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Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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Executive Summary

The scope of this report is to summarize data quality assessment (DQA) activities performed to evaluate the results of 12,217 groundwater samples collected from wells in the 200-BP-5 Groundwater Operable Unit (OU) from January 2008 through December 2013.

The objective of this DQA is to determine whether the data can support the baseline risk assessment (BRA) and selection of remedial alternatives for the 200-BP-5 Groundwater OU. The requirements for the sampling program are found in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit*, hereinafter referred to as the remedial investigation (RI)/feasibility study (FS) Work Plan. Over the assessment period, samples were also collected in accordance with the following documentation:

- DOE/RL-2012-35, *First Determination RCRA Groundwater Quality Assessment Plan for Low-Level Burial Grounds Low-Level Waste Management Area-1*
- DOE/RL-2012-53, *Groundwater Quality Assessment Plan for the Single-Shell Tank Waste Management Area B-BX-BY*
- DOE/RL-2009-75, *Interim Status Groundwater Monitoring Plan for the LLBG WMA-1*
- DOE/RL-2009-76, *Interim Status Groundwater Monitoring Plan for the LLBG WMA-2*
- DOE/RL-2009-77, *Groundwater Quality Assessment Plan for the Single-Shell Tank Waste Management Area C*
- DOE/RL-2008-60, *Interim Status Groundwater Monitoring Plan for the 216-B-63 Trench*
- DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit*
- DOE/RL-2006-55, *Sampling and Analysis Plan for FY 2006 200-BP-5 Groundwater Operable Unit Remedial Investigation/Feasibility Study*

- DOE/RL-2001-49, *Groundwater Sampling and Analysis Plan for the 200-BP-5 Operable Unit*

The DQA process follows general DQA guidelines established by the U.S. Environmental Protection Agency (EPA) in EPA/240/B-06/002, *Data Quality Assessment: A Reviewer's Guide* (EPA QA/G-9R), and EPA/240/B-06/003, *Data Quality Assessment: Statistical Methods for Practitioners*.

The assessment is based on three levels of evaluation: verification, validation, and data usability assessment. Data verification is the process of evaluating the completeness, correctness, and conformance/compliance of a specific data set against the method, procedural, or contractual requirements. Data validation is an analyte-specific and sample-specific process that extends the evaluation of data beyond method, procedural, or contractual compliance (i.e., data verification) to determine the analytical quality of a specific data set. Finally, the data usability assessment is a determination of the adequacy of the data to support a particular environmental decision and is based upon the verification and validation results. When data are collected specifically to perform a statistical test, the DQA must be consistent with the five-step process described in EPA/240/B-06/002 and EPA/240/B-06/003. However, groundwater data for the 200-BP-5 Groundwater OU are collected using a judgmental sampling design. As a result of using a judgmental sample design, steps 3 and 4 of the EPA five-step process do not apply.

The 200-BP-5 Groundwater OU data set included 135,562 analytical results, from samples of 162 wells for 362 individual analytes from January 2008 to December 2013. More than 184,294 individual quality control (QC) results were generated in support of the chemical analyses.

The conclusion of the assessment is that the 200-BP-5 Groundwater OU data are the correct type, quality, and quantity to support the BRA and selection of remedial alternatives. This is supported by the results of the verification, validation, and data usability assessment. With the exception of the findings described in the following paragraphs, all groundwater samples were collected in accordance with the requirements listed in the associated sampling and analysis plans (SAPs), monitoring plans, and work plans each sample was collected under. Detection limits, precision, accuracy, and data completeness were analyzed for all groundwater samples to determine if any analytical

data should be rejected as a result of quality assurance or QC deficiencies. Other than those results that were noted as unusable, the analytical data were found to be acceptable for the intended use.

Comparison of the 200-BP-5 Groundwater OU data set with the overall Hanford Site groundwater data set, as described in the annual Hanford Site groundwater reports, showed that the 200-BP-5 Groundwater OU data are at least as good, in terms of accuracy, precision, and blank contamination, as the overall site groundwater data set. Both field and laboratory performance parameters are equal to or better than those for the Hanford Site groundwater data as a whole. The overall project completeness is estimated to be greater than 99 percent. Completeness is a measure of valid data obtained from the laboratory compared to the amount of data expected to be obtained, based on the analyses requested in the SAP(s), under correct normal conditions.

While the overall laboratory QC performance was very good, the following specific deficiencies were identified:

- 74 individual analytes reported laboratory contamination that exceeded QC criteria. Six analytes (beryllium-7, cesium-137, cobalt-60, europium-155, cyclohexanone, and octachlorodibenzo-p-dioxin) reported 100 percent of their results outside of acceptable limits. In total, 704 individual sample results required qualification as a result of laboratory contamination.
- 115 analytes were reported outside the QC acceptance criteria for laboratory control samples (LCSs), which represented approximately 0.94 percent of the total number of LCSs. In total, 470 individual sample results required qualification as a result of LCS recoveries reported outside QC acceptance criteria.
- 148 analytes were reported outside the QC acceptance criteria for matrix spike/matrix spike duplicate samples, which represented approximately 0.92 percent of the total number of LCSs. In total, 583 individual sample results required qualification as a result of MS/MSD recoveries reported outside QC acceptance criteria.
- 15 analytes were reported outside the QC acceptance criteria for surrogate spike recoveries, which represented approximately 1.3 percent of the total number of LCSs. In total, 247 individual sample results required qualification as a result of surrogate spike recoveries reported outside QC acceptance criteria.

All method detection limits (MDLs) were evaluated against comparison values (pertinent standards and criteria for the protection of human health and aquatic receptors). A different set of comparison values were selected for the evaluation of samples results from monitoring wells located inland of the Columbia River versus monitoring wells that are located near the Columbia River. The purpose of this evaluation is to determine if the MDL is adequate for confirming absence at levels less than or equal to the pertinent criteria or standards. The following summarizes the findings of the evaluation for sample results obtained from monitoring wells that are located inland from the Columbia River:

- MDLs for 195 analytes are less than or equal to their respective comparison value; MDLs for these analytes are considered usable for all RI/FS decision making purposes.
- MDLs for 52 analytes are greater than their respective comparison values; these analytes are not known to be associated with a release at the 200 East Area of the Hanford Site. In total, 50 of these analytes were not detected in any groundwater sample; the remaining 2 analytes reported infrequent anomalous detections that were not associated with a trend.
- MDLs for 27 analytes report a portion of their MDLs greater than their respective comparison value. With the exception of antimony, arsenic, beryllium, cobalt, and nickel, the analytical data are considered usable for all RI/FS decision making purposes. Most sample results for these five metals reported by EPA Method 6010 (inductively coupled plasma-atomic emission spectrometry) are not usable for RI/FS decision making purposes because a high percentage of sample results are reported as nondetected concentrations, and the MDL is not adequate for confirming their absence at concentrations less than or equal to their comparison value.

The following summarizes the findings of the evaluation for sample results obtained from monitoring wells that have the potential to discharge to the Columbia River:

- MDLs for 170 analytes are less than or equal to their respective comparison value; MDLs for these analytes are considered usable for all RI/FS decision making purposes.

- MDLs for 50 analytes are greater than their respective comparison values; these analytes are not known to be associated with a release at the 200 East Area of the Hanford Site. All of these analytes were not detected in any groundwater sample.

- MDLs for 25 analytes report a portion of their MDLs greater than their respective comparison value. With the exception of antimony, cadmium, cobalt, and silver, the analytical data are considered usable for all RI/FS decision making purposes. Most sample results for these five metals reported by EPA Method 6010 (inductively coupled plasma-atomic emission spectrometry) are not usable for RI/FS decision making purposes because a high percentage of sample results are reported as nondetected concentrations, and the MDL is not adequate for confirming their absence at concentrations less than or equal to their comparison value.

Overall field QC performance was also very good; specific deficiencies were identified:

- In total, 33 analytes were reported outside the QC acceptance criteria for field duplicate pairs, which represented approximately 1.1 percent of the total number of field duplicate samples. No sample results are qualified as a result of field duplicate relative percent different (RPD) results reported outside QC acceptance criteria. Analytes and properties that report the highest RPDs (>50 percent) include alkalinity, americium-241, calcium, chloride, chromium, copper, cyanide, fluoride, gross alpha, gross beta, iodine-129, iron, methyl methanesulfonate, nitrate, nickel, potassium-40, strontium-90, sulfate, sulfide, tin, and zinc.

- In total, 7 analytes were reported outside the QC acceptance criteria for field split pairs, which represented approximately 2.5 percent of the total number of field split samples. No sample results are qualified as a result of field split RPD results reported outside QC acceptance criteria. Analytes and properties that report the highest RPDs (>50 percent) include cyanide, gross beta, technetium-99, and tin.

- In total, 53 analytes were reported outside the QC acceptance criteria for field blanks, which represented approximately 2 percent of the total number of field blank samples. Analytes and properties with high (>10 percent) overall percentages of positive blanks include sulfide, total organic halides, calcium, hexavalent chromium, lead, magnesium, sodium, tin, uranium, americium-241, gross beta, potassium-40, strontium-90, thorium-228, thorium-230, iodomethane, and methylene chloride.

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Terms

AEA	alpha energy analysis
AES	atomic emission spectrometry
ARAR	applicable or relevant and appropriate requirement
BRA	baseline risk assessment
CAS	Chemical Abstracts Service
CCC	criterion continuous concentration
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
CHPRC	CH2M HILL Plateau Remediation Company
COPC	contaminant of potential concern
DOE	U.S. Department of Energy
DQA	data quality assessment
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
FS	feasibility study
GC	gas chomatograph
GEA	gamma energy analysis
GPC	gas flow proportional counting
HASQARD	*Hanford Analytical Services Quality Assurance Requirements Document* (DOE/RL-96-68)
HEIS	Hanford Environmental Information System
ICP	inductively coupled plasma
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LSC	liquid scintillation counting
MCL	maximum contaminant level
MDA	minimum detectable activity
MDL	method detection limit
MS	matrix spike
MSD	matric spike duplicate

OU	operable unit
PCB	polychlorinated biphenyl
QA	quality assurance
QC	quality control
RCRA	*Resource Conservation and Recovery Act of 1976*
RDR	request for data review
RI	remedial investigation
RL	DOE Richland Operations Office
RPD	relative percent difference
S&GRP	Soil and Groundwater Remediation Project
SAP	sampling and analysis plan
SDG	sample delivery group
SDT	Sample and Data Tracking
SMR	Sample Management and Reporting
SST	single-shell tank
SVOC	semivolatile organic compound
TPH	total petroleum hydrocarbon
VOC	volatile organic compound
WMA	waste management area
WSCF	Waste Sampling and Characterization Facility

1 Introduction

This data quality assessment (DQA) report evaluates laboratory data for groundwater samples obtained from 162 wells in the 200-BP-5 Groundwater Operable Unit (OU) from January 2008 through December 2013. The purpose of this DQA is to determine whether these data are the right type and of sufficient quality and quantity to support remedial investigation (RI)/feasibility study (FS) decisions. The information contained in this report follows guidelines for DQAs established by the CH2M HILL Plateau Remediation Company (CHPRC) Soil and Groundwater Remediation Project (S&GRP). These guidelines are based on U.S. Environmental Protection Agency (EPA) guidance (EPA/240/B-06/002, *Data Quality Assessment: A Reviewer's Guide* [EPA QA/G-9R]). Table 1-1 identifies all 162 monitoring wells associated with the data evaluated in this report. Figure 1-1 through Figure 1-4 show the locations of the 162 wells included in this DQA.

1.1 Background

In 1989, the Hanford Site was listed on the 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan," Appendix B, "National Priorities List," pursuant to the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA). To address groundwater issues in the 200 East Area, 200-BP-5 Groundwater OU and 200-PO-1 Groundwater OU areas were established. The 200-BP-5 Groundwater OU extends from the 200 East Area to the Columbia River to the north, and to the east flank of Gable Mountain to the east (Figure 1-5). The 200-BP-5 Groundwater OU includes the groundwater beneath the northern part of the 200 East Area. Collectively, the 200-BP-5 and 200-PO-1 Groundwater OUs contain all of the groundwater beneath the 200 East Area of the Hanford Site. The boundaries of the 200-BP-5 Groundwater OU encompass an area of approximately 84.5 km^2 (32.6 mi^2), underlying mostly undeveloped land, with clusters of industrial buildings and associated structures. The buildings and structures primarily are located within the fence line of the 200 East Area. The OU underlies 72 CERCLA liquid effluent waste sites and the following 5 facilities, which have groundwater monitoring requirements under the *Resource Conservation and Recovery Act of 1976* (RCRA) and the *Atomic Energy Act of 1954*:

- Waste Management Area (WMA) B/BX/BY Tank Farms
- 216-B-63 Trench
- Low-Level WMA-1 and -2
- Liquid Effluent Retention Facility
- WMA C Tank Farm

Localized occurrences of contaminated soils in the vadose zone most likely are the primary sources of contamination that currently may be entering the groundwater. In the past, contamination has migrated to the groundwater through percolation or infiltration via the vadose zone (as evidenced by high levels of groundwater contamination) or was injected directly via injection wells. The Columbia River and West Lake are the only surface water bodies that could be impacted from contaminated groundwater in the 200-BP-5 Groundwater OU.

The major sources of contaminated soils overlying the 200-BP-5 Groundwater OU include past intentional liquid discharges to cribs, ponds, and ditches; injection wells; accidental spills and releases; and leaking single-shell tanks (SSTs) and ancillary equipment.

The primary sources known or strongly suspected of contributing to groundwater contamination in the 200-BP-5 Groundwater OU are the BY Cribs, SSTs and ancillary equipment, spills within WMA B/BX/BY and WMA C Tank Farms, the 216-B-5 Reverse Well, and the 216-B-8 Crib.

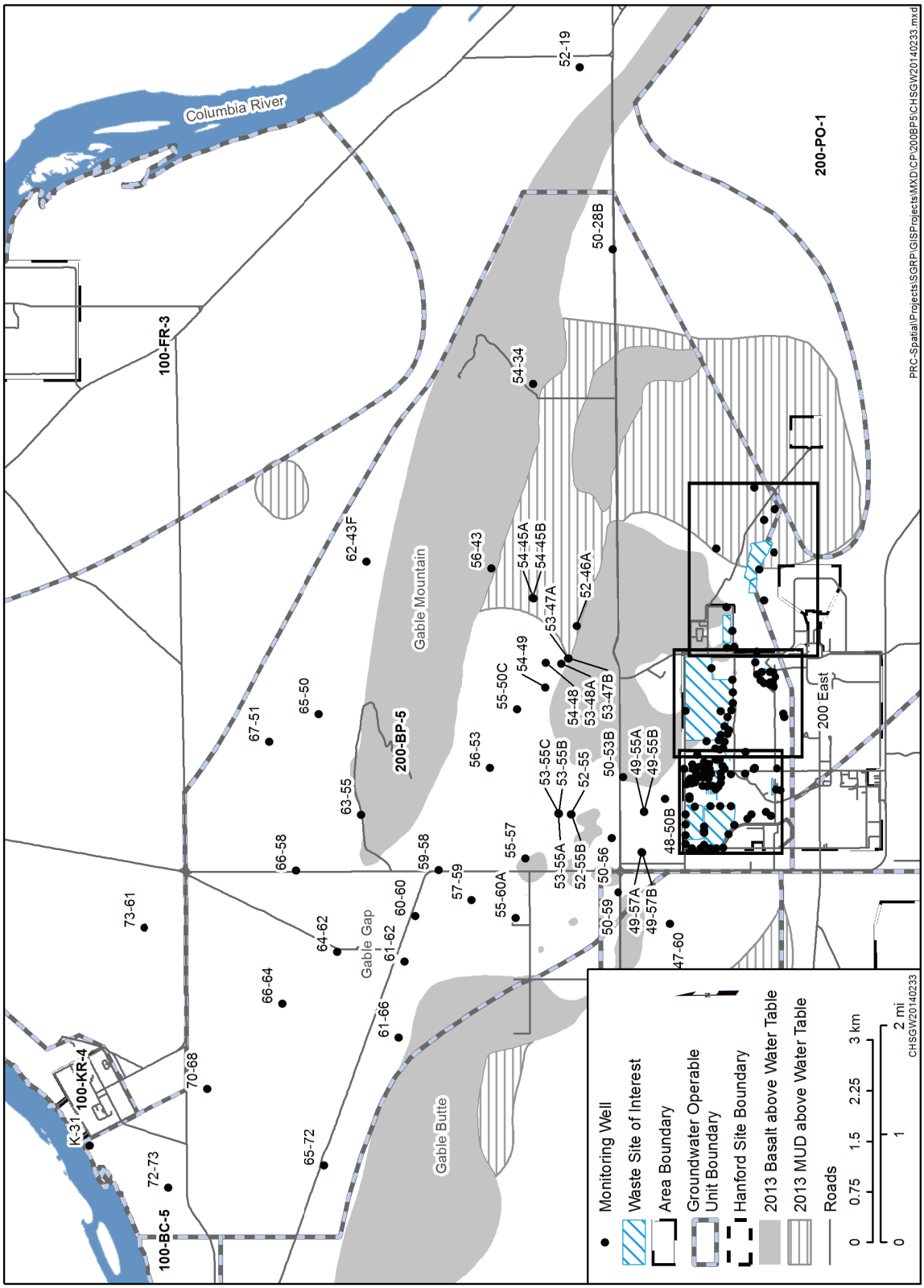

Figure 1-1. Overview of 200-BP-5 Groundwater OU and Monitoring Wells Located in the Far Field

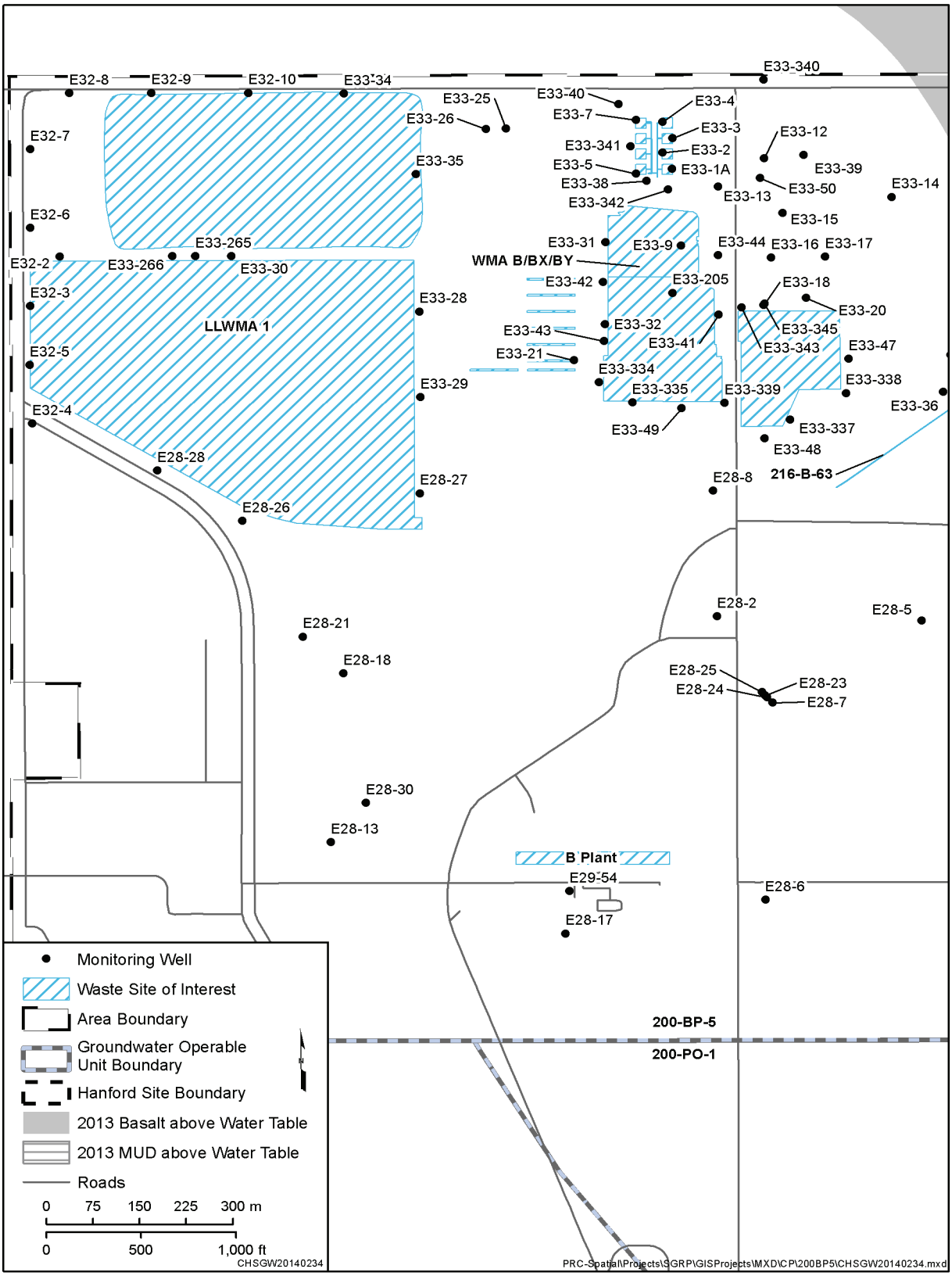

Figure 1-2. Monitoring Wells Located in Low-Level WMA-1 and WMA B/BX/BY Tank Farms

