CLARK COUNTY

RFP 830

CAMP BONNEVILLE GROUNDWATER MONITORING PROGRAM

QUESTIONS and ANSWERS

UPDATED: JUNE 2, 2022

	QUESTION	ANSWER
1.	Attachment D of the RFP indicates that the 2018 Supplemental Groundwater and Surface Water Remedial Investigation Sampling and Analysis Plan and Quality Assurance Project Plan is available at Ecology's website (https://apps.ecology.wa.gov/cleanupsearch/site/11670). I've opened up the View Documents portion of the website and searched for key words in the 2018 SAP/QAPP title but can't find the document. Can you please email me a link? Apologies if I'm missing it,	**PFD documents Attached**
2.		
3.		

Memorandum

DATE: March 5, 2019

TO: Clark County
Attn: Mr. Jerry Barnett
23201 NE Pluss Road
Vancouver, Washington 98606

FROM: Scott Braunsten, LG, CES

PROJECT: 76151.007

REGARDING: Amendment #1 – Changes to Table 4-1A and 4-1B in the Supplemental Groundwater and Surface Water Remedial Investigation Sampling and Analysis Plan and Quality Assurance Project Plan, Remedial Action Units 2C and 3, Dated February 2018
Camp Bonneville, Vancouver, Washington

This memorandum serves as an amendment to the combined Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) issued by PBS in February 2018. The purpose of this amendment is to modify the list of analytes during quarterly monitoring events conducted at Camp Bonneville related to Remedial Action Units (RAU) 2C and 3.

The current quarterly analyte list for Landfill 4 / Demolition Area 1 (LF4/DA1) and Base Boundary (LC) wells includes volatile organic compounds (VOCs), perchlorate, and explosive compounds (including nitroglycerin, PETN, and picric acid). The current Tables 4-1A and 4-1B are reproduced below.

Table 4–1A: Groundwater Sampling and Analysis Program for LF4/DA1 Wells

Parameter	Quarterly	Annually
Water elevation, temperature, specific conductivity, dissolved oxygen (DO), potential of hydrogen (pH), oxidation reduction potential (ORP), and turbidity	√	
VOCs/Low Level	√	
Perchlorate	√	
Explosives compounds list (including nitroglycerin, PETN and picric acid)	√	

Table 4–1B: Groundwater Sampling and Analysis Program for LC Wells

Parameter	Quarterly	Annually
Water elevation, temperature, specific conductivity, DO, pH, ORP, and turbidity	√	
VOCs/Low Level	√	
Perchlorates	√	
Explosives compounds list (including nitroglycerin, PETN and picric acid)	√	
Total priority pollutant (PP) metals		√
SVOCs		√

Based on quarterly monitoring results from 2007 to present, picric acid is not a contaminant of concern for the site. Analysis for picric acid requires the analytical laboratory to include a separate standard to the explosives list, which increases expense and the potential for error. Therefore, picric acid will be removed from the explosive compounds list. The tables will be modified as follows:

Table 4–1A: Groundwater Sampling and Analysis Program for LF4/DA1 Wells

Parameter	Quarterly	Annually
Water elevation, temperature, specific conductivity, dissolved oxygen (DO), potential of hydrogen (pH), oxidation reduction potential (ORP), and turbidity	√	
VOCs/Low Level	√	
Perchlorate	√	
Explosives compounds list (including nitroglycerin and PETN)	√	

Table 4–1B: Groundwater Sampling and Analysis Program for LC Wells

Parameter	Quarterly	Annually
Water elevation, temperature, specific conductivity, DO, pH, ORP, and turbidity	√	
VOCs/Low Level	√	
Perchlorates	√	
Explosives compounds list (including nitroglycerin and PETN)	√	
Total priority pollutant (PP) metals		√
SVOCs		√

cc: Ben Amoah-Forson, Washington State Department of Ecology
Monica Tonel, Environmental Protection Agency

SB:HY:mo

Supplemental Groundwater and Surface Water Remedial Investigation Sampling and Analysis Plan and Quality Assurance Project Plan, Remedial Action Units 2C and 3

Camp Bonneville
23201 NE Pluss Road
Vancouver, Washington 98682

Prepared for:
Clark County, Washington and
Washington State Department of Ecology

February 2018
PBS Project 76151.007

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1 INTRODUCTION

This plan serves as a combined remedial investigation sampling and analysis plan (SAP) and quality assurance project plan (QAPP) for quarterly groundwater and annual surface water sampling in remedial action units (RAU) 2C and 3 at Camp Bonneville in Clark County, Washington. Field task and quality control (QC) activities related to field sampling are addressed by the SAP, while the QAPP defines the policies, organization, procedures, and criteria necessary to achieve project data quality objectives (DQO). These plans are intended only for use for quarterly groundwater monitoring, annual surface water monitoring, and related investigation activities in RAU 2C and 3. The contents of this plan have been updated from previous versions prepared for this site. The following modifications from previous versions are included in this document:

- **Section 4: Sampling Locations and Procedures**
  Nine monitoring wells were added to the sample location network, two at Base Boundary at Lacamas Creek, and seven at Landfill 4/Demolition Area 1, for a total of twenty-eight wells selected for quarterly monitoring.

  Three analytes were removed from the Base Boundary at Lacamas Creek annual monitoring program; polycyclic aromatic hydrocarbons (PAHs) by Environmental Protection Agency (EPA) Method 8270 SIM, pH by EPA Method 150.1, and 1,2-dibromomethane (EDB) by EPA Method 8011.
- **Section 6: Sample Preservation, Holding Times, and Analytical Methods**
  The analytical method for volatile organic compound analysis was updated from EPA Method 8260B to EPA Method 8260C.

  The hold time for EPA Method 7470A analysis was updated from 6 months to 28 days.
- **Section 10.1: QA Objectives for Chemical Data Management**
  The laboratory reporting limits for total priority pollutant metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) were updated.

All work performed under this SAP/QAPP will be conducted in accordance with the Health and Safety Plan (HASP) for the overall Camp Bonneville Conservation Conveyance. The HASP is dated November 2017.

2 PROJECT ORGANIZATION AND QUALITY CONTROL RESPONSIBILITIES

Quality control responsibilities and authorities of PBS Engineering and Environmental Inc. (PBS) personnel are described below. Resumes for key personnel are included in Appendix A.

2.1 PBS Quality Assurance/Quality Control (QA/QC) Officer

The PBS QA/QC officer is responsible for planning and executing QC oversight of field and laboratory operations and for ensuring compliance with specified QC requirements. Responsibilities include offering guidance related to quality control issues and working with the PBS project manager to identify such issues and verify corrective actions.

The PBS QA/QC officer or designee will have sufficient authority, including stop-work authority, to ensure that project activities comply with applicable specifications of this QAPP. This authority applies equally to all project activities, whether performed on or off site, by PBS or its subcontractors and suppliers. The QA/QC officer or designee will be physically on site, when necessary, to provide oversight to field sampling work.

Heidi Yantz, Washington-licensed hydrogeologist and principal on the project, will serve as the PBS QA/QC officer. She will delegate day-to-day duties to the PBS project manager, retaining the role of senior technical reviewer to ensure compliance with the SAP and QAPP. The PBS project manager will provide additional QA/QC oversight and work with the lab to ensure compliance.

2.2 PBS Project Manager

The PBS project manager (PBS PM) is charged with ensuring that project activities comply with the SAP and QAPP requirements. Duties include but will not be limited to:

- Developing, maintaining, and distributing project documents.
- Reviewing qualifications of proposed technical staff and subcontractors.
- Ensuring that field personnel are familiar with, and adhere to, proper sampling procedures, field measurement techniques, and sample identification and custody procedures.
- Ensuring that sufficient QA samples are collected.
- Reviewing the daily field activity reports (DFAR).
- Planning and ensuring preparatory, initial, and follow-up inspections to conform with the SAP and QAPP.

The PBS PM will additionally act as the analytical data manager, who is charged with organizing, processing, and verifying analytical data generated from sampling activities. Duties will include, but will not be limited to:

- Reviewing sample submittal documents and laboratory log-in records to ensure scheduling of proper analyses.
- Reviewing analytical reports and validating analytical results.
- Acting as liaison with the laboratory to address data accuracy or quality issues.
- Entering electronic data deliverables into the database.
- Creating tables and graphs of analytical data for reporting.

Scott Braunsten, Washington-licensed geologist, or his designee, will serve as the PBS PM for groundwater and surface water monitoring activities overseen by Clark County at Camp Bonneville.

2.3 PBS Site Health and Safety

The PBS site safety officer (SSO) is responsible for ensuring that daily field activities are conducted safely and according to provisions of the HASP. The SSO has full stop-work authority if adverse conditions exist that threaten personnel health and safety. A member of PBS' field personnel, conducting groundwater and surface water monitoring, will serve as the SSO during each monitoring event.

3 PERSONNEL QUALIFICATIONS AND TRAINING

3.1 PBS Engineering and Environmental Inc.

Project staff shall be qualified to perform assigned jobs, which is accomplished by establishing and enforcing minimum qualification requirements for key positions, verifying initial and continued personnel proficiency, and implementing a formal training program. Field sampling personnel conducting or observing sampling activities are to be trained and certified in accordance with established PBS protocols. All personnel engaged in site activities will have completed the OSHA HAZWOPER 40-hour health and safety training and have current annual 8-hour refresher training.

Senior technical staff will provide on-the-job training to newly assigned technical staff that is related to their job requirements and techniques, with particular emphasis on solutions to unanticipated field conditions. Work performed by newly assigned staff is to be monitored by senior staff. The frequency of monitoring depends on the individual's demonstrated proficiency to perform his or her assigned duties.

3.2 Laboratory Qualifications

The selected analytical laboratory for this project is TestAmerica Laboratories, Inc. (TA), providing specialty analyses, with labs in West Sacramento, California, and Tacoma, Washington. TA is Washington Department of Ecology (Ecology)-certified for the various analytical procedures they will perform for this project.

A copy of the relevant laboratory Quality Assurance Manual is maintained at the lab and has been reviewed by PBS. Laboratory certifications for both laboratories are included in Appendix B. Key laboratory personnel will have at minimum the following requirements:

Laboratory Director/Supervisor

The laboratory director/supervisor shall have at least five years of related laboratory experience including three years of laboratory management experience and possess a Bachelor of Science in chemistry or a related field.

Inorganic and Organic Chemists

Inorganic and organic chemists shall have at least one year of related inorganic/organic experience in, respectively, inductively coupled plasma-atomic emission spectrometry (ICP) or atomic absorption spectrometry (AA), and high-performance liquid chromatography (HPLC). Both shall possess a Bachelor of Science in chemistry or a related field.

Inorganic and Organic Interpretation Chemists

Inorganic and organic interpretation chemists shall have at least two years' experience performing, respectively, ICP or AA, and HPLC analyses. Both shall possess a Bachelor of Science in chemistry or a related field.

Preparation Technician

All inorganic and organic preparations shall be performed by an analyst with at least one year of method-related experience, and work accomplished shall be under the supervision of a chemist.

QA/QC Chemist

The QA/QC chemist shall have a minimum of three years' experience with hazardous waste projects.

4 SAMPLING LOCATIONS AND PROCEDURES

Groundwater monitoring well sites from the two RAUs were identified by Ecology. The RAUs are typically identified by these common names:

- RAU 2C—Landfill 4 and Demolition Area 1 (L4/D1).
- RAU 3—Refers to site-wide unexploded ordnance hazards; for the purposes of groundwater monitoring, this refers to the Lacamas Creek or Base Boundary wells (LC wells).

Twenty-eight wells were selected for quarterly monitoring, as follows (A and S refer to shallow wells, B and D refer to deep wells):

- Base Boundary at Lacamas Creek
  - Paired Monitoring Wells: LC-MW01S and LC-MW01D
  - Paired Monitoring Wells: LC-MW02S and LC-MW02D
  - Paired Monitoring Wells: LC-MW03S and LC-MW03D
  - Paired Monitoring Wells: LC-MW04S and LC-MW04D
  - Paired Monitoring Wells: LC-MW09S and LC-MW09D

- Landfill 4/Demolition Area 1
  - Paired Monitoring Wells: L4-MW01A and L4-MW01B
  - Paired Monitoring Wells: L4-MW02A and L4-MW02B
  - Paired Monitoring Wells: L4-MW03A and L4-MW03B
  - Monitoring Well L4-MW04A
  - Monitoring Well L4-MW05A
  - Monitoring Well L4-MW07B
  - Paired Monitoring Wells: L4-MW08A and L4-MW08B
  - Paired Monitoring Wells: L4-MW09A and L4-MW09B
  - Paired Monitoring Wells: L4-MW10A and L4-MW10B
  - Monitoring Well L4-MW11B
  - Monitoring Well L4-MW17
  - Monitoring Well L4-MW18

Three surface water sample locations were selected by Ecology and the EPA for annual monitoring during the third quarterly groundwater monitoring event, as follows:

- NF02SW
- LC15SW
- LC03SW

Field personnel collecting groundwater samples will follow PBS' Standard Operating Procedure (SOP) for Low-Flow Groundwater Monitoring, a copy of which is provided in Appendix C. Field conditions may warrant changes to the SOP to ensure achievement of the DQOs. One-time deviations from the SOP will be discussed in the quarterly groundwater monitoring reports. Permanent changes to the SOP will be communicated to Clark County and Ecology for concurrence and should be included as future amendments to this plan.

Field personnel collecting surface water samples will work in pairs for safety consideration. The samples will be collected using the following protocol:

1. Sample collection will start at the furthest downstream location and work upstream to minimize potential cross contamination.
2. From the bank, field personnel will collect the sample slightly upstream by lowering a labeled 1-liter (L) glass amber container into the water.
3. The lid will be removed beneath the water surface and the bottle filled. The lid will be re-attached, and the bottle removed from the water. A second 1-L glass amber container will be collected for quality control.
4. A new 250-milliliter (mL) polyethylene container will be filled using the same method as the 1-L amber bottles.

5. The water from the 250-mL polyethylene bottle will be poured into a syringe to field filter for perchlorate analysis. Approximately 120 mL of filtered water are required for the laboratory analysis.
6. Following sample collection, the containers will be placed on ice and delivered under chain-of-custody (COC) documentation to the designated laboratory for analysis.
7. As a final step, PBS personnel will deploy a water quality meter into the stream to collect field measurements specified in Table 4-1C. In addition, any relevant stream conditions will be recorded.

Tables 4–1A and 4–1B outline the required analytes and sampling frequency for this project.

Table 4–1A: Groundwater Sampling and Analysis Program for LF4/DA1 Wells

Parameter	Quarterly	Annually
Water elevation, temperature, specific conductivity, dissolved oxygen (DO), potential of hydrogen (pH), oxidation reduction potential (ORP), and turbidity	√	
VOCs/Low Level	√	
Perchlorate	√	
Explosives compounds list (including nitroglycerin, PETN and picric acid)	√	

Table 4–1B: Groundwater Sampling and Analysis Program for LC Wells

Parameter	Quarterly	Annually
Water elevation, temperature, specific conductivity, DO, pH, ORP, and turbidity	√	
VOCs/Low Level	√	
Perchlorates	√	
Explosives compounds list (including nitroglycerin, PETN and picric acid)	√	
Total priority pollutant (PP) metals		√
SVOCs		√

Table 4–1C: Surface Water Sampling and Analysis Program

Parameter	Quarterly	Annually
Temperature, specific conductivity, DO, pH, ORP, and turbidity		√
Perchlorate		√
The explosive RDX		√

Investigation-Derived Waste

Purged groundwater will be collected during sampling activities and placed in 55-gallon drums stored at the site. Purge water from the two monitoring areas will be stored in the same drum. Appropriate off-site disposal will be determined following each event and will follow all applicable state and federal transportation and disposal regulations.

5 FIELD QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

QA/QC samples are collected and analyzed to assess the quality of the sampling and analysis by both the field personnel and the laboratory. For samples sent to the laboratory, field QA samples will be collected as provided in Table 5-1; additional sample descriptions follow.

Table 5-1: Summary of Field QA/QC Samples

Laboratory	QA/QC Sample	Purpose	Frequency	Number of Samples per Quarterly Event
Analysis by TA Lab	Field Duplicate	Precision	10%	Three
Analysis by TA Lab	MS/MSD	Accuracy	5%	Two
Analysis by TA Lab	Trip Blank	Cross-Contamination Check	One per cooler containing 40 mL VOAs.	Varies

A separate field duplicate and MS/MSD sample will be collected for surface water samples at the annual event.

Field Duplicates

Field duplicates are used to document sampling and laboratory analysis reproducibility or precision. Duplicate samples are typically selected from sampling locations known to have historical detections of analytes. Field duplicates will be issued unique sample identifications that will not allow TA to identify the source. The duplicate names will be established as noted below.

Duplicate Location Area	Duplicate Name
LC Groundwater	LC-MW140
L4/D1 Groundwater	L4-MW145 and L4-MW150
Surface Water	DP05SW

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD samples are used to evaluate matrix interference and to a lesser extent, determine laboratory accuracy. The sampling location in which the MS/MSD samples are collected will change with each event.

Trip Blank

The purpose of the trip blank is to detect possible contaminants that may result from sample transport, and not from the sample source. It consists of a sealed 40-mL glass vial of deionized water provided by the laboratory that remains sealed and accompanies the groundwater collection bottles in the field. The trip blank is then submitted to the laboratory for analysis for VOCs.

6 SAMPLE PRESERVATION, HOLDING TIMES AND ANALYTICAL METHODS

Table 6–1 summarizes the specifications for minimum sample volume, sample preservation, container requirements, holding times, and analytical methods. Sample handling protocols, including specifications for sample labeling, handling, and shipping, along with COC record preparations and control, are described in detail in the following sections. Please note, analytical methods may periodically be updated; the most appropriate method will be used, and any deviation noted during in the quarterly monitoring report.

Table 6–1: Groundwater Sampling Parameters

Measurement	EPA Method	Container(s)	Preservative cool to 4°C	Holding Time
VOCs	8260C	(3) 40 mL VOA vial	HCl pH<2	14 days
Explosives (including nitroglycerin, PETN and picric acid)	8330/8330A	(2) 1 L AG	No additional	7 days to extraction, 40 days after extraction to analysis
Perchlorates	6850	(1) 250 mL HDPE	No additional	28 days after collection
Total priority pollutant metals	6000LL/7000/7470A	(1) 250 mL HDPE	HNO3 to pH <2	6 months, 7470A 28 days
SVOCs	8270C	(2) 1 L AG	No additional	7 days to extraction 40 days to analysis

Notes:
L= liters
mL= milliliters
HDPE = High Density Polyethylene Bottles with Teflon lined screw cap
AG = Amber glass bottle with Teflon lined screw cap
VOA vial = Clear glass vial with a screw cap with a hole in the center and TFE-faced silicone septum
EPA = Environmental Protection Agency

Table 6–2: Surface Water Sampling Parameters

Measurement	EPA Method	Container(s)	Preservative cool to 4°C, plus	Holding Time
RDX (explosive)	8330/8330A	(2) 1 L AG	No additional	7 days to extraction, 40 days after extraction to analysis
Perchlorates	6850	(1) 250 mL HDPE	No additional	28 days after collection

Notes:
L= liters
mL= milliliters
HDPE = High Density Polyethylene Bottles with Teflon lined screw cap
AG = Amber glass bottle with Teflon lined screw cap
EPA = Environmental Protection Agency

PBS uses EPA method 6850 for analysis of perchlorate in water samples. This laboratory analytical method complies with a US Department of Defense recommendation for perchlorate,[1] and requires that sample collection include field filtering.

[1] Department of Defense Environmental Data Quality Workgroup. (August 2007). *DoD Perchlorate Handbook, Revision 1, Change 1*

Bottles and filtering apparatus are provided by TA. The filtering is accomplished by using a laboratory-provided 60-mL graduated syringe and a 0.2-micrometer (µm) polyethersulfone (PES) filter. The filter is connected to the end of the syringe and approximately 120 mL of groundwater is filtered from the discharge hose through the syringe into a laboratory-provided pre-sealed 250-mL polyethylene container. Additional sample volume is required for the MS/MSD sample. Samples are stored with headspace to minimize the possibility of creating anaerobic conditions that can lead to the breakdown of perchlorate in solution.

7 SAMPLE DOCUMENTATION AND CUSTODY

Collected samples are to be handled in a manner that ensures their integrity and traceability to the sampling location. This is achieved through the use of trained field and laboratory personnel; controlled field, transport, and laboratory conditions; and implementation of rigorous sample preparation, containerization, preservation, storage, packaging, transportation, and custody procedures. Sample custody procedures are designed to ensure that the following objectives are met:

- Each sample is identified uniquely and correctly.
- Each sample is traceable to its source/point of origin.
- Sample representativeness is preserved.
- Sample alteration, such as by preservation or filtration, is documented.
- A record of sample integrity is established and maintained throughout the custody process.
- Sample custody is to be maintained and documented in the field, during shipment, and at the analytical laboratory.
- Shipment custody includes time spent under the control of, and tracking by, the carrier (Federal Express or United Parcel Service).

A permanent record for each sample will be documented by sample labels, DFAR, Groundwater Sampling Field Form, Surface Water Sampling Field Form, chain of custody, sampler receipt (completed by the lab), and occasionally in photographs.

Sample Labels

A label is affixed to each sample bottle prior to transportation to the laboratory. The label and the sample number will not indicate whether a sample is a duplicate. Such designation will be made only on the DFAR and Field Form. Information on sampling labels will include:

- Sampler (Company)
- Site Name
- Sample Number
- Date
- Time
- Parameters to be analyzed

The label will be identified upon receipt by the laboratory and cross-referenced to the COC record. When the samples arrive at the laboratory following shipment, the sample custodian will receive the samples. Any inconsistencies will be noted on the custody record. Laboratory personnel will notify PBS immediately if any inconsistencies exist in the paperwork associated with the samples. PBS will verify the sample custodian has accurately transcribed sample names from the COC and notify TA of any discrepancies.

Daily Field Activity Report (DFAR), Groundwater Sampling Field Form, Surface Water Sampling Field Form, and Depth to Water Form

PBS field personnel are responsible for preparing and submitting the DFAR, Groundwater Sampling Forms, and Surface Water Sampling Field Forms to the PBS PM. The Depth to Water Form should be completed on the first day of sampling. Samples of these forms are provided in Appendix D. A DFAR with attachments, such as the Groundwater Sampling Field Form and chains-of-custody forms, is to be submitted daily. DFARs, in combination with its attachments, are to present an accurate and complete picture of sampling activities; they should be precise, factual, legible, and objective, and at minimum contain:

- The project number
- The day's weather conditions (temperature, humidity, wind, cloud cover)
- Work performed, samples taken including QC samples, and personnel involved
- Available analytical field results
- Physical parameter measurements, calculation results, and any required QC data
- All sampling, sample handling, chemical parameter measurements problems, deviations from the approved plan, and corrective actions that could affect fulfillment of DQOs or minimum data reporting requirements
- Signatures of responsible authority and initials of persons conducting changes
- Verbal or written instructions from PBS PM for retesting or changes of work

Chain-of-Custody Records

COC forms will accompany sample containers during transit to, and upon receipt by, the laboratory. A sample of a COC form is provided in Appendix D. The COC form will be prepared prior to field activities and completed at the end of each field day. Following courier pick-up of the samples, a photocopy of the COC will be made and retained in the project files. The original copy will be submitted with the data package to the lab. PBS will retain an electronic copy (returned by the lab) with the project files.

The COC will be filled out using indelible ink and will include the following:

- Project name and number
- The signatures of sampling personnel
- Sample identification number, which includes sample location code
- Sampling dates and times
- Total number of containers per sample location
- Analyses to be performed on each sample
- Sample relinquisher, date, and time
- Hazards associated with samples
- Any remarks and/or special instructions

Standard protocol is that samples will be picked up and transported by the lab (TA). Transfer of sample custody will occur as follows:

- PBS will sign, date, and enter time on the COC form under "Relinquished by."
- Lab will sign under "Received by" and enter date and time.

