1190	Zinc		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	EPA 245.1 3			10036609	Mercury by Cold Vapor Atomic Absorption
		1095	Mercury		
	EPA 300.0 2.1			10053200	Methods for the Determination of Inorganic Substances in Environmental Samples
		1540	Bromide		
		1575	Chloride		
		1730	Fluoride		
		1810	Nitrate as N		
		1820	Nitrate plus Nitrite as N		
		1840	Nitrite as N		
		2000	Sulfate		
	EPA 3005A			10133207	Acid Digestion of waters for Total Recoverable or Dissolved Metals
		1398	Acid Digestion of Waters for Total Recoverable or Dissolved Metals		
	EPA 3010A			10133605	Acid Digestion of Aqueous samples and Extracts for Total Metals
		1401	Acid Digestion of Aqueous samples and Extracts for Total Metals		
	EPA 310.1			10054805	Alkalinity as CaCO3
		1505	Alkalinity as CaCO3		
	EPA 335.1			10060001	Cyanides, amenable to chlorination
		1510	Amenable cyanide		
	EPA 335.4 1.0			10061402	Methods for the Determination of Inorganic Substances in Environmental Samples
		1645	Total cyanide		
	EPA 350.1 2			10063602	Ammonia Nitrogen - Colorimetric, Auto Phenate
		1515	Ammonia as N		
	EPA 3510C			10138202	Separatory Funnel Liquid-liquid extraction
		8031	Extraction/Preparation		
		1444	Seperatory Funnel Liquid-Liquid Extraction		
	EPA 353.2 2			10067604	Nitrate/Nitrite Nitrogen - Automated, Cadmium

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1820	Nitrate plus Nitrite as N		
	EPA 3610B			10144602	Alumina Cleanup
		1411	Alumina Cleanup		
	EPA 3620B			10145809	Florisil Cleanup
		1414	Florisil Clean-up		
	EPA 3630C			10146802	Silica gel cleanup
		1446	Silica Gel Clean-up		
	EPA 365.1 2			10070005	Phosphorous - Colorimetric, Automated persulfate
		1870	Orthophosphate as P		
		1910	Phosphorus, total		
	EPA 3660B			10148400	Sulfur cleanup
		1456	Sulfur Clean-up		
	EPA 3665A			10148808	Sulfuric Acid / permanganate Cleanup
		1458	Sulfuric Acid / Permanganate Clean-Up		
	EPA 405.1			10075408	Biochemical Oxygen Demand (5 days @ 20 C).
		1530	Biochemical oxygen demand		
		1555	Carbonaceous BOD, CBOD		
	EPA 410.2			10076401	Chemical Oxygen Demand - Titrimetric (low-level).
		1565	Chemical oxygen demand		
	EPA 415.1			10078407	Organic carbon - Combustion or Oxidation
		1710	Dissolved organic carbon (DOC)		
		2040	Total organic carbon		
	EPA 5030B			10153409	Purge and trap for aqueous samples
		1406	Aqueous-phase Purge & Trap		
	EPA 504.1 1.1			10082801	EDB/DBCP/TCP micro-extraction, GC/ECD
		5180	1,2,3-Trichloropropane		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
	EPA 6010B			10155609	ICP - AES

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1550	Calcium hardness as CaCO3		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1760	Hardness (calc.)		
		1070	Iron		
		1075	Lead		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1125	Potassium		
		1140	Selenium		
		1990	Silica as SiO2		
		1145	Silicon		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1755	Total hardness as CaCO3		
		1185	Vanadium		
		1190	Zinc		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	EPA 6010D 4			10155916	Metals by ICP - AES
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1760	Hardness (calc.)		
		1070	Iron		
		1075	Lead		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1125	Potassium		
		1140	Selenium		
		1990	Silica as SiO2		
		1145	Silicon		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020			10156000	Inductively Coupled Plasma-Mass Spectrometry

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1095	Mercury		
		1100	Molybdenum		
		1105	Nickel		
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1180	Titanium		
		3055	Uranium (activity)		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020B 2			10156420	Inductively Coupled Plasma-Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1095	Mercury		
		1100	Molybdenum		
		1105	Nickel		
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1180	Titanium		
		3055	Uranium (activity)		
		1185	Vanadium		
		1190	Zinc		
	EPA 608.3 GC-ECD			10296614	Organochlorine Pesticides and PCBs by GC/ECD
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		7250	Chlordane (tech.)		
		7240	cis-chlordane (alpha-Chlordane)		
		7105	delta-BHC		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		7810	Methoxychlor		
		8250	Toxaphene (Chlorinated camphene)		
	EPA 624.1			10298121	Purgeables by GC/MS
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5185	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		
		4630	1,1-Dichloroethane		
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		
		5180	1,2,3-Trichloropropane		
		5155	1,2,4-Trichlorobenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5210	1,2,4-Trimethylbenzene		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4320	Acetonitrile		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		
		4375	Benzene		
		4385	Bromobenzene		
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4595	Dibromomethane (Methylene bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		4835	Hexachlorobutadiene		
		4840	Hexachloroethane		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4940	Methyl acetate		
		4950	Methyl bromide (Bromomethane)		
		4960	Methyl chloride (Chloromethane)		
		5000	Methyl tert-butyl ether (MTBE)		
		4965	Methylcyclohexane		
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4425	n-Butyl alcohol (1-Butanol, n-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			Butanol)		
		4435	n-Butylbenzene		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		4440	sec-Butylbenzene		
		5100	Styrene		
		4370	T-amylmethylether (TAME)		
		4420	tert-Butyl alcohol		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5120	Tetrahydrofuran (THF)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 625.1			10300024	Base/Neutrals and Acids by GC/MS
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		4615	1,3-Dichlorobenzene		
		4620	1,4-Dichlorobenzene		
		6380	1-Methylnaphthalene		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		

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		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		6412	3 & 4 Methylphenol		
		5945	3,3'-Dichlorobenzidine		
		6465	3-Nitroaniline		
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5545	Aniline		
		5555	Anthracene		
		5562	Azobenzene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		
		6315	Indeno(1,2,3-cd) pyrene		
		6320	Isophorone		
		5005	Naphthalene		
		5875	n-Decane		
		5015	Nitrobenzene		
		6530	n-Nitrosodimethylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6580	n-Octadecane		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6625	Phenol		
		6665	Pyrene		
		5095	Pyridine		
	EPA 7470A			10165807	Mercury in Liquid Waste by Cold Vapor Atomic Absorption
		1095	Mercury		
	EPA 8000C 3			10305201	Determinative Chromatographic Separations
		8031	Extraction/Preparation		
	EPA 8000D 4			10305234	Determinative Chromatographic Separations
		8031	Extraction/Preparation		
	EPA 8011			10173009	1,2-Dibromoethane and 1,2-Dibromo-3-chloropropane by Microextraction and GC/ECD
		5180	1,2,3-Trichloropropane		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
	EPA 8015B			10173601	Non-halogenated organics using GC/FID
		9369	Diesel range organics (DRO)		
		9408	Gasoline range organics (GRO)		
		9499	Motor Oil		
	EPA 8015D			10305609	Nonhalogenated Organics Using GC/FID
		9369	Diesel range organics (DRO)		
		9408	Gasoline range organics (GRO)		
		9499	Motor Oil		
	EPA 8081A			10178606	Organochlorine Pesticides by GC/ECD
		8580	2,4'-DDD		
		8585	2,4'-DDE		
		8590	2,4'-DDT		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7240	cis-chlordane (alpha-Chlordane)		
		7925	cis-Nonachlor		
		7105	delta-BHC		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		7810	Methoxychlor		
		7870	Mirex		
		3890	Oxychlordane		
		8250	Toxaphene (Chlorinated camphene)		
		7910	trans-Nonachlor		

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Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	EPA 8081B			10178800	Organochlorine Pesticides by GC/ECD
		8580	2,4'-DDD		
		8585	2,4'-DDE		
		8590	2,4'-DDT		
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7240	cis-chlordane (alpha-Chlordane)		
		7925	cis-Nonachlor		
		7105	delta-BHC		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		7810	Methoxychlor		
		7870	Mirex		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		3890	Oxychlordane		
		8250	Toxaphene (Chlorinated camphene)		
		7910	trans-Nonachlor		
	EPA 8082			10179007	Polychlorinated Biphenyls (PCBs) by GC/ECD
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
	EPA 8082A			10179201	Polychlorinated Biphenyls (PCBs) by GC/ECD
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
	EPA 8260B			10184802	Volatile Organic Compounds by purge and trap GC/MS
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5185	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		
		4630	1,1-Dichloroethane		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		
		5180	1,2,3-Trichloropropane		
		5182	1,2,3-Trimethylbenzene		
		5155	1,2,4-Trichlorobenzene		
		5210	1,2,4-Trimethylbenzene		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4320	Acetonitrile		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4375	Benzene		
		4385	Bromobenzene		
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4555	Cyclohexane		
		4595	Dibromomethane (Methylene bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		9408	Gasoline range organics (GRO)		
		4835	Hexachlorobutadiene		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4940	Methyl acetate		
		4950	Methyl bromide (Bromomethane)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4960	Methyl chloride (Chloromethane)		
		5000	Methyl tert-butyl ether (MTBE)		
		4965	Methylcyclohexane		
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4425	n-Butyl alcohol (1-Butanol, n-Butanol)		
		4435	n-Butylbenzene		
		4855	n-Hexane		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		4440	sec-Butylbenzene		
		5100	Styrene		
		4370	T-amylmethylether (TAME)		
		4420	tert-Butyl alcohol		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5120	Tetrahydrofuran (THF)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 8260B SIM			10184904	Volatile Organic Compounds by purge and trap

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
					GC/MS-SIM
		5105	1,1,1,2-Tetrachloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5165	1,1,2-Trichloroethane		
		4640	1,1-Dichloroethylene		
		5210	1,2,4-Trimethylbenzene		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		5215	1,3,5-Trimethylbenzene		
		9318	1,3-Butadiene		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4860	2-Hexanone (MBK)		
		4375	Benzene		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4575	Chlorodibromomethane		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4595	Dibromomethane (Methylene bromide)		
		4765	Ethylbenzene		
		4835	Hexachlorobutadiene		
		4895	Isopropyl alcohol (2-Propanol, Isopropanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4950	Methyl bromide (Bromomethane)		
		5000	Methyl tert-butyl ether (MTBE)		
		5005	Naphthalene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4435	n-Butylbenzene		
		5250	o-Xylene		
		4440	sec-Butylbenzene		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		5170	Trichloroethene (Trichloroethylene)		
		5235	Vinyl chloride		
	EPA 8260D			10307127	Volatile Organic Compounds By GC/MS
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5185	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		
		4630	1,1-Dichloroethane		
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		
		5180	1,2,3-Trichloropropane		
		5182	1,2,3-Trimethylbenzene		
		5155	1,2,4-Trichlorobenzene		
		5210	1,2,4-Trimethylbenzene		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		
		4635	1,2-Dichloroethane (Ethylene dichloride)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4320	Acetonitrile		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		
		4375	Benzene		
		4385	Bromobenzene		
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4555	Cyclohexane		
		4595	Dibromomethane (Methylene bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		4835	Hexachlorobutadiene		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4940	Methyl acetate		
		4950	Methyl bromide (Bromomethane)		
		4960	Methyl chloride (Chloromethane)		
		5000	Methyl tert-butyl ether (MTBE)		
		4965	Methylcyclohexane		
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4425	n-Butyl alcohol (1-Butanol, n-Butanol)		
		4435	n-Butylbenzene		
		4855	n-Hexane		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		4440	sec-Butylbenzene		
		5100	Styrene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4370	T-amylmethylether (TAME)		
		4420	tert-Butyl alcohol		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5120	Tetrahydrofuran (THF)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 8260D SIM			10307138	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry Selected Ion Monitoring (GC/MS SIM)
		5105	1,1,1,2-Tetrachloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5165	1,1,2-Trichloroethane		
		4640	1,1-Dichloroethylene		
		5210	1,2,4-Trimethylbenzene		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		5215	1,3,5-Trimethylbenzene		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4860	2-Hexanone (MBK)		
		4375	Benzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4395	Bromodichloromethane		
		4400	Bromoform		
		4575	Chlorodibromomethane		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4595	Dibromomethane (Methylene bromide)		
		4765	Ethylbenzene		
		4835	Hexachlorobutadiene		
		4895	Isopropyl alcohol (2-Propanol, Isopropanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4950	Methyl bromide (Bromomethane)		
		5000	Methyl tert-butyl ether (MTBE)		
		5005	Naphthalene		
		4435	n-Butylbenzene		
		5250	o-Xylene		
		4440	sec-Butylbenzene		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		5170	Trichloroethene (Trichloroethylene)		
		5235	Vinyl chloride		
	EPA 8270C			10185805	Semivolatile Organic compounds by GC/MS
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6220	1,2-Diphenylhydrazine		
		4615	1,3-Dichlorobenzene		
		4620	1,4-Dichlorobenzene		
		6380	1-Methylnaphthalene		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		6412	3 & 4 Methylphenol		
		5945	3,3'-Dichlorobenzidine		
		6465	3-Nitroaniline		
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		

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Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5510	Acetophenone		
		5545	Aniline		
		5555	Anthracene		
		5562	Azobenzene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5587	Benzofluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4840	Hexachloroethane		
		6315	Indeno(1,2,3-cd) pyrene		
		6320	Isophorone		
		5005	Naphthalene		
		5875	n-Decane		
		5015	Nitrobenzene		
		6530	n-Nitrosodimethylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6580	n-Octadecane		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6625	Phenol		
		6665	Pyrene		
		5095	Pyridine		
	EPA 8270C SIM			10242407	Semivolatile Organic compounds by GC/MS Selective Ion Monitoring
		4735	1,4-Dioxane (1,4-Diethyleneoxide)		
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6315	Indeno(1,2,3-cd) pyrene		
		5005	Naphthalene		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6665	Pyrene		
	EPA 8270E			10242543	Semivolatile Organic compounds by GC/MS
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		4615	1,3-Dichlorobenzene		
		4620	1,4-Dichlorobenzene		
		6380	1-Methylnaphthalene		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		6412	3 & 4 Methylphenol		
		5945	3,3'-Dichlorobenzidine		
		6465	3-Nitroaniline		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5510	Acetophenone		
		5545	Aniline		
		5555	Anthracene		
		5562	Azobenzene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6200	Di-n-octyl phthalate		
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		
		6315	Indeno(1,2,3-cd) pyrene		
		6320	Isophorone		
		5005	Naphthalene		
		5875	n-Decane		
		5015	Nitrobenzene		
		6530	n-Nitrosodimethylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6580	n-Octadecane		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6625	Phenol		
		6665	Pyrene		
		5095	Pyridine		
	EPA 8270E SIM			10242565	Semivolatile Organic compounds by Gas Chromatography/Mass Spectrometry (GC/MS-SIM)
		4735	1,4-Dioxane (1,4-Diethyleneoxide)		
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		
		6315	Indeno(1,2,3-cd) pyrene		
		5005	Naphthalene		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6665	Pyrene		
	EPA 9012A			10193405	Total and Amenable Cyanide (automated colorimetric with off-line distillation)
		1510	Amenable cyanide		
		1645	Total cyanide		
	EPA 9012B			10243206	Total and Amenable Cyanide (automated colorimetric with off-line distillation)
		1510	Amenable cyanide		
		1645	Total cyanide		
	EPA 9013			10193609	Cyanide Extraction Procedure for Solids and Oils
		1421	Cyanide Extraction for Solids and Oils		
	EPA 9040B			10197203	pH Electrometric Measurement
		1900	pH		
	EPA 9040C			10244403	pH Electrometric Measurement
		1900	pH		
	EPA 9056A			10199607	Determination of Inorganic Anions by Ion Chromatography
		1540	Bromide		
		1575	Chloride		
		1730	Fluoride		
		1810	Nitrate as N		
		1820	Nitrate plus Nitrite as N		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1840	Nitrite as N		
		2000	Sulfate		
	EPA 9060			10200201	Total Organic Carbon
		1710	Dissolved organic carbon (DOC)		
		2040	Total organic carbon		
	EPA 9060A			10244823	Total Organic Carbon
		1710	Dissolved organic carbon (DOC)		
		2040	Total organic carbon		
	NWTPH-Dx			90018409	Oregon DEQ TPH Diesel Range
		9369	Diesel range organics (DRO)		
		9499	Motor Oil		
	NWTPH-Gx			90018603	Oregon DEQ TPH Gasoline Range Organics by GC/FID-PID Purge & Trap
		9408	Gasoline range organics (GRO)		
	NWTPH-GX (GC/MS)			90018658	Oregon DEQ TPH Gasoline Range Organics by GC/MS Purge & Trap
		9408	Gasoline range organics (GRO)		
	NWTPH-HCID			90013200	Oregon DEQ Total Petroleum Hydrocarbon ID
		9369	Diesel range organics (DRO)		
		9408	Gasoline range organics (GRO)		
		9499	Motor Oil		
	Puget Sound Estuary Program (PSEP): Conventional Sediment Variables			60006408	PSEP: Organotins, TOC, and Sulfide
		5913	Dibutyltin		
		1206	Monobutyltin		
		1209	Tetrabutyltin		
		2040	Total organic carbon		
		1213	Tributyltin		
	SM 2130 B 21st ED			20042608	Turbidity by Nephelometric Method

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		2055	Turbidity		
	SM 2130 B 22nd Ed			20042619	Turbidity - Nephelometric Method
		2055	Turbidity		
	SM 2130 B-2011			20048220	Turbidity by Nephelometric Method
		2055	Turbidity		
	SM 2320 B 21st ED			20045403	Alkalinity by Titration Method
		1505	Alkalinity as CaCO3		
	SM 2320 B 22nd Ed			20045414	Alkalinity by Titration
		1505	Alkalinity as CaCO3		
	SM 2320 B-2011 online			20045618	Alkalinity as CaCO3
		1505	Alkalinity as CaCO3		
	SM 2340 B 21st ED			20046406	Hardness by calculation
		1750	Hardness		
	SM 2340 B 22nd Ed			20046417	Hardness - Hardness by Calculation
		1760	Hardness (calc.)		
	SM 2340 C 21st ED			20047409	Hardness by EDTA Titration Method
		1750	Hardness		
	SM 2340 C-2011 22nd Ed			20047614	Hardness by EDTA Titration
		1750	Hardness		
		1755	Total hardness as CaCO3		
	SM 2510 B 21st ED			20048402	Conductivity by Probe
		1610	Conductivity		
	SM 2510 B 22nd Ed			20048413	Conductivity by Probe
		1610	Conductivity		
	SM 2520 B 20th ED			20040055	Salinity by Electrical Conductivity
		1975	Salinity		
	SM 2520 B 21st ED			20004108	Salinity - Electrical Conductivity Method
		1975	Salinity		
	SM 2540 B 21st ED			20049201	Total Solids Dried at 103 - 105C
		1950	Residue-total		
	SM 2540 B-2011 2011			20049416	Total Solids Dried at 103 - 105C

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1950	Residue-total		
	SM 2540 C 21st ED			20050208	Total Dissolved Solids Dried at 180C
		1955	Residue-filterable (TDS)		
	SM 2540 C 22nd Ed			20050424	Total Dissolved Solids Dried at 180 deg C
		1955	Residue-filterable (TDS)		
	SM 2540 C-2011 online			20050413	Residue-filterable (TDS)
		1955	Residue-filterable (TDS)		
	SM 2540 D 21st ED			20051007	Total Suspended Solids Dried at 103 - 105C
		1960	Residue-nonfilterable (TSS)		
	SM 2540 D 22nd ED			20051018	Solids - Total Suspended Solids Dried at 103 - 105 deg C
		1960	Residue-nonfilterable (TSS)		
	SM 2540 D-2011			20051212	Total Suspended Solids Dried at 103 - 105 C
		1960	Residue-nonfilterable (TSS)		
	SM 2540 F 21st ED			20052000	Settleable Solids
		1965	Residue-settleable		
	SM 2540 F-2011			20052215	Settleable Solids
		1965	Residue-settleable		
	SM 2540 G-2011 online			20005270	Total, Fixed, and Volatile Solids
		8641	Percent Moisture		
	SM 4500-CN E-2011 2011			20096428	Cyanide by Colormetric Method
		1635	Cyanide		
	SM 4500-CN^- E 21st ED			20096202	Cyanide by Colorimetric Method
		1635	Cyanide		
	SM 4500-CN^- E 22nd ED			20096213	Cyanide - Colorimetric Method
		1645	Total cyanide		
	SM 4500-CN^- G 21st ED			20097001	Cyanide by Cyanides Amenable to Chlorination after Distillation
		1510	Amenable cyanide		
	SM 4500-CN^- G 22nd ED			20097012	Cyanide - Cyanides Amenable to Chlorination after Distillation
		1510	Amenable cyanide		
	SM 4500-H+ B 21st ED			20105004	pH Value by Electrometric Method .

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1900	pH		
	SM 4500-H+ B 22nd Ed			20105015	pH Value - Electrometric Method
		1900	pH		
	SM 4500-H+ B-2011			20105220	pH - Electrometric Measurement
		1900	pH		
	SM 4500-NH3 B-2011 22nd ED			20106018	Ammonia Nitrogen Distillation
		1515	Ammonia as N		
	SM 4500-NH3 G 21st ED			20111200	Ammonia by Automated Phenate Method
		1515	Ammonia as N		
	SM 4500-NH3 G-2011			20111415	Nitrogen (Ammonia) - Automated Phenate Method
		1515	Ammonia as N		
	SM 4500-P F 21st ED			20124805	Phosphorus by Automated Ascorbic Acid Reduction Method
		1870	Orthophosphate as P		
		1910	Phosphorus, total		
	SM 4500-P F 22nd ED			20124816	Phosphorus by Automated Ascorbic Acid Reduction Method
		1870	Orthophosphate as P		
		1910	Phosphorus, total		
	SM 5210 B 21st ED			20135006	Biochemical Oxygen Demand, 5-Day (BOD5)
		1530	Biochemical oxygen demand		
		1555	Carbonaceous BOD, CBOD		
	SM 5210 B 22nd ED			20135017	Biochemical Oxygen Demand (BOD) 5-Day
		1530	Biochemical oxygen demand		
		1555	Carbonaceous BOD, CBOD		
	SM 5210 B-2011 online			20135266	Biochemical Oxygen Demand (5 days @ 20 C).
		1530	Biochemical oxygen demand		
		1555	Carbonaceous BOD, CBOD		
	SM 5220 C 21st ED			20135802	COD by Closed Reflux, Titrimetric Method
		1565	Chemical oxygen demand		
	SM 5220 C 22nd ED			20135813	COD by Closed Reflux, Titrimetric Method
		1565	Chemical oxygen demand		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	SM 5220 C-2011			20136010	Chemical Oxygen Demand - Colorimetric, Automated.
		1565	Chemical oxygen demand		
	SM 5220 D 21st ED			20136601	COD by Closed Reflux, Colorimetric Method
		1565	Chemical oxygen demand		
	SM 5220 D 22nd ED			20136612	Chemical Oxygen Demand by Closed Reflux and Colorimetric Determination
		1565	Chemical oxygen demand		
	SM 5220 D-2011 2011			20136816	Chemical Oxygen Demand by Closed Reflux and Colorimetric Determination
		1565	Chemical oxygen demand		
	SM 5310 B 21st ED			20137604	TOC by High-Temperature Combustion Method
		1710	Dissolved organic carbon (DOC)		
		2040	Total organic carbon		
	SM 5310 B 22nd ED			20137615	TOC by High-Temperature Combustion Method
		1710	Dissolved organic carbon (DOC)		
		2040	Total organic carbon		
	SM 5310 B-2011 2011			20137820	TOC by High-Temperature Combustion Method
		1710	Dissolved organic carbon (DOC)		
		2040	Total organic carbon		
	WA EPH			60015001	Extractable Petroleum Hydrocarbons
		6211	EPH Aliphatic >C10-C12		
		6212	EPH Aliphatic >C12-C16		
		6214	EPH Aliphatic >C16-C21		
		6216	EPH Aliphatic >C21-C34		
		6219	EPH Aliphatic C8-C10		
		6224	EPH Aromatic >C10-C12		
		6226	EPH Aromatic >C12-C16		
		6228	EPH Aromatic >C16-C21		
		6231	EPH Aromatic >C21-C34		
		6236	EPH Aromatic C8-C10		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	WA VPH			60015056	Volatile Petroleum Hydrocarbons (VPH) by GC/PID Purge & Trap
		4375	Benzene		
		4765	Ethylbenzene		
		5240	m+p-xylene		
		5000	Methyl tert-butyl ether (MTBE)		
		4855	n-Hexane		
		5250	o-Xylene		
		5140	Toluene		
		5300	VPH Aliphatic >C10-C12		
		5301	VPH Aliphatic >C6-C8		
		5302	VPH Aliphatic >C8-C10		
		5303	VPH Aliphatic C5-C6		
		5308	VPH Aromatic >C10-C12		
		5309	VPH Aromatic >C12-C13		
		5310	VPH Aromatic >C8-C10		
		5260	Xylene (total)		
Solids					
	AK101 GRO			90015002	Determination of Gasoline Range Organics - Alaska Department of Environmental Conservation
		9408	Gasoline range organics (GRO)		
	AK101 GRO-MS			90015159	Determination of Gasoline Range Organics by GC/MS - Alaska Department of Environmental Conservation
		9408	Gasoline range organics (GRO)		
	AK102 DRO			90015206	Determination of Diesel Range Organics - Alaska Department of Environmental Conservation
		9369	Diesel range organics (DRO)		
	AK103 RRO			90015400	Determination of Residual Range Organics - Alaska Department of Environmental Conservation
		9499	Motor Oil		
	ASTM D2216 - 10 10			30025106	Standard Test Methods for Laboratory

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
					Determination of Water (Moisture) Content of Soil and Rock by Mass
		3850	Moisture content		
		8641	Percent Moisture		
	ASTM D2217-85			30025151	Grain sizing
		6118	Distribution of particle sizes		
	ASTM D422-63			30030854	Partical Size Distribution (Grain sizing)
		6118	Distribution of particle sizes		
	EPA 1020A			10117007	Ignitability Setaflash Closed-cup Method
		1780	Ignitability		
	EPA 1311			10118806	Toxicity Characteristic Leaching Procedure
		1466	Toxicity Characteristic Leaching Procedure (TCLP)		
	EPA 1312			10119003	Synthetic Precipitation Leaching Procedure
		1460	Synthetic Precipitation Leaching Procedure (SPLP)		
	EPA 1630			10122608	Methyl Mercury by Purge & Trap Cold Vapor Atomic Fluorescence Spectrometry
		1205	Methyl Mercury		
	EPA 1631B			10123009	Mercury in Water by Oxidation, Purge & Trap, and Cold Vapor Atomic Fluorescence
		1095	Mercury		
	EPA 1632A			10123407	Chemical Speciation of Arsenic in Water and Tissue by Hydride Generation Quartz Furnace Atomic Absorption Spectrometry
		1010	Arsenic		
	EPA 1638			10124002	Trace Elements by ICP/MS
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 300.0 2.1			10053200	Methods for the Determination of Inorganic Substances in Environmental Samples
		1540	Bromide		
		1575	Chloride		
		1730	Fluoride		
		1810	Nitrate as N		
		1820	Nitrate plus Nitrite as N		
		1840	Nitrite as N		
		2000	Sulfate		
	EPA 3050B			10135601	Acid Digestion of Sediments, Sludges, and soils
		1400	Acid Digestion of Solids		
	EPA 350.1 2			10063602	Ammonia Nitrogen - Colorimetric, Auto Phenate
		1515	Ammonia as N		
	EPA 3546			10141205	Microwave Extraction
		1428	Microwave Extraction		
	EPA 3580A			10143007	Waste Dilution
		1470	Waste Dilution		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	EPA 3585			10143201	Waste Dilution for Volatile Organics
		8031	Extraction/Preparation		
	EPA 3610B			10144602	Alumina Cleanup
		8031	Extraction/Preparation		
	EPA 3620B			10145809	Florisil Cleanup
		1414	Florisil Clean-up		
	EPA 3630C			10146802	Silica gel cleanup
		1446	Silica Gel Clean-up		
	EPA 365.1 2			10070005	Phosphorous - Colorimetric, Automated persulfate
		1870	Orthophosphate as P		
		1910	Phosphorus, total		
	EPA 3660B			10148400	Sulfur cleanup
		1456	Sulfur Clean-up		
	EPA 3665A			10148808	Sulfuric Acid / permanganate Cleanup
		1458	Sulfuric Acid / Permanganate Clean-Up		
	EPA 5030B			10153409	Purge and trap for aqueous samples
		1406	Aqueous-phase Purge & Trap		
	EPA 5035A			10284807	Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples
		8031	Extraction/Preparation		
	EPA 6010B			10155609	ICP - AES
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1070	Iron		
		1075	Lead		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1125	Potassium		
		1140	Selenium		
		1990	Silica as SiO2		
		1145	Silicon		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 6010D 4			10155916	Metals by ICP - AES
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		

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		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1125	Potassium		
		1140	Selenium		
		1990	Silica as SiO2		
		1145	Silicon		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020			10156000	Inductively Coupled Plasma-Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1095	Mercury		
		1100	Molybdenum		
		1105	Nickel		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1180	Titanium		
		3055	Uranium (activity)		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020B 2			10156420	Inductively Coupled Plasma-Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1090	Manganese		
		1095	Mercury		
		1100	Molybdenum		
		1105	Nickel		
		1140	Selenium		
		1150	Silver		
		1160	Strontium		
		1165	Thallium		
		1180	Titanium		
		3055	Uranium (activity)		
		1185	Vanadium		
		1190	Zinc		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	EPA 7470A			10165807	Mercury in Liquid Waste by Cold Vapor Atomic Absorption
		1095	Mercury		
	EPA 7471A			10166208	Mercury in Solid Waste by Cold Vapor Atomic Absorption
		1095	Mercury		
	EPA 8000C 3			10305201	Determinative Chromatographic Separations
		8031	Extraction/Preparation		
	EPA 8000D 4			10305234	Determinative Chromatographic Separations
		8031	Extraction/Preparation		
	EPA 8011			10173009	1,2-Dibromoethane and 1,2-Dibromo-3-chloropropane by Microextraction and GC/ECD
		5180	1,2,3-Trichloropropane		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
	EPA 8015B			10173601	Non-halogenated organics using GC/FID
		9369	Diesel range organics (DRO)		
		9408	Gasoline range organics (GRO)		
		9499	Motor Oil		
	EPA 8015D			10305609	Nonhalogenated Organics Using GC/FID
		9369	Diesel range organics (DRO)		
		9408	Gasoline range organics (GRO)		
		9499	Motor Oil		
	EPA 8081A			10178606	Organochlorine Pesticides by GC/ECD
		8580	2,4'-DDD		
		8585	2,4'-DDE		
		8590	2,4'-DDT		
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7240	cis-chlordane (alpha-Chlordane)		
		7925	cis-Nonachlor		
		7105	delta-BHC		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		7810	Methoxychlor		
		7870	Mirex		
		3890	Oxychlordane		
		8250	Toxaphene (Chlorinated camphene)		
		7910	trans-Nonachlor		
	EPA 8081B			10178800	Organochlorine Pesticides by GC/ECD
		8580	2,4'-DDD		
		8585	2,4'-DDE		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8590	2,4'-DDT		
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7240	cis-chlordane (alpha-Chlordane)		
		7925	cis-Nonachlor		
		7105	delta-BHC		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		7810	Methoxychlor		
		7870	Mirex		
		3890	Oxychlordane		
		8250	Toxaphene (Chlorinated camphene)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		7910	trans-Nonachlor		
	EPA 8082			10179007	Polychlorinated Biphenyls (PCBs) by GC/ECD
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
	EPA 8082A			10179201	Polychlorinated Biphenyls (PCBs) by GC/ECD
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
	EPA 8260B			10184802	Volatile Organic Compounds by purge and trap GC/MS
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5185	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		
		4630	1,1-Dichloroethane		
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5180	1,2,3-Trichloropropane		
		5182	1,2,3-Trimethylbenzene		
		5155	1,2,4-Trichlorobenzene		
		5210	1,2,4-Trimethylbenzene		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4320	Acetonitrile		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		
		4375	Benzene		
		4385	Bromobenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4555	Cyclohexane		
		4595	Dibromomethane (Methylene bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		9408	Gasoline range organics (GRO)		
		4835	Hexachlorobutadiene		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4940	Methyl acetate		
		4950	Methyl bromide (Bromomethane)		
		4960	Methyl chloride (Chloromethane)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5000	Methyl tert-butyl ether (MTBE)		
		4965	Methylcyclohexane		
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4425	n-Butyl alcohol (1-Butanol, n-Butanol)		
		4435	n-Butylbenzene		
		4855	n-Hexane		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		4440	sec-Butylbenzene		
		5100	Styrene		
		4370	T-amylmethylether (TAME)		
		4420	tert-Butyl alcohol		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5120	Tetrahydrofuran (THF)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 8260B SIM			10184904	Volatile Organic Compounds by purge and trap GC/MS-SIM
		5105	1,1,1,2-Tetrachloroethane		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5110	1,1,2,2-Tetrachloroethane		
		5165	1,1,2-Trichloroethane		
		4640	1,1-Dichloroethylene		
		5210	1,2,4-Trimethylbenzene		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		5215	1,3,5-Trimethylbenzene		
		9318	1,3-Butadiene		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4860	2-Hexanone (MBK)		
		4375	Benzene		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4575	Chlorodibromomethane		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4595	Dibromomethane (Methylene bromide)		
		4765	Ethylbenzene		
		4835	Hexachlorobutadiene		
		4895	Isopropyl alcohol (2-Propanol, Isopropanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4950	Methyl bromide (Bromomethane)		
		5000	Methyl tert-butyl ether (MTBE)		
		5005	Naphthalene		
		4435	n-Butylbenzene		
		5250	o-Xylene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4440	sec-Butylbenzene		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		5170	Trichloroethene (Trichloroethylene)		
		5235	Vinyl chloride		
	EPA 8260D			10307127	Volatile Organic Compounds By GC/MS
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5185	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		
		4630	1,1-Dichloroethane		
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		
		5180	1,2,3-Trichloropropane		
		5182	1,2,3-Trimethylbenzene		
		5155	1,2,4-Trichlorobenzene		
		5210	1,2,4-Trimethylbenzene		
		4570	1,2-Dibromo-3-chloropropane (DBCP)		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4320	Acetonitrile		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		
		4375	Benzene		
		4385	Bromobenzene		
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4555	Cyclohexane		
		4595	Dibromomethane (Methylene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		4835	Hexachlorobutadiene		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4940	Methyl acetate		
		4950	Methyl bromide (Bromomethane)		
		4960	Methyl chloride (Chloromethane)		
		5000	Methyl tert-butyl ether (MTBE)		
		4965	Methylcyclohexane		
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4425	n-Butyl alcohol (1-Butanol, n-Butanol)		
		4435	n-Butylbenzene		
		4855	n-Hexane		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		4440	sec-Butylbenzene		
		5100	Styrene		
		4370	T-amylmethylether (TAME)		
		4420	tert-Butyl alcohol		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5120	Tetrahydrofuran (THF)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 8260D SIM			10307138	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry Selected Ion Monitoring (GC/MS SIM)
		5105	1,1,1,2-Tetrachloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5165	1,1,2-Trichloroethane		
		4640	1,1-Dichloroethylene		
		5210	1,2,4-Trimethylbenzene		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		5215	1,3,5-Trimethylbenzene		
		9318	1,3-Butadiene		
		4675	1,3-Dichloropropene		
		4620	1,4-Dichlorobenzene		
		4860	2-Hexanone (MBK)		
		4375	Benzene		
		4395	Bromodichloromethane		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4400	Bromoform		
		4575	Chlorodibromomethane		
		4505	Chloroform		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4595	Dibromomethane (Methylene bromide)		
		4765	Ethylbenzene		
		4835	Hexachlorobutadiene		
		4895	Isopropyl alcohol (2-Propanol, Isopropanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4950	Methyl bromide (Bromomethane)		
		5000	Methyl tert-butyl ether (MTBE)		
		5005	Naphthalene		
		4435	n-Butylbenzene		
		5250	o-Xylene		
		4440	sec-Butylbenzene		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		5170	Trichloroethene (Trichloroethylene)		
		5235	Vinyl chloride		
	EPA 8270C			10185805	Semivolatile Organic compounds by GC/MS
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		4615	1,3-Dichlorobenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4620	1,4-Dichlorobenzene		
		6380	1-Methylnaphthalene		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		9363	2,3-Dichloroaniline		
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		6412	3 & 4 Methylphenol		
		5945	3,3'-Dichlorobenzidine		
		6465	3-Nitroaniline		
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		
		5500	Acenaphthene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5505	Acenaphthylene		
		5510	Acetophenone		
		5545	Aniline		
		5555	Anthracene		
		5562	Azobenzene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5587	Benzofluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		

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		6315	Indeno(1,2,3-cd) pyrene		
		6320	Isophorone		
		5005	Naphthalene		
		5875	n-Decane		
		5015	Nitrobenzene		
		6530	n-Nitrosodimethylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6580	n-Octadecane		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6625	Phenol		
		6665	Pyrene		
		5095	Pyridine		
	EPA 8270C SIM			10242407	Semivolatile Organic compounds by GC/MS Selective Ion Monitoring
		4735	1,4-Dioxane (1,4-Diethyleneoxide)		
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		
		6315	Indeno(1,2,3-cd) pyrene		

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Certificate: 4167 - 001

Issue Date: 7/8/2021 Expiration Date: 7/7/2022

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5005	Naphthalene		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6665	Pyrene		
	EPA 8270E			10242543	Semivolatile Organic compounds by GC/MS
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		4615	1,3-Dichlorobenzene		
		4620	1,4-Dichlorobenzene		
		6380	1-Methylnaphthalene		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		6412	3 & 4 Methylphenol		
		5945	3,3'-Dichlorobenzidine		
		6465	3-Nitroaniline		
		5660	4-Bromophenyl phenyl ether		

Eurofins Frontier Global Sciences, LLC

5755 8th Street East
Tacoma, WA 98424

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			(BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5510	Acetophenone		
		5545	Aniline		
		5555	Anthracene		
		5562	Azobenzene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		
		6315	Indeno(1,2,3-cd) pyrene		
		6320	Isophorone		
		5005	Naphthalene		
		5875	n-Decane		
		5015	Nitrobenzene		
		6530	n-Nitrosodimethylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6580	n-Octadecane		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6625	Phenol		
		6665	Pyrene		
		5095	Pyridine		
	EPA 8270E SIM			10242565	Semivolatile Organic compounds by Gas Chromatography/Mass Spectrometry (GC/MS-SIM)
		4735	1,4-Dioxane (1,4-Diethyleneoxide)		
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		
		6315	Indeno(1,2,3-cd) pyrene		
		5005	Naphthalene		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6665	Pyrene		
	EPA 9012A			10193405	Total and Amenable Cyanide (automated colorimetric with off-line distillation)
		1510	Amenable cyanide		
		1645	Total cyanide		
	EPA 9012B			10243206	Total and Amenable Cyanide (automated colorimetric with off-line distillation)
		1510	Amenable cyanide		
		1645	Total cyanide		
	EPA 9013			10193609	Cyanide Extraction Procedure for Solids and Oils
		1421	Cyanide Extraction for Solids and Oils		
	EPA 9045C			10198400	Soil and Waste pH
		1900	pH		
	EPA 9045D			10244607	Soil and Waste pH
		1900	pH		
	EPA 9056A			10199607	Determination of Inorganic Anions by Ion Chromatography
		1540	Bromide		
		1575	Chloride		
		1730	Fluoride		
		1810	Nitrate as N		
		1820	Nitrate plus Nitrite as N		
		1840	Nitrite as N		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		2000	Sulfate		
	EPA 9060			10200201	Total Organic Carbon
		1710	Dissolved organic carbon (DOC)		
		2040	Total organic carbon		
	EPA 9060A			10244823	Total Organic Carbon
		1710	Dissolved organic carbon (DOC)		
		2040	Total organic carbon		
	NWTPH-Dx			90018409	Oregon DEQ TPH Diesel Range
		9369	Diesel range organics (DRO)		
		9499	Motor Oil		
	NWTPH-Gx			90018603	Oregon DEQ TPH Gasoline Range Organics by GC/FID-PID Purge & Trap
		9408	Gasoline range organics (GRO)		
	NWTPH-GX (GC/MS)			90018658	Oregon DEQ TPH Gasoline Range Organics by GC/MS Purge & Trap
		9408	Gasoline range organics (GRO)		
	NWTPH-HCID			90013200	Oregon DEQ Total Petroleum Hydrocarbon ID
		9369	Diesel range organics (DRO)		
		9408	Gasoline range organics (GRO)		
		9499	Motor Oil		
	PLUMB 1981			60006259	Extraction/Preparation
		6118	Distribution of particle sizes		
	Puget Sound Estuary Program (PSEP): Conventional Sediment Variables			60006408	PSEP: Organotins, TOC, and Sulfide
		5913	Dibutyltin		
		1206	Monobutyltin		
		1209	Tetrabutyltin		
		2040	Total organic carbon		
		1213	Tributyltin		

OREGON

Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	SM 2540 G-2011 online			20005270	Total, Fixed, and Volatile Solids
		8641	Percent Moisture		
	WA EPH			60015001	Extractable Petroleum Hydrocarbons
		6211	EPH Aliphatic >C10-C12		
		6212	EPH Aliphatic >C12-C16		
		6214	EPH Aliphatic >C16-C21		
		6216	EPH Aliphatic >C21-C34		
		6219	EPH Aliphatic C8-C10		
		6224	EPH Aromatic >C10-C12		
		6226	EPH Aromatic >C12-C16		
		6228	EPH Aromatic >C16-C21		
		6231	EPH Aromatic >C21-C34		
		6236	EPH Aromatic C8-C10		
	WA VPH			60015056	Volatile Petroleum Hydrocarbons (VPH) by GC/PID Purge & Trap
		4375	Benzene		
		4765	Ethylbenzene		
		5240	m+p-xylene		
		5000	Methyl tert-butyl ether (MTBE)		
		4855	n-Hexane		
		5250	o-Xylene		
		5140	Toluene		
		5300	VPH Aliphatic >C10-C12		
		5301	VPH Aliphatic >C6-C8		
		5302	VPH Aliphatic >C8-C10		
		5303	VPH Aliphatic C5-C6		
		5308	VPH Aromatic >C10-C12		
		5309	VPH Aromatic >C12-C13		
		5310	VPH Aromatic >C8-C10		
		5260	Xylene (total)		

Oregon
Environmental Laboratory
Accreditation Program

NELAP Recognized

Eurofins TestAmerica Sacramento

4040

880 Riverside Parkway

West Sacramento, CA 95605

IS GRANTED APPROVAL BY ORELAP UNDER THE 2016 TNI STANDARDS, TO PERFORM ANALYSES ON ENVIRONMENTAL SAMPLES IN MATRICES AS LISTED BELOW :

Air	Drinking Water	Non-Potable Water	Solids and Chemical Waste	Tissue
Chemistry	Chemistry	Chemistry	Chemistry	Chemistry

AND AS RECORDED IN THE LIST OF APPROVED ANALYTES, METHODS, ANALYTICAL TECHNIQUES, AND FIELDS OF TESTING ISSUED CONCURRENTLY WITH THIS CERTIFICATE AND REVISED AS NECESSARY.

ACCREDITED STATUS DEPENDS ON SUCCESSFUL ONGOING PARTICIPATION IN THE PROGRAM AND CONTINUED COMPLIANCE WITH THE STANDARDS.

CUSTOMERS ARE URGED TO VERIFY THE LABORATORY'S CURRENT ACCREDITATION STATUS IN OREGON.

Travis Bartholomew
Oregon State Public Health Laboratory
ORELAP Program Manager
7202 NE Evergreen Parkway, Suite 100
Hillsboro, OR 97124

EFFECTIVE DATE : **3/25/2021**
EXPIRATION DATE : **1/29/2022**
Certificate No : **4040 - 016**

OREGON

Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

Eurofins TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605

ORELAP ID: 4040
EPA CODE: CA00044
Certificate: 4040 - 016

Issue Date: 3/25/2021 Expiration Date: 1/29/2022

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
Air					
	EPA 3050B			10135601	Acid Digestion of Sediments, Sludges, and soils
		8031	Extraction/Preparation		
	EPA 3620B			10145809	Florisil Cleanup
		8031	Extraction/Preparation		
	EPA 6020			10156000	Inductively Coupled Plasma-Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1080	Lithium		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1910	Phosphorus, total		
		1125	Potassium		
		1140	Selenium		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1175	Tin		
		1180	Titanium		
		1184	Uranium (mass)		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020A 1 1			10156419	Inductively Coupled Plasma -Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1080	Lithium		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1125	Potassium		
		1140	Selenium		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1184	Uranium (mass)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1185	Vanadium		
		1190	Zinc		
	EPA Method 26A 2000 2000			10403200	Determination of Hydrogen Halides and Halogen Emissions From Stationary Sources - Isokinetic Method
		1541	Bromine		
		1580	Chlorine		
		1768	Hydrobromic Acid (Hydrogen Bromide)		
		1770	Hydrochloric acid (Hydrogen chloride (gas only))		
		1775	Hydrogen fluoride (Hydrofluoric acid)		
	EPA Method 29 (CVAA)			10403302	Determination of Metals Emissions from Stationary Sources
		1095	Mercury		
	EPA Method 29 (ICP-MS)			10403700	Determination of Metals Emissions from Stationary Sources
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1075	Lead		
		1090	Manganese		
		1105	Nickel		
		1909	Phosphorus		
		1140	Selenium		
		1150	Silver		
		1165	Thallium		
		1190	Zinc		
	EPA TO-10A (GC/ECD)			10247504	Pesticides and PCBs with LV PUF by GC/ECD
		7355	4,4'-DDD		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8913	Aroclor-1268 (PCB-1268)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7240	cis-chlordane (alpha-Chlordane)		
		7105	delta-BHC		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		7810	Methoxychlor		
		8250	Toxaphene (Chlorinated camphene)		
	EPA TO-13A			10248405	Polycyclic Aromatic Hydrocarbons in Ambient Air by GC/MS

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		4615	1,3-Dichlorobenzene		
		4620	1,4-Dichlorobenzene		
		9546	1,4-Dithiane		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		6412	3 & 4 Methylphenol		
		5945	3,3'-Dichlorobenzidine		
		6465	3-Nitroaniline		
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		
		5500	Acenaphthene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5505	Acenaphthylene		
		5545	Aniline		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5605	Benzo(e)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		
		6315	Indeno(1,2,3-cd) pyrene		
		6320	Isophorone		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5005	Naphthalene		
		5015	Nitrobenzene		
		6530	n-Nitrosodimethylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6605	Pentachlorophenol		
		6615	Phenanthrene		
		6625	Phenol		
		9551	p-Oxathiane (1,4-Oxathiane)		
		6665	Pyrene		
		9577	Thiodiglycol		
	EPA TO-13A SIM			10248449	Polycyclic Aromatic Hydrocarbons in Ambient Air by GC/MS SIM
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		
		6315	Indeno(1,2,3-cd) pyrene		
		5005	Naphthalene		
		6615	Phenanthrene		
		6665	Pyrene		
	EPA TO-4A			10249204	Pesticides and PCBs by HV PUF GC

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		7355	4,4'-DDD		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7240	cis-chlordane (alpha-Chlordane)		
		7105	delta-BHC		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		7810	Methoxychlor		
		8250	Toxaphene (Chlorinated camphene)		
	EPA TO-4A EPA TO-4A EPA TO-4A			10249204	Pesticides and PCBs by HV PUF GC
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		

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		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		7250	Chlordane (tech.)		
	EPA TO-9A			10249408	Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9615	TCDF, total		
Biological Tissue					
	EPA 1613B			10120602	Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		

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		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 1668A			10262007	Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS
		8914	Sum - Dichlorobiphenyls (BZ-12-+ BZ-13)		
		8916	Sum - Heptachlorobiphenyls (BZ-171 + BZ-173)		
		8917	Sum - Heptachlorobiphenyls (BZ-180 + BZ-193)		
		8919	Sum - Hexachlorobiphenyls (BZ-128 + BZ-166)		
		8922	Sum - Hexachlorobiphenyls (BZ-129 + BZ-138 + BZ-163)		
		8927	Sum - Hexachlorobiphenyls (BZ-135 + BZ-151)		
		8928	Sum - Hexachlorobiphenyls (BZ-139 + BZ-140)		
		8929	Sum - Hexachlorobiphenyls (BZ-147 + BZ-149)		
		8931	Sum - Hexachlorobiphenyls (BZ-153 + BZ-168)		
		8932	Sum - Hexachlorobiphenyls (BZ-156 + BZ-157)		
		8934	Sum - Octachlorobiphenyls (BZ-198 + BZ-199)		
		8936	Sum - Pentachlorobiphenyls (BZ-107 +		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			BZ-124)		
		8938	Sum - Pentachlorobiphenyls (BZ-110 + BZ-115)		
		8941	Sum - Pentachlorobiphenyls (BZ-85 + BZ-116 + BZ-117)		
		8943	Sum - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-90 + BZ-109 + BZ-119 + BZ-125)		
		8947	Sum - Pentachlorobiphenyls (BZ-88 + BZ-91)		
		8948	Sum - Pentachlorobiphenyls (BZ-90 + BZ-101 + BZ-113)		
		8949	Sum - Pentachlorobiphenyls (BZ-93 + BZ-100)		
		8951	Sum - Pentachlorobiphenyls (BZ-98 + BZ-102)		
		8954	Sum - Tetrachlorobiphenyls (BZ-40 + BZ-71)		
		8957	Sum - Tetrachlorobiphenyls (BZ-44 + BZ-47 + BZ-65)		
		8959	Sum - Tetrachlorobiphenyls (BZ-49 + BZ-69)		
		8961	Sum - Tetrachlorobiphenyls (BZ-50 + BZ-53)		
		8962	Sum - Tetrachlorobiphenyls (BZ-59 + BZ-62 + BZ-75)		
		8963	Sum - Tetrachlorobiphenyls (BZ-61 + BZ-70 + BZ-74 + BZ-76)		
		8966	Sum - Trichlorobiphenyls (BZ-18 + BZ-30)		
		8967	Sum - Trichlorobiphenyls (BZ-20 + BZ-28)		
		8968	Sum - Trichlorobiphenyls (BZ-21 + BZ-33)		
		8969	Sum - Trichlorobiphenyls (BZ-26 + BZ-29)		
	EPA 1668A EPA 1668A EPA 1668A			10262029	Chlorinated Biphenyl Cogeners in Water, Soil, Sediment, and Tissue by GC-HRMS
		9095	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9090	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)		
		9101	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)		
		9103	2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)		
		9102	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)		
		9065	2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)		
		9104	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)		
		9106	2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)		
		9020	2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)		
		9107	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)		
		9109	2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)		
		9108	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)		
		9110	2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)		
		9111	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)		
		9112	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)		
		9113	2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)		
		9116	2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)		
		9115	2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)		
		9114	2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)		
		9118	2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)		
		9117	2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-		

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			130)		
		9119	2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)		
		9121	2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)		
		9120	2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)		
		9122	2,2',3,3',4-Pentachlorobiphenyl (BZ-82)		
		9123	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)		
		9124	2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)		
		9125	2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)		
		9126	2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)		
		9128	2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)		
		9127	2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)		
		9129	2,2',3,3',5-Pentachlorobiphenyl (BZ-83)		
		9130	2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)		
		9131	2,2',3,3',6-Pentachlorobiphenyl (BZ-84)		
		9132	2,2',3,3'-Tetrachlorobiphenyl (BZ-40)		
		9133	2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)		
		9134	2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)		
		9135	2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)		
		9137	2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)		
		9136	2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)		
		9075	2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)		
		9138	2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)		
		9025	2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			138)		
		9139	2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)		
		9141	2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)		
		9140	2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)		
		9142	2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)		
		9143	2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)		
		9080	2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)		
		9030	2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)		
		9144	2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)		
		9145	2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)		
		9146	2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)		
		9148	2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)		
		9152	2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)		
		9150	2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)		
		9149	2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)		
		9147	2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)		
		9151	2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)		
		9153	2,2',3,4,5-Pentachlorobiphenyl (BZ-86)		
		8975	2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)		
		9155	2,2',3,4',5-Pentachlorobiphenyl (BZ-90)		
		9154	2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)		
		9156	2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)		
		9157	2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)		
		9158	2,2',3,4,6-Pentachlorobiphenyl (BZ-88)		
		9161	2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)		

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		9160	2,2',3,4',6-Pentachlorobiphenyl (BZ-91)		
		9159	2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)		
		9163	2,2',3,4-Tetrachlorobiphenyl (BZ-41)		
		9162	2,2',3,4'-Tetrachlorobiphenyl (BZ-42)		
		9035	2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)		
		9164	2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)		
		9165	2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)		
		9168	2,2',3,5,6-Pentachlorobiphenyl (BZ-93)		
		9167	2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)		
		9166	2,2',3,5',6-Pentachlorobiphenyl (BZ-95)		
		9169	2,2',3,5-Tetrachlorobiphenyl (BZ-43)		
		8945	2,2',3,5'-Tetrachlorobiphenyl (BZ-44)		
		9170	2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)		
		9172	2,2',3,6-Tetrachlorobiphenyl (BZ-45)		
		9171	2,2',3,6'-Tetrachlorobiphenyl (BZ-46)		
		9173	2,2',3-Trichlorobiphenyl (BZ-16)		
		9040	2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)		
		9174	2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)		
		9175	2,2',4,4',5-Pentachlorobiphenyl (BZ-99)		
		9176	2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)		
		9177	2,2',4,4',6-Pentachlorobiphenyl (BZ-100)		
		9178	2,2',4,4'-Tetrachlorobiphenyl (BZ-47)		
		8980	2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)		
		9180	2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)		
		9179	2,2',4,5',6-Pentachlorobiphenyl (BZ-103)		
		9181	2,2',4,5-Tetrachlorobiphenyl (BZ-48)		
		8950	2,2',4,5'-Tetrachlorobiphenyl (BZ-49)		
		9182	2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)		
		9184	2,2',4,6-Tetrachlorobiphenyl (BZ-50)		
		9183	2,2',4,6'-Tetrachlorobiphenyl (BZ-51)		

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		9185	2,2',4-Trichlorobiphenyl (BZ-17)		
		8955	2,2',5,5'-Tetrachlorobiphenyl (BZ-52)		
		9186	2,2',5,6'-Tetrachlorobiphenyl (BZ-53)		
		8930	2,2',5-Trichlorobiphenyl (BZ-18)		
		9187	2,2',6,6'-Tetrachlorobiphenyl (BZ-54)		
		9188	2,2',6-Trichlorobiphenyl (BZ-19)		
		9189	2,2'-Dichlorobiphenyl (BZ-4)		
		9190	2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)		
		9085	2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)		
		9191	2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)		
		9192	2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)		
		9050	2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)		
		9045	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)		
		9193	2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)		
		8985	2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)		
		9194	2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)		
		9195	2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)		
		9196	2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)		
		9197	2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)		
		9198	2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)		
		9199	2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)		
		9201	2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)		
		9200	2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)		
		9204	2,3,3',4,5-Pentachlorobiphenyl (BZ-106)		
		9205	2,3,3',4',5-Pentachlorobiphenyl (BZ-107)		
		9203	2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9202	2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)		
		9206	2,3,3',4,6-Pentachlorobiphenyl (BZ-109)		
		8990	2,3,3',4',6-Pentachlorobiphenyl (BZ-110)		
		9208	2,3,3',4-Tetrachlorobiphenyl (BZ-55)		
		9207	2,3,3',4'-Tetrachlorobiphenyl (BZ-56)		
		9209	2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)		
		9210	2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)		
		9211	2,3,3',5,6-Pentachlorobiphenyl (BZ-112)		
		9212	2,3,3',5',6-Pentachlorobiphenyl (BZ-113)		
		9214	2,3,3',5-Tetrachlorobiphenyl (BZ-57)		
		9213	2,3,3',5'-Tetrachlorobiphenyl (BZ-58)		
		9215	2,3,3',6-Tetrachlorobiphenyl (BZ-59)		
		9216	2,3,3'-Trichlorobiphenyl (BZ-20)		
		9055	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)		
		9217	2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)		
		9218	2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)		
		9005	2,3,4,4',5-Pentachlorobiphenyl (BZ-114)		
		8995	2,3',4,4',5-Pentachlorobiphenyl (BZ-118)		
		9000	2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)		
		9219	2,3,4,4',6-Pentachlorobiphenyl (BZ-115)		
		9220	2,3',4,4',6-Pentachlorobiphenyl (BZ-119)		
		9221	2,3,4,4'-Tetrachlorobiphenyl (BZ-60)		
		8960	2,3',4,4'-Tetrachlorobiphenyl (BZ-66)		
		9223	2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)		
		9222	2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)		
		9225	2,3,4,5,6-Pentachlorobiphenyl (BZ-116)		
		9227	2,3,4',5,6-Pentachlorobiphenyl (BZ-117)		
		9226	2,3',4,5',6-Pentachlorobiphenyl (BZ-121)		
		9224	2,3',4',5',6-Pentachlorobiphenyl (BZ-125)		
		9228	2,3,4,5-Tetrachlorobiphenyl (BZ-61)		
		9233	2,3,4',5-Tetrachlorobiphenyl (BZ-63)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9231	2,3',4,5'-Tetrachlorobiphenyl (BZ-68)		
		9230	2,3',4',5-Tetrachlorobiphenyl (BZ-70)		
		9229	2,3',4',5'-Tetrachlorobiphenyl (BZ-76)		
		9232	2,3',4,5-Tetrachlorobiphenyl (BZ-67)		
		9234	2,3,4,6-Tetrachlorobiphenyl (BZ-62)		
		9236	2,3,4',6-Tetrachlorobiphenyl (BZ-64)		
		9235	2,3',4,6-Tetrachlorobiphenyl (BZ-69)		
		9237	2,3',4',6-Tetrachlorobiphenyl (BZ-71)		
		9238	2,3,4-Trichlorobiphenyl (BZ-21)		
		9241	2,3,4'-Trichlorobiphenyl (BZ-22)		
		9240	2,3',4-Trichlorobiphenyl (BZ-25)		
		9239	2,3',4'-Trichlorobiphenyl (BZ-33)		
		9242	2,3',5,5'-Tetrachlorobiphenyl (BZ-72)		
		9243	2,3,5,6-Tetrachlorobiphenyl (BZ-65)		
		9244	2,3',5',6-Tetrachlorobiphenyl (BZ-73)		
		9245	2,3,5-Trichlorobiphenyl (BZ-23)		
		8935	2,3',5-Trichlorobiphenyl (BZ-26)		
		9246	2,3',5'-Trichlorobiphenyl (BZ-34)		
		9247	2,3,6-Trichlorobiphenyl (BZ-24)		
		9248	2,3',6-Trichlorobiphenyl (BZ-27)		
		8920	2,3-Dichlorobiphenyl (BZ-5)		
		9249	2,3'-Dichlorobiphenyl (BZ-6)		
		9250	2,4,4',5-Tetrachlorobiphenyl (BZ-74)		
		9251	2,4,4',6-Tetrachlorobiphenyl (BZ-75)		
		9252	2,4,4'-Trichlorobiphenyl (BZ-28)		
		9253	2,4,5-Trichlorobiphenyl (BZ-29)		
		8940	2,4',5-Trichlorobiphenyl (BZ-31)		
		9254	2,4,6-Trichlorobiphenyl (BZ-30)		
		9255	2,4',6-Trichlorobiphenyl (BZ-32)		
		9257	2,4-Dichlorobiphenyl (BZ-7)		
		9256	2,4'-Dichlorobiphenyl (BZ-8)		
		9258	2,5-Dichlorobiphenyl (BZ-9)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9259	2,6-Dichlorobiphenyl (BZ-10)		
		8915	2-Chlorobiphenyl (BZ-1)		
		9060	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)		
		9015	3,3',4,4',5-Pentachlorobiphenyl (BZ-126)		
		8965	3,3',4,4'-Tetrachlorobiphenyl (BZ-77)		
		9260	3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)		
		9262	3,3',4,5-Tetrachlorobiphenyl (BZ-78)		
		9261	3,3',4,5'-Tetrachlorobiphenyl (BZ-79)		
		9263	3,3',4-Trichlorobiphenyl (BZ-35)		
		9264	3,3',5,5'-Tetrachlorobiphenyl (BZ-80)		
		9265	3,3',5-Trichlorobiphenyl (BZ-36)		
		8925	3,3'-Dichlorobiphenyl (BZ-11)		
		8970	3,4,4',5-Tetrachlorobiphenyl (BZ-81)		
		9266	3,4,4'-Trichlorobiphenyl (BZ-37)		
		9267	3,4,5-Trichlorobiphenyl (BZ-38)		
		9268	3,4',5-Trichlorobiphenyl (BZ-39)		
		9270	3,4-Dichlorobiphenyl (BZ-12)		
		9269	3,4'-Dichlorobiphenyl (BZ-13)		
		9271	3,5-Dichlorobiphenyl (BZ-14)		
		9272	3-Chlorobiphenyl (BZ-2)		
		9273	4,4'-Dichlorobiphenyl (BZ-15)		
		9274	4-Chlorobiphenyl (BZ-3)		
		9105	Decachlorobiphenyl (BZ-209)		
		8876	Total Dichlorobiphenyls		
		8877	Total Heptachlorobiphenyls		
		8888	Total Hexachlorobiphenyls		
		8889	Total Monochlorobiphenyls		
		8891	Total Nonachlorobiphenyls		
		8892	Total Octachlorobiphenyls		
		8896	Total Pentachlorobiphenyls		
		8893	Total Tetrachlorobiphenyls		

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		8894	Total Trichlorobiphenyls		
	EPA 1668C			10262109	Chlorinated Biphenyl Cogeners in Water, Soil, Sediment, and Tissue by GC-HRMS
		8914	Sum - Dichlorobiphenyls (BZ-12-+ BZ-13)		
		8916	Sum - Heptachlorobiphenyls (BZ-171 + BZ-173)		
		8917	Sum - Heptachlorobiphenyls (BZ-180 + BZ-193)		
		8919	Sum - Hexachlorobiphenyls (BZ-128 + BZ-166)		
		8922	Sum - Hexachlorobiphenyls (BZ-129 + BZ-138 + BZ-163)		
		8927	Sum - Hexachlorobiphenyls (BZ-135 + BZ-151)		
		8928	Sum - Hexachlorobiphenyls (BZ-139 + BZ-140)		
		8929	Sum - Hexachlorobiphenyls (BZ-147 + BZ-149)		
		8931	Sum - Hexachlorobiphenyls (BZ-153 + BZ-168)		
		8932	Sum - Hexachlorobiphenyls (BZ-156 + BZ-157)		
		8934	Sum - Octachlorobiphenyls (BZ-198 + BZ-199)		
		8936	Sum - Pentachlorobiphenyls (BZ-107 + BZ-124)		
		8938	Sum - Pentachlorobiphenyls (BZ-110 + BZ-115)		
		8941	Sum - Pentachlorobiphenyls (BZ-85 + BZ-116 + BZ-117)		
		8943	Sum - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-90 + BZ-109 + BZ-119 + BZ-125)		
		8947	Sum - Pentachlorobiphenyls (BZ-88 + BZ-91)		
		8948	Sum - Pentachlorobiphenyls (BZ-90 + BZ-101 + BZ-113)		
		8949	Sum - Pentachlorobiphenyls (BZ-93 +		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			BZ-100)		
		8951	Sum - Pentachlorobiphenyls (BZ-98 + BZ-102)		
		8954	Sum - Tetrachlorobiphenyls (BZ-40 + BZ-71)		
		8957	Sum - Tetrachlorobiphenyls (BZ-44 + BZ-47 + BZ-65)		
		8959	Sum - Tetrachlorobiphenyls (BZ-49 + BZ-69)		
		8961	Sum - Tetrachlorobiphenyls (BZ-50 + BZ-53)		
		8962	Sum - Tetrachlorobiphenyls (BZ-59 + BZ-62 + BZ-75)		
		8963	Sum - Tetrachlorobiphenyls (BZ-61 + BZ-70 + BZ-74 + BZ-76)		
		8966	Sum - Trichlorobiphenyls (BZ-18 + BZ-30)		
		8967	Sum - Trichlorobiphenyls (BZ-20 + BZ-28)		
		8968	Sum - Trichlorobiphenyls (BZ-21 + BZ-33)		
		8969	Sum - Trichlorobiphenyls (BZ-26 + BZ-29)		
	EPA 1668C EPA 1668C EPA 1668C			10262109	Chlorinated Biphenyl Cogeners in Water, Soil, Sediment, and Tissue by GC-HRMS
		9095	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)		
		9090	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)		
		9101	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)		
		9103	2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)		
		9102	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)		
		9065	2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)		
		9104	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)		
		9106	2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			171)		
		9020	2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)		
		9107	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)		
		9109	2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)		
		9108	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)		
		9110	2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)		
		9111	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)		
		9112	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)		
		9113	2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)		
		9116	2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)		
		9115	2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)		
		9114	2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)		
		9118	2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)		
		9117	2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)		
		9119	2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)		
		9121	2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)		
		9120	2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)		
		9122	2,2',3,3',4-Pentachlorobiphenyl (BZ-82)		
		9123	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)		
		9124	2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)		
		9125	2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			133)		
		9126	2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)		
		9128	2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)		
		9127	2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)		
		9129	2,2',3,3',5-Pentachlorobiphenyl (BZ-83)		
		9130	2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)		
		9131	2,2',3,3',6-Pentachlorobiphenyl (BZ-84)		
		9132	2,2',3,3'-Tetrachlorobiphenyl (BZ-40)		
		9133	2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)		
		9134	2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)		
		9135	2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)		
		9137	2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)		
		9136	2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)		
		9075	2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)		
		9138	2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)		
		9025	2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)		
		9139	2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)		
		9141	2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)		
		9140	2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)		
		9142	2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)		
		9143	2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)		
		9080	2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)		
		9030	2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9144	2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)		
		9145	2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)		
		9146	2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)		
		9148	2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)		
		9152	2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)		
		9150	2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)		
		9149	2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)		
		9147	2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)		
		9151	2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)		
		9153	2,2',3,4,5-Pentachlorobiphenyl (BZ-86)		
		8975	2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)		
		9155	2,2',3,4',5-Pentachlorobiphenyl (BZ-90)		
		9154	2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)		
		9156	2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)		
		9157	2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)		
		9158	2,2',3,4,6-Pentachlorobiphenyl (BZ-88)		
		9161	2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)		
		9160	2,2',3,4',6-Pentachlorobiphenyl (BZ-91)		
		9159	2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)		
		9163	2,2',3,4-Tetrachlorobiphenyl (BZ-41)		
		9162	2,2',3,4'-Tetrachlorobiphenyl (BZ-42)		
		9035	2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)		
		9164	2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)		
		9165	2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)		
		9168	2,2',3,5,6-Pentachlorobiphenyl (BZ-93)		
		9167	2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)		
		9166	2,2',3,5',6-Pentachlorobiphenyl (BZ-95)		
		9169	2,2',3,5-Tetrachlorobiphenyl (BZ-43)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8945	2,2',3,5'-Tetrachlorobiphenyl (BZ-44)		
		9170	2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)		
		9172	2,2',3,6-Tetrachlorobiphenyl (BZ-45)		
		9171	2,2',3,6'-Tetrachlorobiphenyl (BZ-46)		
		9173	2,2',3-Trichlorobiphenyl (BZ-16)		
		9040	2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)		
		9174	2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)		
		9175	2,2',4,4',5-Pentachlorobiphenyl (BZ-99)		
		9176	2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)		
		9177	2,2',4,4',6-Pentachlorobiphenyl (BZ-100)		
		9178	2,2',4,4'-Tetrachlorobiphenyl (BZ-47)		
		8980	2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)		
		9180	2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)		
		9179	2,2',4,5',6-Pentachlorobiphenyl (BZ-103)		
		9181	2,2',4,5-Tetrachlorobiphenyl (BZ-48)		
		8950	2,2',4,5'-Tetrachlorobiphenyl (BZ-49)		
		9182	2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)		
		9184	2,2',4,6-Tetrachlorobiphenyl (BZ-50)		
		9183	2,2',4,6'-Tetrachlorobiphenyl (BZ-51)		
		9185	2,2',4-Trichlorobiphenyl (BZ-17)		
		8955	2,2',5,5'-Tetrachlorobiphenyl (BZ-52)		
		9186	2,2',5,6'-Tetrachlorobiphenyl (BZ-53)		
		8930	2,2',5-Trichlorobiphenyl (BZ-18)		
		9187	2,2',6,6'-Tetrachlorobiphenyl (BZ-54)		
		9188	2,2',6-Trichlorobiphenyl (BZ-19)		
		9189	2,2'-Dichlorobiphenyl (BZ-4)		
		9190	2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)		
		9085	2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)		