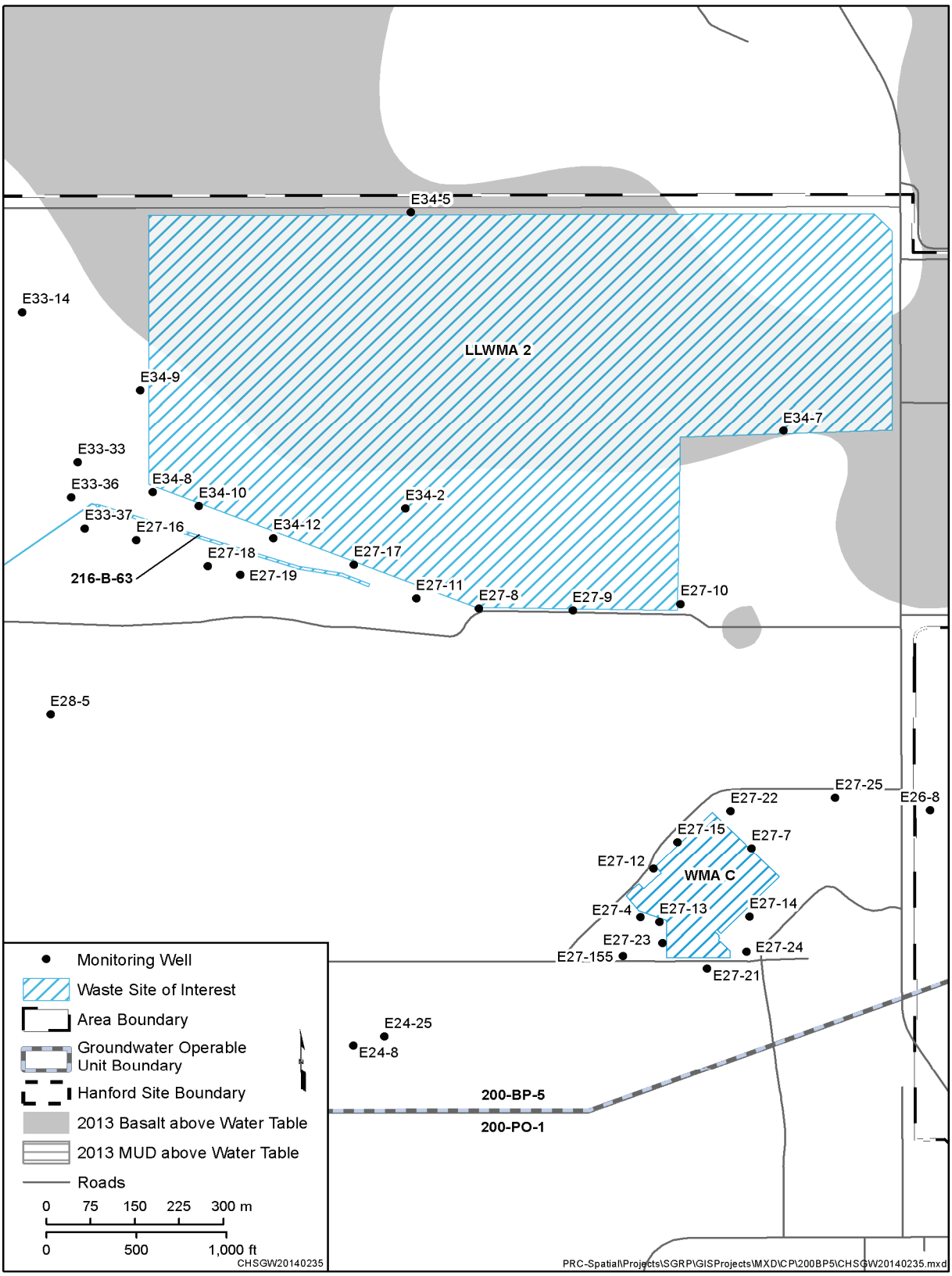

Figure 1-3. Monitoring Wells Located in Low-Level WMA-2

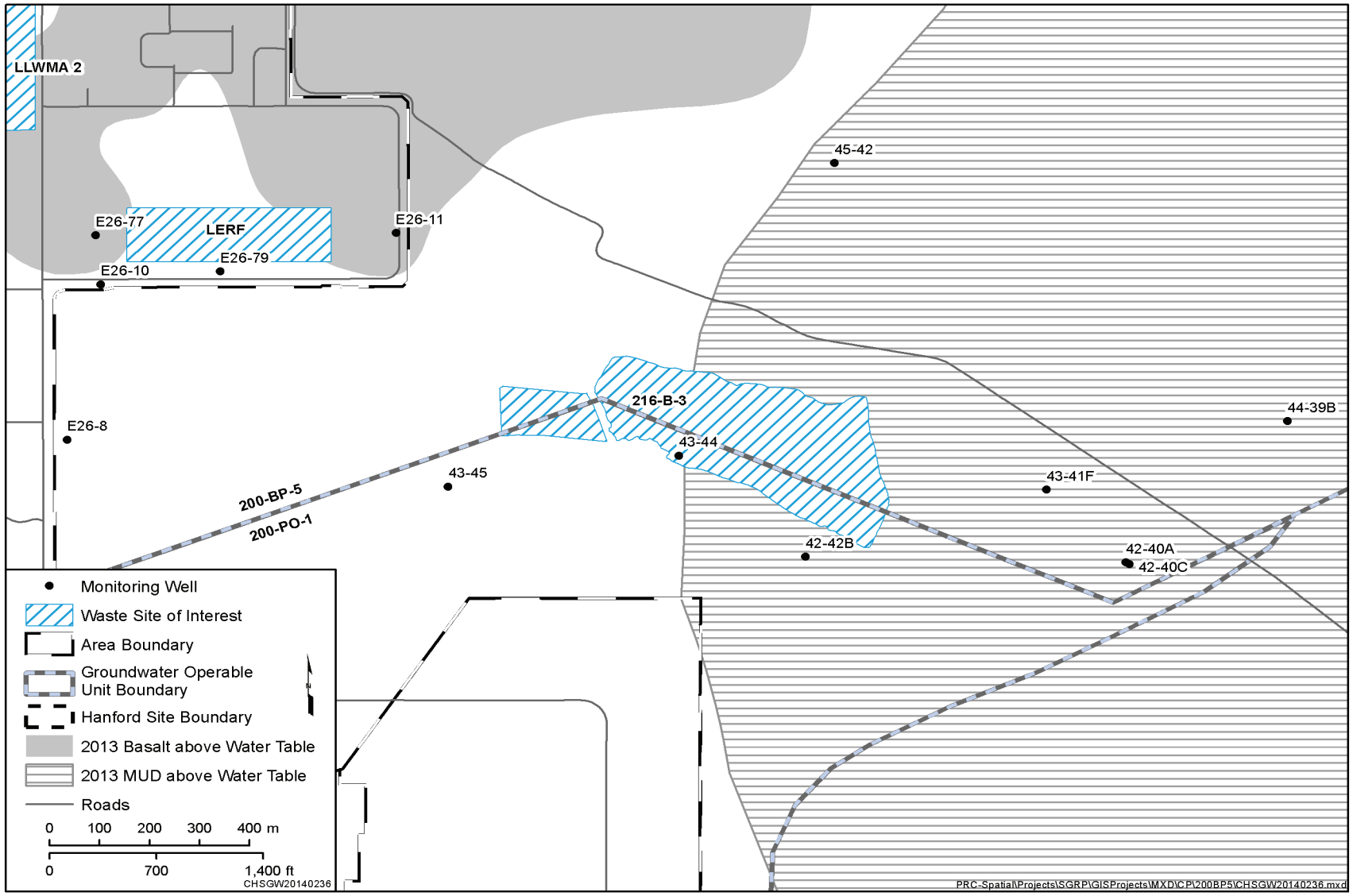

Figure 1-4. Monitoring Wells Located in Liquid Effluent Retention Facility and the 216-B-63 Trench

In addition to these sources, vadose zone contamination, which is likely to pose a significant threat to groundwater quality, is suspected below the 216-B-12 and 216-C-1 Cribs and the 216-B-6 Reverse Well (DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit*). The most widely distributed groundwater contaminants in the 200-BP-5 Groundwater OU are tritium, nitrate, technetium-99, and iodine-129. Contaminants mostly confined to localized areas in the OU are strontium-90, cesium-137, plutonium-239/240, uranium, sulfate, and cyanide.

Table 1-1. List of Selected Groundwater Wells in the 200-BP-5 Groundwater Operable Unit

DOE/RL-2012-35			
299-E28-26[a]	299-E32-5[a]	299-E33-29[a]	299-E33-266[a]
299-E28-27[a]	299-E32-6[a]	299-E33-30	
299-E28-28[a]	299-E32-7[a]	299-E28-18	
299-E32-10[a]	299-E32-8[a]	299-E33-34[a]	
299-E32-2[a]	299-E32-9[a]	299-E33-35[a]	
299-E32-3[a]	299-E33-26	299-E33-43	
299-E32-4[a]	299-E33-28[a]	299-E33-265[a]	
DOE/RL-2012-53			
299-E33-18	299-E33-38	299-E33-47	299-E33-335
299-E33-20	299-E33-41	299-E33-48	299-E33-337
299-E33-31	299-E33-42	299-E33-49	299-E33-338
299-E33-32	299-E33-44	299-E33-334	299-E33-339
DOE/RL-2009-76			
299-E27-8	299-E27-11	299-E34-2	299-E34-10
299-E27-9	299-E27-17	299-E34-9	299-E34-12[b]
299-E27-10			
DOE/RL-2009-77			
299-E27-12	299-E27-13	299-E27-14	299-E27-15
299-E27-155	299-E27-21	299-E27-22	299-E27-23
299-E27-24	299-E27-25	299-E27-4	299-E27-7
DOE/RL-2008-60			
299-E27-16	299-E27-19	299-E33-33	299-E34-8
299-E27-18			

Table 1-1. List of Selected Groundwater Wells in the 200-BP-5 Groundwater Operable Unit

DOE/RL-2007-18			
299-E24-25	299-E28-8	699-45-42	699-55-50C
299-E24-25	299-E29-54	699-47-60	699-55-57
299-E24-8	299-E33-12	699-49-55A	699-55-60A
299-E26-10	299-E33-13	699-49-57A	699-57-59
299-E26-11	299-E33-15	699-49-57B	699-59-58
299-E26-77	299-E33-16	699-50-59	699-60-60
299-E28-13	299-E33-205	699-52-55B	699-61-62
299-E28-17	299-E33-340	699-53-47A	699-61-66
299-E28-2	299-E33-341	699-53-47B	699-64-62
299-E28-21	299-E33-342	699-53-48A	699-65-50
299-E28-23	299-E33-343	699-53-55A	699-65-72
299-E28-24	299-E33-345	699-53-55B	699-66-58
299-E28-25	299-E33-37	699-53-55C	699-66-64
299-E-28-30	299-E33-39	699-54-45A	699-70-68
299-E28-5	299-E33-7	699-54-45B	699-72-73
299-E28-6	299-E34-5	699-54-48	699-73-61
299-E28-7	299-E34-7	699-54-49	
DOE/RL-2006-55			
299-E33-50	699-48-50B	699-50-56	
DOE/RL-2001-49			
299-E26-8	299-E33-3	699-49-55B	699-56-53
299-E33-14	299-E33-36	699-50-28B	699-62-43F
299-E33-17	299-E33-4	699-50-53B	699-63-55
299-E33-1A	299-E33-40	699-52-19	699-67-51
299-E33-2	299-E33-5	699-52-46A	
299-E33-21	299-E33-9	699-54-34	
299-E33-25	699-42-40C	699-56-43	

Table 1-1. List of Selected Groundwater Wells in the 200-BP-5 Groundwater Operable Unit

PNNL-14033			
199-K-31			

a. Well is also identified in DOE/RL-2009-75, *Interim Status Groundwater Monitoring Plan for the LLBG WMA-1*.

b. Well is also identified in DOE/RL-2009-76, *Interim Status Groundwater Monitoring Plan for the LLBG WMA-2*.

Groundwater sampling within the 200-BP-5 Groundwater OU is performed in accordance with the following the following facility-specific RCRA monitoring plans and 200-BP-5 Groundwater OU Work Plans and sampling and analysis plans (SAPs):

- DOE/RL-2012-35, *First Determination RCRA Groundwater Quality Assessment Plan for Low-Level Burial Grounds Low-Level Waste Management Area-1*
- DOE/RL-2012-53, *Groundwater Quality Assessment Plan for the Single-Shell Tank Waste Management Area B-BX-BY*
- DOE/RL-2009-75, *Interim Status Groundwater Monitoring Plan for the LLBG WMA-1*
- DOE/RL-2009-76, *Interim Status Groundwater Monitoring Plan for the LLBG WMA-2*
- DOE/RL-2009-77, *Groundwater Quality Assessment Plan for the Single-Shell Tank Waste Management Area C*
- DOE/RL-2008-60, *Interim Status Groundwater Monitoring Plan for the 216-B-63 Trench*
- DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit*
- DOE/RL-2006-55, *Sampling and Analysis Plan for FY 2006 200-BP-5 Groundwater Operable Unit Remedial Investigation/Feasibility Study*
- DOE/RL-2001-49, *Groundwater Sampling and Analysis Plan for the 200-BP-5 Operable Unit*
- PNNL-14033, *Groundwater Monitoring and Assessment Plan for the 100-K Area Fuel Storage Basins*

1.2 Well Selection

In total, 162 monitoring and compliance wells were identified for inclusion in this DQA. These wells, which represent a subset of the total number of wells in the 200-BP-5 Groundwater OU, were selected because they have had samples collected in the January 2008 to December 2013 timeframe. The list of 162 wells is presented in Table 1-1, and their locations are shown in Figure 1-1 through Figure 1-4.

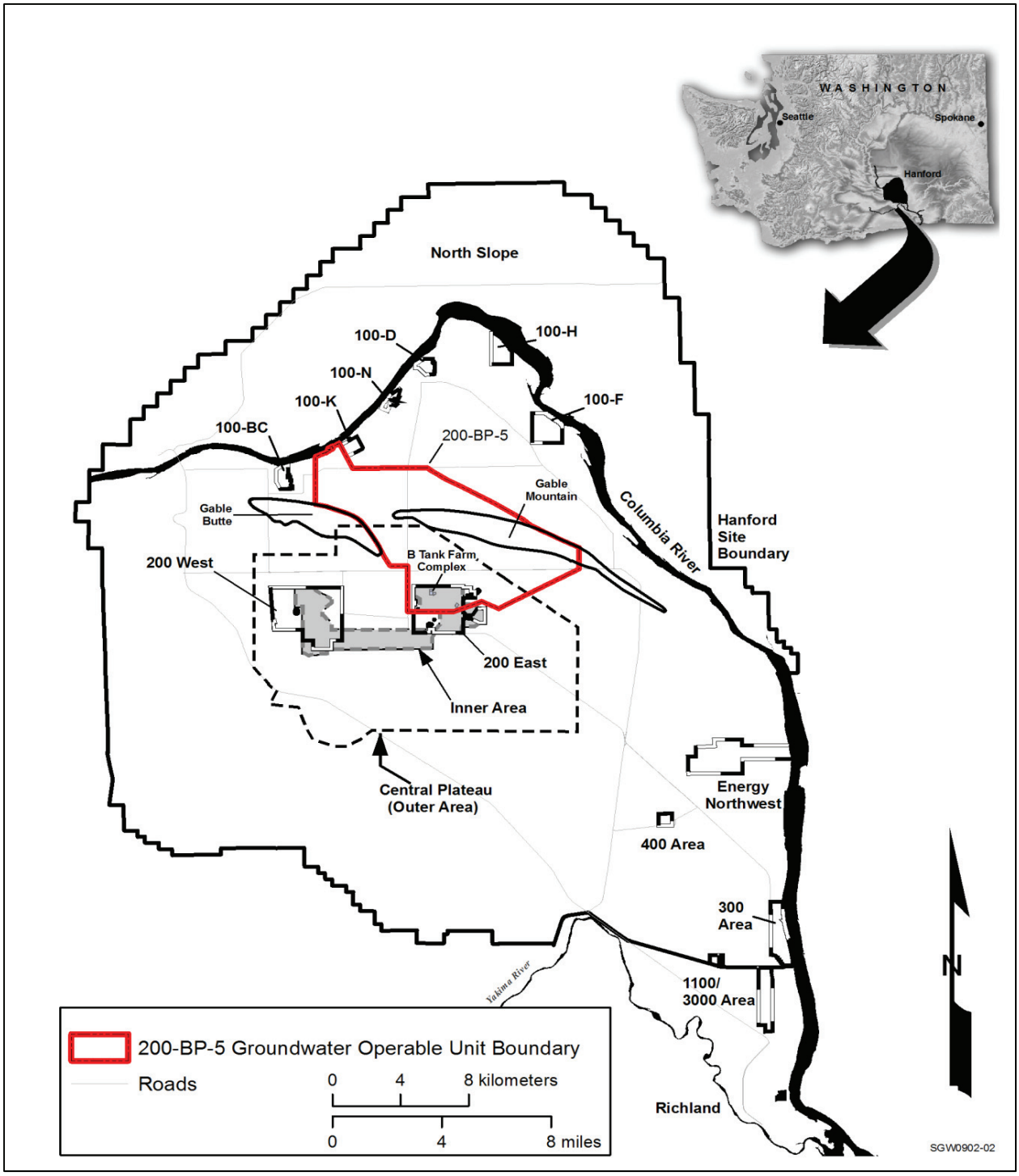

Figure 1-5. Location of the 200-BP-5 Groundwater Operable Unit at the Hanford Site

The analytical data for all groundwater monitoring samples and their associated field quality control (QC) samples are maintained in the Hanford Environmental Information System (HEIS) database; the data are summarized in annual groundwater monitoring reports. The most recent of these reports is DOE/RL-2013-22, *Hanford Site Groundwater Monitoring Report for 2012*.

The wells selected for sampling include those from the monitoring well network of the 200-BP-5 Groundwater OU, as originally established in the SAPs (DOE/RL-2001-49; DOE/RL-2006-55). Subsequently, DOE/RL-2007-18, Appendix A, specified some changes to sampling frequency and target analytes to support the RI process. Finally, some sampling activities were also specified by three RCRA well monitoring plans (DOE/RL-2008-60, DOE/RL-2009-75, and DOE/RL-2009-76), and two groundwater quality assessment plans (DOE/RL-2012-35; DOE/RL-2012-53).

1.3 Laboratories

The groundwater samples collected were analyzed at the following laboratories:

- 222-S Laboratory, located on the Hanford Site, managed by Advanced Technologies and Laboratories International, Inc., performed chemical analyses on selected groundwater samples.
- Eberline Services, located in Richmond, California, performed radionuclide analyses on selected groundwater samples.
- Lionville Laboratory, located in Exton, Pennsylvania, performed chemical analyses on select groundwater samples.
- Test America, Denver, located in Denver, Colorado, performed chemical analyses on selected groundwater samples.
- Test America, Knoxville, located in Knoxville, Tennessee, performed chemical analyses on selected groundwater samples.
- Test America, Richland, located in Richland, Washington, performed chemical and radionuclide analyses on selected groundwater samples.
- Test America, St. Louis, located in St. Louis, Missouri, performed chemical analyses on selected groundwater samples.
- Waste Sampling and Characterization Facility (WSCF) Analytical Laboratory performed chemical and radiological analyses on selected groundwater samples. WSCF is located on the Hanford Site and is operated by the Mission Support Alliance for the U.S. Department of Energy (DOE), Richland Operations Office (RL).

Chapter 5 discusses the analytical data provided by these laboratories.

1.4 Analytical Methods

Groundwater samples were analyzed using the analytical methods listed in Table 1-2. Both multi-component and single-component method-based analyses were used. Multi-component method-based analyses are those analyses typically based upon EPA methods, as applicable, which yield concentration data for multiple analytes in a single analysis. The analytes may include both target analytes and nontarget analytes. Single-component method-based analyses are those analyses typically based upon EPA methods, as applicable, which yield concentration data for a single target analyte in a single analysis. Sample results were reported in the HEIS database.

1.5 Contaminants of Potential Concern

A data quality objectives (DQOs) process was conducted in 2007 to support the RI for the 200-BP-5 Groundwater OU (WMP-28945, *Data Quality Objectives Summary Report in Support of the 200-BP-5 Groundwater Operable Unit Remedial Investigation/Feasibility Study Process*). This DQO process

resulted in a comprehensive list of contaminants of potential concern (COPCs), which was revised to a final list of 26 COPCs, as shown in Table 1-3.

The COPCs were identified for RI/FS characterization (Table 1-3) or treatment, storage, and/or disposal process monitoring. Additional analytes have been reported using a multi-component method-based analysis approach (as previously described in Section 1.4).

Table 1-2. Summary of Analytes, Analyte Classes, and Associated Analytical Methods

Analytical Method	Parameter
General Chemistry	
EPA Method 2320	Alkalinity
EPA Method 310.1	
EPA Method 120.1	Conductivity
EPA Method 9050	
Field Method	
EPA Method 9040	pH
Field	
EPA Method 150.1	
EPA Method 4500B	
EPA Method 160.1	Total Dissolved Solids
EPA Method 2540C	
EPA Method 170.1	Temperature
Field	
EPA Method 180.1	Turbidity
EPA Method 214A	
Field	
EPA Method 360.1	Dissolved Oxygen
EPA Method 410.4	Chemical Oxygen Demand
EPA Method 413.1	Oil and Grease
CATPH_8015M	Total Petroleum Hydrocarbons (TPH)
WTPH_DIESEL	TPH-Diesel Range Organics
WTPH_GASOLINE	TPH-Gasoline Range Organics
EPA Method 9020	Total Organic Halides
EPA Method 9030	Sulfide

Table 1-2. Summary of Analytes, Analyte Classes, and Associated Analytical Methods

Analytical Method	Parameter
EPA Method 9034	
EPA Method 9060	Total Organic Carbon
EPA Method 9223	Coliform
Field	Redox Potential
Anions, Cations, and Ammonia	
EPA Method 350.1	Ammonia
EPA Method 9056	Anions
EPA Method 300.0	
EPA Method 300.7	Cations
EPA Method 9014	Cyanide
EPA Method 9012	
EPA Method 335.2	
EPA Method 4500E	
Metals	
EPA Method 6010	ICP Metals
EPA Method 6020	ICP/MS Metals
EPA Method 200.8	
EPA Method 7060 (Arsenic)	Graphite Furnace Atomic Absorption Metals
EPA Method 7131 (Cadmium)	
EPA Method 7421 (Lead)	
EPA Method 7196	Hexavalent Chromium
EPA Method 7470 (Mercury)	Cold Vapor Atomic Absorption
VOCs	
EPA Method 8260	GC/MS Volatile Organic Compounds
EPA Method 8015	GC Volatile Organic Compounds
SVOCs	
EPA Method 8270	GC/MS Semivolatile Organic Compounds
EPA Method 8310	Polycyclic Aromatic Hydrocarbons
EPA Method 8040	GC Phenolic

Table 1-2. Summary of Analytes, Analyte Classes, and Associated Analytical Methods

Analytical Method	Parameter
EPA Method 8041	
EPA Method 8081	Pesticides
EPA Method 8082	Polychlorinated Biphenyls
EPA Method 8151	Herbicides
EPA Method 8290	Dioxins/Furans
Radiochemistry	
EPA Method 906.0	LSC Tritium
Separation and LSC	Tritium
EPA Method 9310	Gross Alpha/Gross Beta
GPC	Gross Alpha
Separation, Precipitation, and AEA	Americium-241
GPC	Gross Beta
LSC	Carbon-14
Gamma Spectroscopy	Gamma Emitters
Separation and gamma spectroscopy	Iodine-129
LSC	Nickel-63
Separation, precipitation, and AEA	Neptunium-237
Separation and AEA	Pa-231
ICP-MS, KPA	Total Uranium
Separation, precipitation, and AEA	Plutonium Isotopes
Separation and GPC	Radium Isotopes
AEA	Radium Isotopes
Separation and LSC	Selenium-79
Separation, precipitation, and GPC	Strontium-90
Separation and GPC	Technetium-99
Separation and LSC	Technetium-99
Separation, precipitation, and AEA	Thorium Isotopes
Precipitation and AEA	Uranium Isotopes

Table 1-2. Summary of Analytes, Analyte Classes, and Associated Analytical Methods

Analytical Method	Parameter

AEA = alpha energy analysis
LSC = liquid scintillation counting
GC = gas chromatograph
GPC = gas flow proportional counting
ICP = inductively coupled plasma
MS = mass spectrometer

1

Table 1-3. 200-BP-5 Groundwater Operable Unit Contaminants of Potential Concern

Radionuclides	Metals	Inorganics
Americium-241	Aluminum	Chloride
Carbon-14	Antimony	Cyanide[a]
Cesium-137[a]	Arsenic	Nitrate[a]
Cobalt-60	Cadmium	Nitrite
Iodine-129[a]	Chromium	Sulfate[a]
Neptunium-237	Hexavalent Chromium	**Volatile Organics**
Plutonium-238	Iron	Chloroform
Plutonium-239/240[a]	Mercury[a]	Methylene Chloride
Strontium-90[a]	Sodium	**Semivolatile Organics**
Technetium-99[a]	Thallium	Bis(2-ethylhexyl)phthalate
Thorium-232		Pentachlorophenol
Thorium-234		
Tritium[a]		
Uranium Isotopes[b]		

Source: DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit* (Table A1-3).

a. Not listed on Table A1-3 but analytes are listed in Appendix A, Table A1-10 or Table A1-11.

b. Isotopes include uranium-233, uranium-234, uranium-235, and uranium-238.

2

2 Purpose

The 200-BP-5 Groundwater OU DQA evaluates laboratory data for groundwater samples obtained from 162 wells in the 200-BP-5 Groundwater OU from January 2008 through December 2013. Included in this data set are a limited number of groundwater samples that were also included in SGW-44071, *Data Quality Assessment Report for the 200-BP-5 Groundwater Operable Unit*. Groundwater data included in this DQA were collected to support the 200-BP-5 Groundwater OU RI/FS process and other activities (e.g., monitoring data). This DQA is performed to serve the following purposes:

- Ensure that data are of sufficient quality to provide an appropriate description of 200-BP-5 Groundwater OU conditions.
- Specifically assess the usability of the data set for 200-BP-5 Groundwater OU RI/FS-related activities, including nature and extent, risk assessment, and remedial alternative evaluation.

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3 Scope

The DQA completes the data life cycle (i.e., planning, implementation, and assessment) that was initiated by the 200-BP-5 Groundwater OU RI/FS DQO process. A DQA report that evaluated groundwater samples collected from the 200-BP-5 Groundwater OU from November 2006 through May 2010 was published in 2011 (SGW-44071). This report evaluates the requirements for the sampling program found in DOE/RL-2007-18.

The current DQA supplements the first DQA performed for the 200-BP-5 Groundwater OU RI/FS described in the previous paragraph. The data included in this DQA supplement include a limited number of groundwater samples evaluated in the previous DQA report (time period 2008 through 2010) and another four additional years of samples collected after the scope of the work plan and SAP were fulfilled by the initial field investigation.