If an individual other than the sampler in charge of sample custody is to deliver the samples to a common carrier (such as Federal Express), custody must first be transferred to the individual following the previously described protocol. The samples are now under the custody of the individual, who will perform the following:

- Sign, date, and enter the time on the COC form under "Relinquished by"
- Retain a copy of the original signed COC
- Place the COC within the shipment container in a sealable water-tight plastic bag
- Seal the container and affix a custody seal, using a minimum of two seals per container
- Complete other carrier-related shipping papers
- Deliver the sealed container to the common carrier, and retain all shipping information with the copy of the COC

Sample Receipt Form
The laboratory directly logs samples into their computer tracking system and notes problems in sample packaging, chain-of-custody, and sample preservation. The following will occur during sample receipt:

- The carrier and the time of arrival are documented in the log. The number of items on the air bill (if applicable) is checked with the actual number received to ensure that all samples arrived.
- Notation is made as to whether the sample container was sealed.
- The container is opened, the internal ambient temperature is taken by use of an included temperature blank, and the samples itemized. All deviations are noted and reported to the sample coordinator.

Documentation
All completed forms should be reviewed and maintained by the PBS PM. Corrective actions taken upon discovery of anomalies are to be documented. All QC records are to ultimately be maintained as part of the project QC file.

Corrections to Documentation
The PBS PM is responsible for ensuring that the requisite QC records are generated and controlled. The QA/QC officer will verify that these controls are implemented as follows:

- Measurements and observations are recorded at the time they are made.
- Documentation is orderly, legible, and traceable to relevant items/conditions.
- Documentation includes sufficient information to be readily interpreted by staff other than those responsible for its generation.
- Changes or revisions to a record are made in a manner that preserves the original data, such as by drawing a single line through a hard copy entry or maintaining historical records of electronic entries/files.
- Changes to records are signed (or initialed) and dated.
- As a minimum standard, changes to a record are subject to the same review and approval protocols as the original entry.
- Records adequately document digressions from specified procedures, QA plan, or work plan, and identify authorization for the digression.
- Project documents and records, including photographic and electronic records, are protected from loss, damage, misuse, or deterioration.

8 SAMPLE PACKAGING AND SHIPPING

Samples will be transferred to the selected laboratory for analysis via sturdy waterproof coolers. All samples will be packaged and shipped daily to ensure that no sample is held at the site for more than 24 hours. The only allowable exception is Fridays, weekends, and holidays when samples can be held under established COC procedures for up to 72 hours; however, samples must be kept at 4 ± 2 degrees Celsius (°C). Before a sample can be put in the cooler, any drains in the cooler must be sealed with tape to prevent leaking and all pertinent information shall be placed on the sample label. Each cooler will be packed as follows:

- Ensure sample lids are tight.
- Place sufficient inert cushioning material in the bottom of the cooler.
- Wrap all glass sample containers in plastic-bubble wrap. Place samples upright in the cooler so they do not and will not touch during shipment.
- Fill cooler with enough packing material to prevent breakage of glass bottles.
- Place sufficient ice in cooler to maintain the internal temperature at 4 ± 2°C during transport. The ice will be double-bagged to prevent the melt water from contacting the samples. If chemical ice is used, it should also be placed in a plastic bag.
- If the cooler will be shipped by PBS, the following will occur:
    - Place associated COC in a waterproof plastic bag and place it on top of the sample containers.
    - Seal coolers at a minimum of two locations with signed custody seals or evidence tape before transferring off site. Attach a completed shipping label with return address to the top of the cooler. Place "This Side Up" labels on all four sides and "Fragile" labels on at least two sides.
    - Affix custody seals on the front right and back left corners so the cooler can't be opened without breaking the tape. Further seal the cooler with strapping tape applied completely around it at least three times in two different locations. Do not cover any labels.
- If the cooler will be picked up by a TA courier, place the signed COC on top of the shipment.
- Evidence of sample custody shall be traceable from the time the sample is taken until the filled sample bottles are received by the laboratory. Receipts from post offices, copies of bills of lading, and air bills will be retained as part of the COC documentation.
- Sample coolers will be shipped to arrive at the laboratory the day after shipping or be sent by a courier to arrive the same day. The laboratory will be notified of the sample shipment and the estimated date of arrival.
- For each cooler, weight limit for the carrier will be observed (if applicable).

Laboratory Addresses and Points of Contact:
PBS Shipping Contact: PBS Project Manager (Scott Braunsten)
503.417.7737

Contracting Analytical Laboratory:
TestAmerica Laboratory
5755 8th Street E
Tacoma, Washington 98424
253.922.2310
Laboratory Director: Dennis Bean
Laboratory Project Manager: Sheri Cruz (direct phone: 253.248.4960)

9 LABORATORY ANALYTICAL PROCEDURES

Project samples, whether analyzed in the field or at the laboratory, are to be prepared, extracted, and analyzed per specifications of the project DQO. Tables 4–1A, 4–1B, and 4–1C identify the specific location, frequency, and analytical methods to be used. Table 5–1 gives container type, preservative, and holding times for each analytical method. SOPs for the laboratory are maintained internally in their operations and quality assurance manuals. The analytical laboratory is to demonstrate achievement of the specified detection/quantitation limits and method performance criteria. Project samples are to be prepared, extracted, and analyzed by the specific analytical laboratory identified herein.

Specified methods are to be implemented as published. Modifications to approved procedures, alternate procedures, or additional procedures are to be pre-approved in writing by PBS. If non-standard methods are considered, the analytical laboratory shall provide, upon request, method validation data for consideration. Where deemed necessary to fulfill the requirements of the project, a request for approval for an alternate or modified method is to be made by PBS. QAPP-specified QC requirements are to be followed explicitly.

The SW 846 Method 8830/8330A will be modified to include the explosives nitroglycerin, pentaerythritol tetranitrate (PETN), and picric acid (PA).

All analytical data will be validated at a Level II data package. Additionally, 20 percent of the analytical data will be validated at a Level III data package. Level II and Level III refer to the laboratory analysis quality control levels established by various government agencies to allow investigations to meet the DQOs established for a particular project site. These levels follow the criteria in the EPA’s “Data Quality Objectives for Remedial Response Activities Development Process,” National Technical Information Service (PB88-131370). Though all data from this project will be validated at Levels II or III, descriptions for all data validation levels is provided below for completeness:

- Level I validations and reporting include a brief narrative of the laboratory data, and presentations of the sample results and surrogate results for organic compounds.
- Level II validation and reporting add review of QC samples: method blank results, laboratory control sample (LCS) results, and MS/MSD or duplicate sample results.
- Level III validation and reporting add internal standards, blank association, serial dilution results, post-digestion spike results, GC/MS tune table, initial calibration table, continuing calibration verifications, calibration blanks, ICSA/AB, CRDL, MDL/IDL form, column confirmation, and instrument run logs.

9.1 Calibration Procedures and Frequency

Measurement and test equipment is to be calibrated to the appropriate traceable standards. Records of these activities are to be generated by the laboratory individual performing the activity and retained by the laboratory. The SW-846 Method protocols are to be regarded as establishing the minimum calibration goals. Calibration procedures and instrumentation shall be consistent with the sample analysis requirements of this project and the applicable EPA approved methods.

9.2 Internal Quality Control Checks

Sample Batching

Project samples are to be prepared, extracted, and analyzed in batches. Each batch will have no more than 20 uniquely numbered samples of the same matrix to be analyzed for the same analyte or group of analytes.

- To the extent practical, project samples of the same matrix and analytes are to be grouped together in a batch.

- Samples within a preparation batch are to be prepared consecutively or simultaneously, by the same personnel, using the same equipment, reagent and glassware lots, and methodology.
- To the extent practical, project samples prepared and extracted as a batch are to be analyzed as a batch.
- Ideally, samples within a batch are to be analyzed in the same run sequence, by the same personnel, and using the same instrument (under the same calibration and tune, as applicable), reagent lots, and methodology.
- Field QC samples such as Matrix Spike/Matrix Spike Duplicate (MS/MSD) and field duplicates, are to be delivered so they will be prepared and analyzed within the same sample batch as their associated field sample.
- The analytical results pertaining to the samples in the batch are to be reported in a single data package.

Method Quality Control

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 are specified within each method. These include, but are not limited to, the following: laboratory blanks (method and instrument), laboratory control spikes, surrogate spikes, matrix spikes, laboratory duplicates and/or matrix spike duplicate pairs, LCS, field duplicates, and field blanks.

Internal quality control checks are designed to establish technically sound criteria for each measurement parameter, which shall serve to accept, qualify, or reject data in a uniform and systematic manner. Ten percent of the total number of a given type of sample shall be devoted to internal QC checks. These checks include blanks, laboratory control spikes, duplicates, matrix spikes, reference standards, and performance evaluation samples.

10 DATA QUALITY OBJECTIVES

The overall data quality objective is to provide data of known and sufficient quality to evaluate the physical extent and concentration ranges of chemicals of potential concern from analysis of groundwater and surface water samples, and to assure compliance with environmental and health-related agencies. Groundwater samples will be collected from designated wells within the site area. Surface water samples will be collected at the locations identified in the report May 2012 Camp Bonneville Expanded Site Inspection, conducted by the EPA.

10.1 QA Objectives for Chemical Data Management.

Chemical analyses shall meet data quality objectives for precision, accuracy, and completeness. Accuracy goals, measured by the LCS and to a lesser extent, the MS recovery and the surrogate recovery, are determined by the laboratory and are based upon QC limits established in published EPA methods. The completeness goal for all the groundwater and surface water analytical data is 95 percent. Table 10–1 summarizes targeted data quality objectives for the laboratory parameters; actual data quality objectives will be listed in each analytical report generated by the laboratory. Data quality objectives are applicable to all samples submitted to the laboratory, including primary samples, duplicates, and MS/MSDs.

Table 10–1: Data Quality Objectives for Laboratory Analysis

Measurement	EPA Method	Laboratory Reporting Limit	Precision (RPD)	Accuracy (%REC)	Surrogate Recovery %	Completeness (%)
Total priority pollutant metals	6020/7470A	Element specific: 0.4-8.0 µg/L 7470A 0.3 µg/L	20%	Laboratory-determined	NA	95
VOCs	8260C	Compound specific: 0.02-0.5 µg/L	25%	Laboratory-determined	Method	95
SVOCs	8270C	Compound specific: 0.4-15 µg/L	50%	Laboratory-determined	Method	95
Explosives (including nitroglycerin, PETN and picric acid)	8330/8330A	Compound specific: 0.1-0.65 µg/L	Compound specific: Laboratory-determined	5-140 (tetryl 40-150) Laboratory-determined	Laboratory-determined	95
Perchlorates	6850	0.5 µg/L	15%	80-120%	NA	95

Notes:
NA = not perform for this method
Laboratory Reporting Limit
µg/L = micrograms per liter

The maximum allowable reporting limit for each analyte shall be no greater than the concentration of the cleanup level listed in State of Washington Model Toxics Control Act (MTCA) or EPA Region 9 Regional Screening Levels.

These data quality objectives are contractual requirements that take precedence over values in the laboratory SOP. The analytical methodology may be refined to meet regulatory requirements and remediation process-related goals and ensure that approved final DQOs are met during remediation. Quantitative analytical DQOs will be monitored on an ongoing basis to assure that problems are identified and corrected in a timely fashion.

There are no specific data quality objectives for the measurement of field parameters, such as temperature, pH, conductivity, and turbidity. PBS' SOP on low-flow groundwater sampling describes the acceptable criteria for the measurement of field parameters.

10.2 Calculation of Data Quality Objectives—Analytical Precision

Field Duplicate

Precision indicated by analysis of the field duplicate will be expressed as the relative percent difference (RPD) between a sample and its field duplicate. RPD is calculated as follows:

$$\text{RPD (\%)} = \left| \frac{X_1 - X_2}{(X_1 + X_2)/2} \right| \bullet 100\%$$

where: X_1 = measured concentration in the first sample
X_2 = measured concentration in the second sample

Laboratory Duplicate

Two sample aliquots of the same sample are taken in the analytical laboratory and analyzed separately with identical procedures. Analyses of the sample and duplicate give a measure of the precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures. Precision is expressed as RPD (%).

Analytical Accuracy

The accuracy of the laboratory procedure will be estimated from the analyses of the percent recovery of the LCS and to a lesser extent, the MS/MSD sample. Accuracy is calculated based on the percentage of the spike recovered (REC) in the analysis as follows:

$$\text{\% REC} = \left(\frac{Xs - Xu}{SA}\right) \bullet 100\%$$

where: X_s = measured amount in the spiked sample
X_u = measured amount in the unspiked sample
SA = spiked amount

Several EPA methods do not include an MS/MSD analysis. The accuracy for analytical procedures that do not include an MS analysis will be monitored by the percent difference of the true value for a LCS from its measured value. Accuracy is calculated based on the percentage difference of the LCS in the analysis as follows:

$$\%D = (TV - R) / TV \bullet 100\%$$

where: TV = true value of laboratory control sample
R = result

Completeness

Completeness will be calculated and expressed as the percentage of number of samples that were judged to be valid (i.e., not rejected) and acceptable for all intended data use. Completeness (%C) is calculated for each type of measurement/analysis as follows:

$$\%C = \frac{(SE - SR)}{SE} \bullet 100\%$$

where: SE = number of samples collected
SR = number of samples rejected

Sensitivity
Sensitivity is to be expressed in terms of detection and quantitation limits for each type of measurement/analysis.

- The analytical laboratory is to notify the PBS PM if the laboratory anticipates or experiences any difficulties in achieving the detection/quantitation limits specified in the approved QAPP.
- Matrix effects should be considered in assessing the analytical laboratory's compliance with sensitivity specifications. The laboratory is to provide a detailed discussion of all failures to meet sensitivity specifications in the data package narrative.
- If a sample dilution results in non-detect values for analytes that had been detected in the original analysis, then the results of the original run and the dilution are to be reported with the appropriate notations in the data package narrative.

Representativeness
Representativeness expresses the degree to which sample data represent the characteristics of a population of samples, parameter variations at a sampling point, or an environmental condition. Representativeness is to be ensured in the field through implementation of appropriate sample collection, preservation, handling, and techniques. In the laboratory, representativeness is to be ensured by meeting method hold times and appropriate subsampling or aliquot techniques. Representativeness is to be assessed through results of duplicate field and laboratory samples.

11 DATA REDUCTION, REVIEW, AND REPORTING
Conversion of raw data into reported results is to be performed by the laboratory's QC chemist as detailed in the analytical methods. Laboratory SOPs include automated or manual data reduction procedures, equations, conversion factors, significant figures, and reporting units. Suspected outliers are to be reviewed for calculation and transcription errors, instrument malfunctions, and verification of measurement. If no errors are found, statistical methodology can be performed to determine whether the data point is to be rejected or retained. The PBS PM will be responsible for inspection of reported results for laboratory data.

11.1 Data Review
General
Data review is independent of the intended use of the data and determines the technical merit of the data by comparing QC results to method and Ecology-specified criteria. Data are reviewed for traceability, documentation, calculations, transcription errors, and evaluation of data deliverables for contract compliance.

Field Parameters
Field crews are to review their data and implement any necessary corrective actions prior to submitting data for use. All field data must be within the acceptance criteria specified in the SAP before being used for decision-making purposes. Any corrective actions should be noted in the DFAR.

11.2 Data Tracking and Reporting
Data Tracking
Submittals from the analytical laboratory will be tracked and reviewed by the PBS PM. Final data submittals will be included in the quarterly monitoring reports. Data are to include data qualifiers from the data review process.

Electronic Data

The format for electronic data delivery from the laboratory will be a customized electronic data deliverable (EDD) package. The information in the EDD will be checked against each input source using input file structure comparison, comparison of requested and reported data, sample number verification, parameter spelling check, reporting unit consistency, consistency between electronic and validated results, independent spot checks of electronic and hard copy data, detection limit specifications, and other internal consistency checks of the data. The output from the database will also to be checked by the PBS PM to determine if it makes sense from an historical perspective, is representative, and agrees with previous data collected or literature reported values. No project data will be released for use until QC checks have been performed and discrepancies resolved.

Data Reporting

Following each quarterly field event, the PBS PM will submit a monitoring report that includes sampling effort results and comparison with State of Washington Model Toxics Control Act (MTCA) criteria. Following each submission, comments generated as a result of Ecology's review will be incorporated into the next event's monitoring report submitted.

11.3 Quality Control Reports

Data Review—Laboratories

Laboratory data are to be reviewed by TA's laboratory QC chemist prior to delivery as prescribed in the analytical laboratory's approved Laboratory Quality Management Plan (LQMP). Data will be reviewed following contract laboratory program function guidelines using SW-846 method requirements, SOPs, and the DQOs. Data reviews by the laboratory QC chemist will include data on initial and continuing calibration, blanks, laboratory control spikes, duplicates, controls, surrogates, and MS/MSD. The reviews will include an assessment of accuracy, precision, representativeness, calibration, comparability, sensitivity, and completeness, any performance or system audit results, and any significant QA problems encountered. All data outside DQOs will be flagged by the laboratory. Data that are qualified (flagged) during analysis or review will be noted as such in reports where they are used.

Data Review—PBS

The PBS PM will conduct the initial data review for PBS. The sample parameter quantification level data will be reviewed and include cross-checking data from original, duplicate, and MS/MSD samples for consistency; and review of sample data flagged by the laboratory. The data will be compared with Ecology requirements and DQOs before being submitted. All results will be entered into PBS' Environmental Quality Information System (EQuIS) data management system.

If there are no qualifiers, that will indicate that the data are acceptable both qualitatively and quantitatively. If data need to be flagged during the QC data review, the qualifiers outlined in the following table will be used. Under certain circumstances, additional flags may be used; these flags will be described in the associated quarterly monitoring report.

Qualifier	Reason
B	Results are estimated because the compound was detected in an associated blank.
C2	RPD between the primary column and the confirmation column results exceed the laboratories RPD criteria. The higher result was reported. The results are acceptable both qualitatively and quantitatively.

Qualifier	Reason
E	Results exceeded the concentration range for the instrument. Data are not acceptable for any purpose.
J	Results are estimated, and the data are valid for limited purposes. The results are qualitatively acceptable.
N	Analysis was not performed.
R	Reported value is "rejected." Resampling or reanalysis may be necessary to verify the presence or absence of the compound. Data are not acceptable for any purpose.
U	Reported value is below method reporting limit. The results are qualitatively acceptable.

11.4 Relevant Project Schedules

Table 11–1 contains the standard time table for all events or deliverables related to sampling and analysis.

Table 11–1: Timeline for Laboratory Analysis Data Reports

Task	Duration	Deliverable
DFAR	Daily	Prepared daily by PBS field personnel.
Analytical lab data	2 weeks prior to sampling	Notify laboratory of expected date of sample shipment.
	10 business days (minimum)	Lab turnaround for Level II samples.
	15 business days (minimum)	Lab turnaround for Level III samples.
QA by PBS	5 working days	Notify project manager of any deviation or non-compliance.
Draft monitoring report	30 calendar days	After final laboratory results are received.
Final monitoring report	21 calendar days	From Ecology review and approval.

Notes: DFAR = Daily Field Activity Report
QA = Quality Assurance

12 PREVENTIVE MAINTENANCE

The laboratory's preventive maintenance program is described in their Quality Assurance Manual, which is maintained at the laboratory. Equipment used by PBS personnel in the field for sampling, measuring, and analysis will be maintained following manufacturer's recommended practices.

13 PERFORMANCE AND SYSTEM AUDITS

Laboratory and field audits may be scheduled and performed at the direction of the PBS PM.

14 CORRECTIVE ACTIONS BY LAB

Documentation for corrective actions implemented by the laboratory is to be generated and retained in the laboratory's project file.

14.1 Corrective Action Documentation

This documentation is to be made accessible to the PBS PM. Corrective actions are required for the following conditions:

- QC data outside the defined acceptance windows for precision or accuracy.
- Blanks or LCS that contain contaminants above acceptable levels stated in the DQOs.
- Undesirable trends in spike or surrogate recoveries or RPD between spiked duplicates.
- Unusual changes in method reporting limits.
- Deficiencies identified during internal or external audits, or from the results of performance evaluation samples.
- Project management inquiries concerning data quality.

The following corrective actions should be taken for common problems:

Incoming Samples

Problems noted during sample receipt are to be documented on the Cooler Receipt Form. The PBS PM is to be notified for problem resolution.

Sample Holding Times

If maximum holding time is or may be exceeded by the laboratory, the PBS PM must be notified for problem resolution. Resampling may be necessary 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.

Practical Quantitation Limits

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 PBS PM 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 but below the practical quantitation limits 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 DQOs 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. In order to confirm matrix effects, QC results must observe the same direction and magnitude (ten times) bias. The PBS PM 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.

15 QUALITY IMPROVEMENT PROCESS

PBS' quality improvement process (QIP) comprises the internal systems that evaluate our quality program's effectiveness in ensuring and continually improving the quality of our work. The primary goals of our QIP and the QC program defined in this document are to prevent non-conformance and facilitate continual process improvement. To the extent that the first of these goals is not achieved, identified deficiencies or non-conformance are to be corrected in a timely and cost-effective manner, and with the intent of preventing their recurrence. This QAPP includes provisions for preventing quality problems and facilitating process improvements as well as for identifying, documenting, and tracking deficiencies until corrective action has been verified.

Preventive Measures

While the entire QC program is directed toward solutions to unforeseen conditions, certain elements of the program have greater potential to be proactive. The primary tools for problem prevention on this project and the specific sections of the SAP where they are addressed include defined responsibilities and authorities, technical project planning, documentation, and project procedures. Should these preventive measures fail, tracking and communicating deficiencies provide a mechanism for preventing their recurrence.

Continual Improvement

Project staff at all levels are to be encouraged to provide recommendations for improvements in established work processes and techniques. The intent is to identify activities that are compliant but can be performed in a more efficient or cost-effective manner. Typical quality improvement recommendations include identifying an existing practice that should be improved (e.g., a bottleneck in production) and/or recommending an alternative practice that provides a benefit without compromising prescribed standards of quality. Project staff are to bring their recommendations to the attention of project management or the QC staff through verbal or written means; however, deviations from established protocols are not to be implemented without prior written approval by the PBS PM and concurrence of the PBS QA/QC officer.

Deficiency Identification and Resolution

Deficiency identification and resolution are primary responsibilities of the operational staff (both PBS and any subcontractors) and the PBS PM. In the interest of timeliness of corrective actions, a corrective action request can be issued by any member of the project staff. If the individual issuing the request is also responsible for correcting the problem, then he or she should do so and document the results appropriately; otherwise, the request should be forwarded to the PBS PM, who is then responsible for evaluating the validity of the request, formulating a resolution and prevention strategy, assigning personnel and resources, and specifying and enforcing a schedule for corrective actions. Once a corrective action has been completed, the request and supporting information should be maintained in PBS project files.

While deficiency identification and resolution occur primarily at the operational level, QC inspections provide a backup mechanism to address problems that either are not identified or cannot be resolved at the operational level. Through implementation of an inspection program, the QC inspection staff is responsible for verifying that deficiencies are identified, documented as prescribed herein, and corrected in a timely manner.

Deficiencies identified by the QC inspection staff are to be corrected by the operational staff and properly documented in PBS project files.

If the identified deficiency warrants it, a written corrective action plan (CAP) is to be developed by the PBS PM with concurrence by the PBS QA/QC officer. The CAP is to indicate whether it is submitted for informational purposes or for review and approval. In either event, operational staff is to be encouraged to discuss corrective action strategy with the QC staff throughout the process.

The QA/QC officer will have full stop-work authority for unresolved deficiencies.

16 PLAN AMENDMENTS

This combined SAP and QAPP will serve as the primary plan governing all field and reporting activities related to groundwater and surface water monitoring for RAUs 2C and 3 at Camp Bonneville. If any portion of this plan warrants or requires amendment, the changes shall be communicated by either issuing a revised plan in its entirety, or preparing an addendum describing the changes and implementation schedule.

17 APPROVAL AND CONCURRENCES

2/22/18

Scott Braunsten, LG
PBS Project Manager

2/22/18

Heidi Yantz, LHG
PBS QA/QC Officer

APPENDIX A

PBS Qualifications

Staff Resumes

Scott Braunsten RG, LG, CES

Project Geologist

Scott Braunsten is a project geologist with eight years of experience throughout the Northwest. He has evaluated soil, groundwater, outdoor and indoor air, soil gas, surface water, and sediments through numerous site investigations. In addition, he has prepared work plans, sample and analysis plans, quality assurance project plans, contaminated media management plans, and site specific health and safety plans. Scott has worked with state and federal regulators to bring sites toward regulatory closure, assisting clients with efficiently interacting with regulators.