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		9191	2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)		
		9192	2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)		
		9050	2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)		
		9045	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)		
		9193	2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)		
		8985	2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)		
		9194	2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)		
		9195	2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)		
		9196	2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)		
		9197	2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)		
		9198	2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)		
		9199	2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)		
		9201	2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)		
		9200	2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)		
		9204	2,3,3',4,5-Pentachlorobiphenyl (BZ-106)		
		9205	2,3,3',4',5-Pentachlorobiphenyl (BZ-107)		
		9203	2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)		
		9202	2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)		
		9206	2,3,3',4,6-Pentachlorobiphenyl (BZ-109)		
		8990	2,3,3',4',6-Pentachlorobiphenyl (BZ-110)		
		9208	2,3,3',4-Tetrachlorobiphenyl (BZ-55)		
		9207	2,3,3',4'-Tetrachlorobiphenyl (BZ-56)		
		9209	2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)		
		9210	2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)		
		9211	2,3,3',5,6-Pentachlorobiphenyl (BZ-112)		
		9212	2,3,3',5',6-Pentachlorobiphenyl (BZ-113)		
		9214	2,3,3',5-Tetrachlorobiphenyl (BZ-57)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9213	2,3,3',5'-Tetrachlorobiphenyl (BZ-58)		
		9215	2,3,3',6-Tetrachlorobiphenyl (BZ-59)		
		9216	2,3,3'-Trichlorobiphenyl (BZ-20)		
		9055	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)		
		9217	2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)		
		9218	2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)		
		9005	2,3,4,4',5-Pentachlorobiphenyl (BZ-114)		
		8995	2,3',4,4',5-Pentachlorobiphenyl (BZ-118)		
		9000	2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)		
		9219	2,3,4,4',6-Pentachlorobiphenyl (BZ-115)		
		9220	2,3',4,4',6-Pentachlorobiphenyl (BZ-119)		
		9221	2,3,4,4'-Tetrachlorobiphenyl (BZ-60)		
		8960	2,3',4,4'-Tetrachlorobiphenyl (BZ-66)		
		9223	2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)		
		9222	2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)		
		9225	2,3,4,5,6-Pentachlorobiphenyl (BZ-116)		
		9227	2,3,4',5,6-Pentachlorobiphenyl (BZ-117)		
		9226	2,3',4,5',6-Pentachlorobiphenyl (BZ-121)		
		9224	2,3',4',5',6-Pentachlorobiphenyl (BZ-125)		
		9228	2,3,4,5-Tetrachlorobiphenyl (BZ-61)		
		9233	2,3,4',5-Tetrachlorobiphenyl (BZ-63)		
		9231	2,3',4,5'-Tetrachlorobiphenyl (BZ-68)		
		9230	2,3',4',5-Tetrachlorobiphenyl (BZ-70)		
		9229	2,3',4',5'-Tetrachlorobiphenyl (BZ-76)		
		9232	2,3',4,5-Tetrachlorobiphenyl (BZ-67)		
		9234	2,3,4,6-Tetrachlorobiphenyl (BZ-62)		
		9236	2,3,4',6-Tetrachlorobiphenyl (BZ-64)		
		9235	2,3',4,6-Tetrachlorobiphenyl (BZ-69)		
		9237	2,3',4',6-Tetrachlorobiphenyl (BZ-71)		
		9238	2,3,4-Trichlorobiphenyl (BZ-21)		
		9241	2,3,4'-Trichlorobiphenyl (BZ-22)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9240	2,3',4-Trichlorobiphenyl (BZ-25)		
		9239	2,3',4'-Trichlorobiphenyl (BZ-33)		
		9242	2,3',5,5'-Tetrachlorobiphenyl (BZ-72)		
		9243	2,3,5,6-Tetrachlorobiphenyl (BZ-65)		
		9244	2,3',5',6-Tetrachlorobiphenyl (BZ-73)		
		9245	2,3,5-Trichlorobiphenyl (BZ-23)		
		8935	2,3',5-Trichlorobiphenyl (BZ-26)		
		9246	2,3',5'-Trichlorobiphenyl (BZ-34)		
		9247	2,3,6-Trichlorobiphenyl (BZ-24)		
		9248	2,3',6-Trichlorobiphenyl (BZ-27)		
		8920	2,3-Dichlorobiphenyl (BZ-5)		
		9249	2,3'-Dichlorobiphenyl (BZ-6)		
		9250	2,4,4',5-Tetrachlorobiphenyl (BZ-74)		
		9251	2,4,4',6-Tetrachlorobiphenyl (BZ-75)		
		9252	2,4,4'-Trichlorobiphenyl (BZ-28)		
		9253	2,4,5-Trichlorobiphenyl (BZ-29)		
		8940	2,4',5-Trichlorobiphenyl (BZ-31)		
		9254	2,4,6-Trichlorobiphenyl (BZ-30)		
		9255	2,4',6-Trichlorobiphenyl (BZ-32)		
		9257	2,4-Dichlorobiphenyl (BZ-7)		
		9256	2,4'-Dichlorobiphenyl (BZ-8)		
		9258	2,5-Dichlorobiphenyl (BZ-9)		
		9259	2,6-Dichlorobiphenyl (BZ-10)		
		8915	2-Chlorobiphenyl (BZ-1)		
		9060	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)		
		9015	3,3',4,4',5-Pentachlorobiphenyl (BZ-126)		
		8965	3,3',4,4'-Tetrachlorobiphenyl (BZ-77)		
		9260	3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)		
		9262	3,3',4,5-Tetrachlorobiphenyl (BZ-78)		
		9261	3,3',4,5'-Tetrachlorobiphenyl (BZ-79)		
		9263	3,3',4-Trichlorobiphenyl (BZ-35)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9264	3,3',5,5'-Tetrachlorobiphenyl (BZ-80)		
		9265	3,3',5-Trichlorobiphenyl (BZ-36)		
		8925	3,3'-Dichlorobiphenyl (BZ-11)		
		8970	3,4,4',5-Tetrachlorobiphenyl (BZ-81)		
		9266	3,4,4'-Trichlorobiphenyl (BZ-37)		
		9267	3,4,5-Trichlorobiphenyl (BZ-38)		
		9268	3,4',5-Trichlorobiphenyl (BZ-39)		
		9270	3,4-Dichlorobiphenyl (BZ-12)		
		9269	3,4'-Dichlorobiphenyl (BZ-13)		
		9271	3,5-Dichlorobiphenyl (BZ-14)		
		9272	3-Chlorobiphenyl (BZ-2)		
		9273	4,4'-Dichlorobiphenyl (BZ-15)		
		9274	4-Chlorobiphenyl (BZ-3)		
		9105	Decachlorobiphenyl (BZ-209)		
		8876	Total Dichlorobiphenyls		
		8877	Total Heptachlorobiphenyls		
		8888	Total Hexachlorobiphenyls		
		8889	Total Monochlorobiphenyls		
		8891	Total Nonachlorobiphenyls		
		8892	Total Octachlorobiphenyls		
		8896	Total Pentachlorobiphenyls		
		8893	Total Tetrachlorobiphenyls		
		8894	Total Trichlorobiphenyls		
	WS-LC-0025 3.6 3.6			60055438	Eurofins Test America Sacramento - Per and Polyfluorinated Alkyl Substances (PFAS) in Water, Soils, Sediments, and Tissues
		9490	11-chloreicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		
		6948	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)		
		9616	1H, 1H, 2H, 2H-perfluorododecane sulfonic acid (10:2 FTS)		
		6946	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6947	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)		
		6951	4,8-Dioxa-3H-perfluorononanoic acid (DONA)		
		6952	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)		
		9460	Hexafluoropropylene oxide dimer acid (HFPO-DA)		
		9395	N-Ethylperfluorooctane sulfonamide (EtFOSAm)		
		9431	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)		
		4846	N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		
		4847	N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)		
		6949	N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)		
		9433	N-Methylperfluorooctanesulfonamide (MeFOSA)		
		6918	Perfluorobutane sulfonic acid (PFBS)		
		6915	Perfluorobutanoic acid (PFBA)		
		6920	Perfluorodecane sulfonic acid (PFDS)		
		6905	Perfluorodecanoic acid (PFDA)		
		6923	Perfluorododecane sulfonic acid (PFDoS)		
		6903	Perfluorododecanoic acid (PFDoA)		
		9470	Perfluoroheptane sulfonic acid (PFHpS)		
		6908	Perfluoroheptanoic acid (PFHpA)		
		6901	Perfluorohexadecanoic acid (PFHxDA)		
		6927	Perfluorohexane sulfonic acid (PFHxS)		
		6913	Perfluorohexanoic acid (PFHxA)		
		6929	Perfluorononane sulfonic acid (PFNS)		
		6906	Perfluorononanoic acid (PFNA)		
		6916	Perfluorooctadecanoic acid (PFODA)		
		6917	Perfluorooctane sulfonamide (PFOSAm)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6931	Perfluorooctane sulfonic acid (PFOS)		
		6912	Perfluorooctanoic acid (PFOA)		
		6934	Perfluoropentane sulfonic acid (PFPeS)		
		6914	Perfluoropentanoic acid (PFPeA)		
		6902	Perfluorotetradecanoic acid (PFTDA)		
		9563	Perfluorotridecanoic acid (PFTrDA)		
		6904	Perfluoroundecanoic acid (PFUnA)		
Drinking Water					
	EPA 1613B			10120602	Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
	EPA 331.0 1.0 1.0			10059708	Determination of Perchlorate in Drinking Water by Liquid Chromatography Electrospray Mass Spectrometry (LC/ESI/MS)
		1895	Perchlorate		
	EPA 533			10091619	Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Istope Dilution Anion Exchange Soid Phase Extraction and Liquid Chromotography/Tandem Mass Spectrometry
		9490	11-chloreicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		
		6948	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)		
		6946	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)		
		6947	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)		
		6951	4,8-Dioxa-3H-perfluorononanoic acid (DONA)		
		6952	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)		
		9460	Hexafluoropropylene oxide dimer acid (HFPO-DA)		
		6956	Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6957	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)		
		6965	Perfluoro-3-methoxypropanoic acid (PFMPA)		
		6966	Perfluoro-4-methoxybutanoic acid (PFMBA)		
		6918	Perfluorobutane sulfonic acid (PFBS)		
		6915	Perfluorobutanoic acid (PFBA)		
		6905	Perfluorodecanoic acid (PFDA)		
		6903	Perfluorododecanoic acid (PFDoA)		
		9470	Perfluoroheptane sulfonic acid (PFHpS)		
		6908	Perfluoroheptanoic acid (PFHpA)		
		6927	Perfluorohexane sulfonic acid (PFHxS)		
		6913	Perfluorohexanoic acid (PFHxA)		
		6906	Perfluorononanoic acid (PFNA)		
		6931	Perfluorooctane sulfonic acid (PFOS)		
		6912	Perfluorooctanoic acid (PFOA)		
		6934	Perfluoropentane sulfonic acid (PFPeS)		
		6914	Perfluoropentanoic acid (PFPeA)		
		6904	Perfluoroundecanoic acid (PFUnA)		
	EPA 537 1.1 1.1			10091675	Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS
		4846	N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		
		4847	N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)		
		6918	Perfluorobutane sulfonic acid (PFBS)		
		6905	Perfluorodecanoic acid (PFDA)		
		6903	Perfluorododecanoic acid (PFDoA)		
		6908	Perfluoroheptanoic acid (PFHpA)		
		6927	Perfluorohexane sulfonic acid (PFHxS)		
		6913	Perfluorohexanoic acid (PFHxA)		
		6906	Perfluorononanoic acid (PFNA)		
		6931	Perfluorooctane sulfonic acid (PFOS)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6912	Perfluorooctanoic acid (PFOA)		
		6902	Perfluorotetradecanoic acid (PFTDA)		
		9563	Perfluorotridecanoic acid (PFTrDA)		
		6904	Perfluoroundecanoic acid (PFUnA)		
	EPA 537.1 1.0 1.0			10091642	Per- and Polyfluorinated Alkyl Substances in Drinking Water by LC/MS/MS
		9490	11-chloreicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		
		6951	4,8-Dioxa-3H-perfluorononanoic acid (DONA)		
		6952	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)		
		9460	Hexafluoropropylene oxide dimer acid (HFPO-DA)		
		4846	N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		
		4847	N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)		
		6918	Perfluorobutane sulfonic acid (PFBS)		
		6905	Perfluorodecanoic acid (PFDA)		
		6903	Perfluorododecanoic acid (PFDoA)		
		6908	Perfluoroheptanoic acid (PFHpA)		
		6927	Perfluorohexane sulfonic acid (PFHxS)		
		6913	Perfluorohexanoic acid (PFHxA)		
		6906	Perfluorononanoic acid (PFNA)		
		6931	Perfluorooctane sulfonic acid (PFOS)		
		6912	Perfluorooctanoic acid (PFOA)		
		6902	Perfluorotetradecanoic acid (PFTDA)		
		9563	Perfluorotridecanoic acid (PFTrDA)		
		6904	Perfluoroundecanoic acid (PFUnA)		

Non-Potable Water

	AK101 GRO-MS			90015159	Determination of Gasoline Range Organics by GC/MS - Alaska Department of Environmental Conservation
		9408	Gasoline range organics (GRO)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	AK102 DRO-SV			90015228	Determination of Diesel Range Organics Small Volume - Alaska DEC
		9369	Diesel range organics (DRO)		
	AK103 RRO			90015400	Determination of Residual Range Organics - Alaska Department of Environmental Conservation
		9499	Motor Oil		
	EPA 1311			10118806	Toxicity Characteristic Leaching Procedure
		1466	Toxicity Characteristic Leaching Procedure (TCLP)		
	EPA 1312			10119003	Synthetic Precipitation Leaching Procedure
		1460	Synthetic Precipitation Leaching Procedure (SPLP)		
	EPA 1613B			10120602	Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			(1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 1668A			10262007	Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS
		8914	Sum - Dichlorobiphenyls (BZ-12-+ BZ-13)		
		8916	Sum - Heptachlorobiphenyls (BZ-171 + BZ-173)		
		8917	Sum - Heptachlorobiphenyls (BZ-180 + BZ-193)		
		8919	Sum - Hexachlorobiphenyls (BZ-128 + BZ-166)		
		8922	Sum - Hexachlorobiphenyls (BZ-129 + BZ-138 + BZ-163)		
		8927	Sum - Hexachlorobiphenyls (BZ-135 + BZ-151)		
		8928	Sum - Hexachlorobiphenyls (BZ-139 + BZ-140)		
		8929	Sum - Hexachlorobiphenyls (BZ-147 + BZ-149)		
		8931	Sum - Hexachlorobiphenyls (BZ-153 + BZ-168)		
		8932	Sum - Hexachlorobiphenyls (BZ-156 +		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			BZ-157)		
		8934	Sum - Octachlorobiphenyls (BZ-198 + BZ-199)		
		8936	Sum - Pentachlorobiphenyls (BZ-107 + BZ-124)		
		8938	Sum - Pentachlorobiphenyls (BZ-110 + BZ-115)		
		8941	Sum - Pentachlorobiphenyls (BZ-85 + BZ-116 + BZ-117)		
		8943	Sum - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-90 + BZ-109 + BZ-119 + BZ-125)		
		8947	Sum - Pentachlorobiphenyls (BZ-88 + BZ-91)		
		8948	Sum - Pentachlorobiphenyls (BZ-90 + BZ-101 + BZ-113)		
		8949	Sum - Pentachlorobiphenyls (BZ-93 + BZ-100)		
		8951	Sum - Pentachlorobiphenyls (BZ-98 + BZ-102)		
		8954	Sum - Tetrachlorobiphenyls (BZ-40 + BZ-71)		
		8957	Sum - Tetrachlorobiphenyls (BZ-44 + BZ-47 + BZ-65)		
		8959	Sum - Tetrachlorobiphenyls (BZ-49 + BZ-69)		
		8961	Sum - Tetrachlorobiphenyls (BZ-50 + BZ-53)		
		8962	Sum - Tetrachlorobiphenyls (BZ-59 + BZ-62 + BZ-75)		
		8963	Sum - Tetrachlorobiphenyls (BZ-61 + BZ-70 + BZ-74 + BZ-76)		
		8966	Sum - Trichlorobiphenyls (BZ-18 + BZ-30)		
		8967	Sum - Trichlorobiphenyls (BZ-20 + BZ-28)		
		8968	Sum - Trichlorobiphenyls (BZ-21 + BZ-33)		
		8969	Sum - Trichlorobiphenyls (BZ-26 + BZ-29)		
	EPA 1668A EPA			10262029	Chlorinated Biphenyl Cogeners in Water, Soil, Sediment,

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	1668A EPA 1668A				and Tissue by GC-HRMS
		9095	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)		
		9090	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)		
		9101	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)		
		9103	2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)		
		9102	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)		
		9065	2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)		
		9104	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)		
		9106	2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)		
		9020	2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)		
		9107	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)		
		9109	2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)		
		9108	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)		
		9110	2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)		
		9111	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)		
		9112	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)		
		9113	2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)		
		9116	2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)		
		9115	2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)		

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		9114	2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)		
		9118	2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)		
		9117	2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)		
		9119	2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)		
		9121	2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)		
		9120	2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)		
		9122	2,2',3,3',4-Pentachlorobiphenyl (BZ-82)		
		9123	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)		
		9124	2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)		
		9125	2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)		
		9126	2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)		
		9128	2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)		
		9127	2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)		
		9129	2,2',3,3',5-Pentachlorobiphenyl (BZ-83)		
		9130	2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)		
		9131	2,2',3,3',6-Pentachlorobiphenyl (BZ-84)		
		9132	2,2',3,3'-Tetrachlorobiphenyl (BZ-40)		
		9133	2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)		
		9134	2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)		
		9135	2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)		
		9137	2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)		
		9136	2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9075	2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)		
		9138	2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)		
		9025	2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)		
		9139	2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)		
		9141	2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)		
		9140	2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)		
		9142	2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)		
		9143	2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)		
		9080	2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)		
		9030	2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)		
		9144	2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)		
		9145	2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)		
		9146	2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)		
		9148	2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)		
		9152	2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)		
		9150	2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)		
		9149	2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)		
		9147	2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)		
		9151	2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)		
		9153	2,2',3,4,5-Pentachlorobiphenyl (BZ-86)		
		8975	2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)		
		9155	2,2',3,4',5-Pentachlorobiphenyl (BZ-90)		
		9154	2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)		
		9156	2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)		

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		9157	2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)		
		9158	2,2',3,4,6-Pentachlorobiphenyl (BZ-88)		
		9161	2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)		
		9160	2,2',3,4',6-Pentachlorobiphenyl (BZ-91)		
		9159	2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)		
		9163	2,2',3,4-Tetrachlorobiphenyl (BZ-41)		
		9162	2,2',3,4'-Tetrachlorobiphenyl (BZ-42)		
		9035	2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)		
		9164	2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)		
		9165	2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)		
		9168	2,2',3,5,6-Pentachlorobiphenyl (BZ-93)		
		9167	2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)		
		9166	2,2',3,5',6-Pentachlorobiphenyl (BZ-95)		
		9169	2,2',3,5-Tetrachlorobiphenyl (BZ-43)		
		8945	2,2',3,5'-Tetrachlorobiphenyl (BZ-44)		
		9170	2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)		
		9172	2,2',3,6-Tetrachlorobiphenyl (BZ-45)		
		9171	2,2',3,6'-Tetrachlorobiphenyl (BZ-46)		
		9173	2,2',3-Trichlorobiphenyl (BZ-16)		
		9040	2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)		
		9174	2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)		
		9175	2,2',4,4',5-Pentachlorobiphenyl (BZ-99)		
		9176	2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)		
		9177	2,2',4,4',6-Pentachlorobiphenyl (BZ-100)		
		9178	2,2',4,4'-Tetrachlorobiphenyl (BZ-47)		
		8980	2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)		
		9180	2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)		
		9179	2,2',4,5',6-Pentachlorobiphenyl (BZ-103)		
		9181	2,2',4,5-Tetrachlorobiphenyl (BZ-48)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8950	2,2',4,5'-Tetrachlorobiphenyl (BZ-49)		
		9182	2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)		
		9184	2,2',4,6-Tetrachlorobiphenyl (BZ-50)		
		9183	2,2',4,6'-Tetrachlorobiphenyl (BZ-51)		
		9185	2,2',4-Trichlorobiphenyl (BZ-17)		
		8955	2,2',5,5'-Tetrachlorobiphenyl (BZ-52)		
		9186	2,2',5,6'-Tetrachlorobiphenyl (BZ-53)		
		8930	2,2',5-Trichlorobiphenyl (BZ-18)		
		9187	2,2',6,6'-Tetrachlorobiphenyl (BZ-54)		
		9188	2,2',6-Trichlorobiphenyl (BZ-19)		
		9189	2,2'-Dichlorobiphenyl (BZ-4)		
		9190	2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)		
		9085	2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)		
		9191	2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)		
		9192	2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)		
		9050	2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)		
		9045	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)		
		9193	2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)		
		8985	2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)		
		9194	2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)		
		9195	2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)		
		9196	2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)		
		9197	2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)		
		9198	2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)		
		9199	2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)		
		9201	2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9200	2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)		
		9204	2,3,3',4,5-Pentachlorobiphenyl (BZ-106)		
		9205	2,3,3',4',5-Pentachlorobiphenyl (BZ-107)		
		9203	2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)		
		9202	2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)		
		9206	2,3,3',4,6-Pentachlorobiphenyl (BZ-109)		
		8990	2,3,3',4',6-Pentachlorobiphenyl (BZ-110)		
		9208	2,3,3',4-Tetrachlorobiphenyl (BZ-55)		
		9207	2,3,3',4'-Tetrachlorobiphenyl (BZ-56)		
		9209	2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)		
		9210	2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)		
		9211	2,3,3',5,6-Pentachlorobiphenyl (BZ-112)		
		9212	2,3,3',5',6-Pentachlorobiphenyl (BZ-113)		
		9214	2,3,3',5-Tetrachlorobiphenyl (BZ-57)		
		9213	2,3,3',5'-Tetrachlorobiphenyl (BZ-58)		
		9215	2,3,3',6-Tetrachlorobiphenyl (BZ-59)		
		9216	2,3,3'-Trichlorobiphenyl (BZ-20)		
		9055	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)		
		9217	2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)		
		9218	2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)		
		9005	2,3,4,4',5-Pentachlorobiphenyl (BZ-114)		
		8995	2,3',4,4',5-Pentachlorobiphenyl (BZ-118)		
		9000	2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)		
		9219	2,3,4,4',6-Pentachlorobiphenyl (BZ-115)		
		9220	2,3',4,4',6-Pentachlorobiphenyl (BZ-119)		
		9221	2,3,4,4'-Tetrachlorobiphenyl (BZ-60)		
		8960	2,3',4,4'-Tetrachlorobiphenyl (BZ-66)		
		9223	2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)		
		9222	2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)		
		9225	2,3,4,5,6-Pentachlorobiphenyl (BZ-116)		
		9227	2,3,4',5,6-Pentachlorobiphenyl (BZ-117)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9226	2,3',4,5',6-Pentachlorobiphenyl (BZ-121)		
		9224	2,3',4',5',6-Pentachlorobiphenyl (BZ-125)		
		9228	2,3,4,5-Tetrachlorobiphenyl (BZ-61)		
		9233	2,3,4',5-Tetrachlorobiphenyl (BZ-63)		
		9231	2,3',4,5'-Tetrachlorobiphenyl (BZ-68)		
		9230	2,3',4',5-Tetrachlorobiphenyl (BZ-70)		
		9229	2,3',4',5'-Tetrachlorobiphenyl (BZ-76)		
		9232	2,3',4,5-Tetrachlorobiphenyl (BZ-67)		
		9234	2,3,4,6-Tetrachlorobiphenyl (BZ-62)		
		9236	2,3,4',6-Tetrachlorobiphenyl (BZ-64)		
		9235	2,3',4,6-Tetrachlorobiphenyl (BZ-69)		
		9237	2,3',4',6-Tetrachlorobiphenyl (BZ-71)		
		9238	2,3,4-Trichlorobiphenyl (BZ-21)		
		9241	2,3,4'-Trichlorobiphenyl (BZ-22)		
		9240	2,3',4-Trichlorobiphenyl (BZ-25)		
		9239	2,3',4'-Trichlorobiphenyl (BZ-33)		
		9242	2,3',5,5'-Tetrachlorobiphenyl (BZ-72)		
		9243	2,3,5,6-Tetrachlorobiphenyl (BZ-65)		
		9244	2,3',5',6-Tetrachlorobiphenyl (BZ-73)		
		9245	2,3,5-Trichlorobiphenyl (BZ-23)		
		8935	2,3',5-Trichlorobiphenyl (BZ-26)		
		9246	2,3',5'-Trichlorobiphenyl (BZ-34)		
		9247	2,3,6-Trichlorobiphenyl (BZ-24)		
		9248	2,3',6-Trichlorobiphenyl (BZ-27)		
		8920	2,3-Dichlorobiphenyl (BZ-5)		
		9249	2,3'-Dichlorobiphenyl (BZ-6)		
		9250	2,4,4',5-Tetrachlorobiphenyl (BZ-74)		
		9251	2,4,4',6-Tetrachlorobiphenyl (BZ-75)		
		9252	2,4,4'-Trichlorobiphenyl (BZ-28)		
		9253	2,4,5-Trichlorobiphenyl (BZ-29)		
		8940	2,4',5-Trichlorobiphenyl (BZ-31)		
		9254	2,4,6-Trichlorobiphenyl (BZ-30)		

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		9255	2,4',6-Trichlorobiphenyl (BZ-32)		
		9257	2,4-Dichlorobiphenyl (BZ-7)		
		9256	2,4'-Dichlorobiphenyl (BZ-8)		
		9258	2,5-Dichlorobiphenyl (BZ-9)		
		9259	2,6-Dichlorobiphenyl (BZ-10)		
		8915	2-Chlorobiphenyl (BZ-1)		
		9060	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)		
		9015	3,3',4,4',5-Pentachlorobiphenyl (BZ-126)		
		8965	3,3',4,4'-Tetrachlorobiphenyl (BZ-77)		
		9260	3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)		
		9262	3,3',4,5-Tetrachlorobiphenyl (BZ-78)		
		9261	3,3',4,5'-Tetrachlorobiphenyl (BZ-79)		
		9263	3,3',4-Trichlorobiphenyl (BZ-35)		
		9264	3,3',5,5'-Tetrachlorobiphenyl (BZ-80)		
		9265	3,3',5-Trichlorobiphenyl (BZ-36)		
		8925	3,3'-Dichlorobiphenyl (BZ-11)		
		8970	3,4,4',5-Tetrachlorobiphenyl (BZ-81)		
		9266	3,4,4'-Trichlorobiphenyl (BZ-37)		
		9267	3,4,5-Trichlorobiphenyl (BZ-38)		
		9268	3,4',5-Trichlorobiphenyl (BZ-39)		
		9270	3,4-Dichlorobiphenyl (BZ-12)		
		9269	3,4'-Dichlorobiphenyl (BZ-13)		
		9271	3,5-Dichlorobiphenyl (BZ-14)		
		9272	3-Chlorobiphenyl (BZ-2)		
		9273	4,4'-Dichlorobiphenyl (BZ-15)		
		9274	4-Chlorobiphenyl (BZ-3)		
		9105	Decachlorobiphenyl (BZ-209)		
		8876	Total Dichlorobiphenyls		
		8877	Total Heptachlorobiphenyls		
		8888	Total Hexachlorobiphenyls		
		8889	Total Monochlorobiphenyls		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8891	Total Nonachlorobiphenyls		
		8892	Total Octachlorobiphenyls		
		8896	Total Pentachlorobiphenyls		
		8893	Total Tetrachlorobiphenyls		
		8894	Total Trichlorobiphenyls		
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		8914	Sum - Dichlorobiphenyls (BZ-12-+ BZ-13)		
		8916	Sum - Heptachlorobiphenyls (BZ-171 + BZ-173)		
		8917	Sum - Heptachlorobiphenyls (BZ-180 + BZ-193)		
		8919	Sum - Hexachlorobiphenyls (BZ-128 + BZ-166)		
		8922	Sum - Hexachlorobiphenyls (BZ-129 + BZ-138 + BZ-163)		
		8927	Sum - Hexachlorobiphenyls (BZ-135 + BZ-151)		
		8928	Sum - Hexachlorobiphenyls (BZ-139 + BZ-140)		
		8929	Sum - Hexachlorobiphenyls (BZ-147 + BZ-149)		
		8931	Sum - Hexachlorobiphenyls (BZ-153 + BZ-168)		
		8932	Sum - Hexachlorobiphenyls (BZ-156 + BZ-157)		
		8934	Sum - Octachlorobiphenyls (BZ-198 + BZ-199)		
		8936	Sum - Pentachlorobiphenyls (BZ-107 + BZ-124)		
		8938	Sum - Pentachlorobiphenyls (BZ-110 + BZ-115)		
		8941	Sum - Pentachlorobiphenyls (BZ-85 + BZ-116 + BZ-117)		
		8943	Sum - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-90 + BZ-109 + BZ-119 + BZ-125)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8947	Sum - Pentachlorobiphenyls (BZ-88 + BZ-91)		
		8948	Sum - Pentachlorobiphenyls (BZ-90 + BZ-101 + BZ-113)		
		8949	Sum - Pentachlorobiphenyls (BZ-93 + BZ-100)		
		8951	Sum - Pentachlorobiphenyls (BZ-98 + BZ-102)		
		8954	Sum - Tetrachlorobiphenyls (BZ-40 + BZ-71)		
		8957	Sum - Tetrachlorobiphenyls (BZ-44 + BZ-47 + BZ-65)		
		8959	Sum - Tetrachlorobiphenyls (BZ-49 + BZ-69)		
		8961	Sum - Tetrachlorobiphenyls (BZ-50 + BZ-53)		
		8962	Sum - Tetrachlorobiphenyls (BZ-59 + BZ-62 + BZ-75)		
		8963	Sum - Tetrachlorobiphenyls (BZ-61 + BZ-70 + BZ-74 + BZ-76)		
		8966	Sum - Trichlorobiphenyls (BZ-18 + BZ-30)		
		8967	Sum - Trichlorobiphenyls (BZ-20 + BZ-28)		
		8968	Sum - Trichlorobiphenyls (BZ-21 + BZ-33)		
		8969	Sum - Trichlorobiphenyls (BZ-26 + BZ-29)		
	EPA 1668C EPA 1668C EPA 1668C			10262109	Chlorinated Biphenyl Cogeners in Water, Soil, Sediment, and Tissue by GC-HRMS
		9095	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)		
		9090	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)		
		9101	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)		
		9103	2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)		
		9102	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)		

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		9065	2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)		
		9104	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)		
		9106	2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)		
		9020	2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)		
		9107	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)		
		9109	2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)		
		9108	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)		
		9110	2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)		
		9111	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)		
		9112	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)		
		9113	2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)		
		9116	2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)		
		9115	2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)		
		9114	2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)		
		9118	2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)		
		9117	2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)		
		9119	2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)		
		9121	2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)		
		9120	2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)		
		9122	2,2',3,3',4-Pentachlorobiphenyl (BZ-82)		

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		9123	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)		
		9124	2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)		
		9125	2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)		
		9126	2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)		
		9128	2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)		
		9127	2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)		
		9129	2,2',3,3',5-Pentachlorobiphenyl (BZ-83)		
		9130	2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)		
		9131	2,2',3,3',6-Pentachlorobiphenyl (BZ-84)		
		9132	2,2',3,3'-Tetrachlorobiphenyl (BZ-40)		
		9133	2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)		
		9134	2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)		
		9135	2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)		
		9137	2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)		
		9136	2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)		
		9075	2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)		
		9138	2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)		
		9025	2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)		
		9139	2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)		
		9141	2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)		
		9140	2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)		
		9142	2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)		

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		9143	2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)		
		9080	2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)		
		9030	2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)		
		9144	2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)		
		9145	2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)		
		9146	2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)		
		9148	2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)		
		9152	2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)		
		9150	2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)		
		9149	2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)		
		9147	2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)		
		9151	2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)		
		9153	2,2',3,4,5-Pentachlorobiphenyl (BZ-86)		
		8975	2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)		
		9155	2,2',3,4',5-Pentachlorobiphenyl (BZ-90)		
		9154	2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)		
		9156	2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)		
		9157	2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)		
		9158	2,2',3,4,6-Pentachlorobiphenyl (BZ-88)		
		9161	2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)		
		9160	2,2',3,4',6-Pentachlorobiphenyl (BZ-91)		
		9159	2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)		
		9163	2,2',3,4-Tetrachlorobiphenyl (BZ-41)		
		9162	2,2',3,4'-Tetrachlorobiphenyl (BZ-42)		
		9035	2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)		
		9164	2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)		
		9165	2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)		

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		9168	2,2',3,5,6-Pentachlorobiphenyl (BZ-93)		
		9167	2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)		
		9166	2,2',3,5',6-Pentachlorobiphenyl (BZ-95)		
		9169	2,2',3,5-Tetrachlorobiphenyl (BZ-43)		
		8945	2,2',3,5'-Tetrachlorobiphenyl (BZ-44)		
		9170	2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)		
		9172	2,2',3,6-Tetrachlorobiphenyl (BZ-45)		
		9171	2,2',3,6'-Tetrachlorobiphenyl (BZ-46)		
		9173	2,2',3-Trichlorobiphenyl (BZ-16)		
		9040	2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)		
		9174	2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)		
		9175	2,2',4,4',5-Pentachlorobiphenyl (BZ-99)		
		9176	2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)		
		9177	2,2',4,4',6-Pentachlorobiphenyl (BZ-100)		
		9178	2,2',4,4'-Tetrachlorobiphenyl (BZ-47)		
		8980	2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)		
		9180	2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)		
		9179	2,2',4,5',6-Pentachlorobiphenyl (BZ-103)		
		9181	2,2',4,5-Tetrachlorobiphenyl (BZ-48)		
		8950	2,2',4,5'-Tetrachlorobiphenyl (BZ-49)		
		9182	2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)		
		9184	2,2',4,6-Tetrachlorobiphenyl (BZ-50)		
		9183	2,2',4,6'-Tetrachlorobiphenyl (BZ-51)		
		9185	2,2',4-Trichlorobiphenyl (BZ-17)		
		8955	2,2',5,5'-Tetrachlorobiphenyl (BZ-52)		
		9186	2,2',5,6'-Tetrachlorobiphenyl (BZ-53)		
		8930	2,2',5-Trichlorobiphenyl (BZ-18)		
		9187	2,2',6,6'-Tetrachlorobiphenyl (BZ-54)		
		9188	2,2',6-Trichlorobiphenyl (BZ-19)		
		9189	2,2'-Dichlorobiphenyl (BZ-4)		

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		9190	2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)		
		9085	2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)		
		9191	2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)		
		9192	2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)		
		9050	2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)		
		9045	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)		
		9193	2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)		
		8985	2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)		
		9194	2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)		
		9195	2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)		
		9196	2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)		
		9197	2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)		
		9198	2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)		
		9199	2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)		
		9201	2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)		
		9200	2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)		
		9204	2,3,3',4,5-Pentachlorobiphenyl (BZ-106)		
		9205	2,3,3',4',5-Pentachlorobiphenyl (BZ-107)		
		9203	2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)		
		9202	2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)		
		9206	2,3,3',4,6-Pentachlorobiphenyl (BZ-109)		
		8990	2,3,3',4',6-Pentachlorobiphenyl (BZ-110)		
		9208	2,3,3',4-Tetrachlorobiphenyl (BZ-55)		
		9207	2,3,3',4'-Tetrachlorobiphenyl (BZ-56)		
		9209	2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)		
		9210	2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)		

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		9211	2,3,3',5,6-Pentachlorobiphenyl (BZ-112)		
		9212	2,3,3',5',6-Pentachlorobiphenyl (BZ-113)		
		9214	2,3,3',5-Tetrachlorobiphenyl (BZ-57)		
		9213	2,3,3',5'-Tetrachlorobiphenyl (BZ-58)		
		9215	2,3,3',6-Tetrachlorobiphenyl (BZ-59)		
		9216	2,3,3'-Trichlorobiphenyl (BZ-20)		
		9055	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)		
		9217	2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)		
		9218	2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)		
		9005	2,3,4,4',5-Pentachlorobiphenyl (BZ-114)		
		8995	2,3',4,4',5-Pentachlorobiphenyl (BZ-118)		
		9000	2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)		
		9219	2,3,4,4',6-Pentachlorobiphenyl (BZ-115)		
		9220	2,3',4,4',6-Pentachlorobiphenyl (BZ-119)		
		9221	2,3,4,4'-Tetrachlorobiphenyl (BZ-60)		
		8960	2,3',4,4'-Tetrachlorobiphenyl (BZ-66)		
		9223	2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)		
		9222	2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)		
		9225	2,3,4,5,6-Pentachlorobiphenyl (BZ-116)		
		9227	2,3,4',5,6-Pentachlorobiphenyl (BZ-117)		
		9226	2,3',4,5',6-Pentachlorobiphenyl (BZ-121)		
		9224	2,3',4',5',6-Pentachlorobiphenyl (BZ-125)		
		9228	2,3,4,5-Tetrachlorobiphenyl (BZ-61)		
		9233	2,3,4',5-Tetrachlorobiphenyl (BZ-63)		
		9231	2,3',4,5'-Tetrachlorobiphenyl (BZ-68)		
		9230	2,3',4',5-Tetrachlorobiphenyl (BZ-70)		
		9229	2,3',4',5'-Tetrachlorobiphenyl (BZ-76)		
		9232	2,3',4,5-Tetrachlorobiphenyl (BZ-67)		
		9234	2,3,4,6-Tetrachlorobiphenyl (BZ-62)		
		9236	2,3,4',6-Tetrachlorobiphenyl (BZ-64)		

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		9235	2,3',4,6-Tetrachlorobiphenyl (BZ-69)		
		9237	2,3',4',6-Tetrachlorobiphenyl (BZ-71)		
		9238	2,3,4-Trichlorobiphenyl (BZ-21)		
		9241	2,3,4'-Trichlorobiphenyl (BZ-22)		
		9240	2,3',4-Trichlorobiphenyl (BZ-25)		
		9239	2,3',4'-Trichlorobiphenyl (BZ-33)		
		9242	2,3',5,5'-Tetrachlorobiphenyl (BZ-72)		
		9243	2,3,5,6-Tetrachlorobiphenyl (BZ-65)		
		9244	2,3',5',6-Tetrachlorobiphenyl (BZ-73)		
		9245	2,3,5-Trichlorobiphenyl (BZ-23)		
		8935	2,3',5-Trichlorobiphenyl (BZ-26)		
		9246	2,3',5'-Trichlorobiphenyl (BZ-34)		
		9247	2,3,6-Trichlorobiphenyl (BZ-24)		
		9248	2,3',6-Trichlorobiphenyl (BZ-27)		
		8920	2,3-Dichlorobiphenyl (BZ-5)		
		9249	2,3'-Dichlorobiphenyl (BZ-6)		
		9250	2,4,4',5-Tetrachlorobiphenyl (BZ-74)		
		9251	2,4,4',6-Tetrachlorobiphenyl (BZ-75)		
		9252	2,4,4'-Trichlorobiphenyl (BZ-28)		
		9253	2,4,5-Trichlorobiphenyl (BZ-29)		
		8940	2,4',5-Trichlorobiphenyl (BZ-31)		
		9254	2,4,6-Trichlorobiphenyl (BZ-30)		
		9255	2,4',6-Trichlorobiphenyl (BZ-32)		
		9257	2,4-Dichlorobiphenyl (BZ-7)		
		9256	2,4'-Dichlorobiphenyl (BZ-8)		
		9258	2,5-Dichlorobiphenyl (BZ-9)		
		9259	2,6-Dichlorobiphenyl (BZ-10)		
		8915	2-Chlorobiphenyl (BZ-1)		
		9060	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)		
		9015	3,3',4,4',5-Pentachlorobiphenyl (BZ-126)		
		8965	3,3',4,4'-Tetrachlorobiphenyl (BZ-77)		

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		9260	3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)		
		9262	3,3',4,5-Tetrachlorobiphenyl (BZ-78)		
		9261	3,3',4,5'-Tetrachlorobiphenyl (BZ-79)		
		9263	3,3',4-Trichlorobiphenyl (BZ-35)		
		9264	3,3',5,5'-Tetrachlorobiphenyl (BZ-80)		
		9265	3,3',5-Trichlorobiphenyl (BZ-36)		
		8925	3,3'-Dichlorobiphenyl (BZ-11)		
		8970	3,4,4',5-Tetrachlorobiphenyl (BZ-81)		
		9266	3,4,4'-Trichlorobiphenyl (BZ-37)		
		9267	3,4,5-Trichlorobiphenyl (BZ-38)		
		9268	3,4',5-Trichlorobiphenyl (BZ-39)		
		9270	3,4-Dichlorobiphenyl (BZ-12)		
		9269	3,4'-Dichlorobiphenyl (BZ-13)		
		9271	3,5-Dichlorobiphenyl (BZ-14)		
		9272	3-Chlorobiphenyl (BZ-2)		
		9273	4,4'-Dichlorobiphenyl (BZ-15)		
		9274	4-Chlorobiphenyl (BZ-3)		
		9105	Decachlorobiphenyl (BZ-209)		
		8876	Total Dichlorobiphenyls		
		8877	Total Heptachlorobiphenyls		
		8888	Total Hexachlorobiphenyls		
		8889	Total Monochlorobiphenyls		
		8891	Total Nonachlorobiphenyls		
		8892	Total Octachlorobiphenyls		
		8896	Total Pentachlorobiphenyls		
		8893	Total Tetrachlorobiphenyls		
		8894	Total Trichlorobiphenyls		
	EPA 200.8 5.4 5.4			10014605	Metals by ICP-MS
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1075	Lead		
		1080	Lithium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1125	Potassium		
		1140	Selenium		
		1150	Silver		
		1155	Sodium		
		1165	Thallium		
		1185	Vanadium		
		1190	Zinc		
	EPA 300.0 2.1 2.1			10053200	Methods for the Determination of Inorganic Substances in Environmental Samples
		1540	Bromide		
		1575	Chloride		
		1730	Fluoride		
		1810	Nitrate as N		
		1835	Nitrite		
		1870	Orthophosphate as P		
		2000	Sulfate		
	EPA 3005A			10133207	Acid Digestion of waters for Total Recoverable or Dissolved Metals
		1438	Preconcentration under Acid		
	EPA 3010A			10133605	Acid Digestion of Aqueous samples and Extracts for Total Metals
		1401	Acid Digestion of Aqueous samples and		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			Extracts for Total Metals		
	EPA 314.0			10055400	Perchlorate in Drinking Water by Ion Chromatography
		1895	Perchlorate		
	EPA 3510C			10138202	Separatory Funnel Liquid-liquid extraction
		1444	Seperatory Funnel Liquid-Liquid Extraction		
	EPA 353.2			10067206	Nitrate/Nitrite Nitrogen - Automated, Cadmium
		1820	Nitrate plus Nitrite as N		
		1840	Nitrite as N		
	EPA 3535			10139205	Solid-Phase Extraction (SPE)
		1448	Solid-Phase Extraction		
	EPA 3580A			10143007	Waste Dilution
		1470	Waste Dilution		
	EPA 3620B			10145809	Florisil Cleanup
		1414	Florisil Clean-up		
	EPA 3630C			10146802	Silica gel cleanup
		1446	Silica Gel Clean-up		
	EPA 410.4			10077006	Chemical Oxygen Demand - Colorimetric, Automated.
		1565	Chemical oxygen demand		
	EPA 5030B			10153409	Purge and trap for aqueous samples
		1406	Aqueous-phase Purge & Trap		
	EPA 6010B			10155609	ICP - AES
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1910	Phosphorus, total		
		1125	Potassium		
		1140	Selenium		
		1990	Silica as SiO2		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 6010C EPA 6010C EPA 6010C			10155905	Inductively Coupled Plasma - Atomic Emission Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1070	Iron		
		1075	Lead		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1910	Phosphorus, total		
		1125	Potassium		
		1140	Selenium		
		1990	Silica as SiO2		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020			10156000	Inductively Coupled Plasma-Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1080	Lithium		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1910	Phosphorus, total		
		1125	Potassium		
		1140	Selenium		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1184	Uranium (mass)		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020A 1 1			10156419	Inductively Coupled Plasma -Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1080	Lithium		
		1085	Magnesium		
		1090	Manganese		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1100	Molybdenum		
		1105	Nickel		
		1910	Phosphorus, total		
		1125	Potassium		
		1140	Selenium		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1184	Uranium (mass)		
		1185	Vanadium		
		1190	Zinc		
	EPA 6850			10304606	Perchlorate in Water, Soils and Solid Wastes Using High Performance Liquid Chromatography/Electrospray Ionization/Mass Spectrometry
		1895	Perchlorate		
	EPA 7196A			10162400	Chromium Hexavalent colorimetric
		1045	Chromium VI		
	EPA 7470A			10165807	Mercury in Liquid Waste by Cold Vapor Atomic Absorption
		1095	Mercury		
	EPA 8015B			10173601	Non-halogenated organics using GC/FID
		9369	Diesel range organics (DRO)		
		9499	Motor Oil		
	EPA 8015C			10173805	Non-halogenated organics using GC/FID
		9369	Diesel range organics (DRO)		
		9499	Motor Oil		
	EPA 8015D			10305609	Nonhalogenated Organics Using GC/FID
		9369	Diesel range organics (DRO)		
		9499	Motor Oil		
	EPA 8081A			10178606	Organochlorine Pesticides by GC/ECD

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8580	2,4'-DDD		
		8585	2,4'-DDE		
		8590	2,4'-DDT		
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7260	Chlorobenzilate		
		7240	cis-chlordane (alpha-Chlordane)		
		7105	delta-BHC		
		7405	Diallate		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		7725	Isodrin		
		7810	Methoxychlor		
		7870	Mirex		
		8250	Toxaphene (Chlorinated camphene)		
	EPA 8081B			10178800	Organochlorine Pesticides by GC/ECD
		8580	2,4'-DDD		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8585	2,4'-DDE		
		8590	2,4'-DDT		
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7260	Chlorobenzilate		
		7240	cis-chlordane (alpha-Chlordane)		
		7105	delta-BHC		
		7405	Diallate		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		7725	Isodrin		
		7810	Methoxychlor		
		7870	Mirex		
		8250	Toxaphene (Chlorinated camphene)		
	EPA 8082			10179007	Polychlorinated Biphenyls (PCBs) by GC/ECD
		8880	Aroclor-1016 (PCB-1016)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
	EPA 8082A			10179201	Polychlorinated Biphenyls (PCBs) by GC/ECD
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
	EPA 8260B			10184802	Volatile Organic Compounds by purge and trap GC/MS
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		
		4630	1,1-Dichloroethane		
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		
		5180	1,2,3-Trichloropropane		
		5155	1,2,4-Trichlorobenzene		
		5210	1,2,4-Trimethylbenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4620	1,4-Dichlorobenzene		
		4735	1,4-Dioxane (1,4- Diethyleneoxide)		
		4510	1-Chlorohexane		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		
		4355	Allyl chloride (3-Chloropropene)		
		4375	Benzene		
		5635	Benzyl chloride		
		4385	Bromobenzene		
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		
		4525	Chloroprene (2-Chloro-1,3-butadiene)		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4580	Dibromochloropropane		
		4595	Dibromomethane (Methylene bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4810	Ethyl methacrylate		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		9408	Gasoline range organics (GRO)		
		4835	Hexachlorobutadiene		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4950	Methyl bromide (Bromomethane)		
		4960	Methyl chloride (Chloromethane)		
		4990	Methyl methacrylate		
		5000	Methyl tert-butyl ether (MTBE)		
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4435	n-Butylbenzene		
		4855	n-Hexane		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		5080	Propionitrile (Ethyl cyanide)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4440	sec-Butylbenzene		
		5100	Styrene		
		4370	T-amylmethylether (TAME)		
		4420	tert-Butyl alcohol		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 8260C			10307003	Volatile Organics: GC/MS (capillary column)
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		
		4630	1,1-Dichloroethane		
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		
		5180	1,2,3-Trichloropropane		
		5155	1,2,4-Trichlorobenzene		
		5210	1,2,4-Trimethylbenzene		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4620	1,4-Dichlorobenzene		
		4735	1,4-Dioxane (1,4- Diethyleneoxide)		
		4510	1-Chlorohexane		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		
		4355	Allyl chloride (3-Chloropropene)		
		4375	Benzene		
		5635	Benzyl chloride		
		4385	Bromobenzene		
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4525	Chloroprene (2-Chloro-1,3-butadiene)		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4580	Dibromochloropropane		
		4595	Dibromomethane (Methylene bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4810	Ethyl methacrylate		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		9408	Gasoline range organics (GRO)		
		4835	Hexachlorobutadiene		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4950	Methyl bromide (Bromomethane)		
		4960	Methyl chloride (Chloromethane)		
		4990	Methyl methacrylate		
		5000	Methyl tert-butyl ether (MTBE)		
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4435	n-Butylbenzene		
		4855	n-Hexane		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		5080	Propionitrile (Ethyl cyanide)		
		4440	sec-Butylbenzene		
		5100	Styrene		
		4370	T-amylmethylether (TAME)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4420	tert-Butyl alcohol		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 8260C SIM			10307105	Volatile Organic Compounds by GC/MS-SIM
		5110	1,1,2,2-Tetrachloroethane		
		5165	1,1,2-Trichloroethane		
		5180	1,2,3-Trichloropropane		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4620	1,4-Dichlorobenzene		
		4375	Benzene		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4575	Chlorodibromomethane		
		4505	Chloroform		
		4595	Dibromomethane (Methylene bromide)		
		4835	Hexachlorobutadiene		
		4950	Methyl bromide (Bromomethane)		
		5005	Naphthalene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5170	Trichloroethene (Trichloroethylene)		
		5235	Vinyl chloride		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	EPA 8260C SIM EPA 8260C SIM EPA 8260C SIM			10307105	Volatile Organic Compounds by GC/MS-SIM
		9318	1,3-Butadiene		
	EPA 8270C			10185805	Semivolatile Organic compounds by GC/MS
		6703	1,1'-Biphenyl (BZ-0)		
		6715	1,2,4,5-Tetrachlorobenzene		
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		6885	1,3,5-Trinitrobenzene (1,3,5-TNB)		
		4615	1,3-Dichlorobenzene		
		6160	1,3-Dinitrobenzene (1,3-DNB)		
		4620	1,4-Dichlorobenzene		
		6165	1,4-Dinitrobenzene		
		6420	1,4-Naphthoquinone		
		6630	1,4-Phenylenediamine		
		5790	1-Chloronaphthalene		
		6380	1-Methylnaphthalene		
		6425	1-Naphthylamine		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		6740	2,3,5,6-Tetrachlorophenol		
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6005	2,6-Dichlorophenol		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5515	2-Acetylaminofluorene		
		5795	2-Chloronaphthalene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		5145	2-Methylaniline (o-Toluidine)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6430	2-Naphthylamine		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		5050	2-Picoline (2-Methylpyridine)		
		5945	3,3'-Dichlorobenzidine		
		6120	3,3'-Dimethylbenzidine		
		6355	3-Methylcholanthrene		
		6405	3-Methylphenol (m-Cresol)		
		6465	3-Nitroaniline		
		5540	4-Aminobiphenyl		
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6105	4-Dimethyl aminoazobenzene		
		6410	4-Methylphenol (p-Cresol)		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		
		6510	4-Nitroquinoline 1-oxide		
		6570	5-Nitro-o-toluidine		
		6115	7,12-Dimethylbenz(a) anthracene		
		6125	a-a-Dimethylphenethylamine		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5510	Acetophenone		
		5545	Aniline		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5555	Anthracene		
		5560	Aramite		
		5562	Azobenzene		
		5570	Benzaldehyde		
		5595	Benzidine		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		7260	Chlorobenzilate		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		7405	Diallate		
		5900	Dibenz(a, j) acridine		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		7475	Dimethoate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		
		8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)		
		6205	Diphenylamine		
		8625	Disulfoton		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6260	Ethyl methanesulfonate		
		7580	Famphur		
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		
		6295	Hexachloropropene		
		6315	Indeno(1,2,3-cd) pyrene		
		7725	Isodrin		
		6320	Isophorone		
		6325	Isosafrole		
		7740	Kepone		
		6345	Methapyrilene		
		6375	Methyl methanesulfonate		
		7825	Methyl parathion (Parathion, methyl)		
		5005	Naphthalene		
		5015	Nitrobenzene		
		6525	n-Nitrosodiethylamine		
		6530	n-Nitrosodimethylamine		
		5025	n-Nitroso-di-n-butylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6550	n-Nitrosomethylethylamine		
		6555	n-Nitrosomorpholine		
		6560	n-Nitrosopiperidine		
		6565	n-Nitrosopyrrolidine		
		8290	o,o,o-Triethyl phosphorothioate		
		7955	Parathion, ethyl		
		6590	Pentachlorobenzene		
		5035	Pentachloroethane		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6600	Pentachloronitrobenzene		
		6605	Pentachlorophenol		
		6610	Phenacetin		
		6615	Phenanthrene		
		6625	Phenol		
		7985	Phorate		
		6650	Pronamide (Kerb)		
		6665	Pyrene		
		5095	Pyridine		
		6685	Safrole		
		8155	Sulfotepp		
		8235	Thionazin (Zinophos)		
	EPA 8270C SIM			10242407	Semivolatile Organic compounds by GC/MS Selective Ion Monitoring
		4735	1,4-Dioxane (1,4- Diethyleneoxide)		
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		
		6315	Indeno(1,2,3-cd) pyrene		
		5005	Naphthalene		
		6615	Phenanthrene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6665	Pyrene		
	EPA 8270D			10186002	Semivolatile Organic compounds by GC/MS
		6703	1,1'-Biphenyl (BZ-0)		
		6715	1,2,4,5-Tetrachlorobenzene		
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		6885	1,3,5-Trinitrobenzene (1,3,5-TNB)		
		4615	1,3-Dichlorobenzene		
		6160	1,3-Dinitrobenzene (1,3-DNB)		
		4620	1,4-Dichlorobenzene		
		6165	1,4-Dinitrobenzene		
		6420	1,4-Naphthoquinone		
		6630	1,4-Phenylenediamine		
		5790	1-Chloronaphthalene		
		6380	1-Methylnaphthalene		
		6425	1-Naphthylamine		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		6740	2,3,5,6-Tetrachlorophenol		
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6005	2,6-Dichlorophenol		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5515	2-Acetylaminofluorene		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5145	2-Methylaniline (o-Toluidine)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6430	2-Naphthylamine		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		5050	2-Picoline (2-Methylpyridine)		
		5945	3,3'-Dichlorobenzidine		
		6120	3,3'-Dimethylbenzidine		
		6355	3-Methylcholanthrene		
		6405	3-Methylphenol (m-Cresol)		
		6465	3-Nitroaniline		
		5540	4-Aminobiphenyl		
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6105	4-Dimethyl aminoazobenzene		
		6410	4-Methylphenol (p-Cresol)		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		
		6510	4-Nitroquinoline 1-oxide		
		6570	5-Nitro-o-toluidine		
		6115	7,12-Dimethylbenz(a) anthracene		
		6125	a-a-Dimethylphenethylamine		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5510	Acetophenone		
		5545	Aniline		
		5555	Anthracene		
		5560	Aramite		
		5562	Azobenzene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5570	Benzaldehyde		
		5595	Benzidine		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		7260	Chlorobenzilate		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		7405	Diallate		
		5900	Dibenz(a, j) acridine		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		7475	Dimethoate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		
		8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)		
		6205	Diphenylamine		
		8625	Disulfoton		
		6260	Ethyl methanesulfonate		
		7580	Famphur		
		6265	Fluoranthene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		
		6295	Hexachloropropene		
		6315	Indeno(1,2,3-cd) pyrene		
		7725	Isodrin		
		6320	Isophorone		
		6325	Isosafrole		
		7740	Kepone		
		6345	Methapyrilene		
		6375	Methyl methanesulfonate		
		7825	Methyl parathion (Parathion, methyl)		
		5005	Naphthalene		
		5015	Nitrobenzene		
		6525	n-Nitrosodiethylamine		
		6530	n-Nitrosodimethylamine		
		5025	n-Nitroso-di-n-butylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6550	n-Nitrosomethylethylamine		
		6555	n-Nitrosomorpholine		
		6560	n-Nitrosopiperidine		
		6565	n-Nitrosopyrrolidine		
		8290	o,o,o-Triethyl phosphorothioate		
		7955	Parathion, ethyl		
		6590	Pentachlorobenzene		
		5035	Pentachloroethane		
		6600	Pentachloronitrobenzene		
		6605	Pentachlorophenol		
		6610	Phenacetin		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6615	Phenanthrene		
		6625	Phenol		
		7985	Phorate		
		6650	Pronamide (Kerb)		
		6665	Pyrene		
		5095	Pyridine		
		6685	Safrole		
		8155	Sulfotepp		
		8235	Thionazin (Zinophos)		
	EPA 8270D SIM			10242509	Semivolatile Organic compounds by GC/MS Selective Ion Monitoring
		4735	1,4-Dioxane (1,4- Diethyleneoxide)		
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		
		6315	Indeno(1,2,3-cd) pyrene		
		5005	Naphthalene		
		6615	Phenanthrene		
		6665	Pyrene		
	EPA 8280A			10186808	Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			(OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 8280B			10187005	Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 8290			10187209	Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 8290A			10187403	Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 9040B			10197203	pH Electrometric Measurement
		1900	pH		
	EPA 9040C			10244403	pH Electrometric Measurement
		1900	pH		
	EPA 9056			10199005	Determination of Inorganic Anions by Ion Chromatography
		1540	Bromide		
		1575	Chloride		
		1730	Fluoride		
		1805	Nitrate		
		1835	Nitrite		
		1870	Orthophosphate as P		
		2000	Sulfate		
	EPA 9056A			10199607	Determination of Inorganic Anions by Ion Chromatography
		1540	Bromide		
		1575	Chloride		
		1730	Fluoride		
		1805	Nitrate		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1835	Nitrite		
		1870	Orthophosphate as P		
		2000	Sulfate		
	SM 2320 B 21st ED 21st ED			20045403	Alkalinity by Titration Method
		1505	Alkalinity as CaCO3		
	SM 2340 B 20th ED 20th ED			20046202	Hardness by calculation
		1755	Total hardness as CaCO3		
	SM 2340 B-97 SM 2340 B-97 SM 2340 B-97			20046600	Hardness by calculation
		1550	Calcium hardness as CaCO3		
	SM 2540 B-97 SM 2540 B-97 SM 2540 B-97			20049405	Total Solids Dried at 103 - 105C
		1950	Residue-total		
	SM 2540 C-97 SM 2540 C-97 SM 2540 C-97			20050402	Total Dissolved Solids Dried at 180C
		1955	Residue-filterable (TDS)		
	SM 2540 D-97 SM 2540 D-97 SM 2540 D-97			20051201	Total Suspended Solids Dried at 103 - 105C
		1960	Residue-nonfilterable (TSS)		
	SM 4500-H+ B-2000 online online			20105219	pH Value by Electrometric Method .
		1900	pH		
	WS-LC-0010 3.4 3.4			60055154	TestAmerica West Sacramento - Nitroguanidine (EPA 8330)
		6462	2-Nitroguanidine		
	WS-LC-0025 3.6 3.6			60055438	Eurofins Test America Sacramento - Per and Polyfluorinated Alkyl Substances (PFAS) in Water, Soils, Sediments, and Tissues
		9490	11-chloreicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6948	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)		
		9616	1H, 1H, 2H, 2H-perfluorododecane sulfonic acid (10:2 FTS)		
		6946	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)		
		6947	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)		
		6951	4,8-Dioxa-3H-perfluorononanoic acid (DONA)		
		6952	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)		
		9460	Hexafluoropropylene oxide dimer acid (HFPO-DA)		
		9395	N-Ethylperfluorooctane sulfonamide (EtFOSAm)		
		9431	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)		
		4846	N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		
		4847	N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)		
		6949	N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)		
		9433	N-Methylperfluorooctanesulfonamide (MeFOSA)		
		6918	Perfluorobutane sulfonic acid (PFBS)		
		6915	Perfluorobutanoic acid (PFBA)		
		6920	Perfluorodecane sulfonic acid (PFDS)		
		6905	Perfluorodecanoic acid (PFDA)		
		6923	Perfluorododecane sulfonic acid (PFDoS)		
		6903	Perfluorododecanoic acid (PFDoA)		
		9470	Perfluoroheptane sulfonic acid (PFHpS)		
		6908	Perfluoroheptanoic acid (PFHpA)		
		6901	Perfluorohexadecanoic acid (PFHxDA)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6927	Perfluorohexane sulfonic acid (PFHxS)		
		6913	Perfluorohexanoic acid (PFHxA)		
		6929	Perfluorononane sulfonic acid (PFNS)		
		6906	Perfluorononanoic acid (PFNA)		
		6916	Perfluorooctadecanoic acid (PFODA)		
		6917	Perfluorooctane sulfonamide (PFOSAm)		
		6931	Perfluorooctane sulfonic acid (PFOS)		
		6912	Perfluorooctanoic acid (PFOA)		
		6934	Perfluoropentane sulfonic acid (PFPeS)		
		6914	Perfluoropentanoic acid (PFPeA)		
		6902	Perfluorotetradecanoic acid (PFTDA)		
		9563	Perfluorotridecanoic acid (PFTrDA)		
		6904	Perfluoroundecanoic acid (PFUnA)		
	WS-LC-0025 4.0 4.0			60055449	Eurofins Test America Sacramento - Per and Polyfluorinated Alkyl Substances (PFAS) in Water, Soils, Sediments, and Tissues
		9281	1,1,2,2-Tetrafluoro-2-(1,2,2,2-tetrafluoroethoxy)ethane-1-sulfonic acid (NVHOS)		
		9282	1,1,2,2-tetrafluoro-2-[1,2,2,3,3-pentafluoro-1-(trifluoromethyl)propoxy] ethanesulfonic acid (R-PSDCA)		
		9490	11-chloreicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		
		6948	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)		
		9616	1H, 1H, 2H, 2H-perfluorododecane sulfonic acid (10:2 FTS)		
		6946	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)		
		6947	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)		
		9283	2,2,3,3-Tetrafluoro-3-{[1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy}propanoic acid (Hydro-EVE Acid)		
		9284	2,2-Difluoro-2-(trifluoromethoxy) Acetic		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			acid (PFMOAA)		
		9340	2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)		
		9338	2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)		
		9285	2-Perfluorodecylethanoic acid (10:2 FTCA)		
		9286	2-Perfluorohexylethanoic acid (6:2 FTCA)		
		9316	2-Perfluorooctyl ethanoic acid (FOEA)		
		9287	4-(2-carboxy-1,1,2,2-tetrafluoroethoxy)-2,2,3,3,4,5,5,5-octafluoro-pentanoic acid (R-EVE)		
		9353	4,4,5,5,6,6-Heptafluorohexanoic acid (3:3 FTCA)		
		6951	4,8-Dioxa-3H-perfluorononanoic acid (DONA)		
		6952	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)		
		9460	Hexafluoropropylene oxide dimer acid (HFPO-DA)		
		9395	N-Ethylperfluorooctane sulfonamide (EtFOSAm)		
		9431	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)		
		4846	N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		
		4847	N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)		
		6949	N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)		
		9433	N-Methylperfluorooctanesulfonamide (MeFOSA)		
		6956	Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)		
		6957	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)		
		9288	Perfluoro-2-{[perfluoro-3-(perfluoroethoxy)-2-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			propanyl]oxy}ethanesulfonic acid (Hydro-PS Acid)		
		9289	Perfluoro-2-ethoxypropanoic acid (PEPA)		
		9290	Perfluoro-2-methoxypropanoic acid (PMPA)		
		9291	Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid (PFO5DoA)		
		9293	Perfluoro-3,5,7,9-butaoxadecanoic acid (PFO4DA)		
		9294	Perfluoro-3,5,7-trioxaoctanoic acid (PFO3OA)		
		9295	Perfluoro-3,5-dioxahexanoic acid (PFO2HxA)		
		6965	Perfluoro-3-methoxypropanoic acid (PFMPA)		
		9296	Perfluoro-4-ethylcyclohexanesulfonic acid (PFecHS)		
		9298	Perfluoro-4-isopropoxybutanoic acid (PFPE-1)		
		6966	Perfluoro-4-methoxybutanoic acid (PFMBA)		
		6918	Perfluorobutane sulfonic acid (PFBS)		
		6915	Perfluorobutanoic acid (PFBA)		
		6920	Perfluorodecane sulfonic acid (PFDS)		
		6905	Perfluorodecanoic acid (PFDA)		
		6923	Perfluorododecane sulfonic acid (PFDoS)		
		6903	Perfluorododecanoic acid (PFDoA)		
		9470	Perfluoroheptane sulfonic acid (PFHpS)		
		6908	Perfluoroheptanoic acid (PFHpA)		
		6901	Perfluorohexadecanoic acid (PFHxDA)		
		6927	Perfluorohexane sulfonic acid (PFHxS)		
		6913	Perfluorohexanoic acid (PFHxA)		
		6929	Perfluorononane sulfonic acid (PFNS)		
		6906	Perfluorononanoic acid (PFNA)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6916	Perfluorooctadecanoic acid (PFODA)		
		6917	Perfluorooctane sulfonamide (PFOSAm)		
		6931	Perfluorooctane sulfonic acid (PFOS)		
		6912	Perfluorooctanoic acid (PFOA)		
		6934	Perfluoropentane sulfonic acid (PFPeS)		
		6914	Perfluoropentanoic acid (PFPeA)		
		9320	Perfluoropropanesulfonic acid (PFPrS)		
		9323	Perfluoropropionic acid (PFPrA)		
		6902	Perfluorotetradecanoic acid (PFTDA)		
		9563	Perfluorotridecanoic acid (PFTrDA)		
		6904	Perfluoroundecanoic acid (PFUnA)		
	WS-MS-0011 2014 2014			60055529	TestAmerica West Sacramento - 1,4-Dioxane by GC/MS SIM
		4735	1,4-Dioxane (1,4- Diethyleneoxide)		
	WS-MS-0012 2014 2014			60055530	TestAmerica West Sacramento - Nitrosamines by GC/MS/MS with LVI
		6525	n-Nitrosodiethylamine		
		6530	n-Nitrosodimethylamine		
		5025	n-Nitroso-di-n-butylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6550	n-Nitrosomethylethylamine		
		6555	n-Nitrosomorpholine		
		6520	n-Nitroso-n-methylurea		
		6560	n-Nitrosopiperidine		
		6565	n-Nitrosopyrrolidine		
	WS-WC-0050 3.8 3.8			60055472	TestAmerica West Sacramento - Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer
		6484	Nitrocellulose		

Solids

	AK101 GRO-MS	90015159	Determination of Gasoline Range Organics by GC/MS - Alaska Department of Environmental Conservation

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		9408	Gasoline range organics (GRO)		
	AK102 DRO			90015206	Determination of Diesel Range Organics - Alaska Department of Environmental Conservation
		9369	Diesel range organics (DRO)		
	AK103 RRO			90015400	Determination of Residual Range Organics - Alaska Department of Environmental Conservation
		9499	Motor Oil		
	EPA 1311			10118806	Toxicity Characteristic Leaching Procedure
		1466	Toxicity Characteristic Leaching Procedure (TCLP)		
	EPA 1312			10119003	Synthetic Precipitation Leaching Procedure
		1460	Synthetic Precipitation Leaching Procedure (SPLP)		
	EPA 1613B			10120602	Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 1668A			10262007	Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS
		8914	Sum - Dichlorobiphenyls (BZ-12-+ BZ-13)		
		8916	Sum - Heptachlorobiphenyls (BZ-171 + BZ-173)		
		8917	Sum - Heptachlorobiphenyls (BZ-180 + BZ-193)		
		8919	Sum - Hexachlorobiphenyls (BZ-128 + BZ-166)		
		8922	Sum - Hexachlorobiphenyls (BZ-129 + BZ-138 + BZ-163)		
		8927	Sum - Hexachlorobiphenyls (BZ-135 + BZ-151)		
		8928	Sum - Hexachlorobiphenyls (BZ-139 + BZ-140)		
		8929	Sum - Hexachlorobiphenyls (BZ-147 + BZ-149)		
		8931	Sum - Hexachlorobiphenyls (BZ-153 + BZ-168)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8932	Sum - Hexachlorobiphenyls (BZ-156 + BZ-157)		
		8934	Sum - Octachlorobiphenyls (BZ-198 + BZ-199)		
		8936	Sum - Pentachlorobiphenyls (BZ-107 + BZ-124)		
		8938	Sum - Pentachlorobiphenyls (BZ-110 + BZ-115)		
		8941	Sum - Pentachlorobiphenyls (BZ-85 + BZ-116 + BZ-117)		
		8943	Sum - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-90 + BZ-109 + BZ-119 + BZ-125)		
		8947	Sum - Pentachlorobiphenyls (BZ-88 + BZ-91)		
		8948	Sum - Pentachlorobiphenyls (BZ-90 + BZ-101 + BZ-113)		
		8949	Sum - Pentachlorobiphenyls (BZ-93 + BZ-100)		
		8951	Sum - Pentachlorobiphenyls (BZ-98 + BZ-102)		
		8954	Sum - Tetrachlorobiphenyls (BZ-40 + BZ-71)		
		8957	Sum - Tetrachlorobiphenyls (BZ-44 + BZ-47 + BZ-65)		
		8959	Sum - Tetrachlorobiphenyls (BZ-49 + BZ-69)		
		8961	Sum - Tetrachlorobiphenyls (BZ-50 + BZ-53)		
		8962	Sum - Tetrachlorobiphenyls (BZ-59 + BZ-62 + BZ-75)		
		8963	Sum - Tetrachlorobiphenyls (BZ-61 + BZ-70 + BZ-74 + BZ-76)		
		8966	Sum - Trichlorobiphenyls (BZ-18 + BZ-30)		
		8967	Sum - Trichlorobiphenyls (BZ-20 + BZ-28)		
		8968	Sum - Trichlorobiphenyls (BZ-21 + BZ-33)		
		8969	Sum - Trichlorobiphenyls (BZ-26 + BZ-29)		