The DQA process involves the scientific evaluation of data to determine if the data are of the right type, quality, and quantity to support the intended use. This DQA was performed in accordance with EPA/240/B-06/002 and EPA/240/B-06/003, *Data Quality Assessment: Statistical Methods for Practitioners* (EPA QA/G-9S). The DQA methodology consists of the following steps:

1. **Data verification** is the process of evaluating the completeness, correctness, conformance, and compliance of a specific data set against the requirements developed through the systematic planning process or as described in the applicable SAP. It includes confirmation that the specified sampling and analytical requirements have been completed. This includes verification that the number, type, and location of all samples identified in the SAP have been collected and that all required measurements and analyses were performed.

2. **Data validation** is an analyte-specific and sample-specific process that extends the evaluation of data beyond method or contractual compliance (i.e., data verification) to determine the analytical quality of a specific data set. Data quality evaluation includes a determination, where possible, of the reasons for any failure to meet method or QC requirements and an evaluation of the impact of such failure on the overall data set. It might include verification of required deliverables (e.g., the minimum detection limits); evaluation of analytical results based on method blanks, equipment blanks, or field transfer blanks, and the effect of quality deficiencies on the analytical sample data. Data quality evaluation is usually carried out on individual data packages (or sample delivery groups). However, for the purposes of this DQA, an electronic data quality evaluation process is based only on electronic deliverables received from each of the laboratories and conducted using a combination of automated and manual data review tools. An independent formal validation report was provided with SGW-44071.

3. **Data usability** is a determination of the adequacy of the entire data set to support a particular environmental decision and is based upon the verification and data quality evaluation results. The assessment relates to the adequacy of the entire data set to support a specific and defined data need. The usability step involves assessing whether the process execution and the resulting data meet project quality objectives documented in the DQO summary report and associated SAPs.

The DQA procedure is not intended to be a definitive analysis of a project or problem. Instead, it provides an initial assessment of the reasonableness of the data that have been generated through a systematic quality assurance (QA) and QC review process. This DQA focuses on the chemical and radionuclide contaminant monitoring data collected by groundwater sampling at the 200-BP-5 Groundwater OU between January 2008 and December 2013. The monitoring data have been examined to determine if they

meet the analytical quality criteria outlined in DOE/RL-2007-18 and to determine if the data are adequate to support decision making.

The five-step DQA process is described in EPA/240/B-06/002. As described in EPA/240/B-06/002, the five-step process must be followed when data are collected specifically to perform a statistical test. However, groundwater data for the 200-BP-5 Groundwater OU were collected to support RI/FS purposes and other activities, such as monitoring, which implement a judgmental sampling design. As described in EPA/240/B-06/002, steps 3 and 4 of the EPA five-step process do not apply when a judgmental sampling design is implemented. Although steps 3 and 4 are listed in Table 3-1, they were not performed for this DQA. Table 3-1 presents a crosswalk between the major sections in this DQA report and the EPA guidance document. This table shows how the elements of the DQA are consistent with EPA guidance.

Table 3-1. Data Quality Assessment Crosswalk

Data Quality Assessment Report Section	EPA/240/B-06/002
4.0 Data Verification	Step 2 Conduct Preliminary Data Review
4.1 Project Objectives	Step 1 Review DQOs and Sampling Design
5.1 Analytical Requirements	Step 1 Review DQOs and Sampling Design
4.1 Sample Design	Step 1 Review DQOs and Sampling Design
5.0 Data Validation (Data Quality Evaluation)	Step 2 Conduct Preliminary Data Review
6.0 Data Quality Evaluation 7.0 Hanford Groundwater Report Review 8.0 Field Quality Control	Step 3 Select Statistical Test (Not Applicable) Step 4 Verify the Assumptions (Not Applicable Step 5 Draw Conclusions from the Data

Source: EPA/240/B-06/002, *Data Quality Assessment: A Reviewer's Guide* (EPA QA/G-9R).

DQO = data quality objective

4 Data Verification

This chapter describes DQOs established and associated completeness for the 200-BP-5 Groundwater OU. It also describes the data verification activities performed.

4.1 Data Quality Objectives

The primary goals in developing DQOs for the 200-BP-5 Groundwater OU were to determine the environmental measurements necessary to refine the conceptual site model describing the groundwater contamination sources and nature and extent of groundwater contamination; calculate exposure point concentrations to support the baseline risk assessment (BRA); and support evaluation of remedial alternatives. The primary question to be resolved was whether the data from the groundwater monitoring wells are of sufficient quality to be used in the RI/FS decision making process. Within this larger question are additional concerns for QC demonstrations, sufficiency of the data, quantity and circumstances of outliers, and data trends. The data set that addresses this question consists of the analytical data for those analytes identified as COPCs in the RI/FS Work Plan (DOE/RL-2007-18, Appendix A). The COPCs are identified in Table 1-3.

To ensure that these objectives would be met, the DQO process was used to evaluate data needs and develop the sampling design to collect the needed data (WMP-28945). Analytical parameters and associated QC criteria were specified as part of the DQO process. The DQO results were used to develop the SAP for the 200-BP-5 Groundwater OU RI, which was approved by DOE-RL, EPA, and the Washington State Department of Ecology.

4.1.1 Completeness

Completeness objectives are documented in SGW-44071, which documents the outcome of the DQOs process for the 200-BP-5 Groundwater OU. Section 4 of SGW-44071 summarizes the completeness associated with the DQOs (problem statement, decision rules, field QC requirements, and uncertainty limits) and the resulting sample design.

Appendix B of SGW-44071 concludes that the assessment for the 200-BP-5 Groundwater OU depth discrete sample data are of the right type, quality, and quantity for direct regulatory use (e.g., in the BRA) as part of the RI/FS process. Detection limits, precision, accuracy, and data completeness were analyzed to determine if any analytical data should be rejected as a result of QA/QC deficiencies. Other than those results that were noted as questionable or unusable, the analytical data were found to be acceptable for the intended use noted in Appendix B.

4.2 Data Verification Activities

As described in Chapter 3, data verification is the process of evaluating the completeness, correctness, conformance, and compliance of a specific data set against the requirements developed through the systematic planning process or as described in the relevant SAP.

This process is conducted by Sample Management and Reporting (SMR) personnel prior to the data quality evaluation step of the DQA process. Data verification activities are initiated upon receipt of three different types of data packages (radiological screening data package, priority data package, and final data package). The following activities are performed for all samples collected as part of the data verification process:

- All groundwater samples collected and submitted to contracted laboratories are entered into the Sample and Data Tracking (SDT) system.
- Each data package is compared against the requested analyses in the SDT system.

- All HEIS sample numbers assigned to the sample delivery group (SDG) are included, all requested analytical results are present, and the sampling authorization form number is correct identified on the data package.
- Resolve discrepancies by reviewing the chain-of-custody associated with the data package.
- Notify the Problem Discrepancy Reporting Coordinator of data package discrepancies.

- Update the data package status table with data package receipt date

At a minimum, 25 percent of final data packages received and processed by the SMR group are subject to verification to ensure completeness and accuracy of the data package, except for those that were generated through the request for data review (RDR) process. The percentage of non-RDR data or data packages verified can vary in accordance with the number of problems and discrepancies that are being noted. If, at any time, there is an increase in problems and discrepancies, the percentage of verification can be increased as wells. The data verification steps that are performed on final data packages are listed in Table 4-1.

Table 4-1. Summary of Data Verification Activities for Final Data Packages

Actionee	Step and Action
SMR Team	Distribute final data package to data verifier.
Data Verifier	Receive the hard copy data package
	Access the Sample Data Tracking system and initiate a verification "open" entry in the Data Package Status table.
	Enter current date and initials in the provided columns.
	Verify the following on the hard copy data package: • Sample receipt documentation verification a. Chain-of-custody forms are present. b. Sampling authorization form numbers are correct. c. Sample receipt checklist (if applicable is present. d. Number of samples listed is correct. e. Problems noted during sample receipt are noted in narrative. f. Sample/analysis dates/times are correct. • Analytical data review a. Sample holding times were not exceeded. b. Analyses date/time sequences are correct. c. Results are qualified/flagged appropriately. • Narrative or cover letter evaluation a. Number of samples provided is correct. b. Problems encountered during analyses are noted in narrative. c. Qualifiers/flags are discussed, when applicable. d. General information provided is correct/applicable. • Quality control confirmation a. Quality control recoveries are acceptable. b. Precision levels are acceptable. c. Tracers/carrier recoveries are acceptable. d. Accuracy is acceptable.
	Conduct a review of data received in an electronic data deliverable by comparing the analytical results found in the Hanford Environmental Information System to the corresponding data package hard copy analytical results.

Data verification activities are performed for all characterization and monitoring data collected for the Hanford Site. Results from these sample analyses are evaluated and compiled into an annual Hanford Site groundwater monitoring report. The report includes an appendix that provides an overview of the QA/QC information generated to support these programs. The results of the Hanford Groundwater Report review are summarized in Chapter 7 of this report.

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5 Data Quality Evaluation

This chapter describes the data quality evaluation activities that were performed for the 200-BP-5 Groundwater OU data set. It describes the analytical performance requirements and laboratory QA/QC criteria and lists the documents that were used to guide the data quality evaluation activities performed. Three additional activities were performed to determine the usability of the data set: evaluation of detection limits, development and evaluation of data trend charts, and evaluation of annual groundwater monitoring reports.

5.1 Laboratory Performance Requirements

Groundwater results are evaluated by comparing the electronic laboratory QC information to established laboratory QC performance requirements.

Laboratory analytical performance requirements are listed in Table 5-1 and Table 5-2. The analytical performance requirements listed in Table 5-1 (radiological analytes) and Table 5-2 (chemicals) are provided only for those analytes identified as COPCs (Table 1-3).

Table 5-1. Groundwater Radiological Analytical Performance Requirements

Analyte Name	CAS Number	Background Value[a,b]	Comparison Value[c] (pCi/L)	Method Detection Limit (pCi/L)	MS/MSD % RPD	MS/MSD % Recovery
Radionuclides						
Americium-241	14596-10-2	0.000075	15	1	≤30	70-130
Carbon-14	14762-75-5	No Value	2,000	200	≤30	70-130
Cesium-137[d]	10045-97-3	8.6	200	15	≤30	70-130
Cobalt-60	10198-40-0	0.023	100	25	≤30	70-130
Iodine-129[d]	150-46-84-1	9.00E-07	1	1	≤30	70-130
Neptunium-237	13994-20-2	No Value	15	1	≤30	70-130
Plutonium-238	13981-16-3	0.00050	15	1	≤30	70-130
Plutonium-239/240[d]	PU-239/240	No Value	15	1	≤30	70-130
Strontium-90[d]	10098-97-2	0.0010	8.0	2	≤30	70-130
Technetium-99[d]	14133-76-7	0.83	900	15	≤30	70-130
Thorium-232[e]	Th-232	No Value	--	1	≤30	70-130
Thorium-234[e]	Th-234	No Value	--	1	≤30	70-130
Tritium	10028-17-8	119	20,000	25	≤30	70-130

Table 5-1. Groundwater Radiological Analytical Performance Requirements

Analyte Name	CAS Number	Background Value[a,b]	Comparison Value[c] (pCi/L)	Method Detection Limit (pCi/L)	MS/MSD % RPD	MS/MSD % Recovery

a. DOE/RL-96-61, *Hanford Site Background: Part 3, Groundwater Background*.

b. Represents activity levels from filtered groundwater samples; total concentrations from unfiltered samples are not available.

c. 40 CFR 141, "National Primary Drinking Water Regulations"

d. Radioisotope is not identified as a contaminant of potential concern on Table A1-3 but analytes are listed in Appendix A, Table A1-10 (DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit*).

e. Groundwater samples were not analyzed for these analytes.

CAS = Chemical Abstracts Service

MS/MSD = matrix spike (duplicate)

RPD = relative percent difference

Table 5-2. Groundwater Chemical Analytical Performance Requirements

Analyte Name	CAS Number	Background Value[a,b] (µg/L)	Comparison Value[c] (µg/L)	Method Detection Limit (µg/L)	LCS/LCSD RPD[d]	LCS/LCSD % Recovery[d]	MS/MSD RPD[e,f,g]	MS/MSD % Recovery[e,f,g]
Metals								
Aluminum	7429-90-5	7.1	16,000/87	6	≤20[f]	80-120[f]	≤30	70-130
Antimony	7440-36-0	55.1	6	5	≤20[f]	80-120[f]	≤30	70-130
Arsenic	7440-38-2	7.9	7.9	10	≤20[f]	80-120[f]	≤30	70-130
Cadmium	7440-43-9	0.92	5.0/0.25	2	≤20[f]	80-120[f]	≤30	70-130
Chromium (Total)	7440-47-3	2.4	100/65	5	≤20[f]	80-120[f]	≤30	70-130
Chromium (Hexavalent)	18540-29-9	N/A	48/10	10	≤20[f]	80-120[f]	≤30	70-130
Iron	7439-89-6	570	11,200/1,000	50	≤20[f]	80-120[f]	≤30	70-130
Mercury[h]	7487-94-7	0.0030	2.0/0.012	0.2	≤20[f]	80-120[f]	≤30	70-130
Sodium	7440-23-5	--	No Value	50,000	≤20[f]	80-120[f]	≤30	70-130
Thallium	7440-28-0	1.7	0.5/0.50	1	≤20[f]	80-120[f]	≤30	70-130
Uranium	7440-61-1	9.9	30	1	≤20[f]	80-120[f]	≤30	70-130
Anions/Cations								
Chloride	16887-00-6	15,630	250,000	200	≤20[f]	80-120[f]	≤30	70-130
Cyanide[h]	57-12-5	8.4	4.8	5	≤20[f]	80-120[f]	≤30	70-130

Table 5-2. Groundwater Chemical Analytical Performance Requirements

Analyte Name	CAS Number	Background Value[a,b] (µg/L)	Comparison Value[c] (µg/L)	Method Detection Limit (µg/L)	LCS/LCSD RPD[d]	LCS/LCSD % Recovery[d]	MS/MSD RPD[e,f,g]	MS/MSD % Recovery[e,f,g]
Nitrate	14797-55-8	26,871	45,000	250	≤20[f]	80-120[f]	≤30	70-130
Nitrite	14797-65-0	93.7	3,300	250	≤20[f]	80-120[f]	≤30	70-130
Sulfate[h]	14808-79-8	47,014	250,000	500	≤20[f]	80-120[f]	≤30	70-130
Volatile Organic Compounds								
Chloroform	67-66-3	N/A	1.4	5	≤20[f]	Laboratory-specific	≤30	50-150
Methylene Chloride	75-09-2	N/A	5.0	5	≤20[f]	Laboratory-specific	≤30	50-150
Semivolatile Organic Compounds								
Bis(2-ethylhexyl)phthalate	117-81-7	N/A	6.0	5	≤20[f]	Laboratory-specific	≤30	50-150
Pentachlorophenol	108-95-2	N/A	0.22	5	≤20[f]	Laboratory-specific	≤30	50-150

a. DOE/RL-96-61, Rev. 0, *Hanford Site Background: Part 3, Groundwater Background*.

b. Represents concentrations from filtered groundwater samples; total concentrations from unfiltered samples are not available.

c. The lowest value from:

40 CFR 141.62, "Maximum Contaminant Levels for Inorganic Contaminants."

WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington."

WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Ground Water Cleanup Standards."

WAC 173-340-900, "Tables."

WAC 246-290-310, "Group A Public Water Supplies," "Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs)."

d. Precision and accuracy requirements are identified and defined in the referenced EPA procedures. Accuracy criteria are for associated batch matrix spike percentage recoveries. Evaluation based on statistical control of laboratory control sample is also performed. Precision criteria are based on batch laboratory replicate matrix spike sample analyses or replicate sample analyses.

e. Accuracy criteria are the minimum for associated batch laboratory control sample percentage recoveries. Laboratories must meet statistically based control if more stringent. Additional analyte-specific evaluations also performed for matrix spike and surrogates as appropriate to the method. Precision criteria as based on laboratory replicate matrix spike sample analyses.

f. For EPA Method 200.8, see EPA/600/R-94/111, *Methods for the Determination of Metals in Environmental Samples*, Supplement.

g. For EPA Methods 300.0, 335, and 353, see EPA-600/4-79-020, *Methods for Chemical Analysis of Water and Wastes*. For four-digit EPA methods, see SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update IV-B*.

h. Analyte is not identified as a contaminant of potential concern on Table A1-3, but analytes are listed in Appendix A, Table A1-11 (DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit*).

CAS = Chemical Abstracts Service

LCS/LCSD = laboratory control sample (duplicate)

MS/MSD = matrix spike (duplicate)

RPD = relative percent difference

5.1.1 Laboratory Quality Assurance and Quality Control Requirements

QA/QC requirements govern nearly all aspects of analytical laboratory operation, including instrument procurement, maintenance, calibration, and operation. Laboratory requirements for internal QC checks are performed, as appropriate, for the analytical method at a rate of one per sample per SDG or 1 in 20 (5 percent), whichever is more frequent. Laboratory internal QC checks include the following:

- **Laboratory Contamination.** Each analytical batch contains a laboratory (method) blank (material of composition similar to that of the samples with known/minimal contamination of the analytes of interest) carried through the complete analytical process. The method blank is used to evaluate false positive results in samples caused by contamination during handling at the laboratory.

- **Analytical Accuracy.** For most analyses, a known quantity of representative analytes of interest (matrix spike [MS]) is added to a separate aliquot of a sample from the analytical batch. The known amount added is compared to the actual measured amount to calculate the percent recovery. The recovery percentage of the added MS is used to evaluate analytical accuracy. For analyses not amenable to MS techniques (such as gamma energy analysis [GEA]) or where analytical recovery is evaluated from recovery of the tracers or carriers, accuracy of the laboratory preparation and analysis is evaluated via QC reference samples (such as laboratory control spike). In addition to the MS recovery, surrogate compounds are used to evaluate accuracy in the various organic analyses (volatile organic compounds [VOCs] and semivolatile organic compounds [SVOCs]). Surrogate compounds with instrumental responses that are typical of the other analytes are added into the blanks, samples, and MSs, and the recovery is evaluated.

- **Analytical Precision.** Separate aliquots removed from the sample containers (duplicate samples) are analyzed for each analytical batch for radionuclides and metals. The duplicate sample results are compared to the original sample results, which are evaluated as relative percent differences (RPDs) and are used to assess analytical precision. Alternately, a matrix spike duplicate (MSD) may be used for assessing precision of metals and organic parameters. For an MSD, a separate aliquot is removed from the same sample container and spike in the same manner as the MS. The results, not recoveries, from the MS/MSD are used to calculate a RPD and assess precision.

- **Laboratory Control Samples or QC Reference Samples (Analytical Accuracy).** A laboratory control sample (LCS) is prepared from an independent standard at a concentration other than that used for calibration but within the calibration range. The LCS is taken through all the preparation and analysis steps used in the method. The LCS or QC reference sample measures the accuracy of the analytical process. Depending on how it is introduced into the analysis, the LCS is sometimes referred to as a blank spike sample.

In addition to the laboratory QA/QC requirements listed above, sensitivity criteria are also evaluated. Sensitivity identifies any laboratory data that do not meet reporting limits required by the SAP and compares the results to applicable decision thresholds (e.g., comparison values).

Laboratories are also subject to periodic and random audits of laboratory performance, systems, and overall programs. Audits check are performed to laboratory contract requirements. No audits were performed with respect to the data analyses performed as part of this project.

5.1.2 Comparison Values

Comparison values are derived from readily available sources of chemical-specific applicable or relevant and appropriate requirements (ARARs) or risk-based concentrations using default exposure assumptions.

Groundwater results obtained from monitoring wells located inland from the Columbia River are compared to drinking water and groundwater cleanup standards developed for the protection of human health. Groundwater results obtained from monitoring wells that have the potential to discharge to the Columbia River (near river) are compared to drinking water standards, groundwater cleanup standards, and surface water quality standards and criteria developed for the protection of human health or aquatic receptors.

The following sources identify the chemical-specific ARARs obtained from federal regulations:

- Maximum contaminant levels (MCLs), secondary MCLs, and non-zero MCL goals established under the *Safe Drinking Water Act of 1974*
- Ambient water quality criteria established under Section 304 or Section 303 of the *Clean Water Act of 1977*

The following sources identify chemical-specific ARARs obtained from Washington State regulations:

- WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Ground Water Cleanup Standards"
- WAC 246-290-310, "Group A Public Water Supplies," "Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs)"
- WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington"

The comparison values selected for the DQA process represent the lowest of the chemical-specific ARARs or risk-based concentrations that are protective of human and aquatic receptors and available at the time of the assessment. These comparison values, along with their basis, appear in Table 5-3.

5.1.3 Laboratory and Data Quality Evaluation Flags

During generation of environmental analytical data, any of several qualification flags may be assigned to an individual result. The HEIS database carries qualification flags applied by the laboratory and through the validation process. Analytical data associated with this report show all of these applied qualification flags. Potential flags and their meanings are provided in Table 5-4.

5.2 Data Quality Evaluation Review Process

The data quality evaluation process is an analyte-specific and sample-specific process that extends the evaluation of DQA described in Chapter 4. The main focus of data quality review is to determine the data quality in terms of accomplishment of measurement DQOs. Data quality review is generally performed by person(s) independent of the activity which is being evaluated.