EXPERIENCE

8 Years

EDUCATION

MS Geology, Portland State University

BS Geology, Portland State University

ACCREDITATION

Registered Geologist (Oregon #G2303)

Licensed Geologist (Washington #3045)

Certified Environmental Sampler

OSAH 40-hour HAZWOPER

AHERA Inspector

Oregon Heating Oil Tank Supervisor

Washington UST Site Inspector

ASSOCIATIONS

Association of Environmental and Engineering Geologists, Newsletter Editor

RELEVANT PROJECT EXPERIENCE

Camp Bonneville Groundwater Monitoring, Clark County Public Works, **Vancouver, Washington.** Project Manager coordinating field events with field staff and the laboratory, collected groundwater and surface water samples, and managed data generated during field events. Prepared quarterly monitoring reports based on field data and analytical results. Prepared a work plan for additional investigation at the site, and managed field staf during the investigation. Assisted the County with preparing an introductory letter to send to nearby residents for off-site sampling, and collected groundwater samples from domestic wells to determine if off-site migration of contaminants of concern has occurred.

Peter Boscow Elementary School Parking Lot Soil Investigation, Hillsboro School District 1J, Hillsboro, Oregon. Staff Geologist collecting soil gas, soil, and groundwater samples to determine if there was risk present that would affect site occupants. Created a work plan for sampling as requested by the Oregon Department of Environmental Quality (DEQ), including a door-to-door survey in support of a beneficial water use determination. The site received a no further action determination from DEQ following completion of the work.

Oregon State University Agricultural Experiment Station Property Site Assessment Activities, Oregon State University, **Medford, Oregon.** Project Geologist conducted a geophysical survey looking for underground storage tanks and other historical features of concern; collected composite soil samples as per the DEQ guidance document for agricultural land. The findings were interpreted and assisted the client with an appropriate course of action for the best future use of the site.

New Lacamas Heights ES Enviromental Services, Camas School District #117, **Camas, Washington.** Project Manager prepared project specifications to decommission an out of use underground storage tank, and provided project oversight to decommission an out of use water supply well. Acted as the client's environmental consultant during site demolition, and reviewed the contractor health and safety plan to ensure protection of workers.

Elwha and Glines Canyon Dams Environmental Consulting, Barnard Construction Company, Inc., **Port Angeles, Washington.** Staff Geologist prepared documents as per National Park Service guidelines including Soil and Debris Analytical and Physical Characterization Testing Plan, Contaminated Soil Excavation and Water Control Plan, Emergency Response Plan, and Hazard Abatement Plan. Coordinated with the client and additional subcontractors to ensure work proceeded acording to project deadlines. Interpreted the findings to create excavation plans denoting areas of contamination, and determined the vertical and lateral extent of contamination at the site.

Buck Hollow Landfill Compliance 2013, Hampton Lumber Mills, **Willamina, Oregon.** Project Geologist collected groundwater samples at an active landfill as per the requirements of the landfill's Environmental Monitoring Plan. Conducted data quality reviews following sample collection to analyze the validity of the data. Prepared an annual environmental monitoring report (AEMR) for the landfill, including a statistical evaluation of the data, hydrogeologic interpretation, and determination of landfill permit compliance. Permit specific concentration limits (PSCLs) were prepared for the landfill as required by the permit.

Vapor and Groundwater Monitoring, Multnomah County, **Gresham, Oregon.** Project Geologist collected monthly readings of landfill gas from permanently installed monitoring points, installed additional monitoring points to add to the vapor network, and designed and installed a groundwater monitoring network to assess groundwater in the vicinity of a historical landfill. Groundwater samples were collected and analyzed, and a data quality review was conducted on the results. An annual landfill monitoring report was prepared following one year of results to evaluate trends in the data and assist the client with determining next steps for the site based on the needs of the client's master plan.

Environmental Monitoring for County Landfill Sites, Deschutes County Department of Solid Waste, **Bend, Oregon.** Project Geologist managing data from multiple sampling events, and conducted data quality reviews of the data. Performed yearly statistical analysis of results in support of the yearly AEMR, and assisted in generating PSCLs for the site.

Hall Street Soil Removal Work Plan, Port of Coos Bay, **Coos Bay, Oregon.** Project Manager prepared a work plan for review by DEQ to assess soil adjacent to a railroad right of way as part of an emergency spill response. Field personnel were managed during sampling to ensure representative data. The results were interpreted with respect to risk-based guidelines, and an excavation plan was generated with the approval of DEQ. The client was presented with soil disposal options, and oversight and technical assistance during remediation activities were provided. A final closeout report documenting remedial activities was prepared and submitted to DEQ to close the emergency spill file.

Nath Property Phase II Environmental Site Assessment, City of Portland Bureau of Environmental Services, **Portland, Oregon.** Staff Geologist developed a Quality Assurance Project Plan for use during a Phase II Environmental Site Assessment partially funded through an Environmental Protection Agency grant. Developed a sampling and analysis plan to determine if the site is impacted from historical use, and collect soil and sub-slab vapor samples according to the prepared plans. The findings were interpreted with respect to applicable screening levels, and the client was advised as to concerns associated with the site based on the findings.

Former Bumblebee Cleaners Environmental Soil Testing, Bitar Brothers, **Portland, Oregon.** Project Manager assisted client with testing necessary for the installation of an underground injection control to manage storm water following site construction. Enrolled the client in DEQ's Voluntary Cleanup Program - Independent Cleanup Pathway, and designed site investigations to generate sufficient data to be able to request a no further action determination. Assisted environmental engineers in review of construction specifications to make sure vapor intrusion risks are adequately addressed. Applied for a contained-in determination to be able to dispose of excavation spoils generated during construction at a Subtitle D landfill instead of F-listed hazardous waste.

Heidi Yantz, RG, LHG, PG

Principal Hydrogeologist

EXPERIENCE

30 Years

EDUCATION

MS Geosciences, University of Wisconsin-Milwaukee

BA Business Administration, University of Washington

ACCREDITATION

Registered Geologist (Oregon #G2152, Washington #2685, Idaho #1256)

Oregon Soil Matrix Supervisor #26637

OSHA 40-hour Hazardous Waste Operations Training

AHERA Building Inspector

Oregon Lead Inspector

ASSOCIATIONS

Northwest Environmental Business Council – Cascade Chapter Committee

National Ground Water Association / Geological Society of America – Member

Heidi Yantz has over 17 years of experience in site investigations and remedial actions for industrial and commercial facilities and agricultural/rural properties. She has 30 years of business experience managing budgets, projects, and people. Through numerous site investigations, she has evaluated soil, groundwater, outdoor and indoor air, soil gas, surface water, and sediments. Heidi has directed and participated in remedial cleanups including soil excavation, groundwater pump and treat, and a variety of in situ treatments. She has prepared budgets, proposals, work plans, and status reports along with feasibility studies, quality assurance plans, and site closure requests. She has performed a variety of health and safety roles, which included preparing and reviewing health and safety plans, managing MSDS, implementing and training for hazardous communication programs, and consulting on site-specific safety concerns.

Heidi has managed multi-disciplined due diligence projects, which required coordinating efforts with attorney teams as well as various project stakeholders. She works closely with attorneys on properties requiring investigation and potential clean-up, and strives to provide options and recommendations that encompass financial and technical constraints as well as regulatory requirements.

RELEVANT PROJECT EXPERIENCE

Camp Bonneville Consulting Services, Clark County Public Works, **Vancouver, WA.** Senior hydrogeologist overseeing quarterly groundwater monitoring at this former Army reserve. Prepared quarterly reports to assess trends in water quality. Oversaw development of scope and cost estimate and subsequent implementation for remedial investigation. Worked closely with client and regulators to ensure that assessment efforts complement investigation efforts by others to complete remediation of areas impacted by munitions and explosives of concern.

Livingston Quarry Groundwater Well Monitoring, Clark County Public Works, **Vancouver, WA.** Project Manager for baseline groundwater monitoring required prior to gravel quarrying operations. Developed scope of work in conjunction with County staff to ensure effective communication with the public and successful field activities. Coordinated field activities requiring sampling from 42 private wells. Prepared report detailing findings. Participated in County meetings including public forums for Hearing Examiner.

Whitcomb Unit Umatilla National Wildlife Refuge Remediation System O&M, US Fish and Wildlife Service - Region 1, **Paterson, WA.** Senior Hydrogeologist for former petroleum release site. Previous remediation efforts have included soil removal and air sparging. Additional investigation confirmed that soil contamination was fully remediated. Prepared feasibility study and wrote draft record of decision for client. Following remedy selection, prepared cleanup action plan and implemented remedy that included demolition of onsite structures and decommissioning of water well. Prepared remedial action report for submittal to regulator and continue to sample for monitored natural attenuation in groundwater.

Cottonwood Canyon State Park Initial Development, Site Work and Utility Design, Oregon Parks and Recreation Department, **Wasco, OR.** Senior Hydrogeologist for installation of a water supply well for this new state park. Worked closely with field geologist to make real-time drilling decisions on borehole depth and diameter, along with well-casing specifications. Coordinated down-hole geophysical survey and aquifer pump test. Prepared report for submittal to state agencies.

Longview Fibre Property, Kalama, WA, Phase II ESA, Port of Kalama, **Kalama, WA.** Senior Hydrogeologist for a targeted Phase II ESA after long-term tenant had left the site. Two drilling investigations indicated groundwater contamination with the potential for a separate source for limited soil contamination. Provided groundwater monitoring following well installation and evaluated concentration trends.

Environmental Consulting Services, Lots 300 & 400, 8 3W 11, Salem, OFO Partners, **Salem, OR.** Project Manager / Project Hydrogeologist for Phase I ESA, Phase II and remediation services at a 104-acre former agricultural property. Arsenic and chlorinated pesticides in shallow soil required assessment and remediation. Worked with the current property owner, the prospective purchaser (a residential developer) and their civil engineer to prepare a soil removal plan with disposal in an on-site permanent storage cell. Worked with DEQ to establish technically-feasible soil cleanup target levels. Coordinated confirmation sampling once soil removal began, and prepared the cleanup action report for DEQ once remediation was completed.

Agricultural Cooperative, **Eastern Oregon.** Project Manager for assessment of portfolio of properties belonging to an agricultural cooperative. Led a team of seven on activities that included Phase I ESA, site characterization of soil and groundwater, ecological risk assessment, UST assessment, assessment of existing groundwater treatment system, and routine groundwater monitoring. Communicated regularly with client team that included facility staff, attorneys and management consultants.

New Site Acquisition, Project Amethyst, Recology, Inc., **Ashland, OR.** Project Manager for due diligence activities on a closed landfill and current waste transfer station facility. Prepared Phase I ESA and reviewed hydrogeologic assessment and monitoring reports to confirm the conceptual site model and determine present and potential future contamination risks to groundwater and drinking water. Coordinated preparation of an engineering assessment and compliance audit.

Buck Hollow Landfill Compliance, Hampton Lumber Mills, **Willamina, OR.** Project Manager, Client Manager for ongoing environmental monitoring at this active wood waste landfill. Tasks included semi-annual groundwater monitoring, performing statistical analysis to assess groundwater trends along with annual reporting, and assisting client with permit renewal or other landfill-related activities. Negotiated required activities with regulators, and managed development of operational and closure plans.

California Way 6-Acre Industrial Site Environmental Services, Fibre Federal Credit Union, **Longview, WA.** Project Manager / Project Hydrogeologist on a Phase I and Phase II ESA for this light-industrial property. More than 50 years of trucking activity resulted in multiple source areas requiring soil and groundwater investigation. Oversaw limited soil removal and prepared report for use during future real estate transaction activities.

Union Gap Substation Soil Investigation, PacifiCorp, **Union Gap, WA.** Project Manager for a multi-discipline project at a substation undergoing redevelopment. Designed a soil testing program to comply with landfill disposal requirements. Consulted with client on managing groundwater from dewatering activities.

Former Ellis Dry Cleaners Remedial Investigation, City of Portland, **Portland, OR.** Project Geologist / Project Manager at historical dry cleaner site with significant soil and soil gas contamination. Conducted remedial investigation and prepared work plan for additional investigation and future building demolition and remediation.

Suspected Contaminated Site Phase II Activities, City of Portland Brownfield Program, **Portland, OR.** Project Manager for limited site investigation at this former auto sales and repair site. Under an EPA brownfield assessment grant, conducted a limited historical review and drilling investigation to assess potential source areas.

Additional Subsurface Investigation at Former Qualex Facility, ITA LLC, **Portland, OR.** Project Manager / Project Hydrogeologist for Phase I and Phase II activities. Provided third party review of investigation by the tenant's consultant. Conducted additional investigation for the property owner. Worked closely with the property owner's attorney and the prospective purchaser to collect sufficient evidence to successfully receive a No Further Action Determination from Oregon DEQ.

Former Diamond Cabinets Property Environmental Site Investigation and DEQ File Closure, MasterBrand Cabinets, Inc., **Hillsboro, OR.** Project Manager for this former cabinet production facility. PBS conducted several soil and groundwater investigations, focusing on potential source areas such as hazardous waste storage and USTs, to assess the property for contamination. Prepared a beneficial water use determination. Site received a No Further Action determination from DEQ based on PBS' efforts.

SE 36th Avenue & SE Hawthorne Soil Sampling, Kalberer Company, **Portland, OR.** Project Manager for UST decommissioning project in an urban retail district. Coordinated removal of the USTs and completed the initial site characterization and risk assessment report for DEQ. Conducted two rounds of soil and soil gas assessment and prepared risk assessment indicating there was minimal risk to human health. Site was granted a conditional No Further Action determination by DEQ.

Berkley North Pacific Insurance Claims, Berkley North Pacific Group, **Cokeville, WY.** Project Manager providing third-party review of consultant documents and activities at gasoline spill along a remote Wyoming highway. Review invoices and provide technical feedback on reports and work scope.

McLendon's Hardware - Belfair, WA, First Olympic Holdings LLC, **Belfair, WA.** Senior Hydrogeologist working for a property owner with soil and groundwater contamination from an upgradient service station. Consulted with owner's attorney on technical issues related to known contamination, data gap analysis, and workplan development; conducted third-party review on reports from investigations by others.

Sheridan FCI Water Well Sampling, Sheridan Federal Correctional Institution, **Sheridan, OR.** Project Manager for former UST site. Monitored water supply well, performed a beneficial water use determination, and wrote closure report. Coordinated communication with DEQ to obtain a No Further Action determination.

Rollin' Tire Site Cleanup, City of Portland Brownfield Program, **Portland, OR.** Project Manager for remediation of this former auto repair/gas station. With work funded under an EPA cleanup grant, prepared an Alternative to Brownfields Cleanup (ABCA) report, QAPP, and HASP in preparation for remediation through microbial injections. Coordinated remedial activities and post-injection monitoring. Project site converted to flood management green space following remediation.

APPENDIX B

Laboratory Qualifications

Certificates and Accreditations

The State of Washington
Department of Ecology

TestAmerica Sacramento
West Sacramento, CA

has complied with provisions set forth in Chapter 173-50 WAC and is hereby recognized by the Department of Ecology as an ACCREDITED LABORATORY for the analytical parameters listed on the accompanying Scope of Accreditation. This certificate is effective May 6, 2017 and shall expire May 5, 2018.

Witnessed under my hand on April 28, 2017

Alan D. Rue
Lab Accreditation Unit Supervisor

Laboratory ID
C581

WASHINGTON STATE DEPARTMENT OF ECOLOGY

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

SCOPE OF ACCREDITATION

TestAmerica Sacramento

West Sacramento, CA

is accredited for the analytes listed below using the methods indicated. Full accreditation is granted unless stated otherwise in a note. EPA is the U.S. Environmental Protection Agency. SM is "Standard Methods for the Examination of Water and Wastewater." ASTM is the American Society for Testing and Materials. USGS is the U.S. Geological Survey. AOAC is the Association of Official Analytical Chemists. Other references are described in notes.

Matrix/Analyte	Method	Notes
Air		
Carbon dioxide	ASTM D1946-90 (06)	1
Helium	ASTM D1946-90 (06)	1
Hydrogen	ASTM D1946-90 (06)	1
Methane	ASTM D1946-90 (06)	1
Nitrogen	ASTM D1946-90 (06)	1
Oxygen	ASTM D1946-90 (06)	1
Benzene	EPA TO-3 Rev 1 (1984)	1
Ethylbenzene	EPA TO-3 Rev 1 (1984)	1
Gasoline range organics (GRO)	EPA TO-3 Rev 1 (1984)	1
Methyl tert-butyl ether (MTBE)	EPA TO-3 Rev 1 (1984)	1
Toluene	EPA TO-3 Rev 1 (1984)	1
Xylene (total)	EPA TO-3 Rev 1 (1984)	1
1,1,1-Trichloro-2,2,2-trifluoroethane	EPA TO-14A Rev. 2 (1999)	1
1,1,1-Trichloroethane	EPA TO-14A Rev. 2 (1999)	1
1,1,2,2-Tetrachloroethane	EPA TO-14A Rev. 2 (1999)	1
1,1,2-Trichloroethane	EPA TO-14A Rev. 2 (1999)	1
1,1-Dichloroethane	EPA TO-14A Rev. 2 (1999)	1
1,1-Dichloroethylene	EPA TO-14A Rev. 2 (1999)	1

Matrix/Analyte	Method	Notes
1,2,4-Trichlorobenzene	EPA TO-14A Rev. 2 (1999)	1
1,2,4-Trimethylbenzene	EPA TO-14A Rev. 2 (1999)	1
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA TO-14A Rev. 2 (1999)	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	EPA TO-14A Rev. 2 (1999)	1
1,2-Dichlorobenzene	EPA TO-14A Rev. 2 (1999)	1
1,2-Dichloroethane (Ethylene dichloride)	EPA TO-14A Rev. 2 (1999)	1
1,2-Dichloropropane	EPA TO-14A Rev. 2 (1999)	1
1,3,5-Trimethylbenzene	EPA TO-14A Rev. 2 (1999)	1
1,3-Dichlorobenzene	EPA TO-14A Rev. 2 (1999)	1
1,4-Dichlorobenzene	EPA TO-14A Rev. 2 (1999)	1
Benzene	EPA TO-14A Rev. 2 (1999)	1
Benzyl chloride	EPA TO-14A Rev. 2 (1999)	1
Carbon tetrachloride	EPA TO-14A Rev. 2 (1999)	1
Chlorobenzene	EPA TO-14A Rev. 2 (1999)	1
Chloroform	EPA TO-14A Rev. 2 (1999)	1
cis-1,2-Dichloroethylene	EPA TO-14A Rev. 2 (1999)	1
cis-1,3-Dichloropropene	EPA TO-14A Rev. 2 (1999)	1
Dichlorodifluoromethane (Freon-12)	EPA TO-14A Rev. 2 (1999)	1
Ethylbenzene	EPA TO-14A Rev. 2 (1999)	1
Hexachlorobutadiene	EPA TO-14A Rev. 2 (1999)	1
Methyl bromide (Bromomethane)	EPA TO-14A Rev. 2	1

Matrix/Analyte	Method	Notes
	(1999)	
Methyl chloride (Chloromethane)	EPA TO-14A Rev. 2 (1999)	1
Methylene chloride (Dichloromethane)	EPA TO-14A Rev. 2 (1999)	1
o-Xylene	EPA TO-14A Rev. 2 (1999)	1
Styrene	EPA TO-14A Rev. 2 (1999)	1
Tetrachloroethylene (Perchloroethylene)	EPA TO-14A Rev. 2 (1999)	1
Toluene	EPA TO-14A Rev. 2 (1999)	1
trans-1,3-Dichloropropylene	EPA TO-14A Rev. 2 (1999)	1
Trichloroethene (Trichloroethylene)	EPA TO-14A Rev. 2 (1999)	1
Trichlorofluoromethane (Freon 11)	EPA TO-14A Rev. 2 (1999)	1
Vinyl chloride	EPA TO-14A Rev. 2 (1999)	1
Xylene (total)	EPA TO-14A Rev. 2 (1999)	1
1,1,1-Trichloro-2,2,2-trifluoroethane	EPA TO-15 Rev. 2 (1999)	1
1,1,1-Trichloroethane	EPA TO-15 Rev. 2 (1999)	1
1,1,2,2-Tetrachloroethane	EPA TO-15 Rev. 2 (1999)	1
1,1,2-Trichloroethane	EPA TO-15 Rev. 2 (1999)	1
1,1-Dichloroethane	EPA TO-15 Rev. 2 (1999)	1
1,1-Dichloroethylene	EPA TO-15 Rev. 2 (1999)	1
1,2,4-Trichlorobenzene	EPA TO-15 Rev. 2 (1999)	1
1,2,4-Trimethylbenzene	EPA TO-15 Rev. 2 (1999)	1
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA TO-15 Rev. 2 (1999)	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	EPA TO-15 Rev. 2 (1999)	1
1,2-Dichlorobenzene	EPA TO-15 Rev. 2 (1999)	1
1,2-Dichloroethane (Ethylene dichloride)	EPA TO-15 Rev. 2 (1999)	1
1,2-Dichloropropane	EPA TO-15 Rev. 2 (1999)	1
1,3,5-Trimethylbenzene	EPA TO-15 Rev. 2 (1999)	1
1,3-Butadiene	EPA TO-15 Rev. 2 (1999)	1
1,3-Dichlorobenzene	EPA TO-15 Rev. 2 (1999)	1

Matrix/Analyte	Method	Notes
1,4-Dichlorobenzene	EPA TO-15 Rev. 2 (1999)	1
1,4-Dioxane (1,4- Diethyleneoxide)	EPA TO-15 Rev. 2 (1999)	1
1-Propene	EPA TO-15 Rev. 2 (1999)	1
2-Butanone (Methyl ethyl ketone, MEK)	EPA TO-15 Rev. 2 (1999)	1
2-Hexanone	EPA TO-15 Rev. 2 (1999)	1
2-Propanol	EPA TO-15 Rev. 2 (1999)	1
4-Ethyltoluene	EPA TO-15 Rev. 2 (1999)	1
4-Methyl-2-pentanone (MIBK)	EPA TO-15 Rev. 2 (1999)	1
Acetone	EPA TO-15 Rev. 2 (1999)	1
Acrolein (Propenal)	EPA TO-15 Rev. 2 (1999)	1
Benzene	EPA TO-15 Rev. 2 (1999)	1
Benzyl chloride	EPA TO-15 Rev. 2 (1999)	1
Bromodichloromethane	EPA TO-15 Rev. 2 (1999)	1
Bromoform	EPA TO-15 Rev. 2 (1999)	1
Carbon disulfide	EPA TO-15 Rev. 2 (1999)	1
Carbon tetrachloride	EPA TO-15 Rev. 2 (1999)	1
Chlorobenzene	EPA TO-15 Rev. 2 (1999)	1
Chlorodibromomethane	EPA TO-15 Rev. 2 (1999)	1
Chloroform	EPA TO-15 Rev. 2 (1999)	1
cis-1,2-Dichloroethylene	EPA TO-15 Rev. 2 (1999)	1
cis-1,3-Dichloropropene	EPA TO-15 Rev. 2 (1999)	1
Cyclohexane	EPA TO-15 Rev. 2 (1999)	1
Dichlorodifluoromethane (Freon-12)	EPA TO-15 Rev. 2 (1999)	1
Ethanol	EPA TO-15 Rev. 2 (1999)	1
Ethyl acetate	EPA TO-15 Rev. 2 (1999)	1
Ethylbenzene	EPA TO-15 Rev. 2 (1999)	1
Hexachlorobutadiene	EPA TO-15 Rev. 2 (1999)	1
m+p-xylene	EPA TO-15 Rev. 2 (1999)	1
Methyl bromide (Bromomethane)	EPA TO-15 Rev. 2 (1999)	1
Methyl chloride (Chloromethane)	EPA TO-15 Rev. 2 (1999)	1
Methyl methacrylate	EPA TO-15 Rev. 2 (1999)	1
Methyl tert-butyl ether (MTBE)	EPA TO-15 Rev. 2 (1999)	1
Methylene chloride (Dichloromethane)	EPA TO-15 Rev. 2 (1999)	1
Naphthalene	EPA TO-15 Rev. 2 (1999)	1
n-Heptane	EPA TO-15 Rev. 2 (1999)	1
o-Xylene	EPA TO-15 Rev. 2 (1999)	1