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	EPA 1668A EPA 1668A EPA 1668A			10262029	Chlorinated Biphenyl Cogeners in Water, Soil, Sediment, and Tissue by GC-HRMS
		9095	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)		
		9090	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)		
		9101	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)		
		9103	2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)		
		9102	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)		
		9065	2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)		
		9104	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)		
		9106	2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)		
		9020	2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)		
		9107	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)		
		9109	2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)		
		9108	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)		
		9110	2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)		
		9111	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)		
		9112	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)		
		9113	2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)		
		9116	2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)		
		9115	2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			175)		
		9114	2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)		
		9118	2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)		
		9117	2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)		
		9119	2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)		
		9121	2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)		
		9120	2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)		
		9122	2,2',3,3',4-Pentachlorobiphenyl (BZ-82)		
		9123	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)		
		9124	2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)		
		9125	2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)		
		9126	2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)		
		9128	2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)		
		9127	2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)		
		9129	2,2',3,3',5-Pentachlorobiphenyl (BZ-83)		
		9130	2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)		
		9131	2,2',3,3',6-Pentachlorobiphenyl (BZ-84)		
		9132	2,2',3,3'-Tetrachlorobiphenyl (BZ-40)		
		9133	2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)		
		9134	2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)		
		9135	2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)		
		9137	2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)		
		9136	2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			182)		
		9075	2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)		
		9138	2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)		
		9025	2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)		
		9139	2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)		
		9141	2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)		
		9140	2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)		
		9142	2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)		
		9143	2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)		
		9080	2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)		
		9030	2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)		
		9144	2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)		
		9145	2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)		
		9146	2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)		
		9148	2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)		
		9152	2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)		
		9150	2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)		
		9149	2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)		
		9147	2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)		
		9151	2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)		
		9153	2,2',3,4,5-Pentachlorobiphenyl (BZ-86)		
		8975	2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)		
		9155	2,2',3,4',5-Pentachlorobiphenyl (BZ-90)		
		9154	2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9156	2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)		
		9157	2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)		
		9158	2,2',3,4,6-Pentachlorobiphenyl (BZ-88)		
		9161	2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)		
		9160	2,2',3,4',6-Pentachlorobiphenyl (BZ-91)		
		9159	2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)		
		9163	2,2',3,4-Tetrachlorobiphenyl (BZ-41)		
		9162	2,2',3,4'-Tetrachlorobiphenyl (BZ-42)		
		9035	2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)		
		9164	2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)		
		9165	2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)		
		9168	2,2',3,5,6-Pentachlorobiphenyl (BZ-93)		
		9167	2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)		
		9166	2,2',3,5',6-Pentachlorobiphenyl (BZ-95)		
		9169	2,2',3,5-Tetrachlorobiphenyl (BZ-43)		
		8945	2,2',3,5'-Tetrachlorobiphenyl (BZ-44)		
		9170	2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)		
		9172	2,2',3,6-Tetrachlorobiphenyl (BZ-45)		
		9171	2,2',3,6'-Tetrachlorobiphenyl (BZ-46)		
		9173	2,2',3-Trichlorobiphenyl (BZ-16)		
		9040	2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)		
		9174	2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)		
		9175	2,2',4,4',5-Pentachlorobiphenyl (BZ-99)		
		9176	2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)		
		9177	2,2',4,4',6-Pentachlorobiphenyl (BZ-100)		
		9178	2,2',4,4'-Tetrachlorobiphenyl (BZ-47)		
		8980	2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)		
		9180	2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)		
		9179	2,2',4,5',6-Pentachlorobiphenyl (BZ-103)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9181	2,2',4,5-Tetrachlorobiphenyl (BZ-48)		
		8950	2,2',4,5'-Tetrachlorobiphenyl (BZ-49)		
		9182	2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)		
		9184	2,2',4,6-Tetrachlorobiphenyl (BZ-50)		
		9183	2,2',4,6'-Tetrachlorobiphenyl (BZ-51)		
		9185	2,2',4-Trichlorobiphenyl (BZ-17)		
		8955	2,2',5,5'-Tetrachlorobiphenyl (BZ-52)		
		9186	2,2',5,6'-Tetrachlorobiphenyl (BZ-53)		
		8930	2,2',5-Trichlorobiphenyl (BZ-18)		
		9187	2,2',6,6'-Tetrachlorobiphenyl (BZ-54)		
		9188	2,2',6-Trichlorobiphenyl (BZ-19)		
		9189	2,2'-Dichlorobiphenyl (BZ-4)		
		9190	2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)		
		9085	2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)		
		9191	2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)		
		9192	2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)		
		9050	2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)		
		9045	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)		
		9193	2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)		
		8985	2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)		
		9194	2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)		
		9195	2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)		
		9196	2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)		
		9197	2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)		
		9198	2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)		
		9199	2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)		
		9201	2,3,3',4',5',6-Hexachlorobiphenyl (BZ-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			164)		
		9200	2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)		
		9204	2,3,3',4,5-Pentachlorobiphenyl (BZ-106)		
		9205	2,3,3',4',5-Pentachlorobiphenyl (BZ-107)		
		9203	2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)		
		9202	2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)		
		9206	2,3,3',4,6-Pentachlorobiphenyl (BZ-109)		
		8990	2,3,3',4',6-Pentachlorobiphenyl (BZ-110)		
		9208	2,3,3',4-Tetrachlorobiphenyl (BZ-55)		
		9207	2,3,3',4'-Tetrachlorobiphenyl (BZ-56)		
		9209	2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)		
		9210	2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)		
		9211	2,3,3',5,6-Pentachlorobiphenyl (BZ-112)		
		9212	2,3,3',5',6-Pentachlorobiphenyl (BZ-113)		
		9214	2,3,3',5-Tetrachlorobiphenyl (BZ-57)		
		9213	2,3,3',5'-Tetrachlorobiphenyl (BZ-58)		
		9215	2,3,3',6-Tetrachlorobiphenyl (BZ-59)		
		9216	2,3,3'-Trichlorobiphenyl (BZ-20)		
		9055	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)		
		9217	2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)		
		9218	2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)		
		9005	2,3,4,4',5-Pentachlorobiphenyl (BZ-114)		
		8995	2,3',4,4',5-Pentachlorobiphenyl (BZ-118)		
		9000	2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)		
		9219	2,3,4,4',6-Pentachlorobiphenyl (BZ-115)		
		9220	2,3',4,4',6-Pentachlorobiphenyl (BZ-119)		
		9221	2,3,4,4'-Tetrachlorobiphenyl (BZ-60)		
		8960	2,3',4,4'-Tetrachlorobiphenyl (BZ-66)		
		9223	2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)		
		9222	2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)		
		9225	2,3,4,5,6-Pentachlorobiphenyl (BZ-116)		

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		9227	2,3,4',5,6-Pentachlorobiphenyl (BZ-117)		
		9226	2,3',4,5',6-Pentachlorobiphenyl (BZ-121)		
		9224	2,3',4',5',6-Pentachlorobiphenyl (BZ-125)		
		9228	2,3,4,5-Tetrachlorobiphenyl (BZ-61)		
		9233	2,3,4',5-Tetrachlorobiphenyl (BZ-63)		
		9231	2,3',4,5'-Tetrachlorobiphenyl (BZ-68)		
		9230	2,3',4',5-Tetrachlorobiphenyl (BZ-70)		
		9229	2,3',4',5'-Tetrachlorobiphenyl (BZ-76)		
		9232	2,3',4,5-Tetrachlorobiphenyl (BZ-67)		
		9234	2,3,4,6-Tetrachlorobiphenyl (BZ-62)		
		9236	2,3,4',6-Tetrachlorobiphenyl (BZ-64)		
		9235	2,3',4,6-Tetrachlorobiphenyl (BZ-69)		
		9237	2,3',4',6-Tetrachlorobiphenyl (BZ-71)		
		9238	2,3,4-Trichlorobiphenyl (BZ-21)		
		9241	2,3,4'-Trichlorobiphenyl (BZ-22)		
		9240	2,3',4-Trichlorobiphenyl (BZ-25)		
		9239	2,3',4'-Trichlorobiphenyl (BZ-33)		
		9242	2,3',5,5'-Tetrachlorobiphenyl (BZ-72)		
		9243	2,3,5,6-Tetrachlorobiphenyl (BZ-65)		
		9244	2,3',5',6-Tetrachlorobiphenyl (BZ-73)		
		9245	2,3,5-Trichlorobiphenyl (BZ-23)		
		8935	2,3',5-Trichlorobiphenyl (BZ-26)		
		9246	2,3',5'-Trichlorobiphenyl (BZ-34)		
		9247	2,3,6-Trichlorobiphenyl (BZ-24)		
		9248	2,3',6-Trichlorobiphenyl (BZ-27)		
		8920	2,3-Dichlorobiphenyl (BZ-5)		
		9249	2,3'-Dichlorobiphenyl (BZ-6)		
		9250	2,4,4',5-Tetrachlorobiphenyl (BZ-74)		
		9251	2,4,4',6-Tetrachlorobiphenyl (BZ-75)		
		9252	2,4,4'-Trichlorobiphenyl (BZ-28)		
		9253	2,4,5-Trichlorobiphenyl (BZ-29)		
		8940	2,4',5-Trichlorobiphenyl (BZ-31)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9254	2,4,6-Trichlorobiphenyl (BZ-30)		
		9255	2,4',6-Trichlorobiphenyl (BZ-32)		
		9257	2,4-Dichlorobiphenyl (BZ-7)		
		9256	2,4'-Dichlorobiphenyl (BZ-8)		
		9258	2,5-Dichlorobiphenyl (BZ-9)		
		9259	2,6-Dichlorobiphenyl (BZ-10)		
		8915	2-Chlorobiphenyl (BZ-1)		
		9060	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)		
		9015	3,3',4,4',5-Pentachlorobiphenyl (BZ-126)		
		8965	3,3',4,4'-Tetrachlorobiphenyl (BZ-77)		
		9260	3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)		
		9262	3,3',4,5-Tetrachlorobiphenyl (BZ-78)		
		9261	3,3',4,5'-Tetrachlorobiphenyl (BZ-79)		
		9263	3,3',4-Trichlorobiphenyl (BZ-35)		
		9264	3,3',5,5'-Tetrachlorobiphenyl (BZ-80)		
		9265	3,3',5-Trichlorobiphenyl (BZ-36)		
		8925	3,3'-Dichlorobiphenyl (BZ-11)		
		8970	3,4,4',5-Tetrachlorobiphenyl (BZ-81)		
		9266	3,4,4'-Trichlorobiphenyl (BZ-37)		
		9267	3,4,5-Trichlorobiphenyl (BZ-38)		
		9268	3,4',5-Trichlorobiphenyl (BZ-39)		
		9270	3,4-Dichlorobiphenyl (BZ-12)		
		9269	3,4'-Dichlorobiphenyl (BZ-13)		
		9271	3,5-Dichlorobiphenyl (BZ-14)		
		9272	3-Chlorobiphenyl (BZ-2)		
		9273	4,4'-Dichlorobiphenyl (BZ-15)		
		9274	4-Chlorobiphenyl (BZ-3)		
		9105	Decachlorobiphenyl (BZ-209)		
		8876	Total Dichlorobiphenyls		
		8877	Total Heptachlorobiphenyls		
		8888	Total Hexachlorobiphenyls		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8889	Total Monochlorobiphenyls		
		8891	Total Nonachlorobiphenyls		
		8892	Total Octachlorobiphenyls		
		8896	Total Pentachlorobiphenyls		
		8893	Total Tetrachlorobiphenyls		
		8894	Total Trichlorobiphenyls		
	EPA 1668C			10262109	Chlorinated Biphenyl Cogeners in Water, Soil, Sediment, and Tissue by GC-HRMS
		8914	Sum - Dichlorobiphenyls (BZ-12-+ BZ-13)		
		8916	Sum - Heptachlorobiphenyls (BZ-171 + BZ-173)		
		8917	Sum - Heptachlorobiphenyls (BZ-180 + BZ-193)		
		8919	Sum - Hexachlorobiphenyls (BZ-128 + BZ-166)		
		8922	Sum - Hexachlorobiphenyls (BZ-129 + BZ-138 + BZ-163)		
		8927	Sum - Hexachlorobiphenyls (BZ-135 + BZ-151)		
		8928	Sum - Hexachlorobiphenyls (BZ-139 + BZ-140)		
		8929	Sum - Hexachlorobiphenyls (BZ-147 + BZ-149)		
		8931	Sum - Hexachlorobiphenyls (BZ-153 + BZ-168)		
		8932	Sum - Hexachlorobiphenyls (BZ-156 + BZ-157)		
		8934	Sum - Octachlorobiphenyls (BZ-198 + BZ-199)		
		8936	Sum - Pentachlorobiphenyls (BZ-107 + BZ-124)		
		8938	Sum - Pentachlorobiphenyls (BZ-110 + BZ-115)		
		8941	Sum - Pentachlorobiphenyls (BZ-85 + BZ-116 + BZ-117)		
		8943	Sum - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-90 + BZ-109 + BZ-119 + BZ-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			125)		
		8947	Sum - Pentachlorobiphenyls (BZ-88 + BZ-91)		
		8948	Sum - Pentachlorobiphenyls (BZ-90 + BZ-101 + BZ-113)		
		8949	Sum - Pentachlorobiphenyls (BZ-93 + BZ-100)		
		8951	Sum - Pentachlorobiphenyls (BZ-98 + BZ-102)		
		8954	Sum - Tetrachlorobiphenyls (BZ-40 + BZ-71)		
		8957	Sum - Tetrachlorobiphenyls (BZ-44 + BZ-47 + BZ-65)		
		8959	Sum - Tetrachlorobiphenyls (BZ-49 + BZ-69)		
		8961	Sum - Tetrachlorobiphenyls (BZ-50 + BZ-53)		
		8962	Sum - Tetrachlorobiphenyls (BZ-59 + BZ-62 + BZ-75)		
		8963	Sum - Tetrachlorobiphenyls (BZ-61 + BZ-70 + BZ-74 + BZ-76)		
		8966	Sum - Trichlorobiphenyls (BZ-18 + BZ-30)		
		8967	Sum - Trichlorobiphenyls (BZ-20 + BZ-28)		
		8968	Sum - Trichlorobiphenyls (BZ-21 + BZ-33)		
		8969	Sum - Trichlorobiphenyls (BZ-26 + BZ-29)		
	EPA 1668C EPA 1668C EPA 1668C			10262109	Chlorinated Biphenyl Cogeners in Water, Soil, Sediment, and Tissue by GC-HRMS
		9095	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)		
		9090	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)		
		9101	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)		
		9103	2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)		
		9102	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			196)		
		9065	2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)		
		9104	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)		
		9106	2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)		
		9020	2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)		
		9107	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)		
		9109	2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)		
		9108	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)		
		9110	2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)		
		9111	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)		
		9112	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)		
		9113	2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)		
		9116	2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)		
		9115	2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)		
		9114	2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)		
		9118	2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)		
		9117	2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)		
		9119	2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)		
		9121	2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)		
		9120	2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9122	2,2',3,3',4-Pentachlorobiphenyl (BZ-82)		
		9123	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)		
		9124	2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)		
		9125	2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)		
		9126	2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)		
		9128	2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)		
		9127	2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)		
		9129	2,2',3,3',5-Pentachlorobiphenyl (BZ-83)		
		9130	2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)		
		9131	2,2',3,3',6-Pentachlorobiphenyl (BZ-84)		
		9132	2,2',3,3'-Tetrachlorobiphenyl (BZ-40)		
		9133	2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)		
		9134	2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)		
		9135	2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)		
		9137	2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)		
		9136	2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)		
		9075	2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)		
		9138	2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)		
		9025	2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)		
		9139	2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)		
		9141	2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)		
		9140	2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9142	2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)		
		9143	2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)		
		9080	2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)		
		9030	2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)		
		9144	2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)		
		9145	2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)		
		9146	2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)		
		9148	2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)		
		9152	2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)		
		9150	2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)		
		9149	2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)		
		9147	2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)		
		9151	2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)		
		9153	2,2',3,4,5-Pentachlorobiphenyl (BZ-86)		
		8975	2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)		
		9155	2,2',3,4',5-Pentachlorobiphenyl (BZ-90)		
		9154	2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)		
		9156	2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)		
		9157	2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)		
		9158	2,2',3,4,6-Pentachlorobiphenyl (BZ-88)		
		9161	2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)		
		9160	2,2',3,4',6-Pentachlorobiphenyl (BZ-91)		
		9159	2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)		
		9163	2,2',3,4-Tetrachlorobiphenyl (BZ-41)		
		9162	2,2',3,4'-Tetrachlorobiphenyl (BZ-42)		
		9035	2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)		
		9164	2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9165	2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)		
		9168	2,2',3,5,6-Pentachlorobiphenyl (BZ-93)		
		9167	2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)		
		9166	2,2',3,5',6-Pentachlorobiphenyl (BZ-95)		
		9169	2,2',3,5-Tetrachlorobiphenyl (BZ-43)		
		8945	2,2',3,5'-Tetrachlorobiphenyl (BZ-44)		
		9170	2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)		
		9172	2,2',3,6-Tetrachlorobiphenyl (BZ-45)		
		9171	2,2',3,6'-Tetrachlorobiphenyl (BZ-46)		
		9173	2,2',3-Trichlorobiphenyl (BZ-16)		
		9040	2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)		
		9174	2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)		
		9175	2,2',4,4',5-Pentachlorobiphenyl (BZ-99)		
		9176	2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)		
		9177	2,2',4,4',6-Pentachlorobiphenyl (BZ-100)		
		9178	2,2',4,4'-Tetrachlorobiphenyl (BZ-47)		
		8980	2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)		
		9180	2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)		
		9179	2,2',4,5',6-Pentachlorobiphenyl (BZ-103)		
		9181	2,2',4,5-Tetrachlorobiphenyl (BZ-48)		
		8950	2,2',4,5'-Tetrachlorobiphenyl (BZ-49)		
		9182	2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)		
		9184	2,2',4,6-Tetrachlorobiphenyl (BZ-50)		
		9183	2,2',4,6'-Tetrachlorobiphenyl (BZ-51)		
		9185	2,2',4-Trichlorobiphenyl (BZ-17)		
		8955	2,2',5,5'-Tetrachlorobiphenyl (BZ-52)		
		9186	2,2',5,6'-Tetrachlorobiphenyl (BZ-53)		
		8930	2,2',5-Trichlorobiphenyl (BZ-18)		
		9187	2,2',6,6'-Tetrachlorobiphenyl (BZ-54)		
		9188	2,2',6-Trichlorobiphenyl (BZ-19)		

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		9189	2,2'-Dichlorobiphenyl (BZ-4)		
		9190	2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)		
		9085	2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)		
		9191	2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)		
		9192	2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)		
		9050	2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)		
		9045	2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)		
		9193	2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)		
		8985	2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)		
		9194	2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)		
		9195	2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)		
		9196	2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)		
		9197	2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)		
		9198	2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)		
		9199	2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)		
		9201	2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)		
		9200	2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)		
		9204	2,3,3',4,5-Pentachlorobiphenyl (BZ-106)		
		9205	2,3,3',4',5-Pentachlorobiphenyl (BZ-107)		
		9203	2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)		
		9202	2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)		
		9206	2,3,3',4,6-Pentachlorobiphenyl (BZ-109)		
		8990	2,3,3',4',6-Pentachlorobiphenyl (BZ-110)		
		9208	2,3,3',4-Tetrachlorobiphenyl (BZ-55)		
		9207	2,3,3',4'-Tetrachlorobiphenyl (BZ-56)		
		9209	2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)		

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		9210	2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)		
		9211	2,3,3',5,6-Pentachlorobiphenyl (BZ-112)		
		9212	2,3,3',5',6-Pentachlorobiphenyl (BZ-113)		
		9214	2,3,3',5-Tetrachlorobiphenyl (BZ-57)		
		9213	2,3,3',5'-Tetrachlorobiphenyl (BZ-58)		
		9215	2,3,3',6-Tetrachlorobiphenyl (BZ-59)		
		9216	2,3,3'-Trichlorobiphenyl (BZ-20)		
		9055	2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)		
		9217	2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)		
		9218	2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)		
		9005	2,3,4,4',5-Pentachlorobiphenyl (BZ-114)		
		8995	2,3',4,4',5-Pentachlorobiphenyl (BZ-118)		
		9000	2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)		
		9219	2,3,4,4',6-Pentachlorobiphenyl (BZ-115)		
		9220	2,3',4,4',6-Pentachlorobiphenyl (BZ-119)		
		9221	2,3,4,4'-Tetrachlorobiphenyl (BZ-60)		
		8960	2,3',4,4'-Tetrachlorobiphenyl (BZ-66)		
		9223	2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)		
		9222	2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)		
		9225	2,3,4,5,6-Pentachlorobiphenyl (BZ-116)		
		9227	2,3,4',5,6-Pentachlorobiphenyl (BZ-117)		
		9226	2,3',4,5',6-Pentachlorobiphenyl (BZ-121)		
		9224	2,3',4',5',6-Pentachlorobiphenyl (BZ-125)		
		9228	2,3,4,5-Tetrachlorobiphenyl (BZ-61)		
		9233	2,3,4',5-Tetrachlorobiphenyl (BZ-63)		
		9231	2,3',4,5'-Tetrachlorobiphenyl (BZ-68)		
		9230	2,3',4',5-Tetrachlorobiphenyl (BZ-70)		
		9229	2,3',4',5'-Tetrachlorobiphenyl (BZ-76)		
		9232	2,3',4,5-Tetrachlorobiphenyl (BZ-67)		
		9234	2,3,4,6-Tetrachlorobiphenyl (BZ-62)		

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		9236	2,3,4',6-Tetrachlorobiphenyl (BZ-64)		
		9235	2,3',4,6-Tetrachlorobiphenyl (BZ-69)		
		9237	2,3',4',6-Tetrachlorobiphenyl (BZ-71)		
		9238	2,3,4-Trichlorobiphenyl (BZ-21)		
		9241	2,3,4'-Trichlorobiphenyl (BZ-22)		
		9240	2,3',4-Trichlorobiphenyl (BZ-25)		
		9239	2,3',4'-Trichlorobiphenyl (BZ-33)		
		9242	2,3',5,5'-Tetrachlorobiphenyl (BZ-72)		
		9243	2,3,5,6-Tetrachlorobiphenyl (BZ-65)		
		9244	2,3',5',6-Tetrachlorobiphenyl (BZ-73)		
		9245	2,3,5-Trichlorobiphenyl (BZ-23)		
		8935	2,3',5-Trichlorobiphenyl (BZ-26)		
		9246	2,3',5'-Trichlorobiphenyl (BZ-34)		
		9247	2,3,6-Trichlorobiphenyl (BZ-24)		
		9248	2,3',6-Trichlorobiphenyl (BZ-27)		
		8920	2,3-Dichlorobiphenyl (BZ-5)		
		9249	2,3'-Dichlorobiphenyl (BZ-6)		
		9250	2,4,4',5-Tetrachlorobiphenyl (BZ-74)		
		9251	2,4,4',6-Tetrachlorobiphenyl (BZ-75)		
		9252	2,4,4'-Trichlorobiphenyl (BZ-28)		
		9253	2,4,5-Trichlorobiphenyl (BZ-29)		
		8940	2,4',5-Trichlorobiphenyl (BZ-31)		
		9254	2,4,6-Trichlorobiphenyl (BZ-30)		
		9255	2,4',6-Trichlorobiphenyl (BZ-32)		
		9257	2,4-Dichlorobiphenyl (BZ-7)		
		9256	2,4'-Dichlorobiphenyl (BZ-8)		
		9258	2,5-Dichlorobiphenyl (BZ-9)		
		9259	2,6-Dichlorobiphenyl (BZ-10)		
		8915	2-Chlorobiphenyl (BZ-1)		
		9060	3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)		
		9015	3,3',4,4',5-Pentachlorobiphenyl (BZ-126)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		8965	3,3',4,4'-Tetrachlorobiphenyl (BZ-77)		
		9260	3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)		
		9262	3,3',4,5-Tetrachlorobiphenyl (BZ-78)		
		9261	3,3',4,5'-Tetrachlorobiphenyl (BZ-79)		
		9263	3,3',4-Trichlorobiphenyl (BZ-35)		
		9264	3,3',5,5'-Tetrachlorobiphenyl (BZ-80)		
		9265	3,3',5-Trichlorobiphenyl (BZ-36)		
		8925	3,3'-Dichlorobiphenyl (BZ-11)		
		8970	3,4,4',5-Tetrachlorobiphenyl (BZ-81)		
		9266	3,4,4'-Trichlorobiphenyl (BZ-37)		
		9267	3,4,5-Trichlorobiphenyl (BZ-38)		
		9268	3,4',5-Trichlorobiphenyl (BZ-39)		
		9270	3,4-Dichlorobiphenyl (BZ-12)		
		9269	3,4'-Dichlorobiphenyl (BZ-13)		
		9271	3,5-Dichlorobiphenyl (BZ-14)		
		9272	3-Chlorobiphenyl (BZ-2)		
		9273	4,4'-Dichlorobiphenyl (BZ-15)		
		9274	4-Chlorobiphenyl (BZ-3)		
		9105	Decachlorobiphenyl (BZ-209)		
		8876	Total Dichlorobiphenyls		
		8877	Total Heptachlorobiphenyls		
		8888	Total Hexachlorobiphenyls		
		8889	Total Monochlorobiphenyls		
		8891	Total Nonachlorobiphenyls		
		8892	Total Octachlorobiphenyls		
		8896	Total Pentachlorobiphenyls		
		8893	Total Tetrachlorobiphenyls		
		8894	Total Trichlorobiphenyls		
	EPA 3050B			10135601	Acid Digestion of Sediments, Sludges, and soils
		1400	Acid Digestion of Solids		
	EPA 314.0			10055400	Perchlorate in Drinking Water by Ion Chromatography
		1895	Perchlorate		

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Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	EPA 3535			10139205	Solid-Phase Extraction (SPE)
		1448	Solid-Phase Extraction		
	EPA 3540C			10140202	Soxhlet Extraction
		1452	Soxhlet Extraction		
	EPA 3546			10141205	Microwave Extraction
		1428	Microwave Extraction		
	EPA 3550B			10141807	Ultrasonic Extraction
		1468	Ultrasonic Extraction		
	EPA 3580A			10143007	Waste Dilution
		1470	Waste Dilution		
	EPA 3620B			10145809	Florisil Cleanup
		1414	Florisil Clean-up		
	EPA 3630C			10146802	Silica gel cleanup
		1446	Silica Gel Clean-up		
	EPA 6010B			10155609	ICP - AES
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1910	Phosphorus, total		
		1125	Potassium		
		1140	Selenium		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 6010C EPA 6010C EPA 6010C			10155905	Inductively Coupled Plasma - Atomic Emission Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1025	Boron		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1910	Phosphorus, total		
		1125	Potassium		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1140	Selenium		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020			10156000	Inductively Coupled Plasma-Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1080	Lithium		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1910	Phosphorus, total		
		1125	Potassium		
		1140	Selenium		
		1150	Silver		
		1155	Sodium		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1160	Strontium		
		1165	Thallium		
		1175	Tin		
		1180	Titanium		
		1184	Uranium (mass)		
		1185	Vanadium		
		1190	Zinc		
	EPA 6020A 1 1			10156419	Inductively Coupled Plasma -Mass Spectrometry
		1000	Aluminum		
		1005	Antimony		
		1010	Arsenic		
		1015	Barium		
		1020	Beryllium		
		1030	Cadmium		
		1035	Calcium		
		1040	Chromium		
		1050	Cobalt		
		1055	Copper		
		1070	Iron		
		1075	Lead		
		1080	Lithium		
		1085	Magnesium		
		1090	Manganese		
		1100	Molybdenum		
		1105	Nickel		
		1910	Phosphorus, total		
		1125	Potassium		
		1140	Selenium		
		1150	Silver		
		1155	Sodium		
		1160	Strontium		
		1165	Thallium		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1175	Tin		
		1180	Titanium		
		1184	Uranium (mass)		
		1185	Vanadium		
		1190	Zinc		
	EPA 6850			10304606	Perchlorate in Water, Soils and Solid Wastes Using High Performance Liquid Chromatography/Electrospray Ionization/Mass Spectrometry
		1895	Perchlorate		
	EPA 7471A			10166208	Mercury in Solid Waste by Cold Vapor Atomic Absorption
		1095	Mercury		
	EPA 7471B			10166402	Mercury by Cold Vapor Atomic Absorption
		1095	Mercury		
	EPA 8015B			10173601	Non-halogenated organics using GC/FID
		9369	Diesel range organics (DRO)		
		9499	Motor Oil		
	EPA 8015C			10173805	Non-halogenated organics using GC/FID
		9369	Diesel range organics (DRO)		
		9499	Motor Oil		
	EPA 8081A			10178606	Organochlorine Pesticides by GC/ECD
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7260	Chlorobenzilate		
		7240	cis-chlordane (alpha-Chlordane)		
		7105	delta-BHC		
		7405	Diallate		
		7470	Dieldrin		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		7725	Isodrin		
		7810	Methoxychlor		
		8250	Toxaphene (Chlorinated camphene)		
	EPA 8081B			10178800	Organochlorine Pesticides by GC/ECD
		7355	4,4'-DDD		
		7360	4,4'-DDE		
		7365	4,4'-DDT		
		7025	Aldrin		
		7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
		7115	beta-BHC (beta-Hexachlorocyclohexane)		
		7250	Chlordane (tech.)		
		7260	Chlorobenzilate		
		7240	cis-chlordane (alpha-Chlordane)		
		7105	delta-BHC		
		7405	Diallate		
		7470	Dieldrin		
		7510	Endosulfan I		
		7515	Endosulfan II		
		7520	Endosulfan sulfate		
		7540	Endrin		
		7530	Endrin aldehyde		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		7535	Endrin ketone		
		7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)		
		7245	gamma-Chlordane		
		7685	Heptachlor		
		7690	Heptachlor epoxide		
		7725	Isodrin		
		7810	Methoxychlor		
		8250	Toxaphene (Chlorinated camphene)		
	EPA 8082			10179007	Polychlorinated Biphenyls (PCBs) by GC/ECD
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
	EPA 8082A			10179201	Polychlorinated Biphenyls (PCBs) by GC/ECD
		8880	Aroclor-1016 (PCB-1016)		
		8885	Aroclor-1221 (PCB-1221)		
		8890	Aroclor-1232 (PCB-1232)		
		8895	Aroclor-1242 (PCB-1242)		
		8900	Aroclor-1248 (PCB-1248)		
		8905	Aroclor-1254 (PCB-1254)		
		8910	Aroclor-1260 (PCB-1260)		
		8912	Aroclor-1262 (PCB-1262)		
		8913	Aroclor-1268 (PCB-1268)		
	EPA 8260B			10184802	Volatile Organic Compounds by purge and trap GC/MS
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5110	1,1,2,2-Tetrachloroethane		
		5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		
		4630	1,1-Dichloroethane		
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		
		5180	1,2,3-Trichloropropane		
		5155	1,2,4-Trichlorobenzene		
		5210	1,2,4-Trimethylbenzene		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4620	1,4-Dichlorobenzene		
		4735	1,4-Dioxane (1,4- Diethyleneoxide)		
		4510	1-Chlorohexane		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4355	Allyl chloride (3-Chloropropene)		
		4375	Benzene		
		5635	Benzyl chloride		
		4385	Bromobenzene		
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		
		4525	Chloroprene (2-Chloro-1,3-butadiene)		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4580	Dibromochloropropane		
		4595	Dibromomethane (Methylene bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4810	Ethyl methacrylate		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		9408	Gasoline range organics (GRO)		
		4835	Hexachlorobutadiene		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4950	Methyl bromide (Bromomethane)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4960	Methyl chloride (Chloromethane)		
		4990	Methyl methacrylate		
		5000	Methyl tert-butyl ether (MTBE)		
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4435	n-Butylbenzene		
		4855	n-Hexane		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		5080	Propionitrile (Ethyl cyanide)		
		4440	sec-Butylbenzene		
		5100	Styrene		
		4370	T-amylmethylether (TAME)		
		4420	tert-Butyl alcohol		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 8260C			10307003	Volatile Organics: GC/MS (capillary column)
		5105	1,1,1,2-Tetrachloroethane		
		5160	1,1,1-Trichloroethane		
		5110	1,1,2,2-Tetrachloroethane		
		5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		
		5165	1,1,2-Trichloroethane		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4630	1,1-Dichloroethane		
		4640	1,1-Dichloroethylene		
		4670	1,1-Dichloropropene		
		5150	1,2,3-Trichlorobenzene		
		5180	1,2,3-Trichloropropane		
		5155	1,2,4-Trichlorobenzene		
		5210	1,2,4-Trimethylbenzene		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4610	1,2-Dichlorobenzene		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4655	1,2-Dichloropropane		
		5215	1,3,5-Trimethylbenzene		
		4615	1,3-Dichlorobenzene		
		4660	1,3-Dichloropropane		
		4620	1,4-Dichlorobenzene		
		4735	1,4-Dioxane (1,4- Diethyleneoxide)		
		4510	1-Chlorohexane		
		4665	2,2-Dichloropropane		
		4410	2-Butanone (Methyl ethyl ketone, MEK)		
		4500	2-Chloroethyl vinyl ether		
		4535	2-Chlorotoluene		
		4860	2-Hexanone (MBK)		
		4540	4-Chlorotoluene		
		4910	4-Isopropyltoluene (p-Cymene)		
		4995	4-Methyl-2-pentanone (MIBK)		
		4315	Acetone		
		4325	Acrolein (Propenal)		
		4340	Acrylonitrile		
		4355	Allyl chloride (3-Chloropropene)		
		4375	Benzene		
		5635	Benzyl chloride		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4385	Bromobenzene		
		4390	Bromochloromethane		
		4395	Bromodichloromethane		
		4400	Bromoform		
		4450	Carbon disulfide		
		4455	Carbon tetrachloride		
		4475	Chlorobenzene		
		4575	Chlorodibromomethane		
		4485	Chloroethane (Ethyl chloride)		
		4505	Chloroform		
		4525	Chloroprene (2-Chloro-1,3-butadiene)		
		4645	cis-1,2-Dichloroethylene		
		4680	cis-1,3-Dichloropropene		
		4580	Dibromochloropropane		
		4595	Dibromomethane (Methylene bromide)		
		4625	Dichlorodifluoromethane (Freon-12)		
		9375	Di-isopropylether (DIPE)		
		4810	Ethyl methacrylate		
		4765	Ethylbenzene		
		4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)		
		9408	Gasoline range organics (GRO)		
		4835	Hexachlorobutadiene		
		4870	Iodomethane (Methyl iodide)		
		4875	Isobutyl alcohol (2-Methyl-1-propanol)		
		4900	Isopropylbenzene (Cumene)		
		5240	m+p-xylene		
		4925	Methacrylonitrile		
		4950	Methyl bromide (Bromomethane)		
		4960	Methyl chloride (Chloromethane)		
		4990	Methyl methacrylate		
		5000	Methyl tert-butyl ether (MTBE)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4975	Methylene chloride (Dichloromethane)		
		5005	Naphthalene		
		4435	n-Butylbenzene		
		4855	n-Hexane		
		5090	n-Propylbenzene		
		5250	o-Xylene		
		5080	Propionitrile (Ethyl cyanide)		
		4440	sec-Butylbenzene		
		5100	Styrene		
		4370	T-amylmethylether (TAME)		
		4420	tert-Butyl alcohol		
		4445	tert-Butylbenzene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5140	Toluene		
		4700	trans-1,2-Dichloroethylene		
		4685	trans-1,3-Dichloropropylene		
		4605	trans-1,4-Dichloro-2-butene		
		5170	Trichloroethene (Trichloroethylene)		
		5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)		
		5225	Vinyl acetate		
		5235	Vinyl chloride		
		5260	Xylene (total)		
	EPA 8260C SIM			10307105	Volatile Organic Compounds by GC/MS-SIM
		5110	1,1,2,2-Tetrachloroethane		
		5165	1,1,2-Trichloroethane		
		5180	1,2,3-Trichloropropane		
		4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
		4635	1,2-Dichloroethane (Ethylene dichloride)		
		4620	1,4-Dichlorobenzene		
		4375	Benzene		
		4395	Bromodichloromethane		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		4400	Bromoform		
		4575	Chlorodibromomethane		
		4505	Chloroform		
		4595	Dibromomethane (Methylene bromide)		
		4835	Hexachlorobutadiene		
		4950	Methyl bromide (Bromomethane)		
		5005	Naphthalene		
		5115	Tetrachloroethylene (Perchloroethylene)		
		5170	Trichloroethene (Trichloroethylene)		
		5235	Vinyl chloride		
	EPA 8260C SIM EPA 8260C SIM EPA 8260C SIM			10307105	Volatile Organic Compounds by GC/MS-SIM
		9318	1,3-Butadiene		
	EPA 8270C			10185805	Semivolatile Organic compounds by GC/MS
		6703	1,1'-Biphenyl (BZ-0)		
		6715	1,2,4,5-Tetrachlorobenzene		
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		6885	1,3,5-Trinitrobenzene (1,3,5-TNB)		
		4615	1,3-Dichlorobenzene		
		6160	1,3-Dinitrobenzene (1,3-DNB)		
		4620	1,4-Dichlorobenzene		
		6165	1,4-Dinitrobenzene		
		6420	1,4-Naphthoquinone		
		6630	1,4-Phenylenediamine		
		5790	1-Chloronaphthalene		
		6380	1-Methylnaphthalene		
		6425	1-Naphthylamine		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		6740	2,3,5,6-Tetrachlorophenol		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6005	2,6-Dichlorophenol		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5515	2-Acetylaminofluorene		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		5145	2-Methylaniline (o-Toluidine)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6430	2-Naphthylamine		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		5050	2-Picoline (2-Methylpyridine)		
		5945	3,3'-Dichlorobenzidine		
		6120	3,3'-Dimethylbenzidine		
		6355	3-Methylcholanthrene		
		6405	3-Methylphenol (m-Cresol)		
		6465	3-Nitroaniline		
		5540	4-Aminobiphenyl		
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6105	4-Dimethyl aminoazobenzene		
		6410	4-Methylphenol (p-Cresol)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		
		6510	4-Nitroquinoline 1-oxide		
		6570	5-Nitro-o-toluidine		
		6115	7,12-Dimethylbenz(a) anthracene		
		6125	a-a-Dimethylphenethylamine		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5510	Acetophenone		
		5545	Aniline		
		5555	Anthracene		
		5560	Aramite		
		5562	Azobenzene		
		5570	Benzaldehyde		
		5595	Benzidine		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		7260	Chlorobenzilate		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		7405	Diallate		
		5900	Dibenz(a, j) acridine		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		
		6070	Diethyl phthalate		
		7475	Dimethoate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		
		8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)		
		6205	Diphenylamine		
		8625	Disulfoton		
		6260	Ethyl methanesulfonate		
		7580	Famphur		
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		
		6295	Hexachloropropene		
		6315	Indeno(1,2,3-cd) pyrene		
		7725	Isodrin		
		6320	Isophorone		
		6325	Isosafrole		
		7740	Kepone		
		6345	Methapyrilene		
		6375	Methyl methanesulfonate		
		7825	Methyl parathion (Parathion, methyl)		
		5005	Naphthalene		
		5015	Nitrobenzene		
		6525	n-Nitrosodiethylamine		
		6530	n-Nitrosodimethylamine		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5025	n-Nitroso-di-n-butylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6550	n-Nitrosomethylethylamine		
		6555	n-Nitrosomorpholine		
		6560	n-Nitrosopiperidine		
		6565	n-Nitrosopyrrolidine		
		8290	o,o,o-Triethyl phosphorothioate		
		7955	Parathion, ethyl		
		6590	Pentachlorobenzene		
		5035	Pentachloroethane		
		6600	Pentachloronitrobenzene		
		6605	Pentachlorophenol		
		6610	Phenacetin		
		6615	Phenanthrene		
		6625	Phenol		
		7985	Phorate		
		6650	Pronamide (Kerb)		
		6665	Pyrene		
		5095	Pyridine		
		6685	Safrole		
		8155	Sulfotepp		
		8235	Thionazin (Zinophos)		
	EPA 8270C SIM			10242407	Semivolatile Organic compounds by GC/MS Selective Ion Monitoring
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		
		6315	Indeno(1,2,3-cd) pyrene		
		5005	Naphthalene		
		6615	Phenanthrene		
		6665	Pyrene		
	EPA 8270D			10186002	Semivolatile Organic compounds by GC/MS
		6703	1,1'-Biphenyl (BZ-0)		
		6715	1,2,4,5-Tetrachlorobenzene		
		5155	1,2,4-Trichlorobenzene		
		4610	1,2-Dichlorobenzene		
		6885	1,3,5-Trinitrobenzene (1,3,5-TNB)		
		4615	1,3-Dichlorobenzene		
		6160	1,3-Dinitrobenzene (1,3-DNB)		
		4620	1,4-Dichlorobenzene		
		6165	1,4-Dinitrobenzene		
		6420	1,4-Naphthoquinone		
		6630	1,4-Phenylenediamine		
		5790	1-Chloronaphthalene		
		6380	1-Methylnaphthalene		
		6425	1-Naphthylamine		
		4659	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether		
		6735	2,3,4,6-Tetrachlorophenol		
		6740	2,3,5,6-Tetrachlorophenol		
		6835	2,4,5-Trichlorophenol		
		6840	2,4,6-Trichlorophenol		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6000	2,4-Dichlorophenol		
		6130	2,4-Dimethylphenol		
		6175	2,4-Dinitrophenol		
		6185	2,4-Dinitrotoluene (2,4-DNT)		
		6005	2,6-Dichlorophenol		
		6190	2,6-Dinitrotoluene (2,6-DNT)		
		5515	2-Acetylaminofluorene		
		5795	2-Chloronaphthalene		
		5800	2-Chlorophenol		
		6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)		
		5145	2-Methylaniline (o-Toluidine)		
		6385	2-Methylnaphthalene		
		6400	2-Methylphenol (o-Cresol)		
		6430	2-Naphthylamine		
		6460	2-Nitroaniline		
		6490	2-Nitrophenol		
		5050	2-Picoline (2-Methylpyridine)		
		5945	3,3'-Dichlorobenzidine		
		6120	3,3'-Dimethylbenzidine		
		6355	3-Methylcholanthrene		
		6405	3-Methylphenol (m-Cresol)		
		6465	3-Nitroaniline		
		5540	4-Aminobiphenyl		
		5660	4-Bromophenyl phenyl ether (BDE-3)		
		5700	4-Chloro-3-methylphenol		
		5745	4-Chloroaniline		
		5825	4-Chlorophenyl phenylether		
		6105	4-Dimethyl aminoazobenzene		
		6410	4-Methylphenol (p-Cresol)		
		6470	4-Nitroaniline		
		6500	4-Nitrophenol		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6510	4-Nitroquinoline 1-oxide		
		6570	5-Nitro-o-toluidine		
		6115	7,12-Dimethylbenz(a) anthracene		
		6125	a-a-Dimethylphenethylamine		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5510	Acetophenone		
		5545	Aniline		
		5555	Anthracene		
		5560	Aramite		
		5562	Azobenzene		
		5570	Benzaldehyde		
		5595	Benzidine		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		
		5585	Benzo[b]fluoranthene		
		5610	Benzoic acid		
		5630	Benzyl alcohol		
		5760	bis(2-Chloroethoxy)methane		
		5765	bis(2-Chloroethyl) ether		
		5670	Butyl benzyl phthalate		
		5680	Carbazole		
		7260	Chlorobenzilate		
		5855	Chrysene		
		6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)		
		7405	Diallate		
		5900	Dibenz(a, j) acridine		
		5895	Dibenz(a,h) anthracene		
		5905	Dibenzofuran		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6070	Diethyl phthalate		
		7475	Dimethoate		
		6135	Dimethyl phthalate		
		5925	Di-n-butyl phthalate		
		6200	Di-n-octyl phthalate		
		8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)		
		6205	Diphenylamine		
		8625	Disulfoton		
		6260	Ethyl methanesulfonate		
		7580	Famphur		
		6265	Fluoranthene		
		6270	Fluorene		
		6275	Hexachlorobenzene		
		4835	Hexachlorobutadiene		
		6285	Hexachlorocyclopentadiene		
		4840	Hexachloroethane		
		6295	Hexachloropropene		
		6315	Indeno(1,2,3-cd) pyrene		
		7725	Isodrin		
		6320	Isophorone		
		6325	Isosafrole		
		7740	Kepone		
		6345	Methapyrilene		
		6375	Methyl methanesulfonate		
		7825	Methyl parathion (Parathion, methyl)		
		5005	Naphthalene		
		5015	Nitrobenzene		
		6525	n-Nitrosodiethylamine		
		6530	n-Nitrosodimethylamine		
		5025	n-Nitroso-di-n-butylamine		
		6545	n-Nitrosodi-n-propylamine		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6535	n-Nitrosodiphenylamine		
		6550	n-Nitrosomethylethylamine		
		6555	n-Nitrosomorpholine		
		6560	n-Nitrosopiperidine		
		6565	n-Nitrosopyrrolidine		
		8290	o,o,o-Triethyl phosphorothioate		
		7955	Parathion, ethyl		
		6590	Pentachlorobenzene		
		5035	Pentachloroethane		
		6600	Pentachloronitrobenzene		
		6605	Pentachlorophenol		
		6610	Phenacetin		
		6615	Phenanthrene		
		6625	Phenol		
		7985	Phorate		
		6650	Pronamide (Kerb)		
		6665	Pyrene		
		5095	Pyridine		
		6685	Safrole		
		8155	Sulfotepp		
		8235	Thionazin (Zinophos)		
	EPA 8270D SIM			10242509	Semivolatile Organic compounds by GC/MS Selective Ion Monitoring
		6380	1-Methylnaphthalene		
		6385	2-Methylnaphthalene		
		5500	Acenaphthene		
		5505	Acenaphthylene		
		5555	Anthracene		
		5575	Benzo(a)anthracene		
		5580	Benzo(a)pyrene		
		5590	Benzo(g,h,i)perylene		
		5600	Benzo(k)fluoranthene		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		5585	Benzo[b]fluoranthene		
		5855	Chrysene		
		5895	Dibenz(a,h) anthracene		
		6265	Fluoranthene		
		6270	Fluorene		
		6315	Indeno(1,2,3-cd) pyrene		
		5005	Naphthalene		
		6615	Phenanthrene		
		6665	Pyrene		
	EPA 8280A			10186808	Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 8280B			10187005	Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 8290			10187209	Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
			(1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 8290A			10187403	Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS
		9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		
		9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		
		9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)		
		9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)		
		9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)		
		9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)		
		9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)		
		9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)		
		9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)		
		9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)		
		9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)		
		9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)		
		9480	2,3,4,6,7,8-Hexachlorodibenzofuran		
		9549	2,3,4,7,8-Pentachlorodibenzofuran		
		9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)		
		9612	2,3,7,8-Tetrachlorodibenzofuran		
		9438	Hpcdd, total		
		9444	Hpcdf, total		
		9468	Hxcdd, total		
		9483	Hxcdf, total		
		9555	Pecdd, total		
		9552	Pecdf, total		
		9609	TCDD, total		
		9615	TCDF, total		
	EPA 9045C			10198400	Soil and Waste pH
		1900	pH		
	EPA 9045D			10244607	Soil and Waste pH
		1900	pH		
	EPA 9056			10199005	Determination of Inorganic Anions by Ion Chromatography
		1540	Bromide		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		1575	Chloride		
		1730	Fluoride		
		1805	Nitrate		
		1835	Nitrite		
		2000	Sulfate		
	EPA 9056A			10199607	Determination of Inorganic Anions by Ion Chromatography
		1540	Bromide		
		1575	Chloride		
		1730	Fluoride		
		1805	Nitrate		
		1835	Nitrite		
		2000	Sulfate		
	WS-LC-0010 3.4 3.4			60055154	TestAmerica West Sacramento - Nitroguanidine (EPA 8330)
		6462	2-Nitroguanidine		
	WS-LC-0025 3.6 3.6			60055438	Eurofins Test America Sacramento - Per and Polyfluorinated Alkyl Substances (PFAS) in Water, Soils, Sediments, and Tissues
		9490	11-chloreicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		
		6948	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)		
		9616	1H, 1H, 2H, 2H-perfluorododecane sulfonic acid (10:2 FTS)		
		6946	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)		
		6947	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)		
		6951	4,8-Dioxa-3H-perfluorononanoic acid (DONA)		
		6952	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)		
		9460	Hexafluoropropylene oxide dimer acid (HFPO-DA)		
		9395	N-Ethylperfluorooctane sulfonamide (EtFOSAm)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9431	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)		
		4846	N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		
		4847	N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)		
		6949	N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)		
		9433	N-Methylperfluorooctanesulfonamide (MeFOSA)		
		6918	Perfluorobutane sulfonic acid (PFBS)		
		6915	Perfluorobutanoic acid (PFBA)		
		6920	Perfluorodecane sulfonic acid (PFDS)		
		6905	Perfluorodecanoic acid (PFDA)		
		6923	Perfluorododecane sulfonic acid (PFDoS)		
		6903	Perfluorododecanoic acid (PFDoA)		
		9470	Perfluoroheptane sulfonic acid (PFHpS)		
		6908	Perfluoroheptanoic acid (PFHpA)		
		6901	Perfluorohexadecanoic acid (PFHxDA)		
		6927	Perfluorohexane sulfonic acid (PFHxS)		
		6913	Perfluorohexanoic acid (PFHxA)		
		6929	Perfluorononane sulfonic acid (PFNS)		
		6906	Perfluorononanoic acid (PFNA)		
		6916	Perfluorooctadecanoic acid (PFODA)		
		6917	Perfluorooctane sulfonamide (PFOSAm)		
		6931	Perfluorooctane sulfonic acid (PFOS)		
		6912	Perfluorooctanoic acid (PFOA)		
		6934	Perfluoropentane sulfonic acid (PFPeS)		
		6914	Perfluoropentanoic acid (PFPeA)		
		6902	Perfluorotetradecanoic acid (PFTDA)		
		9563	Perfluorotridecanoic acid (PFTrDA)		
		6904	Perfluoroundecanoic acid (PFUnA)		
	WS-LC-0025 4.0			60055449	Eurofins Test America Sacramento - Per and

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
	4.0				Polyfluorinated Alkyl Substances (PFAS) in Water, Soils, Sediments, and Tissues
		9281	1,1,2,2-Tetrafluoro-2-(1,2,2,2-tetrafluoroethoxy)ethane-1-sulfonic acid (NVHOS)		
		9282	1,1,2,2-tetrafluoro-2-[1,2,2,3,3-pentafluoro-1-(trifluoromethyl)propoxy] ethanesulfonic acid (R-PSDCA)		
		9490	11-chloreicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		
		6948	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)		
		9616	1H, 1H, 2H, 2H-perfluorododecane sulfonic acid (10:2 FTS)		
		6946	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)		
		6947	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)		
		9283	2,2,3,3-Tetrafluoro-3-{[1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy}propanoic acid (Hydro-EVE Acid)		
		9284	2,2-Difluoro-2-(trifluoromethoxy) Acetic acid (PFMOAA)		
		9340	2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)		
		9338	2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)		
		9285	2-Perfluorodecylethanoic acid (10:2 FTCA)		
		9286	2-Perfluorohexylethanoic acid (6:2 FTCA)		
		9316	2-Perfluorooctyl ethanoic acid (FOEA)		
		9287	4-(2-carboxy-1,1,2,2-tetrafluoroethoxy)-2,2,3,3,4,5,5,5-octafluoro-pentanoic acid (R-EVE)		
		9353	4,4,5,5,6,6-Heptafluorohexanoic acid (3:3 FTCA)		
		6951	4,8-Dioxa-3H-perfluorononanoic acid (DONA)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6952	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)		
		9460	Hexafluoropropylene oxide dimer acid (HFPO-DA)		
		9395	N-Ethylperfluorooctane sulfonamide (EtFOSAm)		
		9431	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)		
		4846	N-Ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		
		4847	N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)		
		6949	N-Methylperfluorooctane sulfonamido ethanol (MeFOSE)		
		9433	N-Methylperfluorooctanesulfonamide (MeFOSA)		
		6956	Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)		
		6957	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)		
		9288	Perfluoro-2-{[perfluoro-3-(perfluoroethoxy)-2-propanyl]oxy}ethanesulfonic acid (Hydro-PS Acid)		
		9289	Perfluoro-2-ethoxypropanoic acid (PEPA)		
		9290	Perfluoro-2-methoxypropanoic acid (PMPA)		
		9291	Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid (PFO5DoA)		
		9293	Perfluoro-3,5,7,9-butaoxadecanoic acid (PFO4DA)		
		9294	Perfluoro-3,5,7-trioxaoctanoic acid (PFO3OA)		
		9295	Perfluoro-3,5-dioxahexanoic acid (PFO2HxA)		
		6965	Perfluoro-3-methoxypropanoic acid (PFMPA)		

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		9296	Perfluoro-4-ethylcyclohexanesulfonic acid (PFecHS)		
		9298	Perfluoro-4-isopropoxybutanoic acid (PFPE-1)		
		6966	Perfluoro-4-methoxybutanoic acid (PFMBA)		
		6918	Perfluorobutane sulfonic acid (PFBS)		
		6915	Perfluorobutanoic acid (PFBA)		
		6920	Perfluorodecane sulfonic acid (PFDS)		
		6905	Perfluorodecanoic acid (PFDA)		
		6923	Perfluorododecane sulfonic acid (PFDoS)		
		6903	Perfluorododecanoic acid (PFDoA)		
		9470	Perfluoroheptane sulfonic acid (PFHpS)		
		6908	Perfluoroheptanoic acid (PFHpA)		
		6901	Perfluorohexadecanoic acid (PFHxDA)		
		6927	Perfluorohexane sulfonic acid (PFHxS)		
		6913	Perfluorohexanoic acid (PFHxA)		
		6929	Perfluorononane sulfonic acid (PFNS)		
		6906	Perfluorononanoic acid (PFNA)		
		6916	Perfluorooctadecanoic acid (PFODA)		
		6917	Perfluorooctane sulfonamide (PFOSAm)		
		6931	Perfluorooctane sulfonic acid (PFOS)		
		6912	Perfluorooctanoic acid (PFOA)		
		6934	Perfluoropentane sulfonic acid (PFPeS)		
		6914	Perfluoropentanoic acid (PFPeA)		
		9320	Perfluoropropanesulfonic acid (PFPrS)		
		9323	Perfluoropropionic acid (PFPrA)		
		6902	Perfluorotetradecanoic acid (PFTDA)		
		9563	Perfluorotridecanoic acid (PFTrDA)		
		6904	Perfluoroundecanoic acid (PFUnA)		
	WS-MS-0012 2014 2014			60055530	TestAmerica West Sacramento - Nitrosamines by GC/MS/MS with LVI
		6525	n-Nitrosodiethylamine		

OREGON

Environmental Laboratory Accreditation Program

ORELAP Fields of Accreditation

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Matrix	Reference	Analyte Code	Analyte	Method Code	Description
		6530	n-Nitrosodimethylamine		
		5025	n-Nitroso-di-n-butylamine		
		6545	n-Nitrosodi-n-propylamine		
		6535	n-Nitrosodiphenylamine		
		6550	n-Nitrosomethylethylamine		
		6555	n-Nitrosomorpholine		
		6520	n-Nitroso-n-methylurea		
		6560	n-Nitrosopiperidine		
		6565	n-Nitrosopyrrolidine		
	WS-WC-0050 3.8 3.8			60055472	TestAmerica West Sacramento - Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer
		6484	Nitrocellulose		

Matrix: Groundwater/Wastewater
Analytical Group: VOCs (SW8260)
Concentration Level: Low-High

Data Quality Indicators	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision (field)	Field duplicate	≤ 30% RPD
Representativeness	Temperature blank	0 to 6 ºC
Accuracy/bias contamination (field and laboratory)	Blanks (method blank, trip blank)	Analyte detection ≤ LOD
Precision (laboratory)	MS/MSD recoveries LCS/LCSD (if analyzed, not required) recoveries	≤ 30% RPD
Accuracy (laboratory)	LCS recoveries MS/MSD recoveries	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	Surrogate spikes	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	ICV CCV	± 30% ± 20% of expected value (% Drift) or ≤20% of comparable difference
Sensitivity (laboratory)	Internal Standards	RT ±30 seconds from RT of the midpoint standard in ICAL; EICP area within -50% to +100% of ICAL midpoint standard.
Representativeness (laboratory)	Collection date/time, extraction date/time, analysis date/time	Samples extracted and analyzed within holding times (14 days to analysis)
Sensitivity (laboratory)	Evaluate laboratory LODs, LOQs, and DLs	LOD for nondetect results are less than PSL
Completeness	Completeness of analytical requirements per the QAPP	95%

Matrix: Groundwater/Wastewater
Analytical Group: SVOCs (SW8270)
Concentration Level: Low-High

Data Quality Indicators	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision (field)	Field duplicate	≤ 30% RPD
Representativeness	Temperature blank	0 to 6 ºC
Accuracy/bias contamination (laboratory)	Laboratory method blank	Analyte detection ≤ LOD
Precision (laboratory)	MS/MSD recoveries LCS/LCSD (if analyzed, not required) recoveries	≤ 30% RPD
Accuracy (laboratory)	LCS recoveries MS/MSD recoveries	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	Surrogate spikes	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	ICV CCV	± 30% ± 20% of expected value (% Drift) or ≤20% of comparable difference
Sensitivity (laboratory)	Internal Standards	RT ±30 seconds from RT of the midpoint standard in ICAL; EICP area within -50% to +100% of ICAL midpoint standard.
Representativeness (laboratory)	Collection date/time, extraction date/time, analysis date/time	Samples extracted and analyzed within holding times (7 days to extraction, 40 days to analysis of extract)
Sensitivity (laboratory)	Evaluate laboratory LODs, LOQs, and DLs	LOD for nondetect results are less than PSL.
Completeness	Completeness of analytical requirements per the QAPP	95%

Matrix: Groundwater/Wastewater
Analytical Group: PAHs (SW8270SIM)
Concentration Level: Low-High

Data Quality Indicators	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision (field)	Field duplicate	≤ 30% RPD
Representativeness	Temperature blank	0 to 6 ºC
Accuracy/bias contamination(laboratory)	Laboratory method blank	Analyte detection ≤ LOD
Precision (laboratory)	MS/MSD recoveries LCS/LCSD (if analyzed, not required) recoveries	≤ 30% RPD
Accuracy (laboratory)	LCS recoveries MS/MSD recoveries	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	Surrogate spikes	DoD QSM laboratory-derived limits
Accuracy (laboratory)	ICV CCV	± 30% ± 20% of expected value (% Drift) or ≤20% of comparable difference
Sensitivity (laboratory)	Internal Standards	RT ±30 seconds from RT of the midpoint standard in ICAL; EICP area within -50% to +100% of ICAL midpoint standard
Representativeness (laboratory)	Collection date/time, extraction date/time, analysis date/time	Samples extracted and analyzed within holding times (7 days to extraction, 40 days to analysis of extract)
Sensitivity (laboratory)	Evaluate laboratory LODs, LOQs, and DLs	LOD for nondetect results are less than PSL
Completeness	Completeness of analytical requirements per the QAPP	95%

Matrix: Groundwater
Analytical Group: Pesticides (8081)
Concentration Level: Low-High

Data Quality Indicators	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision (field)	Field duplicate	≤ 50% RPD
Representativeness	Temperature blank	0 to 6 °C
Accuracy/bias contamination (laboratory)	Laboratory method blank	Analyte detection < LOD
Precision (laboratory)	MS/MSD recoveries LCS/LCSD (if analyzed, not required) recoveries	≤ 30% RPD
Accuracy (laboratory)	LCS recoveries MS/MSD recoveries	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	Surrogate spikes	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	ICV CCV	± 30% ± 20% of expected value (% Drift) or ≤20% of comparable difference
Representativeness (laboratory)	Collection date/time, extraction date/time, analysis date/time	Samples extracted and analyzed within holding times (14 days to extraction, 40 days to analysis of extract)
Sensitivity (laboratory)	Evaluate laboratory LODs, LOQs, and DLs	LOD for nondetect results are less than PSL
Completeness	Completeness of analytical requirements per the QAPP	95%

Matrix: Groundwater
Analytical Group: Metals (6020B)
Concentration Level: Low-High

Data Quality Indicators	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision (field)	Field duplicate	≤ 50% RPD
Representativeness	Temperature blank	0 to 6 °C
Accuracy/bias contamination (laboratory)	Laboratory method blank	Analyte detection < LOD
Precision (laboratory)	MS/MSD recoveries LCS/LCSD (if analyzed, not required) recoveries	≤ 20% RPD
Accuracy (laboratory)	LCS recoveries MS/MSD recoveries	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	Surrogate spikes	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	ICV CCV	± 10% ± 10% of expected value (% Drift)
Representativeness (laboratory)	Collection date/time, extraction date/time, analysis date/time	Samples extracted and analyzed within holding times (180 days)
Sensitivity (laboratory)	Evaluate laboratory LODs, LOQs, and DLs	LOD for nondetect results are less than PSL
Completeness	Completeness of analytical requirements per the QAPP	95%

Matrix: Groundwater
Analytical Group: Mercury (7470)
Concentration Level: Low-High

Data Quality Indicators	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision (field)	Field duplicate	≤ 50% RPD
Representativeness	Temperature blank	0 to 6 °C
Accuracy/bias contamination (laboratory)	Laboratory method blank	Analyte detection < LOD
Precision (laboratory)	MS/MSD recoveries LCS/LCSD (if analyzed, not required) recoveries	≤ 20% RPD
Accuracy (laboratory)	LCS recoveries MS/MSD recoveries	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	Surrogate spikes	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	ICV CCV	± 10% ± 10% of expected value (% Drift)
Representativeness (laboratory)	Collection date/time, extraction date/time, analysis date/time	Samples extracted and analyzed within holding times (28 days)
Sensitivity (laboratory)	Evaluate laboratory LODs, LOQs, and DLs	LOD for nondetect results are less than PSL
Completeness	Completeness of analytical requirements per the QAPP	95%

SAP Worksheet #12-3
Measurement Performance Criteria Table- Field QC Samples

Matrix: Solid
Analytical Group: GRO
Concentration Level: Medium

QC Sample	Analytical Group	Frequency	Data Quality Indicators (DQIs)	Measurement Performance Criteria	QC Sample Assesses Error for Sampling (S), Analytical (A), or both (S&A)
Field Duplicates	GRO	One per 10 field samples	Precision	RPD < 25%	S & A
Ambient Field Blank		One per week of sampling	Contamination/bias	All target compounds < 1/2 QL	S&A
Equipment blank		One per week of sampling	Contamination/bias		S & A
Cooler Temperature Indicator		One per cooler	Accuracy / Representativeness	4 ± 2 ° C	S&A

Matrix: Solid

Analytical Group: DRO (NWTPH-Dx

Concentration Level: Medium

QC Sample	Analytical Group	Frequency	Data Quality Indicators (DQIs)	Measurement Performance Criteria	QC Sample Assesses Error for Sampling (S), Analytical (A), or both (S&A)
Field Duplicates	DRO	One per 10 field samples	Precision	RPD < 25%	S & A
Equipment blank		One per week of sampling	Contamination/bias	All target compounds < 1/2 QL	S & A
Cooler Temperature Indicator		One per cooler	Accuracy / Representativeness	4 ± 2 ° C	S&A

Matrix: Groundwater
Analytical Group: PCB Congeners
Concentration Level: Low-High

Data Quality Indicators	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision (field)	Field duplicate	≤ 50% RPD
Representativeness	Temperature blank	0 to 6 °C
Accuracy/bias contamination (laboratory)	Laboratory method blank	No target analytes ≥ 1/2 LOQ
Precision (laboratory)	MS/MSD recoveries LCS/LCSD (if analyzed, not required) recoveries	≤ 20% RPD
Accuracy (laboratory)	LCS recoveries MS/MSD recoveries	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	Surrogate spikes	DoD QSM or laboratory-derived limits
Accuracy (laboratory)	Internal Standard spikes	Meets all EPA Method requirements (25-150% Recovery)
Representativeness (laboratory)	Collection date/time, extraction date/time, analysis date/time	Samples extracted and analyzed within holding times
Sensitivity (laboratory)	Evaluate laboratory LODs, LOQs, and DLs	LOD for nondetect results are less than PSL
Completeness	Completeness of analytical requirements per the QAPP	95%

Matrix: Groundwater
Analytical Group: Organotins
Concentration Level: Low-High

Data Quality Indicators	QC Sample or Measurement Performance Activity	Measurement Performance Criteria
Precision (field)	Field duplicate	≤ 50% RPD
Representativeness	Temperature blank	0 to 6 °C
Accuracy/bias contamination (laboratory)	Laboratory method blank	No target analytes ≥ 1/2 LOQ
Precision (laboratory)	LCS/LCSD recoveries	Laboratory-derived limits
Accuracy (laboratory)	LCS recoveries	Laboratory-derived limits
Accuracy (laboratory)	Surrogate spikes	Laboratory-derived limits
Representativeness (laboratory)	Collection date/time, extraction date/time, analysis date/time	Samples extracted and analyzed within holding times
Sensitivity (laboratory)	Evaluate laboratory LODs, LOQs, and DLs	LOD for nondetect results are less than PSL
Completeness	Completeness of analytical requirements per the QAPP	95%

Appendix C

URS Technical Memo for January 2009 Groundwater Sampling Results

TECHNICAL MEMORANDUM

URS

To: Mike Gross, PE, U.S. Army Corps of Engineers – Portland District

From: Mike Powell and Laura McWilliams, PhD, LG

Date: March 31, 2009

Subject: Fourth Quarter Groundwater, Seep, and Surface Water Sampling Results
Bradford Island Upland Operable Unit Remedial Investigation
Cascade Locks, OR

1.0 Introduction

The United States Army Corps of Engineers (USACE) Portland District is performing a remedial investigation/feasibility study (RI/FS) on Bradford Island at Bonneville Dam, Oregon. This memorandum describes the methods and results of the fourth quarter of groundwater/seep/surface water sampling at the Upland Operable Unit (OU) on the eastern portion of Bradford Island (site).

In accordance with Contract No. W9128F-04-D-0001, Task Order No. DT07, groundwater samples were collected from all 15 monitoring wells at the site. In addition two seep samples and two associated surface water samples were collected. The locations of the monitoring wells and seep samples are shown in Figure 1. Monitoring wells MW-1 through MW-9 are located in the Landfill area of potential concern (AOPC), and were installed in the late 1990s and early 2002. MW-11 through MW-15 were installed in the Sandblast Area AOPC during the spring of 2008. And, MW-10 was installed in the Reference Area during the spring of 2008. This is the fourth groundwater sampling event to include the new wells.

All field activities were carried out in accordance with the *Quality Assurance Project Plan (QAPP) Upland Operable Unit Remedial Investigation* (Upland QAPP, URS, 2008a). Based on consultation with the Technical Advisory Group (TAG), the USACE elected to install the monitoring wells (URS, 2008b) and perform the first two quarterly groundwater sampling events (URS, 2008c,d) prior to the finalization of the Upland QAPP to compress the schedule by approximately six months. The Upland QAPP was finalized prior to the completion of this third quarter sampling event (URS, 2008e).

2.0 Sampling Methodology

The following subsections describe the techniques used to collect groundwater, seep water and surface water sampling. This section also discusses sample handling and shipping, the method used to decontaminate field equipment and the disposal of investigation derived waste generated by the sampling.

2.1 Groundwater Sampling Method

Prior to purging the monitoring wells, the depth to groundwater was measured in each well using a decontaminated water level meter. Groundwater levels in the wells located within the Landfill and the Sandblast Area AOPCs were measured on January 12, 2008. Table 1 summarizes the water level elevations. Groundwater elevation data were contoured for each AOPC. These data are plotted and shown in Figure 2 (Landfill AOPC) and Figure 3 (Sandblast Area AOPC).

The volume of water in each well was calculated based on the depth to groundwater measurement and well construction data. Except in the cases of MW-1 and MW-8, the monitoring wells were purged and the groundwater samples were collected via peristaltic pump with clean disposable polyethylene tubing. A decontaminated stainless steel Grundfos submersible pump with clean disposable polyethylene tubing was used to purge MW-1 and MW-8 due to the depth of water in these wells.