A formal data validation effort was not performed for the analytical data included in this DQA report. However, a formal validation report was submitted with the original DQA report submitted for the 200-BP-5 Groundwater OU (SGW-44071). Hard copy data validation reports were not requested from the contracted laboratories. Instead, a low-level data quality review process was performed to evaluate the quality of the data set. This process is similar to the Stage 2A verification and validation described in EPA 540-R-08-005, *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*. Each laboratory electronically submits the following sample-related QC information for each SDG:

- Dates and times of analysis
- Method blank or preparation blank results

- Surrogate recoveries
- Deuterated monitoring compound recoveries
- LCS recoveries
- Duplicate analyses RPD results
- MS and MSD recoveries and relative RPD results

5.2.1 Guidance Documents

The following guidance documents were used for the data quality evaluation process:

- EPA/240/B-06/002 (EPA QA/G-9R)
- EPA/240/B-06/003 (EPA QA/G-9S)
- EPA/240/R-02/004, *Guidance on Environmental Data Verification and Data Validation* (EPA QA/G-8)
- EPA 540-R-08-005 (OSWER 9200.1-85)
- USEPA 540-R-08-01, *National Functional Guidelines for Superfund Organic Methods Data Review* (OSWER 9240.1-48)
- USEPA 540-R-10-011, *National Functional Guidelines for Inorganic Superfund Data Review* (OSWER 9240.1-51)
- EPA-540-R-11-016, *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (OSWER 9240.1-53)

Table 5-3. List of Target Analytes with Comparison Values for the 200-BP-5 Groundwater Operable Unit

Analyte Name	CAS Number	Units	Human Health Comparison Value	Comparison Level Basis	Human Health and Aquatic Comparison Value	Comparison Level Basis
1,4-Dichlorobenzene	106-46-7	µg/L	8.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	8.1	WAC 173-340-720(4)(b)(iii)(A) and (B)
2-Hexanone	591-78-6	µg/L	40	WAC 173-340-720(4)(b)(iii)(A) and (B)	40	WAC 173-340-720(4)(b)(iii)(A) and (B)
Acetone	67-64-1	µg/L	7,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	7,200	WAC 173-340-720(4)(b)(iii)(A) and (B)
Acetophenone	98-86-2	µg/L	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	800	WAC 173-340-720(4)(b)(iii)(A) and (B)
Acrolein	107-02-8	µg/L	4	WAC 173-340-720(4)(b)(iii)(A) and (B)	3.0	Clean Water Act -- Freshwater CCC
Aluminum	7429-90-5	µg/L	16,000	WAC 173-340-720(4)(b)(iii)(A) and (B)	87	Clean Water Act -- Freshwater CCC
Americium-241	14596-10-2	pCi/L	15	40 CFR 141—Federal MCL	15	40 CFR 141—Federal MCL
Antimony	7440-36-0	µg/L	6.0	40 CFR 141—Federal MCL	6.0	40 CFR 141—Federal MCL
Arsenic	7440-38-2	µg/L	0.058	WAC 173-340-720(4)(b)(iii)(A) and (B)	0.058	WAC 173-340-720(4)(b)(iii)(A) and (B)
Barium	7440-39-3	µg/L	2,000	40 CFR 141—Federal MCL	2,000	40 CFR 141—Federal MCL
Benzene	71-43-2	µg/L	0.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	0.8	WAC 173-340-720(4)(b)(iii)(A) and (B)
Beryllium	7440-41-7	µg/L	4.0	40 CFR 141—Federal MCL	4.0	40 CFR 141—Federal MCL
Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	6.0	40 CFR 141—Federal MCL	6.0	40 CFR 141—Federal MCL
Boron	7440-42-8	µg/L	3,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	3,200	WAC 173-340-720(4)(b)(iii)(A) and (B)
Bromomethane	74-83-9	µg/L	11	WAC 173-340-720(4)(b)(iii)(A) and (B)	11	WAC 173-340-720(4)(b)(iii)(A) and (B)
Butylbenzylphthalate	85-68-7	µg/L	46	WAC 173-340-720(4)(b)(iii)(A) and (B)	46	WAC 173-340-720(4)(b)(iii)(A) and (B)
Cadmium	7440-43-9	µg/L	5	40 CFR 141—Federal MCL	0.25	Clean Water Act -- Freshwater CCC
Carbon Disulfide	75-15-0	µg/L	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	800	WAC 173-340-720(4)(b)(iii)(A) and (B)
Carbon Tetrachloride	56-23-5	µg/L	0.63	WAC 173-340-720(4)(b)(iii)(A) and (B)	0.63	WAC 173-340-720(4)(b)(iii)(A) and (B)
Carbon-14	14762-75-5	pCi/L	2,000	40 CFR 141—Federal MCL	2,000	40 CFR 141—Federal MCL
Cesium-137	10045-97-3	pCi/L	200	40 CFR 141—Federal MCL	200	40 CFR 141—Federal MCL
Chloride	16887-00-6	µg/L	250,000	40 CFR 141—Federal Secondary MCL	250,000	40 CFR 141—Federal Secondary MCL
Chloroform	67-66-3	µg/L	1.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	1.4	WAC 173-340-720(4)(b)(iii)(A) and (B)
Chromium	7440-47-3	µg/L	100	40 CFR 141—Federal MCL	65	Clean Water Act -- Freshwater CCC
Cobalt	7440-48-4	µg/L	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)
Cobalt-60	10198-40-0	pCi/L	100	40 CFR 141—Federal MCL	100	40 CFR 141—Federal MCL
Copper	7440-50-8	µg/L	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	9	Clean Water Act -- Freshwater CCC
Cyanide	57-12-5	µg/L	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)

Table 5-3. List of Target Analytes with Comparison Values for the 200-BP-5 Groundwater Operable Unit

Analyte Name	CAS Number	Units	Human Health Comparison Value	Comparison Level Basis	Human Health and Aquatic Comparison Value	Comparison Level Basis
Di-n-nonyl-phthalate	84-76-4	µg/L	--	No Toxicity Value	--	No Toxicity Value
Europium-154	15585-10-1	pCi/L	60	40 CFR 141—Federal MCL	60	40 CFR 141—Federal MCL
Europium-155	14391-16-3	pCi/L	600	40 CFR 141—Federal MCL	600	40 CFR 141—Federal MCL
Fluoride	16984-48-8	µg/L	960	WAC 173-340-720(4)(b)(iii)(A) and (B)	960	WAC 173-340-720(4)(b)(iii)(A) and (B)
Gross Alpha	12587-46-1	pCi/L	15	40 CFR 141—Federal MCL	15	40 CFR 141—Federal MCL
Hexavalent Chromium	18540-29-9	µg/L	48	WAC 173-340-720(4)(b)(iii)(A) and (B)	10	40 CFR 141 -- Freshwater CCC
Iodine-129	150-46-84-1	pCi/L	1	40 CFR 141—Federal MCL	1	40 CFR 141—Federal MCL
Iron	7439-89-6	µg/L	11,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	1,000	Clean Water Act -- Freshwater CCC
Lead	7439-92-1	µg/L	15	40 CFR 141—Federal MCL	2.1	WAC 173-201A
Lithium	7439-93-2	µg/L	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	32	WAC 173-340-720(4)(b)(iii)(A) and (B)
Manganese	7439-96-5	µg/L	384	WAC 173-340-720(4)(b)(iii)(A) and (B)	384	WAC 173-340-720(4)(b)(iii)(A) and (B)
Mercury	7487-94-7	µg/L	2	40 CFR 141—Federal MCL	0.012	40 CFR 131 -- Freshwater CCC
Methyl Methacrylate	80-62-6	µg/L	11,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	11,200	WAC 173-340-720(4)(b)(iii)(A) and (B)
Methyl Methanesulfonate	66-27-3	µg/L	0.88	WAC 173-340-720(4)(b)(iii)(A) and (B)	0.88	WAC 173-340-720(4)(b)(iii)(A) and (B)
Methylene Chloride	75-09-2	µg/L	5.0	40 CFR 141—Federal MCL	5.0	40 CFR 141—Federal MCL
Molybdenum	7439-98-7	µg/L	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	80	WAC 173-340-720(4)(b)(iii)(A) and (B)
Neptunium-237	13994-20-2	pCi/L	15	40 CFR 141—Federal MCL	15	40 CFR 141—Federal MCL
Nickel	7440-02-0	µg/L	100	40 CFR 141—Federal MCL	52	Clean Water Act -- Freshwater CCC
Nitrate	14797-55-8	µg/L	45,000	40 CFR 141—Federal MCL	45,000	40 CFR 141—Federal MCL
Nitrite	14797-65-0	µg/L	3,300	40 CFR 141—Federal MCL	3,300	40 CFR 141—Federal MCL
n-Nitrosodi-n-dipropylamine	621-64-7	µg/L	0.013	WAC 173-340-720(4)(b)(iii)(A) and (B)	0.013	WAC 173-340-720(4)(b)(iii)(A) and (B)
Octachlorodibenzofuran	39001-02-0	µg/L	0.0024	WAC 173-340-720(4)(b)(iii)(A) and (B)	0.0024	WAC 173-340-720(4)(b)(iii)(A) and (B)
Octachlorodibenzo-p-dioxin	3268-87-9	µg/L	0.0024	WAC 173-340-720(4)(b)(iii)(A) and (B)	0.0024	WAC 173-340-720(4)(b)(iii)(A) and (B)
Phenol	108-95-2	µg/L	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)
Plutonium-238	13981-16-3	pCi/L	15	40 CFR 141—Federal MCL	15	40 CFR 141—Federal MCL
Plutonium-239/240	PU-239/240	pCi/L	15	40 CFR 141—Federal MCL	15	40 CFR 141—Federal MCL
Selenium	7782-49-2	µg/L	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	5.0	Clean Water Act -- Freshwater CCC
Silver	7440-22-4	µg/L	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	2.6	WAC 173-201A

Table 5-3. List of Target Analytes with Comparison Values for the 200-BP-5 Groundwater Operable Unit

Analyte Name	CAS Number	Units	Human Health Comparison Value	Comparison Level Basis	Human Health and Aquatic Comparison Value	Comparison Level Basis
Strontium	7440-24-6	µg/L	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)
Strontium-90	10098-97-2	pCi/L	8.0	40 CFR 141—Federal MCL	8.0	40 CFR 141—Federal MCL
Styrene	100-42-5	µg/L	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)
Technetium-99	14133-76-7	pCi/L	900	40 CFR 141—Federal MCL	900	40 CFR 141—Federal MCL
Tetrachloroethene	127-18-4	µg/L	5.0	40 CFR 141—Federal MCL	5.0	40 CFR 141—Federal MCL
Thallium	7440-28-0	µg/L	0.5	40 CFR 141—Federal MCLG	0.50	40 CFR 141—Federal MCLG
Tin	7440-31-5	µg/L	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)
Toluene	108-88-3	µg/L	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	640	WAC 173-340-720(4)(b)(iii)(A) and (B)
Total Petroleum Hydrocarbons-Diesel Range	TPHDIESEL	µg/L	500	WAC 173-340-900, Table 720-1	500	WAC 173-340-900, Table 720-1
Tributyl Phosphate	126-73-8	µg/L	9.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	9.7	WAC 173-340-720(4)(b)(iii)(A) and (B)
Trichloroethene	79-01-6	µg/L	0.95	WAC 173-340-720(4)(b)(iii)(A) and (B)	0.95	WAC 173-340-720(4)(b)(iii)(A) and (B)
Tritium	10028-17-8	pCi/L	20,000	40 CFR 141—Federal MCL	20,000	40 CFR 141—Federal MCL
Uranium	7440-61-1	µg/L	30	40 CFR 141—Federal MCL	30	40 CFR 141—Federal MCL
Vanadium	7440-62-2	µg/L	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	80	WAC 173-340-720(4)(b)(iii)(A) and (B)
Xylenes (Total)	1330-20-7	µg/L	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)
Zinc	7440-66-6	µg/L	4,800	WAC 173-340-720(4)(b)(iii)(A) and (B)	91	WAC 173-201A

Note: Shading identifies those analytes that were identified as contaminants of potential concern in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit* (Appendix A).

40 CFR 141.61, "National Primary Drinking Water Regulations," "Maximum Contaminant Levels for Organic Contaminants."

40 CFR 141.62, "Maximum Contaminant Levels for Inorganic Contaminants."

40 CFR 141.66, "Maximum Contaminant Levels for Radionuclides."

40 CFR 143.3, "National Secondary Drinking Water Regulations," "Secondary Maximum Contaminant Levels."

WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington."

WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Ground Water Cleanup Standards."

WAC 173-340-900, "Tables."

WAC 246-290-310, "Group A Public Water Supplies," "Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs)."

CAS = Chemical Abstracts Service

CCC = criterion continuous concentration

MCL = maximum contaminant level

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Table 5-4. Data Qualification Flags

Flag	Definition
Laboratory-Applied Flags	
B	(Inorganics and Wetchem*) – The analyte was detected at a value less than the contract required detection limit but greater than or equal to the MDL. The data should be considered usable for decision making purposes. (Organics) – The analyte was detected in both the associated QC blank and in the sample. (Radionuclides) – The associated QC sample blank has a result >= 2 times the MDA and, after corrections, result is >= MDA for this sample.
C	(Inorganics and Wetchem) – The analyte was detected in both the sample and the associated QC blank, and the sample concentration was less than or equal to five times the blank concentration. The data should be considered unusable for decision making purposes.
D	(Inorganics and Wetchem) – The analyte was detected in both the sample and the associated QC blank, and the sample concentration was less than or equal to five times the blank concentration. The data should be considered unusable for decision making purposes.
E	(Inorganics) – Reported value is estimated because of interference. See any comments that may be in the laboratory report case narrative. (Organics) – Concentration exceeds the calibration range of the gas chromatograph/mass spectrometer (GC/MS).
N	(All) – The spike sample recovery is outside control limits. The data should be considered usable for decision making purposes.
J	(Organics) – Indicates the constituent was analyzed for and detected. The associated value is estimated because of a QC deficiency identified during data validation. The data should be considered usable for decision making purposes.
O	One or more QC criteria have not been met. Please see the applicable case narrative or Data Exception Report for details.
Q	(Organics - Dioxins and PCB Congeners Only) – Estimated maximum concentration. Used if one of the qualitative identification criteria is not met (e.g., Chlorine isotopic ratios outside theoretical range).
T	(Organics GC/MS only) – Spike and/or spike duplicate sample recovery is outside control limits.
U	(All) – The constituent was analyzed for and was not detected. The data should be considered usable for decision making purposes.
X	(All) – The result-specific translation of this qualifier code is provided in the data report and/or case narrative.
Data Verification Applied Flags	
U	The constituent was analyzed for, but was not detected. The data should be considered usable for decision making purposes.
UJ	The constituent was analyzed for and was not detected. Because of a QC deficiency identified during data validation, the value reported may not accurately reflect the reporting limit. The data should be considered usable for decision making purposes.
J	Indicates the constituent was analyzed for and detected. The associated value is estimated because of a QC deficiency identified during data validation. The data should be considered usable for decision making purposes.

Table 5-4. Data Qualification Flags

Flag	Definition
J+	Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias because of a QC deficiency identified during data validation. The data should be considered usable for decision making purposes.
J-	Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias because of a QC deficiency identified during data validation. The data should be considered usable for decision making purposes
R	Indicates the constituent was analyzed for and detected; however, because of an identified QC deficiency the data should be considered unusable for decision making purposes.
UJ	Indicates the constituent was analyzed for and was not detected. Because of a QC deficiency identified during data validation, the value reported may not accurately reflect the MDL. The data should be considered usable for decision making purposes.
UR	Indicates the constituent was analyzed for and not detected; however, because of an identified QC deficiency the data should be considered unusable for decision making purposes.

* Wetchem is a group of analytical methods which don't use instrumentation but are associated with "wet" chemical reactions.

GC/MS = gas chromatograph/mass spectrometer

MDA = minimum detectable activity

MDL = method detection limit

PCB = polychlorinated biphenyl

QC = quality control

6 Data Quality Evaluation Results

This chapter summarizes the review of the laboratory QC information that is associated with the 200-BP-5 OU groundwater data set from the past six years. Laboratory contamination (Section 6.1), laboratory precision (Section 6.2), laboratory accuracy (Section 6.3), and the sensitivity analysis (Section 6.4) are discussed in this chapter. As discussed in Chapter 3 of this report, the purpose of Step 5 of the DQA process is to draw conclusions from the data. Steps 3 and 4 of the DQA process were not applicable because groundwater data for the 200-BP-5 Groundwater OU were collected using a judgmental sample design. As such, the results presented in Chapters 6, 7, and 8 are used to draw conclusions about the usability of the data.

The data set consists of 184,294 laboratory QC results. This includes 46,100 laboratory blanks (preparation or method blanks), 10,203 duplicate pairs, 37,399 laboratory control standards, 65,132 matrix spikes, and 25,460 individual surrogate results. The laboratory QC elements were evaluated against the criteria listed in Table 6-1.

Table 6-1. Laboratory Quality Control Acceptance Criteria

Quality Control Element	Acceptance Criteria
Laboratory Blanks	For general chemical parameters, ammonia, anions, metals, and volatile organic compounds, the lab blank limit is the MDL, instrument detection limit, or MDA. However, for semivolatile organic compounds, the quality control limit is 2 times the MDL. For radiochemical constituents, the quality control limit is 2 times the MDA.
Laboratory Duplicates	Lab duplicates with at least one result greater than or equal to 5 times the MDL or MDA must have RPD ≤20 to be considered acceptable.
Laboratory Control Samples	LCS percent recovery must be between the laboratory provided minimum control limit and maximum control limit.
Laboratory Spikes	Lab spikes where the sample result is ≤4 times the spiking concentration are evaluated by comparing the percent recovery with the minimum and maximum control limits provided by the laboratory. In addition, where the sample result is ≤4 times the spiking concentration, the MS/MSD RPD must have RPD ≤20.

LCS = laboratory control sample
MDA = minimum detectable activity
MDL = method detection limit
RPD = relative percent difference

6.1 Laboratory Contamination

Hanford Site laboratory contracts require that laboratory method blanks be analyzed with each batch of up to 20 samples (minimum 5 percent frequency). In total, 46,100 lab blanks were reported with the lab QC associated with the 200-BP-5 Groundwater OU data set, which represents 24.1 percent of the total number of sample results.

Of these 46,100 laboratory blanks, 74 individual analytes displayed an unacceptable positive result, indicating potential laboratory contamination. In total,10,698 laboratory blank results were associated

with these 74 analytes. Of these results, 647 or 1.4 percent reported an unacceptable positive result indicating potential laboratory contamination.

Table 6-2 lists the total number of laboratory blanks reported with the 200-BP-5 OU groundwater data set by analyte class. Table 6-3 shows the distribution of analytes with potential laboratory contamination in lab blank results exceeding QC criteria. Of the 74 analytes, beryllium-7, cesium-137, cobalt-60, europium-155, cyclohexanone, and octachlorodibenzo-p-dioxin had 100 percent of their results out of limits.

Table 6-2. Total Laboratory Blank Results by Analyte Class

Analyte Class	Results
Anions	4,404
General Chemistry	644
Metals	13,480
Radiochemistry	5,690
Semivolatile Organic Compounds	6,530
Volatile Organic Compounds	15,352
Total	**46,100**

Table 6-3. Distribution of Contamination in Laboratory Blank Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total Collected	Total Results Out of Limits*	Percent Out of Limits
Chloride	Anions	27	4	14.8
Cyanide	Anions	54	8	14.8
Fluoride	Anions	268	8	3.0
Nitrogen in Nitrate	Anions	291	11	3.8
Nitrogen in Nitrite	Anions	150	3	2.0
Sulfate	Anions	119	5	4.2
Sulfide	Anions	15	5	33.3
Total Organic Carbon	General Chemistry	128	9	7.0
Total Organic Halides	General Chemistry	36	11	30.6

Table 6-3. Distribution of Contamination in Laboratory Blank Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total Collected	Total Results Out of Limits*	Percent Out of Limits
Aluminum	Metals	101	6	5.9
Antimony	Metals	403	11	2.7
Arsenic	Metals	141	8	5.7
Barium	Metals	106	1	0.9
Beryllium	Metals	32	3	9.4
Bismuth	Metals	28	2	7.1
Boron	Metals	29	2	6.9
Calcium	Metals	555	49	8.8
Chromium	Metals	467	9	1.9
Copper	Metals	607	27	4.4
Iron	Metals	557	32	5.7
Lead	Metals	85	3	3.5
Magnesium	Metals	451	49	10.9
Manganese	Metals	215	2	0.9
Mercury	Metals	10	1	10
Molybdenum	Metals	77	6	7.8
Nickel	Metals	477	11	2.3
Potassium	Metals	594	30	5.1
Selenium	Metals	73	5	6.8
Silicon	Metals	29	8	28
Silver	Metals	611	42	6.9
Sodium	Metals	583	118	20.2
Strontium	Metals	303	4	1.3
Thallium	Metals	102	4	3.9
Tin	Metals	87	5	5.7
Uranium	Metals	159	6	3.8
Vanadium	Metals	390	18	4.6

Table 6-3. Distribution of Contamination in Laboratory Blank Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total Collected	Total Results Out of Limits*	Percent Out of Limits
Zinc	Metals	575	21	3.7
Americium-241	Radiochemistry	19	2	10.5
Beryllium-7	Radiochemistry	1	1	100
Carbon-14	Radiochemistry	5	1	20
Cesium-137	Radiochemistry	1	1	100
Cobalt-60	Radiochemistry	1	1	100
Europium-155	Radiochemistry	1	1	100
Gross Alpha	Radiochemistry	57	1	1.8
Gross Beta	Radiochemistry	47	2	4.3
Iodine-129	Radiochemistry	72	2	2.8
Plutonium-239/240	Radiochemistry	22	2	9.1
Potassium-40	Radiochemistry	90	3	3.3
Strontium-90	Radiochemistry	132	1	0.76
Thorium-230	Radiochemistry	16	1	6.3
Tritium	Radiochemistry	72	1	1.4
Uranium-233/234	Radiochemistry	3	2	67
Aldrin	Pesticide	6	1	17
1,2-Dichloroethane	VOC	52	1	1.9
1,4-Dichlorobenzene	VOC	52	4	7.7
1,4-Dioxane	VOC	31	1	3.2
4-Methyl-2-pentanone	VOC	58	1	1.7
Acetone[b]	VOC	222	7	3.2
Acrolein	VOC	36	1	2.8
Benzene	VOC	16	1	6.3
Bromomethane	VOC	36	12	33
Carbon Disulfide	VOC	52	4	7.7
Carbon Tetrachloride	VOC	58	1	1.7

Table 6-3. Distribution of Contamination in Laboratory Blank Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total Collected	Total Results Out of Limits*	Percent Out of Limits
Chloroform	VOC	16	2	12.5
Chloromethane	VOC	38	12	32
Cyclohexanone	VOC	1	1	100
Dichlorodifluoromethane	VOC	17	1	5.9
Iodomethane	VOC	53	5	9.4
Methylene Chloride	VOC	188	7	3.7
Octachlorodibenzo-p-dioxin	Dioxin/Furan	2	2	100
Styrene	VOC	36	1	2.8
Tetrachloroethene	VOC	101	5	5.0
Trichloroethene	VOC	101	7	6.9
Xylenes (Total)	VOC	52	1	1.9
Totals		**10,698**	**647**	

*For general chemical parameters, ammonia and anions, metals, and volatile organic compounds, the quality control limit for method blanks is the method detection limit. For semivolatile organic compounds, the quality control limit is twice the method detection limit. For radiochemical constituents, the quality control limit is twice the minimum detectable activity.

VOC = volatile organic compound

In total, 704 individual results required qualification as a result of laboratory contamination. Tables A-2 through A-7 (Appendix A) list the sample results that required qualification for years 2008 through 2013.

6.2 Laboratory Precision

Precision is the degree of agreement among repeated measurements of the same characteristic. It may be determined by calculating the standard deviation, or RPD, among samples taken from the same place at the same time. The laboratory precision is determined by the difference between duplicate sample pair results or between matrix spike/matrix spike duplicate pairs. Normally, sample duplicates are used for metals and anions, while MS/MSDs are used for organic analyses.

There were a total of 10,203 laboratory duplicates associated with the 200-BP-5 Groundwater OU data set. This represents 5.3 percent of the total number of 200-BP-5 Groundwater OU results. This satisfies the minimum 1-in-20 QC requirement.

Of these 10,203 duplicates, 24 individual analytes had RPDs that exceeded the QC acceptance criteria listed in Table 6-1. In total, 2,239 laboratory duplicate pair results were associated with these 24 analytes. Of the 2,239 pairs collected, 724 were evaluated and 94 (0.92 percent of total) exceeded laboratory precision criteria.

Table 6-4 lists the total number of laboratory duplicates associated with the 200-BP-5 Groundwater OU data set by analyte class. Table 6-5 shows the distribution of the individual analytes in the laboratory duplicate pairs with RPDs exceeding QC criteria.

6.3 Laboratory Accuracy

Accuracy measures how close your results are to a *true* or expected value and can be determined by comparing your analysis of a standard or reference sample to its actual value. Three types of QC are used to assess accuracy. The LCS serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. The MSs and surrogate spikes are used to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology.

Table 6-4. Total Laboratory Duplicate Results by Analyte Class

Analyte Class	Results
Anions	3,931
General Chemistry	455
Metals	258
Radiochemistry	5,550
Semivolatile Organic Compounds	0
Volatile Organic Compounds	9
Total	**10,203**

6.3.1 Laboratory Control Samples

There were 37,399 LCS/LCSD results reported for the 200-BP-5 Groundwater OU data set, which represents 19.6 percent of the total number of 200-BP-5 Groundwater OU results.

Of these 37,399 LCS/LCSD results, 115 individual analytes exceeded the acceptance criteria in Table 6-1. In total, 6,087 LCS/LCSD results were associated with these 115 analytes; 939 of the 6,087 results were LCSDs. Of these 6,087 results, 350 or 0.94 percent of the total exceeded QC requirements for the LCS/LCSD percent recovery to be within the minimum and maximum laboratory control limits. Of the 939 LCSD results, 73 or 7.8 percent had RPDs that were outside the QC acceptance criteria in Table 6-1. Table 6-6 lists the total number of LCS/LCSD results reported for the 200-BP-5 Groundwater OU data set by analyte class. Table 6-7 shows the LCS/LCSDs that exceeded QC limits by analyte.

LCS/LCSD results reported for the 200-BP-5 Groundwater OU generally have sample results from more than one project associated with them. Although LCS/LCSD criteria may have been exceeded for an analytical batch, samples included in this DQA may not have been affected or required sample qualification. Sample results associated with LCS/LCSDs that were outside laboratory-specified QC acceptance criteria are discussed below by year.

In 2008, 13 LCS/LCSD percent recoveries exceeded QC acceptance criteria. Percent recovery exceedances ranged from 5 to 89.5 percent on the low end, and 119.5 to 300.7 on the high end. There were 67 sample results associated with these LCS/LCSDs. The high end exceedances included mercury, potassium, aroclor-1260, plutonium-239/240, and calcium. In total, 59 individual results required qualification as a result of LCS recoveries reported outside QC acceptance criteria. Table A-8 (Appendix A) lists the sample results that required qualification for year 2008.

In 2009, 46 LCS/LCSD percent recoveries exceeded QC acceptance criteria. Percent recovery exceedances ranged from 0.3 to 84 percent on the low end, and 107 to 981 percent on the high end. There were 191 sample results associated with these LCS/LCSDs. The analyte that had the highest exceedances (174 and 981 percent) was heptachlor. In total, 41 individual results required qualification as a result of LCS recoveries reported outside QC acceptance criteria. Table A-9 (Appendix A) lists the sample results that required qualification for year 2009.