Matrix/Analyte	Method	Notes
Styrene	EPA TO-15 Rev. 2 (1999)	1
tert-Butyl alcohol	EPA TO-15 Rev. 2 (1999)	1
Tetrachloroethylene (Perchloroethylene)	EPA TO-15 Rev. 2 (1999)	1
Tetrahydrofuran (THF)	EPA TO-15 Rev. 2 (1999)	1
Toluene	EPA TO-15 Rev. 2 (1999)	1
trans-1,2-Dichloroethylene	EPA TO-15 Rev. 2 (1999)	1
trans-1,3-Dichloropropylene	EPA TO-15 Rev. 2 (1999)	1
Trichloroethene (Trichloroethylene)	EPA TO-15 Rev. 2 (1999)	1
Trichlorofluoromethane (Freon 11)	EPA TO-15 Rev. 2 (1999)	1
Vinyl acetate	EPA TO-15 Rev. 2 (1999)	1
Vinyl chloride	EPA TO-15 Rev. 2 (1999)	1
Xylene (total)	EPA TO-15 Rev. 2 (1999)	1
Drinking Water		
Perchlorate	EPA 314.0-99	1
Perchlorate	EPA 331.0_1.0_2005	1
2,3,7,8-TCDD	EPA 1613_1994	1
Perfluorobutane sulfonate (PFBS)	EPA 537_1.1_2009	1
Perfluoroheptanoic acid (PFHPA)	EPA 537_1.1_2009	1
Perfluorohexane sulfonate (PFHXS)	EPA 537_1.1_2009	1
Perfluorononanoic acid (PFNA)	EPA 537_1.1_2009	1
Perfluorooctane sulfonate (PFOS)	EPA 537_1.1_2009	1
Perfluorooctanoic acid (PFOA)	EPA 537_1.1_2009	1
Non-Potable Water		
Nitrate	EPA 353.2_2_1993	1
Nitrate + Nitrite	EPA 353.2_2_1993	1
Nitrite	EPA 353.2_2_1993	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 1613_1994	1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 1613_1994	1
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7	EPA 1613_1994	1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4	EPA 1613_1994	1
1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8	EPA 1613_1994	1
1,2,3,4,7,8-Hxcdd	EPA 1613_1994	1
1,2,3,4,7,8-Hxcdf	EPA 1613_1994	1
1,2,3,6,7,8-Hxcdd	EPA 1613_1994	1
1,2,3,6,7,8-Hxcdf	EPA 1613_1994	1

Matrix/Analyte	Method	Notes
1,2,3,7,8,9-Hxcdd	EPA 1613_1994	1
1,2,3,7,8,9-Hxcdf	EPA 1613_1994	1
1,2,3,7,8-Pecdd	EPA 1613_1994	1
1,2,3,7,8-Pecdf	EPA 1613_1994	1
2,3,4,6,7,8-Hxcdf	EPA 1613_1994	1
2,3,4,7,8-Pecdf	EPA 1613_1994	1
2,3,7,8-TCDD	EPA 1613_1994	1
2,3,7,8-TCDF	EPA 1613_1994	1
Hpcdd, total	EPA 1613_1994	1
Hpcdf, total	EPA 1613_1994	1
Hxcdd, total	EPA 1613_1994	1
Hxcdf, total	EPA 1613_1994	1
Pecdd, total	EPA 1613_1994	1
Pecdf, total	EPA 1613_1994	1
TCDD, total	EPA 1613_1994	1
TCDF, total	EPA 1613_1994	1
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)	EPA 1668C_2010	1
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207	EPA 1668C_2010	1
2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)	EPA 1668C_2010	1
2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)	EPA 1668C_2010	1
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)	EPA 1668C_2010	1
2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)	EPA 1668C_2010	1
2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208	EPA 1668C_2010	1
2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)	EPA 1668C_2010	1
2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)	EPA 1668C_2010	1
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)	EPA 1668C_2010	1
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)	EPA 1668C_2010	1
2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)	EPA 1668C_2010	1
2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)	EPA 1668C_2010	1
2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)	EPA 1668C_2010	1
2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)	EPA 1668C_2010	1
2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)	EPA 1668C_2010	1
2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)	EPA 1668C_2010	1
2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)	EPA 1668C_2010	1
2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)	EPA 1668C_2010	1
2,2',3,3',4-Pentachlorobiphenyl (BZ-82)	EPA 1668C_2010	1
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)	EPA 1668C_2010	1
2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)	EPA 1668C_2010	1
2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)	EPA 1668C_2010	1
2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)	EPA 1668C_2010	1
2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)	EPA 1668C_2010	1
2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)	EPA 1668C_2010	1
2,2',3,3',5-Pentachlorobiphenyl (BZ-83)	EPA 1668C_2010	1
2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)	EPA 1668C_2010	1
2,2',3,3',6-Pentachlorobiphenyl (BZ-84)	EPA 1668C_2010	1
2,2',3,3'-Tetrachlorobiphenyl (BZ-40)	EPA 1668C_2010	1
2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)	EPA 1668C_2010	1
2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)	EPA 1668C_2010	1
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)	EPA 1668C_2010	1
2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)	EPA 1668C_2010	1
2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)	EPA 1668C_2010	1
2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)	EPA 1668C_2010	1
2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)	EPA 1668C_2010	1
2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)	EPA 1668C_2010	1
2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)	EPA 1668C_2010	1
2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)	EPA 1668C_2010	1
2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)	EPA 1668C_2010	1
2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)	EPA 1668C_2010	1
2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)	EPA 1668C_2010	1
2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)	EPA 1668C_2010	1
2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)	EPA 1668C_2010	1
2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)	EPA 1668C_2010	1
2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)	EPA 1668C_2010	1
2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)	EPA 1668C_2010	1
2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)	EPA 1668C_2010	1
2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)	EPA 1668C_2010	1
2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)	EPA 1668C_2010	1
2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)	EPA 1668C_2010	1
2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)	EPA 1668C_2010	1
2,2',3,4,5-Pentachlorobiphenyl (BZ-86)	EPA 1668C_2010	1
2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)	EPA 1668C_2010	1
2,2',3,4',5-Pentachlorobiphenyl (BZ-90)	EPA 1668C_2010	1
2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)	EPA 1668C_2010	1
2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)	EPA 1668C_2010	1
2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)	EPA 1668C_2010	1
2,2',3,4,6-Pentachlorobiphenyl (BZ-88)	EPA 1668C_2010	1
2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)	EPA 1668C_2010	1
2,2',3,4',6-Pentachlorobiphenyl (BZ-91)	EPA 1668C_2010	1
2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)	EPA 1668C_2010	1
2,2',3,4-Tetrachlorobiphenyl (BZ-41)	EPA 1668C_2010	1
2,2',3,4'-Tetrachlorobiphenyl (BZ-42)	EPA 1668C_2010	1
2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)	EPA 1668C_2010	1
2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)	EPA 1668C_2010	1
2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)	EPA 1668C_2010	1
2,2',3,5,6-Pentachlorobiphenyl (BZ-93)	EPA 1668C_2010	1
2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)	EPA 1668C_2010	1
2,2',3,5',6-Pentachlorobiphenyl (BZ-95)	EPA 1668C_2010	1
2,2',3,5-Tetrachlorobiphenyl (BZ-43)	EPA 1668C_2010	1
2,2',3,5'-Tetrachlorobiphenyl (BZ-44)	EPA 1668C_2010	1
2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)	EPA 1668C_2010	1
2,2',3,6-Tetrachlorobiphenyl (BZ-45)	EPA 1668C_2010	1
2,2',3,6'-Tetrachlorobiphenyl (BZ-46)	EPA 1668C_2010	1
2,2',3-Trichlorobiphenyl (BZ-16)	EPA 1668C_2010	1
2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)	EPA 1668C_2010	1
2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)	EPA 1668C_2010	1
2,2',4,4',5-Pentachlorobiphenyl (BZ-99)	EPA 1668C_2010	1
2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)	EPA 1668C_2010	1
2,2',4,4',6-Pentachlorobiphenyl (BZ-100)	EPA 1668C_2010	1
2,2',4,4'-Tetrachlorobiphenyl (BZ-47)	EPA 1668C_2010	1
2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)	EPA 1668C_2010	1
2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)	EPA 1668C_2010	1
2,2',4,5',6-Pentachlorobiphenyl (BZ-103)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,2',4,5-Tetrachlorobiphenyl (BZ-48)	EPA 1668C_2010	1
2,2',4,5'-Tetrachlorobiphenyl (BZ-49)	EPA 1668C_2010	1
2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)	EPA 1668C_2010	1
2,2',4,6-Tetrachlorobiphenyl (BZ-50)	EPA 1668C_2010	1
2,2',4,6'-Tetrachlorobiphenyl (BZ-51)	EPA 1668C_2010	1
2,2',4-Trichlorobiphenyl (BZ-17)	EPA 1668C_2010	1
2,2',5,5'-Tetrachlorobiphenyl (BZ-52)	EPA 1668C_2010	1
2,2',5,6'-Tetrachlorobiphenyl (BZ-53)	EPA 1668C_2010	1
2,2',5-Trichlorobiphenyl (BZ-18)	EPA 1668C_2010	1
2,2',6,6'-Tetrachlorobiphenyl (BZ-54)	EPA 1668C_2010	1
2,2',6-Trichlorobiphenyl (BZ-19)	EPA 1668C_2010	1
2,2'-Dichlorobiphenyl (BZ-4)	EPA 1668C_2010	1
2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)	EPA 1668C_2010	1
2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)	EPA 1668C_2010	1
2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)	EPA 1668C_2010	1
2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)	EPA 1668C_2010	1
2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)	EPA 1668C_2010	1
2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)	EPA 1668C_2010	1
2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)	EPA 1668C_2010	1
2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)	EPA 1668C_2010	1
2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)	EPA 1668C_2010	1
2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)	EPA 1668C_2010	1
2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)	EPA 1668C_2010	1
2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)	EPA 1668C_2010	1
2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)	EPA 1668C_2010	1
2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)	EPA 1668C_2010	1
2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)	EPA 1668C_2010	1
2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)	EPA 1668C_2010	1
2,3,3',4,5-Pentachlorobiphenyl (BZ-106)	EPA 1668C_2010	1
2,3,3',4',5-Pentachlorobiphenyl (BZ-107)	EPA 1668C_2010	1
2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)	EPA 1668C_2010	1
2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)	EPA 1668C_2010	1
2,3,3',4,6-Pentachlorobiphenyl (BZ-109)	EPA 1668C_2010	1
2,3,3',4',6-Pentachlorobiphenyl (BZ-110)	EPA 1668C_2010	1
2,3,3',4-Tetrachlorobiphenyl (BZ-55)	EPA 1668C_2010	1
2,3,3',4'-Tetrachlorobiphenyl (BZ-56)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)	EPA 1668C_2010	1
2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)	EPA 1668C_2010	1
2,3,3',5,6-Pentachlorobiphenyl (BZ-112)	EPA 1668C_2010	1
2,3,3',5',6-Pentachlorobiphenyl (BZ-113)	EPA 1668C_2010	1
2,3,3',5-Tetrachlorobiphenyl (BZ-57)	EPA 1668C_2010	1
2,3,3',5'-Tetrachlorobiphenyl (BZ-58)	EPA 1668C_2010	1
2,3,3',6-Tetrachlorobiphenyl (BZ-59)	EPA 1668C_2010	1
2,3,3'-Trichlorobiphenyl (BZ-20)	EPA 1668C_2010	1
2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)	EPA 1668C_2010	1
2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)	EPA 1668C_2010	1
2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)	EPA 1668C_2010	1
2,3,4,4',5-Pentachlorobiphenyl (BZ-114)	EPA 1668C_2010	1
2,3',4,4',5-Pentachlorobiphenyl (BZ-118)	EPA 1668C_2010	1
2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)	EPA 1668C_2010	1
2,3,4,4',6-Pentachlorobiphenyl (BZ-115)	EPA 1668C_2010	1
2,3',4,4',6-Pentachlorobiphenyl (BZ-119)	EPA 1668C_2010	1
2,3,4,4'-Tetrachlorobiphenyl (BZ-60)	EPA 1668C_2010	1
2,3',4,4'-Tetrachlorobiphenyl (BZ-66)	EPA 1668C_2010	1
2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)	EPA 1668C_2010	1
2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)	EPA 1668C_2010	1
2,3,4,5,6-Pentachlorobiphenyl (BZ-116)	EPA 1668C_2010	1
2,3,4',5,6-Pentachlorobiphenyl (BZ-117)	EPA 1668C_2010	1
2,3',4,5',6-Pentachlorobiphenyl (BZ-121)	EPA 1668C_2010	1
2,3',4',5',6-Pentachlorobiphenyl (BZ-125)	EPA 1668C_2010	1
2,3,4,5-Tetrachlorobiphenyl (BZ-61)	EPA 1668C_2010	1
2,3,4',5-Tetrachlorobiphenyl (BZ-63)	EPA 1668C_2010	1
2,3',4,5'-Tetrachlorobiphenyl (BZ-68)	EPA 1668C_2010	1
2,3',4',5-Tetrachlorobiphenyl (BZ-70)	EPA 1668C_2010	1
2,3',4',5'-Tetrachlorobiphenyl (BZ-76)	EPA 1668C_2010	1
2,3',4,5-Tetrachlorobiphenyl (BZ-67)	EPA 1668C_2010	1
2,3,4,6-Tetrachlorobiphenyl (BZ-62)	EPA 1668C_2010	1
2,3,4',6-Tetrachlorobiphenyl (BZ-64)	EPA 1668C_2010	1
2,3',4,6-Tetrachlorobiphenyl (BZ-69)	EPA 1668C_2010	1
2,3',4',6-Tetrachlorobiphenyl (BZ-71)	EPA 1668C_2010	1
2,3,4-Trichlorobiphenyl (BZ-21)	EPA 1668C_2010	1
2,3,4'-Trichlorobiphenyl (BZ-22)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,3',4-Trichlorobiphenyl (BZ-25)	EPA 1668C_2010	1
2,3',4'-Trichlorobiphenyl (BZ-33)	EPA 1668C_2010	1
2,3',5,5'-Tetrachlorobiphenyl (BZ-72)	EPA 1668C_2010	1
2,3,5,6-Tetrachlorobiphenyl (BZ-65)	EPA 1668C_2010	1
2,3',5',6-Tetrachlorobiphenyl (BZ-73)	EPA 1668C_2010	1
2,3,5-Trichlorobiphenyl (BZ-23)	EPA 1668C_2010	1
2,3',5-Trichlorobiphenyl (BZ-26)	EPA 1668C_2010	1
2,3',5'-Trichlorobiphenyl (BZ-34)	EPA 1668C_2010	1
2,3,6-Trichlorobiphenyl (BZ-24)	EPA 1668C_2010	1
2,3',6-Trichlorobiphenyl (BZ-27)	EPA 1668C_2010	1
2,3-Dichlorobiphenyl (BZ-5)	EPA 1668C_2010	1
2,3'-Dichlorobiphenyl (BZ-6)	EPA 1668C_2010	1
2,4,4',5-Tetrachlorobiphenyl (BZ-74)	EPA 1668C_2010	1
2,4,4',6-Tetrachlorobiphenyl (BZ-75)	EPA 1668C_2010	1
2,4,4'-Trichlorobiphenyl (BZ-28)	EPA 1668C_2010	1
2,4,5-Trichlorobiphenyl (BZ-29)	EPA 1668C_2010	1
2,4',5-Trichlorobiphenyl (BZ-31)	EPA 1668C_2010	1
2,4,6-Trichlorobiphenyl (BZ-30)	EPA 1668C_2010	1
2,4',6-Trichlorobiphenyl (BZ-32)	EPA 1668C_2010	1
2,4-Dichlorobiphenyl (BZ-7)	EPA 1668C_2010	1
2,4'-Dichlorobiphenyl (BZ-8)	EPA 1668C_2010	1
2,5-Dichlorobiphenyl (BZ-9)	EPA 1668C_2010	1
2,6-Dichlorobiphenyl (BZ-10)	EPA 1668C_2010	1
2-Chlorobiphenyl (BZ-1)	EPA 1668C_2010	1
3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)	EPA 1668C_2010	1
3,3',4,4',5-Pentachlorobiphenyl (BZ-126)	EPA 1668C_2010	1
3,3',4,4'-Tetrachlorobiphenyl (BZ-77)	EPA 1668C_2010	1
3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)	EPA 1668C_2010	1
3,3',4,5-Tetrachlorobiphenyl (BZ-78)	EPA 1668C_2010	1
3,3',4,5'-Tetrachlorobiphenyl (BZ-79)	EPA 1668C_2010	1
3,3',4-Trichlorobiphenyl (BZ-35)	EPA 1668C_2010	1
3,3',5,5'-Tetrachlorobiphenyl (BZ-80)	EPA 1668C_2010	1
3,3',5-Trichlorobiphenyl (BZ-36)	EPA 1668C_2010	1
3,3'-Dichlorobiphenyl (BZ-11)	EPA 1668C_2010	1
3,4,4',5-Tetrachlorobiphenyl (BZ-81)	EPA 1668C_2010	1
3,4,4'-Trichlorobiphenyl (BZ-37)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
3,4,5-Trichlorobiphenyl (BZ-38)	EPA 1668C_2010	1
3,4',5-Trichlorobiphenyl (BZ-39)	EPA 1668C_2010	1
3,4-Dichlorobiphenyl (BZ-12)	EPA 1668C_2010	1
3,4'-Dichlorobiphenyl (BZ-13)	EPA 1668C_2010	1
3,5-Dichlorobiphenyl (BZ-14)	EPA 1668C_2010	1
3-Chlorobiphenyl (BZ-2)	EPA 1668C_2010	1
4,4'-Dichlorobiphenyl (BZ-15)	EPA 1668C_2010	1
4-Chlorobiphenyl (BZ-3)	EPA 1668C_2010	1
Coelution - Dichlorobiphenyls (BZ-12-+13)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-171 + BZ-173)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-180 + BZ-193)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-183 + BZ-185)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-128 + BZ-166)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-129 + BZ-138 + BZ-160 + BZ-163)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-129 + BZ138 + BZ-163)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-129 + BZ-160)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-134 + BZ-143)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-135 + BZ-151 +	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-135 + BZ-151)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-139 + BZ-140)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-147 + BZ-149)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-153 + BZ-168)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-156 + BZ-157)	EPA 1668C_2010	1
Coelution - Octachlorobiphenyls (BZ-197 + BZ-200)	EPA 1668C_2010	1
Coelution - Octachlorobiphenyls (BZ-198 + BZ-199)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-107 + BZ-124)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-108 + BZ-124)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-110 + BZ-115)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-83 + BZ-99)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-85 + BZ-116 +	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-85 + BZ-116)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-86 + BZ-87 +	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-86 + BZ-87 +	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-97 + BZ-109 + BZ-119 + BZ-125)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-88 + BZ-91)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Coelution - Pentachlorobiphenyls (BZ-90 + BZ-101 +	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-93 + BZ-100)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-98 + BZ-102)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-40 + BZ-41 +	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-40 + BZ-41)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-40 + BZ-71)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-43 + BZ-73)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-44 + BZ-47 +	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-45 + BZ-51)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-49 + BZ-69)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-50 + BZ-53)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-59 + BZ-62 +	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-61 + BZ-70 +	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-70 + BZ-74 +	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-18 + BZ-30)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-20 + BZ-28)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-21 + BZ-33)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-26 + BZ-29)	EPA 1668C_2010	1
Decachlorobiphenyl (BZ-209)	EPA 1668C_2010	1
PCBs, as congeners	EPA 1668C_2010	1
Total Dichlorobiphenyls	EPA 1668C_2010	1
Total Heptachlorobiphenyls	EPA 1668C_2010	1
Total Hexachlorobiphenyls	EPA 1668C_2010	1
Total Monochlorobiphenyls	EPA 1668C_2010	1
Total Nonachlorobiphenyls	EPA 1668C_2010	1
Total Octachlorobiphenyls	EPA 1668C_2010	1
Total Pentachlorobiphenyls	EPA 1668C_2010	1
Total Tetrachlorobiphenyls	EPA 1668C_2010	1
Total Trichlorobiphenyls	EPA 1668C_2010	1
Bisphenol A	EPA 1694_2007	1
6:2 Fluorotelomersulfonate (6:2FTS)	SOP WS-LC-0025	3
8:2 Fluorotelomersulfonate (8:2FTS)	SOP WS-LC-0025	3
N-Ethylperfluorooctane sufonamido acetic acid	SOP WS-LC-0025	3
N-Ethylperfluorooctane sulfonamide (EtFOSA)	SOP WS-LC-0025	3
N-Methylperfluorooctane sulfonamide (MeFOSA)	SOP WS-LC-0025	3
N-Methylperfluorooctane sulfonamido acetic acid	SOP WS-LC-0025	3

Matrix/Analyte	Method	Notes
Perfluorobutane sulfonate (PFBS)	SOP WS-LC-0025	3
Perfluorobutyric acid (PFBA)	SOP WS-LC-0025	3
Perfluorodecane sulfonate (PFDS)	SOP WS-LC-0025	3
Perfluorodecanoic acid (PFDA)	SOP WS-LC-0025	3
Perfluorododecanoic acid (PFDOA)	SOP WS-LC-0025	3
Perfluoroheptane sulfonic Acid (PFHpS)	SOP WS-LC-0025	3
Perfluoroheptanoic acid (PFHPA)	SOP WS-LC-0025	3
Perfluorohexane sulfonate (PFHXS)	SOP WS-LC-0025	3
Perfluorohexanoic acid (PFHXA)	SOP WS-LC-0025	3
Perfluorononanoic acid (PFNA)	SOP WS-LC-0025	3
Perfluorooctane sulfonamide (PFOSA)	SOP WS-LC-0025	3
Perfluorooctane sulfonate (PFOS)	SOP WS-LC-0025	3
Perfluorooctanoic acid (PFOA)	SOP WS-LC-0025	3
Perfluoropentanoic acid (PFPEA)	SOP WS-LC-0025	3
Perfluorotetradecanoic acid (PFTDA)	SOP WS-LC-0025	3
Perfluorotridecanoic acid (PFTRIA)	SOP WS-LC-0025	3
Perfluoroundecanoic acid (PFUDA)	SOP WS-LC-0025	3
Solid and Chemical Materials		
Perchlorate	EPA 6850-07	1
Chromium, Hexavalent	EPA 7196A_1_1992	1
Aluminum	EPA 6010C_(2/07)	1
Antimony	EPA 6010C_(2/07)	1
Arsenic	EPA 6010C_(2/07)	1
Barium	EPA 6010C_(2/07)	1,4
Beryllium	EPA 6010C_(2/07)	1
Cadmium	EPA 6010C_(2/07)	1
Calcium	EPA 6010C_(2/07)	1
Chromium	EPA 6010C_(2/07)	1
Cobalt	EPA 6010C_(2/07)	1
Copper	EPA 6010C_(2/07)	1
Iron	EPA 6010C_(2/07)	1
Lead	EPA 6010C_(2/07)	1
Magnesium	EPA 6010C_(2/07)	1
Manganese	EPA 6010C_(2/07)	1
Molybdenum	EPA 6010C_(2/07)	1
Nickel	EPA 6010C_(2/07)	1

Matrix/Analyte	Method	Notes
Potassium	EPA 6010C_(2/07)	1
Selenium	EPA 6010C_(2/07)	1
Silver	EPA 6010C_(2/07)	1
Sodium	EPA 6010C_(2/07)	1
Thallium	EPA 6010C_(2/07)	1
Vanadium	EPA 6010C_(2/07)	1
Zinc	EPA 6010C_(2/07)	1
Antimony	EPA 6020A_(2/07)	1
Arsenic	EPA 6020A_(2/07)	1
Barium	EPA 6020A_(2/07)	1
Beryllium	EPA 6020A_(2/07)	1
Cadmium	EPA 6020A_(2/07)	1
Chromium	EPA 6020A_(2/07)	1
Cobalt	EPA 6020A_(2/07)	1
Copper	EPA 6020A_(2/07)	1
Iron	EPA 6020A_(2/07)	1
Lead	EPA 6020A_(2/07)	1
Molybdenum	EPA 6020A_(2/07)	1
Nickel	EPA 6020A_(2/07)	1
Selenium	EPA 6020A_(2/07)	1
Silver	EPA 6020A_(2/07)	1
Thallium	EPA 6020A_(2/07)	1
Vanadium	EPA 6020A_(2/07)	1
Zinc	EPA 6020A_(2/07)	1
Mercury	EPA 7470A_1_1994	1
Mercury	EPA 7471B_(1/98)	1
4,4'-DDD	EPA 8081B_(2/07)	1
4,4'-DDE	EPA 8081B_(2/07)	1
4,4'-DDT	EPA 8081B_(2/07)	1
Aldrin	EPA 8081B_(2/07)	1
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B_(2/07)	1
alpha-Chlordane	EPA 8081B_(2/07)	1
Chlordane (tech.)	EPA 8081B_(2/07)	1
Chlorobenzilate	EPA 8081B_(2/07)	1
delta-BHC	EPA 8081B_(2/07)	1
Diallate	EPA 8081B_(2/07)	1