During purging, temperature in degrees Celsius (^{o}C), conductivity in milliSiemens per centimeter (mS/cm), dissolved oxygen (DO) in milligrams per liter (mg/L), oxidation/reduction potential (ORP) in millivolts (mV), and pH were periodically measured using a calibrated YSI 556 water quality meter attached to the peristaltic pump with a flow-through cell. The turbidity of the water was measured using a calibrated Hach 2100 P turbidity meter. A summary of water quality data at the site is presented in Table 2. In general, each well was purged until water quality readings stabilized[1] or until one well volume was removed if stabilization could not be achieved due to slow groundwater recharge. Groundwater sampling forms and field notes detailing the calibration of the field instruments are included in Attachment A.

Once purging was completed, the flow through cell was detached from the pump outlet, the groundwater sampling team donned clean nitrile gloves, and the labeled sample containers were filled. The sample containers being analyzed for volatile organic compounds (VOCs) and gasoline range total petroleum hydrocarbons (TPH-Gx) were filled first and special care was taken to avoid aerating the groundwater as it was slowly pumped into the sample container. After all unfiltered sample volume was collected, a filtered sample for dissolved metals analysis was collected by attaching the pump outlet to a 0.45 micron (µm) disposable filter and filling the required sample container.

2.2 Seep and Surface Water Sampling

Samples were collected at two groundwater seep locations, S2 and S4 (Figure 1). Seep samples were also collected from these location during the first quarter sampling event (URS, 2008c). Two other potential seeps identified during the site reconnaissance, S1

[1] Groundwater stabilization criteria are as follows: pH +/- 0.1 units; conductivity +/- 3% of the total range; ORP +/-10 mV; turbidity +/- 10% if above 5 NTU; DO +/- 10% of the total range or 0.2 mg/L.

and S3, were not sampled due to insufficient flow. At each seep where samples were collected, surface water samples were also collected from the Columbia River immediately adjacent to the outflow of the seep. The surface water sampling method is described in Section 2.3.

URS field personnel used ropes to descend and lower equipment down the steep slope face on the north shore of Bradford Island in order to access seeps S2 and S4. At each seep location, a small pool was excavated out of the siltstone with a decontaminated rock hammer in order to collect water flowing from the seep. A laboratory-provided, dedicated four-ounce glass sample jar was placed in the pool with the mouth oriented such that the jar captured the water flowing from the seep, similar to the first quarter sampling event. The suspended sediment in the pool and jar was allowed to settle prior to collecting the seep water sample.

Seep samples were collected by placing dedicated polyethylene tubing in the jar, affixing the tubing to the jar with a clamp, and pumping the water into labeled sample containers with a peristaltic pump. After the samples were collected at each seep, additional seep water was pumped into the YSI sampling container where a calibrated YSI 556 water quality meter was used to record water quality parameters. Water quality parameters for the seep water were recorded once the readings on the meter stabilized, parameters are presented in Table 2.

2.3 Surface Water Sampling Method

Two surface water samples were collected from the Columbia River adjacent to seep locations S2 and S4 (Figure 1). The surface water samples were collected by placing dedicated polyethylene tubing in open water approximately five feet offshore (north) of each seep and filling the sample containers via peristaltic pump. This distance was selected so that the intake tubing could be placed one foot below the surface of the water without disturbing the riverbed sediments. During sample collection, care was taken to avoid agitating sediment in the area of the intake tubing. After the surface water samples were collected, water quality data were collected from the sample location by placing a calibrated YSI 556 water quality meter directly into the river. Water quality parameters for the surface water samples are presented in Table 2.

2.4 Sample Handling and Shipping

Once each sample was collected, the sample containers were placed in a cooler with ice for preservation. Samples were labeled with a unique alpha-numeric code indicating the date that the sample was collected, the station location, and the matrix as specified in the Upland QAPP (i.e., the groundwater sample collected at MW-1 on January 15, 2009 was labeled 090115MW1GW) (URS, 2008a). At the end of each sampling day, all samples were checked for proper labeling and packed inside a trash bag that was filled with ice, goose necked, and sealed with packing tape. Temperature and trip blanks were also

placed in the bag, as necessary. The bag containing the samples and ice was then placed inside a cooler supplied by the analytical laboratory along with packing material to prevent breakage of the sample containers during transit. Prior to pickup by the laboratory courier, a chain of custody (COC) form documenting sample names, sample date and time, and required analyses was completed and placed inside the coolers.

2.5 Decontamination Method

The water level meter and Grundfos submersible pump were decontaminated prior to being used at each well. As specified in the Upland QAPP (URS, 2008a), decontamination was achieved by first submerging the equipment in a phosphate-free soap and deionized water mixture, then methanol, and finally a deionized water rinse. The equipment was thoroughly scrubbed before being submerged in the methanol. The pump was allowed to run while submerged in each stage of the decontamination process.

2.6 Investigation Derived Waste Disposal

Purge water generated during the groundwater sampling was pumped into 5-gallon buckets and transferred into a labeled 55-gallon drum. The drum was staged at the Hazardous Materials Storage Area for characterization and disposal by the USACE, per the instructions of the Bonneville Dam Environmental Compliance Coordinator (ECC). Disposable sampling equipment, including tubing and filters were treated as standard municipal waste.

3.0 Analytical Results

Fifteen groundwater samples were collected for laboratory analysis. Field duplicates were collected at MW-6, MW-10, and MW-11. Additional sample volume was collected at MW-5, MW-10, and MW-14 to provide the laboratory with sufficient volume to perform project-specific matrix spike and matrix spike duplicate analyses when applicable. The analyte list for each groundwater sample is location specific, as described in the Upland QAPP (URS, 2008a). Groundwater samples associated with the Landfill and Sandblast Area AOPCs were analyzed for TPHs, selected VOCs, selected semivolatile organic compounds (SVOCs), butyltins, the pesticide 4-nitrophenol, and selected metals (total and dissolved). The groundwater sample from the Reference Area well (MW-10) was analyzed for the complete list of metals in both the total and dissolved fractions.

The results of the laboratory analyses are presented in Tables 3 through 6. For comparison purposes, the first, second and third quarter analytical results are reproduced alongside the fourth quarter results. A data quality review of the analytical results, prepared in accordance with the Upland QAPP (2008a), is provided in Attachment B.

Tables 3 through 6 include a column listing the most conservative water quality criteria for each analyte, as identified in Table 10 of the Upland QAPP (URS, 2008a). Table 10 of the QAPP has been updated to include Oregon Department of Environmental Quality (ODEQ) Risk-Based Criteria (RBC), revision 3, updated October 2008 (ODEQ, 2008) and EPA Regional Risk-Based Screening Levels, updated September 2008 (EPA, 2008). Although many of these screening criteria are not applicable to groundwater at the site (i.e., they were developed for surface water or drinking water), they are provided for reference. Concentrations of organic constituents are highlighted in the tables where they exceed the most conservative water quality criteria. Concentrations of TPH, tetrachloroethene (PCE), trichloroethene (TCE), cis-dichloroethene, chloroform, and vinyl chloride are the only organic constituents to which observed concentrations exceed the screening criteria (see Tables 3 and 6). For inorganic constituents, concentrations from the Reference Area well (MW-10) are interpreted as background concentrations of naturally occurring metals that leach into groundwater from local soils. Therefore, only those inorganic analytes that exceed both background concentrations and the most conservative water quality criteria are highlighted in Tables 3, 4 and 5. The observed background concentrations of arsenic, manganese and occasionally silver and lead, exceed the most conservative screening criteria (Table 6). Metals in the Landfill and/or Sandblast Area AOPCs that exceed both the background concentrations and the screening criteria include arsenic, iron, lead and manganese.

General water quality parameters recorded in the 15 monitoring wells during the four quarterly events are listed in Table 7. Large variations were observed from quarter to quarter, especially for ORP. Although four samples over the course of one year are insufficient to establish seasonal variability trends, rainwater infiltration is one explanation for this variation. Large differences in geochemical parameters over a short period of time (90 days) are not uncommon where recharge by rainfall infiltration has significant effect on the groundwater redox chemistry (Lee, 2001).

4.0 Variances from QAPP

The groundwater sampling at Bradford Island was conducted in general accordance with the procedures described in the Upland QAPP (URS, 2008a). However, some minor variances from the procedures described in the QAPP occurred, as described below:

- The full suite of analytical parameters was not collected at MW-1 because of the extremely slow groundwater recharge rate (~1.0 ft/day) in this well. MW-1 was purged on January 12, with a decontaminated Grundfos submersible pump. After the well was purged dry with the submersible pump, the well was sealed and allowed to recharge. On January 15, the well was sampled, but was purged dry during sampling. Thus, adequate volume could only be collected for VOCs, TPH-Gx, total metals and dissolved metals. Samples for TPH- Dx, Butyltins, and SVOCs were not collected at MW-1.

- A submersible pump was used to purge and sample the groundwater at MW-1 and MW-8, because the water levels in these wells were too deep to be sampled with a peristaltic pump. A rinsate blank was collected by pouring deionized water onto the decontaminated pump and then into sample containers in order to verify the cleanliness of the submersible pump and the efficiency of the decontamination method.

References

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URS, 2008a. *Quality Assurance Project Plan*. Upland Operable Unit Remedial Investigation, Bradford Island. October 2008.

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URS, 2008d. *Second Quarter Groundwater, Seep, and Surface Water Sampling Results*. Bradford Island Upland Operable Unit Remedial Investigation, Cascade Locks. October 28, 2008.

URS, 2008e. *Third Quarter Groundwater, Seep, and Surface Water Sampling Results*. Bradford Island Upland Operable Unit Remedial Investigation, Cascade Locks. October 28, 2008.

Figures

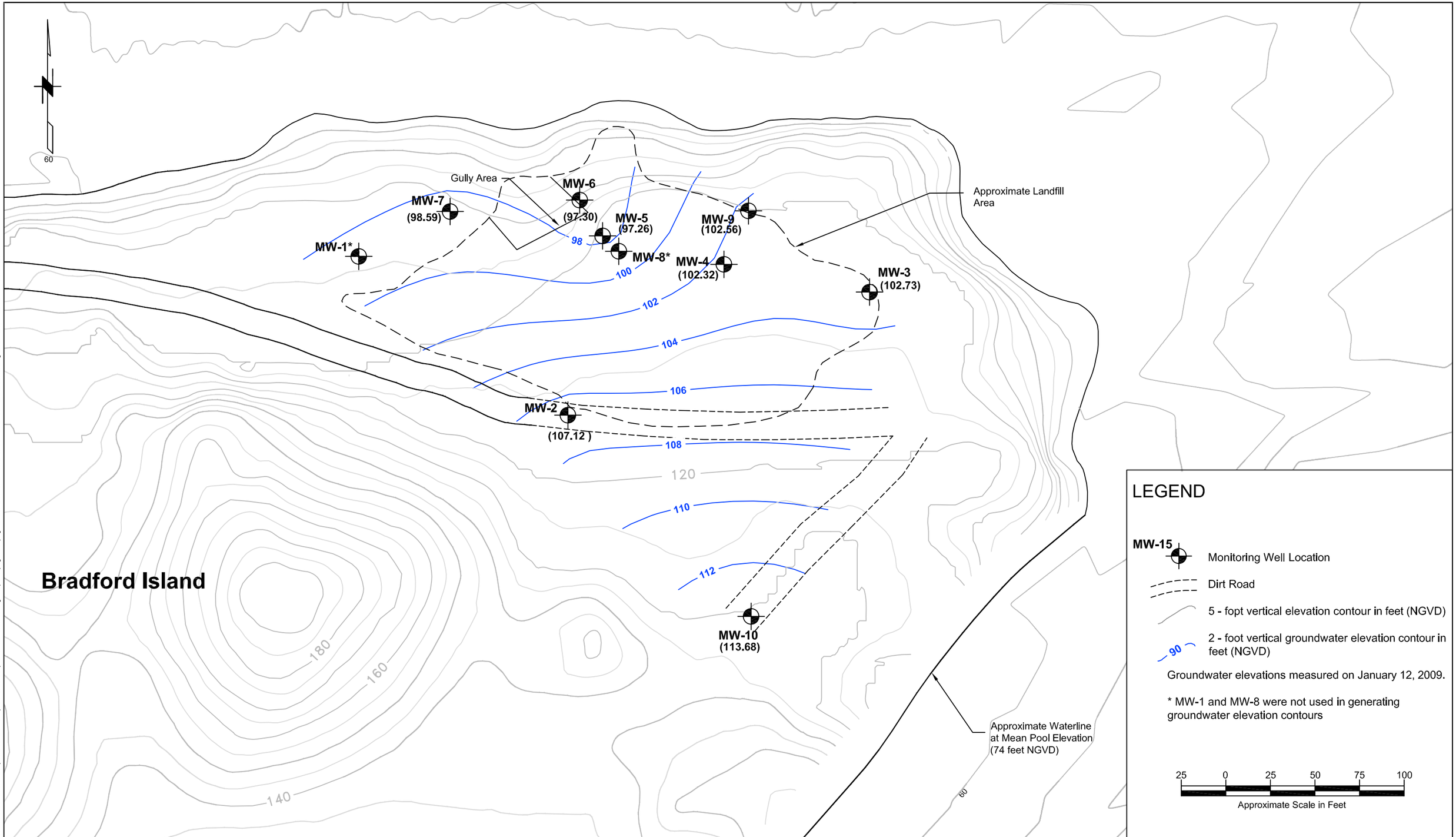
Figure 1 – Bradford Island Groundwater, Seep, and Surface Water Sample Locations
Figure 2 – Landfill and Reference Area Groundwater Elevations
Figure 3 – Sandblast Area Groundwater Elevations

Tables

Table 1 – Groundwater Levels
Table 2 – Groundwater Field Parameters
Table 3 – Analytical Results from Landfill Area Wells
Table 4 – Analytical Results from Seep and Surface Water Associated with the Landfill Area Wells
Table 5 – Analytical Results from Sandblast Area Wells
Table 6 – Analytical Results from Reference Area Well
Table 7 – Summary of Results for ORP, DO, Conductivity and pH for Groundwater

Attachments

Attachment A – Field Notes, Groundwater, Seep, and Surface Water Sampling Forms
Attachment B – Quality Control Summary Report for Analytical Chemistry



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LANDFILL AND REFERENCE AREA GROUNDWATER ELEVATIONS

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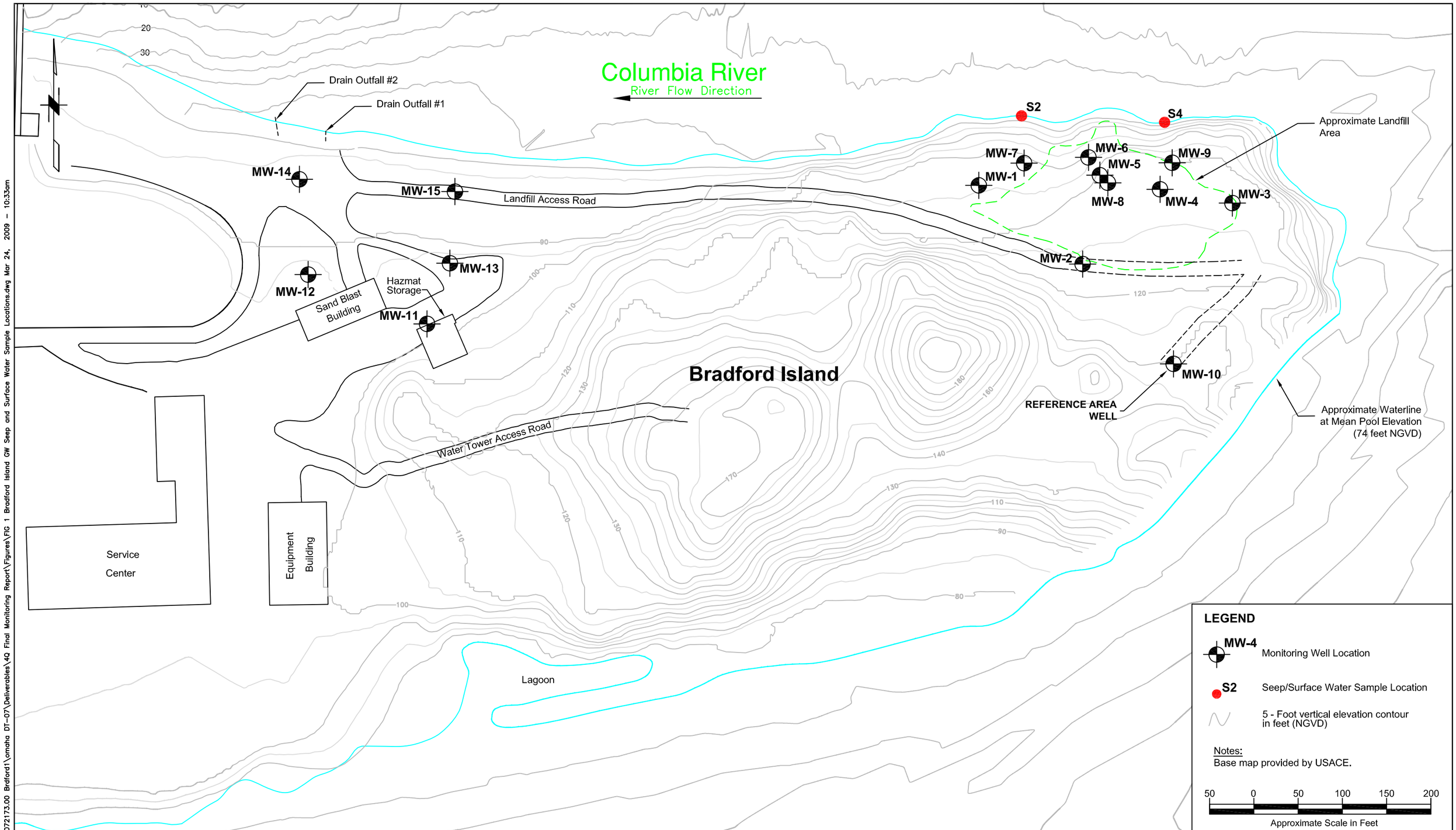

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BRADFORD ISLAND GROUNDWATER SEEP AND SURFACE WATER SAMPLE LOCATIONS

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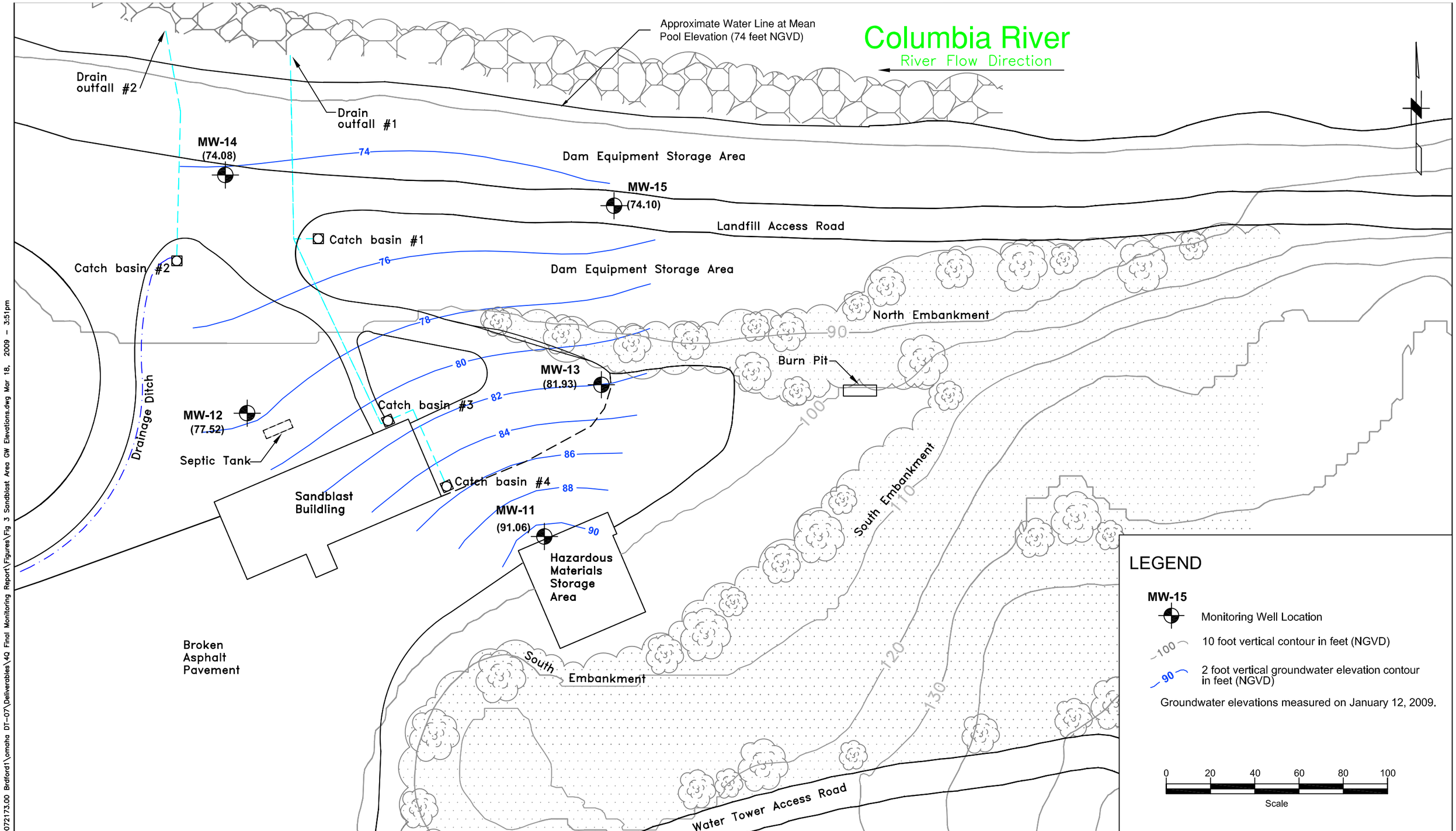

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SANDBLAST AREA
GROUNDWATER ELEVATIONS

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Table 1
Groundwater Levels
Bradford Island - Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	Groundwater Elevation (ft NGVD)			
	1st Qtr[1]	2nd Qtr[2]	3rd Qtr[3]	4rd Qtr[4]
Landfill AOPC				
MW-1	78.38	77.74	78.28	78.08
MW-2	106.31	106.46	106.56	107.12
MW-3	101.75	97.91	97.16	102.73
MW-4	101.43	97.98	97.24	102.32
MW-5	96.83	94.74	93.34	97.26
MW-6	96.82	94.78	93.39	97.30
MW-7	98.17	97.25	97.71	98.59
MW-8	73.66	88.63	88.52	90.13
MW-9	101.69	99.17	99.04	102.56
Reference Area				
MW-10	112.75	107.26	104.29	113.68
Sandblast Area AOPC				
MW-11	91.71	90.07	90.72	91.06
MW-12	76.54	74.57	76.26	77.52
MW-13	81.2	80.47	80.5	81.93
MW-14	73.73	73.06	75.9	74.08
MW-15	73.81	73.05	75.96	74.10

Notes:

[1] = Depths to groundwater were measured over the course of one week (April 14 to 18, 2008), immediately prior to sampling each well.

[2] = Depths to groundwater measured on 7/14/2008.

[3] = Depth of groundwater measured on 10/20/2008.

[4] = Depth of groundwater measured on 1/12/2009.

AOPC **=** area of potential concern

ft NGVD 29 = feet National Geodetic Vertical Datum 1929

Table 2
Groundwater Field Parameters
Bradford Island - Upland OU Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (DO) (mg/L)	pH	ORP (mV)	Turbidity
Landfill AOPC						
MW-1[1]	11.90	2.026	2.45	8.37	148.3	60
MW-2	8.69	0.403	3.52	8.43	172.7	12.9
MW-3	10.79	0.114	2.81	6.01	47.2	2.8
MW-4	9.32	0.587	0.48	5.81	259.2	1.1
MW-5	10.99	0.664	0.30	6.49	-64.1	4.1
MW-6	9.96	0.814	0.21	6.69	-71.4	3.2
MW-7	10.57	0.502	0.70	7.98	-213.8	11
MW-8	11.05	3.763	0.81	7.98	189.7	12
MW-9	7.28	0.162	2.17	5.52	320.5	96
Reference Area						
MW-10	8.69	0.233	0.57	8.11	-108.2	2.0
Sandblast Area AOPC						
MW-11	11.45	0.428	3.88	8.35	126.6	5.4
MW-12	10.84	0.242	0.83	6.29	117.8	2.5
MW-13	10.91	0.348	2.43	8.21	-214.7	1.2
MW-14	11.69	0.214	5.24	6.71	273.7	1.6
MW-15	9.75	0.222	8.17	6.52	282.4	1.6
Seep						
S2	9.99	0.227	5.48	7.85	-108.3	7.9
S4	10.78	0.602	7.02	7.10	-86.8	22
Surface Water						
S2	6.03	0.155	11.80	7.19	-106.7	4.3
S4	5.41	0.177	9.06	7.75	-117.6	9.0

Notes:
Readings shown are final readings recorded prior to sampling
[1] = Limited water volume. The well was pumped dry, allowed to recharge over night and then sampled for a limited analyte list.
AOPC = area of potential concern
ORP = Oxidation Reduction Potential
°C = degrees Celsius
mS/cm = micro siemen per centimeter
mg/L = milligram per liter
mV = millivolt

Table 3
Analytical Results for Landfill Area Wells
Bradford Island - Upland OU Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	MW-01	MW-01	MW-01	MW-01	MW-02	MW-02	MW-02	MW-02	MW-03	MW-03	MW-03	MW-03	MW-04	MW-04	MW-04	MW-04	Most Conservative Screening Criteria[1]	Maximum Concentration Reference Area Well [2]
Screen Interval (feet bgs)	19.84-29.84	19.84-29.84	19.84-29.84	19.84-29.84	22.21-32.21	22.21-32.21	22.21-32.21	22.21-32.21	10.99-20.99	10.99-20.99	10.99-20.99	10.99-20.99	8.21-28.21	8.21-28.21	8.21-28.21	8.21-28.21		
URS ID	080416MW1GW	080718MW1GW	081024MW1GW	090115MW1GW	080416MW2GW	080715MW2GW	081022MW2GW	090113MW2GW	080417MW3GW	080717MW3GW	081023MW3GW	090113MW3GW	080417MW4GW	080717MW4GW	081023MW4GW	090114MW4GW		
Sample Date	04/16/08	07/18/08	10/24/08	01/15/09	04/16/08	07/15/08	10/22/08	01/13/09	04/17/08	07/17/08	10/23/08	01/13/09	04/17/08	07/17/08	10/23/08	01/14/09		
Quarter	1st	2nd[3]	3rd[3]	4th[3]	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th		1st/2nd/3rd/4th
Total Petroleum Hydrocarbons per NWTPH Gx/Dx Methods (µg/L)																		
Gasoline Range Organics	250 U	250 U	**14 J**	250 U	250 U	250 U	250 U	250 U	**18 J**	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100	250 U
Diesel Range Organics	110 U	-	**480**	-	120 U	110 U	120 U	**19 J**	110 U	110 U	**13 J**	**23 J**	110 U	**130**	**120**	**210**	88	130 U
Residual Range Organics	110 U	-	**200**	-	120 U	110 U	120 U	**57 J**	110 U	110 U	110 U	**51 J**	110 U	140 U	**160**	**160**	290	130 U
VOCs per EPA Method 8260B (µg/L)																		
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.2**	**0.1 J**	0.5 U	**3.7**	0.18	0.5 U
Tetrachloroethene (PCE)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**6.8**	**7.2**	**5.9**	**5.7**	**0.25 J**	0.5 U	0.5 U	**0.23 J**	0.091	0.5 U
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.41 J**	**0.33 J**	0.5 U	0.025	0.5 U
SVOCs and Pesticides per EPA Method 8270C (µg/L)																		
1,4-Dichlorobenzene	0.21 U	-	-	-	0.2 U	0.2 U	0.22 UJ	0.23 U	0.21 U	0.22 U	0.21 UJ	0.21 U	0.22 U	0.19 U	0.21 UJ	0.24 U	0.480	0.23 UJ
4-Nitrophenol	2.1 U	-	-	-	2 U	2 U	2.2 U	2.3 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U	1.9 U	2.1 U	2.4 U	150	**0.025 J**
Phenanthrene	0.21 U	-	-	-	0.2 U	0.2 U	0.22 U	0.23 U	0.21 U	0.22 U	0.21 U	0.21 U	0.22 U	0.19 U	0.21 U	0.24 U	NE	0.23 U
Phenol	0.53 U	-	-	-	0.49 U	0.5 U	0.54 U	0.56 U	0.52 U	0.55 U	0.52 U	0.52 U	0.53 U	0.48 U	0.51 U	0.59 U	11,000	0.56 U
Butyltins per Krone, et. al. (µg/L)																		
Di-n-butyltin	0.05 U	-	-	-	0.05 U	0.05 U	0.05 U	0.05 U	**0.015 J**	**0.091**	0.05 U	0.05 U	0.05 U	**0.11 J**	0.05 U	0.05 U	NE	0.05 U
n-Butyltin	0.05 U	-	-	-	0.05 U	**0.029 J**	0.087 U	0.087 U	0.05 UJ	0.087 U	0.087 U	0.087 U	0.05 U	0.087 UJ	0.087 U	0.087 U	NE	**0.038 J**
Total Metals per EPA Methods 6010/6020 (µg/L)																		
Arsenic	**21.3**	**19.6**	**16.2**	**15.8**	**6.93**	**9.06**	**8.81**	**8.2**	**0.35 J**	**0.4 J**	**0.52**	0.5 U	**0.55**	**0.3 J**	**0.34**	0.5 U	0.018	**1.80**
Iron	**75.5**	**7,910**	**2,620**	**4,710**	**185**	**178**	**174**	**198**	**112**	57.8 U	**9.4**	60.6 U	**746**	**14,700**	**28,100**	**156**	300	**558 J**
Lead	**0.558**	**6.36**	**1.7**	**1.44**	**0.397**	**0.556**	**0.343**	**0.377**	**0.154**	0.056 U	0.02 U	**0.04**	**26.9**	**4.96**	**1.65**	**7.45**	2.5	**0.259**
Manganese	3.85 U	**291**	**69**	**77.6**	6.74 U	**4.5 J**	**2.5**	**3.25**	6.25 U	**4.2 J**	**0.81**	**2.07**	**53.2**	**780**	**1,260**	**36.8**	50	**262**
Dissolved Metals per EPA Methods 6010/6020 (µg/L) (Field Filtered)																		
Arsenic	**19.3**	**18.3**	-	**14.2**	**7.98**	**9.11**	**8.54**	**8.3**	0.5 U	**0.22 J**	**0.64**	0.5 U	0.5 U	**0.41 J**	**0.37**	0.5 U	0.018	**1.60**
Calcium	**42,000**	-	-	-	**9,510**	-	-	-	**12,300**	-	-	-	**98,000**	-	-	-	NE	**30,400**
Iron	14.6 U	**534**	-	**8.9 J**	**20.1**	20 U	**7.5**	20 U	**5.8 J**	20 U	20 U	20 U	**8.8 J**	**13,200**	**29,600**	27.7 U	300	**26.9**
Lead	**0.281**	**0.536**	-	**0.016 J**	0.05 U	0.052 U	0.023 U	**0.027 J**	**0.012 J**	0.03 U	0.02 U	0.03 U	**3.5**	**1.62**	**0.372**	**3.16**	2.5	**0.032 J**
Magnesium	**2,810**	-	-	-	**1,210**	-	-	-	**4,200**	-	-	-	**7,550**	-	-	-	NE	**8,180**
Manganese	0.28 U	-	-	**11.3**	**0.12**	-	0.4 U	**0.33**	**0.55**	-	0.04 U	**0.45**	**53.1**	-	**1,340**	**37.1**	50.0	**233**
Potassium	**4,620**	-	-	-	**5,020**	-	-	-	**808 J**	-	-	-	**3,750**	-	-	-	NE	**4,950**
Sodium	**355,000**	-	-	-	**77,400**	-	-	-	**4,100**	-	-	-	**4,040**	-	-	-	NE	**5,050**

Notes:
Bold = indicates detections above the quantification limit.
- = not analyzed
CAS = Columbia Analytical Services
DUP = field duplicate
mg/L = milligrams per liter
µg/L = micrograms per liter
MDL = Method detection limit
MRL = Method reporting limit
NE = Not Established
J = The result is an estimated concentration.
U = The analyte was not detected at or above the CAS MDL. The non-detect values reported in this table are CAS MRLs. If an analyte was detected above the MDL, but below the MRL, that analyte was qualified and flagged 'J'.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
= reported concentration exceeds screening criteria (organics) or exceeds both screening criteria and reference well concentration (Inorganics).
[1] = most conservative water quality criteria as identified in the Upland QAPP (URS, 2008a). Includes both Oregon Department of Environmental Quality (ODEQ) Risk-Based Criteria (RBCs) for ingestion and inhalation from tapwater, revision 3, October 2008 and EPA Regional Risk-Based Screening Levels, updated September 2008.
[2] = highest non-detect or detected value from 1st, 2nd, 3rd, and 4th quarter sampling events. Note that organic constituents were analyzed in the first quarter samples from MW-10.
[3] = MW-01 had insufficient sample volume during the 2nd, 3rd, and 4th quarters to complete the full analyte list, TPH-Gx, VOCs and Metals were given priority over the other constituents.
[4] = MW-09 was not analyzed during the 2nd and 3rd quarters due to insufficient sample volume.

Table 3
Analytical Results for Landfill Area Wells
Bradford Island - Upland OU Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	MW-05	MW-05	MW-05	MW-05	MW-06	MW-06	MW-06-DUP	MW-06	MW-06-DUP	MW-06	MW-06-DUP	Most Conservative Screening Criteria[1]	Maximum Concentration Reference Area Well [2]
Screen Interval (feet bgs)	10.36-35.36	10.36-35.36	10.36-35.36	10.36-35.36	25-30	25-30	25-30	25-30	25-30	25-30	25-30		
URS ID	080416MW5GW	080716MW5GW	081022MW5GW	090114MW5GW	080417MW6GW	080716MW6GW	080716MW21GW	081022MW6GW	081022MW26GW	090114MW6GW	090114MW26GW		
Sample Date	04/16/08	07/16/08	10/22/08	01/14/09	04/17/08	07/16/08	07/16/08	10/22/08	10/22/08	01/14/09	01/14/09		
Quarter	1st	2nd	3rd	4th	1st	2nd	2nd	3rd	3rd	4th	4th		1st/2nd/3rd/4th
Total Petroleum Hydrocarbons per NWTPH Gx/Dx Methods (µg/L)													
Gasoline Range Organics	**120 J**	**110 J**	**32 J**	**90 J**	**30 J**	**35 J**	**36 J**	**30 J**	**30 J**	**29 J**	**30 J**	100	250 U
Diesel Range Organics	**490**	**980**	**730**	**970**	**360**	**470**	**460**	**400**	**390**	**470**	**560**	88	130 U
Residual Range Organics	**180**	**370**	**260**	**330**	120 U	**230**	**230**	170 U	170 U	**130**	**150**	290	130 U
VOCs per EPA Method 8260B (µg/L)													
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18	0.5 U
Tetrachloroethene (PCE)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.091	0.5 U
Vinyl Chloride	**0.18 J**	**0.31 J**	**0.39 J**	**0.25 J**	**0.16 J**	**0.17 J**	**0.17 J**	**0.16 J**	**0.16 J**	**0.22 J**	**0.19 J**	0.025	0.5 U
SVOCs and Pesticides per EPA Method 8270C (µg/L)													
1,4-Dichlorobenzene	0.19 U	0.2 U	0.2 UJ	0.2 U	0.19 U	0.2 UJ	0.2 UJ	0.21 UJ	0.21 UJ	0.21 U	0.21 U	0.480	0.23 UJ
4-Nitrophenol	1.9 U	2 U	2 U	2 U	1.9 U	2 U	2 U	2.1 U	2.1 U	2.1 U	2.1 U	150	**0.025 J**
Phenanthrene	0.21	0.3	0.2 U	0.2 U	0.19 U	0.2 U	0.2 U	0.21 U	0.21 U	0.21 U	0.21 U	NE	0.23 U
Phenol	0.48 U	0.48 U	0.49 U	0.5 U	0.48 U	0.49 U	0.49 U	0.53 U	0.53 U	0.52 U	0.51 U	11,000	0.56 U
Butyltins per Krone, et. al. (µg/L)													
Di-n-butyltin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NE	0.05 U
n-Butyltin	0.05 U	0.087 U	0.087 U	0.087 U	0.05 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	NE	**0.038 J**
Total Metals per EPA Methods 6010/6020 (µg/L)													
Arsenic	**2.65**	**2.85**	**4.16**	**2.3**	**2.69**	**3.21**	**3.2**	**3.44**	**3.56**	**2.9**	**2.9**	0.018	**1.80**
Iron	**19,300**	**21,500**	**25,100**	**21,300**	**25,100**	**23,700**	**23,900**	**26,500**	**25,200**	**28,700**	**27,600**	300	**558 J**
Lead	**0.442**	0.074 U	0.068 U	**0.102**	**0.056**	0.03 U	0.03 U	0.02 U	0.02 U	0.03 U	0.03 U	2.5	**0.259**
Manganese	**2,210**	**2,460**	**2,840**	**4,220**	**3,280**	**2,910**	**2,950**	**3,180**	**3,040**	**5,140**	**5,630**	50	**262**
Dissolved Metals per EPA Methods 6010/6020 (µg/L) (Field Filtered)													
Arsenic	**2.52**	**2.97**	**3.68**	**2.3**	**2.33**	**3.28**	**3.07**	**3.46**	**3.62**	**2.9**	**2.9**	0.018	**1.60**
Calcium	**66,300**	-	-	-	**76,600**	-	-	-	-	-	-	NE	**30,400**
Iron	**18,800**	**19,800**	**24,400**	**19,900**	**24,200**	**23,200**	**22,300**	**25,400**	**25,900**	**27,400**	**26,900**	300	**26.9**
Lead	**0.014 J**	0.03 U	0.02 U	**0.013 J**	**0.017 J**	0.03 U	0.03 U	0.02 U	0.02 U	0.03 U	0.03 U	2.5	**0.032 J**
Magnesium	**21,800**	-	-	-	**25,800**	-	-	-	-	-	-	NE	**8,180**
Manganese	**2,200**	-	**2,760**	**3,790**	**3,200**	-	-	**3,110**	**3,120**	**6,080**	**5,010**	50.0	**233**
Potassium	**7,310**	-	-	-	**7,240**	-	-	-	-	-	-	NE	**4,950**
Sodium	**15,400**	-	-	-	**41,300**	-	-	-	-	-	-	NE	**5,050**

Notes:
Bold = indicates detections above the quantification limit.
- = not analyzed
CAS = Columbia Analytical Services
DUP = field duplicate
mg/L = milligrams per liter
µg/L = micrograms per liter
MDL = Method detection limit
MRL = Method reporting limit
NE = Not Established
J = The result is an estimated concentration.
U = The analyte was not detected at or above the CAS MDL. The non-detect values reported in this table are CAS MRLs. If an analyte was detected above the MDL, but below the MRL, that analyte was qualified and flagged 'J'.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
= reported concentration exceeds screening criteria (organics) or exceeds both screening criteria and reference well concentration (Inorganics).
[1] = most conservative water quality criteria as identified in the Upland QAPP (URS, 2008a). Includes both Oregon Department of Environmental Quality (ODEQ) Risk-Based Criteria (RBCs) for ingestion and inhalation from tapwater, revision 3, October 2008 and EPA Regional Risk-Based Screening Levels, updated September 2008.
[2] = highest non-detect or detected value from 1st, 2nd, 3rd, and 4th quarter sampling events. Note that organic constituents were analyzed in the first quarter samples from MW-10.
[3] = MW-01 had insufficient sample volume during the 2nd, 3rd, and 4th quarters to complete the full analyte list, TPH-Gx, VOCs and Metals were given priority over the other constituents.
[4] = MW-09 was not analyzed during the 2nd and 3rd quarters due to insufficient sample volume.

Table 3
Analytical Results for Landfill Area Wells
Bradford Island - Upland OU Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	MW-07	MW-07 DUP	MW-07	MW-07	MW-07	MW-08	MW-08	MW-08	MW-08	MW-09[4]	MW-09[4]	Most Conservative Screening Criteria[1]	Maximum Concentration Reference Area Well [2]
Screen Interval (feet bgs)	5.24-30.24	5.24-30.24	5.24-30.24	5.24-30.24	5.24-30.24	52.99-57.99	52.99-57.99	52.99-57.99	52.99-57.99	15.18-20.18	15.18-20.18		
URS ID	080416MW7GW	080416MW22GW	080717MW07GW	081021MW7GW	090112MW7GW	080418MW8GW	080716MW8GW	081023MW8GW	090115MW8GW	080417MW9GW	090114MW9GW		
Sample Date	04/16/08	04/16/08	07/17/08	10/21/08	01/12/09	04/18/08	07/16/08	10/23/08	01/15/09	04/17/08	01/14/09		
Quarter	1st	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	4th		1st/2nd/3rd/4th
Total Petroleum Hydrocarbons per NWTPH Gx/Dx Methods (µg/L)													
Gasoline Range Organics	**13 J**	**13 J**	250 U	250 U	250 U	250 U	**14 J**	**13 J**	250 U	250 U	250 U	100	250 U
Diesel Range Organics	120 U	110 U	110 U	**97 J**	**77 J**	**15 J**	**110**	**440**	**53 J**	**65 J**	**110 J**	88	130 U
Residual Range Organics	120 U	110 U	110 U	130 U	**80 J**	120 U	100 U	**150**	**52 J**	**130**	**130**	290	130 U
VOCs per EPA Method 8260B (µg/L)													
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.22 J**	**0.45 J**	0.18	0.5 U
Tetrachloroethene (PCE)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.6**	**4.8**	0.091	0.5 U
Vinyl Chloride	**0.94**	**0.97**	**0.88**	**0.34 J**	**0.68**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.025	0.5 U
SVOCs and Pesticides per EPA Method 8270C (µg/L)													
1,4-Dichlorobenzene	0.23 U	0.22 U	0.2 U	0.22 U	0.22 U	0.23 U	0.19 U	0.19 UJ	0.2 U	0.2 U	0.22 U	0.480	0.23 UJ
4-Nitrophenol	2.3 U	2.2 U	2 U	2.2 U	2.2 U	2.3 U	1.9 U	1.9 U	2 U	2 U	2.2 U	150	**0.025 J**
Phenanthrene	0.23 U	0.22 U	0.2 U	0.22 U	0.22 U	0.23 U	0.19 U	3.9	0.2 U	0.2 U	0.22 U	NE	0.23 U
Phenol	0.56 U	0.53 U	0.49 U	0.55 U	0.53 U	0.57 U	0.48 U	0.48 U	0.49 U	0.5 U	0.53 U	11,000	0.56 U
Butyltins per Krone, et. al. (µg/L)													
Di-n-butyltin	0.05 U	0.05 U	**0.13 J**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.013 J**	0.05 U	0.05 U	NE	0.05 U
n-Butyltin	0.05 U	0.05 U	0.087 UJ	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	NE	**0.038 J**
Total Metals per EPA Methods 6010/6020 (µg/L)													
Arsenic	**15.8**	**16**	**16.8**	**17.4**	**18.7**	**6.86**	**5.76**	**5.4**	**7.2**	0.72 U	0.5 U	0.018	**1.80**
Iron	**29,300**	**28,700**	**30,700**	**36,600**	**35,700**	**854**	**631**	34 U	**112**	**2,550**	**532**	300	**558 J**
Lead	**0.258**	**0.285**	0.136 U	0.038 U	**0.129**	**0.463**	**0.54**	**0.338**	**0.14**	**0.718**	**0.871**	2.5	**0.259**
Manganese	**1,430**	**1,460**	**1,710**	**2,000**	**3,300**	**265**	**173**	**172**	**270**	**103**	**10**	50	**262**
Dissolved Metals per EPA Methods 6010/6020 (µg/L) (Field Filtered)													
Arsenic	**10.7**	**10.6**	**14.7**	**15.7**	**16.7**	**7.92**	**5.65**	**5.24**	**7.1**	**1.4**	0.5 U	0.018	**1.60**
Calcium	**42,600**	**43,600**	-	-	-	**172,000**	-	-	-	**11,600**	-	NE	**30,400**
Iron	**25,300**	**26,000**	**27,900**	**35,400**	**33,800**	**6 J**	20 U	**9**	20 U	**176**	20 U	300	**26.9**
Lead	0.05 U	0.05 U	0.03 U	0.02 U	0.03 U	0.046 U	**0.046**	**0.227**	**0.013 J**	**0.107**	**0.044**	2.5	**0.032 J**
Magnesium	**16,800**	**16,900**	-	-	-	**13,000**	-	-	-	**2,560**	-	NE	**8,180**
Manganese	**1,440**	**1,470**	-	**1,940**	**3,410**	**238**	-	**172**	**266**	**49**	**10**	50.0	**233**
Potassium	**3,170**	**3,220**	-	-	-	**12,900**	-	-	-	**2,680**	-	NE	**4,950**
Sodium	**7,180**	**7,500**	-	-	-	**740,000**	-	-	-	**11,800**	-	NE	**5,050**

Notes:
Bold = indicates detections above the quantification limit.
- = not analyzed
CAS = Columbia Analytical Services
DUP = field duplicate
mg/L = milligrams per liter
µg/L = micrograms per liter
MDL = Method detection limit
MRL = Method reporting limit
NE = Not Established
J = The result is an estimated concentration.
U = The analyte was not detected at or above the CAS MDL. The non-detect values reported in this table are CAS MRLs. If an analyte was detected above the MDL, but below the MRL, that analyte was qualified and flagged 'J'.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
= reported concentration exceeds screening criteria (organics) or exceeds both screening criteria and reference well concentration (Inorganics).
[1] = most conservative water quality criteria as identified in the Upland QAPP (URS, 2008a). Includes both Oregon Department of Environmental Quality (ODEQ) Risk-Based Criteria (RBCs) for ingestion and inhalation from tapwater, revision 3, October 2008 and EPA Regional Risk-Based Screening Levels, updated September 2008.
[2] = highest non-detect or detected value from 1st, 2nd, 3rd, and 4th quarter sampling events. Note that organic constituents were analyzed in the first quarter samples from MW-10.
[3] = MW-01 had insufficient sample volume during the 2nd, 3rd, and 4th quarters to complete the full analyte list, TPH-Gx, VOCs and Metals were given priority over the other constituents.
[4] = MW-09 was not analyzed during the 2nd and 3rd quarters due to insufficient sample volume.

Table 4
Analytical Results for Seep and Surface Water Samples Associated with the Landfill Area Wells
Bradford Island - Upland OU Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	S2 - Seep	S2 - Surface	S2-Seep	S2-Surface	S4 - Seep	S4 - Surface	S4-Seep	S4-Surface	Most Conservative Screening Criteria[1]	Maximum Concentration Reference Area Well [2]
URS ID	08041852SP	08041852SW	090111S2SP	090111S2SW	08041754 SP	08041754 SW	090111S4SP	090111S4SW		
Sample Date	04/18/08	04/18/08	01/11/09	01/11/09	04/17/08	04/17/08	01/11/09	01/11/09		
Quarter	1st	1st	4th	4th	1st	1st	4th	4th		1st/2nd/3rd/4th
Total Petroleum Hydrocarbons per NWTPH Gx/Dx Methods (µg/L)										
Gasoline Range Organics	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100	250 U
Diesel Range Organics	120 U	110 U	**29 J**	**26 J**	120 U	120 U	**130**	**30 J**	88	130 U
Residual Range Organics	120 U	110 U	110 U	100 U	120 U	120 U	**130**	100 U	290	130 U
VOCs per EPA Method 8260B (µg/L)										
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	**0.74**	0.5 U	**2.8**	0.5 U	0.18	0.5 U
Tetrachloroethene (PCE)	**0.15 J**	0.5 U	0.5 U	0.5 U	**1.7**	0.5 U	**4.4**	0.5 U	0.091	0.5 U
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.025	0.5 U
SVOCs and Pesticides per EPA Method 8270C (µg/L)										
1,4-Dichlorobenzene	0.23 U	0.2 U	0.21 U	0.2 U	0.2 U	0.21 U	0.21 U	0.2 U	0.480	0.23 UJ
4-Nitrophenol	2.3 U	2.0 U	2.1 U	2.0 U	2.0 U	2.1 U	2.1 U	2.0 U	150	**0.025 J**
Phenanthrene	0.23 U	0.2 U	0.21 U	0.2 U	0.2 U	0.21 U	0.21 U	0.2 U	NE	0.23 U
Phenol	0.57 U	0.48 U	0.52 U	0.49 U	0.49 U	0.53 U	0.51 U	0.5 U	11,000	0.56 U
Butyltins per Krone, et. al. (µg/L)										
Di-n-butyltin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NE	0.05 U
n-Butyltin	0.087 U	0.087 U	0.087 U	0.087 U	0.050 U	0.050 U	0.087 U	0.087 U	NE	**0.038 J**
Total Metals per EPA Methods 6010/6020 (µg/L)										
Arsenic	1.01 U	1.1 U	**0.5**	**0.9**	**12.8**	**1.17**	**1.1**	**0.8**	0.018	**1.8**
Iron	**5,300**	**251**	**433**	**167**	**121,000**	**446**	**271**	**188**	300	**558 J**
Lead	**2.23**	**0.243**	**0.342**	**0.105**	**25.7**	**0.407**	**0.113**	**0.289**	2.5	**0.259**
Manganese	**75**	11.1 U	**15.5**	**6.37**	**3,240**	**13.6**	**8.9**	**5.9**	50	**262**
Dissolved Metals per EPA Methods 6010/6020 (µg/L) (Field Filtered)										
Arsenic	0.52 U	**1.01**	**0.5**	**0.8**	**1.0**	**0.87**	**1.0**	**0.8**	0.018	**1.6**
Calcium	**22,600**	**20,500**	-	-	**76,400**	**19,900**	-	-	NE	**30,400**
Iron	**14.9 J**	20 U	20 U	20 U	**9.7 J**	**9.2 J**	20 U	20 U	300	**26.9**
Lead	**0.065**	**0.016 J**	0.03 U	**0.01 J**	**0.018 J**	0.05 U	**0.008 J**	**0.01 J**	2.5	**0.032 J**
Magnesium	**5070**	**6330**	-	-	**16600**	**6190**	-	-	NE	**8,180**
Manganese	**5.41**	**0.49**	0.16 U	**1.01**	**1.99**	**0.56**	0.14 U	**0.93**	50.0	**233**
Potassium	**771 J**	**1,490 J**	-	-	**4,160**	**1,510 J**	-	-	NE	**4,950**
Sodium	**19,700**	**7,900**	-	-	**6,680**	**7,630**	-	-	NE	**5,050**

Notes:

Bold = indicates detections above the quantification limit.
- = not analyzed
CAS = Columbia Analytical Services
µg/L = micrograms per liter
MDL = Method detection limit
MRL = Method reporting limit
NE = Not Established
J = The result is an estimated concentration.
U = The analyte was not detected at or above the CAS MDL. The non-detect values reported in this table are CAS MRLs. If an analyte was detected above the MDL, but below the MRL, that analyte was qualified and flagge
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
= reported concentration exceeds screening criteria (organics) or exceeds *both* screening criteria and reference well concentration (Inorganics).

[1] = most conservative water quality criteria as identified in the Upland QAPP (URS, 2008a). Includes both Oregon Department of Environmental Quality (ODEQ) Risk-Based Criteria (RBCs) for ingestion and inhalation from tapwater, revision 3, October 2008 and EPA Regional Risk-Based Screening Levels, updated September 2008.

[2] = highest non-detect or detected value from 1st and 4th quarter sampling events.

Table 5
Analytical Results for Sandblast Area Wells
Bradford Island - Upland OU Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	MW-11	MW-11 DUP	MW-11	MW-11	MW-11 DUP	MW-11	MW-11-DUP	MW-12	MW-12	MW-12	MW-12 (Teflon)[3]	MW-12	Most Conservative Screening Criteria[1]	Maximum Concentration Reference Area Well [2]
Screen Interval (feet bgs)	26-36	26-36	26-36	26-36	26-36	26-36	26-36	16-26	16-26	16-26	16-26	16-26		
Sample ID	080415MW11GW	080415MW20GW	080715MW11GW	081020MW11GW	081020MW21GW	090112MW11GW	090112MW21GW	080415MW12GW	080715MW12GW	081021MW12GW	081021MW12GW	090113MW12GW		
Sample Date	04/15/08	04/15/08	07/15/08	10/20/08	10/20/08	01/12/09	01/12/09	04/15/08	07/15/08	10/21/08	10/21/08	01/13/09		
Quarter	1st	1st	2nd	3rd	3rd	4th	4th	1st	2nd	3rd	3rd	4th		1st/2nd/3rd/4th
Total Petroleum Hydrocarbons per NWTPH Gx/Dx Methods (µg/L)														
Gasoline Range Organics	**14 J**	**13 J**	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100	250 U
Diesel Range Organics	110 U	110 U	**18 J**	110 U	100 U	110 U	110 U	120 U	**17 J**	110 U	110 U	110 U	88	130 U
Residual Range Organics	110 U	120 U	110 U	110 U	100 U	110 U	110 U	120 U	110 U	110 U	110 U	**48 J**	290	130 U
VOCs per EPA Method 8260B (µg/L)														
2,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	1.3 U	1.3 U	1.3 U	NE	-
Chloroform	**0.18 J**	**0.18 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	1.3 U	1.3 U	1.3 U	0.18	0.5 U
cis-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**550**	**660**	**600**	**490**	**530**	61	-
Tetrachloroethene (PCE)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**5.1**	**5.1**	**6.2**	**5**	**5.8**	0.091	0.5 U
Trichloroethene (TCE)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.2**	**3.0**	**3.4**	**3.2**	**3.0**	0.029	-
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**4.1**	**0.9**	**0.48**	**0.63**	**1.6**	0.025	0.5 U
SVOCs per EPA Method 8270C (µg/L)														
Benzo(b)fluoranthene	0.21 U	-	0.2 U	0.2 U	0.2 U	0.2 U	0.22 U	**0.018 J**	0.2 U	0.2 U	0.22 U	0.2 U	0.0038	**0.025 J**
Benzo(k)fluoranthene	0.21 U	-	0.2 U	0.2 U	0.2 U	0.2 U	0.22 U	0.21 U	0.2 U	0.2 U	0.22 U	0.2 U	0.0038	0.23 U
Phenanthrene	0.21 U	-	0.2 U	0.2 U	0.2 U	0.2 U	0.22 U	0.21 U	0.2 U	0.2 U	0.22 U	0.2 U	NE	0.23 U
Butyltins per Krone, et. al. (µg/L)														
n-Butyltin	**0.026 J**	-	0.087 U	0.087 U	0.087 U	0.087 U	0.087 U	0.05 U	0.087 U	0.087 U	0.087 U	0.087 U	NE	**0.038 J**
Total Metals per EPA Methods 6010/6020 (µg/L)														
Arsenic	**11.6**	-	**1.13**	**0.65**	**0.73**	**0.6**	**0.6**	**0.61**	**0.76**	**0.71**	**0.86**	**0.6**	0.018	**1.80**
Iron	**1,500**	-	**179**	**81**	**97**	**152**	**144**	50 U	**108**	**14**	**123**	20 U	300	**558 J**
Vanadium	**5.9 J**	-	**0.86**	**0.31**	**0.32**	**0.34**	**0.39**	**1.1 J**	**1.27**	**0.96**	**0.83**	**1.43**	180	**1.7 J**
Dissolved Metals per EPA Methods 6010/6020 (µg/L)														
Arsenic	**8.99**	-	**1.11**	**0.56**	**0.66**	**0.6**	**0.5**	**0.61**	**0.87**	**0.62**	**0.74**	**0.8**	0.018	**1.49 J**
Calcium	**6,690**	-	-	-	-	-	-	**30,900**	-	-	-	-	NE	**30,400**
Iron	20 U	-	**52.5**	20 U	20 U	20 U	20 U	20 U	**7.1 J**	20 U	**161**	20 U	300	**26.9**
Magnesium	**883**	-	-	-	-	-	-	**8,430**	-	-	-	-	NE	**8,180**
Potassium	**2,610**	-	-	-	-	-	-	**2,260**	-	-	-	-	NE	**4,950**
Sodium	**89,400**	-	-	-	-	-	-	**13,400**	-	-	-	-	NE	**5,050**
Vanadium	**3.1 J**	-	0.69 U	**0.19**	**0.22**	**0.15 J**	**0.14 J**	10 U	**1.05**	**0.82**	**0.56**	**1.17**	180	10 U

Notes:
Bold = indicates detections above the quantification limit.
- = not analyzed
CAS = Columbia Analytical Services
DUP = field duplicate
mg/L = milligrams per liter
µg/L = micrograms per liter
MDL = Method detection limit
MRL = Method reporting limit
NE = Not Established
J = The result is an estimated concentration.
U = The analyte was not detected at or above the CAS MDL. The non-detect values reported in this table are CAS MRLs. If an analyte was detected above the MDL, but below the MRL, that analyte was qualified and flagged 'J'.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
= reported concentration exceeds screening criteria (organics) or exceeds *both* screening criteria and reference well concentration (Inorganics).
[1] = most conservative water quality criteria as identified in the Upland QAPP (URS, 2008a). Updated to include both Oregon Department of Environmental Quality (ODEQ) Risk-Based Criteria (RBCs) for ingestion and inhalation from tapwater, revision 3, October 2008 and EPA Regional Risk-Based Screening Levels, updated September 2008.
[2] = highest non-detect or detected value from 1st, 2nd, 3rd, and 4th quarter sampling events.
[3] = In October 2008, monitoring well MW-12 was sampled a second time using Teflon tubing to evaluate sampling procedures.

Table 5
Analytical Results for Sandblast Area Wells
Bradford Island - Upland OU Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	MW-13	MW-13	MW-13-DUP	MW-13	MW-13	MW-14	MW-14	MW-14	MW-14	MW-15	MW-15	MW-15	MW-15	Most Conservative Screening Criteria[1]	Maximum Concentration Reference Area Well [2]
Screen Interval (feet bgs)	26-36	26-36	26-36	26-36	26-36	13-23	13-23	13-23	13-23	12-22	12-22	12-22	12-22		
Sample ID	080414MW13GW	080714MW13GW	080714MW23GW	081020MW13GW	090112MW13GW	080414MW14GW	080714MW14GW	081021MW14GW	090113MW14GW	080414MW15GW	080714MW15GW	081021MW15GW	090113MW15GW		
Sample Date	04/14/08	07/14/08	07/14/08	10/20/08	01/12/09	04/14/08	07/14/08	10/21/08	01/13/09	04/14/08	07/14/08	10/21/08	01/13/09		
Quarter	1st	2nd	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th		1st/2nd/3rd/4th
Total Petroleum Hydrocarbons per NWTPH Gx/Dx Methods (µg/L)															
Gasoline Range Organics	**15 J**	**33 J**	**14 J**	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100	250 U
Diesel Range Organics	110 U	100 U	100 U	110 U	120 U	100 U	100 U	110 U	120 U	120 U	110 U	110 U	120 U	88	130 U
Residual Range Organics	110 U	100 U	100 U	110 U	120 U	100 U	100 U	110 U	120 U	120 U	110 U	110 U	120 U	290	130 U
VOCs per EPA Method 8260B (µg/L)															
2,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NE	-
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18	0.5 U
cis-1,2-Dichloroethene	**2**	**2.1**	**2.1**	**2.5**	**2.4**	**46**	**10**	**0.62**	**50**	**0.44 J**	**0.17 J**	**0.08 J**	0.5 U	61	-
Tetrachloroethene (PCE)	**0.36 J**	**0.49 J**	**0.45 J**	**0.66**	**0.71**	**1.5**	**1.1**	**0.38 J**	**1.8**	**1.8**	**1.6**	**2.1**	**1.1**	0.091	0.5 U
Trichloroethene (TCE)	**1.9**	**3.0**	**2.9**	**3.4**	**3.1**	**0.82**	**0.61**	**0.14 J**	**0.89**	**0.27 J**	**0.23 J**	**0.25 J**	0.5 U	0.029	-
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.025	0.5 U
SVOCs per EPA Method 8270C (µg/L)															
Benzo(b)fluoranthene	0.23 U	0.2 U	0.2 U	0.19 U	0.22 U	0.22 U	0.2 U	0.2 U	0.23 U	0.21 U	0.22 U	0.2 U	0.22 U	0.0038	**0.025 J**
Benzo(k)fluoranthene	0.23 U	0.2 U	0.2 U	0.19 U	0.22 U	0.22 U	0.2 U	0.2 U	0.23 U	0.21 U	0.22 U	0.2 U	0.22 U	0.0038	0.23 U
Phenanthrene	**0.084 J**	0.2 U	0.2 U	0.19 U	0.22 U	0.22 U	0.2 U	0.2 U	0.23 U	0.21 U	0.22 U	0.2 U	0.22 U	NE	0.23 U
Butyltins per Krone, et. al. (µg/L)															
n-Butyltin	**0.014 J**	0.087 U	0.087 U	0.087 U	0.087 U	0.05 U	0.087 U	0.087 U	0.087 U	0.05 U	0.087 U	0.087 U	0.087 U	NE	**0.038 J**
Total Metals per EPA Methods 6010/6020 (µg/L)															
Arsenic	**1.86**	**0.82**	**0.75**	**0.86**	**1.0**	**0.79**	**1.02**	**1.12**	**1.0**	**0.54**	**0.75**	**0.59**	**0.6**	0.018	**1.80**
Iron	56 U	**219**	**224**	**312**	**265**	**188**	**26**	**13**	43 U	**163**	**190**	**37**	**91**	300	**558 J**
Vanadium	**1 J**	0.2 U	0.2 U	0.2 U	**0.13 J**	**1.8 J**	**1.64**	**2.0**	**1.72**	**1.4 J**	**1.68**	**1.3**	**1.57**	180	**1.7 J**
Dissolved Metals per EPA Methods 6010/6020 (µg/L)															
Arsenic	**1.79**	**0.72**	**0.84**	**0.9**	**0.9**	**0.84**	**1.01**	**0.97**	**0.9**	**0.51**	**0.63**	**0.62**	**0.6**	0.018	**1.49 J**
Calcium	**44,300**	-	-	-	-	**22,700**	-	-	-	**28,200**	-	-	-	NE	**30,400**
Iron	**12.4 J**	**201**	**203**	**270**	**202**	20 U	20 U	20 U	20 U	**6.4 J**	20 U	20 U	20 U	300	**26.9**
Magnesium	**14,000**	-	-	-	-	**6,140**	-	-	-	**7,120**	-	-	-	NE	**8,180**
Potassium	**1,480 J**	-	-	-	-	**1,170 J**	-	-	-	**782 J**	-	-	-	NE	**4,950**
Sodium	**18,400**	-	-	-	-	**6,860**	-	-	-	**7,620**	-	-	-	NE	**5,050**
Vanadium	**1.1 J**	0.2 U	0.2 U	0.2 U	0.2 U	**1.1 J**	**1.68**	**1.98**	**1.64**	**0.9 J**	**1.19**	**1.22**	**1.41**	180	10 U

Notes:
Bold = indicates detections above the quantification limit.
- = not analyzed
CAS = Columbia Analytical Services
DUP = field duplicate
mg/L = milligrams per liter
µg/L = micrograms per liter
MDL = Method detection limit
MRL = Method reporting limit
NE = Not Established
J = The result is an estimated concentration.
U = The analyte was not detected at or above the CAS MDL. The non-detect values reported in this table are CAS MRLs. If an analyte was detected above the MDL, but below the MRL, that analyte was qualified and flagged 'J'.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds

[1] = most conservative water quality criteria as identified in the Upland QAPP (URS, 2008a). Updated to include both Oregon Department of Environmental Quality (ODEQ) Risk-Based Criteria (RBCs) for ingestion and inhalation from tapwater, revision 3, October 2008 and EPA Regional Risk-Based Screening Levels, updated September 2008.
[2] = highest non-detect or detected value from 1st, 2nd, 3rd, and 4th quarter sampling events.
[3] = In October 2008, monitoring well MW-12 was sampled a second time using Teflon tubing to evaluate sampling procedures.

Table 6
Analytical Results for Reference Area Well
Bradford Island - Upland OU Remedial Investigation
4th Quarter Sampling Event - January 2009

Well ID	MW-10	MW-10 DUP	MW-10	MW-10 DUP	MW-10	MW-10 DUP	MW-10	MW-10-DUP	Most Conservative Screening Criteria[1]	Maximum Concentration
Screen Interval (feet bgs)	47-57	47-57	47-57	47-57	47-57	47-57	47-57	47-57		
Sample ID	080415MW10GW	080415MW21GW	080716MW10GW	080716MW22GW	081022MW10GW	081022MW20GW	090113MW10GW	090113MW20GW		
Sample Date	04/15/08	04/15/08	07/16/08	07/16/08	10/22/08	10/22/08	01/13/09	01/13/09		
Quarter	1st	1st	2nd	2nd	3rd	3rd	4th	4th		1st/2nd/3rd/4th
Total Metals per EPA Methods 6010/6020 (µg/L)										
Aluminum	**212**	**209**	**45.9**	**50.9**	**149**	**198**	**7.6**	**5.3**	36,500	**212**
Antimony	**0.082**	**0.078**	**0.029 J**	**0.031 J**	0.017 U	**0.025**	0.09 U	**0.071 J**	5.60	**0.082**
Arsenic	1.32 U	1.32 U	**1.16**	**1.29**	**1.56**	**1.8**	**1.6**	**1.6**	0.018	**1.8**
Barium	**26.5**	**26.5**	**20**	**21.6**	**18.6**	**18.4**	**17.1**	**17.4**	1,000	**26.5**
Beryllium	**0.01 J**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	5.30	**0.01 J**
Cadmium	0.057 U	0.074 U	0.02 U	0.02 U	**0.052**	**0.046**	0.02 U	0.02 U	0.25	**0.052**
Calcium	**29,200**	**29,500**	**31,000**	**30,900**	**28,800**	**29,500**	**30,800 J**	**30,300 J**	NE	**31,000**
Chromium	0.57 U	0.57 U	**0.21**	**0.21**	**3.13 J**	**4.83 J**	**0.14 J**	**0.15 J**	11 (VI)	**4.83 J**
Cobalt	**0.295**	**0.295**	**0.162**	**0.178**	**0.299**	**0.347**	**0.071**	**0.071**	11	**0.347**
Copper	0.67 U	0.7 U	**0.23**	**0.29**	**0.99**	**1.25**	**0.13**	**0.12**	9	**1.25**
Iron	436 U	434 U	**112**	**120**	**344 J**	**558 J**	37.8 U	37 U	300	**558 J**
Lead	0.363 U	0.585 U	**0.118**	**0.142**	**0.236**	**0.259**	**0.033**	**0.17**	2.5	**0.259**
Magnesium	**8,290**	**8,340**	**8,150**	**8,130**	**7,520**	**7,720**	**7,780**	**7,640**	NE	**8,340**
Manganese	**246**	**243**	**255**	**262**	**208**	**208**	**205**	**203**	50	**262**
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.77	0.2 U
Nickel	20 U	20 U	**1.02**	**1.12**	**5.93**	**7.31**	**0.59**	**0.55**	52	**7.31**
Potassium	**4,790**	**4,810**	**4,960**	**4,950**	**4,630**	**4,780**	**5,000**	**4,890**	NE	**5,000**
Selenium	1.0 U	1.0 U	1.2 U	1.2 U	1.0 U	1.0 U	1.2 U	1.2 U	5	1.2 U
Silver	0.184 U	0.066 U	0.03 U	0.03 U	0.02 U	0.02 U	0.03 U	**0.009 J**	0.1	**0.009 J**
Sodium	**5,640**	**5,610**	**5,240**	**5,270**	**4,900**	**4,980**	**5,060**	**4,970**	NE	**5,640**
Thallium	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.24	0.02 U
Vanadium	**1.4 J**	**1.7 J**	**0.13 J**	**0.22**	**0.28**	**0.36**	0.2 U	0.2 U	180	**1.7 J**
Zinc	**5.5 J**	**6.8 J**	**1.6**	**1.9**	**6.25 J**	**10.3 J**	**2.1 J**	**2.4 J**	120	**10.3 J**
Dissolved Metals per EPA Methods 6010/6020 (µg/L)										
Aluminum	**2.3**	**2.2**	**2.4**	**2.3**	**2.5**	**2.7**	**1.9 J**	**2.1**	36,500	**2.7**
Antimony	**0.051**	**0.049 J**	0.09 U	0.09 U	0.05 U	**0.014**	0.09 U	0.09 U	5.60	**0.051**
Arsenic	**1.33**	**1.31**	**1.09**	**1.17**	**1.49**	**1.44**	**1.6**	**1.5**	0.018	**1.6**
Barium	**22.6**	**23.1**	**19.4**	**19.5**	**17.7**	**17.1**	**15.1**	**15.4**	1,000	**23.1**
Beryllium	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	5.30	0.02 U
Cadmium	**0.027**	**0.035**	0.02 U	0.02 U	**0.037**	**0.048**	0.02 U	0.02 U	0.25	**0.048**
Calcium	**29,500**	**30,100**	**30,400**	**29,800**	**28,800**	**29,100**	**30,100 J**	**29,500 J**	NE	**30,400**
Chromium	**0.18 J**	**0.18 J**	**0.1 J**	**0.14 J**	**0.29**	0.26 U	0.2 U	**0.06 J**	11 (VI)	**0.18 J**
Cobalt	0.079 U	0.084 U	**0.11**	**0.107**	**0.138**	**0.139**	**0.064**	**0.062**	11	**0.139**
Copper	0.30 U	0.30 U	**0.10 J**	**0.09 J**	**0.29**	**0.34**	**0.09 J**	**0.07 J**	9	**0.34**
Iron	**9.1 J**	**12.3 J**	**11.4 J**	**8.2 J**	**22.8**	**26.9**	20.8 U	20 U	300	**26.9**
Lead	**0.012 J**	**0.032 J**	0.03 U	0.03 U	0.068 U	0.077 U	**0.006 J**	0.03 U	2.5	**0.032 J**
Magnesium	**7,990**	**8,180**	**7,910**	**7,770**	**7,320**	**7,400**	**7,550**	**7,400**	NE	**8,180**
Manganese	**214**	**222**	**233**	**222**	**194**	**200**	**188**	**186**	50	**233**
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.77	0.2 U
Nickel	20 U	20 U	**1.06**	**1.08**	**1.44**	**1.38**	**0.52**	**0.8**	52	**1.44**
Potassium	**4,810**	**4,950**	**4,760**	**4,660**	**4,680**	**4,740**	**4,880**	**4,800**	NE	**4,950**
Selenium	1.0 U	1.0 U	1.2 U	1.2 U	1.0 U	1.0 U	1.2 U	1.2 U	5	1.2 U
Silver	**0.071**	**0.163**	0.03 U	0.03 U	0.02 U	0.02 U	0.03 U	0.03 U	0.1	**0.163**
Sodium	5,440 U	5,600 U	**5,050**	**4,900**	**4,810**	**4,840**	**4,940**	**4,810**	NE	**5,050**
Thallium	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.24	0.02 U
Vanadium	10 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	180	10 U
Zinc	10 U	10 U	**1.1**	**1.5**	**3.17**	**3.12**	**1.2 J**	**1.1 J**	120	**3.17**

Notes:
Bold = indicates detections above the quantification limit.
- = not analyzed
CAS = Columbia Analytical Services
DUP = field duplicate
mg/L = milligrams per liter
µg/L = micrograms per liter
MDL = Method detection limit
MRL = Method reporting limit
NE = Not Established
J = The result is an estimated concentration.
U = The analyte was not detected at or above the CAS MDL. The non-detect values reported in this table are CAS MRLs. If an analyte was detected above the MDL, but below the MRL, that analyte was qualified and flagged 'J'.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
= reported concentration exceeds screening criteria.
[1] = most conservative water quality criteria as identified in the Upland QAPP (URS, 2008a). Updated to include both Oregon Department of Environmental Quality (ODEQ) Risk-Based Criteria (RBCs) for ingestion and inhalation from tapwater, revision 3, October 2008 and EPA Regional Risk-Based Screening Levels, updated September 2008.
[2] = highest non-detect or detected value from 1st, 2nd, 3rd and 4th quarter sampling events (including primary and duplicate samples).