Table 6-5. Distribution of Analytes in Laboratory Duplicate Pairs with Relative Percent Differences Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Number Laboratory Duplicates Collected	Number Laboratory Duplicates Evaluated*	Number with RPD Out of Limits	Percent RPDs Out of Limit	Range of RPD Exceedances
Ammonium Ion	Anions	13	3	3	100	45.4-200
Cyanide	Anions	2	1	1	100	200
Fluoride	Anions	128	22	1	4.5	200
Nitrate	Anions	135	95	2	2.1	27.6 - 67
Nitrite	Anions	267	6	2	33.3	23-37.9
Alkalinity	General Chemistry	52	48	1	2.1	199.3
Total Organic Halides	General Chemistry	10	3	2	66.7	121 -125
Total Petroleum Hydrocarbons-Gasoline Range	General Chemistry	2	1	1	100	36.4
Hexavalent Chromium	Metals	38	18	1	5.6	24.6
Americium-241	Radiochemistry	18	1	1	100	20.7
Carbon-14	Radiochemistry	65	16	6	37.5	23.9-36.8
Cobalt-60	Radiochemistry	189	15	5	33.3	24.6-32.8
Gross Alpha	Radiochemistry	334	101	12	11.9	21.1-203.3
Gross Beta	Radiochemistry	299	153	21	13.7	20.2-96.3
Iodine-129	Radiochemistry	200	70	17	24.3	22.1-197.4
Potassium-40	Radiochemistry	50	1	1	100	154.4

Table 6-5. Distribution of Analytes in Laboratory Duplicate Pairs with Relative Percent Differences Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Number Laboratory Duplicates Collected	Number Laboratory Duplicates Evaluated*	Number with RPD Out of Limits	Percent RPDs Out of Limit	Range of RPD Exceedances
Plutonium-239/240	Radiochemistry	10	3	3	100	21-24.8
Strontium-90	Radiochemistry	138	14	4	28.6	22.2-445.2
Technetium-99	Radiochemistry	106	60	2	3.3	24-106.7
Thorium-228	Radiochemistry	16	1	1	100	53.4
Tritium	Radiochemistry	157	83	3	3.6	20.2-34.5
Uranium-233/234	Radiochemistry	3	3	1	33.3	22.6
Uranium-235	Radiochemistry	2	1	1	100	65.4
Uranium-238	Radiochemistry	5	5	2	40	23.4-34.2
Totals		**2,239**	**724**	**94**		

* Meets the evaluation criterion that the sample-duplicate pair has at least one result greater than or equal to five times the method detection limit or the minimum detectable activity.

RPD = relative percent difference

Table 6-6. Total Laboratory Control Sample Results by Analyte Class

Analyte Class	Results
Anions	4,262
General Chemistry	1,465
Metals	13,674
Radiochemistry	3,342
Semivolatile Organic Compounds	4,083
Volatile Organic Compounds	10,573
Total	**37,399**

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Table 6-7. Laboratory Control Sample Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total LCS/ LCSD Collected	Number LCS/LCSD Out of Limits*	Number of LCSD	Number of RPDs Out of Limits
Chloride	Anions	118	1	--	--
Cyanide	Anions	39	2	--	--
Sulfate	Anions	117	1	--	--
Calcium	Metals	113	1	--	--
Iron	Metals	122	1	--	--
Mercury	Metals	60	4	--	--
Potassium	Metals	310	3	--	--
Selenium	Metals	8	1	--	--
Silver	Metals	22	1	--	--
Sodium	Metals	76	2	--	--
Thallium	Metals	76	2	--	--
Uranium	Metals	45	1	--	--
Carbon-14	Radiochemistry	24	2	--	--
Gross Alpha	Radiochemistry	212	10	--	--
Gross Beta	Radiochemistry	328	18	--	--
Plutonium-239/240	Radiochemistry	13	1	--	--

Table 6-7. Laboratory Control Sample Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total LCS/ LCSD Collected	Number LCS/LCSD Out of Limits*	Number of LCSD	Number of RPDs Out of Limits
Strontium-90	Radiochemistry	91	6	--	--
Technetium-99	Radiochemistry	54	2	--	--
Thorium-228	Radiochemistry	2	2	--	--
Thorium-232	Radiochemistry	2	2	--	--
Total Alpha Energy Emitted from Radium	Radiochemistry	10	4	--	--
Tritium	Radiochemistry	216	6	--	--
Uranium-235	Radiochemistry	1	1	--	--
1,2,4-Trichlorobenzene	SVOC	8	2	--	--
1,4-Dichlorobenzene	SVOC	8	2	--	--
2,3,4,6-Tetrachlorophenol	SVOC	17	3	--	--
2,4,5-Trichlorophenol	SVOC	18	4	--	--
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	Herbicide	3	1	--	--
2,4,5-TP(2-(2,4,5-Trichlorophenoxy) propionic acid)Silvex	Herbicide	3	1	--	--
2,4,6-Trichlorophenol	SVOC	18	4	--	--
2,4-Dichlorophenol	SVOC	32	6	1	--
2,4-Dimethylphenol	SVOC	28	4	1	1
2,4-Dinitrophenol	SVOC	18	7	--	--
2,6-Dichlorophenol	SVOC	17	3	--	--
2-Chlorophenol	SVOC	50	6	1	--
2-Methylphenol (cresol, o-)	SVOC	32	4	1	--
2-Nitrophenol	SVOC	32	3	1	--
2-Picoline	SVOC	16	2	--	--
3,3'-Dichlorobenzidine	SVOC	9	--	1	1
3+4 Methylphenol (cresol,m+p)	SVOC	41	4	--	--

Table 6-7. Laboratory Control Sample Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total LCS/ LCSD Collected	Number LCS/LCSD Out of Limits*	Number of LCSD	Number of RPDs Out of Limits
4,4'-DDD(Dichlorodiphenyldichloroethane)	Pesticide	10	1	1	--
4,4'-DDE (Dichlorodiphenyldichloroethylene)	Pesticide	10	2	1	--
4,4'-DDT(Dichlorodiphenyltrichloroethane)	Pesticide	10	1	1	--
4,6-Dinitro-2-methylphenol	SVOC	18	3	--	--
4-Chloro-3-methylphenol	SVOC	28	5	1	
4-Nitrophenol	SVOC	58	6	1	1
Acenaphthene	SVOC	8	1	--	--
Aldrin	Pesticide	12	4	2	--
Alpha-BHC	Pesticide	10	1	1	--
Aroclor-1260	PCB	3	1	--	--
Bis(2-ethylhexyl) phthalate	SVOC	8	1	--	--
Delta-BHC	Pesticide	1	1	--	--
Dicamba	Herbicide	3	1	--	--
Dichloroprop	Herbicide	3	1	--	--
Dieldrin	Pesticide	10	3	1	--
Dimethoate	SVOC	11	5	--	--
Dinoseb(2-secButyl-4, 6-dinitrophenol)	Herbicide	17	5	--	--
Endosulfan I	Pesticide	10	1	1	--
Endosulfan II	Pesticide	10	1	1	--
Endosulfan Sulfate	Pesticide	10	3	1	--
Endrin	Pesticide	10	3	1	--
Endrin Aldehyde	Pesticide	11	7	2	1
Gamma-BHC (Lindane)	Pesticide	10	2	1	--
Heptachlor	Pesticide	13	3	1	--

Table 6-7. Laboratory Control Sample Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total LCS/ LCSD Collected	Number LCS/LCSD Out of Limits*	Number of LCSD	Number of RPDs Out of Limits
Heptachlor Epoxide	Pesticide	10	2	1	--
Hexachlorocyclopentadiene	SVOC	8	--	--	--
Hexachloroethane	SVOC	1	1	--	--
Hexachlorophene	SVOC	7	1	--	--
n-Nitrosodi-n-dipropylamine	SVOC	8	1	--	--
Pentachlorophenol	SVOC	40	11	1	1
Phenol	SVOC	61	4	1	--
Tributyl phosphate	SVOC	18	2	1	--
1,1-Dichloroethane	VOC	54	4	3	--
1,1-Dichloroethene	VOC	103	5	10	--
1,2-Dichloroethane	VOC	123	2	24	1
1,2-Dichloroethene (Total)	VOC	27	1	6	--
1,4-Dichlorobenzene	VOC	38	2	9	--
1,4-Dioxane	VOC	143	4	39	7
1-Butanol	VOC	168	4	50	6
2-Butanone	VOC	107	2	32	6
2-Hexanone	VOC	83	3	26	2
4-Methyl-2-pentanone	VOC	29	--	13	1
Acetone	VOC	145	11	45	9
Acetonitrile	VOC	56	--	20	3
Acrolein	VOC	79	20	26	6
Acrylonitrile	VOC	22	1	6	--
Allyl Chloride	VOC	8	1	1	--
Benzene	VOC	124	5	36	1
Bromodichloromethane	VOC	56	1	20	--
Bromoform	VOC	92	2	26	1
Bromomethane	VOC	83	9	26	1
Carbon Disulfide	VOC	135	9	24	--

Table 6-7. Laboratory Control Sample Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total LCS/ LCSD Collected	Number LCS/LCSD Out of Limits*	Number of LCSD	Number of RPDs Out of Limits
Chlorobenzene	VOC	26	2	6	--
Chloroethane	VOC	56	4	20	--
Chloroform	VOC	43	2	10	--
Chloromethane	VOC	56	4	20	2
Ethyl Cyanide	VOC	55	1	13	1
Tetrahydrofuran	VOC	29	--	13	1
cis-1,2-Dichloroethylene	VOC	114	3	33	--
cis-1,3-Dichloropropene	VOC	56	--	20	1
Ethyl Cyanide	VOC	114	2	37	2
Ethyl Methacrylate	VOC	23	1	6	--
Ethylbenzene	VOC	76	2	24	--
Iodomethane	VOC	56	7	20	3
Isobutyl Alcohol	VOC	79	2	26	4
Methacrylonitrile	VOC	23	1	6	--
Methyl Methacrylate	VOC	64	1	21	1
Methylene Chloride	VOC	119	4	34	2
Styrene	VOC	56	1	20	--
Tetrachloroethene	VOC	119	3	34	1
Tetrahydrofuran	VOC	114	3	33	2
Trans-1,2-Dichloroethylene	VOC	47	3	--	--
Trichloroethene	VOC	76	1	24	1
Vinyl Acetate	VOC	79	3	26	1
Vinyl Chloride	VOC	76	--	24	2
Totals		**6,087**	**350**	**939**	**73**

* LCS percent recovery must be between the laboratory provided minimum control limit and maximum control limit.

LCS(D)= laboratory control sample (duplicate)
PCB = polychlorinated biphenyl
RPD = relative percent difference
SVOC = semivolatile organic compound
VOC = volatile organic compound

In 2010, 90 LCS/LCSD percent recoveries exceeded QC acceptance criteria. Percent recovery exceedances ranged from 0.7 to 79.8 percent on the low end, and 80 to 416 percent on the high end. There were 146 sample results associated with these LCSs. Acrolein had 5 exceedances over 200 percent. In total, 33 individual results required qualification as a result of LCS recoveries reported outside QC acceptance criteria. Table A-10 (Appendix A) lists the sample results that required qualification for year 2010.

In 2011, 83 LCS/LCSD percent recoveries exceeded QC acceptance criteria. Percent recovery exceedances ranged from 70.9 to 79.8 percent on the low end, and 106 to 198 percent on the high end. There were 352 sample results associated with these LCSs. As a result of LCS recoveries reported outside QC acceptance criteria, 44 individual results required qualification. Table A-11 (Appendix A) lists the sample results that required qualification for year 2011.

In 2012, 42 LCS/LCSD percent recoveries exceeded QC acceptance criteria. Percent recovery exceedances ranged from 36 to 84.4 percent on the low end, and 127.4 to 135 percent on the high end. There are 277 sample results associated with these LCSs. Bromoform and allyl chloride exceeded on the high end. In total, 277 individual results required qualification as a result of LCS recoveries reported outside QC acceptance criteria. Table A-12 (Appendix A) lists the sample results that required qualification for year 2012.

In 2013, 27 LCS/LCSD percent recoveries exceeded QC acceptance criteria. Percent recovery exceedances ranged from 0 to 84.3 percent on the low end, and 116.4 percent on the high end for silver. There were 168 sample results associated with these LCSs. In total, 16 individual results required qualification as a result of LCS recoveries reported outside QC acceptance criteria. Table A-13 (Appendix A) lists the sample results that required qualification for year 2013.

In summary, there were 1,201 sample results associated with LCS/LCSD exceedances, which represents less than 1 percent of the total results in the 200-BP-5 Groundwater OU data set. In total, 470 individual sample results required qualification as a result of LCS recoveries reported outside QC acceptance criteria.

6.3.2 Laboratory Matrix Spike/Matrix Spike Duplicates

Laboratory spike recovery is also used as a measure of laboratory accuracy and precision. For the 200-BP-5 Groundwater OU data set, there were 65,132 individual spiked sample results.

Of these 65,132 MS/MSD percent recoveries, 148 individual analytes exceeded the minimum and/or maximum control limits set up by the laboratory. In total, 29,249 MS/MSD results were associated with these 148 analytes; 14,403 of the 29,249 results were MSDs. Of these results, 1,027 exceeded the minimum and/or maximum control limits set up by the laboratory. Of the 14,403 MSD results, 586 or 0.92 percent of the total reported RPDs did not meet the acceptance criteria in Table 6-1.The total laboratory MS/MSDs reported with the 200-BP-5 Groundwater OU data set are listed by analyte class in Table 6-8. Table 6-9 shows the 148 analytes that reported laboratory matrix spike results outside of the QC acceptance criteria.

MS/MSD results reported for the 200-BP-5 Groundwater OU generally have sample results from more than one project associated with them. Although MS/MSD criteria may have been exceeded for an analytical batch, samples included in this DQA may not have been affected or required qualification. Sample results associated with MS/MSDs that were outside of the laboratory-specified QC acceptance criteria are discussed by year.

Table 6-8. Total Laboratory Spikes (Matrix Spike/Matrix Spike Duplicate) by Analyte Class

Analyte Class	Results
Anions	8,461
General Chemistry	1,955
Metals	27,278
Radiochemistry	889
Semivolatile Organic Compounds	6,877
Volatile Organic Compounds	19,672
Total	**65,132**

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Table 6-9. Laboratory Matrix Spike Results Outside of Quality Control Criteria

Analyte Name	Analyte Class	Number MS/MSD	Number MS/MSD Out of Limits*	Number MSD	Number RPDs Out of Limit
Bromide	Anions	60	1	30	1
Chloride	Anions	1,349	52	662	7
Cyanide	Anions	277	19	136	6
Fluoride	Anions	1,502	18	740	4
Nitrogen in Ammonia	Anions	10	4	5	--
Nitrate	Anions	1,112	20	543	5
Nitrite	Anions	756	6	375	3
Phosphorus in Phosphate	Anions	61	2	30	1
Sulfate	Anions	690	26	344	6
Alkalinity	General Chemistry	2	--	--	--
Total Organic Carbon	General Chemistry	424	10	212	2
Total Organic Halides	General Chemistry	762	4	381	8
Total Petroleum Hydrocarbons –Diesel Range	General Chemistry	44	1	22	--
Total Petroleum Hydrocarbons – Gasoline Range	General Chemistry	4	2	2	1
Aluminum	Metals	14	1	7	--

Table 6-9. Laboratory Matrix Spike Results Outside of Quality Control Criteria

Analyte Name	Analyte Class	Number MS/MSD	Number MS/MSD Out of Limits*	Number MSD	Number RPDs Out of Limit
Arsenic	Metals	78	--	39	1
Boron	Metals	14	1	7	--
Cadmium	Metals	46	1	23	--
Calcium	Metals	288	24	144	4
Chromium	Metals	750	4	375	2
Cobalt	Metals	46	2	23	--
Copper	Metals	46	2	23	--
Hexavalent Chromium	Metals	94	4	2	1
Iron	Metals	804	13	402	6
Lead	Metals	14	1	7	--
Magnesium	Metals	92	11	46	2
Manganese	Metals	46	2	23	--
Mercury	Metals	94	3	47	1
Molybdenum	Metals	14	1	7	--
Nickel	Metals	46	2	23	--
Potassium	Metals	526	12	263	3
Selenium	Metals	14	1	7	1
Silicon	Metals	40	15	20	3
Silver	Metals	758	17	379	5
Sodium	Metals	302	11	151	3
Strontium	Metals	408	9	204	1
Thallium	Metals	154	8	77	--
Uranium	Metals	545	13	269	3
Vanadium	Metals	46	1	23	--
Zinc	Metals	206	6	103	1
Carbon-14	Radiochemistry	3	1	--	--
Technetium-99	Radiochemistry	111	6	--	--
Tritium	Radiochemistry	140	5	--	--

Table 6-9. Laboratory Matrix Spike Results Outside of Quality Control Criteria

Analyte Name	Analyte Class	Number MS/MSD	Number MS/MSD Out of Limits*	Number MSD	Number RPDs Out of Limit
1,2,4-Trichlorobenzene	SVOC	52	5	26	2
1,4-Dichlorobenzene	SVOC	58	8	29	3
2,3,4,6-Tetrachlorophenol	SVOC	64	4	32	3
2,4,5-Trichlorophenol	SVOC	100	4	50	6
2,4,6-Trichlorophenol	SVOC	68	5	34	5
2,4-Dichlorophenol	SVOC	157	4	78	10
2,4-Dimethylphenol	SVOC	125	5	62	10
2,4-Dinitrophenol	SVOC	126	8	63	8
2,4-Dinitrotoluene	SVOC	78	1	39	3
2,6-Dichlorophenol	SVOC	92	4	46	7
2-Chlorophenol	SVOC	209	12	104	11
2-Methylphenol (cresol, *o*-)	SVOC	186	3	93	10
2-Nitrophenol	SVOC	157	7	78	9
2-Picoline	SVOC	91	6	46	7
3,3'-Dichlorobenzidine	SVOC	18	3	9	2
3+4 Methylphenol (cresol, *m*+*p*)	SVOC	118	3	59	7
4,4’-DDT(Dichlorodiphenyltrichloroethane)	Pesticide	2	2	1	--
4,6-Dinitro-2-methylphenol	SVOC	90	4	45	7
4-Chloro-3-methylphenol	SVOC	168	9	84	12
4-Chloroaniline	SVOC	18	--	9	2
4-Nitrophenol	SVOC	252	14	126	21
Aroclor-1016	PCB	12	1	6	2
Aroclor-1260	PCB	12	1	6	2
Benzo(a)pyrene	SVOC	2	--	1	1
Bis(2-ethylhexyl)phthalate	SVOC	60	2	30	3
Chrysene	SVOC	4	2	2	1
Dimethoate	SVOC	23	9	12	--
Di-n-butylphthalate	SVOC	2	--	1	1

Table 6-9. Laboratory Matrix Spike Results Outside of Quality Control Criteria

Analyte Name	Analyte Class	Number MS/MSD	Number MS/MSD Out of Limits*	Number MSD	Number RPDs Out of Limit
Di-n-octylphthalate	SVOC	2	--	1	1
Dinoseb(2-secButyl-4,6-dinitrophenol)	SVOC	92	7	46	7
Endosulfan I	SVOC	16	6	8	--
Endosulfan II	SVOC	12	--	6	1
Endosulfan sulfate	SVOC	12	--	6	1
Endrin aldehyde	SVOC	28	4	14	2
Fluorene	SVOC	2	--	1	1
Heptachlor	SVOC	34	4	17	4
Hexachlorophene	SVOC	17	--	10	3
Hexachloroethane	SVOC	2	1	2	1
Indeno(1,2,3-cd)pyrene	SVOC	4	--	6	1
Methoxychlor	SVOC	12	--	91	12
n-Nitrosodimethylamine	SVOC	26	--	13	1
Pentachlorophenol	SVOC	209	18	13	3
Phenol	SVOC	264	9	132	19
Pyrene	SVOC	37	3	18	3
Tributyl phosphate	SVOC	42	1	21	1
Tris-2-chloroethyl phosphate	SVOC	16	--	8	2
1,1,1,2-Tetrachloroethane	VOC	128	3	64	1
1,1,1-Trichloroethane	VOC	480	12	240	5
1,1,2,2-Tetrachloroethane	VOC	136	10	68	4
1,1-Dichloroethane	VOC	438	20	219	9
1,1-Dichloroethene	VOC	686	22	343	5
1,1,2-Trichloroethane	VOC	428	13	214	5
1,2-Dibromo-3-chloropropane	VOC	88	--	44	2
1,2-Dibromoethane	VOC	128	2	64	2
1,2-Dichloroethane	VOC	338	9	169	3
1,2-Dichloroethene (Total)	VOC	138	5	69	1

Table 6-9. Laboratory Matrix Spike Results Outside of Quality Control Criteria

Analyte Name	Analyte Class	Number MS/MSD	Number MS/MSD Out of Limits*	Number MSD	Number RPDs Out of Limit
1,2-Dichloropropane	VOC	136	3	68	1
1,2,3-Trichloropropane	VOC	12	--	6	1
1,4-Dichlorobenzene	VOC	222	10	111	4
1,4-Dioxane	VOC	336	13	168	38
1-Butanol	VOC	336	13	168	28
2-Butanone	VOC	312	6	156	13
2-Chloroethyl Vinyl Ether	VOC	2	2	1	--
2-Hexanone	VOC	92	1	46	2
4-Methyl-2-pentanone	VOC	246	4	123	6
Acetone	VOC	354	24	177	20
Acetonitrile	VOC	128	5	64	6
Acrolein	VOC	128	50	64	4
Allyl Chloride	VOC	92	2	46	2
Benzene	VOC	442	11	221	5
Bromodichloromethane	VOC	138	3	69	1
Bromoform	VOC	184	9	92	3
Bromomethane	VOC	136	21	68	4
Carbon Disulfide	VOC	428	16	214	6
Carbon Tetrachloride	VOC	258	7	129	4
Chlorobenzene	VOC	306	6	153	1
Chloroethane	VOC	92	7	46	1
Chloroform	VOC	246	9	123	4
Chloromethane	VOC	136	4	68	4
Chloroprene	VOC	92	1	46	1
cis-1,2-Dichloroethylene	VOC	398	19	199	5
cis-1,3-Dichloropropene	VOC	136	7	68	1
Cyclohexanone	VOC	4	1	2	1
Dibromochloromethane	VOC	136	3	68	1

Table 6-9. Laboratory Matrix Spike Results Outside of Quality Control Criteria

Analyte Name	Analyte Class	Number MS/MSD	Number MS/MSD Out of Limits*	Number MSD	Number RPDs Out of Limit
Dichlorodifluoromethane	VOC	128	2	64	1
Diethyl Ether	VOC	4	1	2	--
Ethyl Cyanide	VOC	284	12	142	8
Ethyl Methacrylate	VOC	92	2	46	1
Ethylbenzene	VOC	426	8	213	4
Iodomethane	VOC	92	22	46	9
Isobutyl Alcohol	VOC	92	--	46	7
Methacrylonitrile	VOC	144	4	72	1
Methyl Methacrylate	VOC	144	2	72	2
Methylene Chloride	VOC	298	8	149	5
Styrene	VOC	136	3	68	1
Tetrachloroethene	VOC	290	8	145	4
Tetrahydrofuran	VOC	276	15	138	7
Toluene	VOC	448	13	224	4
trans-1,2-Dichloroethylene	VOC	394	29	197	11
trans-1,3-Dichloropropene	VOC	136	2	68	1
trans-1,4-Dichloro-2-butene	VOC	144	1	72	5
Trichloroethene	VOC	748	14	374	4
Trichloromonofluoromethane	VOC	128	2	64	1
Vinyl Acetate	VOC	130	4	65	2
Vinyl Chloride	VOC	236	1	118	5
Totals		**29,249**	**1,027**	**14,403**	**586**

Table 6-9. Laboratory Matrix Spike Results Outside of Quality Control Criteria

Analyte Name	Analyte Class	Number MS/MSD	Number MS/MSD Out of Limits*	Number MSD	Number RPDs Out of Limit

Note: Shading denotes those analytes that were identified as contaminants of potential concern in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit* (Appendix A).

* Lab spikes where the sample result is ≤4 times the spiking concentration are evaluated by comparing the percent recovery with the minimum and maximum control limits provided by the laboratory. In addition, where the sample result is ≤4 times the spiking concentration, the MS/MSD RPD must have RPD ≤20 percent.