Matrix/Analyte	Method	Notes
Dieldrin	EPA 8081B_(2/07)	1
Endosulfan I	EPA 8081B_(2/07)	1
Endosulfan II	EPA 8081B_(2/07)	1
Endosulfan sulfate	EPA 8081B_(2/07)	1
Endrin	EPA 8081B_(2/07)	1
Endrin aldehyde	EPA 8081B_(2/07)	1
Endrin ketone	EPA 8081B_(2/07)	1
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 8081B_(2/07)	1
gamma-Chlordane	EPA 8081B_(2/07)	1
Heptachlor	EPA 8081B_(2/07)	1
Heptachlor epoxide	EPA 8081B_(2/07)	1
Isodrin	EPA 8081B_(2/07)	1
Methoxychlor	EPA 8081B_(2/07)	1
Toxaphene (Chlorinated camphene)	EPA 8081B_(2/07)	1
Aroclor-1016 (PCB-1016)	EPA 8082A_(2/07)	1
Aroclor-1221 (PCB-1221)	EPA 8082A_(2/07)	1
Aroclor-1232 (PCB-1232)	EPA 8082A_(2/07)	1
Aroclor-1242 (PCB-1242)	EPA 8082A_(2/07)	1
Aroclor-1248 (PCB-1248)	EPA 8082A_(2/07)	1
Aroclor-1254 (PCB-1254)	EPA 8082A_(2/07)	1
Aroclor-1260 (PCB-1260)	EPA 8082A_(2/07)	1
1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330B_(10/06)	1
1,3,5-Trinitroso-1,3,5-hexahydrotriazine (TNX)	EPA 8330B_(10/06)	1
1,3-Dinitrobenzene (1,3-DNB)	EPA 8330B_(10/06)	1
2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330B_(10/06)	1
2,4-Dinitrotoluene (2,4-DNT)	EPA 8330B_(10/06)	1
2,6-Dinitrotoluene (2,6-DNT)	EPA 8330B_(10/06)	1
2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330B_(10/06)	1
2-Nitrotoluene	EPA 8330B_(10/06)	1
3,5-Dinitroaniline	EPA 8330B_(10/06)	1
3-Nitrotoluene	EPA 8330B_(10/06)	1
4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330B_(10/06)	1
4-Nitrotoluene	EPA 8330B_(10/06)	1
Hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine (DNX)	EPA 8330B_(10/06)	1,2
Hexahydro-1-nitroso-3,5-dinitro-1,3,5-triazine (MNX)	EPA 8330B_(10/06)	1,2
Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330B_(10/06)	1

Matrix/Analyte	Method	Notes
Nitrobenzene	EPA 8330B_(10/06)	1
Nitroglycerin	EPA 8330B_(10/06)	1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330B_(10/06)	1
Pentaerythritoltetranitrate (PETN)	EPA 8330B_(10/06)	1
Picric Acid	EPA 8330B_(10/06)	1
RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330B_(10/06)	1
Tetryl (methyl-2,4,6-trinitrophenylnitramine)	EPA 8330B_(10/06)	1
Nitrocellulose	SOP WS-WC-0050	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 1613_1994	1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 1613_1994	1
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7	EPA 1613_1994	1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4	EPA 1613_1994	1
1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8	EPA 1613_1994	1
1,2,3,4,7,8-Hxcdd	EPA 1613_1994	1
1,2,3,4,7,8-Hxcdf	EPA 1613_1994	1
1,2,3,6,7,8-Hxcdd	EPA 1613_1994	1
1,2,3,6,7,8-Hxcdf	EPA 1613_1994	1
1,2,3,7,8,9-Hxcdd	EPA 1613_1994	1
1,2,3,7,8,9-Hxcdf	EPA 1613_1994	1
1,2,3,7,8-Pecdd	EPA 1613_1994	1
1,2,3,7,8-Pecdf	EPA 1613_1994	1
2,3,4,6,7,8-Hxcdf	EPA 1613_1994	1
2,3,4,7,8-Pecdf	EPA 1613_1994	1
2,3,7,8-TCDD	EPA 1613_1994	1
2,3,7,8-TCDF	EPA 1613_1994	1
Hpcdd, total	EPA 1613_1994	1
Hpcdf, total	EPA 1613_1994	1
Hxcdd, total	EPA 1613_1994	1
Hxcdf, total	EPA 1613_1994	1
Pecdd, total	EPA 1613_1994	1
Pecdf, total	EPA 1613_1994	1
TCDD, total	EPA 1613_1994	1
TCDF, total	EPA 1613_1994	1
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)	EPA 1668C_2010	1
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)	EPA 1668C_2010	1
2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)	EPA 1668C_2010	1
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)	EPA 1668C_2010	1
2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)	EPA 1668C_2010	1
2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208	EPA 1668C_2010	1
2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)	EPA 1668C_2010	1
2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)	EPA 1668C_2010	1
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)	EPA 1668C_2010	1
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)	EPA 1668C_2010	1
2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)	EPA 1668C_2010	1
2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)	EPA 1668C_2010	1
2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)	EPA 1668C_2010	1
2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)	EPA 1668C_2010	1
2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)	EPA 1668C_2010	1
2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)	EPA 1668C_2010	1
2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)	EPA 1668C_2010	1
2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)	EPA 1668C_2010	1
2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)	EPA 1668C_2010	1
2,2',3,3',4-Pentachlorobiphenyl (BZ-82)	EPA 1668C_2010	1
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)	EPA 1668C_2010	1
2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)	EPA 1668C_2010	1
2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)	EPA 1668C_2010	1
2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)	EPA 1668C_2010	1
2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)	EPA 1668C_2010	1
2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)	EPA 1668C_2010	1
2,2',3,3',5-Pentachlorobiphenyl (BZ-83)	EPA 1668C_2010	1
2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)	EPA 1668C_2010	1
2,2',3,3',6-Pentachlorobiphenyl (BZ-84)	EPA 1668C_2010	1
2,2',3,3'-Tetrachlorobiphenyl (BZ-40)	EPA 1668C_2010	1
2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)	EPA 1668C_2010	1
2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)	EPA 1668C_2010	1
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)	EPA 1668C_2010	1
2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)	EPA 1668C_2010	1
2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)	EPA 1668C_2010	1
2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)	EPA 1668C_2010	1
2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)	EPA 1668C_2010	1
2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)	EPA 1668C_2010	1
2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)	EPA 1668C_2010	1
2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)	EPA 1668C_2010	1
2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)	EPA 1668C_2010	1
2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)	EPA 1668C_2010	1
2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)	EPA 1668C_2010	1
2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)	EPA 1668C_2010	1
2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)	EPA 1668C_2010	1
2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)	EPA 1668C_2010	1
2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)	EPA 1668C_2010	1
2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)	EPA 1668C_2010	1
2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)	EPA 1668C_2010	1
2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)	EPA 1668C_2010	1
2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)	EPA 1668C_2010	1
2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)	EPA 1668C_2010	1
2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)	EPA 1668C_2010	1
2,2',3,4,5-Pentachlorobiphenyl (BZ-86)	EPA 1668C_2010	1
2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)	EPA 1668C_2010	1
2,2',3,4',5-Pentachlorobiphenyl (BZ-90)	EPA 1668C_2010	1
2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)	EPA 1668C_2010	1
2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)	EPA 1668C_2010	1
2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)	EPA 1668C_2010	1
2,2',3,4,6-Pentachlorobiphenyl (BZ-88)	EPA 1668C_2010	1
2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)	EPA 1668C_2010	1
2,2',3,4',6-Pentachlorobiphenyl (BZ-91)	EPA 1668C_2010	1
2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)	EPA 1668C_2010	1
2,2',3,4-Tetrachlorobiphenyl (BZ-41)	EPA 1668C_2010	1
2,2',3,4'-Tetrachlorobiphenyl (BZ-42)	EPA 1668C_2010	1
2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)	EPA 1668C_2010	1
2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)	EPA 1668C_2010	1
2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)	EPA 1668C_2010	1
2,2',3,5,6-Pentachlorobiphenyl (BZ-93)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)	EPA 1668C_2010	1
2,2',3,5',6-Pentachlorobiphenyl (BZ-95)	EPA 1668C_2010	1
2,2',3,5-Tetrachlorobiphenyl (BZ-43)	EPA 1668C_2010	1
2,2',3,5'-Tetrachlorobiphenyl (BZ-44)	EPA 1668C_2010	1
2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)	EPA 1668C_2010	1
2,2',3,6-Tetrachlorobiphenyl (BZ-45)	EPA 1668C_2010	1
2,2',3,6'-Tetrachlorobiphenyl (BZ-46)	EPA 1668C_2010	1
2,2',3-Trichlorobiphenyl (BZ-16)	EPA 1668C_2010	1
2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)	EPA 1668C_2010	1
2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)	EPA 1668C_2010	1
2,2',4,4',5-Pentachlorobiphenyl (BZ-99)	EPA 1668C_2010	1
2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)	EPA 1668C_2010	1
2,2',4,4',6-Pentachlorobiphenyl (BZ-100)	EPA 1668C_2010	1
2,2',4,4'-Tetrachlorobiphenyl (BZ-47)	EPA 1668C_2010	1
2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)	EPA 1668C_2010	1
2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)	EPA 1668C_2010	1
2,2',4,5',6-Pentachlorobiphenyl (BZ-103)	EPA 1668C_2010	1
2,2',4,5-Tetrachlorobiphenyl (BZ-48)	EPA 1668C_2010	1
2,2',4,5'-Tetrachlorobiphenyl (BZ-49)	EPA 1668C_2010	1
2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)	EPA 1668C_2010	1
2,2',4,6-Tetrachlorobiphenyl (BZ-50)	EPA 1668C_2010	1
2,2',4,6'-Tetrachlorobiphenyl (BZ-51)	EPA 1668C_2010	1
2,2',4-Trichlorobiphenyl (BZ-17)	EPA 1668C_2010	1
2,2',5,5'-Tetrachlorobiphenyl (BZ-52)	EPA 1668C_2010	1
2,2',5,6'-Tetrachlorobiphenyl (BZ-53)	EPA 1668C_2010	1
2,2',5-Trichlorobiphenyl (BZ-18)	EPA 1668C_2010	1
2,2',6,6'-Tetrachlorobiphenyl (BZ-54)	EPA 1668C_2010	1
2,2',6-Trichlorobiphenyl (BZ-19)	EPA 1668C_2010	1
2,2'-Dichlorobiphenyl (BZ-4)	EPA 1668C_2010	1
2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)	EPA 1668C_2010	1
2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)	EPA 1668C_2010	1
2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)	EPA 1668C_2010	1
2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)	EPA 1668C_2010	1
2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)	EPA 1668C_2010	1
2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)	EPA 1668C_2010	1
2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)	EPA 1668C_2010	1
2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)	EPA 1668C_2010	1
2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)	EPA 1668C_2010	1
2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)	EPA 1668C_2010	1
2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)	EPA 1668C_2010	1
2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)	EPA 1668C_2010	1
2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)	EPA 1668C_2010	1
2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)	EPA 1668C_2010	1
2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)	EPA 1668C_2010	1
2,3,3',4,5-Pentachlorobiphenyl (BZ-106)	EPA 1668C_2010	1
2,3,3',4',5-Pentachlorobiphenyl (BZ-107)	EPA 1668C_2010	1
2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)	EPA 1668C_2010	1
2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)	EPA 1668C_2010	1
2,3,3',4,6-Pentachlorobiphenyl (BZ-109)	EPA 1668C_2010	1
2,3,3',4',6-Pentachlorobiphenyl (BZ-110)	EPA 1668C_2010	1
2,3,3',4-Tetrachlorobiphenyl (BZ-55)	EPA 1668C_2010	1
2,3,3',4'-Tetrachlorobiphenyl (BZ-56)	EPA 1668C_2010	1
2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)	EPA 1668C_2010	1
2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)	EPA 1668C_2010	1
2,3,3',5,6-Pentachlorobiphenyl (BZ-112)	EPA 1668C_2010	1
2,3,3',5',6-Pentachlorobiphenyl (BZ-113)	EPA 1668C_2010	1
2,3,3',5-Tetrachlorobiphenyl (BZ-57)	EPA 1668C_2010	1
2,3,3',5'-Tetrachlorobiphenyl (BZ-58)	EPA 1668C_2010	1
2,3,3',6-Tetrachlorobiphenyl (BZ-59)	EPA 1668C_2010	1
2,3,3'-Trichlorobiphenyl (BZ-20)	EPA 1668C_2010	1
2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)	EPA 1668C_2010	1
2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)	EPA 1668C_2010	1
2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)	EPA 1668C_2010	1
2,3,4,4',5-Pentachlorobiphenyl (BZ-114)	EPA 1668C_2010	1
2,3',4,4',5-Pentachlorobiphenyl (BZ-118)	EPA 1668C_2010	1
2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)	EPA 1668C_2010	1
2,3,4,4',6-Pentachlorobiphenyl (BZ-115)	EPA 1668C_2010	1
2,3',4,4',6-Pentachlorobiphenyl (BZ-119)	EPA 1668C_2010	1
2,3,4,4'-Tetrachlorobiphenyl (BZ-60)	EPA 1668C_2010	1
2,3',4,4'-Tetrachlorobiphenyl (BZ-66)	EPA 1668C_2010	1
2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)	EPA 1668C_2010	1
2,3,4,5,6-Pentachlorobiphenyl (BZ-116)	EPA 1668C_2010	1
2,3,4',5,6-Pentachlorobiphenyl (BZ-117)	EPA 1668C_2010	1
2,3',4,5',6-Pentachlorobiphenyl (BZ-121)	EPA 1668C_2010	1
2,3',4',5',6-Pentachlorobiphenyl (BZ-125)	EPA 1668C_2010	1
2,3,4,5-Tetrachlorobiphenyl (BZ-61)	EPA 1668C_2010	1
2,3,4',5-Tetrachlorobiphenyl (BZ-63)	EPA 1668C_2010	1
2,3',4,5'-Tetrachlorobiphenyl (BZ-68)	EPA 1668C_2010	1
2,3',4',5-Tetrachlorobiphenyl (BZ-70)	EPA 1668C_2010	1
2,3',4',5'-Tetrachlorobiphenyl (BZ-76)	EPA 1668C_2010	1
2,3',4,5-Tetrachlorobiphenyl (BZ-67)	EPA 1668C_2010	1
2,3,4,6-Tetrachlorobiphenyl (BZ-62)	EPA 1668C_2010	1
2,3,4',6-Tetrachlorobiphenyl (BZ-64)	EPA 1668C_2010	1
2,3',4,6-Tetrachlorobiphenyl (BZ-69)	EPA 1668C_2010	1
2,3',4',6-Tetrachlorobiphenyl (BZ-71)	EPA 1668C_2010	1
2,3,4-Trichlorobiphenyl (BZ-21)	EPA 1668C_2010	1
2,3,4'-Trichlorobiphenyl (BZ-22)	EPA 1668C_2010	1
2,3',4-Trichlorobiphenyl (BZ-25)	EPA 1668C_2010	1
2,3',4'-Trichlorobiphenyl (BZ-33)	EPA 1668C_2010	1
2,3',5,5'-Tetrachlorobiphenyl (BZ-72)	EPA 1668C_2010	1
2,3,5,6-Tetrachlorobiphenyl (BZ-65)	EPA 1668C_2010	1
2,3',5',6-Tetrachlorobiphenyl (BZ-73)	EPA 1668C_2010	1
2,3,5-Trichlorobiphenyl (BZ-23)	EPA 1668C_2010	1
2,3',5-Trichlorobiphenyl (BZ-26)	EPA 1668C_2010	1
2,3',5'-Trichlorobiphenyl (BZ-34)	EPA 1668C_2010	1
2,3,6-Trichlorobiphenyl (BZ-24)	EPA 1668C_2010	1
2,3',6-Trichlorobiphenyl (BZ-27)	EPA 1668C_2010	1
2,3-Dichlorobiphenyl (BZ-5)	EPA 1668C_2010	1
2,3'-Dichlorobiphenyl (BZ-6)	EPA 1668C_2010	1
2,4,4',5-Tetrachlorobiphenyl (BZ-74)	EPA 1668C_2010	1
2,4,4',6-Tetrachlorobiphenyl (BZ-75)	EPA 1668C_2010	1
2,4,4'-Trichlorobiphenyl (BZ-28)	EPA 1668C_2010	1
2,4,5-Trichlorobiphenyl (BZ-29)	EPA 1668C_2010	1
2,4',5-Trichlorobiphenyl (BZ-31)	EPA 1668C_2010	1
2,4,6-Trichlorobiphenyl (BZ-30)	EPA 1668C_2010	1
2,4',6-Trichlorobiphenyl (BZ-32)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
2,4-Dichlorobiphenyl (BZ-7)	EPA 1668C_2010	1
2,4'-Dichlorobiphenyl (BZ-8)	EPA 1668C_2010	1
2,5-Dichlorobiphenyl (BZ-9)	EPA 1668C_2010	1
2,6-Dichlorobiphenyl (BZ-10)	EPA 1668C_2010	1
2-Chlorobiphenyl (BZ-1)	EPA 1668C_2010	1
3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)	EPA 1668C_2010	1
3,3',4,4',5-Pentachlorobiphenyl (BZ-126)	EPA 1668C_2010	1
3,3',4,4'-Tetrachlorobiphenyl (BZ-77)	EPA 1668C_2010	1
3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)	EPA 1668C_2010	1
3,3',4,5-Tetrachlorobiphenyl (BZ-78)	EPA 1668C_2010	1
3,3',4,5'-Tetrachlorobiphenyl (BZ-79)	EPA 1668C_2010	1
3,3',4-Trichlorobiphenyl (BZ-35)	EPA 1668C_2010	1
3,3',5,5'-Tetrachlorobiphenyl (BZ-80)	EPA 1668C_2010	1
3,3',5-Trichlorobiphenyl (BZ-36)	EPA 1668C_2010	1
3,3'-Dichlorobiphenyl (BZ-11)	EPA 1668C_2010	1
3,4,4',5-Tetrachlorobiphenyl (BZ-81)	EPA 1668C_2010	1
3,4,4'-Trichlorobiphenyl (BZ-37)	EPA 1668C_2010	1
3,4,5-Trichlorobiphenyl (BZ-38)	EPA 1668C_2010	1
3,4',5-Trichlorobiphenyl (BZ-39)	EPA 1668C_2010	1
3,4-Dichlorobiphenyl (BZ-12)	EPA 1668C_2010	1
3,4'-Dichlorobiphenyl (BZ-13)	EPA 1668C_2010	1
3,5-Dichlorobiphenyl (BZ-14)	EPA 1668C_2010	1
3-Chlorobiphenyl (BZ-2)	EPA 1668C_2010	1
4,4'-Dichlorobiphenyl (BZ-15)	EPA 1668C_2010	1
4-Chlorobiphenyl (BZ-3)	EPA 1668C_2010	1
Coelution - Dichlorobiphenyls (BZ-12-+13)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-171 + BZ-173)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-180 + BZ-193)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-183 + BZ-185)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-128 + BZ-166)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-129 + BZ-138 + BZ-160 + BZ-163)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-129 + BZ138 + BZ-163)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-129 + BZ-160)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-134 + BZ-143)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-135 + BZ-151 +	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-135 + BZ-151)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Coelution - Hexachlorobiphenyls (BZ-139 + BZ-140)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-147 + BZ-149)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-153 + BZ-168)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-156 + BZ-157)	EPA 1668C_2010	1
Coelution - Octachlorobiphenyls (BZ-197 + BZ-200)	EPA 1668C_2010	1
Coelution - Octachlorobiphenyls (BZ-198 + BZ-199)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-107 + BZ-124)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-108 + BZ-124)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-110 + BZ-115)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-83 + BZ-99)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-85 + BZ-116 +	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-85 + BZ-116)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-86 + BZ-87 +	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-86 + BZ-87 +	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-97 + BZ-109 + BZ-119 + BZ-125)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-88 + BZ-91)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-90 + BZ-101 +	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-93 + BZ-100)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-98 + BZ-102)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-40 + BZ-41 +	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-40 + BZ-41)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-40 + BZ-71)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-43 + BZ-73)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-44 + BZ-47 +	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-45 + BZ-51)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-49 + BZ-69)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-50 + BZ-53)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-59 + BZ-62 +	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-61 + BZ-70 +	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-70 + BZ-74 +	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-18 + BZ-30)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-20 + BZ-28)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-21 + BZ-33)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-26 + BZ-29)	EPA 1668C_2010	1
Decachlorobiphenyl (BZ-209)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
PCBs, as congeners	EPA 1668C_2010	1
Total Dichlorobiphenyls	EPA 1668C_2010	1
Total Heptachlorobiphenyls	EPA 1668C_2010	1
Total Hexachlorobiphenyls	EPA 1668C_2010	1
Total Monochlorobiphenyls	EPA 1668C_2010	1
Total Nonachlorobiphenyls	EPA 1668C_2010	1
Total Octachlorobiphenyls	EPA 1668C_2010	1
Total Pentachlorobiphenyls	EPA 1668C_2010	1
Total Tetrachlorobiphenyls	EPA 1668C_2010	1
Total Trichlorobiphenyls	EPA 1668C_2010	1
Bisphenol A	EPA 1694_2007	1
1,1,1,2-Tetrachloroethane	EPA 8260C_(8/06)	1
1,1,1-Trichloroethane	EPA 8260C_(8/06)	1
1,1,2,2-Tetrachloroethane	EPA 8260C_(8/06)	1
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260C_(8/06)	1
1,1,2-Trichloroethane	EPA 8260C_(8/06)	1
1,1-Dichloroethane	EPA 8260C_(8/06)	1
1,1-Dichloroethylene	EPA 8260C_(8/06)	1
1,1-Dichloropropene	EPA 8260C_(8/06)	1
1,2,3-Trichlorobenzene	EPA 8260C_(8/06)	1
1,2,3-Trichloropropane	EPA 8260C_(8/06)	1
1,2,4-Trichlorobenzene	EPA 8260C_(8/06)	1
1,2,4-Trimethylbenzene	EPA 8260C_(8/06)	1
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260C_(8/06)	1
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260C_(8/06)	1
1,2-Dichlorobenzene	EPA 8260C_(8/06)	1
1,2-Dichloroethane (Ethylene dichloride)	EPA 8260C_(8/06)	1
1,2-Dichloropropane	EPA 8260C_(8/06)	1
1,3,5-Trimethylbenzene	EPA 8260C_(8/06)	1
1,3-Dichlorobenzene	EPA 8260C_(8/06)	1
1,3-Dichloropropane	EPA 8260C_(8/06)	1
1,4-Dichlorobenzene	EPA 8260C_(8/06)	1
1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260C_(8/06)	1
1-Chlorohexane	EPA 8260C_(8/06)	1
2,2-Dichloropropane	EPA 8260C_(8/06)	1
2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260C_(8/06)	1