Table 7
Summary of Results for ORP, DO, Conductivity and pH
for Groundwater
Bradford Island - Upland OU Remedial Investigation

Well ID	Oxygen Reduction Potential (ORP) (mV)				Dissolved Oxygen (DO) (mg/L)				Conductivity (mS/cm)				pH			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Date Collected	04/16/08	07/18/08	10/24/08	01/15/08	04/16/08	07/18/08	10/24/08	01/15/08	04/16/08	07/18/08	10/24/08	01/15/08	04/16/08	07/18/08	10/24/08	01/15/08
Landfill AOPC																
MW-1[1]	91.3	69.4	48.7	148.3	6.47	--	1.14	2.45	1.386	2.009	1.959	2.026	8.34	8.34	8.40	8.37
MW-2	151.5	143.4	175.8	172.7	9.22	5.6	1.6	3.52	0.273	0.292	0.296	0.403	8.62	8.62	8.57	8.43
MW-3	137.9	--	217.2	47.2	2.85	3.7	0.81	2.81	0.086	0.104	0.109	0.114	6.3	--	6.08	6.01
MW-4	113.4	-22.9	-35.8	259.2	0.33	1.39	0.29	0.48	0.394	0.340	0.560	0.587	6.65	6.58	6.48	5.81
MW-5	-55.4	-83.4	-110.3	-64.1	0.4	--	0.26	0.30	0.44	0.588	0.487	0.664	6.52	6.60	6.82	6.49
MW-6	-156.5	-106.9	-88.4	-71.4	1.44	0.23	0.31	0.21	0.588	0.646	0.589	0.814	6.88	6.76	6.68	6.69
MW-7	-171.3	100.4	-121.2	-213.8	0.94	--	0.31	0.70	0.326	0.471	0.376	0.502	7.23	6.61	6.74	7.98
MW-8	80.1	44.7	65.3	189.7	2.29	0.45	3.39	0.81	4.123	3.392	2.221	3.763	8.21	7.71	7.31	7.98
MW-9	92.5	--	--	320.5	2.48	--	--	2.17	0.102	--	--	0.162	5.78	--	--	5.52
Reference Area																
MW-10	-107.8	67.7	-119.4	-108.2	1.56	2.35	0.88	0.57	0.183	0.186	0.179	0.233	8.36	8.14	8.23	8.11
Sandblast Area AOPC																
MW-11	116.2	-51.3	-179.9	126.6	1.98	0.70	0.28	3.88	0.335	0.373	0.445	0.428	8.97	8.65	8.60	8.35
MW-12	186.2	136.6	116.4	117.8	3.71	2.31	0.87	0.83	0.234	0.170	0.237	0.242	6.74	6.32	6.56	6.29
MW-13	-89.9	63.4	-105.9	-214.7	0.84	0.93	0.33	2.43	0.27	0.307	0.280	0.348	7.73	7.43	7.47	8.21
MW-14	70.2	111.1	204.1	273.7	5.72	4.92	2.95	5.24	0.14	0.132	0.134	0.214	6.66	6.59	6.70	6.71
MW-15	98.1	204.8	200.2	282.4	6.57	6.13	0.98	8.17	0.159	0.190	0.189	0.222	6.38	6.27	6.26	6.52

Notes:
Readings shown are final readings recorded prior to groundwater sampling.
AOPC = area of potential concern
-- = not recorded due to insufficient volume in monitoring well and/or malfunctioning meter
°C = degrees Celsius
mS/cm = micro siemen per centimeter
mg/L = milligram per liter
mV = millivolt

ATTACHMENT A

URS

Field Notes and Groundwater Sampling Forms

Location Bradford Island Date 1/11/09

Project / Client Upland OU RI / USACE

Mark Cecchini

1130: M. Cecchini (MC), Z. Oremland (ZO), Nicky Moody (NM) + Sam Joyce (SJ) onsite, check in @ security

1150: Meet C. Morris + mob to landfill

1200: MC + SJ prepare equipment for seep/surface water sampling. Calibrate YSI 556 (see YSI log book)

NM + ZO to pistol range for sed. sampling

1230: MC checks seeps. S1 covered by recent landslide debris, S2 flowing, S3 dripping but not w/ sufficient flow for sample. S4 flowing.

1300: MC + SJ setup @ S2. Rental battery for ϕ-pump dead. ZO + NM offsite to purchase battery.

Seep sampling procedure: see p. 39 same as Q1

1310: collect sample 09011152SP

1320: Collect sample 09011152SW

See sampling sheets for water quality readings.

1400: Move equipment from S2 to S4

1445: ZO + NM complete sed. sampling and return w/ battery

1630: Collect sample 09011154SP

1645: Collect sample 09011154SW

1700: Seep/SW sampling complete

1722: ZO, MC, NM, SJ offsite

Location Bradford Island Date 1/12/09

Project / Client Upland OU RI / USACE

840 Mark Cecchini on site, badged

915 Zack Oremland on site

930 URS YSI Calibration recorded in YSI Calibration log.

Rental, # U56013X

Buffer	Reading	Action
pH 7.0	7.08	okay
DO 100%	100.3%	okay
cond 1409 µs/cm	1469	Calibrated

1000 Begin opening wells and purging well vaults to take a round of water levels

	DTW:	TD:		DTW:	TD:
MW-1	27.42	31.8	MW-13	15.62	36.1
MW-2	9.44	34.2	MW-14	12.59	23.5
MW-3	12.48	22.8	MW-15	12.76	22.15
MW-4	12.47	32.2			
MW-5	16.81	36.9			
MW-6	15.72	33.4			
MW-7	8.33	33.2			
MW-8	25.16	60.30			
MW-9	12.60	~~17.5~~ MC	→ 16.73' (soft)		
MW-10	19.52	58.4			
MW-11	7.06	36.5			
MW-12	23.10	29.6			

Location Bradford Island Date 1/12/09

Project / Client Upland OU RI / USACE

Mark Cal

1132: MC + ZO complete water levels mob to MW-1 & MW-7 and setup to purge. See monitoring well sampling forms for details.

1225: MW-1 purged dry. Plan to check water level recovery and collect sample once water column has recovered to within 10% of original.

1255: Collect sample 090112MW7GW

1305: MC and ZO mob to sandblast area. ZO sets up on MW-11 MC @ MW-13. See sampling forms for details.

1424: Collect sample 090112MW11GW also collect field duplicate "090112MW21GW" ST: "1005"

1430: Collect sample 090112MW13GW

1526: MC + ZO complete sampling. Begin site cleanup, place purge water in onsite drum.

1535: MC + ZO offsite

Location Bradford Island Date 1/13/09

Project / Client Upland OU RI / USACE

Mark Cal

0753: MC onsite, stop @ security office for key card

0758: ZO onsite. MC to BI to prep. for sampling. URS YSI calibration

	Standard	Reading	
pH	4.0	4.24	cal'd
pH	7.0	6.92	cal'd
pH	10.0	9.88	cal'd
Cond ~~Cond~~ mc	1413 µS/cm	1209 µS/cm	cal'd
DO	100%	83.0%	cal'd
ORP	232 @ 41°F	-193.3	cal'd

Rental YSI Calibration Check

Standard	Reading	
pH 7.0	7.08	okay
pH 4.0	3.95	okay
Cond 1409 µS/cm	1401	okay
DO 100%	106.3%	Cal'd

0835: MC begins setup @ MW-14, see MW purge log for details. ZO begins MW-12

0917: MC recalibrates ORP probe on URS YSI due to anomalous readings @ MW-14

Location Bradford Island Date 1/13/09

Project / Client Upland OU RI / USACE

Mark C

1010: Collect sample 090113MW12GW

1008: Collect sample 090113MW14GW

1010: Collect sample 090113MW14GWMS

1013: Collect sample 090113MW14GWMSD

1036: ZO mobs to MW-10 and preps for purge, see MW sampling form for details.

1106: MC completes sampling MW-14, moves to MW-15.

1158: Collect sample 090113MW10GW
also collect MS/MSD 090113MW10GWMS/D
MS/MSD placed in two separate additional bottles from sample. MS/MSD volumes are in the same bottle.
Also collected field duplicate
" 090113MW20GW " @ST: " 1117 "

1245: Collect sample 090113MW15GW

1300: MC begins setup @ MW-2, ZO sets up @ MW-3

1418: Collect sample 090113MW3GW

1430: ZO completes sampling MW-3, begin site cleanup and preparing COCs

1500: Collect sample 090113MW2GW

Location Bradford Island Date 1/13/09

Project / Client Upland OU RI / USACE

1539: MC completes sampling MW-2 begin packing samples and cleaning up the site.

1550: ZO offsite, MC to Hazmat Storage to drop off purge water

1600: MC offsite

Location Bradford Island Date 1/14/09

Project / Client Upland OU RI / USACE

Mark Gal

0820: MC onsite mob to Hazmat Storage area to calibrate YSI

0824: Calibrate UKS YSI

	Standard	Reading	Result
pH	4.0	4.02	check
pH	7.0	7.18	check
pH	10.0	9.87	check
Cond	1413 µS/cm	1382	check
DO	100%	103.8%	Check

0855: MC checks water level in MW-1 which was purged dry on 1/12.

0858: MW-1 DTW = 30.50 ∴ well has recovered 1.3' since 1225 on 1/12. 10% of original (27.42) WL = 27.9'. Based on observed rate of recovery, MW-1 will not recover to 10% of original WL by end of sampling round. MC plans to allow MW-1 to continue to recover until end of sampling round and collect minimum sample volumes from MW-1.

0904: MC proceeds to MW-9 to prep for purge. See MW sampling form for details

Location Bradford Island Date 1/14/09

Project / Client Upland OU RI / USACE

Mark Gal

0905: 20 onsite. Begins calibrating Rental YSI

	Standard	Reading	Action
pH	7.0	7.11	Cal'd 2 pt
pH	10.0	10.05	Cal ✓
cond	1409 µS/cm	1429 µS/cm	Cal'd
DO	100%	104.8%	Cal

908: 20 begins setup @ MW-6 see purge log for details

1043: Collect sample 090114MW96W

1052: Collect sample 090114MW66W

also collect field duplicate 090114MW26GW

dup time: "1003"

1125: MC + 20 complete sampling and depart to Cascade Locks for lunch and ice.

1240: MC + 20 onsite. Begin setup @ MW-4 & MW-5. See MW sampling forms for details

1346: Collect sample 090114MW56W

also collect MS/MSD 090114MW56W MS/MSD

@ same time.

1415: Collect sample 090114MW46W

1420: MC + 20 complete sampling and

Location Bradford Island Date 1/14/09

Project / Client Upland OU RI / USACE

Mark Cal

1420 (cont): begin site cleanup.

1443: Deposit purge water in onsite drum @ Hazmat storage area.

1458: MC + ZO offsite

Location Bradford Island Date 1/15/09

Project / Client Upland OU / RI / USACE

Mark Cal

0830: MC onsite, mob to BI landfill. must await arrival of ZO for equipment to purge MW-1 & MW-8

0848: MW-1 DTW = 30.43', well has recovered 0.07' since 0858 on 1/14. Plan to sample MW-1 today by collecting minimum volumes according to following priority: 1) VOCs / TPH-Gx, 2.) Metals, 3) TPH-Dx, 4) SVOCs, 5.) Butyltins.

0921: ZO onsite, he was late due to a poison oak breakout. Both MC + ZO have poison oak, likely the result of walking through brush in the landfill area. No leaves on brush @ this time.

0930: Calibrate rental YSI 556

	Standard	Reading	Result
pH	4.0	3.97	check
pH	7.0	6.98	check
pH	10.0	10.08	check
Cond	1413	1358	cal'd
DO	100%	103%	check

0948: Begin prep to sample MW-1. Pump (submersible) set @

Location Bradford Island Date 1/15/09

Project / Client Upland OU RI / USACE

Mark [illegible]

0948 (cont): bottom of well to maximize volume available for sample

1000: Collect sample 090115MW1GW

NOTE: Only VOCs, TPH-GX, + Metals bottles could be filled w/ min volume. Submersible pump would not lift enough water to collect more sample.

1024: Begin decontamination of submersible pump using soap + DI/methanol/DI rinse and begin setup @ MW-8.

1135: Collect sample 090115MW8GW

begin site cleanup and decon. submersible pump in preparation for rinse blank.

1153: Collect rinse blank 090115RB

Note: Only Total Metals (unfiltered) collected for metals analysis.

1206: Complete collection of rinse blank. Rinse blank collected by pouring laboratory supplied DI water over the decontaminated submersible pump.

1208: MC + ZO pack equipment and depart BI landfill, lock gate upon departure

Location Bradford Island Date 1/15/09

Project / Client Upland OU RI / USACE

Mark [illegible]

1210: Arrive @ Haz mat Area. Transfer purge water and decontamination fluids to drum. ~36 gal of fluid collected in drum.

1230: Equipment loaded, MC + ZO offsite. MC calls C. Morris to inform him that we are finished.

1235: ZO + MC drop off security badges @ security office.

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: MW-1

Date: 1/12/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25696679

Sampling Information	
Field Team:	ZO / MC
Purge Method:	Monsoon Submersible
Pump Intake Depth (ft btc):	31'
Flow-Through Cell:	NO
Sampling Method:	
Decontamination Method:	
Purge Water Disposition:	Cloudy, w/ some silts
Field Conditions:	Clear Calm
Comments:	
PID reading upon opening well cap:	
Initial DTW =	27.42'
Total Well Depth =	31.8
Feet of Water in Casing =	4.4'
~~Well Storage Volume~~ =	Will pump, taking water quality with sample cup. Sample postponed until recharge.

Well Information — Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	-	31.8	-		20 - 30

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	40mL VOA	HCl	TPH-GX	
3	40mL VOA	HCl	VOC	
1	1L Poly	HNO_3	Total Metals	
1	1L Poly	HNO_3	Dissolved Metals	X
	↳ ~ 300 mL sampled for each metals analysis			

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
			Initial	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1155	Pump On									
1200	3	-300		11.88	2,030	3.64	8.01	156.3	140	Cl
1205	5	400		11.80	2034	3.49	8.29	154.3	100	Cl
1210	10	300		12.03	2031	2.83	8.34	152.5	55	Cl
1215	11	300		11.88	2025	2.64	8.37	150.2	65	Cl
1220	13	300		11.90	2026	2.45	8.37	148.3	60	
1225	WELL DRY - SEE FIELD BOOK WILL ALLOW RECHARGE									
1230										

1/15/09

1/15/09

Start Sampling	0957	1/15 * 090115MW1GW	
End Sampling	1012	Sample Number: ~~090112MW1GW~~ 20	Sample Time: 1004
		Final 31.25	

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of 1

Well Number: MW-2
Date: 1/13/09

Project Information

Project Name: Bradford Island
URS Project Number: 25696679

Sampling Information

Field Team: MC + 20
Purge Method: p-pump
Pump Intake Depth (ft btc): ~ 28'
Flow-Through Cell: yes
Sampling Method: low flow
Decontamination Method: n/a dedicated tubing
Purge Water Disposition: onsite drum
Field Conditions: 40's partly cloudy

Comments:

PID reading upon opening well cap: n/a
Initial DTW = 8.40
Total Well Depth = 34.2
Feet of Water in Casing = 25.8
Well Storage Volume = 25.8 x 0.17

Note: Well purged at lower limit of pump speed range

Well Information — Slick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	32	34.2	22	—	22 - 32

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1	1L Poly	HNO_3	Total Metals	
1	1L Poly	HNO_3	Dissolved Metals	X
1	1L Poly	—	Butyltins	
1	1L Amber	—	SVOCs	
1	500mL Amber	HCl	TPH-DX	
3	40mL VOA	HCl	TPH-GX	
3	40mL VOA	HCl	VOCs	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1344	Pump On		Initial 8.40	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1351	0	~50	9.06	8.74	389	7.36	5.41	274.5	13	C
1356	0.2	25	9.50	8.87	394	4.67	7.69	214.8	16	C
1401	0.3	25	9.45	8.72	398	4.20	8.00	197.6	13.5	C
1406	0.45	25	10.21	8.74	400	4.09	7.79	191.3	14.9	C
1411	0.55	25	10.42	8.74	400	3.94	7.88	186.4	16.4	C
1416	0.7	25	10.65	8.75	401	3.80	8.09	182.3	12.3	C
1421	0.8	25	10.98	8.71	402	3.86	8.20	178.2	9.62	C
1426	0.95	25	11.20	8.69	403	3.67	8.34	175.3	14.1	✓ C
1431	1.05	25	11.41	8.69	403	3.55	8.41	173.2	10.54	✓ C
1436	1.2	25	11.74	8.69	403	3.52	8.43	172.7	12.9	✓ C

1/13/09

Start Sampling 1442
End Sampling 1539
Final 16.84

Sample Number: 090113MW2GW
Sample Time: 1500

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of 1

Well Number: MW-3
Date: 1/13/09

Project Information

Project Name: Bradford Island
URS Project Number: 25696679

Sampling Information

Field Team: ZO / MC
Purge Method: P-Pump
Pump Intake Depth (ft btc): 19'
Flow-Through Cell: YSI 556
Sampling Method: Low Flow
Decontamination Method: NA - Dedicated
Purge Water Disposition:
Field Conditions: Overcast calm 50°

Comments:

PID reading upon opening well cap:
Initial DTW = 12.60
Total Well Depth = ~24
Feet of Water in Casing = 12
Well Storage Volume =

Well Information Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2			11	~14	11 - 21

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1	1L Poly	HNO_3	Metals	X
1	1L Poly	HNO_3	Metals	
1	1L Poly	Ø	Butyltin	
1	1L Amber	Ø	SVOCs	
1	500mL Amber	HCl	Dx	
3	VOA	HCl	Gx	
3	VOA	HCl	VOC	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1330	Pump On		Initial 12.60	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1335	<1	200	12.62	10.15	109	5.17	6.20	8.0	4.3	C
1340	1.5	200	12.62	10.57	110	4.40	6.07	10.7	4.3	C
1345	2.5	200	12.62	10.73	112	4.01	6.04	20.6	4.4	C
1350	3.5	200	12.63	10.76	114	3.07	6.03	24.3	3.1	C
1355	4.5	200	12.63	10.76	114	3.15	6.02	32.2	2.9	C
1400	5	200	12.63	10.76	114	2.90	6.01	40.7	2.8	C
1405	6	200	12.63	10.79	114	2.81	6.01	47.2	2.8	C
1410	SAMPLE									

Start Sampling 1408
End Sampling 1430
Final 12.64

Sample Number: 090113MW3GW

Sample Time: 1418

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of 1

Well Number: MW-4

Date: 1/14/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25696679

Sampling Information	
Field Team:	MC/ZO
Purge Method:	p-pump
Pump Intake Depth (ft btc):	~18'
Flow-Through Cell:	yes
Sampling Method:	low flow
Decontamination Method:	n/a dedicated tubing
Purge Water Disposition:	onsite drum
Field Conditions:	40's partly cloudy
Comments:	
PID reading upon opening well cap:	n/a
Initial DTW =	12.70
Total Well Depth =	~~28'~~ MC 32.2'
Feet of Water in Casing =	~~15.3~~ MC 19.5'
Well Storage Volume =	19.5 X 0.17 = 3.3 gal
~~Extra Volume collected for MS/MSD~~ MC	

Well Information			Stick-up or Flush (circle one)		
Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2		32.2	8		8-28

Sample Containers				
Number	Type	Preservative	Analytical Parameters	Filtered?
1x3	1L Poly	HNO_3	Total Metals	
1x3	1L Poly	HNO_3	Dissolved Metals	X
1x3	1L Poly	—	Butyltins	
1x3	1L Amber	—	SVOCs	
1x3	500mL Amber	HCl	TPH-DX	
3x3	40mL VOA	HCl	TPH-GX	
3x3	40mL VOA	HCl	VOCs	
MC				

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1305	Pump On		Initial 12.70	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1308	0	250	12.70	7.90	562	12.61	3.94	348.3	50	C
1313	1.5	200	12.71	9.30	576	2.32	5.28	293.1	31	C
1318	2.5	200	12.71	9.24	586	1.78	5.69	278.0	19	C
1323	3.5	200	12.71	9.35	590	1.42	5.86	270.2	11	C
1328	4.5	200	12.71	9.37	592	1.02	5.73	267.2	6.7	C
1333	5.5	200	12.71	9.29	593	0.89	5.95	262.7	4.2	C
1338	6.5	200	12.71	9.31	592	0.73	6.00	260.5	2.3	C
1343	7.5	200	12.71	9.36	590	0.63	5.72	261.5	1.7	✓C
1348	8.5	200	12.71	9.32	589	0.53	5.80	259.6	1.1	✓C
1353	9.5	200	12.71	9.32	587	0.48	5.81	259.2	1.1	✓C

1/14/09

Start Sampling 1400

End Sampling 1426

Final 12.70

Sample Number: 090114MW46W

Sample Time: 1415

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

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Well Number: MW-5

Date: 1/14/09

Project Information

Project Name: Bradford Island

URS Project Number: 25696679

Sampling Information

Field Team: ZO / MC

Purge Method: P - Pump

Pump Intake Depth (ft btc): ~~27~~ 28 32' btc

Flow-Through Cell: 451556

Sampling Method: Low Flow

Decontamination Method: NA - Dedicated

Purge Water Disposition: Yellowish Brown (lt)

Field Conditions: clear calm 50°

Comments:

PID reading upon opening well cap:

Initial DTW = 16.94

Total Well Depth = ~37

Feet of Water in Casing = 20

~~Well Storage Volume~~ = Extra Volume for MS/MSD

Well Information (Stick-up or Flush) (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	35	~38		~12	10 - 35

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1x3	1L Poly	HNO_3	Metals	X
1x2	1L Poly	HNO_3	Metals	
1x3	1L Poly	Ø	Butyltin	
1x3	1L Amber	Ø	SVOCs	
1x3	500 mL	HCl	Dx	
3x3	VOA	HCl	GX	
3x3	VOA	HCl	VOCs	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
			Initial							<= Stabilization Criteria
1305	Pump On		16.94	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	
1310	1	400	16.93	9.94	674	0.84	6.49	-50.9	13	AC
1315	3.5	450	16.93	10.81	674	0.29	6.49	-59.0	5.3	C
1320	5.5	450	16.93	10.93	666	0.40	6.49	-63.7	5.0	C
1325	7.5	400	16.93	10.94	664	0.28	6.49	-63.9	4.6	C
1330	9.5	400	16.93	10.99	664	0.30	6.49	-64.1	4.1	C
1335	SAMPLE									
1340										
	Start Sampling		1335							
	End Sampling		1420							
			Final 16.94							

Sample Number: 0901A MW5 GW

Sample Time: 1346

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

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Well Number: MW-6

Date: 1/14/09

Project Information

Project Name: Bradford Island

URS Project Number: 25696679

Sampling Information

Field Team: ZO / MC

Purge Method: P-Pump

Pump Intake Depth (ft btc): 30

Flow-Through Cell: YSI 556

Sampling Method: Low Flow

Decontamination Method: NA - Dedicated

Purge Water Disposition:

Field Conditions: Clear Calm 50°

Comments:

PID reading upon opening well cap:

Initial DTW = 15.84' btc

Total Well Depth = ~33' btc

Feet of Water in Casing = 17'

Well Storage Volume =

Dup Collected 090114MW26GW ST: 1003

Well Information — Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2			25	~28	25 - 30

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1x2	1L Poly	HNO_3	Metals	X
1x2	1L Poly	HNO_3	Metals	
1x2	1L Poly	Ø	butyltins	
1x2	1L Amber	Ø	SVOCs	
1x2	500mL	HCl	Dx	
3x2	VOA	HCl	Gx	
3x2	VOA	HCl	VOCs	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
951	Pump On		Initial 15.84	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
956	0	200	15.86	8.23	836	2.06	6.63	-31.4	14	AC
1001	1	200	15.86	8.83	843	0.83	6.69	-68.6	7.1	C
1006	2	200	15.86	9.40	834	0.45	6.70	-73.4	4.8	C
1011	3	200	15.86	9.50	831	0.41	6.71	-63.9	3.4	C
1016	4	200	15.86	9.69	823	0.31	6.70	-71.4	3.3	C
1021	5	200	15.86	9.79	818	0.21	6.69	-73.5	3.4	C
1026	6	200	15.86	9.96	814	0.21	6.69	-71.4	3.2	C
1031	SAMPLE									

Start Sampling 1031

End Sampling 1120

Final 15.86

Dup: 090114MW26GW ST: 1003

Sample Number: 090114MW6GW

Sample Time: 1052

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

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Well Number: MW-7

Date: 1/12/2009

Project Information

Project Name: Bradford Island

URS Project Number: 25696679

Sampling Information

Field Team: 20 + MC

Purge Method: peristaltic

Pump Intake Depth (ft btc): 20

Flow-Through Cell: yes

Sampling Method: low flow

Decontamination Method: n/a dedicated tubing

Purge Water Disposition: onsite drum

Field Conditions: 50's partly cloudy

Comments:

PID reading upon opening well cap: n/a

Initial DTW = 8.33

Total Well Depth = 32

Feet of Water in Casing = 23.67

Well Storage Volume = 23.67 x 0.17 = 4.02 gal

Well Information — Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	—	32	—	—	5 - 30

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1	1L Poly	HNO_3	Total Metals	
1	1L Poly	HNO_3	Dissolved Metals	X
1	1L Amber	—	SVOCs	
1	1L Poly	—	Butyltins	
1	500mL Amber	HCl	TPH-DX	
3	40mL VOA	HCl	TPH-GX	
3	40mL VOA	HCl	VOCs	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
			Initial							<= Stabilization Criteria
1159	Pump On		8.33	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	
1203	0.1	200	8.49	10.10	504	2.99	7.75	-147.8	13	orange biomass in water
1208	1.1	200	8.54	10.41	508	1.75	8.06	-171.9	21	"
1213	2.1	200	8.57	10.49	506	1.76	8.15	-177.9	17	"
1218	3.1	200	8.57	10.47	507	1.76	8.11	-187.2	29	"
1223	4.1	200	8.58	10.49	506	1.28	8.03	-196.4	23	"
1228	5.1	200	8.58	10.48	505	1.01	8.02	-202.6	19	"
1233	6.1	200	8.59	10.51	504	0.84	8.01	-202.5	16	"
1238	7.1	200	8.59	10.55	503	0.79	8.00	-211.0	12	"
1243	8.1	200	8.59	10.57	502	0.70	7.98	-213.8	11	"
			Final							

1/12/09

Start Sampling 1246

End Sampling 1305

Sample Number: 090112MW7GW

Sample Time: 1255

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

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Well Number: MW-8

Date: 1/15/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25696679

Sampling Information	
Field Team:	MC & 20
Purge Method:	submersible pump
Pump Intake Depth (ft btc):	~57'
Flow-Through Cell:	yes
Sampling Method:	low flow
Decontamination Method:	DI + Soap (alconox)/ methanol / DI rinse
Purge Water Disposition:	onsite drum
Field Conditions:	30's clear
Comments:	
PID reading upon opening well cap:	n/a
Initial DTW =	23.86
Total Well Depth =	60.3
Feet of Water in Casing =	36.44
Well Storage Volume =	36.44 X 0.17 = 6.2 gal

Well Information — Slick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	—	60.3	53	—	53 - 58

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1	1L Poly	HNO_3	Total Metals	
1	1L Poly	HNO_3	Dissolved Metals	X
1	1L Amber	—	SVOCs	
1	1L Poly	—	Butyltins	
1	500mL Amber	HCl	TPH-DX	
3	40mL VOA	HCl	TPH-GX	
3	40mL VOA	HCl	VOC	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
			Initial							<= Stabilization Criteria
1051	Pump On		23.86	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	
1057	1.5	200	26.58	9.23	3750	3.16	7.64	202.5	90	SC
1102	2.5	200	30.0	10.92	3789	1.35	8.13	189.6	31	C
1107	3.5	200	31.18	10.84	3766	1.25	8.13	190.9	19	C
1112	4.5	200	33.62	10.83	3766	1.00	8.05	190.9	9.6 ✓	C
1117	5.5	200	35.04	10.57	3766	0.97	8.01	191.4	8.3 ✓	C
1121	6.5	200	36.56	11.05	3763	0.81	7.98	189.7	12 ✓	C
	Start Sampling	1123								
	End Sampling	1135		Sample Number:	090115MW86W				Sample Time:	1135
			Final 42.72							

1/15/09

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

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Well Number: MW-9

Date: 1/14/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25696679

Sampling Information	
Field Team:	MC/20
Purge Method:	p-pump
Pump Intake Depth (ft btc):	~15'
Flow-Through Cell:	yes
Sampling Method:	low flow
Decontamination Method:	n/a dedicated tubing
Purge Water Disposition:	onsite drum
Field Conditions:	40's clear

Comments:

PID reading upon opening well cap:	n/a
Initial DTW =	12.80
Total Well Depth =	16.73
Feet of Water in Casing =	3.93
Well Storage Volume =	3.93 x 0.17 = 0.67 gal

Well Information — Slick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	—	16.73	15	—	15 - 20

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1	1L Poly	HNO_3	Total Metals	
1	1L Poly	HNO_3	Dissolved Metals	X
1	1L Poly	—	Butyltins	
1	1L Amber	—	SVOCs	
1	500mL Amber	HCl	TPH-DX	
3	40mL VOA	HCl	TPH-GX	
3	40mL VOA	HCl	VOCs	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
			Initial							<= Stabilization Criteria
0934	Pump On		12.80	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	
0941	0	~25	13.01	7.04	187	3.96	6.67	315.3	170	Cl
0946	0.1	~25	13.05	7.20	177	4.69	6.13	321.0	142	Cl
0951	0.25	25	13.07	7.11	171	3.89	5.81	318.8	112	Cl
0956	0.35	25	13.08	6.99	171	3.10	5.75	317.0	102.5	Cl
1001	0.5	25	13.09	6.90	165	2.66	5.72	316.3	107.1	Cl
1006	0.6	25	13.12	7.16	165	2.46	5.65	316.7	88.9	Cl
1011	0.75	25	13.16	7.22	165	2.20	5.61	314.3	90 ✓	Cl
1016	0.85	25	13.19	7.36	163	2.05	5.53	318.9	100 ✓	Cl
1021	1.0	25	13.20	7.28	162	2.17	5.52	320.5	96 ✓	Cl
	Start Sampling	1025								
	End Sampling	1123								
			Final 14.09							

1/14/09

Mark Cal

Sample Number: 090114MW9GW **Sample Time:** 1043

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

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Well Number: MW -10

Date: 1/13/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25696679

Sampling Information	
Field Team:	ZO / MC
Purge Method:	P-Pump
Pump Intake Depth (ft btc):	
Flow-Through Cell:	YSI 556
Sampling Method:	Low-Flow
Decontamination Method:	
Purge Water Disposition:	
Field Conditions:	Overcast ~50°
Comments:	
PID reading upon opening well cap:	
Initial DTW =	19.65'
Total Well Depth =	~60
Feet of Water in Casing =	~40
Well Storage Volume =	

090113MW10GW MS
090113MW10GW MSD
090113MW20GW
} Collected ST: 1117

Well Information — Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	57.5	~60		~50	47 - 57

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
2	1L Poly	HNO_3	Metals	X
2	1L Poly	HNO_3	Metals	

MS/MSD Volume included.

Field Dup also collected

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1110	Pump On		Initial 19.57	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1115	Flow Through		not	full						
1120	<1	<100	20.33	8.43	229	1.40	8.03	13.5	2.1	C
1125	<1	<100	20.57	8.65	228	1.10	8.11	-43.3	2.1	C
1130	1	50	20.80	8.67	227	0.60	8.11	-78.0	2.1	C
1135	1.5	50	20.94	8.69	228	0.77	8.10	-94.1	2.0	C
1140	1.5	50	21.10	8.86	229	0.69	8.11	-101.9	2.0	C
1145	1.5	50	21.22	8.69	233	0.57	8.11	-108.2	2.0	C
1150	SAMPLE									
	Start Sampling		1147	Field Dup: ~~090120MW20~~ 090113MW20GW					ST: 1117	
	End Sampling		1255	Sample Number: 090113MW10GW					Sample Time:	1158
			Final 22.84							

Δ 3.27'

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

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Well Number: MW - 11

Date: 1/12/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25696679

Sampling Information	
Field Team:	ZO / MC
Purge Method:	P-Pump
Pump Intake Depth (ft btc):	31'
Flow-Through Cell:	451556
Sampling Method:	Low Flow
Decontamination Method:	NA - Dedicated
Purge Water Disposition:	
Field Conditions:	Overcast
Comments:	Pressure upon removing cap
~~PID reading upon opening well cap:~~	
Initial DTW =	5.71' and rising
Total Well Depth =	36
Feet of Water in Casing =	30'
~~Well Storage Volume =~~	

Well Information — Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	36	36	26	26	26 - 36

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1x2	Poly 1L	HNO_3	Metals	X
1x2	Poly 1L	HNO_3	Metals	
1x2	Poly 1L	Ø	Butyltins	
1x2	Amber 1L	Ø	SVOCs	
1x2	Amber 500	HCl	Dx	
3x2	VOA	HCl	Gx	
3x2	VOA	HCl	VOCs	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1331	Pump On		Initial 5.55	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1336	<1	<200	6.96	11.59	428	5.07	8.32	128.2	4.9	C
1341	1	100	7.50	11.62	427	4.62	8.31	128.4	5.3	C
1346	1.5	100	7.92	11.44	426	4.62	8.30	128.3	5.3	C
1351	2	100	8.23	11.43	428	4.28	8.29	128.7	5.6	C
1356	2	50	8.58	11.43	432	4.16	8.29	128.1	5.4	C
1401	3	50	8.89	11.43	428	4.07	8.32	126.1	5.8	C
1406	3	50	9.11	11.45	428	3.88	8.35	126.6	5.4	C
1411	SAMPLE									

Start Sampling 1409

End Sampling 1525

Final 12.74

Dup: 090112 MW21 GW

Sample Number: 090112 MW11 GW

ST: 1005

~~Sample Time:~~ 1424

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of 1

Well Number: MW-12

Date: 1/13/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25696679

Sampling Information	
Field Team:	ZO / MC
Purge Method:	P-Pump
Pump Intake Depth (ft btc):	26'
Flow-Through Cell:	YSI 556
Sampling Method:	Low Flow
Decontamination Method:	NA - Dedicated
Purge Water Disposition:	Clear
Field Conditions:	calm overcast

Comments:

PID reading upon opening well cap:

Initial DTW = 23.08

Total Well Depth = 29

Feet of Water in Casing = 6

~~Well Storage Volume~~ = Pump was set too slow, no water for first five minutes.

Well Information — Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	26	29.3	16	19	16 - 26

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1	Poly 1L	HNO_3	Metals	X
1	Poly 1L	HNO_3	Metals	
1	Poly 1L	Ø	Butyltins	
1	Amber 1L	Ø	SVOC	
1	Amber 500	HCl	Dx	
3	VOA	HCl	Gx	
3	VOA	HCl	VOC	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
			Initial							<= Stabilization Criteria
910	Pump On	~~23~~	23.11	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	
915	No Readings									
920	1	200	23.36	10.60	190	1.51	6.24	127.4	2.3	C
925	2	200	23.55	10.97	200	1.17	6.25	121.8	2.1	C
930	3	200	23.74	10.99	221	0.92	6.28	119.1	2.2	C
935	4	200	23.86	10.91	233	0.85	6.28	120.1	2.4	C
940	5	200	23.94	10.87	239	0.91	6.29	119.2	2.4	C
945	6	200	24.08	10.84	242	0.83	6.29	117.8	2.5	C
950	SAMPLE									
	Start Sampling		949							
	End Sampling		1018	Sample Number: 090113MW12GW					Sample Time:	1010
			Final 24.46							

Notes: AC = almost clear; A 1.35'; btc = below top of casing; DTW = depth to water; VC = very cloudy; bgs = below ground surface; Cl = cloudy; C = clear; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: MW-13

Date: 1/12/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25692679

Sampling Information	
Field Team:	20 / ML
Purge Method:	P-Pump
Pump Intake Depth (ft btc):	~30'
Flow-Through Cell:	yes
Sampling Method:	low flow
Decontamination Method:	NA - dedicated tubing
Purge Water Disposition:	Onsite Drum
Field Conditions:	40's partly cloudy
Comments:	
PID reading upon opening well cap:	n/a
Initial DTW =	15.59
Total Well Depth =	36
Feet of Water in Casing =	20.41
Well Storage Volume =	20.41 x 0.17 = 3.5 gal

Well Information			Stick-up or Flush (circle one)		
Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	36	—	26	—	26 - 36

Sample Containers				
Number	Type	Preservative	Analytical Parameters	Filtered?
3	40 mL VOA	HCl	TPH-GX	
3	"	HCl	VOC	
1	1L Poly	HNO_3	Total Metals	
1	1L Poly	HNO_3	Dissolved Metals	X
1	1L Poly	—	Butyltins	
1	1L Amber	—	SVOCs	
1	500 mL Amber	HCl	TPH-DX	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1335	Pump On		Initial 15.59	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1339	0.2	250	16.25	10.81	344	5.14	6.85	-164.5	13	clear
1344	1.5	250	16.62	10.88	343	3.83	7.49	-189.5	3.2	"
1349	2.5	200	16.71	10.92	343	3.70	7.73	-197.2	1.5	"
1354	3.0	100	16.79	10.87	344	3.57	7.88	-202.6	1.2	"
1359	3.5	100	16.79	10.80	344	3.25	8.00	-206.3	1.3	"
1404	4.0	100	16.79	10.81	344	3.08	8.04	-207.9	1.3	"
1409	4.5	100	16.83	10.86	345	2.63	8.08	-210.4	1.2	"
1414	5.0	100	16.87	10.90	347	2.41	8.20	-213.3	1.0	"
1419	5.5	100	16.94	10.91	348	2.43	8.21	-214.7	1.0	"
	Start Sampling	1419								
	End Sampling	1502	Final 17.09	Sample Number:	090112 MW13 GW				Sample Time:	1430

1/12/09

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: MW-14
Date: 1/13/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25696679

Sampling Information	
Field Team:	MC/20
Purge Method:	P-pump
Pump Intake Depth (ft btc):	~18'
Flow-Through Cell:	yes
Sampling Method:	low flow
Decontamination Method:	n/a dedicated tubing
Purge Water Disposition:	onsite drum
Field Conditions:	40's partly cloudy
Comments:	
PID reading upon opening well cap:	n/a
Initial DTW =	13.01'
Total Well Depth =	23
Feet of Water in Casing =	9.99
Well Storage Volume =	9.99 x 0.17 = 1.7 gal

Extra volume collected for MS/MSD
Recal ORP @ 0917

Well Information — Stick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	23	—	13	—	13 - 23

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1x3	1L Poly	HNO_3	Total Metals	
1x3	1L Poly	HNO_3	Dissolved Metals	X
1x3	1L Poly	—	Butyltins	
1x3	1L Amber	—	SVOCs	
1x3	500mL Amber	HCl	TPH-Dx	
3x3	40mL VOA	HCl	TPH-Gx	
3x3	40mL VOA	HCl	VOC	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
900	Pump On		Initial 13.01	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
0904	0.3	150	13.01	9.91	228	7.34	7.81	-169.5	5.3	disregard ORP
0909	1.0	150	13.01	10.85	219	6.20	7.80	-156.8	3.7	↓
0914	1.8	150	13.01	11.50	206	5.91	7.16	—	3.9	ORP recalibrate
0926	3.6	150	13.00	11.47	212	6.02	8.04	220.2	3.7	↓
0931	4.3	150	13.00	11.60	225	5.33	7.54	256.9	2.6	
0936	5.1	150	12.96	11.68	224	5.39	7.07	269.9	2.0	
0941	5.8	150	12.96	11.76	226	5.31	6.93	271.8	1.9	
0946	6.6	150	12.95	11.71	217	5.30	6.83	273.8	1.8	✓
0951	7.3	150	12.94	11.59	212	5.22	6.76	274.1	1.8	✓
0956	8.0	150	12.94	11.69	214	5.24	6.71	273.7	1.6	✓

1/13/09

Mark [signature]

				@	1010		@	1013		
	Start Sampling	1005		090113MW14GWMS + 090113MW14GWMSD						
	End Sampling	1106		Sample Number: 090113MW14GW					Sample Time:	1008
			Final 12:90							

Notes: AC = almost clear; btc = below top of casing; DTW = depth to water; VC = very cloudy
bgs = below ground surface; Cl = cloudy; C = clear; SC = slightly cloudy

Monitoring Well Sampling Field Log

Page 1 of ____

Well Number: MW-15

Date: 1/13/09

Project Information	
Project Name:	Bradford Island
URS Project Number:	25692709
Sampling Information	
Field Team:	MC / 20
Purge Method:	p-pump
Pump Intake Depth (ft btc):	~ 17'
Flow-Through Cell:	yes
Sampling Method:	low flow
Decontamination Method:	n/a dedicated tubing
Purge Water Disposition:	onsite drum
Field Conditions:	40's partly cloudy
Comments:	
PID reading upon opening well cap:	n/a
Initial DTW =	13.05
Total Well Depth =	22
Feet of Water in Casing =	8.95
Well Storage Volume =	8.95 X 0.17 = 1.5 gal

Well Information — Slick-up or Flush (circle one)

Well Diameter (in)	Drilled Well Depth (ft bgs)	Drilled Well Depth (ft btc)	Top of Screen (ft bgs)	Top of Screen (ft btc)	Screen Interval (ft bgs)
2	22	—	12	—	12 - 22

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
1	1L Poly	HNO_3	Total Metals	
1	1L Poly	HNO_3	Dissolved Metals	X
1	1L Poly	—	Butyltins	
1	1L Amber	—	SVOCs	
3	40mL VOA	HCl	TPH-GX	
3	40mL VOA	HCl	VOCs	
1	500mL Amber	HCl	TPH-DX	

Well Purge Data

Time	Volume Purged (L)	Purge Rate (mL/m)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity / Color / Remarks
1145	Pump On		Initial 13.05	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
1150	0.7	100	13.05	8.96	219	8.46	5.31	316.7	8.8	CC
1155	0.7	200	13.05	9.35	224	7.89	6.10	299.8	8.2	CC
1200	1.7	200	13.05	9.55	227	8.17	6.30	295.8	6.1	CC
1205	2.7	200	13.05	9.57	221	8.14	6.69	288.5	4.5	CC
1210	3.7	200	13.05	9.61	224	8.12	6.85	285.2	2.5	CC
1215	4.7	200	13.05	9.64	224	8.09	6.60	286.8	2.8	CC ✓
1220	5.7	200	13.05	9.69	224	8.17	6.50	287.0	2.6	CC ✓
1225	6.7	200	13.05	9.75	222	8.17	6.52	282.4	1.6	CC ✓
	Start Sampling	1231								
	End Sampling	1257	Final 13.05	Sample Number: 090113MW15GW					Sample Time: 1245	

1/13/09

Notes: AC = almost clear; bgs = below ground surface; btc = below top of casing; Cl = cloudy; DTW = depth to water; C = clear; VC = very cloudy; SC = slightly cloudy

Bradford Island

Seep and Surface Water Sampling Form

Sample Number: 52	Date: 1/11/09
Weather Conditions: 40.5 light rain	Time: 1253

Analyses

____PCB-Aroclors	X VOCs	____TSS
____PCB – Congeners	____Pesticides	____Hardness
X Metals	X Butyltins	____pH
X SVOCs	X Diesel/Heavy Range Organics	____TOC
____PAHs		____DOC

Sample Collection

Seep Sampling Method:	P-pump from dedicated jar @ seep outlet (same as Q1)
QC Samples Collected:	none
Surface Water Sample Method:	P-pump w/ dedicated tubing direct from river ↳ 7' offshore ~0.5' deep
Decontamination Method:	n/a dedicated equipment
Sample Team:	MFC + SJ

Sample Location

Latitude: _____ N

Longitude: _____ W

Description of Location: Seep #2 ~~at~~ mc east of fallen tree

Seep flow rate: ~100 mL/min

Field Water Quality Measurements

	Seep	SW
pH	7.85	7.19
Turbidity	7.9 ntu	4.3 ntu
Dissolved Oxygen	5.48 mg/L	11.80 mg/L
Conductivity	227 µS/cm	155 µS/cm
Reduction-Oxidation Potential	-108.3 mV	-106.7 mV
Temperature	9.99°C	6.03°C

Other Comments

Seep: 090111S2SP @ 1310

Surface Water: 090111S2SW @ 1320

Bradford Island

Seep and Surface Water Sampling Form

Sample Number: S4		Date: 1/11/09	
Weather Conditions: 40's rain		Time: 1600	
Analyses			
____PCB-Aroclors	X VOCs	____TSS	
____PCB – Congeners	____Pesticides	____Hardness	
X Metals	X Butyltins	____pH	
X SVOCs	X Diesel/Heavy Range Organics	____TOC	
____PAHs		____DOC	
Sample Collection			
Seep Sampling Method: P-pump from dedicated jar w/ dedicated tubing (same as Q1)			
QC Samples Collected: none			
Surface Water Sample Method: P-pump from dedicated tubing placed directly in river			
Decontamination Method: n/a all dedicated equipment			
Sample Team: MFC + SJ			
Sample Location			
Latitude: _____ N			
Longitude: _____ W			
Description of Location: Seep #4 (farthest East), downslope + E of MW-6			
Seep flow rate: ~75 mL/min			
Field Water Quality Measurements			
	Seep	SW	
pH	7.10	7.75	
Turbidity	22 ntu	9.0 ntu	
Dissolved Oxygen	7.02	9.06	
Conductivity	602 µS/cm	177 µS/cm	
Reduction-Oxidation Potential	-86.8	-117.6	
Temperature	10.78°C	5.41°C	
Other Comments			
090111S4SP @ 1630			
090111S4SW @ 1645			

ATTACHMENT B

URS

Quality Control Summary Report for Analytical Chemistry

UPLAND OPERABLE UNIT REMEDIAL INVESTIGATION

QUALITY CONTROL SUMMARY REPORT FOR ANALYTICAL CHEMISTRY

4TH QUARTER UPLAND SAMPLING EVENT – JANUARY 2009

MARCH 2009

Prepared by:

URS

111 S.W. Columbia, Suite 1500
Portland, Oregon 97201-5850

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TABLES

TABLE 1 SAMPLE ID AND ANALYSIS SUMMARY……..FOLLOWING REPORT
TABLE 2 QUALIFIER SUMMARY…….…..FOLLOWING REPORT

1.0 Executive Summary

The overall assessment of the fourth quarter groundwater results show the quality of the data is acceptable to support project objectives. The contracted laboratory provided all requested analyses and delivered data reports were complete. Some data were qualified as estimated and flagged with a 'J' or 'UJ'. Some data were qualified as not detected and flagged with a 'U'. All data qualifiers resulting from this review have been added to both the project database and the data tables within the main body of the attached report.

2.0 Project Description

URS collected 18 groundwater samples (15 primary and 3 field duplicates), 2 seep water samples, 2 surface water samples, 1 rinsate blank, and 4 trip blanks during the fourth quarter upland sampling event on Bradford Island. Samples were collected from January 11 through January 15, 2009. Table 1 summarizes the sample stations, URS and laboratory identification numbers, and the requested analyses.

3.0 Sampling and Analytical Procedures

Samples were collected according to the Quality Assurance Project Plan (QAPP) *Upland Operable Unit Remedial Investigation* (URS 2008). All water samples were submitted to Columbia Analytical Services (CAS) located in Kelso, Washington and logged in by the laboratory under four CAS sample delivery groups (SDGs, K0900280, K0900315, K0900316, and K0900366). The following table lists the parameters analyzed on one or more of the samples.

Method	Analytical Parameter
EPA 8260B	VOCs
EPA 8270C	SVOCs
EPA 6000 series	Metals (total and dissolved)[1]
Krone (Krone 1998)	Butyltins
Total Petroleum Hydrocarbons (Ecology 1997)	Northwest Total Petroleum Hydrocarbons – Diesel Range (DRO) and Residual Range (RRO) (NWTPH-Dx) NWTPH – Gasoline Range (GRO) (NWTPH-Gx)

[1]One or more of the following metals: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc.

4.0 Data Validation

Analyses were performed in general accordance with the above-referenced methods. The analytical results for all samples were subjected to a quality assurance/quality control (QA/QC) review. This QA/QC review includes evaluation of representativeness (sample collection/handling), accuracy (spike and/or standard recoveries), analytical precision (duplicate relative percent difference), comparability (use of standard methods) and completeness (percent of usable data). Specifically, the following items were reviewed when appropriate: compliance with the QAPP, chain-of-custody (COC), laboratory case narrative, proper sample preservation and handling procedures, holding times, field/method/trip blank analyses, matrix/matrix spike duplicate recoveries, laboratory duplicate results, field duplicate results, blank spike recoveries (laboratory control samples), data completeness and format, data qualifiers assigned by the laboratory, and analyte identification. The following items were reviewed on 15% or greater of the data: initial and continuing calibration verification (6000 series methods), instrument calibration, and a verification of the reported electronic data with the hard copy deliverable. The data were reviewed in accordance with the QAPP (URS 2008). The data results were reviewed in accordance with the criteria contained in the DoD QSM (DoD 2006), the above-listed methods, and the following EPA guidance documents, as applicable; EPA's *Contract Laboratory Program National Functional Guidelines (EPA NFGs) for Organic Data Review* (USEPA 1999) and EPA's *NFGs for Inorganic Data Review* (USEPA 2004) in that order. Project-specific QC criteria are listed in the QAPP.

A summary of qualifiers assigned to results in this investigation is included in Table 2. Samples are represented by their URS sample identification assigned in the field as well as the laboratory identification. The laboratory was requested to report analytical results above the method detection limit (MDL) but below the method reporting limit (MRL). These results were flagged 'J' by CAS and for simplicity these 'J' flags are not included in Table 2 unless the analytical result was otherwise qualified based on quality control issues identified in this report. The 'J' qualifiers assigned to results reported between the MDL and MRL are included in the database and are included in the data tables in the main body of the remedial investigation report. Qualifiers that may be assigned to the results of this investigation include the following:

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

- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

- DNR - Do Not Report. Another result is available that is more reliable or appropriate.

Final sample results and qualifiers are presented in the analytical tables provided in the sampling report.

4.1 Chain-of-Custody, Sample Preservation and Holding Time

The project-specific analyte lists for metals, VOCs and SVOCs for monitoring wells MW-1 through MW-9 and MW-11 through MW-14 were misidentified on the associated COC forms. This was discovered and corrected during the sample confirmation process; all samples were analyzed for the appropriate analytes.

COC forms indicated samples were maintained under chain-of-custody protocols and forms were signed upon release and receipt with the following exceptions:

- The COC form associated with SDG K0900280 was signed but the date and time were inadvertently omitted. The COC form associated with SDG K0900315 relinquished on January 13 was not signed by URS. All subsequent courier and laboratory signatures with date and time are included. All samples were received intact by the laboratory. Data were not qualified.
- One 500 milliliter (mL) glass amber sample container for sample 090111S2SW (SDG K0900280) was missing a sample label. Through process of elimination CAS determined the proper sample identification. Data were not qualified.

All samples were released by URS to a CAS courier and were received and logged in by the laboratory on the same day. All coolers were submitted at temperatures within the EPA-recommended temperature range of 6°C or below. All samples were analyzed within the technical and contracted holding times.

All samples were received with adequate sample volume with the following exception:

- Due to insufficient groundwater in monitoring well 1 (MW-01), adequate sample volume to analyze all constituents could not be collected. Therefore, NWTPH-Gx, VOCs and metals were given priority. Butyltins, NWTPH-Dx and SVOCs were not analyzed due to insufficient sample volume.

4.2 Instrument Calibration

The laboratory performed initial multipoint calibrations for all target and surrogate compounds as required by the analytical methods. Initial calibrations (ICALs) and continuing calibrations (CCALs) were analyzed at the proper frequency and at the appropriate concentrations required by the methods. Instrument calibrations were acceptable for all sample analyses with the following exception:

- Butlytins are analyzed using dual columns for confirmation. Continuing calibration results for the confirmation column in analysis lot KWG0900568 were outside the laboratory-specific calibration criterion of 20% for n-butyltin and tri-n-propyltin. Results ranged from a percent difference of 25% to 35% for the post sample continuing calibration in this analysis lot. The samples analyzed in the analysis lot were K0900280-001, K0900280-002, K0900280-003, K0900280-004, K0900315-001, K0900315-002, K0900315-003, K0900315-004 and K0900315-005. The primary calibration results prior to sample analysis were in control. All associated results were reported from the column with acceptable continuing calibration results. Qualification of the data was not necessary. (Note: the original case narrative for data package K0900316 inadvertently stated samples associated with this SDG were analyzed in the analysis lot KWG0900568. This error was detected during the data review and an addendum narrative was issued by CAS correcting the error.)

4.3 Review of Blanks

Method blanks were used to check for laboratory contamination and instrument bias. The laboratory analyzed at least one method blank for each analysis and for each analytical batch, per QAPP requirements. Qualification of samples due to method, rinsate, or trip blank contamination followed guidelines set forth in the EPA NFGs.

Organic sample results less than five times (5x) and inorganic sample results and common organic laboratory contaminates less than ten times (10x) the associated blank concentration and between the method detection limit (MDL) and the method reporting limit (MRL) were qualified as non-detect and flagged with a 'U' at the MRL. When sample results were less than 5x (or 10x) the blank concentration but above the MRL, the reported result was qualified as non-detect and flagged with a 'U'. Target compounds detected in the method blank but reported as not detected in the associated samples were not qualified. Target compounds reported with concentrations greater than 5x (or 10x) the blank concentration were not qualified.

Method and Calibration Blanks (Inorganics)

- Manganese was detected above the MDL but below the MRL in the method blank in delivery group K0900280. Detected results for manganese not exceeding 10x the blank

concentration were qualified as non-detect and flagged 'U' using the criteria described above. The specific sample results are listed in Table 2.

- Cadmium was detected at or above the MDL but below the MRL in the method blank associated with sample delivery group K0900366. Detected results not exceeding 10x the blank concentration of cadmium were qualified as non-detect and flagged 'U' using the criteria described above. Specific sample results are listed in Table 2.
- Two method blanks were analyzed with the metals in SDG K0900316, one was non-detect for all project specific metals, the second had a detection of arsenic at the MDL. Detected results for arsenic not exceeding 10x the blank concentration were qualified as non-detect and flagged 'U' using the criteria described above. The specific sample results are listed in Table 2.
- Iron and antimony were detected above the MDL but below the MRL in the calibration blanks bracketing the samples in SDGs K0900280 and K0900366, indicating possible instrument contamination and not preparatory contamination. Detected results for iron and antimony not exceeding 10x the blank concentration were qualified as non-detect and flagged 'U' using the criteria described above. The specific sample results are listed in Table 2.
- Iron, lead and manganese were detected above the MDL but below the MRL in the calibration blanks bracketing the samples in SDG K0900316. Detected results for iron, lead and manganese not exceeding 10x the blank concentration were qualified as non-detect and flagged 'U' using the criteria described above. The specific sample results are listed in Table 2.

Method Blanks (Organics)

- RRO was detected above the MDL and below the MRL in the method blanks associated with SDGs K0900280 and K0900315. These results were qualified as not detected and flagged 'U' at the MRL, using the criteria described above. Specific sample results are listed in Table 2.

Rinsate Blanks

One rinsate blank was collected by running laboratory-provided deionized water through the *Grundfos* submersible pump used to sample monitoring wells MW-01 and MW-08 (all other wells were sampled using dedicated tubing and a peristaltic pump). Analytical results for the rinsate blank were non-detect with the following exceptions:

- Iron, lead and manganese were detected at concentrations above the MDL and below the MRL, but were qualified as non-detect based on the associated method blank and/or calibration blank detections (as stated above and listed in Table 2).

- GRO was detected above the MDL and below the MRL. GRO analytical results for both MW-01 and MW-08 were non-detect; therefore, qualification of the data was not necessary.
- Phenol was detected above the MDL and below the MRL. Only MW-08 was analyzed for SVOCs. The phenol result for MW-08 was non-detect. Therefore, qualification of the data was not necessary.

Trip Blanks

VOCs and GRO samples were submitted to CAS under four independent submittals which resulted in four trip blanks. All analytical results for trip blanks were non-detect for VOCs and GRO.

Trip blank TB5 is associated with samples submitted to CAS on January 13, 2008. This trip blank was delivered to CAS in a cooler containing VOC and TPH-Gx sample containers associated with SDGs K0900315 and K0900316. This trip blank is listed on COC forms associated with both SDGs. The trip blank was analyzed once and reported in both SDGs. The same is true for trip blank TB 4 associated with samples from both SDGs delivered to CAS on January 14, 2009.

Both trip blanks TB4 and TB5 consisted of a single vial. The single vial for each sample was initially analyzed for GRO. After analysis, the remaining volume was analyzed for VOCs, however the vial used for VOC analysis contained headspace. Therefore, the VOC data is considered qualitative and flagged 'UJ', due to the headspace in the sample container prior to analysis. This problem has been remedied and all future sampling events will include adequate number of sample vials to complete requested analyses. It was not deemed necessary to qualify the analytical results of the primary samples.

4.4 Surrogate Recovery Review

Each sample analyzed for organic compounds was spiked with surrogates (system monitoring compounds). Surrogate recoveries are a measure of accuracy for the overall analysis of each individual sample. SVOCs contain acid and base/neutral components. When more than one surrogate per fraction (acid or base/neutral) were spiked in the sample, SVOCs were qualified if two or more surrogate recoveries for a given fraction were outside DoD QSM sample criteria. When only one surrogate per fraction was spiked, all sample results associated with that fraction were qualified when the surrogate recovery was outside DoD QSM sample criteria. Surrogate recoveries were acceptable for all analyses.

4.5 Laboratory Control Samples and Matrix Spike/Matrix Spike Duplicate Review

Laboratory control/laboratory control duplicate (LCS/LCSD) samples are used to monitor the laboratory's day-to-day performance of routine analytical methods independent of matrix effects

and to assess accuracy for the target compounds. Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to assess the ability of the laboratory to recover the target compounds from the sample matrix. At least one LCS and one MS/MSD for each analysis and for each batch were analyzed per method requirements.

LCS/LCSD and MS/MSD recoveries were acceptable for all analytical tests with the following exception:

- The recovery of calcium within the MS performed on sample K0900366-001 was below the DOD QSM lower control limit of 80% at 74%. The associated MSD and RPD were within the control limits. The LCS and post spike recoveries were in control, indicating the analytical batch was in control. Because two of three matrix spike control parameters (MSD and RPD) were within the DOD QSM control limits the associated calcium analytical results were not qualified.

4.6 Duplicate Review

Field duplicates are used to evaluate the variability associated with sample collection. Relative percent difference (RPD) calculations were performed on the analytical results from the three field duplicates associated with sample locations MW-06, MW-10 and MW-11, and identified as MW-26, MW-20, and MW-21, respectively. Specific field duplicate precision control limits were not defined in the QAPP; however, all field duplicate results were below the DoD QSM laboratory precision control of 30%. To evaluate laboratory precision, CAS performed duplicate analyses (i.e. LCS/LCSD and MS/MSD) as discussed above. RPD precision was within project-specific control limits.

4.7 Compound Quantification

- CAS assigned ‘L’ and/or ‘Y’ flags in reporting RRO and/or DRO sample results for samples K0900316-006, K0900316-007, K0900316-008, K0900316-009, and K0900316-010 to indicate that the chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents (‘L’) or the elution pattern does not match the calibration standard (‘Y’). Further qualification was not necessary.
- CAS assigned a ‘Z’ flag in reporting RRO and DRO sample results for sample K0900280-003 to indicate the chromatographic fingerprint of the sample does not resemble a petroleum product. Further qualification was not necessary.

4.8 Reporting Limits

If sample results were detected at concentrations below the MRL but above the MDL, they were identified by the laboratory and flagged with a 'J'. As stated above, these flags are recorded within the database and are reported in the data tables included in the main body of this report but are not included in Table 2 of this report.

5.0 Completeness

The laboratory reported all requested analyses and the deliverable data reports were complete. Some data were qualified as estimated and flagged with a 'J' or a 'UJ'. Some data were qualified as not detected and flagged with a 'U.' A summary of qualifiers can be found in Table 2.

The electronic and .pdf versions of the deliverables were cross-checked for accuracy at a frequency of 15% or greater. Any minor discrepancies found between the deliverables were reported to CAS and corrected by updating the database to reflect the .pdf deliverable.

- *Technical Completeness* = (number of usable results/total reported results) x100

  = (527 compliant / 527 total results) = 100%

  All samples results are considered usable.

- *Analytical Completeness* = (number of unqualified results/total reported results) x100

  = (474 compliant / 527 total results) = 90%

  Some data were qualified non-detect and flagged 'U' and some were qualified as estimated and flagged 'J' or 'UJ.' Data qualified 'J' due to detections between the MDL and the MRL were not included in this calculation.

- *Contract Completeness* = (number of contract compliant results/total reported results) x100

  = (527 compliant / 527 total results) = 100%

  All samples analyzed met laboratory contract requirements.

- *Field Sampling Completeness* =(number samples collected/total reported results) x100

  = (22 compliant / 22 total results) = 100%

  All samples collected and submitted to CAS for analysis had acceptable results.

6.0 References

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URS 2008. Quality Assurance Project Plan, *Upland Operable Unit Remedial Investigation*, Bradford Island, Bonneville Lock and Dam Project, Cascade Locks, Oregon. October 2008.

USEPA 2004. U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. October 2004.