MS(D) = matrix spike (duplicate)
PCB = polychlorinated biphenyl
RPD = relative percent difference
SVOC = semivolatile organic compound
VOC = volatile organic compound

In 2008, 76 MS/MSD percent recoveries exceeded the minimum and/or maximum QC limits established by the laboratory. Percent recovery exceedances ranged from 8 to 79.6 percent on the low end, and 117 to 423 on the high end. There were 171 sample results associated with these MS/MSDs. The analytes that had the highest exceedances (over 200 percent) included calcium and technetium-99. In total, 92 individual results required qualification as a result of MS or MSD recoveries reported outside QC acceptance criteria. Table A-14 (Appendix A) lists the sample results that required qualification for year 2008.

In 2009, 74 MS/MSD percent recoveries exceeded the minimum and/or maximum QC limits established by the laboratory. Percent recovery exceedances ranged from 0.4 to 84 percent on the low end, and 97.6 to 1,460 on the high end. There were 244 sample results associated with these MS/MSDs. The analytes that had the highest exceedances (over 200 percent) included calcium, cyanide, iron, heptachlor, and sodium. In total, 113 individual results required qualification as a result of MS or MSD recoveries reported outside QC acceptance criteria. Table A-15 (Appendix A) lists the sample results that required qualification for year 2009.

In 2010, 284 MS/MSD percent recoveries exceeded the minimum and/or maximum QC limits established by the laboratory. Percent recovery exceedances ranged from 9.8 to 79.7 percent on the low end, and 119 to 1,570 on the high end. There were 315 sample results associated with these MS/MSDs. There were analytes that had exceedances over 300 percent and they were acrolein, calcium, iodomethane, magnesium, silicon, and uranium. In total, 90 individual results required qualification as a result of MS or MSD recoveries reported outside QC acceptance criteria. Table A-16 (Appendix A) lists the sample results that required qualification for year 2010.

In 2011, 162 MS/MSD percent recoveries exceeded the minimum and/or maximum QC limits established by the laboratory. Percent recovery exceedances ranged from 0.9 to 89 percent on the low end, and 112 to 892 on the high end. There were 353 sample results associated with these MS/MSDs. The analytes that had exceedances over 200 percent were strontium, endrin aldehyde, 4,4'-DDT (dichlorodiphenyltrichloroethane), acrolein, chrysene, uranium, and carbon tetrachloride. In total, 101 individual results required qualification as a result of MS or MSD recoveries reported outside QC

acceptance criteria. Table A-17 (Appendix A) lists the sample results that required qualification for year 2011.

In 2012, 63 MS/MSD percent recoveries exceeded the minimum and/or maximum QC limits established by the laboratory. Percent recovery exceedances ranged from -289 to 89 percent on the low end, and 115.5 to 231 on the high end. There were 142 sample results associated with these MS/MSDs. The analytes that had exceedances over 150 percent were carbon-14, cyanide, total organic carbon, calcium, and methacrylonitrile. In total, 74 individual results required qualification as a result of MS or MSD recoveries reported outside QC acceptance criteria. Table A-18 (Appendix A) lists the sample results that required qualification for year 2012.

In 2013, 113 MS/MSD percent recoveries exceeded the minimum and/or maximum control limits set up by the laboratory. The range of percent recovery exceedances went from -147 to 79.7 percent on the low end, and 113 to 925 on the high end. There were 147 sample results associated with these MS/MSDs. Uranium had the highest exceedances with percent recoveries over 150 percent. In total, 113 individual results required qualification as a result of MS or MSD recoveries reported outside QC acceptance criteria. Table A-19 (Appendix A) lists the sample results that required qualification for year 2013.

In summary, there were 1,372 sample results associated with MS/MSD exceedances, which represents less than 1 percent of the total results in the 200-BP-5 Groundwater OU data set. In total, 583 individual sample results required qualification as a result of MS/MSD recoveries reported outside QC acceptance criteria.

6.3.3 Surrogate Spikes

Finally, as part of VOC and SVOC analyses, a compound that is not likely to be contained in an environmental sample (a surrogate) is injected into each sample as a measure of overall method performance on that specific sample. The 200-BP-5 Groundwater OU data set contained 25,460 individual surrogate results. Of these, 15 individual analytes were outside of the laboratory-specified acceptability criteria. In total, 19,965 surrogate results are associated with these 15 analytes. Of these results, 320 or 1.3 percent exceeded QC limits established by the laboratory. The total laboratory surrogates reported with the 200-BP-5 Groundwater OU data set are listed by analyte class in Table 6-10. Table 6-11 shows the 15 analytes that reported surrogate results outside of QC acceptance criteria.

Table 6-10. Total Laboratory Surrogates by Analyte Class

Analyte Class	Results
Total Petroleum Hydrocarbons	331
Semivolatile Organic Compounds	7,172
Volatile Organic Compounds	17,957
Total	**25,460**

Table 6-11. Laboratory Surrogates Exceeding Quality Control Criteria

Analyte	Analyte Class	Number of Surrogates	Number Surrogates Out of Limits	Percent Surrogates Out of Limits
o-Terphenyl	TPH	216	8	3.7
1,2-Dichloroethane-d4	VOC	4,446	18	0.40
4-Fluorobromobenzene	VOC	4,517	22	0.49
Dibromofluoromethane	VOC	1,602	40	2.5
Toluene-d8	VOC	4,262	40	0.94
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	PCB	33	1	3.0
2,4,5,6-Tetrachloro-m-xylene	PCB	136	3	2.2
2,4,6-Tribromophenol	SVOC	1,442	51	3.5
2-Fluorobiphenyl	SVOC	419	5	1.2
2-Fluorophenol	SVOC	1,336	47	3.5
Fluoranthene-d10	SVOC	78	6	7.7
Nitrobenzene-d5	SVOC	359	3	0.84
Phenol-d5	SVOC	769	65	8.5
p-terphenyl-d14	SVOC	127	1	0.79
Terphenyl-d14	SVOC	223	10	4.5
Total		**19,965**	**320**	

PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon
VOC = volatile organic compound

Surrogate recovery results reported for the 200-BP-5 Groundwater OU generally have sample results from more than one project associated with them. Although surrogate spike recovery criteria may have been exceeded for an analytical batch, samples included in this DQA may not have been affected or required sample qualification. Sample results associated with surrogate recoveries that were outside the laboratory-specified QC acceptance criteria are discussed below by year.

In 2008, there were 22 surrogate percent recoveries that were outside of the laboratory-specified QC acceptance criteria. Percent recovery exceedances ranged from 4.16 to 51.2 percent on the low end, and 111 to 156 percent on the high end. There were 171 sample results associated with these surrogates. In total, 152 individual results required qualification as a result of surrogate recoveries reported outside QC acceptance criteria. Table A-20 (Appendix A) lists the sample results that required qualification for year 2008.

In 2009, there were 30 surrogate percent recoveries that were outside of the laboratory-specified QC acceptance criteria. Percent recovery exceedances ranged from 7.3 to 56.3 percent on the low end, and 106.2 to 124.9 percent on the high end. There were 160 sample results associated with these surrogates. In total, 19 individual results required qualification as a result of surrogate recoveries reported outside QC acceptance criteria. Table A-21 (Appendix A) lists the sample results that required qualification for year-2009.

In 2010, there were 51 surrogate percent recoveries that were outside of the laboratory-specified QC acceptance criteria. Percent recovery exceedances ranged from 0 to 70 percent on the low end, and 65 to 154 percent on the high end. There were 1,134 sample results associated with these surrogates. In total, 16 individual results required qualification as a result of surrogate recoveries reported outside QC acceptance criteria. Table A-22 (Appendix A) lists the sample results that required qualification for year 2010.

In 2011, there were 67 surrogate percent recoveries that were outside of the laboratory-specified QC acceptance criteria. Percent recovery exceedances ranged from 18.2 to 69 percent on the low end, and 99 to 190 percent on the high end. There were 840 sample results associated with these surrogates. In total, 2 individual results required qualification as a result of surrogate recoveries reported outside QC acceptance criteria. Table A-23 (Appendix A) lists the sample results that required qualification for year 2011.

In 2012, there were 51 surrogate percent recoveries that were outside of the laboratory-specified QC acceptance criteria. Percent recovery exceedances ranged from 0 to 65 percent on the low end, and 113.8 to 152 percent on the high end. There were 2,872 sample results associated with these surrogates. In total, 58 individual results required qualification as a result of surrogate recoveries reported outside QC acceptance criteria. Table A-24 (Appendix A) lists the sample results that required qualification for year 2012.

In 2013, there were 8 surrogate percent recoveries that were outside of the laboratory-specified QC acceptance criteria. There were 123 sample results associated with these surrogates. Percent recovery exceedances ranged from 0 to 72.4 percent on the low end, and 134.8 to 149.2 on the high end. No sample results required qualification as a result of surrogate spikes reported outside QC acceptance criteria.

In summary, there were 5,300 sample results associated with surrogate spike exceedances. This represents 2.8 percent of the total results in the 200-BP-5 Groundwater OU data set. In total, 247 individual sample results required qualification as a result of surrogate spike recoveries reported outside QC acceptance criteria.

6.4 Sensitivity Analysis – Evaluation of Method Detection Limits

The groundwater data set consists of 135,562 individual analytical results. Of these, approximately 79,098 results (58 percent) were nondetected results. The range of method detection limits (MDLs) reported for each analyte were compared to their respective comparison values (see definitions provided in Section 1.6). The purpose of this evaluation is to determine if the MDL is adequate for confirming absence at levels less than or equal to the pertinent criteria or standards. Table 6-12 through Table 6-14 provide a comparison of the minimum and maximum MDLs to the comparison values selected for the evaluation of results from monitoring wells located inland from the Columbia River. Table 6-15 through Table 6-17 provide a comparison of the minimum and maximum MDLs to the comparison values selected for the evaluation of results from monitoring wells that have the potential to discharge to the Columbia River. Comparison values are listed in Table 5-4 of this report.

A summary of analytes that report all MDLs less than or equal to their respective comparison value are shown in Table 6-12 and Table 6-15. A summary of analytes that report all minimum MDLs less than or equal to the respective comparison value but report the a portion of maximum MDLs greater than the comparison value is shown in Table 6-13 and Table 6-16. A summary of analytes that report all MDLs greater than the comparison value is shown in Table 6-14 and Table 6-17.

6.4.1 MDL Results for Inland Groundwater Samples

As shown in Table 6-12, all MDLs for 195 analytes are less than or equal to their respective comparison value. MDLs for these analytes are considered usable for all RI/FS purposes.

As shown in Table 6-13, 27 analytes are reported with a portion of the MDLs greater than their respective comparison value. With the exception of antimony and iodine-129, the analytes listed on this table are not known to be associated with a release at the 200 East Area of the Hanford Site, and they were not identified as COPCs in the RI/FS Work Plan (DOE/RL-2007-18, Appendix A). Of the 27 analytes, 17 do not report any detected concentrations. Analytes with reported concentrations are discussed in the following paragraphs.

A single detection of benzene was reported; its presence is considered suspect because its presence is anomalous relative to additional sampling events at this well (see Appendix B for trench chart). A single detection of acrolein was reported and the result is flagged with a “B” laboratory qualifier indicating that the analyte was detected in both the sample and the associated QC blank.

The laboratory cannot attain the comparison value for carbon tetrachloride; therefore, nondetected concentrations are reported as less than or equal to 1 µg/L; the comparison value for carbon tetrachloride is 0.63 µg/L.

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Anions/Cations															
Chloride	No	1/2/2008	12/23/2013	µg/L	1667	1667	100	--	--	3,140	297,000	250,000	40 CFR 141--Secondary MCL	No	No
Cyanide	No	1/2/2008	12/23/2013	µg/L	1175	627	53.36	1.67	4	2	1,730	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Fluoride	No	1/2/2008	12/23/2013	µg/L	1666	1488	89.32	30	500	35.2	3,270	960	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Nitrate	No	1/2/2008	12/23/2013	µg/L	1667	1657	99.4	168	421	103	1,700,000	45,000	40 CFR 141--Federal MCL	No	No
Nitrite	No	1/2/2008	12/23/2013	µg/L	1662	303	18.23	9.85	2,500	21.3	14,400	3,300	40 CFR 141--Federal MCL	No	No
Sulfate	No	1/2/2008	12/23/2013	µg/L	1362	1357	99.6	50	300	1,220	371,000	250,000	40 CFR 141--Secondary MCL	No	No
Dioxins/Furans															
2,3,7,8-Tetrachlorodibenzofuran	No	10/3/2012	10/15/2012	µg/L	19	0	0	3.80E-07	1.30E-06	--	--	6.73E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	No	10/3/2012	10/15/2012	µg/L	19	0	0	3.50E-07	1.30E-06	--	--	6.73E-07	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
1,2,3,4,6,7,8-Heptachlorodibenzofuran	No	10/3/2012	10/15/2012	µg/L	19	0	0	2.10E-07	6.60E-07	--	--	6.73E-05	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,3,4,7,8,9-Heptachlorodibenzofuran	No	10/3/2012	10/15/2012	µg/L	19	0	0	2.80E-07	9.50E-07	--	--	6.73E-05	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,3,4,7,8-Hexachlorodibenzofuran	No	10/3/2012	10/15/2012	µg/L	19	0	0	1.60E-07	4.20E-07	--	--	6.73E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	No	10/3/2012	10/15/2012	µg/L	19	0	0	2.30E-07	8.50E-07	--	--	6.73E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,3,6,7,8-Hexachlorodibenzofuran	No	10/3/2012	10/15/2012	µg/L	19	0	0	1.50E-07	4.60E-07	--	--	6.73E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	No	10/3/2012	10/15/2012	µg/L	19	0	0	2.40E-07	8.90E-07	--	--	6.73E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,3,7,8,9-Hexachlorodibenzofuran	No	10/3/2012	10/15/2012	µg/L	19	0	0	1.80E-07	6.40E-07	--	--	6.73E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	No	10/3/2012	10/15/2012	µg/L	19	0	0	2.20E-07	8.10E-07	--	--	6.73E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
2,3,4,7,8-Pentachlorodibenzofuran	No	10/3/2012	10/15/2012		19	0	0	2.60E-07	8.40E-07	--	--	2.24E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,3,4,6,7,8-Hexachlorodibenzofuran	No	10/3/2012	10/15/2012	µg/L	19	0	0	1.30E-07	4.50E-07	--	--	6.73E-06	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Octachlorodibenzofuran	No	7/3/2012	10/15/2012	µg/L	22	4	18.18	3.40E-07	1.30E-06	1.00E-06	1.70E-06	2.24E-03	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Octachlorodibenzo-p-dioxin	No	7/3/2012	10/15/2012	µg/L	22	13	59.09	2.90E-07	1.00E-06	7.70E-07	1.70E-05	2.24E-03	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Herbicides															
Dalapon	No	7/3/2012	10/15/2012	µg/L	22	0	0	0.94	3.9	--	--	240	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dicamba	No	7/3/2012	10/15/2012	µg/L	22	0	0	0.27	0.29	--	--	480	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dinoseb(2-secButyl-4,6-dinitrophenol)	No	1/2/2008	11/21/2013	µg/L	335	0	0	0.63	2.4	--	--	7.0	40 CFR 141--Federal MCL	No	No
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	No	7/3/2012	10/15/2012	µg/L	22	0	0	0.14	0.16	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	No	7/3/2012	10/15/2012	µg/L	22	0	0	0.14	0.15	--	--	128	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4-D(2,4-Dichlorophenoxyacetic acid)	No	7/3/2012	10/15/2012	µg/L	22	0	0	1.8	2	0	0	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	No	7/3/2012	10/15/2012	µg/L	22	0	0	2.4	2.6	0	0	128	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Metals															
Aluminum	No	1/9/2008	12/17/2013	µg/L	119	42	35.29	5	20	6.21	7,180	16,000	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Aluminum	Yes	1/9/2008	12/17/2013	µg/L	116	24	20.69	5	20	5.03	30.2	16,000	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Barium	No	1/2/2008	12/23/2013	µg/L	1530	1528	99.87	4	4.1	3.61	330	2,000	40 CFR 141--Federal MCL	No	No
Barium	Yes	1/2/2008	12/23/2013	µg/L	1523	1522	99.93	4	4	8.2	529	2,000	40 CFR 141--Federal MCL	No	No
Boron	No	4/11/2010	12/17/2013	µg/L	24	7	29.17	19	41	13	53.1	3,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Boron	Yes	3/26/2010	12/17/2013	µg/L	22	8	36.36	19	41	13	36.2	3,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Cadmium	No	1/2/2008	12/23/2013	µg/L	1530	13	0.85	0.1	4.1	0.17	34.7	5.0	40 CFR 141--Federal MCL	No	No
Cadmium	Yes	1/2/2008	12/23/2013	µg/L	1523	5	0.33	0.05	4.1	4	5.3	5.0	40 CFR 141--Federal MCL	No	No
Chromium	No	1/2/2008	12/23/2013	µg/L	1530	1024	66.93	1	14	0.24	356	100	40 CFR 141--Federal MCL	No	No
Chromium	Yes	1/2/2008	12/23/2013	µg/L	1523	737	48.39	0.5	14	0.20	114	100	40 CFR 141--Federal MCL	No	No
Copper	No	1/2/2008	12/23/2013	µg/L	1530	124	8.1	0.2	6.7	0.25	1,720	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Copper	Yes	1/2/2008	12/23/2013	µg/L	1523	95	6.24	0.1	6	0.14	51	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Hexavalent Chromium	No	1/9/2008	12/17/2013	µg/L	257	140	54.47	2	3.7	2	80.3	48	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Hexavalent Chromium	Yes	4/2/2009	12/5/2011	µg/L	154	84	54.55	2	3.7	2	82.9	48	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Iron	No	1/2/2008	12/23/2013	µg/L	1534	1274	83.05	9	63.8	10.8	18,900	11,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Iron	Yes	1/2/2008	12/23/2013	µg/L	1527	951	62.28	9	40	9.4	18,100	11,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Lead	No	1/2/2008	12/17/2013	µg/L	153	63	41.18	0.1	0.2	0.11	8.5	15	40 CFR 141--Federal MCL	No	No
Lead	Yes	1/2/2008	12/17/2013	µg/L	145	22	15.17	0.05	0.2	0.11	1.12	15	40 CFR 141--Federal MCL	No	No
Lithium	No	4/11/2010	12/17/2010	µg/L	18	13	72.22	4	4	4	15	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Lithium	Yes	3/26/2010	12/17/2010	µg/L	19	14	73.68	4	4	4.3	26	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Manganese	No	1/2/2008	12/23/2013	µg/L	1530	441	28.82	0.2	6	0.21	1190	384	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Manganese	Yes	1/2/2008	12/23/2013	µg/L	1523	432	28.37	0.96	6	0.21	1,690	384	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Mercury	No	1/2/2008	12/17/2013	µg/L	240	40	16.67	0.05	0.1	0.052	1.74	2.0	40 CFR 141--Federal MCL	No	No
Mercury	Yes	1/2/2008	12/10/2013	µg/L	221	36	16.29	0.03	0.1	0.051	1.69	2.0	40 CFR 141--Federal MCL	No	No
Molybdenum	No	4/11/2010	12/17/2013	µg/L	50	50	100	--	--	0.19	11.4	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Molybdenum	Yes	3/26/2010	12/17/2013	µg/L	46	46	100	--	--	0.91	12.5	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Nickel	Yes	1/2/2008	12/23/2013	µg/L	1523	424	27.84	0.2	66.5	0.47	3,640	100	40 CFR 141--Federal MCL	No	No
Selenium	No	12/3/2009	12/17/2013	µg/L	128	122	95.31	0.6	2	0.76	18.2	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Selenium	Yes	12/3/2009	12/17/2013	µg/L	120	116	96.67	0.6	2	0.66	18.8	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Silver	No	1/2/2008	12/23/2013	µg/L	1530	57	3.73	0.1	13.1	0.14	158	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Silver	Yes	1/2/2008	12/23/2013	µg/L	1523	66	4.33	0.05	22.9	0.1	32	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Strontium	No	1/2/2008	12/23/2013	µg/L	1514	1513	99.93	4.1	4.1	33	2,310	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Strontium	Yes	1/2/2008	12/23/2013	µg/L	1507	1507	100	--	--	94.8	6,850	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Thallium	No	1/9/2008	12/17/2013	µg/L	175	6	3.43	0.05	0.1	0.065	0.32	0.5	40 CFR 141--Federal MCLG	No	No
Thallium	Yes	1/9/2008	12/17/2013	µg/L	168	9	5.36	0.03	0.1	0.052	0.242	0.5	40 CFR 141--Federal MCLG	No	No
Tin	No	12/3/2009	12/17/2013	µg/L	106	28	26.42	0.1	0.2	0.10	1.54	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tin	Yes	12/3/2009	12/17/2013	µg/L	98	19	19.39	0.05	0.2	0.13	0.936	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Uranium	No	1/2/2008	12/23/2013	µg/L	1362	1356	99.56	0.1	4.6	0.27	5,550	30	40 CFR 141--Federal MCL	No	No
Uranium	Yes	7/16/2008	12/17/2013	µg/L	11	11	100	--	--	1.16	416	30	40 CFR 141--Federal MCL	No	No
Vanadium	No	1/2/2008	12/23/2013	µg/L	1530	1211	79.15	0.4	17	5	35.3	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Vanadium	Yes	1/2/2008	12/23/2013	µg/L	1523	1183	77.68	4.1	17	4.2	34	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Zinc	No	1/2/2008	12/23/2013	µg/L	1527	377	24.69	1.6	9	2.1	5,450	4,800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Zinc	Yes	1/2/2008	12/23/2013	µg/L	1520	275	18.09	2	9	0.914	4,350	4,800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Total Petroleum Hydrocarbons															
Oil and Grease	No	4/2/2008	4/2/2008	µg/L	1	1	100	--	--	1,000	1,000	500	WAC 173-340-900 Tables, Table 720-1	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Total Petroleum Hydrocarbons-Diesel Range	No	4/2/2008	10/15/2012	µg/L	42	4	9.52	70	72	74	270	500	WAC 173-340-900, Table 720-1	No	No
Total Petroleum Hydrocarbons-Gasoline Range	No	4/2/2008	10/15/2012	µg/L	24	0	0	50	50	--	--	1,000	WAC 173-340-900, Table 720-1	No	No
Total Petroleum Hydrocarbons-Kerosene Range	No	4/2/2008	10/15/2012	µg/L	24	0	0	70	72	--	--	500	WAC 173-340-900 Tables, Table 720-1	No	No
Organochlorine Pesticides															
4,4'-DDD (Dichlorodiphenyldichloroethane)	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0038	0.01	--	--	0.36	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4,4'-DDE (Dichlorodiphenyldichloroethylene)	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0027	0.02	--	--	0.26	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4,4'-DDT (Dichlorodiphenyltrichloroethane)	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0056	0.023	--	--	0.26	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Alpha-BHC	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0025	0.01	--	--	0.014	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.01	0.013	--	--	0.049	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Chlordane	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.04	0.23	--	--	0.25	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Endosulfan I	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0025	0.02	--	--	96	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Endosulfan II	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0094	0.01	--	--	96	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Endrin	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0028	0.018	--	--	2.0	40 CFR 141--Federal MCL	No	No
Gamma-BHC (Lindane)	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0025	0.01	--	--	0.080	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Heptachlor	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.0025	0.01	--	--	0.019	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Methoxychlor	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.001	0.013	--	--	40	40 CFR 141--Federal MCL	No	No
Polychlorinated Biphenyls															
Aroclor-1016	No	10/8/2008	10/15/2012	µg/L	40	0	0	0.09	0.21	--	--	1.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Radionuclides															
Americium-241	No	1/9/2008	12/17/2013	pCi/L	106	22	20.75	-0.24	0.24	0.056	0.621	15.0	40 CFR 141--Federal MCL	No	No
Carbon-14	No	1/9/2008	12/17/2013	pCi/L	94	34	36.17	-4.66	17.9	9.26	146	2,000	40 CFR 141--Federal MCL	No	No
Cesium-137	No	1/9/2008	12/23/2013	pCi/L	798	16	2.01	-12	20	34.5	2,430	200	40 CFR 141--Federal MCL	No	No
Cobalt-60	No	1/9/2008	12/23/2013	pCi/L	798	158	19.8	-7.3	30.7	2.88	1,040	100	40 CFR 141--Federal MCL	No	No
Europium-152	No	1/9/2008	12/23/2013	pCi/L	798	0	0	-32	37	--	--	200	40 CFR 141--Federal MCL	No	No
Europium-154	No	1/9/2008	12/23/2013	pCi/L	798	1	0.13	-36	25	45	45	60	40 CFR 141--Federal MCL	No	No
Europium-155	No	1/9/2008	12/23/2013	pCi/L	798	0	0	-31	58	--	--	600	40 CFR 141--Federal MCL	No	No
Neptunium-237	No	1/9/2008	12/17/2013	pCi/L	87	6	6.9	-0.16	0.91	0.054	1.26	15.0	40 CFR 141--Federal MCL	No	No
Plutonium-238	No	1/9/2008	12/17/2013	pCi/L	126	1	0.79	-0.23	0.5	0.19	0.19	15	40 CFR 141--Federal MCL	No	No
Plutonium-239/240	No	1/9/2008	12/17/2013	pCi/L	126	28	22.22	-0.18	0.11	0.028	52	15	40 CFR 141--Federal MCL	No	No
Selenium-79	No	11/4/2008	11/4/2008	pCi/L	1	0	0	-4.1	-4.1	--	--	7.3	EPA, 2013	No	No
Silver-108 Metastable	No	9/15/2011	9/15/2011	pCi/L	1	0	0	-0.705	-0.705	--	--	6.6	EPA, 2013	No	No
Strontium-90	No	1/9/2008	12/17/2013	pCi/L	245	59	24.08	-10	2.2	1.2	4,900	8.0	40 CFR 141--Federal MCL	No	No
Technetium-99	No	1/2/2008	12/23/2013	pCi/L	1418	1271	89.63	-15	8.72	6.7	39,000	900	40 CFR 141--Federal MCL	No	No
Tritium	No	1/2/2008	12/23/2013	pCi/L	1345	1109	82.45	-180	341	30.1	91,000	20,000	40 CFR 141--Federal MCL	No	No
Semivolatile Organic Compounds															
1,2,4,5-Tetrachlorobenzene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,3,4,6-Tetrachlorophenol	No	1/2/2008	11/21/2013	µg/L	335	0	0	0.48	2.1	--	--	480	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4,5-Trichlorophenol	No	1/2/2008	11/21/2013	µg/L	335	0	0	0.62	2.2	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4,6-Trichlorophenol	No	1/2/2008	11/21/2013	µg/L	335	0	0	0.48	2.2	--	--	4.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4-Dichlorophenol	No	1/2/2008	12/17/2013	µg/L	414	0	0	0.47	2.1	--	--	24	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4-Dimethylphenol	No	1/2/2008	11/21/2013	µg/L	335	0	0	0.9	2.1	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
2,4-Dinitrophenol	No	1/2/2008	11/21/2013	µg/L	336	0	0	0.9	10	--	--	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,6-Dinitrotoluene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2.2	--	--	16	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Chloronaphthalene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Chlorophenol	No	1/2/2008	11/21/2013	µg/L	396	0	0	0.47	2.2	--	--	40	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Methylnaphthalene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Methylphenol (cresol, o-)	No	1/2/2008	12/17/2013	µg/L	416	0	0	0.47	2.2	--	--	400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Nitroaniline	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
3-Nitroaniline	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1.1	--	--	4.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4-Chloro-3-methylphenol	No	1/2/2008	11/21/2013	µg/L	396	0	0	0.47	2.4	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4-Methylphenol (cresol, p-)	No	4/2/2008	7/3/2012	µg/L	21	0	0	0.1	10	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4-Nitroaniline	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1.3	--	--	4.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Acenaphthene	No	1/9/2008	11/21/2013	µg/L	203	0	0	0.5	2.5	--	--	480	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Acetophenone	No	4/2/2008	11/21/2013	µg/L	113	1	0.88	0.9	1.1	1.7	1.7	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Aniline	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1.3	--	--	7.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Anthracene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1.1	--	--	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Benzyl alcohol	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Bis(2-Chloroethoxy)methane	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	48	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Bis(2-ethylhexyl) phthalate	No	1/9/2008	12/17/2013	µg/L	227	22	9.69	0.7	1	0.97	11	6.0	40 CFR 141--Federal MCL	No	No
Butylbenzylphthalate	No	4/2/2008	11/21/2013	µg/L	113	1	0.88	0.9	1	2.8	2.8	46	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Carbazole	No	12/17/2009	11/21/2013	µg/L	102	0	0	0.9	1	--	--	4.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Chrysene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	1.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dibenzofuran	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	8.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Diethylphthalate	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	12,800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dimethoate	No	4/2/2008	11/21/2013	µg/L	114	0	0	0.9	1.1	--	--	3.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Di-n-butylphthalate	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Di-n-octylphthalate	No	4/2/2008	11/21/2013	µg/L	113	6	5.31	0.9	5	0.95	5.5	192	No Action Level	No	No
Diphenylamine	No	12/17/2009	12/17/2009	µg/L	3	0	0	1	1	--	--	400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Fluoranthene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Fluorene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	320	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Hexachlorocyclopentadiene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2.5	--	--	48	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Hexachloroethane	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	1.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Isophorone	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	46.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
m-Dinitrobenzene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	1.6	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Methyl parathion	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	4.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Naphthalene	No	1/9/2008	12/17/2013	µg/L	227	0	0	0.5	2	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Nitrobenzene	No	4/2/2008	11/21/2013	µg/L	114	0	0	0.9	1.1	--	--	16	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
n-Nitrosodiphenylamine	No	4/2/2008	12/17/2010	µg/L	17	0	0	1	1	--	--	18	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
p-Phenylenediamine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	3,040	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Parathion	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	96	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Pentachlorobenzene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2.7	--	--	13	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Phenacetin	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	40	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Phenol	No	1/2/2008	12/17/2013	µg/L	416	3	0.72	0.47	4	0.91	1.1	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Phorate	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2.9	--	--	3.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Pronamide	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	1,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Pyrene	No	1/9/2008	11/21/2013	µg/L	203	0	0	0.47	1	--	--	240	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Pyridine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	5	--	--	8.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
sym-Trinitrobenzene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	5	--	--	480	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tetraethyl dithiopyrophosphate (Sulfotepp)	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	8.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Total Cresols	No	1/14/2009	1/17/2013	µg/L	44	0	0	0.5	3	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tributyl Phosphate	No	1/9/2008	11/21/2013	µg/L	221	7	3.17	0.47	1.5	0.6	8.4	9.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tris-2-chloroethyl Phosphate	No	1/9/2008	1/17/2013	µg/L	112	0	0	0.5	1	--	--	4.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Volatile Organic Compounds															
1,1,1,2-Tetrachloroethane	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.09	1	--	--	1.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,1,1-Trichloroethane	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.067	1	--	--	200	40 CFR 141--Federal MCL	No	No
1,1-Dichloroethane	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.068	1	--	--	7.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,1-Dichloroethene	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.051	1	--	--	7.0	40 CFR 141--Federal MCL	No	No
1,2-Dichlorobenzene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	600	40 CFR 141--Federal MCL	No	No
1,2-Dichloroethene (Total)	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.13	1	--	--	72.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2-Dichloropropane	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.077	1	--	--	1.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,4-Dichlorobenzene	No	1/9/2008	12/17/2013	µg/L	336	1	0.3	0.1	1.4	0.39	0.39	8.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1-Butanol	No	1/9/2008	4/3/2013	µg/L	286	0	0	12	100	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Butanone	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.52	1	--	--	4,800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Hexanone	No	4/2/2008	4/3/2013	µg/L	177	1	0.56	0.08	5	2	2	40	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4-Methyl-2-pentanone	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.12	1	--	--	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Acetone	No	1/9/2008	12/17/2013	µg/L	292	8	2.74	0.34	5	0.75	37	7,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Allyl Chloride	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.091	1	--	--	2.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Bromoform	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.094	1	--	--	5.5	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Bromomethane	No	4/2/2008	4/3/2013	µg/L	177	16	9.04	0.084	1	0.24	0.69	11	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Carbon Disulfide	No	1/9/2008	12/17/2013	µg/L	292	6	2.05	0.029	1	0.056	2.4	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Chlorobenzene	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.15	1	--	--	100	40 CFR 141--Federal MCL	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Chloroform	No	1/9/2008	12/17/2013	µg/L	292	28	9.59	0.08	1	0.11	1.5	1.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Chloroprene	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.085	1	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
cis-1,2-Dichloroethylene	No	1/9/2008	4/3/2013	µg/L	286	0	0	0.083	1	--	--	16.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dibromomethane	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.14	1	--	--	80.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dichlorodifluoromethane	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.07	2	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Ethyl methacrylate	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.11	1	--	--	720	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Ethylbenzene	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.061	1	--	--	4.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Hexane	No	11/4/2008	11/4/2008	µg/L	1	0	0	0.16	0.16	--	--	480	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Isobutyl Alcohol	No	4/2/2008	4/3/2013	µg/L	173	0	0	5	200	--	--	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Methyl Methacrylate	No	4/2/2008	4/3/2013	µg/L	173	1	0.58	0.26	2	1.4	1.4	11,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Methylene Chloride	No	1/9/2008	12/17/2013	µg/L	292	14	4.79	0.091	1	0.2	1.8	5.0	40 CFR 141--Federal MCL	No	No
Styrene	No	4/2/2008	4/3/2013	µg/L	177	1	0.56	0.036	1	0.21	0.21	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tetrachloroethene	No	1/9/2008	12/17/2013	µg/L	292	6	2.05	0.088	1	0.19	0.67	5.0	40 CFR 141--Federal MCL	No	No
Tetrahydrofuran	No	1/9/2008	4/3/2013	µg/L	286	0	0	1.1	3.2	--	--	14,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Toluene	No	1/9/2008	12/17/2013	µg/L	292	2	0.68	0.029	1	0.17	2.3	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
trans-1,2-Dichloroethylene	No	1/9/2008	4/3/2013	µg/L	286	0	0	0.08	1	--	--	100	40 CFR 141--Federal MCL	No	No
Trichloromonofluoromethane	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.041	1	--	--	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Vinyl Acetate	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.17	2	--	--	8,000	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-12. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Xylenes (Total)	No	1/9/2008	12/17/2013	µg/L	292	1	0.34	0.11	1.6	0.21	0.21	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Sources: 40 CFR 141, "National Primary Drinking Water Regulations."