Matrix/Analyte	Method	Notes
2-Chloroethyl vinyl ether	EPA 8260C_(8/06)	1
2-Chlorotoluene	EPA 8260C_(8/06)	1
2-Hexanone	EPA 8260C_(8/06)	1
4-Chlorotoluene	EPA 8260C_(8/06)	1
4-Isopropyltoluene (p-Cymene)	EPA 8260C_(8/06)	1
4-Methyl-2-pentanone (MIBK)	EPA 8260C_(8/06)	1
Acetone	EPA 8260C_(8/06)	1
Acrolein (Propenal)	EPA 8260C_(8/06)	1
Acrylonitrile	EPA 8260C_(8/06)	1
Allyl chloride (3-Chloropropene)	EPA 8260C_(8/06)	1
Benzene	EPA 8260C_(8/06)	1
Bromobenzene	EPA 8260C_(8/06)	1
Bromochloromethane	EPA 8260C_(8/06)	1
Bromodichloromethane	EPA 8260C_(8/06)	1
Bromoform	EPA 8260C_(8/06)	1
Carbon disulfide	EPA 8260C_(8/06)	1
Carbon tetrachloride	EPA 8260C_(8/06)	1
Chlorobenzene	EPA 8260C_(8/06)	1
Chlorodibromomethane	EPA 8260C_(8/06)	1
Chloroethane (Ethyl chloride)	EPA 8260C_(8/06)	1
Chloroform	EPA 8260C_(8/06)	1
Chloroprene (2-Chloro-1,3-butadiene)	EPA 8260C_(8/06)	1
cis & trans-1,2-Dichloroethene	EPA 8260C_(8/06)	1
cis-1,2-Dichloroethylene	EPA 8260C_(8/06)	1
cis-1,3-Dichloropropene	EPA 8260C_(8/06)	1
Dibromomethane	EPA 8260C_(8/06)	1
Dichlorodifluoromethane (Freon-12)	EPA 8260C_(8/06)	1
Ethyl methacrylate	EPA 8260C_(8/06)	1
Ethylbenzene	EPA 8260C_(8/06)	1
Hexachlorobutadiene	EPA 8260C_(8/06)	1
Iodomethane (Methyl iodide)	EPA 8260C_(8/06)	1
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260C_(8/06)	1
Isopropylbenzene	EPA 8260C_(8/06)	1
m+p-xylene	EPA 8260C_(8/06)	1
Methacrylonitrile	EPA 8260C_(8/06)	1
Methyl bromide (Bromomethane)	EPA 8260C_(8/06)	1

Matrix/Analyte	Method	Notes
Methyl chloride (Chloromethane)	EPA 8260C_(8/06)	1
Methyl tert-butyl ether (MTBE)	EPA 8260C_(8/06)	1
Methylene chloride (Dichloromethane)	EPA 8260C_(8/06)	1
Naphthalene	EPA 8260C_(8/06)	1
n-Butylbenzene	EPA 8260C_(8/06)	1
n-Hexane	EPA 8260C_(8/06)	1
n-Propylbenzene	EPA 8260C_(8/06)	1
o-Xylene	EPA 8260C_(8/06)	1
Propionitrile (Ethyl cyanide)	EPA 8260C_(8/06)	1
sec-Butylbenzene	EPA 8260C_(8/06)	1
Styrene	EPA 8260C_(8/06)	1
tert-amylmethylether (TAME)	EPA 8260C_(8/06)	1
tert-Butyl alcohol	EPA 8260C_(8/06)	1
tert-Butylbenzene	EPA 8260C_(8/06)	1
Tetrachloroethylene (Perchloroethylene)	EPA 8260C_(8/06)	1
Toluene	EPA 8260C_(8/06)	1
trans-1,2-Dichloroethylene	EPA 8260C_(8/06)	1
trans-1,3-Dichloropropylene	EPA 8260C_(8/06)	1
trans-1,4-Dichloro-2-butene	EPA 8260C_(8/06)	1
Trichloroethene (Trichloroethylene)	EPA 8260C_(8/06)	1
Trichlorofluoromethane (Freon 11)	EPA 8260C_(8/06)	1
Vinyl acetate	EPA 8260C_(8/06)	1
Vinyl chloride	EPA 8260C_(8/06)	1
Xylene (total)	EPA 8260C_(8/06)	1
1,2,4,5-Tetrachlorobenzene	EPA 8270D_(2/07)	1
1,2,4-Trichlorobenzene	EPA 8270D_(2/07)	1
1,2-Dichlorobenzene	EPA 8270D_(2/07)	1
1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270D_(2/07)	1
1,3-Dichlorobenzene	EPA 8270D_(2/07)	1
1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D_(2/07)	1
1,4-Dichlorobenzene	EPA 8270D_(2/07)	1
1,4-Dinitrobenzene	EPA 8270D_(2/07)	1
1,4-Naphthoquinone	EPA 8270D_(2/07)	1
1,4-Phenylenediamine	EPA 8270D_(2/07)	1
1-Chloronaphthalene	EPA 8270D_(2/07)	1
1-Methylnaphthalene	EPA 8270D_(2/07)	1

Matrix/Analyte	Method	Notes
1-Naphthylamine	EPA 8270D_(2/07)	1
2,3,4,6-Tetrachlorophenol	EPA 8270D_(2/07)	1
2,4,5-Trichlorophenol	EPA 8270D_(2/07)	1
2,4,6-Trichlorophenol	EPA 8270D_(2/07)	1
2,4-Dichlorophenol	EPA 8270D_(2/07)	1
2,4-Dimethylphenol	EPA 8270D_(2/07)	1
2,4-Dinitrophenol	EPA 8270D_(2/07)	1
2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D_(2/07)	1
2,6-Dichlorophenol	EPA 8270D_(2/07)	1
2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D_(2/07)	1
2-Acetylaminofluorene	EPA 8270D_(2/07)	1
2-Chloronaphthalene	EPA 8270D_(2/07)	1
2-Chlorophenol	EPA 8270D_(2/07)	1
2-Methylaniline (o-Toluidine)	EPA 8270D_(2/07)	1
2-Methylnaphthalene	EPA 8270D_(2/07)	1
2-Methylphenol (o-Cresol)	EPA 8270D_(2/07)	1
2-Naphthylamine	EPA 8270D_(2/07)	1
2-Nitroaniline	EPA 8270D_(2/07)	1
2-Nitrophenol	EPA 8270D_(2/07)	1
2-Picoline (2-Methylpyridine)	EPA 8270D_(2/07)	1
3,3'-Dichlorobenzidine	EPA 8270D_(2/07)	1
3,3'-Dimethylbenzidine	EPA 8270D_(2/07)	1
3-Methylcholanthrene	EPA 8270D_(2/07)	1
3-Methylphenol (m-Cresol)	EPA 8270D_(2/07)	1
3-Nitroaniline	EPA 8270D_(2/07)	1
4-Aminobiphenyl	EPA 8270D_(2/07)	1
4-Bromophenyl phenyl ether (BDE-3)	EPA 8270D_(2/07)	1
4-Chloro-3-methylphenol	EPA 8270D_(2/07)	1
4-Chloroaniline	EPA 8270D_(2/07)	1
4-Chlorophenyl phenylether	EPA 8270D_(2/07)	1
4-Dimethyl aminoazobenzene	EPA 8270D_(2/07)	1
4-Methylphenol (p-Cresol)	EPA 8270D_(2/07)	1
4-Nitroaniline	EPA 8270D_(2/07)	1
4-Nitrophenol	EPA 8270D_(2/07)	1
5-Nitro-o-toluidine	EPA 8270D_(2/07)	1
7,12-Dimethylbenz(a) anthracene	EPA 8270D_(2/07)	1

Matrix/Analyte	Method	Notes
a,a-Dimethylphenethylamine	EPA 8270D_(2/07)	1
Acenaphthene	EPA 8270D_(2/07)	1
Acenaphthylene	EPA 8270D_(2/07)	1
Acetophenone	EPA 8270D_(2/07)	1
Aniline	EPA 8270D_(2/07)	1
Anthracene	EPA 8270D_(2/07)	1
Aramite	EPA 8270D_(2/07)	1
Benzidine	EPA 8270D_(2/07)	1
Benzo(a)anthracene	EPA 8270D_(2/07)	1
Benzo(a)pyrene	EPA 8270D_(2/07)	1
Benzo(g,h,i)perylene	EPA 8270D_(2/07)	1
Benzo(k)fluoranthene	EPA 8270D_(2/07)	1
Benzo[b]fluoranthene	EPA 8270D_(2/07)	1
Benzoic acid	EPA 8270D_(2/07)	1
Benzyl alcohol	EPA 8270D_(2/07)	1
bis(2-Chloroethoxy)methane	EPA 8270D_(2/07)	1
bis(2-Chloroethyl) ether	EPA 8270D_(2/07)	1
bis(2-Chloroisopropyl) ether	EPA 8270D_(2/07)	1
Butyl benzyl phthalate	EPA 8270D_(2/07)	1
Carbazole	EPA 8270D_(2/07)	1
Chlorobenzilate	EPA 8270D_(2/07)	1
Chrysene	EPA 8270D_(2/07)	1
Di(2-ethylhexyl)phthalate	EPA 8270D_(2/07)	1
Diallate	EPA 8270D_(2/07)	1
Dibenz(a,h) anthracene	EPA 8270D_(2/07)	1
Dibenz(a,j) acridine	EPA 8270D_(2/07)	1
Dibenzofuran	EPA 8270D_(2/07)	1
Diethyl phthalate	EPA 8270D_(2/07)	1
Dimethoate	EPA 8270D_(2/07)	1
Dimethyl phthalate	EPA 8270D_(2/07)	1
Di-n-butyl phthalate	EPA 8270D_(2/07)	1
Di-n-octyl phthalate	EPA 8270D_(2/07)	1
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270D_(2/07)	1
Diphenylamine	EPA 8270D_(2/07)	1
Disulfoton	EPA 8270D_(2/07)	1
Ethyl methanesulfonate	EPA 8270D_(2/07)	1

Matrix/Analyte	Method	Notes
Famphur	EPA 8270D_(2/07)	1
Fluoranthene	EPA 8270D_(2/07)	1
Fluorene	EPA 8270D_(2/07)	1
Hexachlorobenzene	EPA 8270D_(2/07)	1
Hexachlorobutadiene	EPA 8270D_(2/07)	1
Hexachlorocyclopentadiene	EPA 8270D_(2/07)	1
Hexachloroethane	EPA 8270D_(2/07)	1
Hexachloropropene	EPA 8270D_(2/07)	1
Indeno(1,2,3-cd) pyrene	EPA 8270D_(2/07)	1
Isodrin	EPA 8270D_(2/07)	1
Isophorone	EPA 8270D_(2/07)	1
Isosafrole	EPA 8270D_(2/07)	1
Kepone	EPA 8270D_(2/07)	1
Methapyrilene	EPA 8270D_(2/07)	1
Methyl methanesulfonate	EPA 8270D_(2/07)	1
Methyl parathion (Parathion, methyl)	EPA 8270D_(2/07)	1
Naphthalene	EPA 8270D_(2/07)	1
Nitrobenzene	EPA 8270D_(2/07)	1
N-Nitrosodiethylamine	EPA 8270D_(2/07)	1
N-Nitrosodimethylamine	EPA 8270D_(2/07)	1
N-Nitroso-di-n-butylamine	EPA 8270D_(2/07)	1
N-Nitroso-di-n-propylamine	EPA 8270D_(2/07)	1
N-Nitrosopiperidine	EPA 8270D_(2/07)	1
N-Nitrosopyrrolidine	EPA 8270D_(2/07)	1
o,o,o-Triethyl phosphorothioate	EPA 8270D_(2/07)	1
Pentachlorobenzene	EPA 8270D_(2/07)	1
Pentachloronitrobenzene	EPA 8270D_(2/07)	1
Pentachlorophenol	EPA 8270D_(2/07)	1
Phenacetin	EPA 8270D_(2/07)	1
Phenanthrene	EPA 8270D_(2/07)	1
Phenol	EPA 8270D_(2/07)	1
Phorate	EPA 8270D_(2/07)	1
Pronamide (Kerb)	EPA 8270D_(2/07)	1
Pyrene	EPA 8270D_(2/07)	1
Pyridine	EPA 8270D_(2/07)	1
Safrole	EPA 8270D_(2/07)	1

Matrix/Analyte	Method	Notes
Thionazin (Zinophos)	EPA 8270D_(2/07)	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 8280B_(1/98)	1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 8280B_(1/98)	1
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7	EPA 8280B_(1/98)	1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4	EPA 8280B_(1/98)	1
1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8	EPA 8280B_(1/98)	1
1,2,3,4,7,8-Hxcdd	EPA 8280B_(1/98)	1
1,2,3,4,7,8-Hxcdf	EPA 8280B_(1/98)	1
1,2,3,6,7,8-Hxcdd	EPA 8280B_(1/98)	1
1,2,3,6,7,8-Hxcdf	EPA 8280B_(1/98)	1
1,2,3,7,8,9-Hxcdd	EPA 8280B_(1/98)	1
1,2,3,7,8,9-Hxcdf	EPA 8280B_(1/98)	1
1,2,3,7,8-Pecdd	EPA 8280B_(1/98)	1
1,2,3,7,8-Pecdf	EPA 8280B_(1/98)	1
2,3,4,6,7,8-Hxcdf	EPA 8280B_(1/98)	1
2,3,4,7,8-Pecdf	EPA 8280B_(1/98)	1
2,3,7,8-TCDD	EPA 8280B_(1/98)	1
2,3,7,8-TCDF	EPA 8280B_(1/98)	1
Hpcdd, total	EPA 8280B_(1/98)	1
Hpcdf, total	EPA 8280B_(1/98)	1
Hxcdd, total	EPA 8280B_(1/98)	1
Hxcdf, total	EPA 8280B_(1/98)	1
Pecdd, total	EPA 8280B_(1/98)	1
Pecdf, total	EPA 8280B_(1/98)	1
TCDD, total	EPA 8280B_(1/98)	1
TCDF, total	EPA 8280B_(1/98)	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 8290A_(1/98)	1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 8290A_(1/98)	1
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7	EPA 8290A_(1/98)	1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4	EPA 8290A_(1/98)	1
1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8	EPA 8290A_(1/98)	1
1,2,3,4,7,8-Hxcdd	EPA 8290A_(1/98)	1
1,2,3,4,7,8-Hxcdf	EPA 8290A_(1/98)	1
1,2,3,6,7,8-Hxcdd	EPA 8290A_(1/98)	1
1,2,3,6,7,8-Hxcdf	EPA 8290A_(1/98)	1
1,2,3,7,8,9-Hxcdd	EPA 8290A_(1/98)	1

Matrix/Analyte	Method	Notes
1,2,3,7,8,9-Hxcdf	EPA 8290A_(1/98)	1
1,2,3,7,8-Pecdd	EPA 8290A_(1/98)	1
1,2,3,7,8-Pecdf	EPA 8290A_(1/98)	1
2,3,4,6,7,8-Hxcdf	EPA 8290A_(1/98)	1
2,3,4,7,8-Pecdf	EPA 8290A_(1/98)	1
2,3,7,8-TCDD	EPA 8290A_(1/98)	1
2,3,7,8-TCDF	EPA 8290A_(1/98)	1
Hpcdd, total	EPA 8290A_(1/98)	1
Hpcdf, total	EPA 8290A_(1/98)	1
Hxcdd, total	EPA 8290A_(1/98)	1
Hxcdf, total	EPA 8290A_(1/98)	1
Pecdd, total	EPA 8290A_(1/98)	1
Pecdf, total	EPA 8290A_(1/98)	1
TCDD, total	EPA 8290A_(1/98)	1
TCDF, total	EPA 8290A_(1/98)	1
6:2 Fluorotelomersulfonate (6:2FTS)	SOP WS-LC-0025	3
8:2 Fluorotelomersulfonate (8:2FTS)	SOP WS-LC-0025	3
N-Ethylperfluorooctane sufonamido acetic acid	SOP WS-LC-0025	3
N-Ethylperfluorooctane sulfonamide (EtFOSA)	SOP WS-LC-0025	3
N-Methylperfluorooctane sulfonamide (MeFOSA)	SOP WS-LC-0025	3
N-Methylperfluorooctane sulfonamido acetic acid	SOP WS-LC-0025	3
Perfluorobutane sulfonate (PFBS)	SOP WS-LC-0025	3
Perfluorobutyric acid (PFBA)	SOP WS-LC-0025	3
Perfluorodecane sulfonate (PFDS)	SOP WS-LC-0025	3
Perfluorodecanoic acid (PFDA)	SOP WS-LC-0025	3
Perfluorododecanoic acid (PFDOA)	SOP WS-LC-0025	3
Perfluoroheptane sulfonic Acid (PFHpS)	SOP WS-LC-0025	3
Perfluoroheptanoic acid (PFHPA)	SOP WS-LC-0025	3
Perfluorohexane sulfonate (PFHXS)	SOP WS-LC-0025	3
Perfluorohexanoic acid (PFHXA)	SOP WS-LC-0025	3
Perfluorononanoic acid (PFNA)	SOP WS-LC-0025	3
Perfluorooctane sulfonamide (PFOSA)	SOP WS-LC-0025	3
Perfluorooctane sulfonate (PFOS)	SOP WS-LC-0025	3
Perfluorooctanoic acid (PFOA)	SOP WS-LC-0025	3
Perfluoropentanoic acid (PFPEA)	SOP WS-LC-0025	3
Perfluorotetradecanoic acid (PFTDA)	SOP WS-LC-0025	3

Matrix/Analyte	Method	Notes
Perfluorotridecanoic acid (PFTRIA)	SOP WS-LC-0025	3
Perfluoroundecanoic acid (PFUDA)	SOP WS-LC-0025	3

Accredited Parameter Note Detail

(1) Accreditation based in part on recognition of Oregon NELAP accreditation. (2) Limited to water. (3) Based on EPA 537. (4) Provisional accreditation pending submittal of acceptable Proficiency Testing (PT) results (WAC 173-50-110).

04/28/2017

Authentication Signature
Alan D. Rue, Lab Accreditation Unit Supervisor

Date

The State of Washington
Department of Ecology

TestAmerica Seattle-Tacoma
Tacoma, WA

has complied with provisions set forth in Chapter 173-50 WAC and is hereby recognized by the Department of Ecology as an ACCREDITED LABORATORY for the analytical parameters listed on the accompanying Scope of Accreditation. This certificate is effective February 18, 2017 and shall expire February 17, 2018.

Witnessed under my hand on February 13, 2017

Alan D. Rue
Lab Accreditation Unit Supervisor

Laboratory ID
C553

WASHINGTON STATE DEPARTMENT OF ECOLOGY

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

SCOPE OF ACCREDITATION

TestAmerica Seattle-Tacoma

Tacoma, WA

is accredited for the analytes listed below using the methods indicated. Full accreditation is granted unless stated otherwise in a note. EPA is the U.S. Environmental Protection Agency. SM is "Standard Methods for the Examination of Water and Wastewater." ASTM is the American Society for Testing and Materials. USGS is the U.S. Geological Survey. AOAC is the Association of Official Analytical Chemists. Other references are described in notes.

Matrix/Analyte	Method	Notes
Drinking Water		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 504.1_1.1_1995	7
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 504.1_1.1_1995	7
Non-Potable Water		
Specific Conductance	EPA 120.1_1982	7
n-Hexane Extractable Material (O&G)	EPA 1664A_1_1999	7
Turbidity	EPA 180.1_2_1993	7
Bromide	EPA 300.0_2.1_1993	7
Chloride	EPA 300.0_2.1_1993	7
Fluoride	EPA 300.0_2.1_1993	7
Nitrate	EPA 300.0_2.1_1993	7
Nitrate + Nitrite	EPA 300.0_2.1_1993	7
Nitrite	EPA 300.0_2.1_1993	7
Sulfate	EPA 300.0_2.1_1993	7
Cyanide, Total	EPA 335.4_1_1993	7
Ammonia	EPA 350.1_2_1993	7
Nitrate	EPA 353.2_2_1993	7
Nitrate + Nitrite	EPA 353.2_2_1993	7
Nitrite	EPA 353.2_2_1993	7
Orthophosphate	EPA 365.1_2_1993	7
Phosphorus, Total	EPA 365.1_2_1993	7
Turbidity	SM 2130 B-01	7
Alkalinity	SM 2320 B-97	7

Matrix/Analyte	Method	Notes
Carbonate/Bicarbonate	SM 2320 B-97	
Hardness (calc.)	SM 2340 B-97	7
Hardness, Total (as CaCO3)	SM 2340 C-97	7
Specific Conductance	SM 2510 B-97	7
Salinity	SM 2520 B-93	7
Solids, Total	SM 2540 B-97	7
Solids, Total Dissolved	SM 2540 C-97	7
Solids, Total Suspended	SM 2540 D-97	7
Solids, Settleable	SM 2540 F-97	7,10
Chromium, Hexavalent	SM 3500-Cr B-09	7
Cyanide, Total	SM 4500-CN¯ E-99	7
Cyanide, Weak Acid Dissociable	SM 4500-CN¯ I-97	7
pH	SM 4500-H+ B-00	7
Ammonia	SM 4500-NH3 G-97	7
Biochemical Oxygen Demand (BOD)	SM 5210 B-01	7
Chemical Oxygen Demand (COD)	SM 5220 C-97	7
Chemical Oxygen Demand (COD)	SM 5220 D-97	7
Total Organic Carbon	SM 5310 B-00	7
Aluminum	EPA 200.7_4.4_1994	7
Antimony	EPA 200.7_4.4_1994	7
Arsenic	EPA 200.7_4.4_1994	7
Barium	EPA 200.7_4.4_1994	7
Beryllium	EPA 200.7_4.4_1994	7
Boron	EPA 200.7_4.4_1994	7
Cadmium	EPA 200.7_4.4_1994	7
Calcium	EPA 200.7_4.4_1994	7
Chromium	EPA 200.7_4.4_1994	7
Cobalt	EPA 200.7_4.4_1994	7
Copper	EPA 200.7_4.4_1994	7
Hardness, Total (as CaCO3)	EPA 200.7_4.4_1994	7
Iron	EPA 200.7_4.4_1994	7,10
Lead	EPA 200.7_4.4_1994	7
Magnesium	EPA 200.7_4.4_1994	7
Manganese	EPA 200.7_4.4_1994	7
Molybdenum	EPA 200.7_4.4_1994	7
Nickel	EPA 200.7_4.4_1994	7

Matrix/Analyte	Method	Notes
Potassium	EPA 200.7_4.4_1994	7
Selenium	EPA 200.7_4.4_1994	7
Silica as SiO2	EPA 200.7_4.4_1994	7
Silicon	EPA 200.7_4.4_1994	7
Silver	EPA 200.7_4.4_1994	7
Sodium	EPA 200.7_4.4_1994	7
Strontium	EPA 200.7_4.4_1994	7
Thallium	EPA 200.7_4.4_1994	7
Tin	EPA 200.7_4.4_1994	7
Titanium	EPA 200.7_4.4_1994	7
Vanadium	EPA 200.7_4.4_1994	7
Zinc	EPA 200.7_4.4_1994	7
Antimony	EPA 200.8_5.4_1994	7
Arsenic	EPA 200.8_5.4_1994	7
Barium	EPA 200.8_5.4_1994	7
Beryllium	EPA 200.8_5.4_1994	7
Cadmium	EPA 200.8_5.4_1994	7
Chromium	EPA 200.8_5.4_1994	7
Cobalt	EPA 200.8_5.4_1994	7
Copper	EPA 200.8_5.4_1994	7,10
Lead	EPA 200.8_5.4_1994	7
Manganese	EPA 200.8_5.4_1994	7
Molybdenum	EPA 200.8_5.4_1994	7
Nickel	EPA 200.8_5.4_1994	7
Selenium	EPA 200.8_5.4_1994	7
Silver	EPA 200.8_5.4_1994	7
Strontium	EPA 200.8_5.4_1994	7
Thallium	EPA 200.8_5.4_1994	7
Titanium	EPA 200.8_5.4_1994	7
Total Uranium	EPA 200.8_5.4_1994	7
Vanadium	EPA 200.8_5.4_1994	7
Zinc	EPA 200.8_5.4_1994	7
Mercury	EPA 245.1_3_1994	7
4,4'-DDD	EPA 608	7
4,4'-DDE	EPA 608	7
4,4'-DDT	EPA 608	7