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Table 1
Sample ID and Analysis Summary
Quality Control Summary Report for Analytical Chemistry
4th Quarter Sampling Event - January 2009

Station Number	URS Sample ID	CAS ID	Date Collected	Anaytes						
				Butyltins	VOCs	SVOCs	Metals (Total/Dissolved)	Mercury (Total and Dissolved)	TPH-Dx (DRO and RRO)	TPH-Gx (GRO)
MW-01[1]	090115MW1GW	K0900316-012	01/15/09		X		X			X
MW-02	090113MW2GW	K0900316-004	01/13/09	X	X	X	X		X	X
MW-03	090113MW3GW	K0900316-003	01/13/09	X	X	X	X		X	X
MW-04	090114MW4GW	K0900316-010	01/14/09	X	X	X	X		X	X
MW-05	090114MW5GW	K0900316-009	01/14/09	X	X	X	X		X	X
MW-06	090114MW6GW	K0900316-006	01/14/09	X	X	X	X		X	X
MW-26 (MW-6 duplicate)	090114MW26GW	K0900316-007	01/14/09	X	X	X	X		X	X
MW-07	090112MW7GW	K0900316-001	01/12/09	X	X	X	X		X	X
MW-08	090115MW8GW	K0900316-013	01/15/09	X	X	X	X		X	X
MW-09	090114MW9GW	K0900316-008	01/14/09	X	X	X	X		X	X
MW-10	090113MW10GW	K0900366-001	01/13/09				X	X		
MW-20 (MW-10 duplicate)	090113MW20GW	K0900366-002	01/13/09				X	X		
MW-11	090112MW11GW	K0900315-002	01/12/09	X	X	X	X		X	X
MW-21 (MW-11 duplicate)	090112MW21GW	K0900315-001	01/12/09	X	X	X	X		X	X
MW-12	090113MW12GW	K0900315-006	01/13/09	X	X	X	X		X	X
MW-13	090112MW13GW	K0900315-003	01/12/09	X	X	X	X		X	X
MW-14	090113MW14GW	K0900315-005	01/13/09	X	X	X	X		X	X
MW-15	090113MW15GW	K0900315-007	01/13/09	X	X	X	X		X	X
Seep Water										
S2-Seep	090111S2SP	K0900280-001	01/11/09	X	X	X	X		X	X
S4-Seep	090111S4SP	K0900280-003	01/11/09	X	X	X	X		X	X
Surface Water										
S2-Surface	090111S2SW	K0900280-002	01/11/09	X	X	X	X		X	X
S4-Surface	090111S4SW	K0900280-004	01/11/09	X	X	X	X		X	X
Blanks										
Rinsate Blank	090115RB	K0900316-014	01/15/09	X	X	X	X		X	X
Trip Blank (TB2)	Trip Blank 1/15/09	K0900316-015	--		X					X
Trip Blank (TB3)	Trip Blank 1/14/09	K0900316-011	--		X					X
Trip Blank (TB4)	Trip Blank 1/13/09	K0900315-008	--		X					X
		K0900316-005	--		X					X
Trip Blank (TB5)	Trip Blank 1/12/09	K0900315-004	--		X					X
		K0900316-002	--		X					X

Notes:
X = Analyzed
-- = Not Applicable
1 = MW-01 did not have sufficient volume to complete the full analyte list, TPH-Gx, VOCs and Metals were given priority over the other constituents.
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons: Diesel Range Organics (DRO), Residual Range Organics (RRO) or Gasoline Range Organics (GRO).
VOCs = Volatile Organic Compounds

Table 2
Qualifier Summary
Quality Control Summary Report for Analytical Chemistry
4th Quarter Sampling Event - January 2009

Station ID	URS ID	CAS ID	Analyte	Qualifiers	Rationale
S2-Seep	090111S2SP	K0900280-001 Diss	manganese	0.16U	method blank detection
S4-Seep	090111S4SP	K0900280-003 Diss		0.14U	
MW-10	090113MW10GW	K0900366-001	cadmium	0.020U	
MW-10	090113MW10GW	K0900366-001 Diss		0.020U	
MW-21 (MW-11duplicate)	090112MW21GW	K0900315-001	DRO	110U	
MW-11	090112MW11GW	K0900315-002		110U	
MW-13	090112MW13GW	K0900315-003		120U	
MW-15	090113MW15GW	K0900315-007		120U	
S2-Seep	090111S2SP	K0900280-001	RRO	110U	
S2-Surface	090111S2SW	K0900280-002		100U	
S4-Surface	090111S4SW	K0900280-004		100U	
MW-21 (MW-11duplicate)	090112MW21GW	K0900315-001		110U	
MW-11	090112MW11GW	K0900315-002		110U	
MW-13	090112MW13GW	K0900315-003		120U	
MW-14	090113MW14GW	K0900315-005		120U	
MW-12	090113MW12GW	K0900315-006		120U	
MW-15	090113MW15GW	K0900315-007		120U	
MW-03	090113MW3GW	K0900316-003	arsenic	0.5U	
MW-03	090113MW3GW	K0900316-003 Diss		0.5U	
MW-09	090114MW9GW	K0900316-008		0.5U	
MW-09	090114MW9GW	K0900316-008 Diss		0.5U	
MW-04	090114MW4GW	K0900316-010		0.5U	
MW-04	090114MW4GW	K0900316-010 Diss		0.5U	
MW-14	090113MW14GW	K0900315-005	iron	43.2U	continuing calibration blank detection
MW-12	090113MW12GW	K0900315-006		20U	
MW-21 (MW-11duplicate)	090112MW21GW	K0900315-001 Diss		20U	
MW-11	090112MW11GW	K0900315-002 Diss		20U	
MW-14	090113MW14GW	K0900315-005 Diss		20U	
MW-12	090113MW12GW	K0900315-006 Diss		20U	
MW-15	090113MW15GW	K0900315-007 Diss		20U	
S2-Seep	090111S2SP	K0900280-001 Diss		20U	
S2-Surface	090111S2SW	K0900280-002 Diss		20U	
S4-Seep	090111S4SP	K0900280-003 Diss		20U	
S4-Surface	090111S4SW	K0900280-004 Diss		20U	
MW-10	090113MW10GW	K0900366-001		37.8U	
MW-20 (MW-10 duplicate)	090113MW20GW	K0900366-002		37.0U	
MW-10	090113MW10GW	K0900366-001 Diss		20.8U	
MW20 (MW-10 duplicate)	090113MW20GW	K0900366-002 Diss		20.0U	
MW-03	090113MW3GW	K0900316-003		60.6U	
MW-03	090113MW3GW	K0900316-003 Diss		20U	
MW-02	090113MW2GW	K0900316-004 Diss		20U	
MW-09	090114MW9GW	K0900316-008 Diss		20U	
MW-04	090114MW4GW	K0900316-010 Diss		27.7U	
MW-01	090115MW1GW	K0900316-012 Diss		20U	
Rinsate Blank	090115RB	K0900316-014		20U	
S2-Seep	090111S2SP	K0900280-001 Diss	lead	0.030U	
MW-07	090112MW7GW	K0900316-001 Diss		0.030U	
MW-06	090114MW6GW	K0900316-006 Diss		0.030U	
MW-26 (MW-6 duplicate)	090114MW26GW	K0900316-007		0.030U	
Rinsate Blank	090115RB	K0900316-014		0.030U	
Rinsate Blank	090115RB	K0900316-014 Diss		0.030U	
Rinsate Blank	090115RB	K0900316-014	manganese	0.22U	
Rinsate Blank	090115RB	K0900316-014 Diss		0.22U	
Trip Blank (TB4)	Trip Blank 1/13/09	K0900315-008	VOCs	UJ	Headspace in sample vial
		K0900316-005			
Trip Blank (TB5)	Trip Blank 1/12/09	K0900315-004			
		K0900316-002			

Notes:
Diss = field filtered dissolved phase
LCS = Laboratory Control Sample
MS/MSD = Matrix Spike/Matrix Spike Duplicate
RPD = Relative Percent Difference
RRO = Residual Range Organics

Appendix D

Low-Flow Groundwater Purging and Sampling SOP

LOW-FLOW GROUND WATER PURGING AND SAMPLING USING NON-DEDICATED GROUNDWATER SAMPLING PUMPS

SEATTLE DISTRICT HTRW DESIGN CENTER
STANDARD OPERATING PROCEDURES

23 March 1999
(Revised 1 September 2009)

US Army Corps
of Engineers
Seattle District

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LOW FLOW GROUND WATER PURGING AND SAMPLING USING NON-DEDICATED GROUNDWATER SAMPLING PUMPS

STANDARD OPERATING PROCEDURES

1.0 PURPOSE

This Standard Operating Procedure provides general information on low flow minimal draw down ground water purging and sample acquisition from HTRW monitoring wells with non-dedicated submersible pumps to include peristaltic and portable bladder pump systems. This SOP is intended to provide field personnel with a uniform approach to routine ground water sampling tasks using the low flow method.

2.0 SCOPE

This guideline describes equipment and method for the low flow purging and collection of ground water sample from the saturated zone. Review of these guidelines will also assist in the development and execution of a low flow purging and sampling plan that will provide meaningful and representative data.

3.0 DEFINITION

Low flow groundwater purging and sampling is an EPA-recommended method that is now the industry-standard suitable for all USACE groundwater monitoring projects. The low flow purging and sampling technique induces laminar (non-turbulent) flow in the immediate vicinity of the sampling pump intake, thus drawing ground water directly from the aquifer, horizontally through the well screen and into the sampling device. Low flow pumping rates are typically in the range of 0.1 to 0.5 liter per minute. However, this is dependent on site-specific hydrogeology. Some extremely coarse-textured formations can be sampled successfully at flow rates of 0.5 to1.0 liters per minute. These low flow rates minimize disturbance in the aquifer, resulting in: (1) minimal production of artificial turbidity and oxidation; (2) minimal mixing of chemically distinct zones; (3) minimal loss of volatile organic compounds; and (4) collection of representative samples while minimizing purge volume.

4.0 GUIDELINES

4.1 General

Efficiency and cost-effectiveness of a sampling program will be increased by planning before starting the sampling operation. Well construction must be reviewed in order to specify the equipment and procedures to be used during purging and sampling. A table of well specifications that includes at least the well depths, casing diameters, screened intervals, recovery rates, and

water level measurements is to be provided in the Project Sampling and Analysis Plan. Mobilization of equipment will be faster if accessibility of each well location is verified, the wells are accurately plotted on a site map, and the sampling order is determined in advance.

4.2 Purging, Sampling, and Monitoring Supplies and Equipment

The following is a general list of supplies and equipment that will be required when sampling monitoring wells.

- Accident Prevention Plan
- Project Sampling and Analysis Plan
- Personal protective equipment(e.g., gloves, rain gear or Tyvex suits, steel toe boots, safety glasses)
- First aid kit
- Keys for well locks
- Purge and sample equipment(e.g., peristaltic pump, Sample Pro® portable bladder pump system, T1200M Bladder Pump system, or electrical submersible pumps, electrical generator, compressed CO2 cylinders, 12-volt air compressor, 12-volt portable pump batteries, pump-specific airlines, cable, and tubing as required for the specific system)
- In-line flow cell with multi-parameter meter that allows for interchanging of sensor probes.
- Meters, probes and standards for field measurements (e.g., turbidity, water level, PID, calibration gas)
- Pyrex measuring cup
- Graduated beaker
- Stop watch
- Calculator
- Temperature and trip blanks, as specified in the QAPP
- Sample preservation(e.g., deionized water, acids, pipettes, pH paper)
- Sample containers (e.g., glass or polyethylene of specific volumes)
- Sample shipment ice chest coolers

- Cold pack frozen gel ice and/or cubed ice for sample preservation in shipment coolers
- Plastic freezer bags to contain ice
- Bubble-wrap plastic bags for sample containers
- Packing material to prevent sample containers from breakage during shipment
- Fiber and clear tape
- Chain-of-custody labels, record forms, custody seals, and low-flow ground water purging and sampling log sheets.
- Measuring tape
- Log book and indelible ink pen
- Decontamination equipment (paper towels, tap and distilled water, phosphate-free soap, Citrasolv® cleaner and degreaser, buckets, sponges, brushes)
- Digital cameral
- Tool box with standard tool set for opening wells and equipment maintenance
- D.O.T. approved gasoline storage container for generator if needed.
- Plastic sheeting
- Decontamination sprayer filled with distilled water
- Scissors and/or razor knife
- Plastic trash bags
- Extra batteries and/or battery packs
- Fedex air bills

Once all the equipment is gathered and checked to determine that it is clean, properly packaged and in working order, the actual procedures for obtaining the samples must be selected. Well sampling is discussed in the next eleven sections in the order that it is performed:

1) Sample Preservation
2) Trip Blanks

3) Equipment Calibration
4) Equipment Blanks
5) Well Condition Check and Contamination Prevention
6) Air Monitoring
7) Water Level Measurement and Monitoring
8) Low-Flow Purging
9) Sample Collection
10) After Completion of Sampling
11) Decontamination

4.3 Sample Preservation

The appropriate sample containers will be prepared in advance of actual sample collection for analytes of interest and include sample preservative where necessary. Preservatives will be added to the sample containers in a controlled setting prior to entering the field in order to reduce introducing field contaminants into the sample container while adding the preservatives. The preservatives will be transferred from the chemical bottle to the sample container using a disposable pipette. The pipette will be used for only one preservative type and then discarded after adding the specific preservative in the required group of sample containers. The pH of VOA samples will be checked by filling an extra vial with sample water and checking the pH with pH paper once per sampling event.

4.4 Trip Blanks

Trip blanks are used to assess the potential induction of contaminants from sample containers or during the transportation and storage procedures. Trip blanks are not opened in the field. Trip blanks are prepared only when VOC samples are taken and are analyzed for VOC analytes. Trip blanks will be prepared in the USACE Seattle District laboratory by filling 40 ml volatile organic analyses (VOA) vials with reagent grade water prior to commencement of field work. Trip blanks will be preserved following the same procedure as investigative samples. One trip blank will accompany each cooler containing VOC samples sent to the laboratory for analysis.

4.5 Equipment Calibration

Prior to and following each day of sampling, all sampling device and monitoring equipment will be calibrated according to manufacturer's recommendations. Calibration documentation including date, time, and the initials of the person that performed the calibration will be recorded in the logbook.

A MicroPurge® Flow Cell Model MP20 or equivalent will be used to simultaneously measure the pH, conductivity, water temperature, dissolved oxygen (DO), oxidation reduction potential (ORP-Eh), and turbidity of the pumped groundwater. The pH sensor will be calibrated at 2 points. One at neutral point (pH 7 buffer) and the second at pH 4 if the sample is expected to be acidic or pH 10 if the sample is expected to be basic. The conductivity sensor should be calibrated with a standard close to the conductivity range as the water to be sampled and

performed at a temperature close to 25 degrees centigrade. This will minimize temperature compensation errors. Before calibrating the DO sensor, check condition of the membrane and change it if bubbles are visible under the membrane, if significant deposits of dried KCL electrolyte are visible on the membrane or O-ring, and/or if the probe shows unstable readings or other malfunction. For DO sensor calibration follow the detailed calibration procedure found in the MicroPurge® Flow Cell Model MP20 User Guide manual or equivalent.

A Mini RAE 2000, or equivalent hand held air monitor/photoionization detector(PID) will be used to measure the total concentration of airborne photoionizable gases and vapors released from the wells if required by the QAPP and site-specific health and safety plan (SSHSP). The PID will first be calibrated to zero air followed by isobutylene span gas at 100 ppm +/- 5%.

A LaMotte Turbidity Meter, Model 2008, or equivalent may be used to measure the turbidity of the ground water if the flow cell cannot measure turbidity. Turbidity standards, AMCO Turbidity Standard 0.5 NTU or 5.0 NTU, will be used to calibrate the meter.

A combustible gas indicator (CGI), Biosystems,Inc. Cannonball, or equivalent that will respond to all combustible gases and vapors will be used when specified in the QAPP and HASP. The CGI will first be calibrated to zero air followed by LFL propane span gas at 52.4 %.

4.6 Equipment Blanks

Equipment blank samples will be collected at a frequency of once per day to assess the effectiveness of the equipment decontamination procedures. The frequency of equipment blank collection will be specified in the Project Sampling and Analysis Plan. Equipment blanks will be collected in the field prior to purging and between sampling wells after proper equipment decontamination. Distilled or reagent grade water will be pumped through the system and will be collected in a sample container. All equipment blanks will be submitted blind to the laboratory with sample numbers that are indistinguishable from the investigative samples. Equipment blanks will be preserved in the same manner as the investigative samples and will analyzed for the same parameters as the associated samples.

4.7 Well Condition Check and Contamination Prevention

Check and record the condition of the well for any damage or evidence of tampering. To prevent contamination of the surface soils and the equipment, lay out plastic sheeting around the wellhead and place the monitoring, purging and sampling equipment on the sheeting. If necessary, oil-absorbent pads may also be placed on the plastic sheeting if NAPL is expected to be recovered from the monitoring well.

4.8 Air Monitoring

Measure total organic vapors upwind from the well to obtain a background reading using a PID equipped with a 10.6 eV lamp. Unlock well and remove well cap. Measure head space with the PID. For wells installed on a landfill or sites where combustible gas may be present, also

measure head space with a CGI. If measurements indicate it is not safe, take necessary precautions noted in Health and Safety Plan.

4.9 Water Level Measurement and Monitoring

An electric water level meter will be used to measure the water level in the wells before installing the pump. Water levels will also be measured before, during purging, and after sampling. The water level probe should be carefully lowered down the well to minimize disturbance. Check water level periodically to monitor draw down as a guide to flow rate adjustment. The goal is minimal draw down, less than 4 inches during purging. This goal may be difficult to achieve under some circumstances due to geologic heterogeneities within the screened interval and may require adjustment based on site-specific conditions.

Measure the water level to the nearest 0.01 foot. Water level will be measured from the notch located at the top of the well casing. If well casing is not notched, measurement will be taken from the north edge of the top of the well casing, and a notch will be made using a decontaminated metal file.

Well depth should be obtained from well logs prior to entering the field. If, well depth measurement is required, measure depth after sampling is complete.

4.10 Low-Flow Purging

Set up non-dedicated 12-volt battery-powered Geotech Geopump II® peristaltic pump (or equivalent) by attaching the battery and power cable to the pump unit. Next, insert approximately one foot of dedicated Number 5 silicone tubing into the easy-load pump head. Pump tubing (normally 1/4 inch polyethylene or Teflon-lined polyethylene tubing) is inserted in the well to the mid-screen depth, and the outlet is attached to the silicone pump head tubing. On projects using other non-dedicated pump systems, the preferred pumps are portable Sample Pro® bladder pumps or portable submersible impellor pump systems. These systems will be assembled, connected to compressed air or electric power, then installed and operated according to manufacturer specifications.

Slowly and carefully lower pump down to the desired sample depth where contaminants and representative ground water flow are expected. Be careful not to place the pump intake less than 2-feet above the bottom of the well as this may cause the mobilization of bottom sediments. There should be at least 2-feet of water above the pump intake to prevent pump suction from being broken or entrainment of air in the sample. The pump intake should be positioned in the middle of the screened interval for wells with screen lengths less than or equal to 5-feet. For wells with longer screens, the pump intake should be placed within the most productive zone. Therefore, the geologic log for each well shall be first consulted to determine the most productive zone. The pump intake depth will be recorded on the purging and sampling log sheet.

The water level in the well will rise due to displacement by the pump. Wait for water to equilibrate to its original level before purging.

After the well has equilibrated, begin purging at rate that minimizes stress(draw down) to the system. The appropriate and final purge rate will be determined by monitoring ground water draw down controlled by site specific conditions. The discharge during purging and sampling must produce a non-pulsating flow. The water level should stabilize and the pump rate should be sufficiently low to allow an equal or greater amount of water to recharge the well so little or no water level draw down is observed.

Measure and record ground water levels at least every 2 to 5 minutes until stabilization occurs. After stabilization, measure water levels at regular intervals. If significant draw down occurs, more than 4 inches, lower the speed of the pump and repeat discharge and water level measurements. Repeat until the water level stabilizes to closely match the recharge rate. Record the pumping rate and any adjustments and depths to water on the purging and sampling log sheet.

During purging, water chemistry indicator parameters will be measured continuously, every 2 to 5 minutes, until the parameters have stabilized. The water chemistry indicator parameters monitored shall include pH, temperature, conductivity, redox potential (Eh) and dissolved oxygen (DO). Turbidity shall also be measured, but shall not used as a stabilizer indicator. However, turbidity values should not exceed 10 NTU's. The required indicator parameters to be monitored will be specified in the Project Sampling and Analysis Plan. As a guideline for stabilization, all indicator parameters should have stabilized for three successive readings. The 3 successive readings should be within +/- 0.1 for pH, +/- 3% for conductivity, +/- 10% for temperature, DO, and Eh. Eh and DO usually require the longest time for stabilization. A turbidity reading of 10 NTU's or less is desirable.[1] The stabilization guidelines displayed here are provided as estimates and will not be appropriate for use in all circumstances.

NOTE: The following stabilization criteria have been established by EPA Region 9, and may be selected for EPA Superfund groundwater monitoring projects: The three successive readings should be within +/- 0.1 units for pH, +/- 10% S/cm for specific conductivity, +/- 0.1 ˚C for temperature, +/- 0.3 mg/l for D.O., and +/- 10 mV for ORP (Eh).[3]

The purge stabilized indicator parameter trends are generally obvious and follow either an exponential or asymptotic change to stable parameter values during purging. Purging will continue until the indicator parameters have stabilized to within the specified tolerance for each parameter and graph out asymptotically. It is important to establish specific well stabilization criteria and then consistently follow the same methods thereafter particularly with respect to draw down, flow rate, and sampling device. Purging will cease if the indicator parameters do not stabilize within 45 minutes of elapsed purging time.

The ground water should not be exposed to the atmosphere prior to measurement of the parameters because turbulence, degassing, aeration, heating, and depressurization can all cause significant changes in Eh, conductivity, and DO concentrations. Therefore, an in-line multi-parameter flow-through cell will be utilized when monitoring the indicator parameters.

All water produced during purging will be containerized and stored pending evaluation of acceptability for discharge or treatment.

Unless absolutely necessary, the pump will not be turned off between the purging and sampling process.

Wells installed in very low permeability formations (<0.1 L/min recharge) will require alternative purging and sampling methods. Use of the usual low flow techniques may be impractical in this type of environment, because devices to pump at such low flow rates are not readily available. The primary consideration is to avoid dewatering of the well screen and exposing the filter pack or formation in the saturated zone to atmospheric conditions. This may entail acquiring the sample with no or very little purging (volume of the tubing and pump chamber) and repeated recovery of the water. This may require that the water quality parameters be measured more frequently (every 1 to 2 minutes). Satisfying the usual sample volume requirements may also be a problem and some latitude will be needed on the part of the end-users. To ensure that the appropriate technique and methodology for purging and sampling collection is used, information on well construction and development is needed prior to the start of field activities. The decision on the purging and sampling collection technique and methodology to employ will be dictated by site specific conditions and objectives covered in the Project Sampling and Analysis Plan.

4.11 Sample Collection

Sampling can be initiated after the water quality indicator parameters have stabilized. Before collecting samples, sampling personnel will don clean, nitrile or equivalent protective gloves. Sampling should occur in progression from least to most contaminated well if this is known. Samples will be collected directly from the end of the discharge tubing maintaining the established low flow purge rate. The sequence in which the different types of samples are collected is immaterial.

While filling the sample vial for VOC analysis, formation of air bubbles, aeration, and turbulence should be minimized by using the established low flow rate. A meniscus should be formed over the mouth of the vial to eliminate formation of air bubbles and head space prior to capping.

When pouring the sample from the discharge tubing into the sample bottle, the sample water will be poured gently down the inside of the bottle with minimal turbulence. After filling the sample container, the Teflon-lined cap will be screwed tightly to prevent the container from leaking. A sample label will be filled out and placed on the sample container as specified in the Project Sampling and Analysis Plan. The samples will be stored and shipped at 4°C. All samples will be shipped to the laboratory within 48 hours of collection.

The intent of low flow purging and sampling is to minimize disturbance in the well and thus eliminate the need for filtering samples for inorganic analyses. The unfiltered sample is meant to represent the total mobile contaminant load. However, filtering of samples collected for inorganic analyses may be recommended in some instances. The decision to filter samples will be dictated by site specific sampling objectives covered in the Project Sampling and Analysis Plan.

If filtering is performed, in-line filters will be used. The filters must be pre-rinsed following manufacturer's recommendations. If there are no recommendations for rinsing, pass through a minimum of one liter of ground water following purging and prior to sampling.

4.12 After Completion of Sampling

Unless the pump has been dedicated to the well, the pump assembly should be carefully removed from the well. Close and lock the well. Between all sampling locations, all sampling equipment that comes in contact with the well water will require decontamination. All non-dedicated supplies and equipment will be gathered and disposed of properly.

4.13 Decontamination

If using peristaltic pumps, pump tubing can be dedicated to each monitoring well. The peristaltic pump unit does not come into contact with the sample matrix and requires no decontamination unless it is inadvertently splashed with contaminated groundwater. In this case, the pump unit will be wiped dry with paper towels.

The non-dedicated ground water pump system (e.g., bladder pump or submersible impellor pump, power source cable, tubing) that will be used in multiple wells will be decontaminated after use in each well according to the following procedures:

1. The outside surfaces of the pump and other components that come into contact with ground water will be hand washed with phosphate free detergent and warm water, up to 100°F maximum, with a scrubber sponge; thoroughly rinsed with warm water, then rinsed with distilled water.

2. The inside and outside surfaces of the pump will be flushed with phosphate free detergent and warm water, up to 100 °F maximum, then thoroughly flushed with warm water followed with distilled water. It is recommended that the Teflon lined tubing used to draw the ground water be dedicated to each well sampled.

3. The environmental sampling team will be required to clean the pump system using procedures 1 and 2 between well sampling. For rental pumps, the rental company shall be required to decontaminate the equipment following above procedures 1 and 2. In addition, the pump shall be disassembled, all internal parts shall be cleaned, and all Teflon parts shall be replaced.

The water level meter and water quality parameter indicator probes will be decontaminated according to the following procedures:

1. The water level meter, cable and flow cell probes will be wiped with paper towels to remove NAPL and other gross contamination. Next, Citrasolv® or equivalent degreaser may be used to effectively remove any remaining NAPL from the equipment (this step is not compatible with the sensitive flow cell probes). Then, the equipment will be hand washed with phosphate free detergent and a scrubber or sponge, then thoroughly rinsed with tap water followed by distilled

water. Finally, a distilled water spray will be applied to all surfaces before allowing the equipment to air dry.

2. The flow cell water quality indicator probes will be rinsed with tap water after use at each well. No other decontamination procedures are necessary or recommended for these instrument probes since they are very sensitive, and they will not come into contact with the sample matrix. After the sampling event, the meter probes will be decontaminated again by hand washing with phosphate free detergent and warm water with a soft sponge. Next the probes will be rinsed with tap water before being placed in the probe storage cup containing 50 percent tap water and 50 percent pH 4 storage solution for long-term storage in the USACE Seattle District laboratory.

Footnotes:
[1]Revised and updated on 24 Sep 2001

[2] Updated on 15 September 2006

[3] Updated per EPA Region 9 on 20 April 2007

End of Standard Operating Procedures

Appendix E

Field Forms

Sheet _1__ of __1_

MICROPURGE/LOW-FLOW SAMPLING LOG

US Army Corps of Engineers ®
Seattle District

PROJECT: _____
Sample Round: _____
Task: _____
Date: _____
Weather: _____
Samplers: _____

Purge Method: Micropurge
Sample Collection Method: Low Flow
Sampling Device: Peristaltic Pump or portable bladder pump
Tubing: Bonded TLPE **Pump Intake Depth:** _____
Total Recovered Purge Water This Well: _____

WELL ID: _____
flush mount Y N
Well Condition:
Well Riser Dia. (ID):
Screened Interval:
S.W.L. Measuring Pnt: top of well riser

Well Bottom Depth:
STATIC WATER LEVEL:
Initial Purge Volume:
Approximate Pump Throttle Setting:

Groundwater Sample Data:

Sample ID	Analysis	Primary	QC	MS/MSD	Blank					

Instrumentation/Equipment Data:	**Calibration Date:** (Temperature is factory calibrated)
MP 20 Water Analyzer - probes for Temp., pH, Cond., ORP, D.O.,	
and Turbidity.	

Field Test Results:

Pump Flow Rate:

Comments:
Observations: Clarity: Odor: Floating Product: Sheen:

PURGE WATER DATA TABLES

Stabilization Parameters	Units	____ Minutes	____ Minutes	____ Minutes	____ Minutes	____ Minutes	____ Minutes	____ Minutes	____ Minutes
Temperature	C								
Sp. Cond.	ms/cm								
D.O.	ppm								
pH									
ORP (Eh)	mV								
Turbidity	NTU								
Clock Time									
Static W.L.									
Flow Rate									

Stabilization Parameters	Units	____ Minutes	____ Minutes	____ Minutes	____ Minutes	____ Minutes	____ Minutes	____ Minutes	____ Minutes
Temperature	C								
Sp. Cond.	ms/cm								
D.O.	ppm								
pH									
ORP (Eh)	mV								
Turbidity	NTU								
Clock Time									
Static W.L.									
Flow Rate									

US Army Corps of Engineers Environmental Sampling Team

Monitoring Well Development Field Log

Well Number: ____

Page 1 of ____ **Date:** ____

Project Information

Project Name:

General Information

Field Team:

Purge Method:

Pump Intake Depth (ft btc):

Flow-Through Cell:

Decontamination Method:

Well Volume Calculation			Stick-up or Flush		(circle one)
Well Depth (ft bgs)	Well Depth (ft btc)	DTW (ft btc)	Water Column (ft)	Convert Factor (gal/ft)	One Well Volume (gal)

3/4"=0.023 gal/ft 2"=0.17 gal/ft 4"=0.66 gal/ft 6"=1.5 gal/ft

General Information

Purge Water Disposition:

Field Conditions:

Comments:

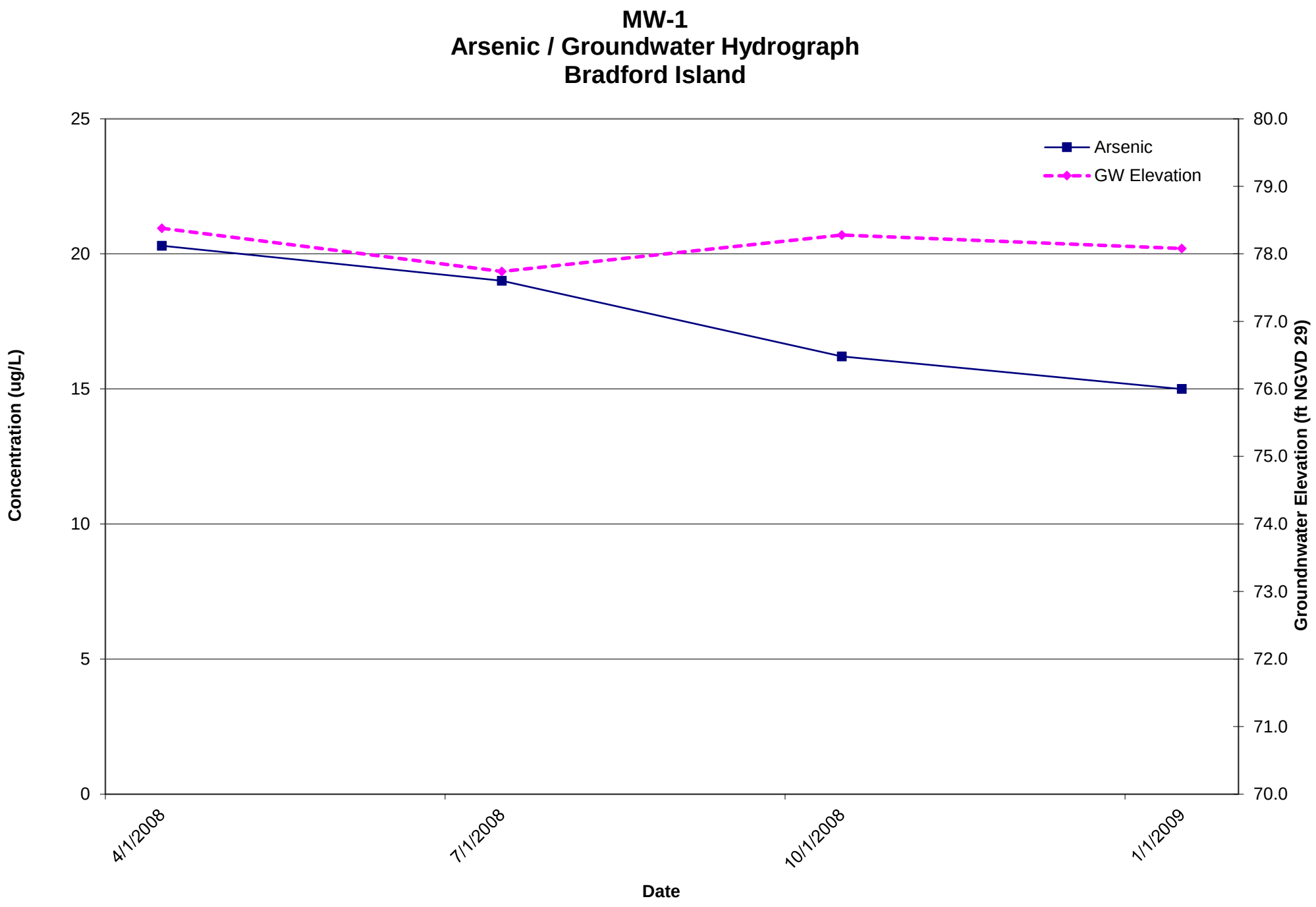
Well Purge Data **Total Volume to Purge (gal) =** ____

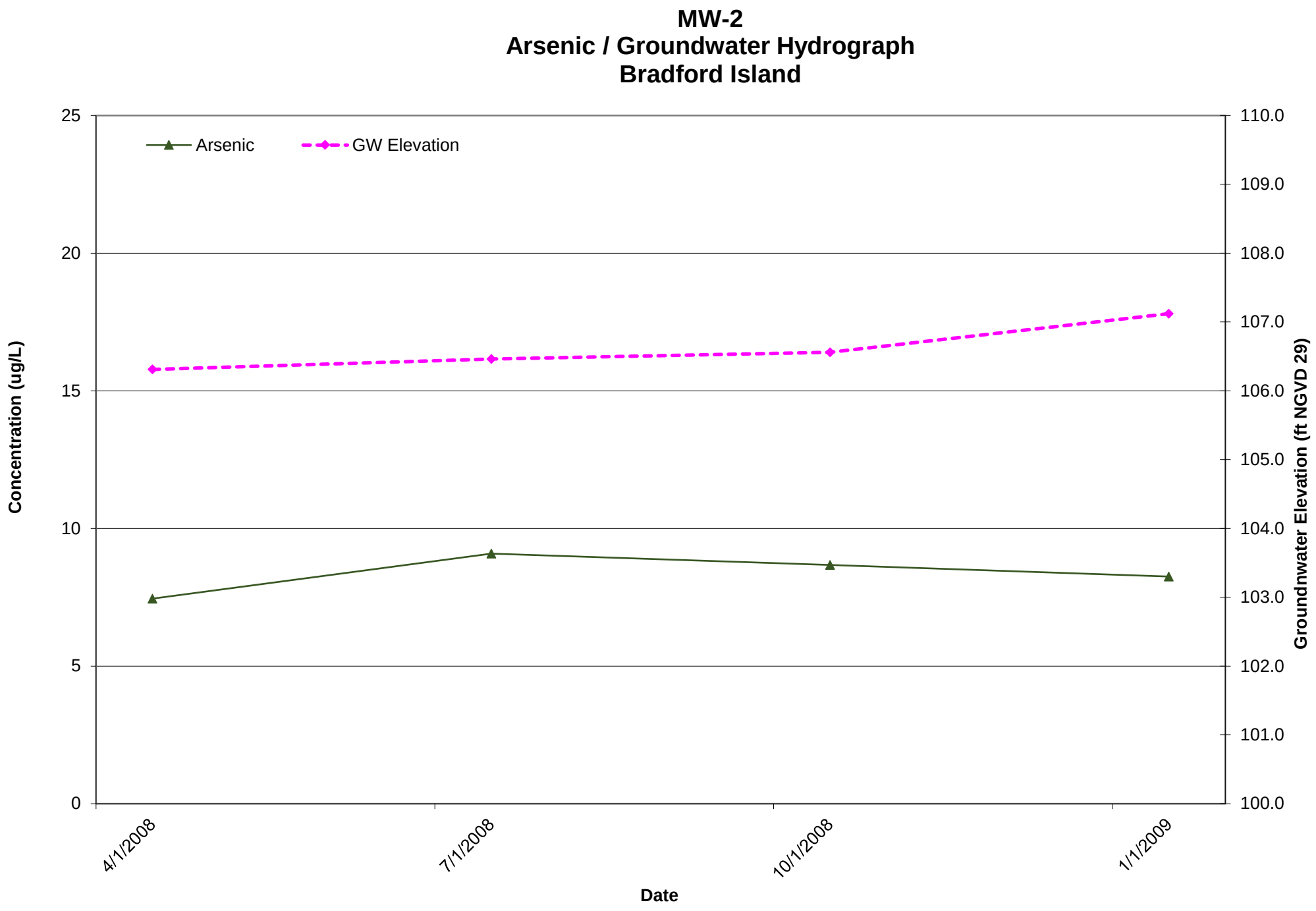
Time	Volume Purged (gallons)	Purge Rate (gpm)	DTW (ft btc)	Temp. (^{0}C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/ Remarks
	Pump On		Initial	-	±3%	±greater of 10% or 0.2mg/L	±0.1	±10mv	±10%	<= Stabilization Criteria
	Pump Off		Final							

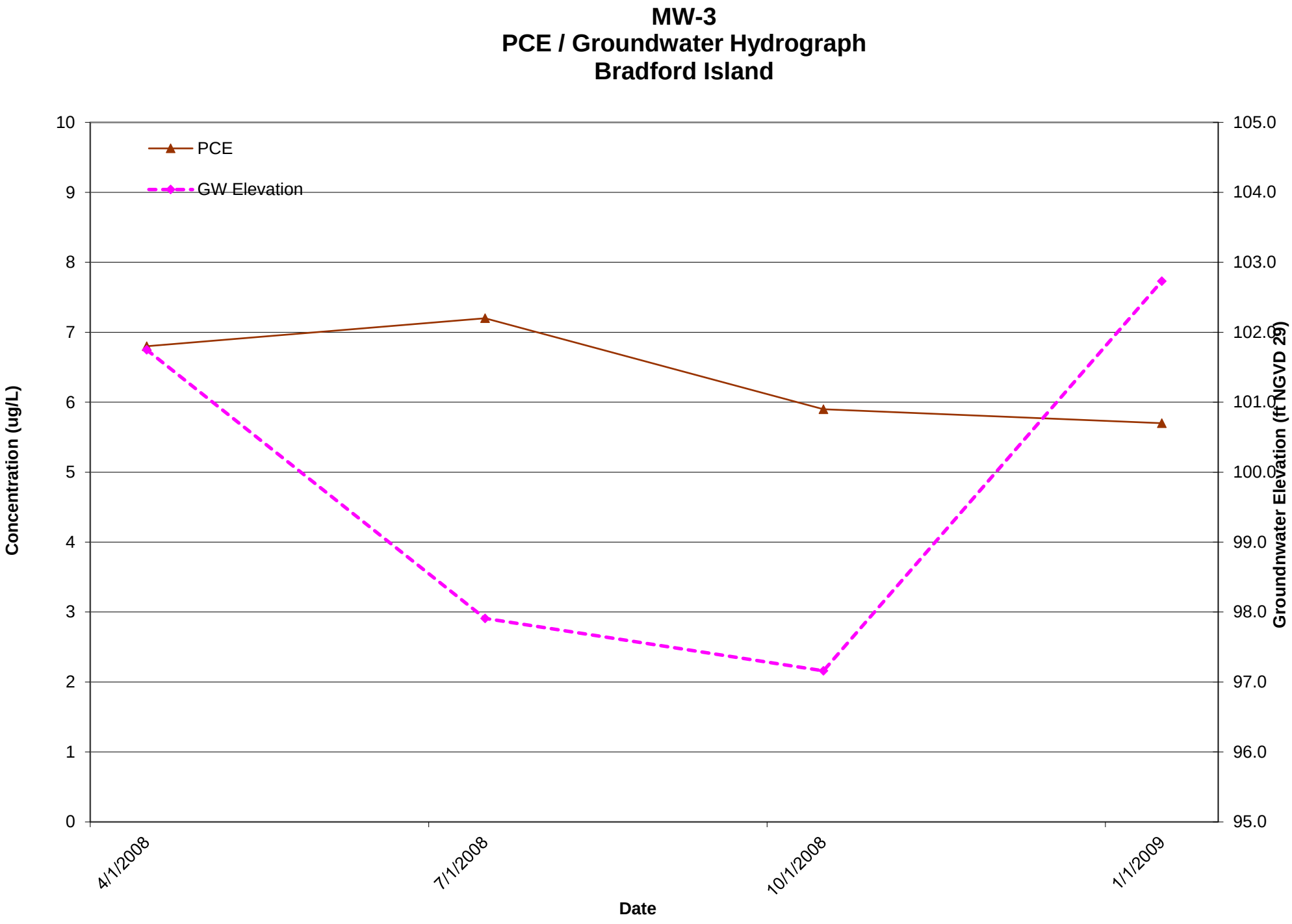
Note: bgs= below ground surface btc=below top of casing DTW=depth to water gpm=gallons per minute
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

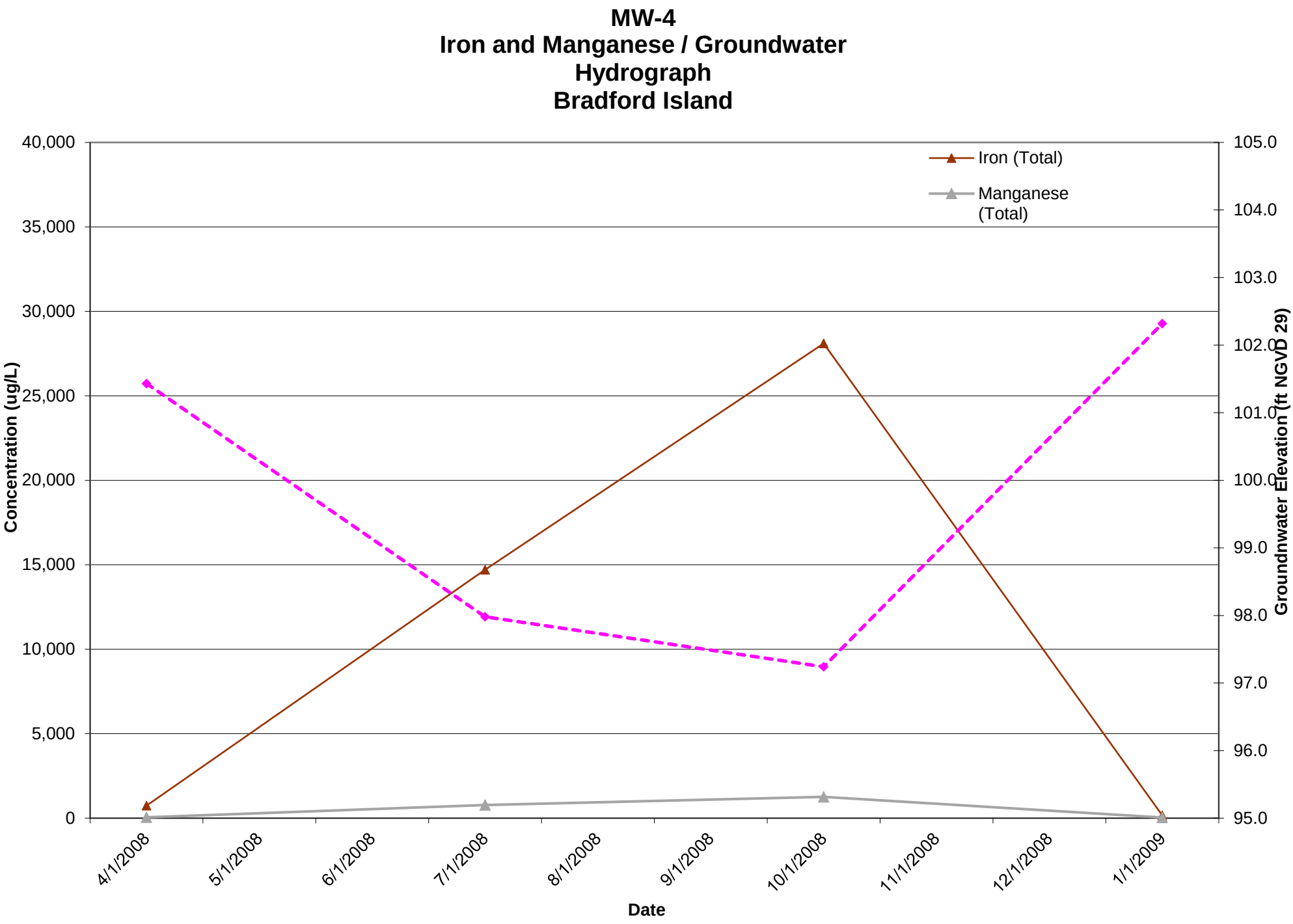
Appendix F

Groundwater Hydrographs


MW-1
Arsenic / Groundwater Hydrograph
Bradford Island
Arsenic
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
25
20
15
10
5
0
80.0
79.0
78.0
77.0
76.0
75.0
74.0
73.0
72.0
71.0
70.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009


MW-2
Arsenic / Groundwater Hydrograph
Bradford Island
Arsenic
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
25
20
15
10
5
0
110.0
109.0
108.0
107.0
106.0
105.0
104.0
103.0
102.0
101.0
100.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009


MW-3
PCE / Groundwater Hydrograph
Bradford Island
PCE
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
0
1
2
3
4
5
6
7
8
9
10
95.0
96.0
97.0
98.0
99.0
100.0
101.0
102.0
103.0
104.0
105.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009


MW-4
Iron and Manganese / Groundwater
Hydrograph
Bradford Island
Iron (Total)
Manganese (Total)
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
105.0
104.0
103.0
102.0
101.0
100.0
99.0
98.0
97.0
96.0
95.0
4/1/2008
5/1/2008
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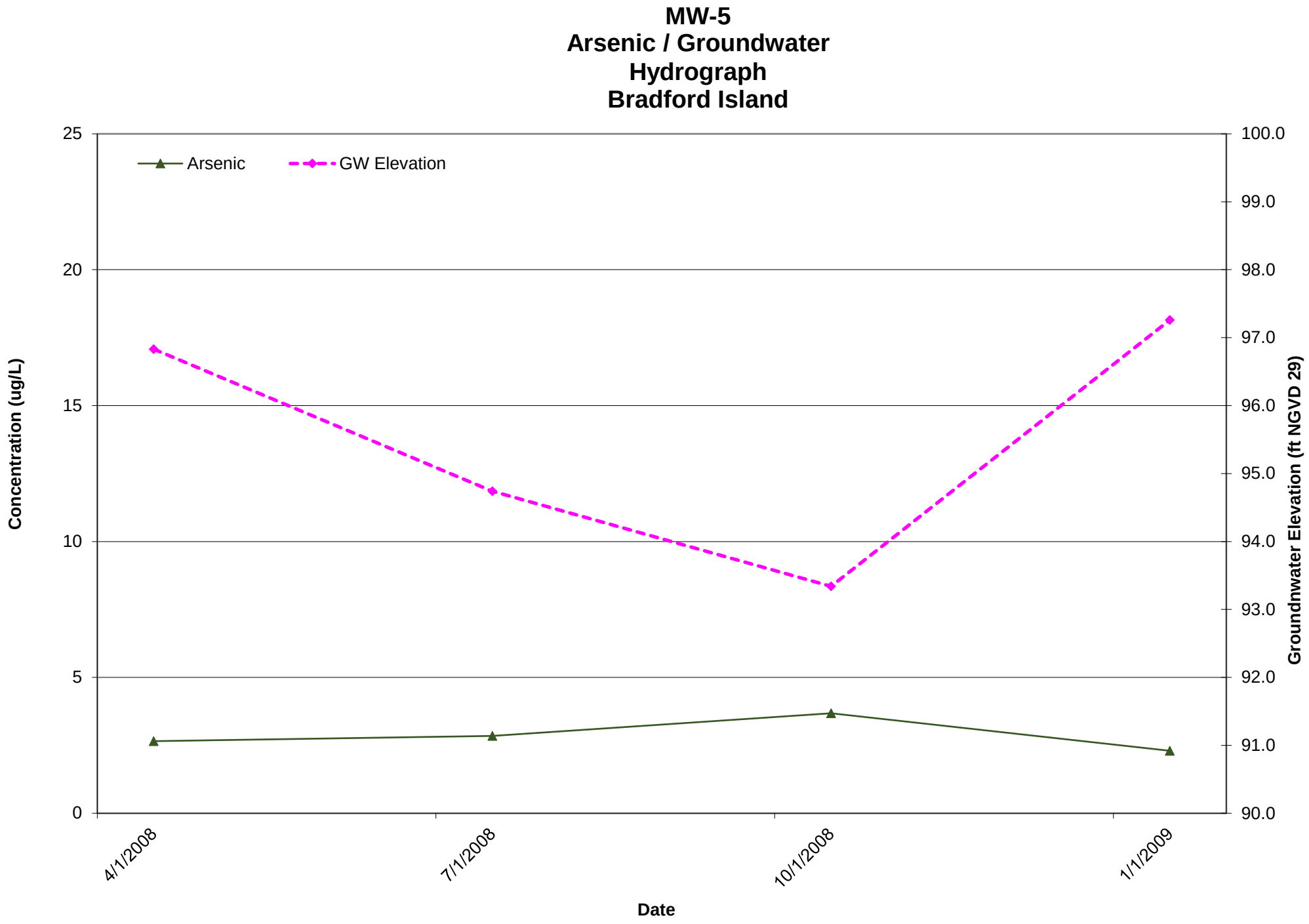
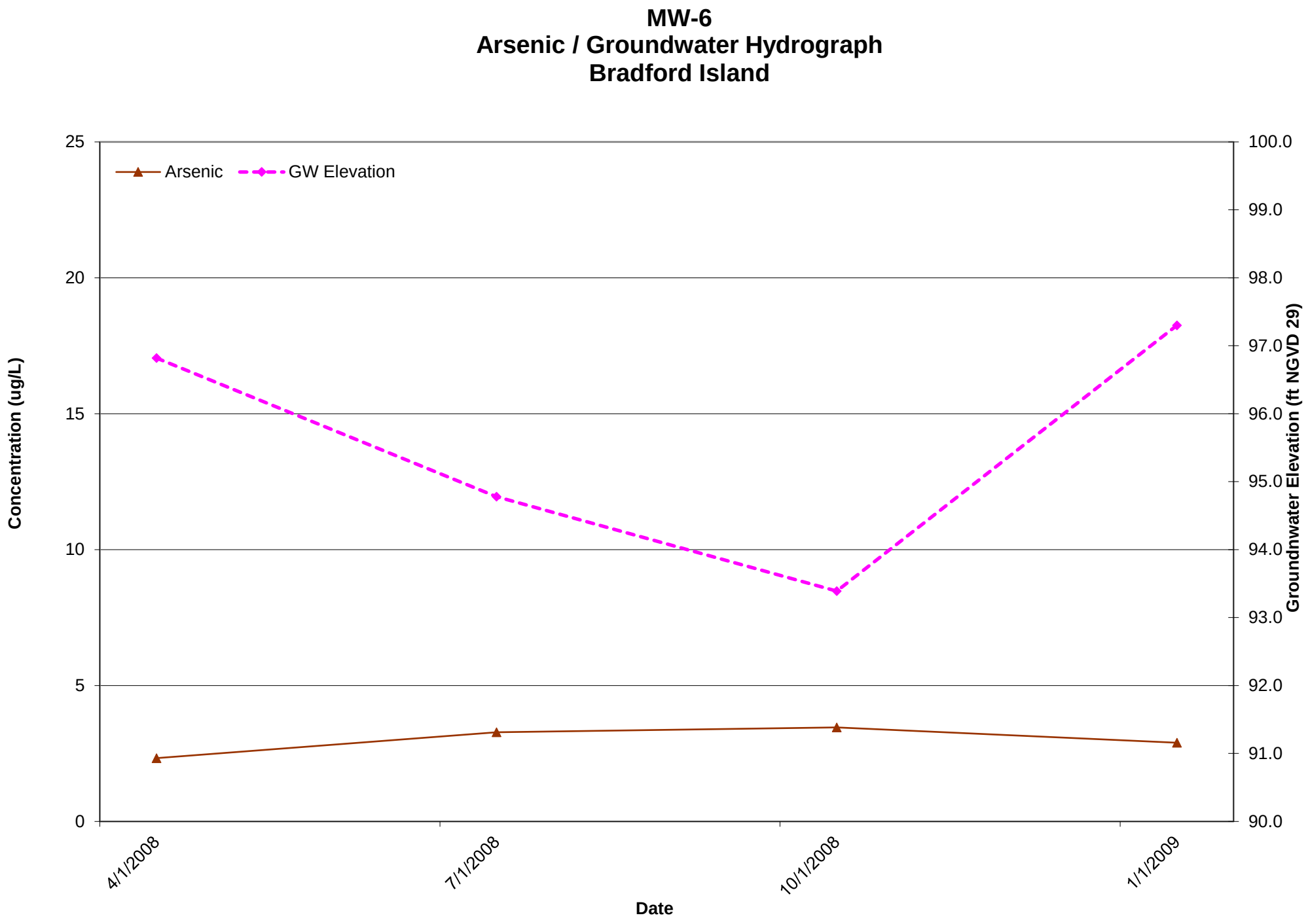
7/1/2008
8/1/2008
9/1/2008
10/1/2008
11/1/2008
12/1/2008
1/1/2009


MW-5
Arsenic / Groundwater
Hydrograph
Bradford Island
Arsenic
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
25
20
15
10
5
0
100.0
99.0
98.0
97.0
96.0
95.0
94.0
93.0
92.0
91.0
90.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009


MW-6
Arsenic / Groundwater Hydrograph
Bradford Island
Arsenic
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
25
20
15
10
5
0
100.0
99.0
98.0
97.0
96.0
95.0
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91.0
90.0
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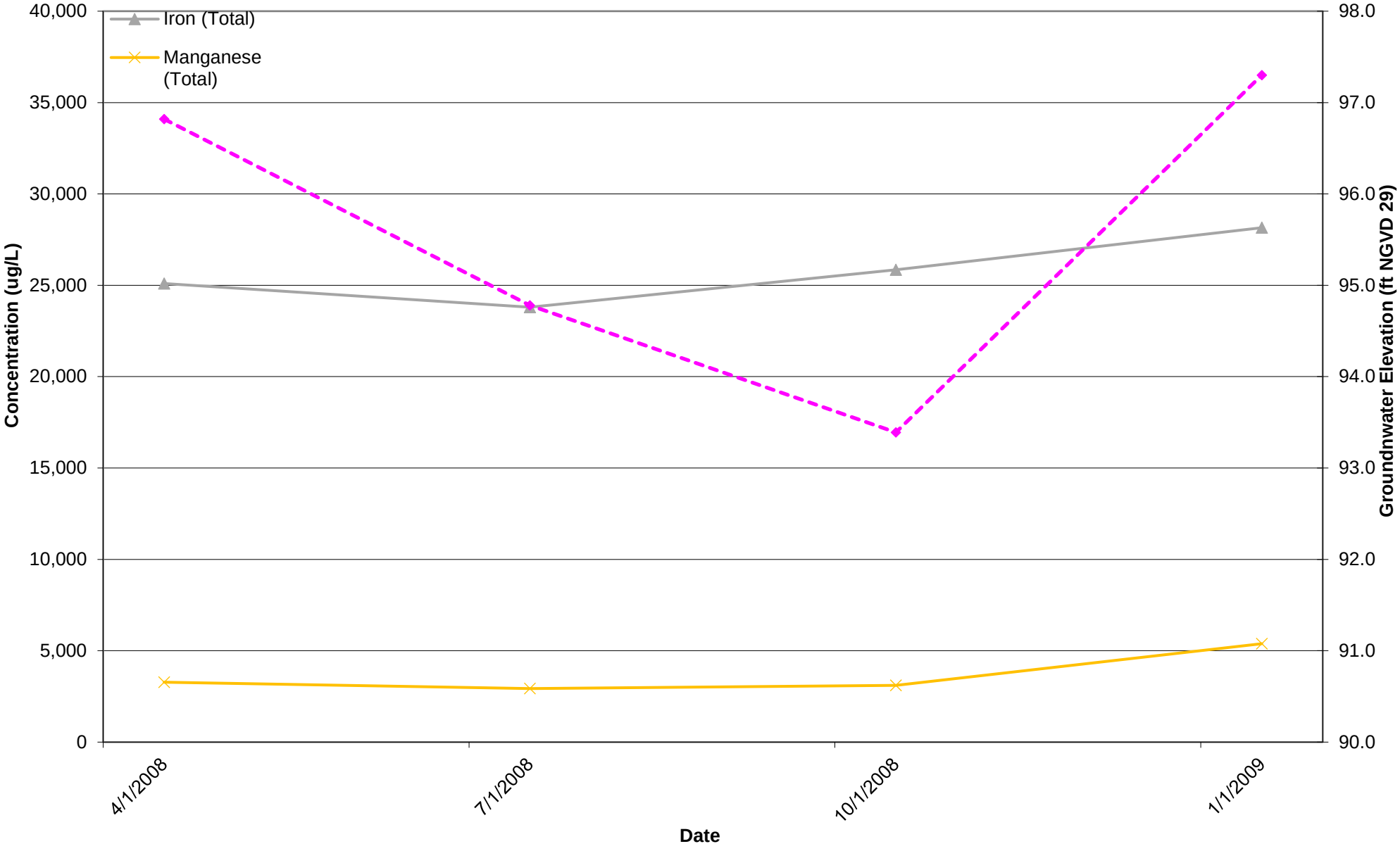
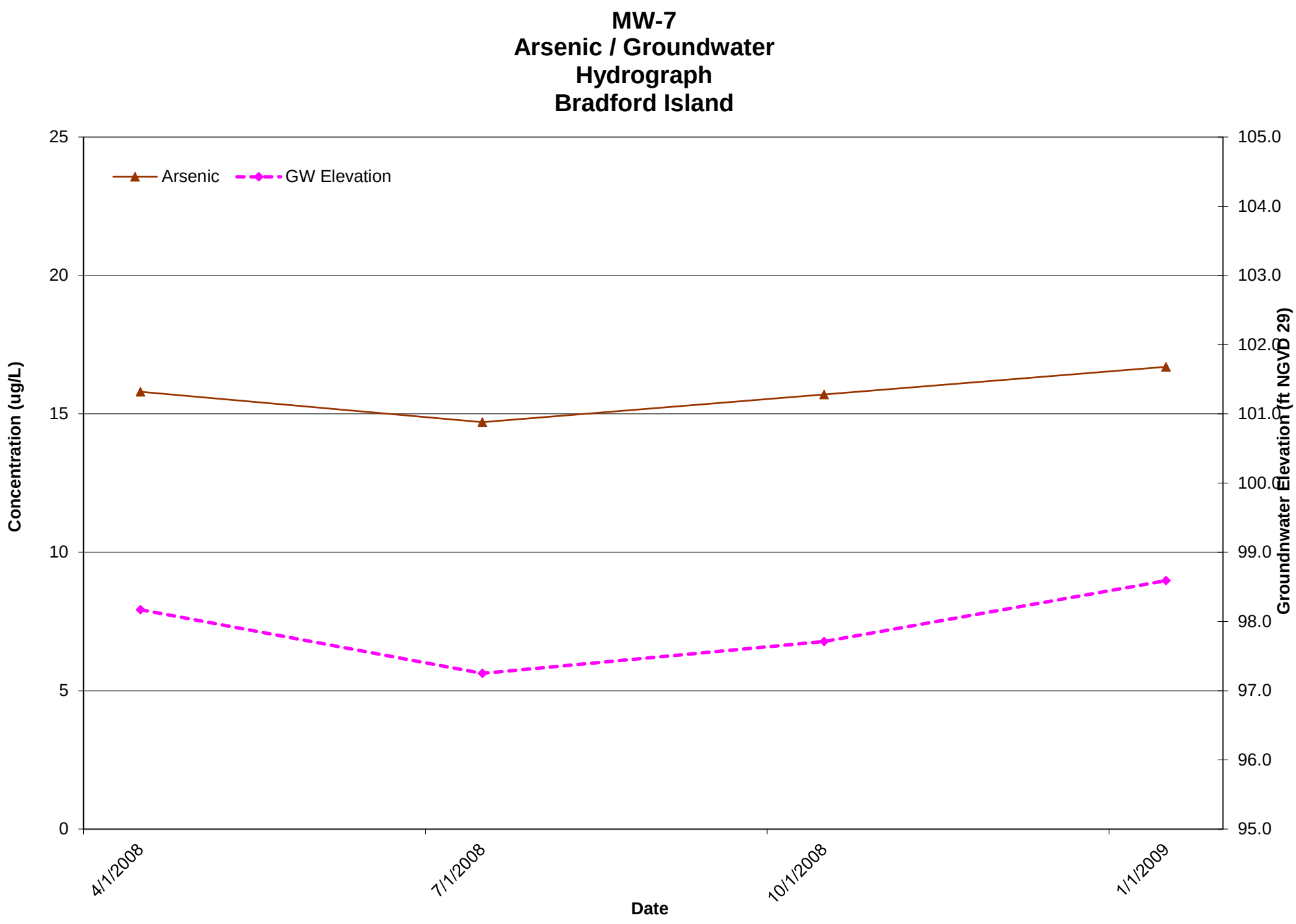
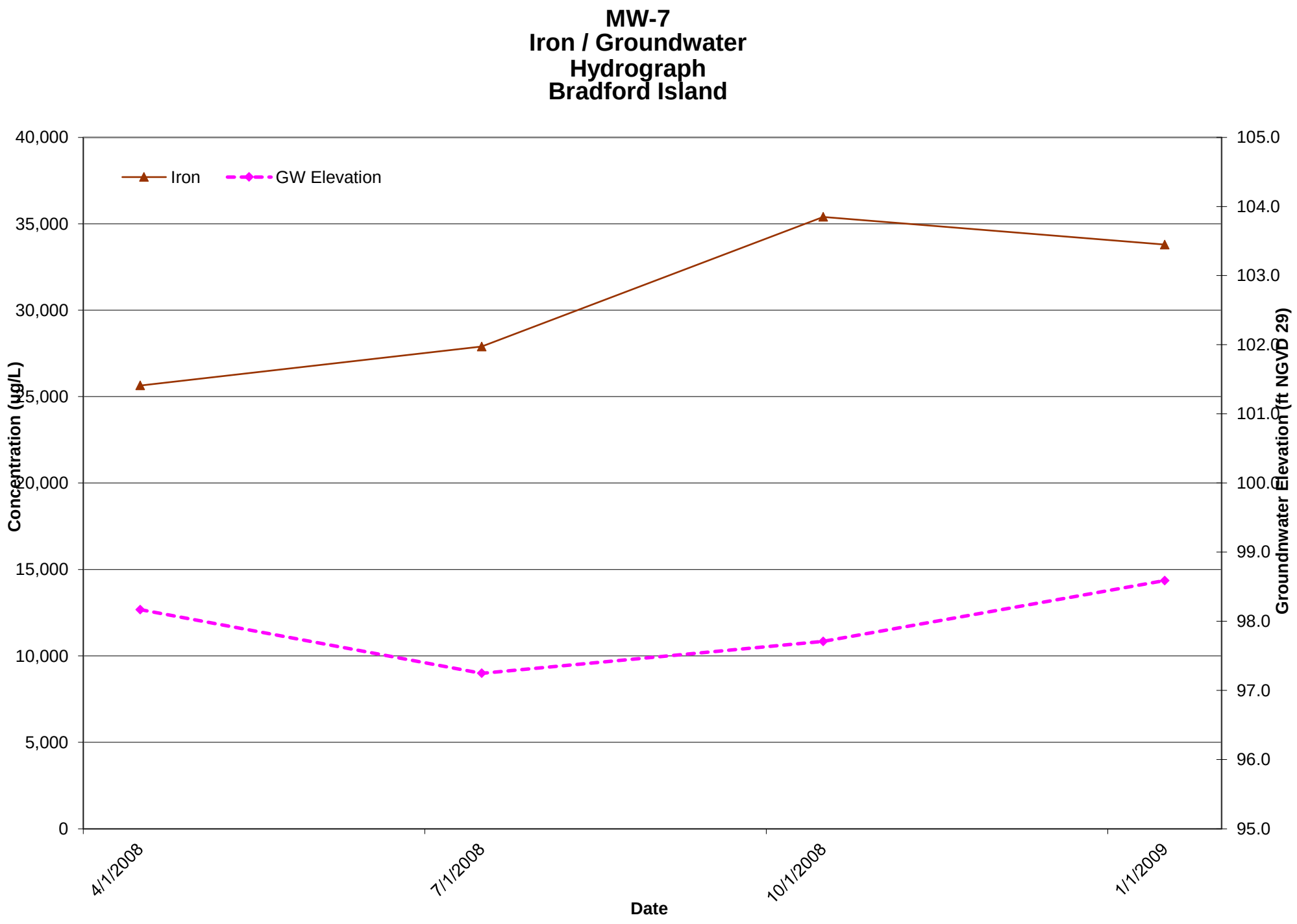
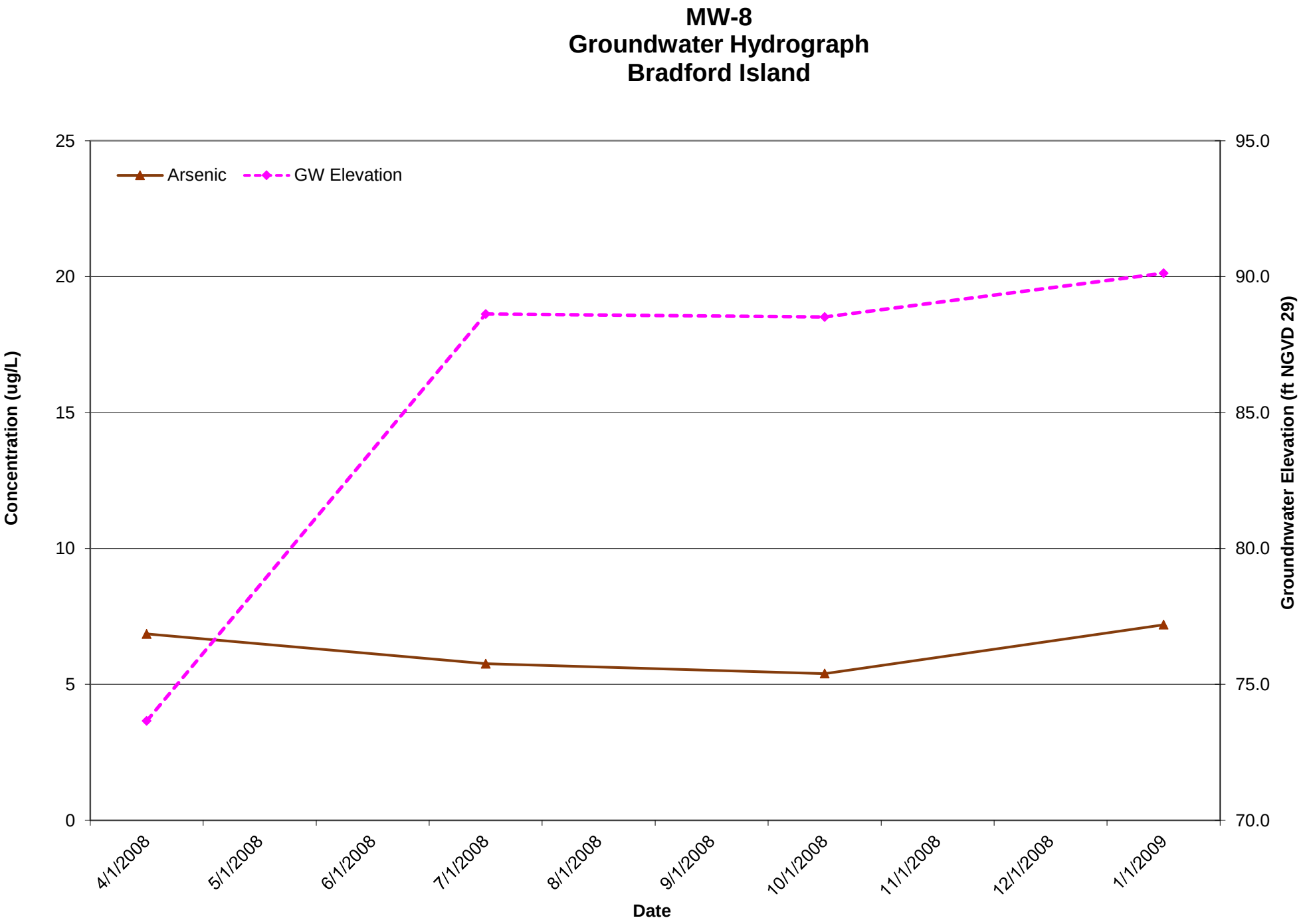
7/1/2008
10/1/2008
1/1/2009

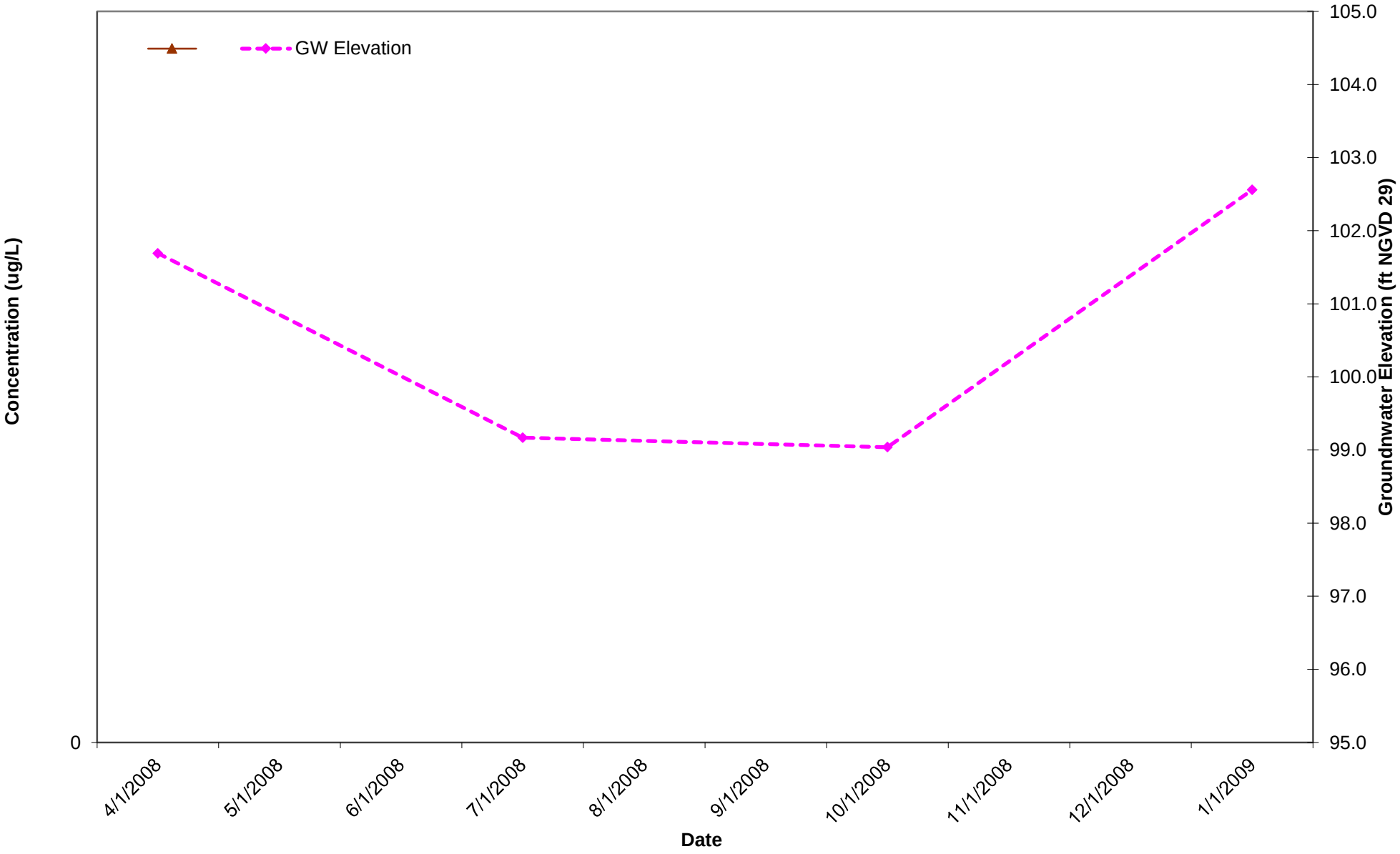

MW-6
Iron and Manganese / Groundwater
Hydrograph
Bradford Island
Iron (Total)
Manganese (Total)
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
98.0
97.0
96.0
95.0
94.0
93.0
92.0
91.0
90.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009