EPA, 2013, *Preliminary Remediation Goals for Radionuclides*.

WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Groundwater Cleanup Standards."

Note: Shading indicates that analyte was identified as a contaminant of potential concern in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit.*

MCL = maximum contaminant level

Table 6-13. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (Some MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Dioxins/Furans															
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	No	10/3/2012	10/15/2012	µg/L	19	0	0	3.50E-07	1.30E-06	--	--	6.73E-07	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,3,7,8-Tetrachlorodibenzo-p-dioxin	No	7/3/2012	10/15/2012	µg/L	22	0	0	6.50E-07	2.20E-06	--	--	6.73E-07	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Metals															
Antimony (All Results)	No	1/2/2008	1/6/2014	µg/L	1493	73	4.89	0.1	60	0.11	213	6.0	40 CFR 141--Federal MCL	No	Yes
Antimony (All Results)	Yes	1/2/2008	1/6/2014	µg/L	1486	77	5.18	0.3	60	0.13	238	6.0	40 CFR 141--Federal MCL	No	Yes
Antimony (Method 6010 Results)	No	1/2/2008	12/23/2013	µg/L	1385	69	4.98	3.5	60	3.55	213	6.0	40 CFR 141--Federal MCL	No	Yes
Antimony (Method 6010 Results)	Yes	1/2/2008	12/23/2013	µg/L	1385	73	5.27	3.5	60	4	238	6.0	40 CFR 141--Federal MCL	No	Yes
Antimony (Method 200.8 Results)	No	1/30/2008	1/6/2014	µg/L	140	4	2.86	0.1	0.6	0.11	0.32	6.0	40 CFR 141--Federal MCL	No	No
Antimony (Method 200.8 Results)	Yes	10/22/2009	1/6/2014	µg/L	133	4	3.01	0.3	0.6	0.14	0.54	6.0	40 CFR 141--Federal MCL	No	No
Arsenic (All Results)	No	1/9/2008	12/23/2013	µg/L	514	471	91.63	0.8	30	1	98.8	7.9	DOE/RL-96-61, Table ES-1	No	Yes
Arsenic (All Results)	Yes	1/9/2008	12/23/2013	µg/L	499	456	91.38	0.8	30	0.83	104	7.9	DOE/RL-96-61, Table ES-1	No	Yes
Arsenic (Method 6010 Results)	No	6/6/2013	12/23/2013	µg/L	39	3	7.69	25	30	9.78	10.2	7.9	DOE/RL-96-61, Table ES-1	Yes	Yes
Arsenic (Method 6010 Results)	Yes	6/6/2013	12/23/2013	µg/L	40	2	5.0	5	30	5.07	11.8	7.9	DOE/RL-96-61, Table ES-1	No	Yes
Arsenic (Method 200.8 Results)	No	1/9/2008	12/17/2013	µg/L	432	424	98.1	0.8	0.8	1	98.8	7.9	DOE/RL-96-61, Table ES-1	No	No

Table 6-13. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (Some MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Arsenic (Method 200.8 Results)	Yes	1/9/2008	12/17/2013	µg/L	424	419	98.8	0.8	0.8	0.83	104	7.9	DOE/RL-96-61, Table ES-1	No	No
Beryllium (All Results)	No	1/2/2008	12/23/2013	µg/L	1514	3	0.2	0.1	4.1	0.12	1.6	4.0	40 CFR 141--Federal MCL	No	Yes
Beryllium (All Results)	Yes	1/2/2008	12/23/2013	µg/L	1507	3	0.2	0.05	4.1	0.64	1.6	4.0	40 CFR 141--Federal MCL	No	Yes
Beryllium (Method 6010 Results)	No	1/2/2008	12/23/2013	µg/L	1463	2	0.14	0.5	4.1	1.5	1.6	4.0	40 CFR 141--Federal MCL	No	Yes
Beryllium (Method 6010 Results)	Yes	1/2/2008	12/23/2013	µg/L	1461	3	0.21	0.5	4.1	0.64	1.6	4.0	40 CFR 141--Federal MCL	No	Yes
Beryllium (Method 200.8 Results)	No	4/11/2010	12/17/2013	µg/L	51	1	1.96	0.1	0.2	0.12	0.12	4.0	40 CFR 141--Federal MCL	No	No
Beryllium (Method 200.8 Results)	Yes	4/11/2010	12/17/2013	µg/L	46	0	0.00	0.05	0.2	--	--	4.0	40 CFR 141--Federal MCL	No	No
Cobalt (All Results)	No	1/2/2008	12/23/2013	µg/L	1530	65	4.25	0.1	5	0.10	69	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Cobalt (All Results)	Yes	1/2/2008	12/23/2013	µg/L	1523	104	6.83	0.1	5	0.10	62	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Cobalt (Method 6010 Results)	No	1/2/2008	12/23/2013	µg/L	1479	40	2.70	1	5	1.8	69	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Cobalt (Method 6010 Results)	Yes	1/2/2008	12/23/2013	µg/L	1477	75	5.08	1	5	2.2	62	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Cobalt (Method 200.8 Results)	No	4/11/2010	12/17/2013	µg/L	51	25	49.02	0.1	0.2	0.10	9.1	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Cobalt (Method 200.8 Results)	Yes	4/11/2010	12/17/2013	µg/L	46	29	73.91	0.1	0.2	0.10	8.6	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Nickel (All Results)	No	1/2/2008	12/23/2013	µg/L	1530	609	39.8	0.2	133	0.228	4070	100	40 CFR 141--Federal MCL	No	Yes
Nickel (Method 6010 Results)	No	1/2/2008	12/23/2013	µg/L	1499	584	38.96	1.5	133	4	4070	100	40 CFR 141--Federal MCL	No	Yes
Nickel (Method 200.8 Results)	No	12/17/2010	12/17/2013	µg/L	31	29	93.55	0.2	0.4	0.228	9.16	100	40 CFR 141--Federal MCL	No	No
Organochlorine Pesticides															
Dieldrin	N	11/4/2008	2/12/2013	µg/L	77	0	0	0.0023	0.01	--	--	0.0055	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Heptachlor Epoxide	N	11/4/2008	2/12/2013	µg/L	77	0	0	0.0032	0.017	--	--	0.0048	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Polychlorinated Biphenyls															
Aroclor-1016	No	10/8/2008	10/15/2012	µg/L	40	0	0	0.09	0.21	--	--	1.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-13. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (Some MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Radionuclides															
Gross Alpha	No	1/9/2008	12/17/2013	pCi/L	840	507	60.36	-18	19	1.4	2,300	15.0	40 CFR 141--Federal MCL	No	Yes
Iodine-129	No	1/2/2008	12/23/2013	pCi/L	813	555	68.27	-0.26	4.5	0.17	7.54	1.0	40 CFR 141--Federal MCL	No	Yes
Semivolatile Organic Compounds															
1,2,4-Trichlorobenzene	No	1/9/2008	11/21/2013	µg/L	203	0	0	0.7	2.2	--	--	1.5	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
4,6-Dinitro-2-methylphenol	No	1/2/2008	11/21/2013	µg/L	335	0	0	0.9	5	--	--	1.3	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
5-Nitro-o-toluidine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	20	--	--	9.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Aramite	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	20	--	--	3.5	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Diallate	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2	--	--	1.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Hexachlorophene	No	4/2/2008	11/21/2013	µg/L	76	0	0	0.9	10	--	--	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Methacrylonitrile	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.05	2	--	--	0.80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Volatile Organic Compounds															
1,1,2,2-Tetrachloroethane	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.098	1	--	--	0.22	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
1,1,2-Trichloroethane	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.063	1	--	--	0.77	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
1,2-Dichloroethane	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.1	1	--	--	0.48	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Acrolein	No	4/2/2008	4/3/2013	µg/L	173	1	0.58	0.52	5	4.3	4.3	4.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Benzene	No	1/9/2008	12/17/2013	µg/L	292	1	0.34	0.032	1	2.5	2.5	0.80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Bromodichloromethane	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.082	1	--	--	0.71	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes

Table 6-13. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (Some MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Carbon Tetrachloride	No	1/9/2008	12/17/2013	µg/L	292	12	4.11	0.042	1	0.22	5.9	0.63	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
cis-1,3-Dichloropropene	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.07	1	--	--	0.44	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Dibromochloromethane	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.057	1	--	--	0.52	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
trans-1,3-Dichloropropene	No	4/2/2008	4/3/2013	µg/L	177	0	0	0.08	1	--	--	0.44	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Trichloroethene	No	1/9/2008	12/17/2013	µg/L	292	2	0.68	0.11	1	0.4	0.43	1.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Vinyl Chloride	No	1/9/2008	12/17/2013	µg/L	292	0	0	0.032	1	--	--	0.061	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes

Sources: 40 CFR 141, "National Primary Drinking Water Regulations."

DOE/RL-96-61, *Hanford Site Background: Part 3, Groundwater Background*.

WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Groundwater Cleanup Standards."

Note: Shading indicates that analyte was identified as a contaminant of potential concern in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit*.

MCL = maximum contaminant level

Table 6-14. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Greater Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Herbicides															
2-(2-methyl-4-chlorophenoxy) Propionic Acid	No	7/3/2012	10/15/2012	µg/L	22	0	0	130	140	--	--	16.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
2-Methyl-4 chlorophenoxyacetic Acid	No	7/3/2012	10/15/2012	µg/L	22	0	0	120	130	--	--	8.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Organochlorine Pesticides															
Aldrin	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.004	0.01	--	--	0.0026	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Toxaphene	No	11/4/2008	2/12/2013	µg/L	77	0	0	0.25	0.66	--	--	0.080	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes

Table 6-14. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Greater Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Polychlorinated Biphenyls															
Aroclor-1221	No	10/8/2008	10/15/2012	µg/L	40	0	0	0.14	0.21	--	--	0.022	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Aroclor-1232	No	10/8/2008	10/15/2012	µg/L	40	0	0	0.09	0.21	--	--	0.022	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Aroclor-1242	No	10/8/2008	10/15/2012	µg/L	40	0	0	0.09	0.21	--	--	0.044	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Aroclor-1248	No	10/8/2008	10/15/2012	µg/L	40	0	0	0.09	0.21	--	--	0.044	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Aroclor-1254	No	10/8/2008	10/15/2012	µg/L	40	0	0	0.09	0.14	--	--	0.044	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Aroclor-1260	No	10/8/2008	10/15/2012	µg/L	40	0	0	0.09	0.14	--	--	0.044	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Semivolatile Organic Compounds															
2,4-Dinitrotoluene	No	1/9/2008	11/21/2013	µg/L	203	0	0	0.47	1.1	--	--	0.28	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
2-Acetylaminofluorene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.023	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
2-Naphthylamine	No	4/2/2008	11/21/2013	µg/L	113	0	0	1	2	--	--	0.049	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
3,3'-Dichlorobenzidine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1.3	--	--	0.19	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
3,3'-Dimethylbenzidine	No	4/2/2008	11/21/2013	µg/L	113	0	0	1	10	--	--	0.0080	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
3-Methylcholanthrene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.0040	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
4-Aminobiphenyl	No	4/2/2008	11/21/2013	µg/L	113	0	0	1	2	--	--	0.0042	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
4-Chloroaniline	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2.2	--	--	0.22	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
7,12-Dimethylbenz[a]anthracene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.00035	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Azobenzene	No	4/2/2008	7/3/2012	µg/L	6	0	0	1	1	--	--	0.40	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes

Table 6-14. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Greater Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Benzo(a)anthracene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Benzo(a)pyrene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.012	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Benzo(b)fluoranthene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Benzo(k)fluoranthene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Bis(2-chloro-1-methylethyl)ether	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.63	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Bis(2-chloroethyl) Ether	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.040	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Chlorobenzilate	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.80	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Dibenz[a,h]anthracene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Disulfoton	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	3	--	--	0.64	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Hexachlorobenzene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.055	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Hexachlorobutadiene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.56	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Indeno(1,2,3-cd)pyrene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Kepone	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	20	--	--	0.0088	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Methyl Methanesulfonate	No	4/2/2008	11/21/2013	µg/L	113	1	0.88	0.9	5	340	340	0.88	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Nitrosopyrrolidine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2	--	--	0.021	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosodiethylamine	No	4/2/2008	11/21/2013	µg/L	114	0	0	0.9	1.1	--	--	0.00029	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosodimethylamine	No	1/30/2008	11/21/2013	µg/L	134	0	0	0.72	2	--	--	0.00086	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes

Table 6-14. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Non-River Exposure Areas to Human Health Comparison Values (All MDLs Greater Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
n-Nitrosodi-n-butylamine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.0081	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosodi-n-dipropylamine	No	1/9/2008	11/21/2013	µg/L	203	2	0.99	0.5	1	2.6	3.5	0.013	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosomethylethylamine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	2	--	--	0.0040	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosomorpholine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1.2	--	--	0.013	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosopiperidine	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.0093	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
p-Dimethylaminoazobenzene	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.019	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Pentachloroethane	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1.3	--	--	0.49	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Pentachloronitrobenzene (PCNB)	No	4/2/2008	11/21/2013	µg/L	113	0	0	1	2	--	--	0.34	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Pentachlorophenol	No	1/2/2008	12/17/2013	µg/L	416	0	0	0.5	2.4	--	--	0.22	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Safrol	No	4/2/2008	11/21/2013	µg/L	113	0	0	0.9	1	--	--	0.40	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Volatile Organic Compounds															
1,2,3-Trichloropropane	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.15	1	--	--	0.0015	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
1,2-Dibromo-3-chloropropane	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.41	1	--	--	0.055	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
1,2-Dibromoethane	No	4/2/2008	4/3/2013	µg/L	173	0	0	0.13	1	--	--	0.022	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
1,4-Dioxane	No	4/2/2008	11/21/2013	µg/L	218	0	0	0.9	10	--	--	0.44	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Acrylonitrile	No	3/26/2010	4/3/2013	µg/L	152	0	0	0.58	5	--	--	0.081	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes

Source: WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Groundwater Cleanup Standards."