Matrix/Analyte	Method	Notes
Aldrin	EPA 608	7
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 608	7
alpha-Chlordane	EPA 608	7
Aroclor-1016 (PCB-1016)	EPA 608	6,7
Aroclor-1221 (PCB-1221)	EPA 608	6,7
Aroclor-1232 (PCB-1232)	EPA 608	6,7
Aroclor-1242 (PCB-1242)	EPA 608	6,7
Aroclor-1248 (PCB-1248)	EPA 608	6,7
Aroclor-1254 (PCB-1254)	EPA 608	6,7
Aroclor-1260 (PCB-1260)	EPA 608	6,7
Aroclor-1262 (PCB-1262)	EPA 608	6,7
Aroclor-1268 (PCB-1268)	EPA 608	6,7
beta-BHC (beta-Hexachlorocyclohexane)	EPA 608	7
Chlordane (tech.)	EPA 608	7
delta-BHC	EPA 608	7
Dieldrin	EPA 608	7
Endosulfan I	EPA 608	7
Endosulfan II	EPA 608	7
Endosulfan sulfate	EPA 608	7
Endrin	EPA 608	7
Endrin aldehyde	EPA 608	7
Endrin ketone	EPA 608	7
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 608	7
gamma-Chlordane	EPA 608	7
Heptachlor	EPA 608	7
Heptachlor epoxide	EPA 608	7
Methoxychlor	EPA 608	7
Toxaphene (Chlorinated camphene)	EPA 608	7
1,1,1,2-Tetrachloroethane	EPA 624	7
1,1,1-Trichloroethane	EPA 624	7
1,1,2,2-Tetrachloroethane	EPA 624	7
1,1,2-Trichloroethane	EPA 624	7
1,1-Dichloroethane	EPA 624	7
1,1-Dichloroethylene	EPA 624	7
1,1-Dichloropropene	EPA 624	7
1,2,3-Trichlorobenzene	EPA 624	7

Matrix/Analyte	Method	Notes
1,2,3-Trichloropropane	EPA 624	7
1,2,4-Trichlorobenzene	EPA 624	7
1,2,4-Trimethylbenzene	EPA 624	7
1,2-Dibromo-3-chloropropane (DBCP)	EPA 624	7
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 624	7
1,2-Dichlorobenzene	EPA 624	7
1,2-Dichloroethane (Ethylene dichloride)	EPA 624	7
1,2-Dichloropropane	EPA 624	7
1,3,5-Trimethylbenzene	EPA 624	7
1,3-Dichlorobenzene	EPA 624	7
1,3-Dichloropropane	EPA 624	7
1,4-Dichlorobenzene	EPA 624	7
2,2-Dichloropropane	EPA 624	7
2-Butanone (Methyl ethyl ketone, MEK)	EPA 624	7
2-Chloroethyl vinyl ether	EPA 624	7
2-Chlorotoluene	EPA 624	7
2-Hexanone	EPA 624	7
4-Chlorotoluene	EPA 624	7
4-Isopropyltoluene (p-Cymene)	EPA 624	7
4-Methyl-2-pentanone (MIBK)	EPA 624	7
Acetone	EPA 624	7
Acetonitrile	EPA 624	7
Acrolein (Propenal)	EPA 624	7
Acrylonitrile	EPA 624	7
Benzene	EPA 624	7
Bromobenzene	EPA 624	7
Bromochloromethane	EPA 624	7
Bromodichloromethane	EPA 624	7
Bromoform	EPA 624	7
Carbon disulfide	EPA 624	7
Carbon tetrachloride	EPA 624	7
Chlorobenzene	EPA 624	7
Chlorodibromomethane	EPA 624	7
Chloroethane (Ethyl chloride)	EPA 624	7
Chloroform	EPA 624	7
cis-1,2-Dichloroethylene	EPA 624	7

Matrix/Analyte	Method	Notes
cis-1,3-Dichloropropene	EPA 624	7
Dibromomethane	EPA 624	7
Dichlorodifluoromethane (Freon-12)	EPA 624	7
Di-isopropylether (DIPE)	EPA 624	7
Ethylbenzene	EPA 624	7
Hexachlorobutadiene	EPA 624	7
Iodomethane (Methyl iodide)	EPA 624	7
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 624	7
Isopropylbenzene	EPA 624	7
m+p-xylene	EPA 624	7
Methyl bromide (Bromomethane)	EPA 624	7
Methyl chloride (Chloromethane)	EPA 624	7
Methyl tert-butyl ether (MTBE)	EPA 624	7
Methylene chloride (Dichloromethane)	EPA 624	7
Naphthalene	EPA 624	7
n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 624	7
n-Butylbenzene	EPA 624	7
n-Propylbenzene	EPA 624	7
o-Xylene	EPA 624	7
sec-Butylbenzene	EPA 624	7
Styrene	EPA 624	7
tert-Butylbenzene	EPA 624	7
Tetrachloroethylene (Perchloroethylene)	EPA 624	7
Tetrahydrofuran (THF)	EPA 624	7
Toluene	EPA 624	7
trans-1,2-Dichloroethylene	EPA 624	7
trans-1,3-Dichloropropylene	EPA 624	7
trans-1,4-Dichloro-2-butene	EPA 624	7
Trichloroethene (Trichloroethylene)	EPA 624	7
Trichlorofluoromethane (Freon 11)	EPA 624	7
Vinyl acetate	EPA 624	7
Vinyl chloride	EPA 624	7
Xylene (total)	EPA 624	7
1,2,4-Trichlorobenzene	EPA 625	7
1,2-Dichlorobenzene	EPA 625	7
1,3-Dichlorobenzene	EPA 625	7

Matrix/Analyte	Method	Notes
1,4-Dichlorobenzene	EPA 625	7
1-Methylnaphthalene	EPA 625	7
2,2'-Oxybis(1-chloropropane)	EPA 625	7
2,3,4,6-Tetrachlorophenol	EPA 625	7
2,3,5,6-Tetrachlorophenol	EPA 625	7
2,3,5-Trichlorophenol	EPA 625	7
2,3,6-Trichlorophenol (4C)	EPA 625	7
2,4,5-Trichlorophenol	EPA 625	7
2,4,6-Trichlorophenol	EPA 625	7
2,4-Dichlorophenol	EPA 625	7
2,4-Dimethylphenol	EPA 625	7
2,4-Dinitrophenol	EPA 625	7
2,4-Dinitrotoluene (2,4-DNT)	EPA 625	7
2,6-Dinitrotoluene (2,6-DNT)	EPA 625	7
2-Chloronaphthalene	EPA 625	7
2-Chlorophenol	EPA 625	7
2-Methylnaphthalene	EPA 625	7
2-Methylphenol (o-Cresol)	EPA 625	7
2-Nitroaniline	EPA 625	7
2-Nitrophenol	EPA 625	7
3,3'-Dichlorobenzidine	EPA 625	7
3-Nitroaniline	EPA 625	7
4,6-Dinitro-2-methylphenol	EPA 625	7
4-Bromophenyl phenyl ether (BDE-3)	EPA 625	7
4-Chloro-3-methylphenol	EPA 625	7
4-Chloroaniline	EPA 625	7
4-Chlorophenyl phenylether	EPA 625	7
4-Nitrophenol	EPA 625	7
Acenaphthene	EPA 625	7
Acenaphthylene	EPA 625	7
Aniline	EPA 625	7
Anthracene	EPA 625	7
Benzo(a)anthracene	EPA 625	7
Benzo(a)pyrene	EPA 625	7
Benzo(g,h,i)perylene	EPA 625	7
Benzo(k)fluoranthene	EPA 625	7

Matrix/Analyte	Method	Notes
Benzo[b]fluoranthene	EPA 625	7
Benzoic acid	EPA 625	7
Benzyl alcohol	EPA 625	7
bis(2-Chloroethoxy)methane	EPA 625	7
bis(2-Chloroethyl) ether	EPA 625	7
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 625	7
Butyl benzyl phthalate	EPA 625	7
Carbazole	EPA 625	7
Chrysene	EPA 625	7
Dibenz(a,h) anthracene	EPA 625	7
Dibenzofuran	EPA 625	7
Diethyl phthalate	EPA 625	7
Dimethyl phthalate	EPA 625	7
Di-n-butyl phthalate	EPA 625	7
Di-n-octyl phthalate	EPA 625	7
Fluoranthene	EPA 625	7
Fluorene	EPA 625	7
Hexachlorobenzene	EPA 625	7
Hexachlorobutadiene	EPA 625	7
Hexachlorocyclopentadiene	EPA 625	7
Hexachloroethane	EPA 625	7
Indeno(1,2,3-cd) pyrene	EPA 625	7
Isophorone	EPA 625	7
Naphthalene	EPA 625	7
Nitrobenzene	EPA 625	7
n-Nitrosodimethylamine	EPA 625	7
N-Nitroso-di-n-propylamine	EPA 625	7
n-Nitrosodiphenylamine	EPA 625	7
Pentachlorophenol	EPA 625	7
Phenanthrene	EPA 625	7
Phenol	EPA 625	7
Pyrene	EPA 625	7
Dibutyltin	Krone 1988	3
Monobutyltin	Krone 1988	3
Tetrabutyltin	Krone 1988	3
Tributyltin	Krone 1988	3

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Bromide	EPA 300.0_2.1_1993	7
Chloride	EPA 300.0_2.1_1993	7
Fluoride	EPA 300.0_2.1_1993	7
Nitrate	EPA 300.0_2.1_1993	7
Nitrate + Nitrite	EPA 300.0_2.1_1993	7
Nitrite	EPA 300.0_2.1_1993	7
Sulfate	EPA 300.0_2.1_1993	7
Cyanide, Total	EPA 9012 B-04	7
Cyanides, Amenable to Chlorination	EPA 9012 B-04	7
pH	EPA 9045C_3_1995	7
Bromide	EPA 9056A_(11/00)	7
Chloride	EPA 9056A_(11/00)	7
Fluoride	EPA 9056A_(11/00)	7
Nitrate	EPA 9056A_(11/00)	7
Nitrite	EPA 9056A_(11/00)	7
Sulfate	EPA 9056A_(11/00)	7
Total Organic Carbon	EPA 9060A_1_2004	7
Aluminum	EPA 6010C_(2/07)	7
Antimony	EPA 6010C_(2/07)	7
Arsenic	EPA 6010C_(2/07)	7
Barium	EPA 6010C_(2/07)	7
Beryllium	EPA 6010C_(2/07)	7
Boron	EPA 6010C_(2/07)	7
Cadmium	EPA 6010C_(2/07)	7
Calcium	EPA 6010C_(2/07)	7
Chromium	EPA 6010C_(2/07)	7
Cobalt	EPA 6010C_(2/07)	7
Copper	EPA 6010C_(2/07)	7
Iron	EPA 6010C_(2/07)	7
Lead	EPA 6010C_(2/07)	7
Magnesium	EPA 6010C_(2/07)	7
Manganese	EPA 6010C_(2/07)	7
Molybdenum	EPA 6010C_(2/07)	7
Nickel	EPA 6010C_(2/07)	7

Matrix/Analyte	Method	Notes
Potassium	EPA 6010C_(2/07)	7
Selenium	EPA 6010C_(2/07)	7
Silica	EPA 6010C_(2/07)	7
Silicon	EPA 6010C_(2/07)	7
Silver	EPA 6010C_(2/07)	7
Sodium	EPA 6010C_(2/07)	7
Strontium	EPA 6010C_(2/07)	7
Thallium	EPA 6010C_(2/07)	7
Tin	EPA 6010C_(2/07)	7
Titanium	EPA 6010C_(2/07)	7
Vanadium	EPA 6010C_(2/07)	7
Zinc	EPA 6010C_(2/07)	7
Antimony	EPA 6020B_(7/14)	7
Arsenic	EPA 6020B_(7/14)	7
Barium	EPA 6020B_(7/14)	7
Beryllium	EPA 6020B_(7/14)	7
Cadmium	EPA 6020B_(7/14)	7
Chromium	EPA 6020B_(7/14)	7
Cobalt	EPA 6020B_(7/14)	7
Copper	EPA 6020B_(7/14)	7
Lead	EPA 6020B_(7/14)	7
Manganese	EPA 6020B_(7/14)	7
Mercury	EPA 6020B_(7/14)	7
Molybdenum	EPA 6020B_(7/14)	7
Nickel	EPA 6020B_(7/14)	7
Selenium	EPA 6020B_(7/14)	7
Silver	EPA 6020B_(7/14)	7
Strontium	EPA 6020B_(7/14)	7
Thallium	EPA 6020B_(7/14)	7
Titanium	EPA 6020B_(7/14)	7
Uranium	EPA 6020B_(7/14)	7
Vanadium	EPA 6020B_(7/14)	7
Zinc	EPA 6020B_(7/14)	7
Mercury, Liquid Waste	EPA 7470A_1_1994	7
Mercury, Solid Waste	EPA 7471A_1_1994	7
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8011-94	1,7

Matrix/Analyte	Method	Notes
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8011-94	1,7
Diesel range organics (DRO)	EPA 8015B_2_1996	7
Gasoline range organics (GRO)	EPA 8015B_2_1996	7
Motor Oil	EPA 8015B_2_1996	7
4,4'-DDD	EPA 8081B_(2/07)	7
4,4'-DDE	EPA 8081B_(2/07)	7
4,4'-DDT	EPA 8081B_(2/07)	7
Aldrin	EPA 8081B_(2/07)	7
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B_(2/07)	7
alpha-Chlordane	EPA 8081B_(2/07)	7
beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B_(2/07)	7
Chlordane (tech.)	EPA 8081B_(2/07)	7
delta-BHC	EPA 8081B_(2/07)	7
Dieldrin	EPA 8081B_(2/07)	7
Endosulfan I	EPA 8081B_(2/07)	7
Endosulfan II	EPA 8081B_(2/07)	7
Endosulfan sulfate	EPA 8081B_(2/07)	7
Endrin	EPA 8081B_(2/07)	7
Endrin aldehyde	EPA 8081B_(2/07)	7
Endrin ketone	EPA 8081B_(2/07)	7
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 8081B_(2/07)	7
gamma-Chlordane	EPA 8081B_(2/07)	7
Heptachlor	EPA 8081B_(2/07)	7
Heptachlor epoxide	EPA 8081B_(2/07)	7
Hexachlorobenzene	EPA 8081B_(2/07)	7
Hexachlorobutadiene	EPA 8081B_(2/07)	7
Methoxychlor	EPA 8081B_(2/07)	7
Toxaphene (Chlorinated camphene)	EPA 8081B_(2/07)	7
Aroclor-1016 (PCB-1016)	EPA 8082A_(2/07)	4,6,7
Aroclor-1221 (PCB-1221)	EPA 8082A_(2/07)	4,6,7
Aroclor-1232 (PCB-1232)	EPA 8082A_(2/07)	4,6,7
Aroclor-1242 (PCB-1242)	EPA 8082A_(2/07)	4,6,7
Aroclor-1248 (PCB-1248)	EPA 8082A_(2/07)	4,6,7
Aroclor-1254 (PCB-1254)	EPA 8082A_(2/07)	4,6,7
Aroclor-1260 (PCB-1260)	EPA 8082A_(2/07)	4,6,7
Aroclor-1262 (PCB-1262)	EPA 8082A_(2/07)	4,6,7

Matrix/Analyte	Method	Notes
Aroclor-1268 (PCB-1268)	EPA 8082A_(2/07)	4,6,7
2,4,5-T	EPA 8151A_(1/98)	7
2,4-D	EPA 8151A_(1/98)	7
2,4-DB	EPA 8151A_(1/98)	7
4-Nitrophenol	EPA 8151A_(1/98)	7
Dalapon	EPA 8151A_(1/98)	7
Dicamba	EPA 8151A_(1/98)	7
Dichloroprop (Dichlorprop)	EPA 8151A_(1/98)	7
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151A_(1/98)	7
MCPA	EPA 8151A_(1/98)	7
MCPP	EPA 8151A_(1/98)	7
Pentachlorophenol	EPA 8151A_(1/98)	7
Silvex (2,4,5-TP)	EPA 8151A_(1/98)	7
C8-C10 Aliphatic EPH	WDOE EPH_(1997)	2,7
C8-C10 Aromatic EPH	WDOE EPH_(1997)	2,7
>C10-C12 Aliphatic EPH	WDOE EPH_(1997)	2,7
>C10-C12 Aromatic EPH	WDOE EPH_(1997)	2,7
>C12-C16 Aliphatic EPH	WDOE EPH_(1997)	2,7
>C12-C16 Aromatic EPH	WDOE EPH_(1997)	2,7
>C16-C21 Aliphatic EPH	WDOE EPH_(1997)	2,7
>C16-C21 Aromatic EPH	WDOE EPH_(1997)	2,7
>C21-C34 Alpihatic EPH	WDOE EPH_(1997)	2,7
>C21-C34 Aromatic EPH	WDOE EPH_(1997)	2,7
Diesel range organics (DRO)	WDOE NWTPH-Dx_(1997)	2,7
Gasoline range organics (GRO)	WDOE NWTPH-Gx_(1997)	2,7,9
C8-C10 Aromatic VPH	WDOE VPH_(1997)	2,7
C5-C6 Aliphatic VPH	WDOE VPH_(1997)	2,7
>C10-C12 Aliphatic VPH	WDOE VPH_(1997)	2,7
>C10-C12 Aromatic VPH	WDOE VPH_(1997)	2,7
>C12-C13 Aromatic VPH	WDOE VPH_(1997)	2,7
>C6-C8 Aliphatic VPH	WDOE VPH_(1997)	2,7
Benzene	WDOE VPH_(1997)	2,7
C8-C10 Aliphatic VPH	WDOE VPH_(1997)	2,7
Ethylbenzene	WDOE VPH_(1997)	2,7
m+p-xylene	WDOE VPH_(1997)	2,7

Matrix/Analyte	Method	Notes
Methyl tert-butyl ether (MTBE)	WDOE VPH_(1997)	2,7
n-Hexane	WDOE VPH_(1997)	2,7
o-Xylene	WDOE VPH_(1997)	2,7
Toluene	WDOE VPH_(1997)	2,7
Xylene (total)	WDOE VPH_(1997)	2,7
1,1,1,2-Tetrachloroethane	EPA 8260C_(8/06)	7
1,1,1-Trichloroethane	EPA 8260C_(8/06)	7
1,1,2,2-Tetrachloroethane	EPA 8260C_(8/06)	7
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260C_(8/06)	7
1,1,2-Trichloroethane	EPA 8260C_(8/06)	7
1,1-Dichloroethane	EPA 8260C_(8/06)	7
1,1-Dichloroethylene	EPA 8260C_(8/06)	7
1,1-Dichloropropene	EPA 8260C_(8/06)	7
1,2,3-Trichlorobenzene	EPA 8260C_(8/06)	7
1,2,3-Trichloropropane	EPA 8260C_(8/06)	7
1,2,4-Trichlorobenzene	EPA 8260C_(8/06)	7
1,2,4-Trimethylbenzene	EPA 8260C_(8/06)	7
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260C_(8/06)	7
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260C_(8/06)	7
1,2-Dichlorobenzene	EPA 8260C_(8/06)	7
1,2-Dichloroethane (Ethylene dichloride)	EPA 8260C_(8/06)	7
1,2-Dichloropropane	EPA 8260C_(8/06)	7
1,3,5-Trimethylbenzene	EPA 8260C_(8/06)	7
1,3-Dichlorobenzene	EPA 8260C_(8/06)	7
1,3-Dichloropropane	EPA 8260C_(8/06)	7
1,4-Dichlorobenzene	EPA 8260C_(8/06)	7
2,2-Dichloropropane	EPA 8260C_(8/06)	7
2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260C_(8/06)	7
2-Chloroethyl vinyl ether	EPA 8260C_(8/06)	7
2-Chlorotoluene	EPA 8260C_(8/06)	7
2-Hexanone	EPA 8260C_(8/06)	7
4-Chlorotoluene	EPA 8260C_(8/06)	7
4-Isopropyltoluene (p-Cymene)	EPA 8260C_(8/06)	7
4-Methyl-2-pentanone (MIBK)	EPA 8260C_(8/06)	7
Acetone	EPA 8260C_(8/06)	7
Acetonitrile	EPA 8260C_(8/06)	7

Matrix/Analyte	Method	Notes
Acrolein (Propenal)	EPA 8260C_(8/06)	7
Acrylonitrile	EPA 8260C_(8/06)	7
Benzene	EPA 8260C_(8/06)	7
Bromobenzene	EPA 8260C_(8/06)	7
Bromochloromethane	EPA 8260C_(8/06)	7
Bromodichloromethane	EPA 8260C_(8/06)	7
Bromoform	EPA 8260C_(8/06)	7
Carbon disulfide	EPA 8260C_(8/06)	7
Carbon tetrachloride	EPA 8260C_(8/06)	7
Chlorobenzene	EPA 8260C_(8/06)	7
Chlorodibromomethane	EPA 8260C_(8/06)	7
Chloroethane (Ethyl chloride)	EPA 8260C_(8/06)	7
Chloroform	EPA 8260C_(8/06)	7
cis-1,2-Dichloroethylene	EPA 8260C_(8/06)	7
cis-1,3-Dichloropropene	EPA 8260C_(8/06)	7
cis-1,4-Dichloro-2-butene	EPA 8260C_(8/06)	7
Dibromomethane	EPA 8260C_(8/06)	7
Dichlorodifluoromethane (Freon-12)	EPA 8260C_(8/06)	7
Di-isopropylether (DIPE)	EPA 8260C_(8/06)	7
Ethylbenzene	EPA 8260C_(8/06)	7
Ethyl-t-butylether (ETBE)	EPA 8260C_(8/06)	7
Hexachlorobutadiene	EPA 8260C_(8/06)	7
Iodomethane (Methyl iodide)	EPA 8260C_(8/06)	7
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260C_(8/06)	7
Isopropylbenzene	EPA 8260C_(8/06)	7
m+p-xylene	EPA 8260C_(8/06)	7
Methacrylonitrile	EPA 8260C_(8/06)	7
Methyl acetate	EPA 8260C_(8/06)	7
Methyl bromide (Bromomethane)	EPA 8260C_(8/06)	7
Methyl chloride (Chloromethane)	EPA 8260C_(8/06)	7
Methyl tert-butyl ether (MTBE)	EPA 8260C_(8/06)	7
Methylcyclohexane	EPA 8260C_(8/06)	7
Methylene chloride (Dichloromethane)	EPA 8260C_(8/06)	7
Naphthalene	EPA 8260C_(8/06)	7
n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8260C_(8/06)	7
n-Butylbenzene	EPA 8260C_(8/06)	7

Matrix/Analyte	Method	Notes
n-Propylbenzene	EPA 8260C_(8/06)	7
o-Xylene	EPA 8260C_(8/06)	7
sec-Butylbenzene	EPA 8260C_(8/06)	7
Styrene	EPA 8260C_(8/06)	7
tert-amylmethylether (TAME)	EPA 8260C_(8/06)	7
tert-Butylbenzene	EPA 8260C_(8/06)	7
Tetrachloroethylene (Perchloroethylene)	EPA 8260C_(8/06)	7
Tetrahydrofuran (THF)	EPA 8260C_(8/06)	7
Toluene	EPA 8260C_(8/06)	7
trans-1,2-Dichloroethylene	EPA 8260C_(8/06)	7
trans-1,3-Dichloropropylene	EPA 8260C_(8/06)	7
trans-1,4-Dichloro-2-butene	EPA 8260C_(8/06)	7
Trichloroethene (Trichloroethylene)	EPA 8260C_(8/06)	7
Trichlorofluoromethane (Freon 11)	EPA 8260C_(8/06)	7
Vinyl acetate	EPA 8260C_(8/06)	7
Vinyl chloride	EPA 8260C_(8/06)	7
2,3-Dichloroaniline	EPA 8270C_3_1996	5,7
1,2-Dichlorobenzene	EPA 8270D_(2/07)	5,7
1,2-Diphenylhydrazine	EPA 8270D_(2/07)	5,7
1,3-Dichlorobenzene	EPA 8270D_(2/07)	5,7
1,4-Dichlorobenzene	EPA 8270D_(2/07)	5,7
1-Methylnaphthalene	EPA 8270D_(2/07)	5,7
2,3,4,6-Tetrachlorophenol	EPA 8270D_(2/07)	5,7
2,3,5,6-Tetrachlorophenol	EPA 8270D_(2/07)	5,7
2,4,5-Trichlorophenol	EPA 8270D_(2/07)	5,7
2,4,6-Trichlorophenol	EPA 8270D_(2/07)	5,7
2,4-Dichlorophenol	EPA 8270D_(2/07)	5,7
2,4-Dimethylphenol	EPA 8270D_(2/07)	5,7
2,4-Dinitrophenol	EPA 8270D_(2/07)	5,7
2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D_(2/07)	5,7
2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D_(2/07)	5,7
2-Chloronaphthalene	EPA 8270D_(2/07)	5,7
2-Chlorophenol	EPA 8270D_(2/07)	5,7
2-Methylnaphthalene	EPA 8270D_(2/07)	5,7
2-Methylphenol (o-Cresol)	EPA 8270D_(2/07)	5,7
2-Nitroaniline	EPA 8270D_(2/07)	5,7