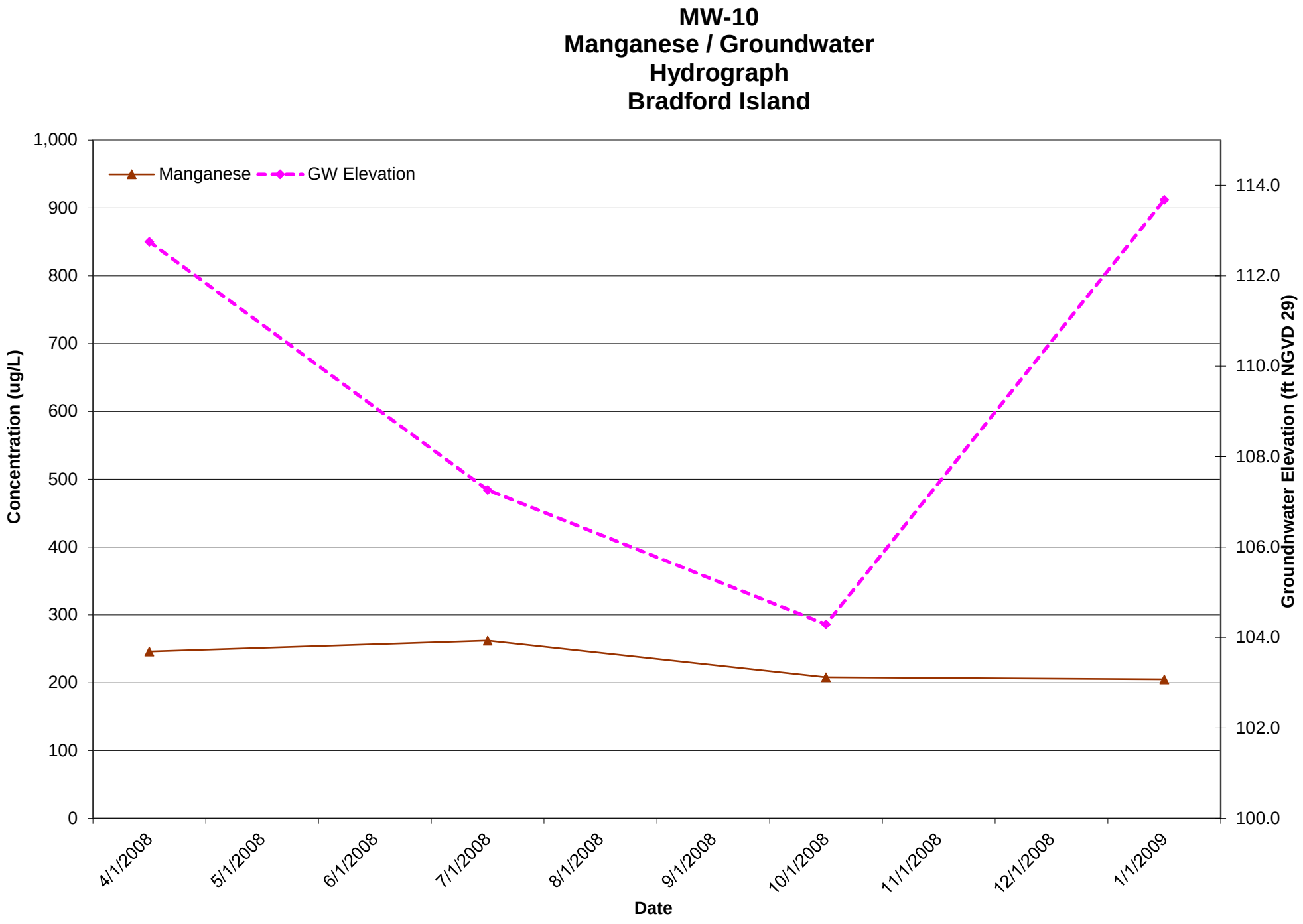

MW-7
Arsenic / Groundwater
Hydrograph
Bradford Island
Arsenic
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
25
20
15
10
5
0
105.0
104.0
103.0
102.0
101.0
100.0
99.0
98.0
97.0
96.0
95.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009


MW-7
Iron / Groundwater
Hydrograph
Bradford Island
Iron
GW Elevation
Concentration (µg/L)
Groundwater Elevation (ft NGVD 29)
Date
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
105.0
104.0
103.0
102.0
101.0
100.0
99.0
98.0
97.0
96.0
95.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009


MW-8
Groundwater Hydrograph
Bradford Island
Arsenic
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
25
20
15
10
5
0
95.0
90.0
85.0
80.0
75.0
70.0
4/1/2008
5/1/2008
6/1/2008
7/1/2008
8/1/2008
9/1/2008
10/1/2008
11/1/2008
12/1/2008
1/1/2009

MW-9
Groundwater Hydrograph
Bradford Island




MW-10
Manganese / Groundwater
Hydrograph
Bradford Island
Manganese
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
1,000
900
800
700
600
500
400
300
200
100
0
114.0
112.0
110.0
108.0
106.0
104.0
102.0
100.0
4/1/2008
5/1/2008
6/1/2008
7/1/2008
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11/1/2008
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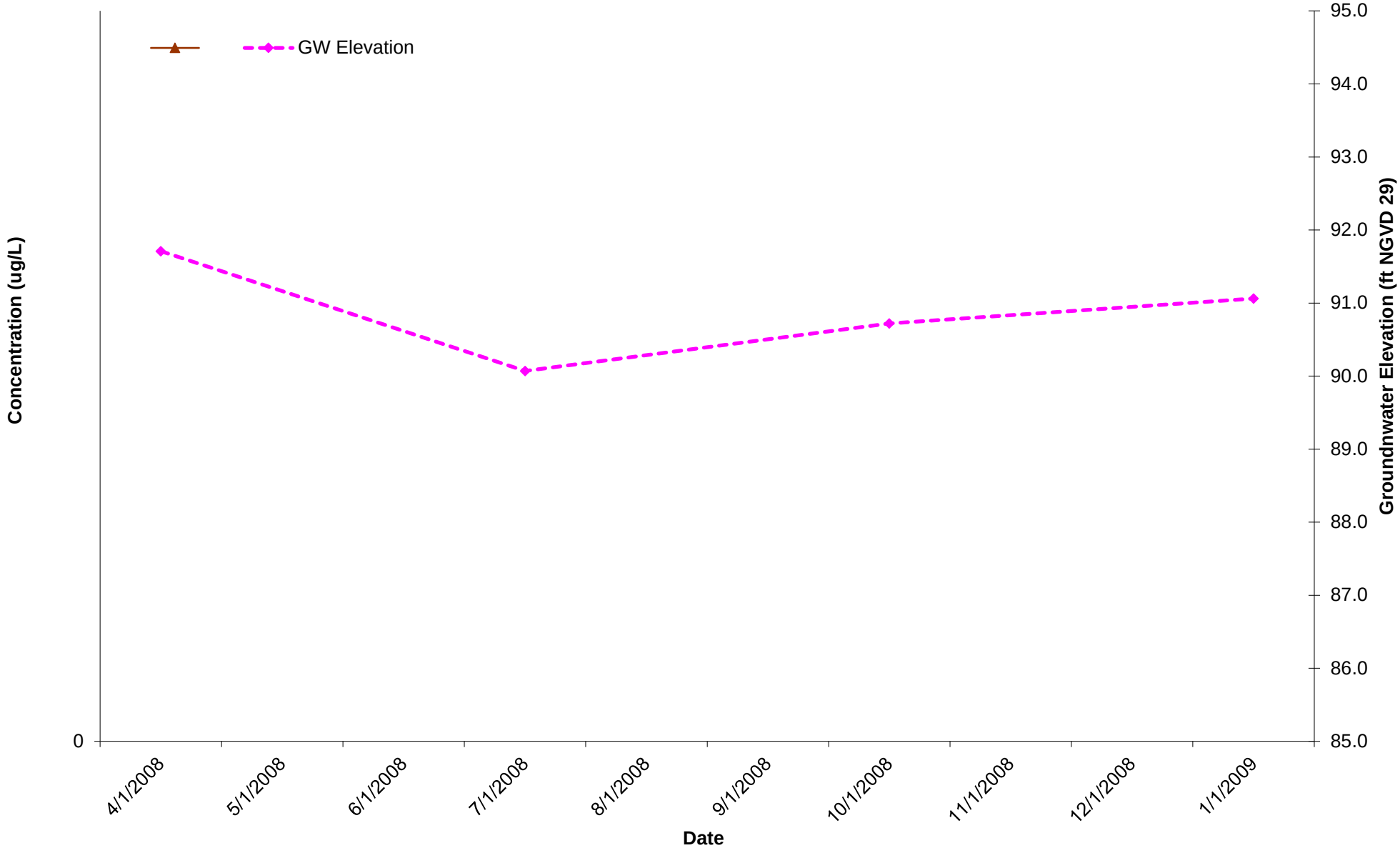
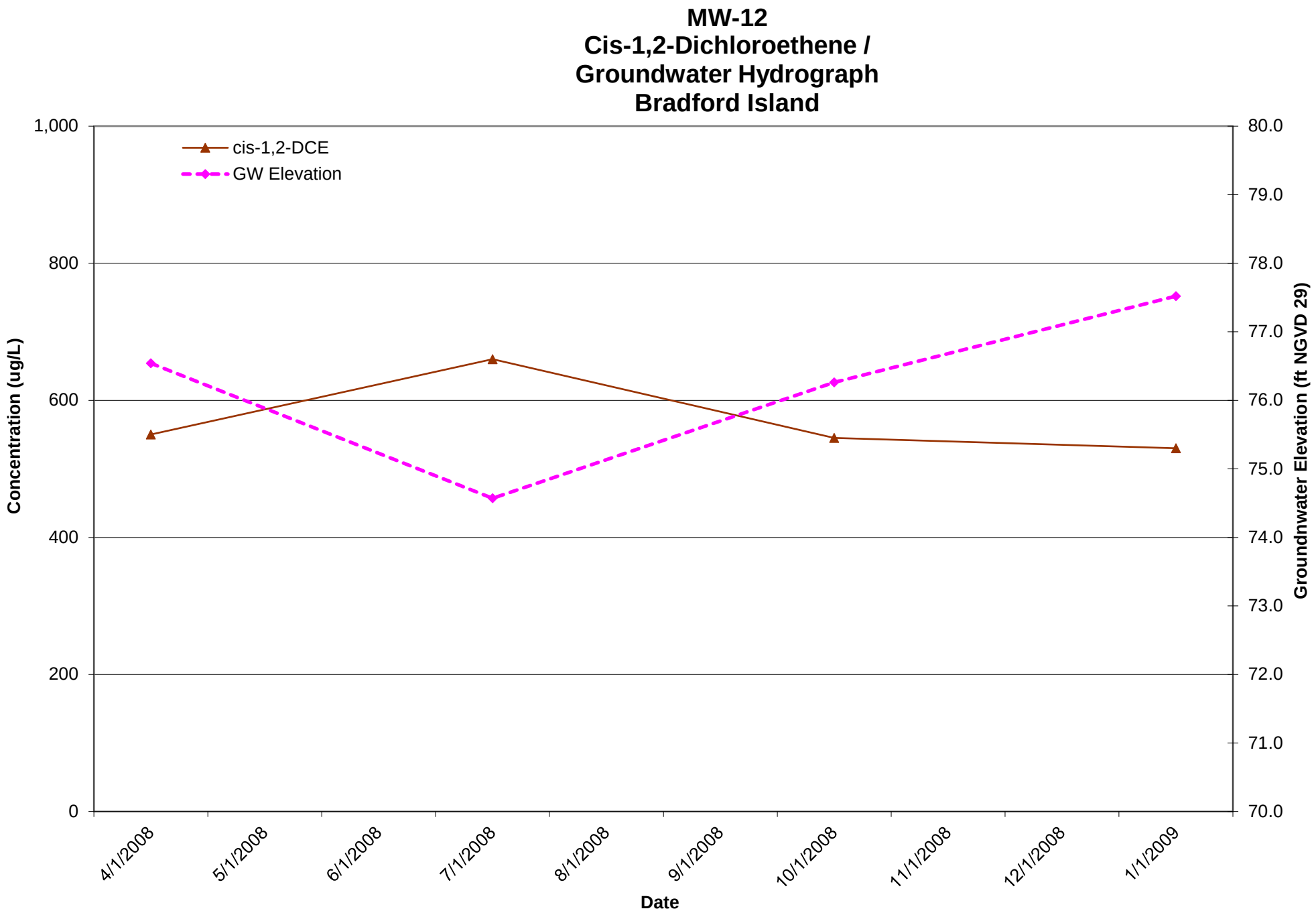
1/1/2009

MW-11
Groundwater Hydrograph
Bradford Island




MW-12
Cis-1,2-Dichloroethene /
Groundwater Hydrograph
Bradford Island
cis-1,2-DCE
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
1,000
800
600
400
200
0
80.0
79.0
78.0
77.0
76.0
75.0
74.0
73.0
72.0
71.0
70.0
4/1/2008
5/1/2008
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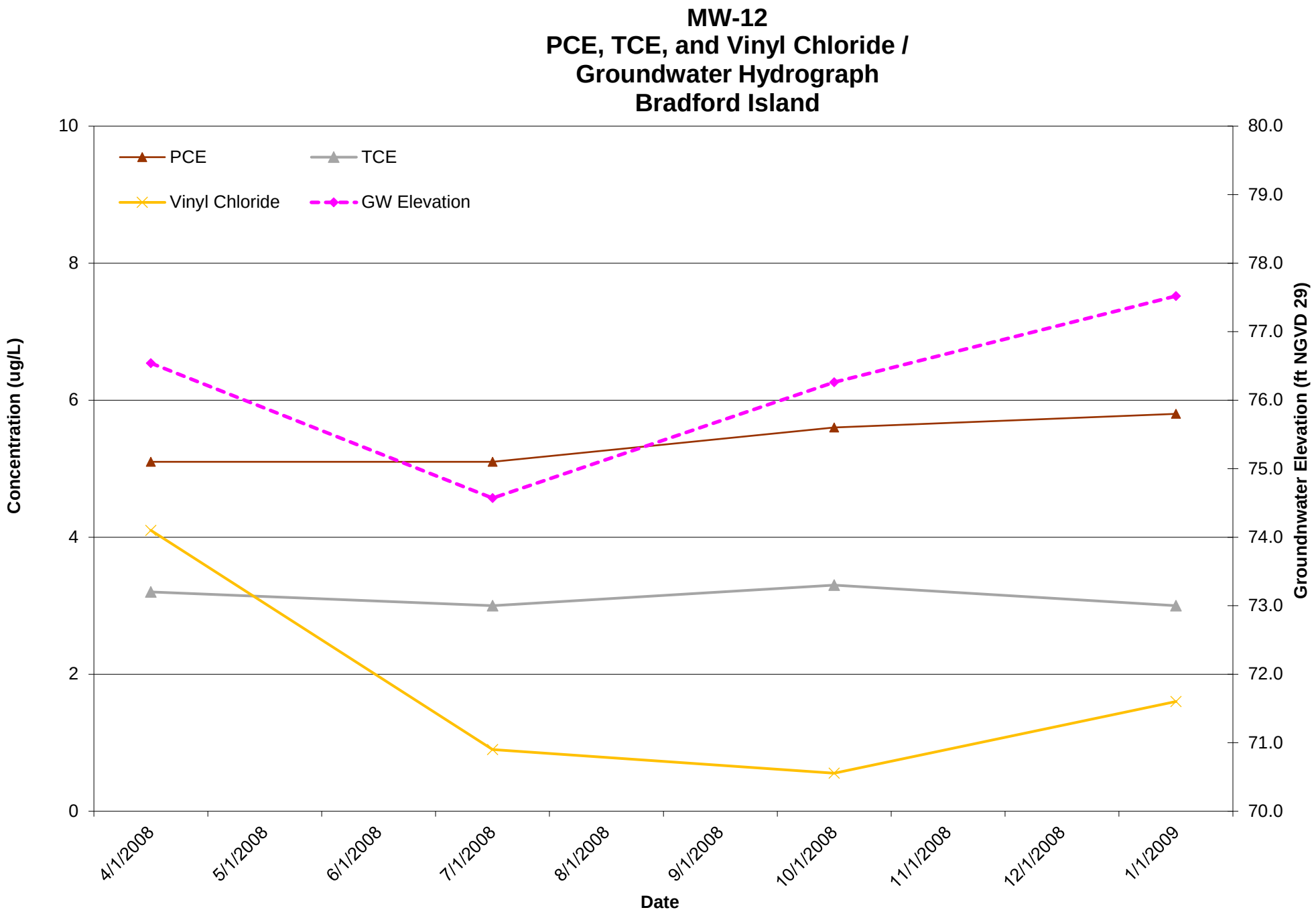
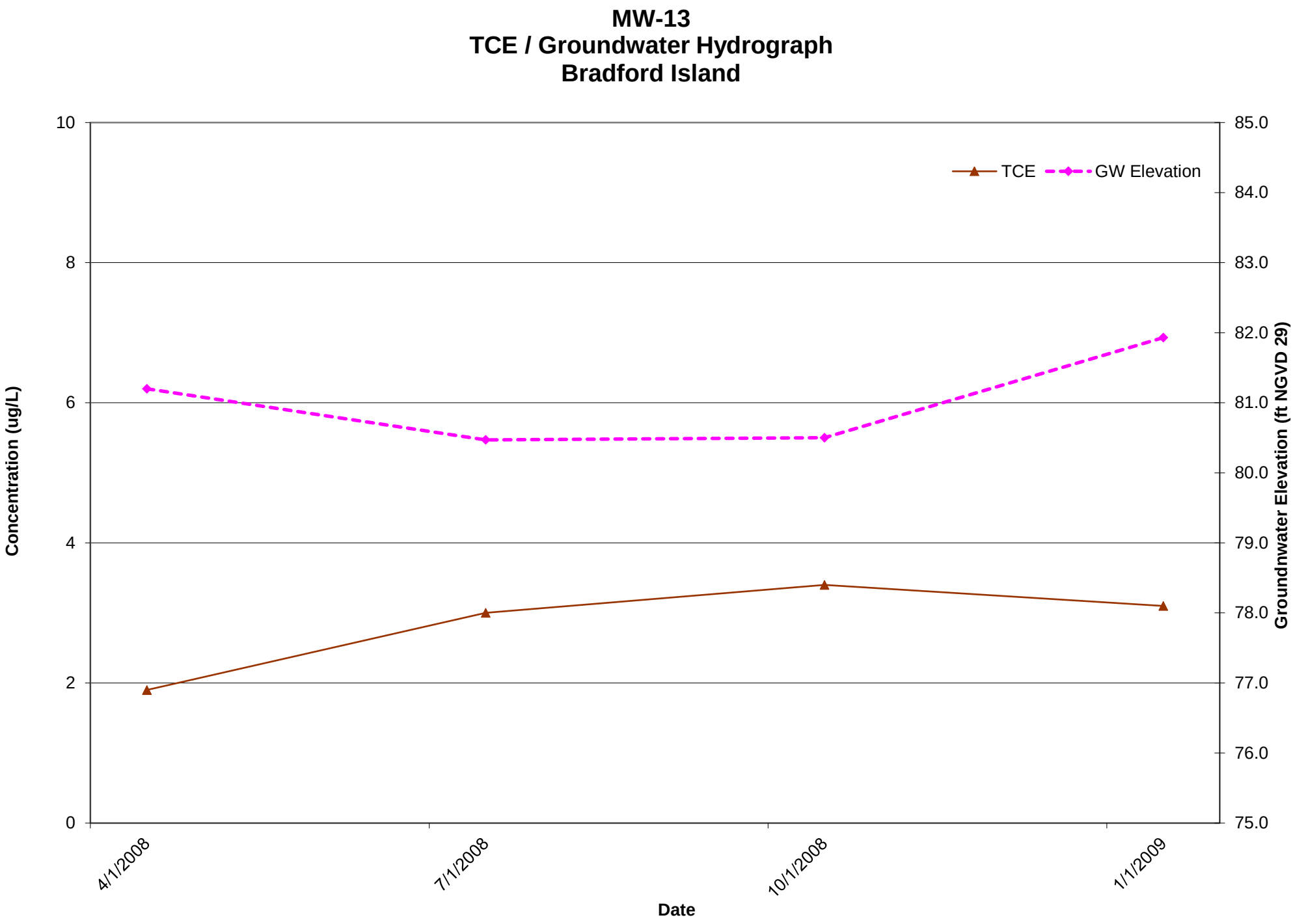
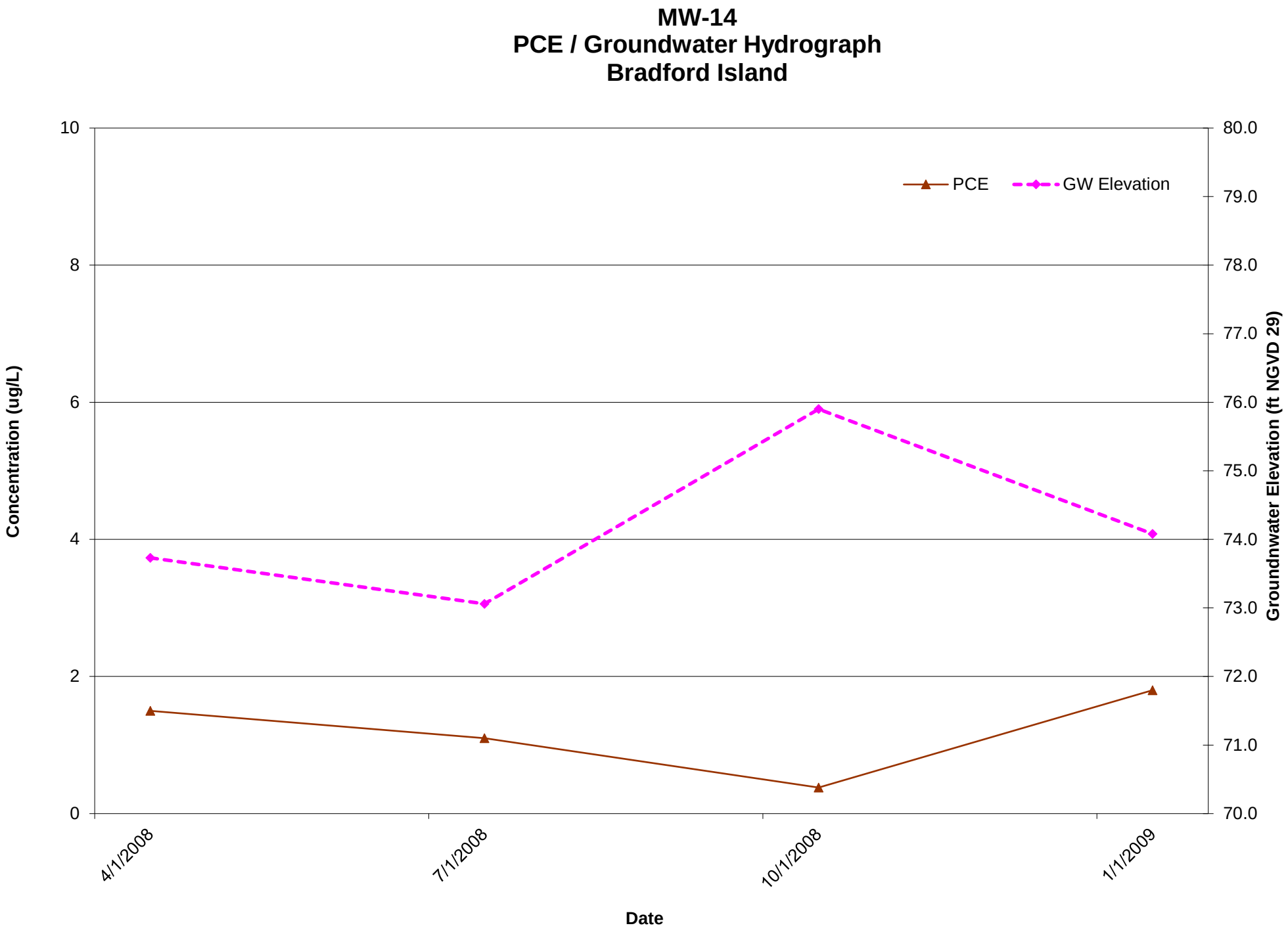
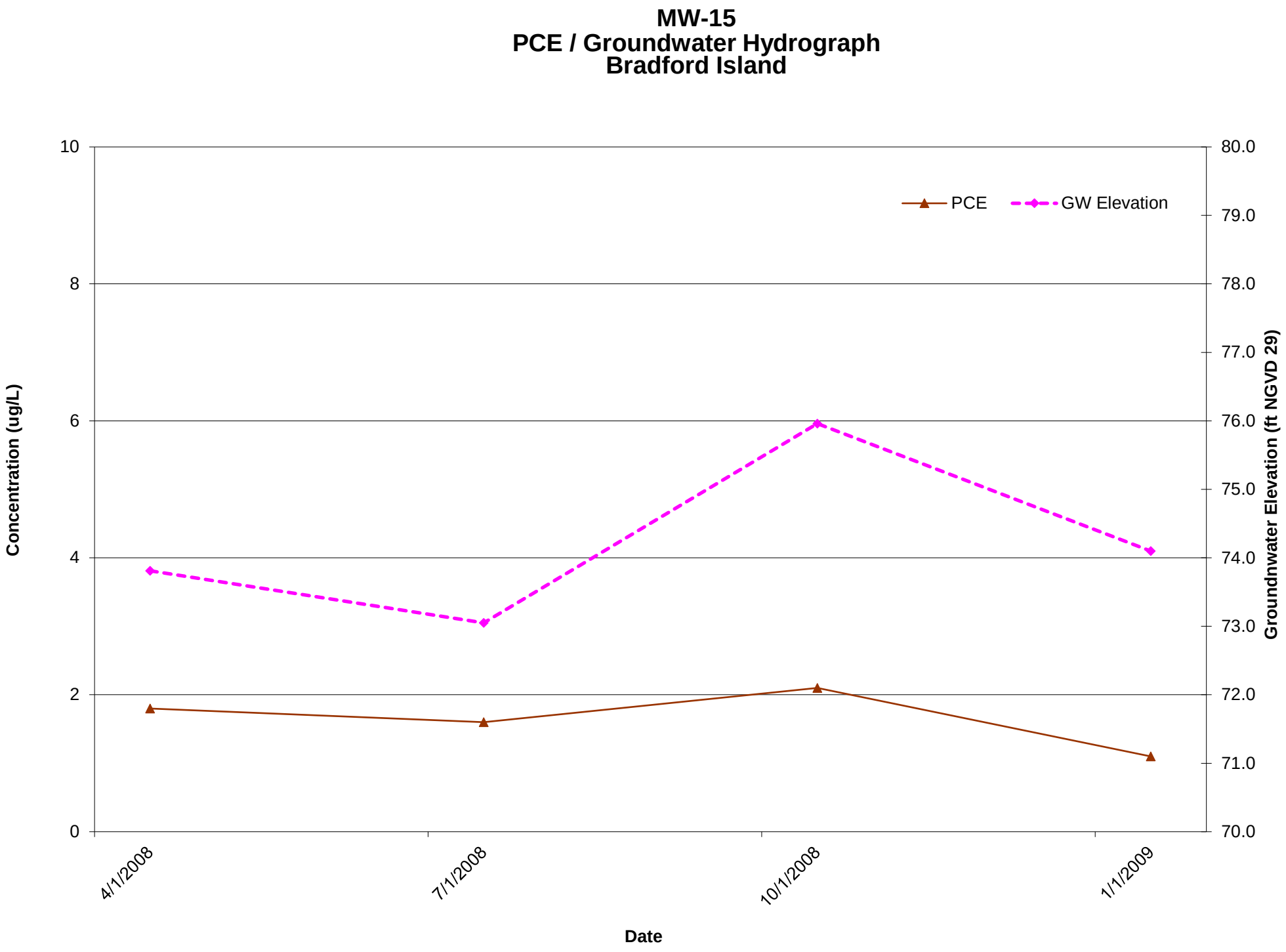
12/1/2008
1/1/2009


MW-12
PCE, TCE, and Vinyl Chloride /
Groundwater Hydrograph
Bradford Island
PCE
TCE
Vinyl Chloride
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
10
8
6
4
2
0
80.0
79.0
78.0
77.0
76.0
75.0
74.0
73.0
72.0
71.0
70.0
4/1/2008
5/1/2008
6/1/2008
7/1/2008
8/1/2008
9/1/2008
10/1/2008
11/1/2008
12/1/2008
1/1/2009


MW-13
TCE / Groundwater Hydrograph
Bradford Island
TCE
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
10
8
6
4
2
0
85.0
84.0
83.0
82.0
81.0
80.0
79.0
78.0
77.0
76.0
75.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009


MW-14
PCE / Groundwater Hydrograph
Bradford Island
PCE
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
10
8
6
4
2
0
80.0
79.0
78.0
77.0
76.0
75.0
74.0
73.0
72.0
71.0
70.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009


MW-15
PCE / Groundwater Hydrograph
Bradford Island
PCE
GW Elevation
Concentration (ug/L)
Groundnwater Elevation (ft NGVD 29)
Date
10
8
6
4
2
0
80.0
79.0
78.0
77.0
76.0
75.0
74.0
73.0
72.0
71.0
70.0
4/1/2008
7/1/2008
10/1/2008
1/1/2009

Appendix G

Boring Logs

HTRW DRILLING LOG

DISTRICT Portland		HOLE NUMBER SB1
1 COMPANY NAME Tetra Tech, Inc.	2 DRILL SUBCONTRACTOR Cascade Drilling	SHEET 1 OF SHEETS 3

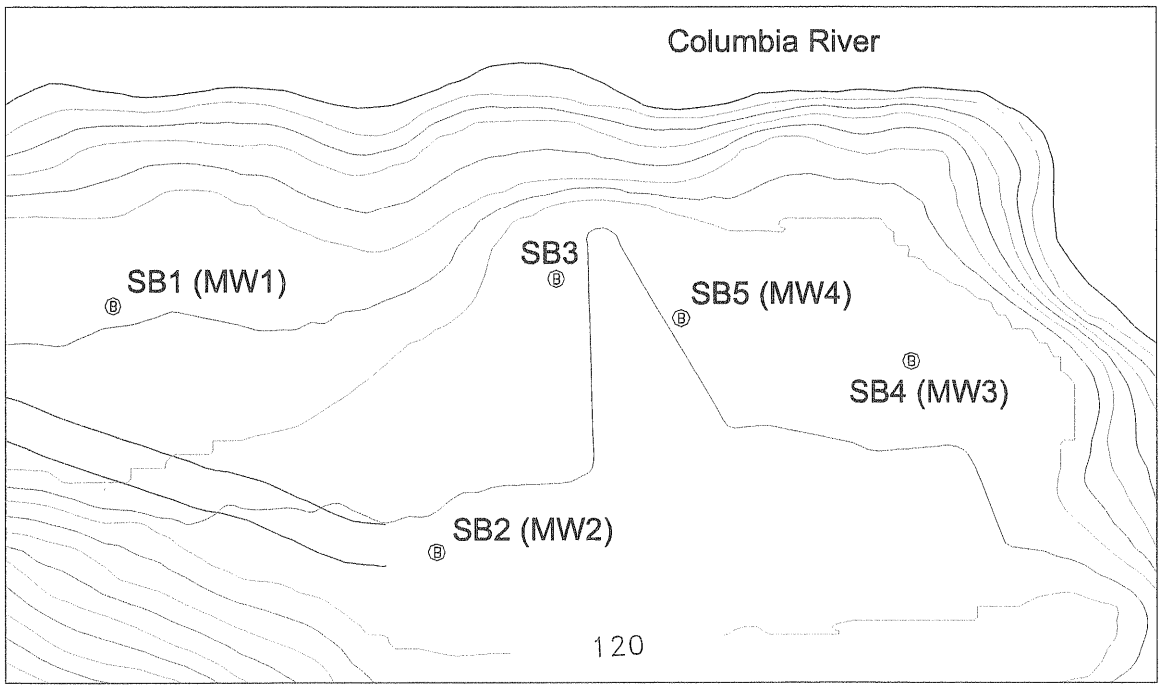
3 PROJECT USCOE Bradford Island Landfill	4 LOCATION Bradford Island Landfill
5 NAME OF DRILLER Steve Hughes	6 MANUFACTURERS DESIGNATION OF DRILL CME 75
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4.25" ID (9.25 OD) HSA 18" long, 2" OD split spoon sampler 140 lbs with 30-inch drop	8 HOLE LOCATION West end of landfill (723653.80 North) (1632933.91 East)
	9 SURFACE ELEVATION 102.84' (TOC = 105.50')
	10 DATE STARTED 8/17/98 — 11 DATE COMPLETED 8/17/98
12 OVERBURDEN THICKNESS 28'	15 DEPTH GROUNDWATER ENCOUNTERED No Groundwater
13 DEPTH DRILLED INTO ROCK 2' (fractured)	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED No groundwater after >24 hours
14 TOTAL DEPTH OF HOLE 30'	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
0	0	0	0

20 SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS/SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY
	1	1	PCB – 1	Chlor herbs - 1	TPH - 1	

22 DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23 SIGNATURE OF INSPECTOR
Well installed		X		

LOCATION SKETCH/COMMENTS:



PROJECT Bradford Island	HOLE NO. SB1

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

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER	SHEET	SHEETS
SB1	2	3

PROJECT	INSPECTOR
Bradford Island	Carlotta Cellucci

ELEV (a)	DEPTH (FEET) (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
ML ? ? ?	0 1	Grassy cover underlain by brown sandy silt with gravel (ML) (sand 10%, gravel 30%, fines 60%) loose, dry					Background PID reading = 2.8
	2 3 4						
	5	No recovery				40 50	No recovery at 5' drilled to 6' BLS
	6	No recovery (1" slough)	2.7			31 64 72	About 1" of slough in sampler at 6' BLS
ML CL	7 8	Dark brown clayey silt (ML) with gravel, moist, firm (gravel 5%, fines 95%) grading, to silty clay (CL) at approximately 7.5' BLS, low plasticity (95% fines, 5% gravel)	2.7			13 13 17	2' of recovery in 2.5' sampler at 7' BLS
	9						
CL	10 11	Same as above with areas of orange oxidation in spots grading to gray silty clay (CL) with gravel at approximately 11' BLS (95% fines, 5% gravel)	3.1			7 7 7	1.25' of recovery Background PID = 3.1
	12						
	13						Very hard at 13' BLS
	14						
	15	No recovery				86 120	No recovery
	16						Very hard at 16' BLS
SM	17	Gray silty clayey sand (SM), dry/moist, well graded, (45% fines, 55% sand) possible ash flow	2.7			28 41 60	1.25' recovery

PROJECT	HOLD NO.
Bradford Island	SB1

ENG FORM 5056A-4, AUG 94 (Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: SB1

PROJECT: Bradford Island

INSPECTOR: Carlotta Cellucci

SHEET 3 OF 3 SH

ELEV (a)	DEPTH (FEET) (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
ML	20–21	Gray gravelly, clayey silt (ML) (20% gravel, 80% fines) low plasticity, very stiff	2.3 2.7		8/17/98-BIL-SB1-SS01 (1200)	28 46 60 19 46 70	PID background = 2.3: 2' Recovery in 1st sampler 3" of Recovery; 2nd sampler at 20'; PID background 2.0
CL	22–24	Same with increasing clay content (20% gravel, 80% fines) grading at 22.5' to gray silty gravelly clay (CL), low plasticity, moist, very stiff (5% gravel, 95% fines)	2.0 1.6			25 48 56 28 45 60	4th sampler hammered at 22' BLS Full recovery 5th sampler hammered at 22.5' BLS 1.5' Recovery Background PID = 1.6
CL Ash tuff	27–28	Same as above to contact at approximately 28' with weathered rock/sand stone/ash tuff, well graded angular macrocrystalline (100% sand/crushed rock)	1.6			25 46	1.25' Recovery
	29	Drilled to 29.5' BLS					

PROJECT: Bradford Island

HOLD NO. SB1

ENG FORM 5056A-4, AUG 94

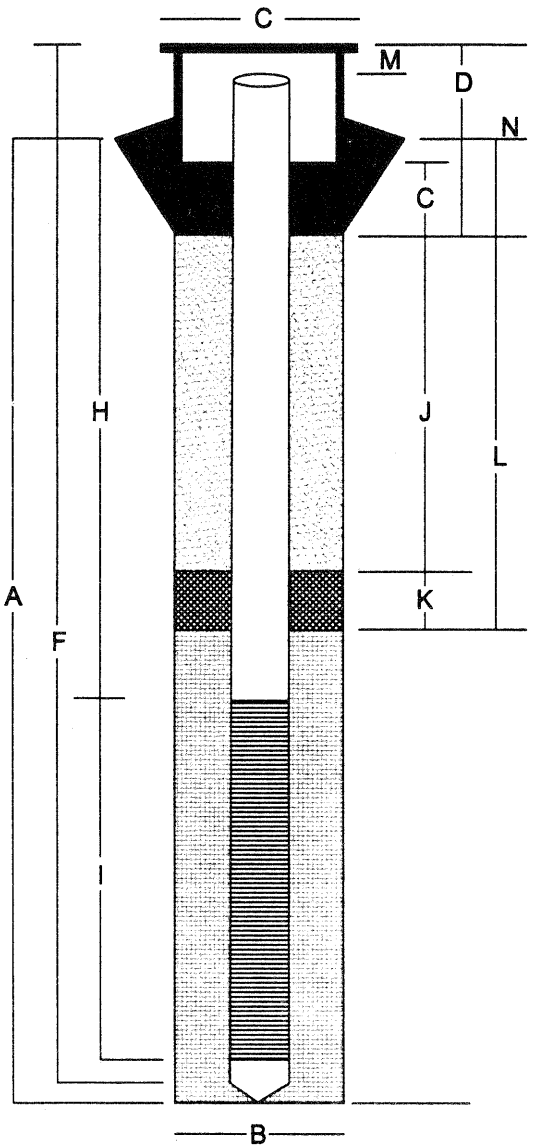
(Proponent: CECW-EG)

Above-ground Monitoring Well Construction Log

Project Name: USCOE BRADFORD ISLAND **Well No.:** MW01 (SB1) **Date:** 8/17/98

Project No: 10022-03 **Drilling Method:** HSA

Geologist: Carlotta Cellucci



A:	Total Boring Depth:	30'
B:	Boring Diameter:	9.25"
C:	Diameter of Protective Casing:	5" ID
D:	Length of Protective Casing:	5'
	Type of Protective Casing:	Steel mountment
E:	Interval of Surface Grout:	0-4'
F:	Total Riser Casing Length:	31.4'
	Length of Sediment Sump:	1"
	Casing Type:	Sch. 80, Flush threaded PVC
G:	Inner Diameter:	1.62" (2" OD)
H:	Depth to Screen:	20'
I:	Screen Length:	10'
	Screen Intrval:	20'-30'
	Screen / Slot Type:	0.010" Factory slot
J:	Depth to Top of Seal:	4'
K:	Thickness of Seal:	13'
	Type of seal material:	Pure gold medium Bentonite chips
L:	Depth to Top of Filter Pack:	17'
	Type of Filter Pack:	20/40 Colorado silica sand
M:	Top of Casing Elevation:	105.50' above msl
N:	Surface Elevation:	102.84' above msl

NOTE: Well was not surged after placement of sand pack, because there was no water in the well.

HTRW DRILLING LOG

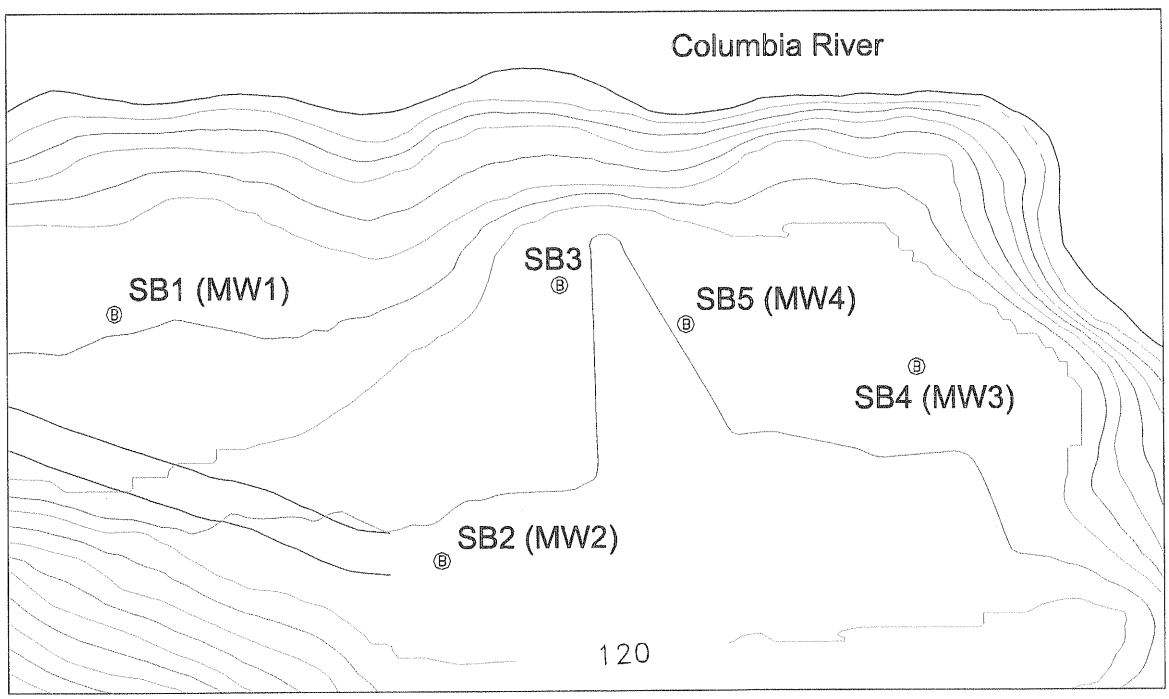
DISTRICT Portland		HOLE NUMBER SB2
1 COMPANY NAME Tetra Tech, Inc.	2 DRILL SUBCONTRACTOR Cascade Drilling	SHEET 1 OF SHEETS 3
3 PROJECT USCOE Bradford Island Landfill	4 LOCATION Bradford Island Landfill	
5 NAME OF DRILLER Steve Hughes	6 MANUFACTURERS DESIGNATION OF DRILL CME 75	
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4.25" ID (9.25 OD) HSA 18" long, 2" OD split spoon sampler 140 lbs with 30-inch drop	8 HOLE LOCATION Pesticide wash area (723564.81 North) (1633051.27 East)	
	9 SURFACE ELEVATION 114.21' (TOC = 116.56')	
	10 DATE STARTED 8/17/98	11 DATE COMPLETED 8/17/98
12 OVERBURDEN THICKNESS 30'	15 DEPTH GROUNDWATER ENCOUNTERED No Groundwater Encountered/Dry Hole	
13 DEPTH DRILLED INTO ROCK ~2' (weathered)	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 32.32 below TOC after 24 hours	
14 TOTAL DEPTH OF HOLE 32'	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
0	--	--	0

20 SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS/SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY

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

LOCATION SKETCH/COMMENTS:



PROJECT	HOLE NO.
Bradford Island	SB2

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

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: SB2

PROJECT: Bradford Island

INSPECTOR:

SHEET 2 OF 3 SHEETS

ELEV (a)	DEPTH (FEET) (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	0	Grassy cover	2.0				Background PID reading = 2.0
	1						
	2						
	3						
	4						
SM	5	Very dark gray clayey sand (SM) with gravel, well graded, moist (20% fines, 15% gravel, 65% sand), loose-firm.	0.2			28 48 56	Background PID dropped to 0.0 2' of recovery
CL	6	Contact at 6.5' BLS with brown sandy silty clay with gravel, (CL) (25% sand, 65% fines, 5% gravel) firm, moist, low plasticity					
	7						
	8						
	9						
Weather-ed Basalt	10	Brown sandy clay matrix with basalt fragments to cobble size, some moisture in fractures and between matrix and basalt cobbles. Cobbles are angular to subrounded (10-20% matrix, 80-90% fractured basalt)	0.0			18 26 50	1.5' recovery
	11						
	12						
	13						
	14						
Weather-ed Basalt	15	Same as above, gray-black fractured basalt in a brown sandy clay matrix. Sand and basalt fragments are angular to subrounded (10-20% matrix, 80-90% fractured basalt)	0.0			23 50	8" recovery
	16						
	17						

PROJECT: Bradford Island

HOLD NO. SB2

ENG FORM 5056A-4, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: SB2

PROJECT: Bradford Island

INSPECTOR:

SHEET 3 OF 3 SHEETS

ELEV (a)	DEPTH (FEET) (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
CL Weather-ed rock	20	Brown sandy clay with gravel (CL) (10% gravel, 20% sand, 70% fines) low plasticity, moist, firm to contact at approximately 20.5' with desiccated rock (sand with angular gravel) (5% gravel, 95% sand) moist, well graded, angular, dense (granite or macrocrystalline volcanic)	0.0 0.0			28 50	1.25' recovery
	25	Gray weathered/desiccated sand stone (ash tuff?), very dense, well graded, moist	0.0			26 50	1' + 3 " slough
Weather-ed rock	30	Red rhyolitic cobble underlain by gray sand/sandstone/ash tuff (weathered) well graded sandstone fragments are angular, very dense, moist	0.0			40 50	1' + 3 " slough recovery
Weather-ed rock	32	Gray weathered sandstone/ash tuff, fragmented Total Depth = 32'	0.0			50	6" recovery

PROJECT: Bradford Island

HOLD NO. SB2

ENG FORM 5056A-4, AUG 94

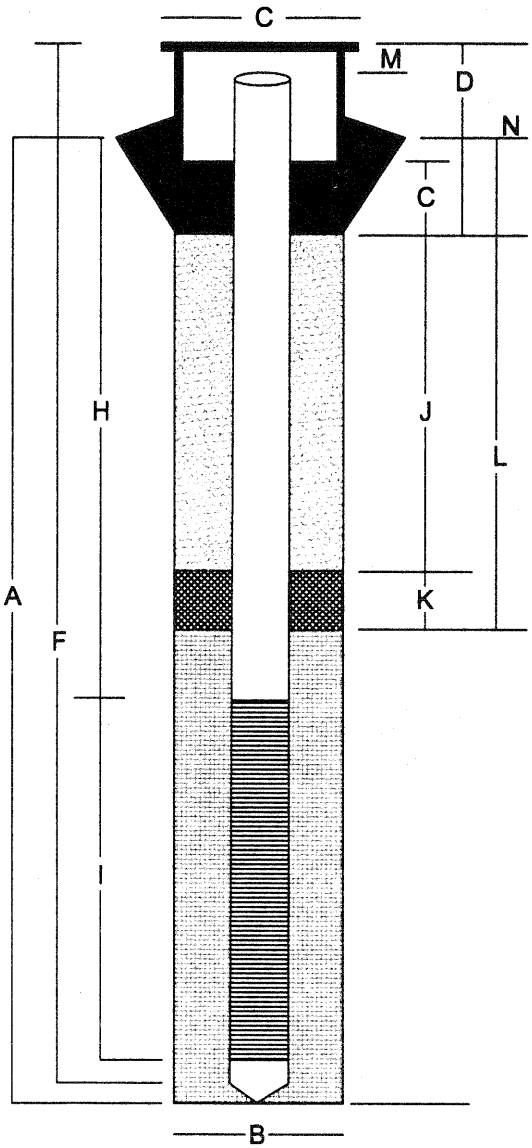
(Proponent: CECW-EG)

Above-ground Monitoring Well Construction Log

Project Name: USCOE BRADFORD ISLAND Well No.: MW02 (SB2) Date: 8/17/98

Project No: 10022-03 Drilling Method: HSA

Geologist: Carlotta Cellucci



A: Total Boring Depth:	32'
B: Boring Diameter:	9.25"
C: Diameter of Protective Casing:	5" ID
D: Length of Protective Casing:	5'
Type of Protective Casing:	Steel mountment
E: Interval of Surface Grout:	0-4'
F: Total Riser Casing Length:	34.14'
Length of Sediment Sump:	1"
Casing Type:	Sch. 80, Flush threaded PVC
G: Inner Diameter:	1.62" (2" OD)
H: Depth to Screen:	22'
I: Screen Length:	10'
Screen Intrval:	22'-32'
Screen / Slot Type:	0.010" Factory slot
J: Depth to Top of Seal:	4'
K: Thickness of Seal:	16'
Type of seal material:	Pure gold medium Bentonite chips
L: Depth to Top of Filter Pack:	20'
Type of Filter Pack:	20/40 Colorado silica sand
M: Top of Casing Elevation:	116.56' above msl
N: Surface Elevation:	114.21' above msl

NOTE: Well was not surged after placement of sand pack, because there was no water in the well at that time. Well was surged by hand prior to well development.

HTRW DRILLING LOG

DISTRICT Portland		HOLE NUMBER SB4
1 COMPANY NAME Tetra Tech, Inc.	2 DRILL SUBCONTRACTOR Cascade Drilling	SHEET 1 OF SHEETS 3

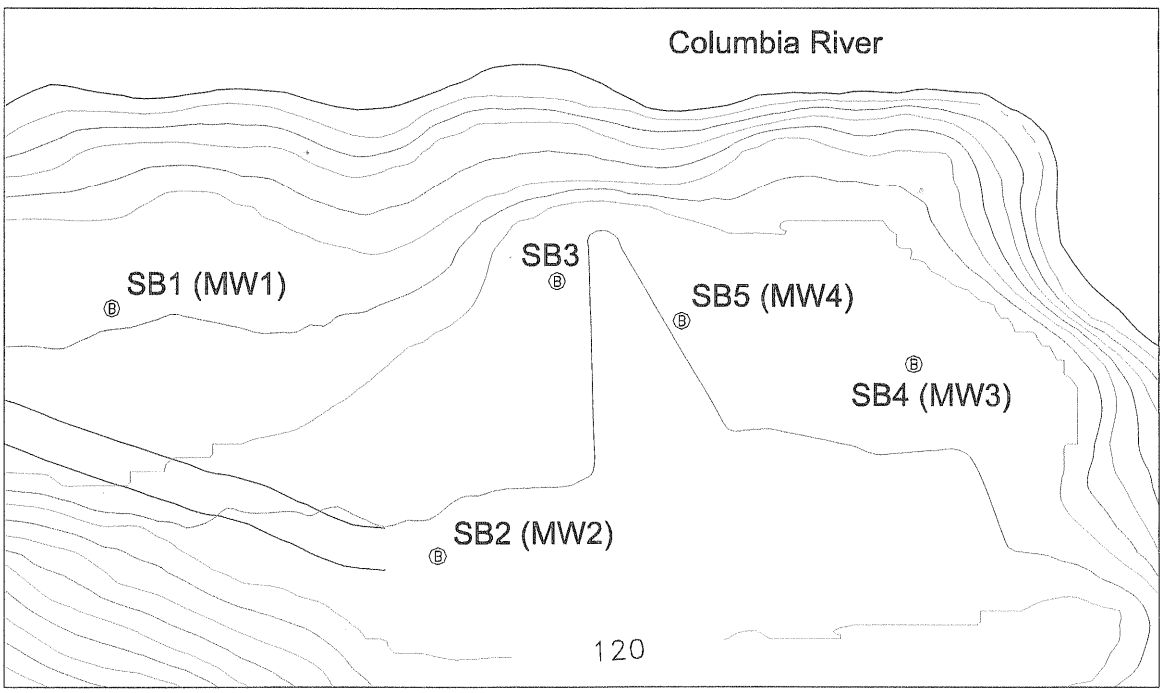
3 PROJECT USCOE Bradford Island Landfill	4 LOCATION Bradford Island Landfill
5 NAME OF DRILLER Steve Hughes	6 MANUFACTURERS DESIGNATION OF DRILL CME 75
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4.25" ID (9.25 OD) HSA 18" long, 2" OD split spoon sampler 140 lbs with 30-inch drop	8 HOLE LOCATION East end of Landfill (723633.77 north) (1633220.55 east)
	9 SURFACE ELEVATION 112.99' (TOC = 115.22')
	10 DATE STARTED 8/17/98 — 11 DATE COMPLETED 8/17/98
12 OVERBURDEN THICKNESS N/A	15 DEPTH GROUNDWATER ENCOUNTERED Approximately 18'
13 DEPTH DRILLED INTO ROCK Approximately 0.5' (Fractured)	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 17.65 after 20 hours
14 TOTAL DEPTH OF HOLE 21'	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY) N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
0	--	--	0

20 SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS/SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY
	1					

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

LOCATION SKETCH/COMMENTS:



PROJECT	HOLE NO.
Bradford Island	SB4

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

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: SB4

PROJECT: Bradford Island

INSPECTOR: Carlotta Cellucci

SHEET 2 OF 3 SHEETS

ELEV (a)	DEPTH (FEET) (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	0	Grassy cover					
	1						
	2						
	3						
	4						
SM	5	Brown silty sand with gravel (SM) (fines 20%, gravel 5%, sand 75%) very dense, dry, well graded	0.0			50	1' of recovery
	6						
	7						
	8						
	9						
SM	10	Same as above with clay (SM) (fines 40%, gravel 5%, sand 55%) very dense, dry to moist, well graded, appears to be weathered basalt (i.e., clayey matrix with basalt/volcanic sand and gravel)	0.0			50	6" of recovery Material packing augers had to pull augers and clean out material.
	11						
	12						
	13						
	14						
	15	No recovery				86 120	No recovery. Material packed auger and bit again at 15' BLS had to pull augers and clean out again. Drilled with center rod and plug
	16						
	17						

PROJECT: Bradford Island

HOLD NO.: SB4

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: SB4

PROJECT: Bradford Island

INSPECTOR: Carlotta Cellucci

SHEET 3 OF 3 SH

ELEV (a)	DEPTH (FEET) (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	18						Became wet at approximately 18' BLS
	19						
Weathered rock	20	Brown weathered rock in silty sand matrix (fines 5%, sand 25%, gravel/angular rock 70%) wet, very dense, well graded second sampler driven at 20' BLS = Fractured basalt in a sand matrix with large volume of free water Refusal at 21' BLS (Hard rock)	0.0		8/17/98-BIL-SB4-SS-01 (1805) VOCs only (Not submitted to the laboratory for analysis)	8 50	1' of recovery in 1st sampler
	21					50	3" of recovery in 2nd sampler
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						
	33						
	34						
	35						

PROJECT: Bradford Island

HOLD NO. SB4

ENG FORM 5056A-4, AUG 94

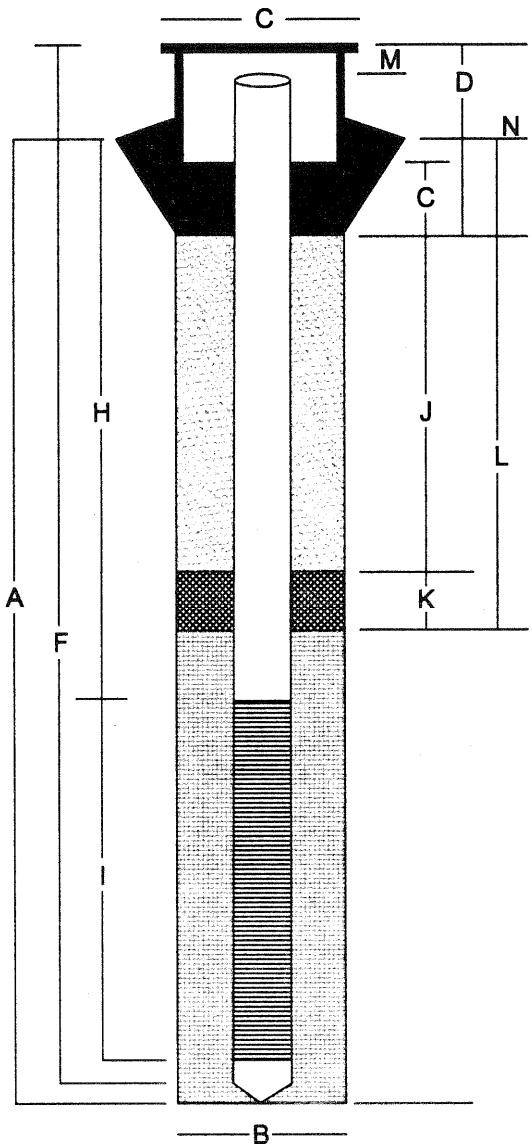
(Proponent: CECW-EG)

Above-ground Monitoring Well Construction Log

Project Name: USCOE BRADFORD ISLAND Well No.: MW03 (SB4) Date: 8/17/98

Project No: 10022-03 Drilling Method: HSA

Geologist: Carlotta Cellucci



A: Total Boring Depth:	21'
B: Boring Diameter:	9.25"
C: Diameter of Protective Casing:	5" ID
D: Length of Protective Casing:	5'
Type of Protective Casing:	Steel mountment
E: Interval of Surface Grout:	0-3'
F: Total Riser Casing Length:	22.57'
Length of Sediment Sump:	1"
Casing Type:	Sch. 80, Flush threaded PVC
G: Inner Diameter:	1.62" (2" OD)
H: Depth to Screen:	11'
I: Screen Length:	10'
Screen Intrval:	11'-21'
Screen / Slot Type:	0.010" Factory slot
J: Depth to Top of Seal:	3'
K: Thickness of Seal:	6'
Type of seal material:	Pure gold medium Bentonite chips
L: Depth to Top of Filter Pack:	9'
Type of Filter Pack:	20/40 Colorado silica sand
M: Top of Casing Elevation:	115.22' above msl
N: Surface Elevation:	112.99' above msl

NOTE: After placement of sand pack, surged well for 5 minutes, Sand settled 4-inches. Replaced sand and surged again for 5 more minutes; sand did not settle.

HTRW DRILLING LOG

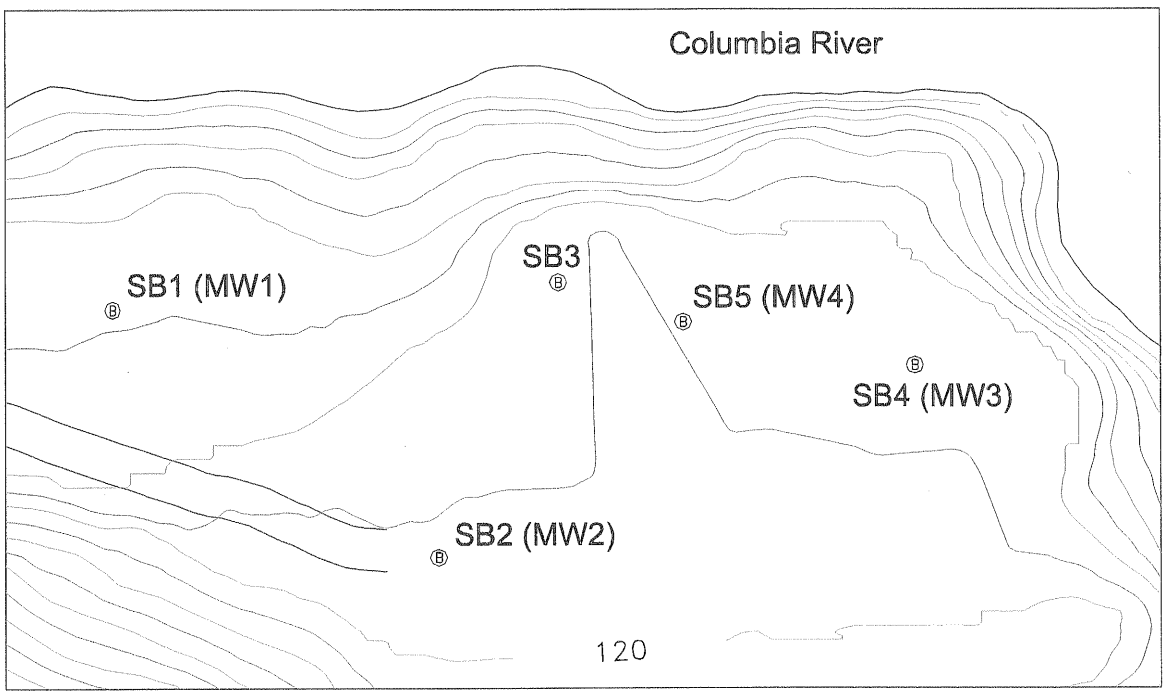
DISTRICT Portland		HOLE NUMBER SB5
1 COMPANY NAME Tetra Tech, Inc.	2 DRILL SUBCONTRACTOR Cascade Drilling	SHEET 1 OF SHEETS 3
3 PROJECT USCOE Bradford Island Landfill	4 LOCATION Bradford Island Landfill	
5 NAME OF DRILLER Steve Hughes	6 MANUFACTURERS DESIGNATION OF DRILL CME 75	
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 4.25" ID (9.25 OD) HSA 18" long, 2" OD split spoon sampler 140 lbs with 30-inch drop	8 HOLE LOCATION Northeast area of landfill (723649.42 north) (1633138.74 east)	
	9 SURFACE ELEVATION 114.47' (TOC = 114.79')	
	10 DATE STARTED 8/18/98	11 DATE COMPLETED 8/18/98
12 OVERBURDEN THICKNESS approximately 30'	15 DEPTH GROUNDWATER ENCOUNTERED Between 15-20' BGS	
13 DEPTH DRILLED INTO ROCK Decompose <1'	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 17.25 after 4 hours	
14 TOTAL DEPTH OF HOLE 30'	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY) N/A	

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
0	--	--	0

20 SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS/SVOCs	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY

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

LOCATION SKETCH/COMMENTS:



PROJECT	HOLE NO.
Bradford Island	SB5

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

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: SB5

PROJECT: Bradford Island

INSPECTOR: Carlotta Cellucci

SHEET 2 OF 3 SHEETS

ELEV (a)	DEPTH (FEET) (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	0	Grassy cover					
	1						
	2						
	3						
	4						
SM	5	Brown silty sand with gravel (SM) (fines 25%, gravel 5%, sand 70%) dry to moist, dense, well graded	1.1			11 11 20	6" recovery (2" of which are slough) Background PID <1.1
	6						
	7						
	8						
	9						
SM	10	Mottled black/orange/brown silty sand (SM) with gravel (fines 10%, sand 75%, gravel 15%) moist, dense, well graded	0.4			5 5 5	6" of recovery Background PID = 0.3
	11						
	12						
	13						
	14						
	15	No recovery Sampler wet				3 6 4	No recovery
	16						
	17						

PROJECT: Bradford Island

HOLD NO. SB5

ENG FORM 5056A-4, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER	SHEET	SHEETS
SB5	3	3

PROJECT: Bradford Island

INSPECTOR: Carlotta Cellucci

ELEV (a)	DEPTH (FEET) (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	18						
	19						
	20	No recovery				50	No recovery Background PID = 0.1
CL	21	Gray gravelly (fractured volcanics) clay (CL) (fines 60%, fractured rock 40%) very stiff, moist-wet, low plasticity	0.1			10 33 50	2.75' recovery
	22						
	23						
	24						
SM	25	Gray gravelly, clayey sand (SM) (gravel 10%, fines 10%, sand 80%) gravel = angular volcanics, sand is volcanic/angular wet, dense, well graded	1.0			50	5" recovery Background PID = 0.8
	26						
	27						
	28						
	29						
Weather-ed Rock	30	Gray decomposed volcanics in a gravelly clay matrix, moist, very dense, well graded, all gravel and rock is angular	0.3			31 50	2' recovery Background PID = 0.3
	31	Total Depth = 30'					
	32						
	33						
	34	**NOTE: A large piece of metal was wrapped around the augers when they were removed from the boring.**					
	35						

PROJECT: Bradford Island

HOLD NO.: SB5

ENG FORM 5056A-4, AUG 94

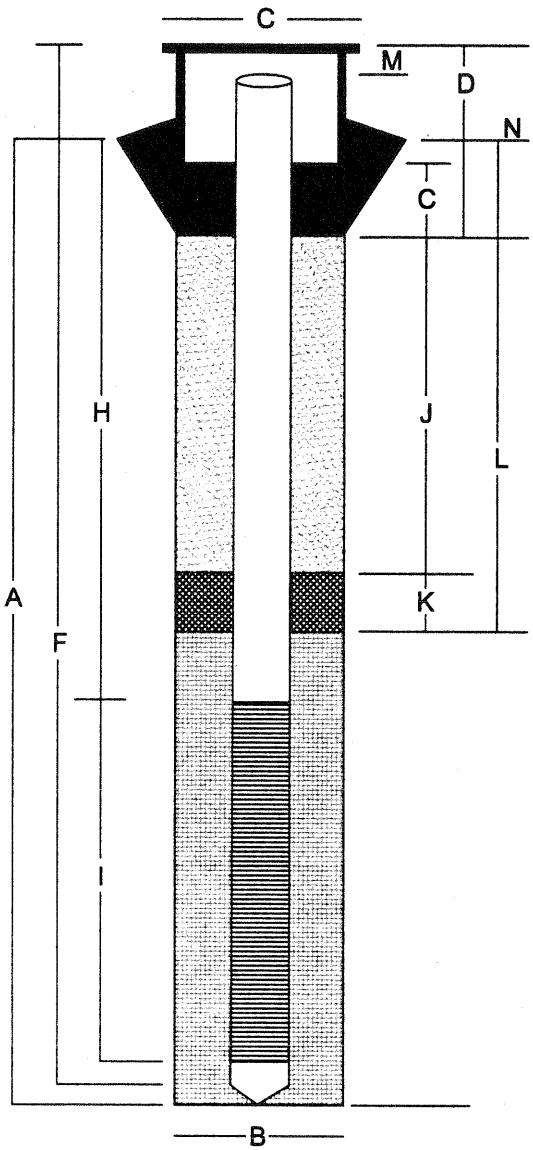
(Proponent: CECW-EG)

Above-ground Monitoring Well Construction Log

Project Name: USCOE BRADFORD ISLAND Well No.: MW04 (SB5) Date: 8/18/98

Project No: 10022-03 Drilling Method: HSA

Geologist: Carlotta Cellucci



A: Total Boring Depth:	30'
B: Boring Diameter:	9.25"
C: Diameter of Protective Casing:	5"
D: Length of Protective Casing:	5'
Type of Protective Casing:	Steel mountment
E: Interval of Surface Grout:	0-4'
F: Total Riser Casing Length:	31.85'
Length of Sediment Sump:	1"
Casing Type:	Sch. 80, Flush threaded PVC
G: Inner Diameter:	1.62" (2" OD)
H: Depth to Screen:	10'
I: Screen Length:	20'
Screen Intrval:	10'-30'
Screen / Slot Type:	0.010" Factory slot
J: Depth to Top of Seal:	4'
K: Thickness of Seal:	4'
Type of seal material:	Pure gold medium Bentonite chips
L: Depth to Top of Filter Pack:	8'
Type of Filter Pack:	20/40 Colorado silica sand
M: Top of Casing Elevation:	114.79' above msl
N: Surface Elevation:	114.47' above msl

NOTE: After placement of sand pack, surged well for 5 minutes, Sand settled 1" inch. Replaced sand and surged again for 5 more minutes; sand did not settle.

Project: Bradford Island Landfill
Project Location: Bonneville Dam, Oregon
Project Number: 53-F0072173.02

Key to Log of Boring

Elevation feet	Depth, feet	SAMPLES: Type	SAMPLES: Number	SAMPLES: Sampling Resistance, blows / 6 in.	SAMPLES: Recovery, inches	SAMPLES: Headspace PID [FID], ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
1	2	3	4	5	6	7	8	9	10	11	12

COLUMN DESCRIPTIONS

1. **Elevation:** Elevation in feet referenced to mean sea level (MSL) or site datum.
2. **Depth:** Depth in feet below the ground surface.
3. **Sample Type:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.
4. **Sample Number:** Sample identification number.
5. **Sampling Resistance:** Number of blows to advance driven sampler each 6-inch drive interval, or distance noted, using a 140-lb hammer with a 30-inch drop; "NA" indicates data not recorded.
6. **Recovery:** Length in inches of sample actually recovered in driven or pushed sampler; "NA" indicates data not recorded.
7. **Headspace PID/FID:** Photo-ionization/flame ionization device sample headspace reading in parts per million (ppm).
8. **Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.
9. **USCS Code:** Unified Soil Classification System (USCS) group symbol code for associated soil strata.
10. **Material Description:** Description of material encountered; may include color, moisture, grain size, and density/consistency.
11. **Well Completion Schematic:** Schematic of piezometer or well installation; materials are listed in header block and alongside well schematic; graphic symbols are explained below.
12. **Field Notes and Well Details:** Comments and observations regarding drilling or sampling made by driller or field personnel. Well construction materials and installation details are also listed in this column.

TYPICAL SOIL GRAPHIC SYMBOLS

- SAND (SP)
- CLAY (CL)
- SILT (ML)
- SANDSTONE
- SAND with silt (SP-SM)
- Plastic CLAY (CH)
- Silty CLAY (CL/ML)
- Rock Fragments / Gravel
- Silty SAND (SM)
- Clayey SAND (SC)
- Silty GRAVEL (GM)
- Non-soil Fill

TYPICAL WELL GRAPHIC SYMBOLS

- Blank well casing in concrete
- Blank well casing in filter sand
- Blank well casing in bentonite-cement slurry
- Slotted well casing in filter sand
- Blank well casing in bentonite chips
- Native backfill or slough

TYPICAL SAMPLER GRAPHIC SYMBOLS

- 2-inch-OD split spoon sampler (SPT)
- 2.5-inch-OD split spoon with brass liners (modified California)
- Thin-walled tube sampler (Shelby tube)

OTHER GRAPHIC SYMBOLS

- First water encountered at time of drilling (ATD)
- Static water level measured in well on specified date
- Change in material properties within a stratum
- Inferred or gradational lithologic contact

GENERAL NOTES

1. Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive; actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2. Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

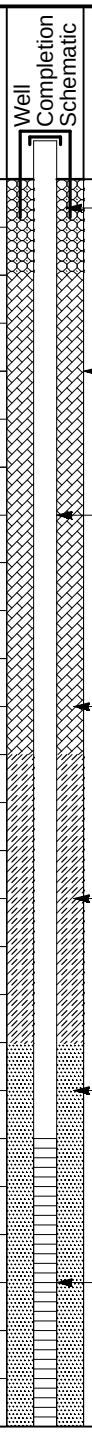
Report: ENV_12W_CLEVELAND_W/USCS_KEY; File: BRADFORD.GPJ; 1/12/2000 keyowwell

Project: Bradford Island Landfill
Project Location: Bonneville Dam, Oregon
Project Number: 53-F0072173.02

Log of Boring SB-7 (MW-5)

Date(s) Drilled and Installed	**9/29/99 and 9/30/99**	Geologist	**G. Lukert**	Reviewer	
Drilling Method	**Hollow-Stem Auger**	Drilling Contractor	**Cascade Drilling, Inc.**	Total Depth of Borehole	**36.5 feet**
Sampling Method	**Split spoon**	Drill Bit Size/Type	**8-7/8-inch-OD auger bit**	Top of Casing Elevation	**114.07 feet MSL**
Size and Type of Well Casing	**1-7/8-inch-I.D. Schedule 80 PVC**	Screen Perforation	**0.010-inch slot (10-34.5 feet)**	Ground Surface Elevation	**112.36 feet MSL**
Seal or Backfill	**Bentonite-cement slurry 1-6 feet, bentonite chips 6-9 feet**	Location	**North side of landfill**	Coordinates	**N 723,665.69 E 1,633,072.42**

Elevation feet	Depth, feet	SAMPLES Type Number	Sampling Resistance, blows / 6 in.	Recovery, inches	Headspace PID [FID], ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION
112	0							Surface conditions: brown, silty SAND with rounded cobbles [Fill]
	1							
	2							
110								
	3							
	4	01	1-1-1	2	0.0 [0.0]		ML	SILT; dark yellowish brown (10YR 3/4), trace fine sand, slightly micaceous, dry, soft, no odor [FILL]
108								
	5							
	6							
106								
	7							
	8							
104								
	9	02	7-5-7	0				**No recovery in sampled interval 9-10.5 feet; apparent void space 7.5-10 feet**
	10							
102								
	11							
	12							
100								
	13							



FIELD NOTES AND WELL DETAILS

Report: ENV_12W_CLEVELAND+/-USCS_2FT/IN; File: BRADFORD.GPJ; 1/12/2000 SB-07

Project: Bradford Island Landfill
Project Location: Bonneville Dam, Oregon
Project Number: 53-F0072173.02

Log of Boring SB-7 (MW-5)

Elevation feet	Depth, feet	SAMPLES Type Number	Sampling Resistance, blows / 6 in.	Recovery, inches	Headspace PID [FID], ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	13									8-7/8-in.-dia. borehole (0-35 ft)
98	14	03	8-3-4	2	0.0 [0.0]		SM	Silty SAND with gravel; very dark gray (2.5Y 3/1), ~60% sand, ~30% medium plasticity silt, ~10% rounded to subrounded gravel, wet, loose, no odor [FILL]		
	15									20/40 silica sand (9-35 ft)
96	16									
	17									1-7/8-in.-I.D. Schedule 80 PVC screen, 0.010-in. slot (10-35 ft)
94	18									
	19									
92	20	04	10-12-9	2	0.0 [0.0]		SM/ML	Silty SAND to sandy SILT; very dark gray (2.5Y 3/1), slightly micaceous, damp to wet, medium dense, no odor [FILL]		
	21									
90	22									
	23									
88	24	05	4-6-5	4	43 [0.0]		SM	Silty SAND; dark gray (2.5Y 4/1), trace angular volcanic gravel, wood fragments, damp to wet, medium dense		
	25									
86	26									
	27									
84	28									
	29									

Report: ENV_12W_CLEVELAND+/-USCS_2FT/IN; File: BRADFORD.GPJ; 1/12/2000 SB-07

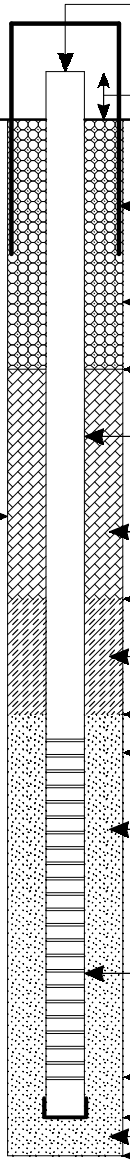
Project: Bradford Island Landfill
Project Location: Bonneville Dam, Oregon
Project Number: 53-F0072173.02

Log of Boring SB-7 (MW-5)

Elevation feet	Depth, feet	SAMPLES Type Number	Sampling Resistance, blows / 6 in.	Recovery, inches	Headspace PID [FID], ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	29									
82	30	06	1-2-4	18	375 [0.0]		SC	CLAYEY SAND with silt; dark gray (2.5Y 4/1), ~60% poorly graded sand, ~35% medium plasticity fines, ~5% angular gravel, wet, loose		8-7/8-in.-dia. borehole (0-35 ft)
	31									20/40 silica sand (9-35 ft)
80	32									
	33									1-7/8-in.-I.D. Schedule 80 PVC screen, 0.010-in. slot (10-35 ft)
78	34									
76	35	07	5-9-14	14	32 [0.0]		[Rock]	Weathered SANDSTONE; very dark gray (2.5Y 3/1), angular volcanic fragments (35.0-35.5 ft), trace clay, damp to wet, medium dense		Native soil (sampled interval)
	36									
	37							**Bottom of boring at 36.5 feet bgs**		
74	38									
	39									
72	40									
	41									
70	42									
	43									
68	44									
	45									

Project: Bradford Island Landfill **Project Location: Bonneville Dam, Oregon** **Project Number: 53-F0072173.02**	**MONITORING WELL CONSTRUCTION LOG FOR WELL MW-5**

Well Location	**Boring SB-7, north side of landfill**		Date(s) Installed **9/30/99**	Time	**0930**
Installed By	**Cascade Drilling, Inc.**	Observed By	**G. Lukert**	Total Depth	**36.5 feet**
Method of Installation	**Hollow-stem auger**				
Screened Interval	**10 - 35 feet**	Completion Zone	**Unconfined aquifer above slideblock**		
Remarks	**Well installed at coordinate location N 723,665.69 E 1,633,072.42**				



Elevation of Top of Riser Pipe: **114.07 ft MSL**

Height of Riser Above Ground: **1.71 ft**

Ground Elevation: **112.36 ft MSL**

ID/Type of Surface Casing:
6-3/16-inch-dia. steel

Type of Surface Seal:
Concrete

Depth of Surface Seal: **1.0 ft**

ID/Type of Riser Pipe:
1-7/8-inch-I.D. Schedule 80 PVC

Boring Diameter:
8-7/8 inches

Type of Backfill:
Bentonite/Portland cement slurry

Depth of Seal: **6.0 ft**

Type of Seal:
Bentonite chips

Depth of Top of Filter Pack: **9.0 ft**

Depth of Top of Screen: **10.0 ft**

Type of Filter Pack:
20/40 silica sand

ID/Type of Screen:
1-7/8-inch-I.D. Schedule 80 PVC
Screen Slot Size:
0.010-inch

Depth of Bottom of Screen: **34.5 ft**

Depth of Bottom of Plugged Blank Casing: **35.0 ft**

Type/Depth of Backfill/Seal Below Well:
Native soil (sampled interval)

Total Depth of Boring: **36.5 ft**

NOTE: DIAGRAM IS NOT TO SCALE

Report: ENV_WELL_CONSTR_ABOVE_GROUND; File: BRADFORD.GPJ; 1/8/00

Project: Bradford Island Landfill **Project Location:** Cascade Locks, Oregon **Project Number:** 52-00080001.00	**Log of Boring MW-6** Sheet 1 of 2

Date(s) Drilled	4/22/02	Logged By	CM	Checked By	BM
Drilling Method	Air Rotary	Drill Bit Size/Type		Total Depth of Borehole	35.0 feet
Drill Rig Type		Drilling Contractor	Enviromental West	Approximate Surface Elevation	110.00' MSL
Groundwater Level and Date Measured	16.36 feet [btoc] [4/22/02]	Sampling Method(s)	Split Spoon Sampler	Hammer Data	140 lb. Automatic
Borehole Backfill	Monitoring Well Installed	Location	Bradford Island Landfill		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	REMARKS
110	0						GW	**COBBLES [GW]**, dark grey, [angular basalt, maximum size 1.0' to 2.0'], [Fill for drill rig pad].		
							ML	**CLAYEY SILT [ML]**, brown, [10YR-4/3], [trace sand], [fines medium plastic], soft, [moist], [Fill/Alluvium].		
105	5									
							SM	**SILTY SAND WITH GRAVEL [SM]**, dark yellowish brown [10YR-4/3], [well graded], [gravel maximum size 1/4", rounded to subrounded], medium dense, [wet to saturated], [Fill/Alluvium].		
100	10		1	20	1.5					
95	15		2	28-6"	0.0					
							CL	**SILTY CLAY [CL]**, black [10YR], [slightly plastic], [wood debris], [slight petroleum odor and sheen], soft, wet to saturated,[Fill/Alluvium].		
90	20		3	25	0.2					
							SM	**SILTY SAND [SM]**, dark greenish grey [Glex 1-3/1], [trace gravel, gravel angular with a maximum size 1" and consists of siltstone], [saturated], [Weathered Slide Block].		
85	25		4	9	0.2					
80	30									

URS

Project: Bradford Island Landfill
Project Location: Cascade Locks, Oregon
Project Number: 52-00080001.00

Log of Boring MW-6

Elevation, feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic		REMARKS
80	30	◪	5	50-5"	.42			**SILTSTONE [SLST]**, dark olive grey [5Y-3/2], [weathered to clays and silts], [fractures], very dense, [moist to wet], [Slide Block].			
75	35							Boring terminated at a depth of 35.0' [bgs] on 4/22/2002 and a monitoring well was installed upon completion.			
70	40										
65	45										
60	50										
55	55										
50	60										
45	65										

URS

Project: Bradford Island Landfill **Project Location:** Cascade Locks, Oregon **Project Number:** 52-00080001.00	**Log of Boring MW-7** Sheet 1 of 2

Date(s) Drilled	4/22/02	Logged By	CM	Checked By	BM
Drilling Method	Air Rotary	Drill Bit Size/Type		Total Depth of Borehole	45.5 feet
Drill Rig Type		Drilling Contractor	Enviromental West	Approximate Surface Elevation	104.24' MSL
Groundwater Level and Date Measured	8.96 feet [btoc] [4/22/02]	Sampling Method(s)	Split Spoon Sampler	Hammer Data	140 lb. Automatic
Borehole Backfill	Monitoring Well Installed	Location	Bradford Island Landfill		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	REMARKS
	0						SC	**CLAYEY SAND WITH GRAVEL [SC]**, very dark brown [7.5YR-2.5/2], [well graded sand with angular to rounded grains], loose, [damp to moist], [Fill/Alluvium].		
100	5		1	16	1.5		CL	**SANDY CLAY [CL]**, dark brown [10YR-3/3], [trace gravel], [plastic], [gravel had rounded to subrounded grains], soft, [moist], [Fill/Alluvium].		
95	10		2	80-11"	1.33			*Grades to dark greenish grey, wet to saturated.*		
								More gravel in cuttings, gravel consists of dark grey siltstone clasts, friable.		
90	15		3	50-1"	0.0					
							SC	**CLAYEY SAND [SC]**, dark greenish grey [Glex 1-3/1], [trace silt], [sand rounded to subrounded], [moist to wet], [Weathered Slide Block].		
85	20		4	50-3"	.17			**SILTSTONE [SLST]**, dark greenish grey, [weathered to silts and clays in fractures of rock], [moist to wet], [Slide Block].		
80	25		5	50-2"	.17			*Sand present in cuttings and sampler.*		
								Less sand in cuttings.		
75	30									

Report: PORT_GEO_WELL_NO_DD; File: BRADISL.GPJ; 12/4/2003 MW-7

URS

Project: Bradford Island Landfill
Project Location: Cascade Locks, Oregon
Project Number: 52-00080001.00

Log of Boring MW-7

Elevation, feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic		REMARKS
	30		6	90-10"	.5		GW	**GRAVELLY SAND [GW]**, dark greyish green [Glex 1-3/2], [trace clay], [gravel consists of siltstone clasts with hard angular basalt], [wet], [Slide Block].			
70	35		7	50-2"	0.0			**SILTSTONE [SLST]**, dark greenish grey, [weathered to silts and clays in fractures], [moist to wet], [Slide Block].			
65	40		8	50-2"	.083			*Basalt chips in cuttings.*			
60	45		9	50-2"	0.0						
								Boring terminated at a depth of 45.5' [bgs] on 04/22/2002 and a monitoing well was installed upon completion.			
55	50										
50	55										
45	60										
40	65										

URS

Project: Bradford Island Landfill **Project Location:** Cascade Locks, Oregon **Project Number:** 52-00080001.00	**Log of Boring MW-8** Sheet 1 of 2

Date(s) Drilled	4/23/02	Logged By	CM	Checked By	BM
Drilling Method	Air Rotary	Drill Bit Size/Type		Total Depth of Borehole	62.0 feet
Drill Rig Type		Drilling Contractor	Enviromental West	Approximate Surface Elevation	112.49' MSL
Groundwater Level and Date Measured	57.78 feet [btoc] [4/22/02]	Sampling Method(s)	Split Spoon Sampler	Hammer Data	140 lb. Automatic
Borehole Backfill	Monitoring Well Installed	Location	Bradford Island Landfill		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	REMARKS
	0						ML	**CLAYEY SILT [ML]**, dark brownish yellow [10YR-3/4], [trace fine sand], soft, [dry to damp], [Landfill].		
110										
	5						SM	**SILTY SAND WITH GRAVEL [SM]**, dark brownish yellow [10YR-3/4], [gravel maximum size 1/4", rounded], [damp], [Landfill].		
105										
	10									
100										
							CL	**SILTY CLAY [CL]**, black [10YR-2/1], [wood fragments], [slight petroleum sheen and odor], soft, [wet to saturated], [Fill/Alluvium].		
	15									
95										
	20									
90										
							SM	**SILTY SAND [SM]**, dark greenish grey [Glex 1-3/1], [trace gravel, angular, maximum size 1"], [saturated], [Weathered Slide Block].		
	25									
85										
							SC	**CLAYEY SAND WITH SILT [SC]**, dark greenish grey [Glex 1-3/1], [fines medium plastic], [wet to saturated], [Weathered Slide Block].		
	30									

URS

Project: Bradford Island Landfill
Project Location: Cascade Locks, Oregon
Project Number: 52-00080001.00

Log of Boring MW-8

Elevation, feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	REMARKS
	30									
80								**SILTSTONE [SLST]**, dark olive grey [5Y-3/2], [weathered to clays and silts], very dense, [moist to wet], [Slide Block].		
	35									Begin Coring
			1		1.5		GP	**GRAVEL**[GP], grey, [hard rounded to subrounded gravels of basalt maximum size 1/2"].		
75								**CONGLOMERATE**, grey, [clasts consists of hard angular to rounded basalt up to 1.0'], [matrix consists of a plastic sandy to silty clay], [Slide Block].		
	40									
			2		2.0					
70										
	45									End Coring due to poor recovery
65										
	50									
60										Resume Coring
	55							*Chloritic alteration in basalt vesicles.*		
55									▽	
	60									
50								Boring terminated at a depth of 62.0' [bgs] on 04/23/2002 and a monitoring well was installed upon completion.		
	65									

URS

Project: Bradford Island Landfill **Project Location:** Cascade Locks, Oregon **Project Number:** 52-00080001.00	**Log of Boring MW-9** Sheet 1 of 1

Date(s) Drilled	4/23/02	Logged By	CM	Checked By	BM
Drilling Method	Air Rotary	Drill Bit Size/Type		Total Depth of Borehole	18.0 feet
Drill Rig Type		Drilling Contractor	Enviromental West	Approximate Surface Elevation	112.18' MSL
Groundwater Level and Date Measured	14.97 feet [btoc] [05/01/02	Sampling Method(s)	Split Spoon Sampler	Hammer Data	140 lb. Automatic
Borehole Backfill	Monitoring Well Installed	Location	Bradford Island Landfill		

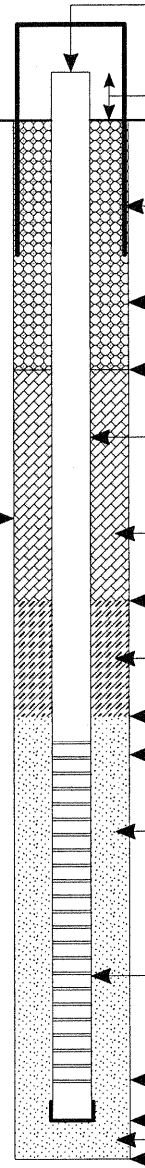
Elevation, feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	REMARKS
	0						GW	**WELL GRADED GRAVEL [GW]**, dark grey, some cobbles, 1-2' in diameter, angular basalt, [Fill for Drilling Pad].		
110										
	5						SC	**CLAYEY SAND WITH SILT [SC]**, dark yellowish-brown, [10YR-3/4], well graded, [rounded to sub-rounded], [wood debris], loose, [moist], [Fill/Alluvium].		
105										
	10		1	50/6"	.25		SM	**SILTY SAND [SM]**, yellowish-brown, [10YR-5/4], [medium coarse sand, rounded to sub-rounded], [saturated], [Fill/Alluvium].		
100										
	15		2	50/0"	0			**SILTSTONE [SLST]**, dark olive grey [5Y-3/2], [weathered to clays and silts in fractures], very dense, [wet to saturated], [Slide Block]. ▽		
95										
								Boring terminated at a depth of 18.0' [bgs] on 04/23/2002 and a monitoring well was installed upon completion.		
	20									
90										
	25									
85										
	30									

URS

Report: PORT_GEO_WELL_NO_DD; File: BRADISL.GPJ; 12/4/2003 MW-9

Project: Bradford Island Landfill **Project Location: Cascade Locks, Oregon** **Project Number: 52-00080001.00**	**MONITORING WELL CONSTRUCTION LOG FOR WELL MW-6**

Well Location	**Bradford Island**		Date(s) Installed **4/22/2002**	Time	
Installed By	**CM**	Observed By	**CM**	Total Depth	**35.0 feet**
Method of Installation	**Air Rotary**				
Screened Interval	**25-30 ft bgs**	Completion Zone	**24-31 ft bgs**		
Remarks					



Elevation of Top of Riser Pipe: **113.02**

Height of Riser Above Ground: **3.02 ft**

Ground Elevation: **110.00 ft MSL**

ID/Type of Surface Casing: **6 in Steel**

Type of Surface Seal: **Concrete**

Depth of Surface Seal: **1.0 ft**

ID/Type of Riser Pipe: **2 in Sch. 40 PVC**

Boring Diameter: **8 in inches**

Type of Backfill: **Bentonite Grout**

Depth of Seal: **14.0 ft**

Type of Seal: **Bentonite Chips**

Depth of Top of Filter Pack: **24.0 ft**

Depth of Top of Screen: **25.0 ft**

Type of Filter Pack: **20/40 Silica Sand**

ID/Type of Screen: **2 in Sch. 40 PVC**
Screen Slot Size: **0.010 in**

Depth of Bottom of Screen: **30.0 ft**

Depth of Bottom of Plugged Blank Casing: **30.0 ft**

Type/Depth of Backfill/Seal Below Well: **Bentonite Chips/5 ft**

Total Depth of Boring: **35.0 ft**

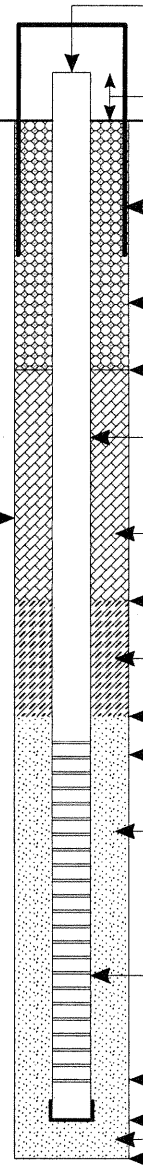
NOTE: DIAGRAM IS NOT TO SCALE

Report: ENV_WELL_CONSTR_ABOVE_GROUND; File: BRADISL.GPJ; 8/14/2002 MW-6

URS

Project: Bradford Island Landfill Project Location: Cascade Locks, Oregon Project Number: 52-00080001.00	MONITORING WELL CONSTRUCTION LOG FOR WELL MW-7

Well Location	**Bradford Island**			Date(s) Installed **4/22/2002**	Time
Installed By	**CM**	Observed By	**CM**	Total Depth	**45.5 feet**
Method of Installation	**Air Rotary**				
Screened Interval	**5-30 ft bgs**	Completion Zone	**3-32 ft bgs**		
Remarks					



Elevation of Top of Riser Pipe: **106.92**

Height of Riser Above Ground: **2.68 ft**

Ground Elevation: **104.24 ft MSL**

ID/Type of Surface Casing:
6 in Steel

Type of Surface Seal:
Concrete

Depth of Surface Seal: **1.0 ft**

ID/Type of Riser Pipe:
2 in Sch. 40 PVC

Boring Diameter:
8 in inches

Type of Backfill:
Bentonite Grout

Depth of Seal: **3.0 ft**

Type of Seal:
Bentonite Chips

Depth of Top of Filter Pack: **3.0 ft**

Depth of Top of Screen: **5.0 ft**

Type of Filter Pack:
20/40 Silica Sand

ID/Type of Screen:
2 in Sch. 40 PVC
Screen Slot Size:
0.010 in

Depth of Bottom of Screen: **30.0 ft**

Depth of Bottom of Plugged Blank Casing: **30.0 ft**

Type/Depth of Backfill/Seal Below Well:
Bentonite Chips/15.5 ft

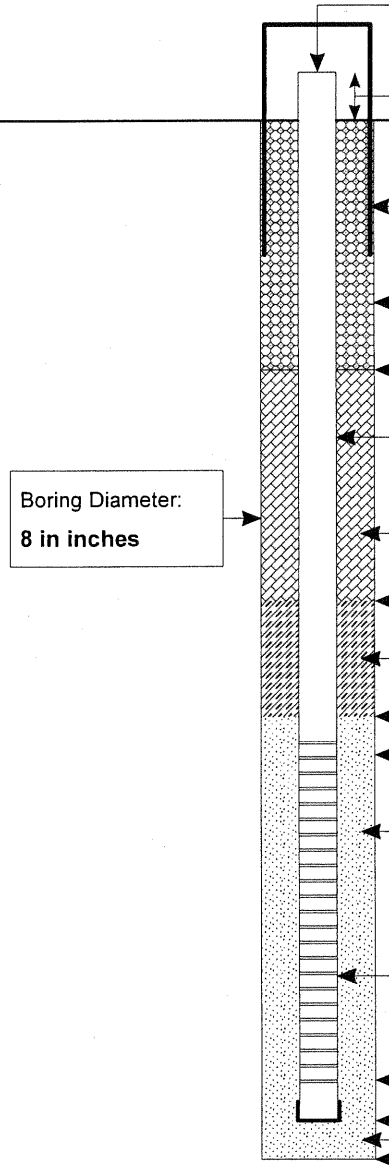
Total Depth of Boring: **45.5 ft**

NOTE: DIAGRAM IS NOT TO SCALE

URS

Project: Bradford Island Landfill **Project Location: Cascade Locks, Oregon** **Project Number: 52-00080001.00**	**MONITORING WELL CONSTRUCTION LOG FOR WELL MW-8**

Well Location	**Bradford Island**			Date(s) Installed **4/23/2002**	Time
Installed By	**CM**	Observed By	**CM**	Total Depth	**62.0 feet**
Method of Installation	**Air Rotary**				
Screened Interval	**53-58 ft bgs**	Completion Zone	**50-58 ft bgs**		
Remarks					



Elevation of Top of Riser Pipe: **115.29**

Height of Riser Above Ground: **2.80 ft**

Ground Elevation: **112.49 ft MSL**

ID/Type of Surface Casing:
6 in Steel

Type of Surface Seal:
Concrete

Depth of Surface Seal: **1.0 ft**

ID/Type of Riser Pipe:
2 in Sch. 40 PVC

Boring Diameter:
8 in inches

Type of Backfill:
Bentonite Grout

Depth of Seal: **45.0 ft**

Type of Seal:
Bentonite Chips

Depth of Top of Filter Pack: **50.0 ft**

Depth of Top of Screen: **53.0 ft**

Type of Filter Pack:
20/40 Silica Sand

ID/Type of Screen:
2 in Sch. 40 PVC
Screen Slot Size:
0.010 in

Depth of Bottom of Screen: **58.0 ft**

Depth of Bottom of Plugged Blank Casing: **58.0 ft**

Type/Depth of Backfill/Seal Below Well:
Bentonite Chips/58-62 ft

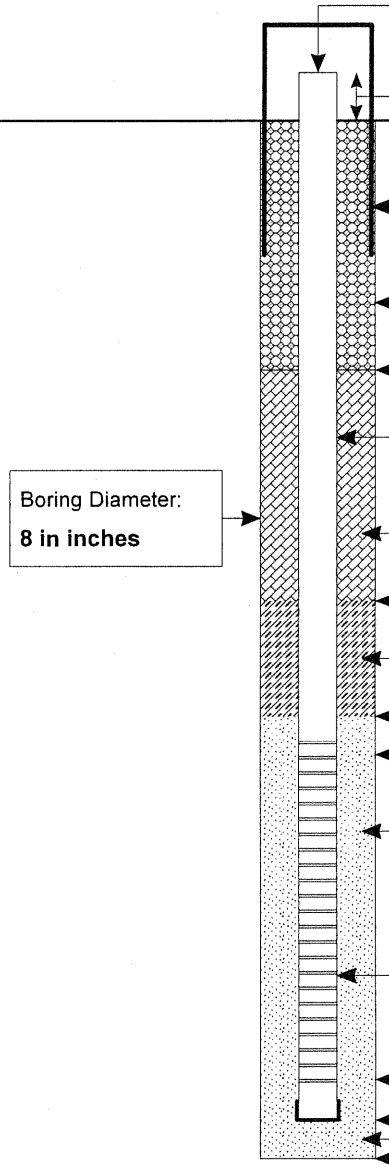
Total Depth of Boring: **62.0 ft**

NOTE: DIAGRAM IS NOT TO SCALE

URS

Project: Bradford Island Landfill Project Location: Cascade Locks, Oregon Project Number: 52-00080001.00	MONITORING WELL CONSTRUCTION LOG FOR WELL MW-9

Well Location	**Bradford Island**			Date(s) Installed **4/23/2002**	Time
Installed By	**CM**	Observed By	**CM**	Total Depth	**18.0 feet**
Method of Installation	**Air Rotary**				
Screened Interval	**10-15 ft bgs**	Completion Zone	**9-16 ft bgs**		
Remarks					



Elevation of Top of Riser Pipe: **115.16**

Height of Riser Above Ground: **2.98 ft**

Ground Elevation: **112.18 ft MSL**

ID/Type of Surface Casing: **6 in Steel**

Type of Surface Seal: **Concrete**

Depth of Surface Seal: **1.0 ft**

ID/Type of Riser Pipe: **2 in Sch. 40 PVC**

Boring Diameter: **8 in inches**

Type of Backfill: **Bentonite Grout**

Depth of Seal: **7.0 ft**

Type of Seal: **Bentonite Chips**

Depth of Top of Filter Pack: **9.0 ft**

Depth of Top of Screen: **10.0 ft**

Type of Filter Pack: **20/40 Silica Sand**

ID/Type of Screen: **2 in Sch. 40 PVC**
Screen Slot Size: **0.010 in**

Depth of Bottom of Screen: **15.0 ft**

Depth of Bottom of Plugged Blank Casing: **15.0 ft**

Type/Depth of Backfill/Seal Below Well: **Bentonite Chips/15-18 ft bgs**

Total Depth of Boring: **18.0 ft**

NOTE: DIAGRAM IS NOT TO SCALE

URS

Report: ENV_WELL_CONSTR_ABOVE_GROUND; File: BRADISL.GPJ; 8/14/2002 MW-9

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

Log of Boring MW-10

Date(s) Drilled and Installed	**4/3 - 4/5/2008**	Geologist	**MC**	Reviewer	**NM**
Drilling Method	**Sonic**	Drilling Contractor	**Boart Longyear**	Total Depth of Borehole	**57.6 ft. [bgs]**
Sampling Method	**Continuous Core**	Drill Bit Size/Type	**4 in. core with 6 in. casing**	Approximate Surface Elevation	**129.28 ft. MSL**
Drill Rig Type	**Prosonic Spider**	Groundwater Level(s)	**16.53 ft. [bgs] [4/16/08]**	Hammer Data	**n/a**
Borehole Backfill	**Monitoring Well Installed**	Comments	**MSL: mean sea level, bgs: below ground surface**	Location	**Bradford Island Reference Area**

Elevation feet	Depth, feet	SAMPLES Type	Number		Recovery, (feet)	Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	0								**Basalt BOULDER**, dark grey, dry, hard, fresh.		Stickup Monument; Concrete; 2" Schedule PVC Riser
			1		4			SM	**Silty SAND with Gravel [SM]**, brown to orange-brown, moist, loose, well-graded sand with root fragments. Moderate plasticity fines. Subrounded gravel with some hard, angular clasts, few cobbles. [Colluvium]		
	5					0.0			*Light yellow-brown, no root fragments.*		
			2		6			ML	**Sandy SILT with Gravel [ML]**, brown, medium stiff, moist, low plasticity fines. Poorly-graded fine sand. Rounded gravel with few hard, angular clasts. [Colluvium]		
	10					0.0			*Dark olive-brown, stiff, moderately plastic fines with yellow-brown, loose coarse-grained sand.*		
	15		3		10	0.2			*Increasingly fine, angular gravel, moist to wet.*		Baroid Hole Plug 3/8" Bentonite Chips [hydrated]
									Basalt BOULDER, dark grey, moist, hard, fresh.		
	20					0.0			**SILTSTONE**, greenish-grey, dry, dense, friable, moderately weathered to soft silt and clay with irregularly-spaced 1/8-in [chloritic] laminae . Fine-grained matrix with rock texture. Trace fine, angular gravel-sized basalt clasts. [Weathered Slide Block]		
	25		4		10	0.3			*Dry to moist.*		
	30										

URS

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

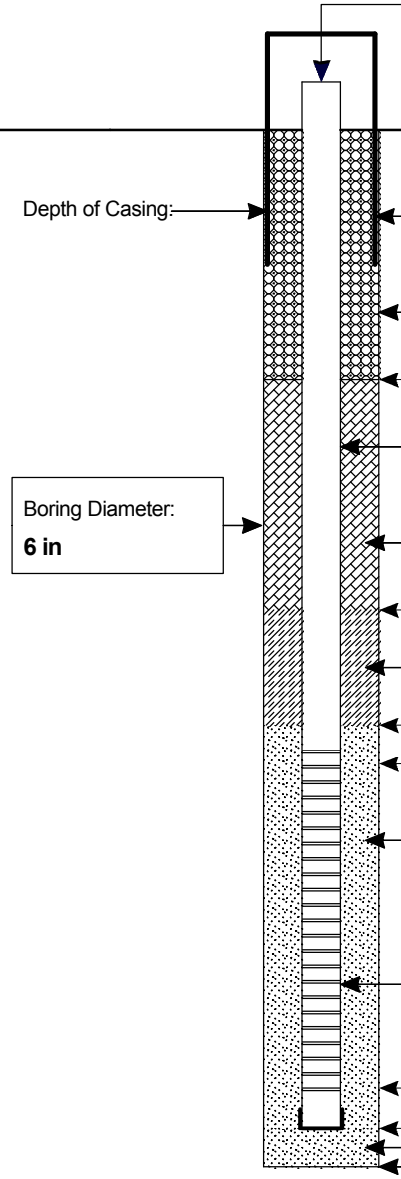
Log of Boring MW-10

Elevation feet	Depth, feet	SAMPLES Type	Number		Recovery, (feet)	Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	30					0.2			*Increased [chloritic] alteration throughout.*		
	35		5		10	0.3			*As above, with dark brown moderate plasticity clay laminae, up to 1/2", increasingly soft.*		
								CL	**Sandy CLAY with Gravel [CL]**, dark brown-black, wet, soft, low plasticity. Trace subangular gravel. [Weathered Slide Block]		
	40					0.6			**SILTSTONE**, dark greenish-grey, moist to wet, dense, slightly weathered to stiff silt and clay with irregularly-spaced 1/8-in [chloritic] laminae. Fine-grained matrix with rock texture. Trace fine, angular gravel-sized basalt clasts. [Slide Block]		
			6		6						Oglebay Norton 10-20 Silica Sand
	45					0.0			*Wet.*		
									Basalt BOULDER, dark grey, moist, hard, fresh.		0.010 in. - Slot Schedule 40 PVC screen
			7		4						
	50					0.1			**SILTSTONE**, dark greenish-grey, moist to wet, dense, fresh with irregularly-spaced 1/8-in [chloritic] laminae. Trace fine, angular basalt gravel clasts partially weathered to silty sand. [Slide Block]		
			8		7.6						
	55										Schedule 40 PVC Sump
									Boring terminated at a depth of 57.6' [bgs] on 4/5/2008 and a monitoring well was installed upon completion.		
	60										
	65										

URS

Project: Bradford Island Project Location: Bonneville Dam, Oregon Project Number: 25696679	MONITORING WELL CONSTRUCTION LOG FOR WELL MW-10

Well Location	**Bradford Island Reference Area**			Date Completed	**4/8/2008**
Installed By	**Boart Longyear**	Observed By	**MC**	Total Depth	**57.6 ft. bgs**
Method of Installation	**Sonic**				
Screened Interval	**47-57 ft bgs**	Completion Zone	**45-57.6 ft bgs**		
Remarks					



Support Plate Elevation: **133.20 ft. MSL**

Ground Elevation: **129.28 ft. MSL**

Depth of Casing:

ID/Type of Surface Casing:
6 in Square Aluminum Stickup Monument

Type of Surface Seal:
Concrete

Depth of Surface Seal: **1.0 ft**

ID/Type of Riser Pipe:
2 in Sch. 40 PVC

Boring Diameter:
6 in

Type of Backfill:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Seal: **1.0 ft**

Type of Seal:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Top of Filter Pack: **43.0 ft**

Depth of Top of Screen: **47.0 ft**

Type of Filter Pack:
Oglebay Norton 10-20 Silica Sand

ID/Type of Screen:
2 in Sch. 40 PVC
Screen Slot Size:
0.010 in

Depth of Bottom of Screen: **57.0 ft**

Depth of Bottom of Plugged Blank Casing: **57.5 ft**

Type/Depth of Backfill/Seal Below Well:
none

Total Depth of Boring: **57.6 ft**

NOTE: DIAGRAM IS NOT TO SCALE

Report: PORT_ENV_WELL_ABOVE_GROUND; File: BRADISL.GPJ; 6/6/2008 MW-10

URS

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

Log of Boring MW-11

Date(s) Drilled and Installed	**4/3/2008**	Geologist	**MC**	Reviewer	**NM**
Drilling Method	**Sonic**	Drilling Contractor	**Boart Longyear**	Total Depth of Borehole	**37.0 ft. [bgs]**
Sampling Method	**Continuous Core**	Drill Bit Size/Type	**4 in. core with 6 in. casing**	Approximate Surface Elevation	**99.45 ft. MSL**
Drill Rig Type	**Prosonic Truck Mount**	Groundwater Level(s)	**7.74 ft. [bgs] [4/15/08]**	Hammer Data	**n/a**
Borehole Backfill	**Monitoring Well Installed**	Comments	**MSL: mean sea level, bgs: below ground surface**	Location	**Bradford Island Sandblast Area**

Elevation feet	Depth, feet	SAMPLES Type	Number		Recovery, (feet)	Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	0							GM	**Asphalt**		Flush to Grade Monument
									Silty GRAVEL [GM], dark brown, dry, rounded, well-graded gravel with few cobbles. Low plasticity, hard silt. [Colluvium]		Concrete
			1		7			SM	**Silty SAND with Gravel [SM]**, brown to yellow-brown, dry to moist, low plasticity medium stiff fines. Rounded to subangular, well-graded gravel with some cobbles. [Colluvium]		
									Trace gravel, no cobbles.		
	5					0.2					2" Schedule PVC Riser
								MH	**Clayey SILT with Gravel [MH]**, orange-brown, moist, high plasticity hard fines with thinly laminated 1/8" orange-brown and yellow-brown zones. Rounded well-graded gravel with some cobbles and oxidized zones surrounding some clasts. [Colluvium]		
	10		2		5	1.2			*Fewer cobbles.*		
			3		3			ML	**Clayey SILT with Gravel [ML]**, grey, moist, hard low plasticity fines. Rounded to subrounded gravel with some cobbles and trace well graded sand. [Weathered Slide Block]		
	15					0.3					Baroid Hole Plug 3/8" Bentonite Chips [hydrated]
			4		2				*Increasing sand, decreasing clay.*		
									Basalt BOULDER, dark grey, dry, hard and fresh.		
	20		5		6	0.1		ML	**Sandy SILT with Gravel [ML]**, grey, moist, stiff low plasticity fines. Poorly graded medium to fine-grained sand. Rounded gravel with few cobbles. [Weathered Slide Block]		
	25		6		4	0.2			*Wet.*		Oglebay Norton 10-20 Silica Sand; 0.010 in. - Slot Schedule 40 PVC screen
	30										

URS

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

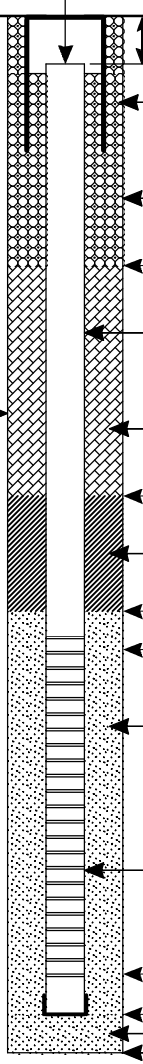
Log of Boring MW-11

Elevation feet	Depth, feet	SAMPLES Type	Number		Recovery, (feet)	Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	30		7		7	0.4			*Increasing low plasticity clay, decreasing sand.*		
	35		8		3	0.0					Schedule 40 PVC Sump
									Boring terminated at a depth of 37' [bgs] on 4/3/2008 and a monitoring well was installed upon completion.		
	40										
	45										
	50										
	55										
	60										
	65										

URS

Project: Bradford Island Project Location: Bonneville Dam, Oregon Project Number: 25696679	MONITORING WELL CONSTRUCTION LOG FOR WELL MW-11

Well Location	**Bradford Island Sandblast Area**		Date(s) Installed	**4/3/2008**	Time
Installed By	**Boart Longyear**	Observed By	**MC**	Total Depth (ft)	**37.0 ft. bgs**
Method of Installation	**Sonic**				
Screened Interval	**26-36 ft bgs**	Completion Zone	**26.5-37 ft bgs**		
Remarks					



Elevation of Top of Riser Pipe: **98.12 ft. MSL**

Depth of Riser Below Ground Surface: **-1.33 ft**

Ground Elevation: **99.45 ft MSL**

ID/Type of Surface Casing:
8 in Flush to Grade Monument

Type of Surface Seal:
Concrete

Depth of Surface Seal: **1.0 ft**

ID/Type of Riser Pipe:
2 in Sch. 40 PVC

Boring Diameter:
6 in

Type of Backfill:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Seal: **1.0 ft**

Type of Seal:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Top of Filter Pack: **24.5 ft**

Depth of Top of Screen: **26.0 ft**

Type of Filter Pack:
Oglebay Norton 10-20 Silica Sand

ID/Type of Screen:
2 in Sch. 40 PVC
Screen Slot Size:
0.010 in

Depth of Bottom of Screen: **36.0 ft**

Depth of Bottom of Plugged Blank Casing: **36.4 ft**

Type/Depth of Backfill/Seal Below Well:
none

Total Depth of Boring: **37.0 ft**

NOTE: DIAGRAM IS NOT TO SCALE

Report: ENV_WELL_CONSTR_BELOW_GROUND; File: BRADISL.GPJ; 6/6/2008 MW-11

URS

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

Log of Boring MW-12

Sheet 1 of 1

Date(s) Drilled and Installed	**3/26/2008**	Geologist	**MC**	Reviewer	**NM**
Drilling Method	**Hollow Stem Auger [HSA]**	Drilling Contractor	**Boart Longyear**	Total Depth of Borehole	**26.5 ft. [bgs]**
Sampling Method	**Split Spoon Sampler**	Drill Bit Size/Type	**6 5/8 in. I.D. HSA with center bit**	Approximete Surface Elevation	**96.93 ft. MSL**
Drill Rig Type	**CME-75 HT**	Groundwater Level(s)	**24.08 ft. [bgs] [4/15/08]**	Hammer Data	**140 lb. , 30 in. drop automatic hammer**
Borehole Backfill	**Monitoring Well Installed**	Comments	**MSL: mean sea level, bgs: below ground surface**	Location	**Bradford Island Sandblast Area**

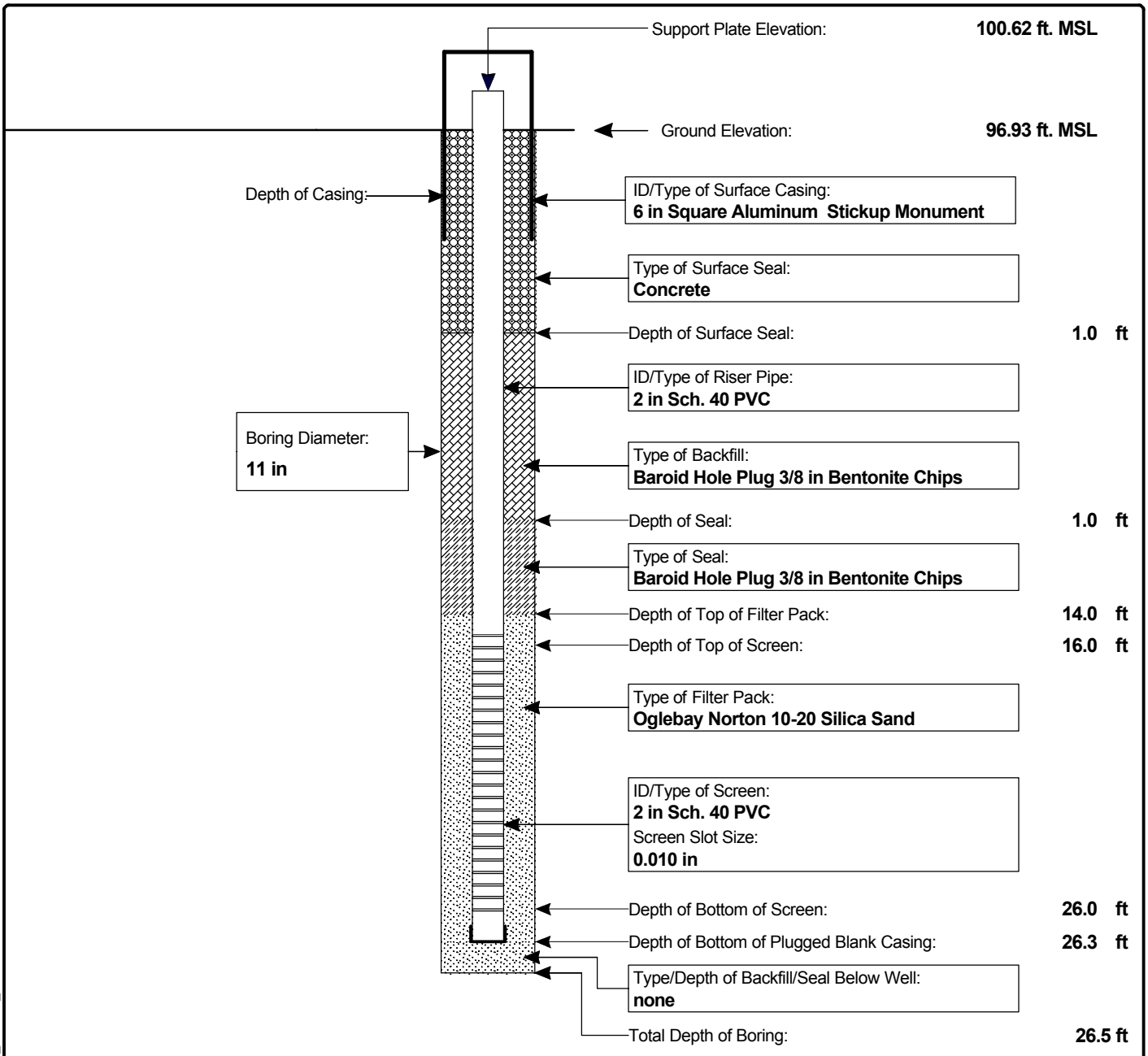
Elevation feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	0							GW	**Sandy GRAVEL with Silt [GW]**, grey-brown, dry to moist, subrounded to rounded well-graded gravel. Loose fine sand. Low plasticity silt. [Colluvium]		Stickup Monument; Concrete; 2" Schedule PVC Riser
	5		1	61/3 in.	.5	0.2		ML	**Gravelly SILT with Sand [ML]**, brown to orange-brown, moist, low plasticity, stiff silt. Rounded to subrounded, well-graded gravel with some cobbles. Loose fine sand. [Colluvium] *Trace low plasticity clay.*		Steel cable in auger cuttings from 4' to 5' bgs.
	10		2	10	NR	NS					Baroid Hole Plug 3/8" Bentonite Chips [hydrated]
	15		3	39	0.3	0.4		CL	**Silty CLAY [CL]**, grey-brown, moist, low plasticity hard fines. Some rounded gravel and cobbles. [Colluvium]		Oglebay Norton 10-20 Silica Sand; 0.010 in. - Slot Schedule 40 PVC screen
	20		4	22	0.5	0.5		CL	**Silty CLAY [CL]**, dark grey, moist, low plasticity, stiff fines. Little subangular to subrounded gravel. [Weathered Slide Block]		
								ML	**Sandy SILT [ML]**, grey-green with yellow and grey mottling, moist, low plasticity, very stiff silt. Loose fine sand. Some angular gravel. [Weathered Slide Block] *Wet.*		
	25		5	61/8 in.	0.3	0.2			**SILTSTONE**, dark grey, wet, slightly weathered to low plasticity silt and clay in fractures. Fine grained matrix with some subrounded to subangular gravel clasts. [Slide Block]		Schedule 40 PVC Sump
	30								Boring terminated at a depth of 26.3' [bgs] due to auger refusal on 3/26/2008 and a monitoring well was installed upon completion.		

Report: PORT_ENV_WELL; File: BRADISL.GPJ; 6/6/2008 MW-12

URS

Project: Bradford Island **Project Location: Bonneville Dam, Oregon** **Project Number: 25696679**	**MONITORING WELL CONSTRUCTION LOG FOR WELL MW-12**

Well Location	**Bradford Island Sandblast Area**			Date Completed	**3/26/2008**
Installed By	**Boart Longyear**	Observed By	**MC**	Total Depth	**26.5 ft. bgs**
Method of Installation	**Hollow Stem Auger**				
Screened Interval	**16-26 ft bgs**	Completion Zone	**22-26.3 ft bgs**		
Remarks					



NOTE: DIAGRAM IS NOT TO SCALE

Report: PORT_ENV_WELL_ABOVE_GROUND; File: BRADISL.GPJ; 6/6/2008 MW-12

URS

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

Log of Boring MW-13

Date(s) Drilled and Installed	**4/2/2008**	Geologist	**MC**	Reviewer	**NM**
Drilling Method	**Sonic**	Drilling Contractor	**Boart Longyear**	Total Depth of Borehole	**37.0 ft. [bgs]**
Sampling Method	**Continuous Core**	Drill Bit Size/Type	**4 in. core with 6 in. casing**	Approximete Surface Elevation	**97.82 ft. MSL**
Drill Rig Type	**Prosonic Truck Mount**	Groundwater Level(s)	**16.62 ft. [bgs] [4/14/08]**	Hammer Data	**n/a**
Borehole Backfill	**Monitoring Well Installed**	Comments	**MSL: mean sea level, bgs: below ground surface**	Location	**Bradford Island Sandblast Area**

Elevation feet	Depth, feet	SAMPLES Type	Number		Recovery, (feet)	Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	0							GM	**Asphalt**		Flush to Grade Monument
			1		7				**Silty GRAVEL [GM]**, brown, dry to moist, rounded, well-graded gravel with some cobbles. Matrix consists of low plasticity stiff, silt with trace loose fine sand. [Colluvium]		Concrete 2" Schedule PVC Riser
									Decreasing sand, increasing low plasticity clay, increasingly angular gravel.		
	5					0.6		ML	**Clayey SILT with Gravel [ML]**, mottled grey, brown, and greenish-grey, moist, low plasticity, medium stiff fines. Subangular to subrounded gravel with some cobbles. Fractures in matrix are filled with yellow-brown, low plasticity clay. [Weathered Slide Block]		
	10					0.0			*Brown, subrounded to rounded gravel, green low plasticity clay on fracture surfaces.*		
			2		9						
								ML	**Gravelly SILT with Sand [ML]**, brown fines with yellow-orange sand, dry, low plasticity, hard fines. Subangular to subrounded gravel with some rounded cobbles. Loose, poorly graded, medium-fine sand. [Weathered Slide Block]		
	15					0.3					Baroid Hole Plug 3/8" Bentonite Chips [hydrated]
			3		5						
	20					0.6		ML	**Sandy SILT with Gravel [ML]**, grey to dark greenish grey, moist, low plasticity medium stiff silt. Loose, poorly graded fine sand. Subrounded to rounded gravel with some cobbles. [Weathered Slide Block]		
			4		5						
	25					0.5			*Wet.*		Oglebay Norton 10-20 Silica Sand 0.010 in. - Slot Schedule 40 PVC screen
	30										

Report: PORT_ENV_WELL; File: BRADISL.GPJ; 6/6/2008 MW-13

URS

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

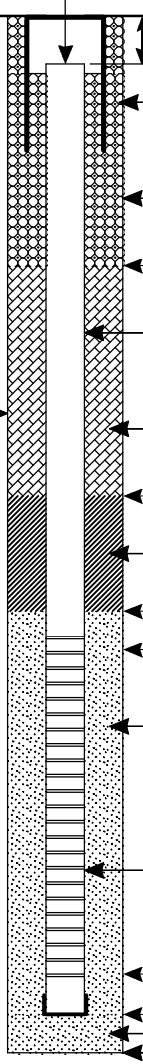
Log of Boring MW-13

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES	SAMPLES Recovery, (feet)	SAMPLES Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	30		5		11	0.4			*As above.*		
	35					0.5					Schedule 40 PVC Sump
									Boring terminated at a depth of 37' [bgs] on 4/2/2008 and a monitoring well was installed upon completion.		
	40										
	45										
	50										
	55										
	60										
	65										

URS

Project: Bradford Island Project Location: Bonneville Dam, Oregon Project Number: 25696679	MONITORING WELL CONSTRUCTION LOG FOR WELL MW-13

Well Location	**Bradford Island Sandblast Area**		Date(s) Installed	**4/2/2008**	Time
Installed By	**Boart Longyear**	Observed By	**MC**	Total Depth (ft)	**37.0 ft. bgs**
Method of Installation	**Sonic**				
Screened Interval	**26-36 ft bgs**	Completion Zone	**26-37 ft bgs**		
Remarks					



Elevation of Top of Riser Pipe: **97.55 ft. MSL**

Depth of Riser Below Ground Surface: **-0.27 ft**

Ground Elevation: **97.82 ft MSL**

ID/Type of Surface Casing:
8 in Flush to Grade Monument

Type of Surface Seal:
Concrete

Depth of Surface Seal: **1.0 ft**

ID/Type of Riser Pipe:
2 in Sch. 40 PVC

Boring Diameter:
6 in

Type of Backfill:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Seal: **1.0 ft**

Type of Seal:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Top of Filter Pack: **24.0 ft**

Depth of Top of Screen: **26.0 ft**

Type of Filter Pack:
Oglebay Norton 10-20 Silica Sand

ID/Type of Screen:
2 in Sch. 40 PVC
Screen Slot Size:
0.010 in

Depth of Bottom of Screen: **36.0 ft**

Depth of Bottom of Plugged Blank Casing: **36.4 ft**

Type/Depth of Backfill/Seal Below Well:
none

Total Depth of Boring: **37.0 ft**

NOTE: DIAGRAM IS NOT TO SCALE

URS

Report: ENV_WELL_CONSTR_BELOW_GROUND; File: BRADISL.GPJ; 6/6/2008 MW-13

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

Log of Boring MW-14

Sheet 1 of 1

Date(s) Drilled and Installed	**3/25/2008**	Geologist	**MC**	Reviewer	**NM**
Drilling Method	**Hollow Stem Auger [HSA]**	Drilling Contractor	**Boart Longyear**	Total Depth of Borehole	**24.0 ft. [bgs]**
Sampling Method	**Split Spoon Sampler**	Drill Bit Size/Type	**6 5/8 in. I.D. HSA with center bit**	Approximete Surface Elevation	**86.84 ft. MSL**
Drill Rig Type	**CME-75 HT**	Groundwater Level(s)	**13.11 ft. [bgs] [4/14/08]**	Hammer Data	**140 lb. , 30 in. drop automatic hammer**
Borehole Backfill	**Monitoring Well Installed**	Comments	**MSL: mean sea level, bgs: below ground surface**	Location	**Bradford Island Sandblast Area**

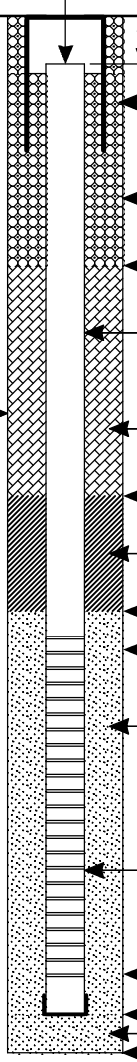
Elevation feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	0					33.2		GW	**Asphalt** **Sandy GRAVEL with Silt [GW]**, grey-brown, dry to moist, subrounded to rounded well-graded gravel with some cobbles. Matrix consists of loose fine sand and nonplastic silt. Slight solvent odor. [Colluvium]		Flush to Grade Monument Concrete Collected bag headspace sample from auger cuttings @ 2' due to odor.
	5		1	13	.8	17.6		GM	**Silty GRAVEL with Clay [GM]**, grey-brown, dry to moist, subrounded, well graded gravel with some cobbles. Low plasticity stiff fines. Slight solvent odor. [Colluvium] *No odor @ 6 ft.*		2" Schedule PVC Riser Baroid Hole Plug 3/8" Bentonite Chips [hydrated]
	10		2	5	.3	14.1		CL	**Silty CLAY with Gravel [CL]**, mottled yellow, grey, and brown, moist, low plasticity, medium stiff fines. Subrounded, well graded gravel. [Colluvium] *Wet.*		Oglebay Norton 10-20 Silica Sand 0.010 in. - Slot Schedule 40 PVC screen
	15		3	13	.5	1.0			**SILTSTONE**, greenish-grey, wet, slightly weathered to low plasticity silt and clay. Fine-grained matrix with rock texture and some subrounded to subangular gravel-sized clasts. [Slide Block]		
	20		4	7	.6	1.6		GW	**Sandy GRAVEL [GW]**, greenish-grey, wet, subrounded, well graded gravel with loose coarse sand. [Slide Block]		
									SILTSTONE, greenish-grey, wet, moderately weathered to low plasticity, stiff silt and clay. Fine-grained matrix with rock texture and some subrounded to subangular gravel-sized clasts. [Slide Block]		Schedule 40 PVC Sump
	25								Boring terminated at a depth of 24' [bgs] on 3/25/2008 and a monitoring well was installed upon completion.		
	30										

Report: PORT_ENV_WELL; File: BRADISL.GPJ; 6/6/2008 MW-14

URS

Project: Bradford Island Project Location: Bonneville Dam, Oregon Project Number: 25696679	MONITORING WELL CONSTRUCTION LOG FOR WELL MW-14

Well Location	**Bradford Island Sandblast Area**			Date(s) Installed **3/25/2008**	Time
Installed By	**Boart Longyear**	Observed By	**MC**	Total Depth (ft)	**24.0 ft. bgs**
Method of Installation	**Hollow Stem Auger**				
Screened Interval	**13-23 ft bgs**	Completion Zone	**13-24 ft bgs**		
Remarks					



Elevation of Top of Riser Pipe: **86.67 ft. MSL**

Depth of Riser Below Ground Surface: **-0.17 ft**

Ground Elevation: **86.84 ft MSL**

ID/Type of Surface Casing:
8 in Flush to Grade Monument

Type of Surface Seal:
Concrete

Depth of Surface Seal: **0.7 ft**

ID/Type of Riser Pipe:
2 in Sch. 40 PVC

Boring Diameter:
11 in

Type of Backfill:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Seal: **0.7 ft**

Type of Seal:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Top of Filter Pack: **11.0 ft**

Depth of Top of Screen: **13.0 ft**

Type of Filter Pack:
Oglebay Norton 10-20 Silica Sand

ID/Type of Screen:
2 in Sch. 40 PVC
Screen Slot Size:
0.010 in

Depth of Bottom of Screen: **23.0 ft**

Depth of Bottom of Plugged Blank Casing: **23.5 ft**

Type/Depth of Backfill/Seal Below Well:
none

Total Depth of Boring: **24.0 ft**

NOTE: DIAGRAM IS NOT TO SCALE

Report: ENV_WELL_CONSTR_BELOW_GROUND; File: BRADISL.GPJ; 6/6/2008 MW-14

URS

Project: Bradford Island
Project Location: Bonneville Dam, Oregon
Project Number: 25696679

Log of Boring MW-15

Sheet 1 of 1

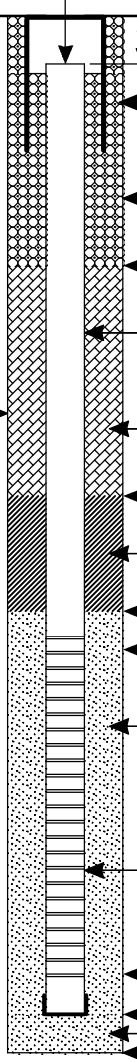
Date(s) Drilled and Installed	**3/24/2008**	Geologist	**MC**	Reviewer	**NM**
Drilling Method	**Hollow Stem Auger [HSA]**	Drilling Contractor	**Boart Longyear**	Total Depth of Borehole	**22.9 ft. [bgs]**
Sampling Method	**Split Spoon Sampler**	Drill Bit Size/Type	**6 5/8 in. I.D. HSA with center bit**	Approximate Surface Elevation	**87.09 ft. MSL**
Drill Rig Type	**CME-75 HT**	Groundwater Level(s)	**13.28 ft. [bgs] [4/14/08]**	Hammer Data	**140 lb. , 30 in. drop automatic hammer**
Borehole Backfill	**Monitoring Well Installed**	Comments	**MSL: mean sea level, bgs: below ground surface**	Location	**Bradford Island Sandblast Area**

Elevation feet	Depth, feet	SAMPLES Type	Number	Sampling Resistance, Blows/12 in.	Recovery, (feet)	Headspace PID, ppm	Graphic Log	Lithologic Log (USCS Code)	MATERIAL DESCRIPTION	Well Completion Schematic	FIELD NOTES AND WELL DETAILS
	0							GW	**Asphalt.**		Flush to Grade Monument
									Sandy Gravel with Silt [GW], grey-brown, dry to moist, rounded well-graded gravel with cobbles. Loose poorly-graded fine sand. Nonplastic medium stiff silt. [Colluvium]		Concrete
											2" Schedule 40 PVC Riser
	5		1	14	.4	1.2			*Moist.*		
								GM	**Silty GRAVEL [GM]**, grey-brown, moist, rounded, well-graded gravel with few cobbles. Low plasticity stiff to very stiff silt with trace clay. [Colluvium]		Baroid Hole Plug 3/8" Bentonite Chips [hydrated]
	10		2	24	.5	1.0					Oglebay Norton 10-20 Silica Sand
									Wet.		0.010 in. - Slot Schedule 40 PVC screen
								CL	**Gravelly CLAY [CL]**, grey-brown, wet, low plasticity, hard clay with trace silt. Rounded, well graded gravel. [Weathered Slide Block]		
	15		3	31	.9	0.6					
								SM	**Basalt Boulder**, red-brown, wet, moderately weathered and highly fractured with low plasticity hard green clay infilling. [Weathered Slide Block]		
									Silty SAND [SM], yellow-brown, wet, well-graded loose sand. Low plasticity soft silt. [Weathered Slide Block]		
	20		4	3	.3	0.9					Schedule 40 PVC Sump
									Boring terminated at a depth of 22.9' [bgs] on 3/24/2008 and a monitoring well was installed upon completion.		
	25										
	30										

URS

Project: Bradford Island Project Location: Bonneville Dam, Oregon Project Number: 25696679	MONITORING WELL CONSTRUCTION LOG FOR WELL MW-15

Well Location	**Bradford Island Sandblast Area**		Date(s) Installed	**3/24/2008**	Time
Installed By	**Boart Longyear**	Observed By	**MC**	Total Depth (ft)	**22.9 ft. bgs**
Method of Installation	**Hollow Stem Auger**				
Screened Interval	**12-22 ft bgs**	Completion Zone	**12-23 ft bgs**		
Remarks					



Elevation of Top of Riser Pipe: **86.86 ft. MSL**

Depth of Riser Below Ground Surface: **-0.23 ft**

Ground Elevation: **87.09 ft MSL**

ID/Type of Surface Casing:
8 in Flush to Grade Monument

Type of Surface Seal:
Concrete

Depth of Surface Seal: **0.9 ft**

ID/Type of Riser Pipe:
2 in Sch. 40 PVC

Boring Diameter:
11 in

Type of Backfill:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Seal: **0.9 ft**

Type of Seal:
Baroid Hole Plug 3/8 in Bentonite Chips

Depth of Top of Filter Pack: **9.5 ft**

Depth of Top of Screen: **12.0 ft**

Type of Filter Pack:
Oglebay Norton 10-20 Silica Sand

ID/Type of Screen:
2 in Sch. 40 PVC
Screen Slot Size:
0.010 in

Depth of Bottom of Screen: **22.0 ft**

Depth of Bottom of Plugged Blank Casing: **22.5 ft**

Type/Depth of Backfill/Seal Below Well:
none

Total Depth of Boring: **22.9 ft**

NOTE: DIAGRAM IS NOT TO SCALE

Report: ENV_WELL_CONSTR_BELOW_GROUND; File: BRADISL.GPJ; 6/6/2008 MW-15

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Appendix H

Instructions – How to Pack Sample Coolers for Shipment with Wet or Dry Ice

Instructions - How to Pack Sample Coolers for Shipment with Wet or Dry Ice

At the sampling location:

1. Samples should be iced as soon as they are sampled. Place the collected samples in a cooler with ice. Samples may be prepared for shipping at the sample location, or later at a convenient location, as long as samples are iced throughout.

When using wet ice – How to prepare the samples and cooler for shipment:

1. So that leaks will not escape the cooler, seal the cooler drain with tape on the inside of the cooler, if it is not already sealed.
2. Line the bottom and sides of the cooler with thick bubble wrap.
3. Place a large, heavy-duty trash bag inside the cooler. All samples and ice will go inside this trash bag.
4. Double-bag ice inside gallon-sized Ziploc bags. Each cooler should have 4 to 5 bags of ice. Ice from water is preferred to gel packs because the gel packs are very hard when frozen and may break bottles, and also due to chemical contamination concerns with some sample types. If the ice was used earlier in the day during sampling, it is good practice to top off the ice bags with additional ice, pouring out any water, to ensure the samples stay cold during shipping.
5. Place all sample bottles in individual Ziploc bags. Place the bagged samples inside bubblewrap sleeves, or wrap with bubblewrap and secure with rubber bands or tape.
6. Put the bagged, bubble-wrapped samples and the double-bagged ice inside the trash bag in the cooler. Each sample should be in contact with ice. A common way to arrange the contents is to lay 2 bags of ice on the bottom of the cooler, put the samples on top of the ice, and then put additional bags of ice on top of the samples, and also vertically between the bottles. Arrangement may vary so that all samples will fit in the cooler.
7. Place an additional piece of bubblewrap on top of the samples.
8. Gather the ends of the trash bag together, fold over several times, and seal with tape. All samples and ice will be sealed in the trash bag, so any leaks should not escape the cooler.
9. If there is too much extra space, stuff bubblewrap around the trash bag to limit motion inside the cooler.

When using dry ice – How to prepare the samples and cooler for shipment:

1. Acquire the appropriate training prior to field event.
    a. If shipping by **ground**, the personnel packaging and shipping a package (e.g. cooler) containing dry ice do not have to have additional training.
    b. If shipping by **air**, personnel who package, mark, label, load, document, or sign shipping papers for shipments containing dry ice must have training that satisfies hazmat training requirements in 49 CFR (Part 172), the IATA DGR, and the IMDG Code.
        i. The Safety Unlimited training course DOT Hazmat: Carrier Requirements – Air/IATA provides training to meet this requirement (https://www.safetyunlimited.com/online-courses/DOT-Modal-Specific-Air.asp)
2. Unless otherwise specified by the lab, use 5lbs of dry ice when shipping bottles of groundwater samples, or 10lbs of dry ice when shipping biological samples.

    a. Dry ice will sublimate from a solid to gas at a rate of 5-10 pounds (2.27 – 4.54 kg) per 24 hours when shipped in an appropriate insulated cooler.
3. Use paper bags or specific dry ice plastic bags (must be vented) to contain the dry ice. Dry ice pellets work better for distribution. Fill a bag with half of the dry ice and put it on the bottom of the cooler.
4. Put bubblewrap or other insulating material on top of the dry ice bag.
5. Put samples on top of the bubble wrap.
6. Put another layer of bubble wrap or other insulating material on top of the samples.
7. Fill another bag with the other half of the dry ice and put it on top of the top layer of bubblewrap.
8. Use additional insulating material to fill the cooler as much as possible.
9. Do **not** put everything in a trash bag and tie it off. The dry ice needs to vent to avoid the buildup of pressure as it sublimates.

At the shipping location, with either ice type (for example, FedEx store):

1. Sign off the chain of custody (COC) with the date and time you are relinquishing the samples to the shipping company. Include the airbill number/tracking number on the COC. It is good practice to take a picture of the COC and email it to the laboratory, along with the tracking number.
2. Place the signed COC in a Ziploc bag and tape it to the inside of the cooler lid.
3. Shut the cooler. Seal the cooler by wrapping filament tape around the cooler. Wrap the filament tape around the cooler on the right and left sides, with two layers of tape on each wrapping.
4. Cut two ~8-10 inch pieces of custody tape. Use the pieces of custody tape to seal the cooler lid to the cooler body, placing the pieces of tape at the front right and back left of the cooler.
5. Fill out the airbill, then keep the top copy of the airbill and return it to the Visa card holder who provided the shipping company account number. Scan a copy and email, if needed.
6. Attach the rest of the airbill to the cooler handle, or tape to the top lid of the cooler.
7. If shipping biological specimens (and assuming they are non-infectious), put a label on the cooler that says “exempt animal specimen.” This label can simply be a piece of paper taped to the cooler. Put on the same side as any other labels.

Additional shipping steps if shipping with dry ice:

1. Confirm that the carrier location accepting dry ice shipments; many don’t. Often airport locations do.
2. Make sure to **not** tape around the seal between the lid and cooler body, to allow venting. Additionally, make sure the **cooler spout remains open** to allow venting.
3. The FedEx label needs to specify the amount of dry ice in the cooler at time of shipment, in kg (4.55 kg for 10 lb).
4. Put a Class 9 Dry Ice diamond placard label on the cooler.
5. Note - While dry ice is considered a dangerous good when shipped by air, a Dangerous Goods Shippers Declaration is not required (assuming there are no other types of dangerous goods in the shipment).
6. If shipping via UPS, they require an additional UPS Dry Ice label. Shipments of dry ice and other dangerous goods without an approved contract with UPS are prohibited. Shipper must establish contracted services with UPS in order to ship dangerous goods.