Matrix/Analyte	Method	Notes
2-Nitrophenol	EPA 8270D_(2/07)	5,7
3,3'-Dichlorobenzidine	EPA 8270D_(2/07)	5,7
3-Nitroaniline	EPA 8270D_(2/07)	5,7
4,6-Dinitro-2-methylphenol	EPA 8270D_(2/07)	5,7
4-Bromophenyl phenyl ether (BDE-3)	EPA 8270D_(2/07)	5,7
4-Chloro-3-methylphenol	EPA 8270D_(2/07)	5,7
4-Chloroaniline	EPA 8270D_(2/07)	5,7
4-Chlorophenyl phenylether	EPA 8270D_(2/07)	5,7
4-Nitroaniline	EPA 8270D_(2/07)	5,7
4-Nitrophenol	EPA 8270D_(2/07)	5,7
Acenaphthene	EPA 8270D_(2/07)	5,7
Acenaphthylene	EPA 8270D_(2/07)	5,7
Acetophenone	EPA 8270D_(2/07)	5,7
Aniline	EPA 8270D_(2/07)	5,7
Anthracene	EPA 8270D_(2/07)	5,7
Benzidine	EPA 8270D_(2/07)	5,7
Benzo(a)anthracene	EPA 8270D_(2/07)	5,7
Benzo(a)pyrene	EPA 8270D_(2/07)	5,7
Benzo(g,h,i)perylene	EPA 8270D_(2/07)	5,7
Benzo(k)fluoranthene	EPA 8270D_(2/07)	5,7
Benzo[b]fluoranthene	EPA 8270D_(2/07)	5,7
Benzoic acid	EPA 8270D_(2/07)	5,7
Benzyl alcohol	EPA 8270D_(2/07)	5,7
bis(2-Chloroethoxy)methane	EPA 8270D_(2/07)	5,7
bis(2-Chloroethyl) ether	EPA 8270D_(2/07)	5,7
Butyl benzyl phthalate	EPA 8270D_(2/07)	5,7
Carbazole	EPA 8270D_(2/07)	5,7
Chrysene	EPA 8270D_(2/07)	5,7
Di(2-ethylhexyl)phthalate	EPA 8270D_(2/07)	5,7
Dibenz(a,h) anthracene	EPA 8270D_(2/07)	5,7
Dibenzofuran	EPA 8270D_(2/07)	5,7
Diethyl phthalate	EPA 8270D_(2/07)	5,7
Dimethyl phthalate	EPA 8270D_(2/07)	5,7
Di-n-butyl phthalate	EPA 8270D_(2/07)	5,7
Di-n-octyl phthalate	EPA 8270D_(2/07)	5,7
Fluoranthene	EPA 8270D_(2/07)	5,7

Matrix/Analyte	Method	Notes
Fluorene	EPA 8270D_(2/07)	5,7
Hexachlorobenzene	EPA 8270D_(2/07)	5,7
Hexachlorobutadiene	EPA 8270D_(2/07)	5,7
Hexachlorocyclopentadiene	EPA 8270D_(2/07)	5,7
Hexachloroethane	EPA 8270D_(2/07)	5,7
Indeno(1,2,3-cd) pyrene	EPA 8270D_(2/07)	5,7
Isophorone	EPA 8270D_(2/07)	5,7
m+p Cresol	EPA 8270D_(2/07)	5,7
Naphthalene	EPA 8270D_(2/07)	5,7
Nitrobenzene	EPA 8270D_(2/07)	5,7
n-Nitrosodimethylamine	EPA 8270D_(2/07)	5,7
N-Nitroso-di-n-propylamine	EPA 8270D_(2/07)	5,7
n-Nitrosodiphenylamine	EPA 8270D_(2/07)	5,7
Pentachlorophenol	EPA 8270D_(2/07)	5,7
Phenanthrene	EPA 8270D_(2/07)	5,7
Phenol	EPA 8270D_(2/07)	5,7
Pyrene	EPA 8270D_(2/07)	5,7
Pyridine	EPA 8270D_(2/07)	5,7
1-Methylnaphthalene	EPA 8270D_(2/07) SIM	7
2-Methylnaphthalene	EPA 8270D_(2/07) SIM	7
Acenaphthene	EPA 8270D_(2/07) SIM	7
Acenaphthylene	EPA 8270D_(2/07) SIM	7
Anthracene	EPA 8270D_(2/07) SIM	7
Benzo(a)anthracene	EPA 8270D_(2/07) SIM	7
Benzo(a)pyrene	EPA 8270D_(2/07) SIM	7
Benzo(g,h,i)perylene	EPA 8270D_(2/07) SIM	7
Benzo(k)fluoranthene	EPA 8270D_(2/07) SIM	7
Benzo[b]fluoranthene	EPA 8270D_(2/07) SIM	7
Chrysene	EPA 8270D_(2/07) SIM	7
Dibenz(a,h) anthracene	EPA 8270D_(2/07) SIM	7
Fluoranthene	EPA 8270D_(2/07) SIM	7
Fluorene	EPA 8270D_(2/07) SIM	7
Indeno(1,2,3-cd) pyrene	EPA 8270D_(2/07) SIM	7
Naphthalene	EPA 8270D_(2/07) SIM	7
Pentachlorophenol	EPA 8270D_(2/07) SIM	7
Phenanthrene	EPA 8270D_(2/07) SIM	7

Matrix/Analyte	Method	Notes
Pyrene	EPA 8270D_(2/07) SIM	7
Dibutyltin	Krone 1988	3
Monobutyltin	Krone 1988	3
Tetrabutyltin	Krone 1988	3
Tributyltin	Krone 1988	3
Particle Size Distribution	ASTM D 422	7,8
Ignitability	EPA 1020A_1_1992	7
Corrosivity	EPA 9045C_3_1995	7
Particle Size Distribution	PLUMB 1981	7
Particle Size Distribution	PSEP 1986 Wet Sieve	

Accredited Parameter Note Detail

(1) Limited to water only. (2) Washington Department of Ecology Analytical Methods for Petroleum Hydrocarbons, Publication Number ECY 97-602, June 1997. (3) Procedure is an Ion Trap method for determination of tetra-, tri-, di-, and monobutyltin in sediments and pore water. (4) Includes oil matrix. (5) For sediments, modifications are: Extraction of 20 grams of sample with an initial solvent volume of 35-50 mL instead of extraction of 30 grams of sample with an initial solvent volume of 60 mL. (6) When acid cleanup is not necessary, lab runs according to EPA 8082A protocol. (7) Accreditation based in part on recognition of Oregon NELAP accreditation. (8) Includes hydrometer and modified methods. (9) Includes determination by GCMS.(10) Provisional accreditation pending submittal of acceptable Proficiency Testing (PT) results (WAC 173-50-110).

03/16/2017

Authentication Signature
Alan D. Rue, Lab Accreditation Unit Supervisor

Date

APPENDIX C

PBS Standard Operating Procedure—Low Flow Groundwater Sampling

STANDARD OPERATING PROCEDURE
Sampling Groundwater Monitoring Wells

1 BACKGROUND AND PURPOSE

Groundwater samples are collected from monitoring wells for analysis of physical and chemical parameters, either by using field observations and portable equipment and/or using established laboratory analytical methods. The goal of this process is to obtain groundwater samples that are representative of the aquifer (i.e., avoiding a sample that has been impacted by surface or atmospheric conditions).

Low-flow or zero volume purging and sampling methods were developed to produce samples with the least amount of interference resulting from the collection method. Low-flow purging techniques became the industry standard for collecting a groundwater sample because the methods slow groundwater velocity to the well, minimize turbidity and agitation in the water column, and reduce the volume of purged groundwater requiring disposal. These techniques include the use of pumps dedicated to specific wells or the use of a portable pump system. A zero volume/no purging method requires installation of a collection vessel within the well prior to the sample collection event, allowing the water column within the well to equilibrate with the aquifer prior to retrieving the sample. The appropriate technique is dependent on project-specific goals and data quality requirements. Sampling methodology should be confirmed with the PBS project manager (PM) prior to preparing for groundwater monitoring.

The procedures in this Standard Operating Procedure (SOP) are specific to standard monitoring wells with a single-slotted interval. It is assumed that low-flow purging and sampling protocols are used, although these protocols can be easily adjusted for other sampling methods. Temporary borings advanced for a single field event may be sampled using the techniques presented in this SOP.

2 EQUIPMENT AND SUPPLY LIST

- Well lock keys
- Groundwater Sampling Field Form and Depth to Groundwater Field Form
- Copies of field forms and data tables from previous groundwater monitoring event
- Electronic water level probe or interface probe (if dense or light non-aqueous phase liquids [DNAPL or LNAPL] are potentially present)
- Tubing cutters, knife or scissors (note: some sites do not allow the use of a knife on-site)
- Decontamination equipment
- Measuring cup
- Safety cones
- Bolt cutters
- Replacement well caps, bolts, and padlocks
- Small cup, turkey baster, or large sponge to purge standing water inside well monument
- Fish hooks, stainless steel weight, and fishing line to retrieve objects in the well
- Site map and health and safety plan

- Personal protection equipment (PPE) required for the site, including nitrile gloves (confirm with site-specific health and safety plan)
- Submersible pump or peristaltic pump and associated equipment
- Compressed gas source (nitrogen or air compressor), battery source, or generator and fuel
- Control box
- Disposable tubing, if necessary
- Flow-through cell and water quality parameter meter (e.g. YSI model)
- Buckets or containers for purge water and drum labels
- Sample containers, labels, packaging material
- Coolers and ice for samples

3 PROCEDURE

This section outlines standard procedures used for collecting groundwater samples from a monitoring well. Project Managers may modify or remove tasks as dictated by project needs; for example, turbidity or depth-to-bottom measurements may not be warranted at a site with sufficiently developed wells.

Preparation for a monitoring event begins in the office. The first step is to read the scope of work (e.g., proposal, sampling and analysis plan (SAP), work plan) to determine the number and location of monitoring wells to be sampled, health and safety considerations, quality control (QC) samples needed, sample containers required, and equipment needed for the site (peristaltic pump, bladder pump, both, etc.). Recommended preplanning procedures are as follows:

- Prepare, review, or update Health and Safety Plan (HASP) for the site.
- Obtain appropriate PPE for the site (e.g., hard hat, safety vest, gloves, safety glasses, life vest, flame retardant [FR] shirt or other client-required PPE).
- Determine number and type of samples to be collected.
- Determine which laboratory can meet analytical requirements (required analysis, screening levels).
- Order sample containers from laboratory, making sure to order QC sample containers and at least one extra set of containers. Ensure that a Safety Data Sheet (SDS) is provided for any sample preservative supplied by the laboratory.
- Print all forms needed for sampling event (work plan, HASP, depth to water forms, groundwater sampling forms, labels, chain of custody, etc.).
- Schedule PBS vehicle and equipment use on PBS calendars, as warranted.
- Order rental equipment for sampling event, if not available internally.

After arriving at the site, the following procedures should be followed:

- Don appropriate PPE and place safety cones around the work zone, if required by the HASP or deemed necessary by site conditions.
- Open all of the monitoring wells on-site and wait a minimum of 15 minutes for water levels to approach an equilibrium state with atmospheric pressure before taking any measurements.

- Note the general condition of the well on the depth to groundwater field form. Check well for damage or evidence of tampering, and record pertinent observations. Note any maintenance tasks that should be completed, such as well cap or padlock replacement.
- Collect depth to water measurements from each monitoring well, decontaminating the probe between locations. If possible, gauging should be conducted in order from the least to the most contaminated well. The measurements should be collected from all wells prior to beginning sample collection, unless project scope or site conditions indicate otherwise.
- Measure the depth to water relative to the marking on the well casings. If there is no mark, use the north side of the casing. Record the water level on the depth to groundwater field form. Note if DNAPL or LNAPL is present (this typically requires a meter capable of detecting NAPL-water interfaces). If NAPL is present, additional decontamination procedures will be warranted.
- Measure depth to bottom of well to record if sedimentation in the well has occurred.
- Make sure all information is completed on the depth to groundwater field form and sign and date it.

Sampling a groundwater monitoring well utilizing low-flow techniques relies on stabilization of field water quality parameters to determine when groundwater is representative of aquifer conditions. Measurement of groundwater quality parameters with a water quality parameter meter occurs in a closed system in which groundwater does not come in contact with open air; this is important for valid measurements because dissolved oxygen (DO), oxidation-reduction potential (ORP), and pH measurements can be sensitive to reactions with the atmosphere. A flow-through cell (flow cell) connected to the water quality parameter meter provides this closed system and is used to measure field parameters prior to collecting groundwater samples. Stabilization of selected parameters indicates that collected groundwater is representative of the aquifer and conditions are suitable for sampling to begin. See protocol below for stabilization parameters.

Low-flow purge and sample methods require care when placing a portable pump and/or tubing in the well to minimize disturbance to the water column. Pumping rates must be maintained at 0.1 to 0.5 liter per minute to reduce drawdown; the pump should never be run higher than 0.5 liters per minute prior to sampling.

For monitoring wells, sampling should proceed as follows:

- If using a portable pump setup, slowly lower the pump or tubing to the midpoint of the screen or sample interval. Secure the pump or tubing at the surface to prevent it from moving (not applicable if using dedicated pumps).
- Connect the bladder pump (attaching control box, compressor or nitrogen tank with regulator) or peristaltic pump to flow cell containing water quality parameter probes. Place the water level probe in the well so water levels can be measured as you are pumping. Start the pump and adjust the pumping rate to between 0.1 and 0.5 liters per minute (using a measuring cup to calculate the flow rate). Begin recording readings on the groundwater sampling field form. Be sure to purge the initial volume of water in the tubing before taking a reading.
- During purging, record readings of groundwater parameters (listed below) and water level every 3 to 5 minutes on the groundwater sampling field form. A drawdown of less than 0.3 feet in the water column, once the pumping rate has stabilized, is desirable; however, less permeable aquifer material or a clogged well filter pack may result in a deeper drawdown. At a minimum, the depth-to-water should be stabilized for three consecutive readings taken between 3 to 5 minutes apart (in conjunction with the stabilization of the other parameters). Visually describe and record turbidity. Purging is considered complete when the groundwater parameters have stabilized for three consecutive readings.

Field Parameter	Stabilization Goal
Temperature	+/-3%
Specific Conductance	+/- 3% mS/cm
pH	+/- 0.1 pH units
DO	+/- 10% or +/- 0.3 mg/L
ORP	+/- 10 millivolts
Depth to Water	+/- 0.3 feet

Please note that multi-parameter meters may have a resolution greater than the stabilization goal. Note the meter capabilities. If the field parameters do not stabilize within the stabilization goal, but are within the resolution of the meter, it may be acceptable to collect a sample in this scenario. This MUST be noted on the field form.

- Measure turbidity of the sample water using field instruments prior to sample collection and upon any obvious visual changes in turbidity during sample collection.
- Prior to collecting the water sample, the tubing originating in the well must be disconnected from the influent (inflow) side of the flow cell.
- Directly fill the sample containers from the tubing originating in the well. If you are collecting samples for volatile organic compound (VOC) analysis, you may need to decrease the pump rate to minimize volatilization of compounds from the sample; if this is the case, other samples should be collected first. You may restore the flow rate upon completion of filling sample containers for VOC analysis. Fill unpreserved bottles first. Filtered samples should be collected after all other samples have been collected.
- Groundwater samples collected for VOC analysis must be collected with zero headspace in the sample vial. This can be confirmed by gently tapping the sealed vial against a gloved hand to ensure that air bubbles are not present.
- If a duplicate sample is required for the well, it should be filled concurrently with the regular sample. This is accomplished by alternating bottles of the same type during sample collection (e.g., filling one bottle from each sample, then the second bottle from each sample.)
- Groundwater samples for dissolved metals analysis must be field filtered with a 0.45 micron filter directly connected to the tubing. Mark "field filtered" or "FF" on the bottle label, field form, and chain of custody.
- Prior to filling or just after filling, label each bottle with the project name, sample name, and sample date and time, and make sure it is properly sealed. The sample containers may also be labeled with what analysis will be performed (confirm with Project Manager). Place in a cooler with ice and pack for transportation.
- As necessary, pull pump and discard tubing. Decontaminate the pump based on the decontamination procedures established for the site.
- Make sure all information is completed on the groundwater field form and sign and date it.
- Close and lock the well.
- Contain purge and decontamination water in the appropriate containers as established for the project.
- Dispose of used sampling supplies and other waste in appropriate container as established for the project.

If low-flow sampling is not used at the site, these procedures should be modified as appropriate. The objective is to provide high-quality groundwater samples representative of the aquifer. Modifications to this SOP should keep this objective in mind at all times.

After fieldwork is completed:

- Ensure that chain-of-custody form has necessary information including site name, project manager, sample names, date and time collected, requested analysis, special notes (field filtered, MS/MSD, etc.).
- Scan and save field sheets to project folder on server. Retain original field copies in project folder; these are legal documents and should be retained as per PBS guidelines for document retention.
- Report any sampling or well maintenance issues to the project manager for evaluation and remedy.
- Clean and store PBS equipment for use on next project. Report any equipment damage or malfunctions or missing/depleted calibration solutions to the office equipment manager.
- Ship rental equipment back to vendor immediately to minimize project costs. Borrowed PBS equipment should be returned promptly to the lending office.

References

Puls, R.W. and M.J. Barcelona. *Groundwater Issue Paper: Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*. US Environmental Protection Agency, EPA 540-S-95-504 (1996).

Yeskis, D. and Bernard Zavala. *Groundwater Issue Paper: Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers*. US Environmental Protection Agency, EPA 542-S-02-001 (May 2002).

APPENDIX D

Project Forms

Daily Field Activity Report
Groundwater Sampling Field Form
Surface Water Sampling Field Form
Depth to Water Form
Sample Chain of Custody

DAILY FIELD ACTIVITY REPORT

Project: Camp Bonneville Groundwater Sampling and Analysis **Date:** ____________________

PBS Project No. ___________________ **Phase/Task**: ___________

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP (degrees F.)	To 32	32-50	50-70	70-85	85 up
WIND	Still	Moderate	High		
HUMIDITY	Dry	Moderate	High		

PBS/Subcontractor Personnel and Duties:

Name	Hours of Work	Employer	Description of Work
		PBS Engineering + Environmental	Groundwater monitoring
		PBS Engineering + Environmental	Groundwater monitoring

Work Performed Today: *See Groundwater Field Sampling Form for details of sampling at each well*

Groundwater Level Measurements ☐ Yes ☐ No	Groundwater Sample Collection (list wells).	Other

Remarks: (i.e., instructions received or given; problems or deficiencies noted; delays encountered; other)

List of Attachments:

- Depth to Water Sheet: ☐ Yes ☐ No
- Groundwater Field Sampling Form: ☐ Yes ☐ No
- Lab Chain of Custody: ☐ Yes ☐ No
- Other ________________________
- Other ________________________

Contractor's Verification: On behalf of PBS Engineering + Environmental, I certify this report is complete and correct, and all work performed during this reporting period are in compliance with the contract Scope of Work and specifications, to the best of my knowledge, except as may be noted above.

Name Date

PBS

	PBS Engineering and Environmental Inc. **DEPTH TO GROUNDWATER FORM** Revised: 11/28/17	**PROJECT:** **PROJECT NO:** **Date:**	**Camp Bonneville** **Clark County, Washington** **76151.007** **12/ /2017**

Field Personnel: **Start Time:**

Weather Conditions: **End Time:**

INITIAL DEPTH TO WATER MEASUREMENTS **More Info on Back? Yes/No**

Monitoring Well ID	Depth to Water Measurement (ft)	Measurment Taken from (TOC/Metal Casing)	Time	Well Condition Notes

Equipment Used:

Additional Notes/Observations:

Signature of Field Personnel: **Date:**

PBS	PBS Engineering and Environmental **SURFACE WATER SAMPLING FIELD FORM** Revised: 09/06/16 03Q 2017	**PROJECT: Camp Bonneville** **Clark County, Washington** **PROJECT NO: 76151.007** **Date:** 9/ /2017

Field Personnel: **Surface Water Location:**

Weather Conditions: **Start Time:**

SURFACE WATER DATA AND INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Dissolved Oxygen (mg/L)	Specific Conductivity (mS/cm)	Water pH (S.U.)	ORP (mV)	Turbidity visual/meas. (NTUs)

STREAM CONDITIONS

QA/QC Sample (circle one): Duplicate Lab MS/MSD Equipment Blank None

Sample ID: **Sample Time:**

Analytical Parameters	Number of bottles	Bottle size	Preserv.	Filtered? Y/N	Notes
RDX by 8330	2	1L amber	none	N	
Perchlorates by EPA 6850	1	250 ml poly	none	Y	Fill w/~120 mL water

Method of transportation of samples: Pickup by TestAmerica

Field Observations/Notes of Sampling Event:

Signature of Field Personnel: **Date:**

PBS	PBS Engineering + Environmental GROUNDWATER SAMPLING FIELD FORM Revised: 11/28/17 04Q 2017	PROJECT: Camp Bonneville Clark County, Washington PROJECT NO: 76151.007 Date: 12/ /2017

Initial DTW (feet bgs)		**Monitoring Well ID:**	
Screen Interval (feet bgs)		**Sample ID**	
Well Depth (feet bgs)		**Sample Time**	
Depth of pump (ft bgs)		**QC Sample type:**	☐ Not collected
Sampling Method	Dedicated Bladder Pump		ID:
Purge rate (mL/min)			Time:
Field Personel		**Weather Conditions**	

INITIAL WELL DATA & WELL PURGING INFORMATION **More Info on Back? Yes/No**

Time (0:00 - 23:59)	DTW (feet TOC)	Temp. (C)	Dissolved Oxygen (mg/L)	Specific Conductivity (mS/cm)	pH	ORP (mV)	Turbidity visual/meas. (NTUs)	Volume Purged (gallons/liters)
							Total Volume Purged	

Analytical Parameters	**Number of bottles**	**Bottle size**	**Preserv.**	**Filtered? Y/N**	**Run? ✓**	**Notes**
Explosives, Nitroglicerin, PETN, Picric Acid by 8330	2	1 L amber	none	N	☐	
Perchlorates by EPA 6850	1	250 ml poly	none	Y	☐	Fill w/~120 mL water
VOCs by 8260B	3	40 ml VOA	HCL	N	☐	
Total PP Metals by 6020/74070A	1	250 ml poly	HNO_3	N	☐	
SVOCs by 8270C	2	1 L amber	none	N	☐	

Method of transportation of samples: Pickup by TestAmerica *Only analyzed annually for LC Wells*

Field Observations/Notes of Sampling Event:
Signature of Field Personnel: **Date:**

TestAmerica
ANALYTICAL TESTING CORPORATION

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508	(425) 420-9200	FAX 420-9210	
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779	(509) 924-9200	FAX 924-9290	
8920 SW Gemini Dr (Building 7), Beaverton, OR 97008-7123	(503) 906-9200	FAX 906-9210	X
2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119	(907) 563-9200	FAX 563-9210	

CHAIN OF CUSTODY REPORT Work Order #:

CLIENT: PBS

REPORT TO: heidi.yantz@pbsusa.com, scott.braunsten@pbsusa.com, chad.koepfle@pbsusa.com

ADDRESS: 4412 SW Corbett Avenue, Portland, Oregon

PHONE: 503.248.1939 FAX: 888.371.7891

INVOICE TO: PBS

P.O. NUMBER:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: **10** (STD.) | 7 | 5 | 4 | 3 | 2 | 1 | < 1

Petroleum Hydrocarbon Analyses: **5** (STD.) | 4 | 3 | 2 | 1 | < 1

OTHER Specify:

** Turnaround Requests less than standard may incur Rush Charges.*

PROJECT NAME: Camp Bonneville GW Sampling

PROJECT NUMBER: 76151.007 Phase 0004

SAMPLED BY:

CLIENT SAMPLE INDENTIFICATION	SAMPLING DATE/TIME		Explosives by 8330 (incl. Picric Acid, NG and PETN)	Perchlorate by 6850	VOCs (LL) by 8260C	Total PP Metals by 6020/7470A	SVOCs by 8270C								MATRIX (W, S, O)	# OF CONT.	COMMENTS/SAMPLER'S INITIAL	NCA WO ID
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

REQUESTED ANALYSES (columns above)

RELINQUISHED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:
RELINQUISHED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS: Use PBS sample for ALL QA/QC

TEMP:

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