Note: Shading indicates that analyte was identified as a contaminant of potential concern in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit.*

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Anions/Cations															
Chloride	No	2/8/2008	11/22/2013	µg/L	50	50	100	0	0	2,260	15,200	250,000	40 CFR 141--Secondary MCL	No	No
Cyanide	No	6/18/2010	1/7/2011	µg/L	3	0	0	4	4	--	--	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Fluoride	No	2/8/2008	11/22/2013	µg/L	50	48	96	60	250	61	462	960	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Nitrate	No	2/8/2008	11/22/2013	µg/L	49	49	100	0	0	1,790	28,200	45,000	40 CFR 141--Federal MCL	No	No
Nitrite	No	2/8/2008	11/22/2013	µg/L	49	7	14.29	9.85	2,500	30.2	285	3,300	40 CFR 141--Federal MCL	No	No
Sulfate	No	2/15/2008	1/6/2014	µg/L	59	58	98.3	130	130	3,980	61,400	250,000	40 CFR 141--Secondary MCL	No	No
Metals															
Aluminum	No	10/22/2009	1/6/2014	µg/L	34	7	20.59	5	20	15.4	37	87	Clean Water Act -- Freshwater CCC	No	No
Aluminum	Yes	10/22/2009	1/6/2014	µg/L	34	1	2.94	5	20	366	366	87	Clean Water Act -- Freshwater CCC	No	No
Arsenic	No	10/22/2009	1/6/2014	µg/L	34	32	94.12	0.4	0.8	1.29	4.8	7.9	DOE/RL-96-61, Table ES-1	No	No
Arsenic	Yes	10/22/2009	1/6/2014	µg/L	34	32	94.12	0.4	0.8	1.32	5.04	7.9	DOE/RL-96-61, Table ES-1	No	No
Barium	No	2/8/2008	1/6/2014	µg/L	41	41	100	--	--	16.3	36.2	2,000	40 CFR 141--Federal MCL	No	No
Barium	Yes	2/8/2008	1/6/2014	µg/L	41	41	100	--	--	16.8	37.1	2,000	40 CFR 141--Federal MCL	No	No
Beryllium	No	2/8/2008	1/6/2014	µg/L	41	0	0	0.05	4	--	--	4.0	40 CFR 141--Federal MCL	No	No
Beryllium	Yes	2/8/2008	1/6/2014	µg/L	41	0	0	0.05	4	--	--	4.0	40 CFR 141--Federal MCL	No	No
Boron	No	3/5/2010	1/6/2014	µg/L	24	15	62.5	19	41	7.96	43.2	3,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Boron	Yes	3/5/2010	1/6/2014	µg/L	24	11	45.83	19	41	7.68	49.8	3,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Chromium	No	2/8/2008	1/6/2014	µg/L	41	36	87.8	4	13	0.83	8.9	65	Clean Water Act -- Freshwater CCC	No	No
Chromium	Yes	2/8/2008	1/6/2014	µg/L	41	37	90.24	4	13	0.68	13.7	65	Clean Water Act -- Freshwater CCC	No	No
Copper	No	2/8/2008	1/6/2014	µg/L	41	12	29.27	0.2	6	0.22	4.7	9.0	Clean Water Act -- Freshwater CCC	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Copper	Yes	2/8/2008	1/6/2014	µg/L	41	3	7.32	0.1	6	0.25	0.63	9.0	Clean Water Act -- Freshwater CCC	No	No
Hexavalent Chromium	No	10/22/2009	1/6/2014	µg/L	31	16	51.61	2	3.7	2.4	9.7	10	40 CFR 131 -- Freshwater CCC	No	No
Hexavalent Chromium	Yes	10/22/2009	1/6/2014	µg/L	25	12	48	2	2	2.4	8.9	10	40 CFR 131 -- Freshwater CCC	No	No
Iron	No	2/8/2008	1/6/2014	µg/L	33	27	81.82	38	40	19.6	1,280	1,000	Clean Water Act -- Freshwater CCC	No	No
Iron	Yes	2/8/2008	1/6/2014	µg/L	33	12	36.36	16	40	18.5	47.6	1,000	Clean Water Act -- Freshwater CCC	No	No
Lead	No	10/22/2009	1/6/2014	µg/L	34	8	23.53	0.1	0.2	0.18	16.3	2.1	WAC 173-201A	No	No
Lead	Yes	10/22/2009	1/6/2014	µg/L	34	7	20.59	0.05	0.2	0.19	2.31	2.1	WAC 173-201A	No	No
Lithium	No	3/5/2010	1/7/2011	µg/L	14	12	85.71	4	4	4.9	19	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Lithium	Yes	3/5/2010	1/7/2011	µg/L	14	12	85.71	4	4	5	18	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Manganese	No	2/8/2008	1/6/2014	µg/L	34	20	58.82	4	6	0.34	70.2	384	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Manganese	Yes	2/8/2008	1/6/2014	µg/L	34	16	47.06	4	6	0.22	65.9	384	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Molybdenum	No	3/5/2010	1/6/2014	µg/L	31	31	100	--	--	1.49	7.33	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Molybdenum	Yes	3/5/2010	1/6/2014	µg/L	31	31	100	--	--	1.53	8.08	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Nickel	No	2/8/2008	1/6/2014	µg/L	34	8	23.53	0.2	13.3	0.33	12	52	Clean Water Act -- Freshwater CCC	No	No
Nickel	Yes	2/8/2008	1/6/2014	µg/L	34	8	23.53	0.1	13.3	0.22	4	52	Clean Water Act -- Freshwater CCC	No	No
Selenium	No	10/22/2009	1/6/2014	µg/L	34	23	67.65	0.6	2	0.65	3.98	5.0	Clean Water Act -- Freshwater CCC	No	No
Selenium	Yes	10/22/2009	1/6/2014	µg/L	34	24	70.59	0.6	2	0.61	3.15	5.0	Clean Water Act -- Freshwater CCC	No	No
Strontium	No	2/8/2008	1/6/2014	µg/L	34	34	100	--	--	124	308	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Strontium	Yes	2/8/2008	1/6/2014	µg/L	34	34	100	--	--	125	312	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tin	No	3/5/2010	1/6/2014	µg/L	31	3	9.68	0.1	1	0.066	0.17	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tin	Yes	3/5/2010	1/6/2014	µg/L	31	4	12.9	0.05	0.1	0.14	1.9	9,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Uranium	No	10/22/2009	1/6/2014	µg/L	22	22	100	--	--	0.12	2.85	30	40 CFR 141--Federal MCL	No	No
Uranium	Yes	10/22/2009	1/6/2014	µg/L	11	11	100	--	--	0.11	3.05	30	40 CFR 141--Federal MCL	No	No
Vanadium	No	2/8/2008	1/6/2014	µg/L	34	21	61.76	7	17	0.63	25.6	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Vanadium	Yes	2/8/2008	1/6/2014	µg/L	34	22	64.71	7	17	0.50	31	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Zinc	No	2/8/2008	1/6/2014	µg/L	34	12	35.29	4	9	2.05	1270	91	WAC 173-201A	No	No
Zinc	Yes	2/8/2008	1/6/2014	µg/L	34	12	35.29	2	9	1.82	281	91	WAC 173-201A	No	No
Organochlorine Pesticides															
4,4'-DDD (Dichlorodiphenyldichloroethane)	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.01	--	--	0.36	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4,4'-DDE (Dichlorodiphenyldichloroethylene)	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.02	--	--	0.26	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Alpha-BHC	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.01	--	--	0.014	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.013	--	--	0.049	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dinoseb(2-secButyl-4,6-dinitrophenol)	No	9/19/2010	1/7/2011	µg/L	2	0	0	2	2	--	--	7.0	40 CFR 141--Federal MCL	No	No
Endosulfan I	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.02	--	--	0.056	Clean Water Act -- Freshwater CCC	No	No
Endosulfan II	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.01	--	--	0.056	Clean Water Act -- Freshwater CCC	No	No
Gamma-BHC (Lindane)	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.003	0.01	--	--	0.080	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Methoxychlor	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.001	0.01	--	--	0.030	Clean Water Act -- Freshwater CCC	No	No
Radionuclides															
Americium-241	No	4/9/2010	11/29/2010	pCi/L	6	2	33.33	-0.0091	0.085	0.09	0.13	15	40 CFR 141--Federal MCL	No	No
Carbon-14	No	10/27/2008	11/22/2013	pCi/L	24	8	33.33	-9.49	4.98	179	436	2,000	40 CFR 141--Federal MCL	No	No
Cesium-137	No	10/27/2008	1/7/2011	pCi/L	10	0	0	-2.86	1.09	--	--	200	40 CFR 141--Federal MCL	No	No
Cobalt-60	No	10/27/2008	1/7/2011	pCi/L	10	0	0	-2.86	1.99	--	--	100	40 CFR 141--Federal MCL	No	No
Europium-152	No	10/27/2008	1/7/2011	pCi/L	10	0	0	-9.58	3.28	--	--	200	40 CFR 141--Federal MCL	No	No
Europium-154	No	10/27/2008	1/7/2011	pCi/L	10	0	0	-9.36	3.04	--	--	60	40 CFR 141--Federal MCL	No	No
Europium-155	No	10/27/2008	1/7/2011	pCi/L	10	0	0	-4.34	2.52	--	--	600	40 CFR 141--Federal MCL	No	No
Gross alpha	No	5/5/2008	11/22/2013	pCi/L	20	5	25	-0.7	2.4	1.8	3.8	15	40 CFR 141--Federal MCL	No	No
Gross beta	No	5/5/2008	11/22/2013	pCi/L	22	21	95.45	2.7	2.7	4.6	80	4.0	40 CFR 141--Federal MCL	No	No
Iodine-129	No	4/9/2010	4/26/2012	pCi/L	12	2	16.67	-0.0412	0.177	0.213	0.246	1.0	40 CFR 141--Federal MCL	No	No
Nickel-63	No	5/17/2010	9/2/2010	pCi/L	3	0	0	0.107	1.78	--	--	50	40 CFR 141--Federal MCL	No	No
Plutonium-238	No	9/19/2010	1/7/2011	pCi/L	2	0	0	0.0074	0.035	--	--	15	40 CFR 141--Federal MCL	No	No
Plutonium-239/240	No	9/19/2010	1/7/2011	pCi/L	2	0	0	0.0087	0.037	--	--	15	40 CFR 141--Federal MCL	No	No
Silver-108 Metastable	No	1/7/2011	1/7/2011	pCi/L	1	0	0	-0.164	-0.164	--	--	7.3	EPA, 2013	No	No
Strontium-90	No	10/22/2009	11/22/2013	pCi/L	25	0	0	-12	0.83	--	--	8.0	40 CFR 141--Federal MCL	No	No
Technetium-99	No	10/27/2008	11/22/2013	pCi/L	34	28	82.35	-10	2.4	7.7	120	900	40 CFR 141--Federal MCL	No	No
Tritium	No	2/8/2008	11/22/2013	pCi/L	50	37	74	-120	240	230	15000	20,000	40 CFR 141--Federal MCL	No	No
Semivolatile Organic Compounds															
1,2,4,5-Tetrachlorobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2,4-Trichlorobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	1.5	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2-Dichlorobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	600	40 CFR 141--Federal MCL	No	No
2,3,4,6-Tetrachlorophenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	480	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
2,4,5-Trichlorophenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4,6-Trichlorophenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	4.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4-Dichlorophenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	24	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4-Dimethylphenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,4-Dinitrophenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	2	2	--	--	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2,6-Dinitrotoluene	No	9/19/2010	1/7/2011	µg/L	2	0	0	2.2	2.2	--	--	16	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Chloronaphthalene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Chlorophenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	40	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Methylnaphthalene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	32	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Methylphenol (cresol, o-)	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Nitroaniline	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
3-Nitroaniline	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	4.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4,6-Dinitro-2-methylphenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	1.3	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4-Chloro-3-methylphenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4-Methylphenol (cresol, p-)	No	9/19/2010	1/7/2011	µg/L	2	0	0	10	10	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4-Nitroaniline	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	4.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
5-Nitro-o-toluidine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	9.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Acenaphthene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.65	1	--	--	480	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Acetophenone	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Aniline	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	7.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Anthracene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.02	1	--	--	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Benzyl alcohol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Bis(2-Chloroethoxy)methane	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	48	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Bis(2-ethylhexyl) phthalate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	6.0	40 CFR 141--Federal MCL	No	No
Butylbenzylphthalate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	46	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Carbazole	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	4.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Chrysene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.035	1	--	--	1.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dibenzofuran	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	8.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Fluoranthene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.18	1	--	--	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Fluorene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.071	1	--	--	320	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Hexachloroethane	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	1.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Hexachlorocyclopentadiene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	48	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Isophorone	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	46	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
m-Dinitrobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	1.6	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Naphthalene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.2	1	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Nitrobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	16	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
n-Nitrosodiphenylamine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	18	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Pentachlorobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	13	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Phenacetin	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	40	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Phenol	No	9/19/2010	9/19/2010	µg/L	1	0	0	2	2	--	--	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Phorate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	3.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
p-Phenylenediamine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	3,040	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Pronamide	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	1,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Pyrene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.083	1	--	--	240	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Pyridine	No	9/19/2010	1/7/2011	µg/L	2	0	0	2	2	--	--	8.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
sym-Trinitrobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	480	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tetraethyl dithiopyrophosphate (Sulfotepp)	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	8.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tributyl Phosphate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	9.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Total Petroleum Hydrocarbons															
Total Petroleum Hydrocarbons-Diesel Range	No	4/9/2010	1/7/2011	µg/L	9	1	11.11	70	70	180	180	500	WAC 173-340-900,Table 720-1	No	No
Total Petroleum Hydrocarbons-Gasoline Range	No	6/18/2010	1/7/2011	µg/L	3	0	0	50	50	--	--	1,000	WAC 173-340-900,Table 720-1	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Volatile Organic Compounds															
1,1,1,2-Tetrachloroethane	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.09	0.09	--	--	1.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,1,1-Trichloroethane	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.067	1	--	--	200	40 CFR 141--Federal MCL	No	No
1,1-Dichloroethane	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.068	1	--	--	7.7	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,1-Dichloroethene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.051	1	--	--	7.0	40 CFR 141--Federal MCL	No	No
1,2-Dichloroethene (Total)	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.13	1	--	--	72	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,2-Dichloropropane	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.097	1	--	--	1.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1-Butanol	No	10/22/2009	1/7/2011	µg/L	17	0	0	12	100	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
1,4-Dichlorobenzene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.12	1	--	--	8.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Butanone	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.52	1	--	--	4,800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
2-Hexanone	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.22	1	--	--	40	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
4-Methyl-2-pentanone	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.12	1	--	--	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Acetone	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.34	1	--	--	7,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Acrolein	No	3/5/2010	1/7/2011	µg/L	14	0	0	2.8	2.8	--	--	3.0	Clean Water Act -- Freshwater CCC	No	No
Allyl Chloride	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.091	0.11	--	--	2.1	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Bromoform	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.094	1	--	--	5.5	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Bromomethane	No	10/22/2009	1/7/2011	µg/L	17	4	23.53	0.084	1	0.29	0.98	11	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Carbon Disulfide	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.05	1	--	--	800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Chlorobenzene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.15	1	--	--	100	40 CFR 141--Federal MCL	No	No
Chloroform	No	10/22/2009	1/7/2011	µg/L	17	7	41.18	0.1	1	0.11	0.36	1.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Chloroprene	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.086	0.097	--	--	160	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
cis-1,2-Dichloroethylene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.083	1	--	--	16	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dibromomethane	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.21	0.21	--	--	80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dichlorodifluoromethane	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.07	0.084	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Diethylphthalate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	12,800	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Dimethoate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	3.2	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Di-n-butylphthalate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Ethyl Acetate	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.18	2,000	--	--	7,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Ethyl Methacrylate	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.11	0.11	--	--	720	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Ethylbenzene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.086	1	--	--	4.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Ethylene Glycol	No	9/19/2010	1/7/2011	µg/L	2	0	0	2,000	2,000	--	--	16,000	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Isobutyl Alcohol	No	3/5/2010	1/7/2011	µg/L	14	0	0	8.7	8.7	--	--	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Methacrylonitrile	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.05	0.5	--	--	0.80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Methanol	No	9/19/2010	9/19/2010	µg/L	1	0	0	2,000	2,000	--	--	4,000	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Methyl Methacrylate	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.26	0.26	--	--	11,200	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Table 6-15. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered ?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Methyl Parathion	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	4.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Methylene Chloride	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.11	1	--	--	5.0	40 CFR 141--Federal MCL	No	No
Styrene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.036	1	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Tetrachloroethene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.088	1	--	--	5.0	40 CFR 141--Federal MCL	No	No
Tetrahydrofuran	No	10/22/2009	1/7/2011	µg/L	17	0	0	1.1	2	--	--	14,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Toluene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.062	1	--	--	640	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
trans-1,2-Dichloroethylene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.083	1	--	--	100	40 CFR 141--Federal MCL	No	No
Trichloromonofluoromethane	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.041	0.11	--	--	2,400	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Vinyl Acetate	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.17	0.18	--	--	8,000	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Xylenes (Total)	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.11	1	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No

Sources: 40 CFR 131, "Water Quality Standards."

40 CFR 141, "National Primary Drinking Water Regulations."

Clean Water Act of 1977.

DOE/RL-96-61, *Hanford Site Background: Part 3, Groundwater Background*.

EPA, 2013, *Preliminary Remediation Goals for Radionuclides*.

WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Groundwater Cleanup Standards."

Note: Shading indicates that analyte was identified as a contaminant of potential concern in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit*.

MCL = maximum contaminant level

Table 6-16. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (Some MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Metals															
Antimony (All Results)	No	2/8/2008	1/6/2014	µg/L	41	0	0	0.3	60	--	--	6.0	40 CFR 141--Federal MCL	No	Yes

Table 6-16. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (Some MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Antimony (All Results)	Yes	2/8/2008	1/6/2014	µg/L	41	1	2.44	0.3	60	36.5	36.5	6.0	40 CFR 141--Federal MCL	No	Yes
Antimony (Method 6010 Results)	No	2/8/2008	10/18/2009	µg/L	7	0	0	4	60	--	--	6.0	40 CFR 141--Federal MCL	No	Yes
Antimony (Method 6010 Results)	Yes	2/8/2008	10/18/2009	µg/L	7	1	14.3	0.3	60	36.5	36.5	6.0	40 CFR 141--Federal MCL	No	Yes
Antimony (Method 200.8 Results)	No	10/22/2009	1/6/2014	µg/L	32	0	0	0.3	0.6	--	--	6.0	40 CFR 141--Federal MCL	No	No
Antimony (Method 200.8 Results)	Yes	10/22/2009	1/6/2014	µg/L	32	0	0	0.3	0.6	--	--	6.0	40 CFR 141--Federal MCL	No	No
Cadmium (All Results)	No	2/8/2008	1/6/2014	µg/L	41	2	4.88	0.1	4	0.1	0.11	0.25	Clean Water Act -- Freshwater CCC	No	Yes
Cadmium (All Results)	Yes	2/8/2008	1/6/2014	µg/L	41	0	0	0.05	4	--	--	0.25	Clean Water Act -- Freshwater CCC	No	Yes
Cadmium (Method 6010 Results)	No	2/8/2008	10/18/2009	µg/L	7	0	0	0.45	4	--	--	0.25	Clean Water Act -- Freshwater CCC	Yes	Yes
Cadmium (Method 6010 Results)	Yes	2/8/2008	10/18/2009	µg/L	7	0	0	0.45	4	--	--	0.25	Clean Water Act -- Freshwater CCC	Yes	Yes
Cadmium (Method 200.8 Results)	No	10/22/2009	1/6/2014	µg/L	32	1	3.13	0.1	0.2	0.11	0.11	0.25	Clean Water Act -- Freshwater CCC	No	No
Cadmium (Method 200.8 Results)	Yes	10/22/2009	1/6/2014	µg/L	32	0	0	0.05	0.2	--	--	0.25	Clean Water Act -- Freshwater CCC	No	No
Cobalt (All Results)	No	2/8/2008	1/6/2014	µg/L	41	2	4.88	0.05	5	0.10	0.14	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Cobalt (All Results)	Yes	2/8/2008	1/6/2014	µg/L	41	12	29.27	0.1	5	0.12	0.76	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Cobalt (Method 6010 Results)	No	2/8/2008	10/18/2009	µg/L	7	0	0	4	5	--	--	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Cobalt (Method 6010 Results)	Yes	2/8/2008	10/18/2009	µg/L	7	0	0	4	5	--	--	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Cobalt (Method 200.8 Results)	No	10/22/2009	1/6/2014	µg/L	32	2	6.25	0.05	0.1	0.10	0.14	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Cobalt (Method 200.8 Results)	Yes	10/22/2009	1/6/2014	µg/L	32	11	34.38	0.1	0.1	0.12	0.76	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	No
Silver (All Results)	No	2/8/2008	1/6/2014	µg/L	41	0	0	0.04	6	--	--	2.6	WAC 173-201A	No	Yes

Table 6-16. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (Some MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Silver (All Results)	Yes	2/8/2008	1/6/2014	µg/L	41	0	0	0.04	6	--	--	2.6	WAC 173-201A	No	Yes
Silver (Method 6010 Results)	No	2/8/2008	10/18/2009	µg/L	7	0	0	5	6	--	--	2.6	WAC 173-201A	Yes	Yes
Silver (Method 6010 Results)	Yes	2/8/2008	10/18/2009	µg/L	7	0	0	5	6	--	--	2.6	WAC 173-201A	Yes	Yes
Silver (Method 200.8 Results)	No	10/22/2009	1/6/2014	µg/L	32	0	0	0.1	0.2	--	--	2.6	WAC 173-201A	No	No
Silver (Method 200.8 Results)	Yes	10/22/2009	1/6/2014	µg/L	32	0	0	0.1	0.2	--	--	2.6	WAC 173-201A	No	No
Organochlorine Pesticides															
Heptachlor	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.003	0.01	0	0	0.0038	Clean Water Act -- Freshwater CCC	No	Yes
Semivolatile Organic Compounds															
Benzo(a)anthracene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.063	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Benzo(b)fluoranthene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.051	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Benzo(k)fluoranthene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.074	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Volatile Organic Compounds															
1,1,2,2-Tetrachloroethane	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.098	1	--	--	0.22	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
1,1,2-Trichloroethane	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.063	1	--	--	0.77	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
1,2-Dichloroethane	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.1	1	--	--	0.48	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Benzene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.045	1	--	--	0.80	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Bromodichloromethane	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.082	1	--	--	0.71	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Carbon tetrachloride	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.063	1	--	--	0.63	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
cis-1,3-Dichloropropene	No	10/22/20	1/7/2011	µg/L	17	0	0	0.073	1	--	--	0.44	WAC 173-340-	No	Yes

Table 6-16. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (Some MDLs Less Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
		09											720(4)(b)(iii)(A) and (B)		
Dibromochloromethane	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.057	1	--	--	0.52	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Diethyl ether	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.26	2,000	--	--	1,600	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
trans-1,3-Dichloropropene	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.083	1	--	--	0.44	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Trichloroethene	No	10/22/2009	1/7/2011	µg/L	17	14	82.35	0.21	1	0.25	3.9	1.0	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes
Vinyl chloride	No	10/22/2009	1/7/2011	µg/L	17	0	0	0.032	1	--	--	0.061	WAC 173-340-720(4)(b)(iii)(A) and (B)	No	Yes

Sources: 40 CFR 141, "National Primary Drinking Water Regulations."

Clean Water Act of 1977.

WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington."

WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Groundwater Cleanup Standards."

Note: Shading indicates that analyte was identified as a contaminant of potential concern in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit.*

CCC = criterion continuous concentration

MCL = maximum contaminant level

Table 6-17. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Greater Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Metals															
Mercury	No	10/22/2009	1/6/2014	µg/L	23	0	0	0.05	0.1	--	--	0.012	40 CFR 131 -- Freshwater CCC	Yes	Yes
Mercury	Yes	10/22/2009	1/6/2014	µg/L	23	0	0	0.05	0.1	--	--	0.012	40 CFR 131 -- Freshwater CCC	Yes	Yes
Organochlorine Pesticides															
4,4'-DDT (Dichlorodiphenyltrichloroethane)	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.01	--	--	0.0010	Clean Water Act -- Freshwater CCC	Yes	Yes
Aldrin	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.01	--	--	0.0019	WAC 173-201A	Yes	Yes

Table 6-17. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Greater Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
Chlordane	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.04	0.23	--	--	0.0043	Clean Water Act -- Freshwater CCC	Yes	Yes
Dieldrin	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.01	--	--	0.0019	40 CFR 131 -- Freshwater CCC	Yes	Yes
Endrin	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.01	--	--	0.0023	40 CFR 131 -- Freshwater CCC	Yes	Yes
Heptachlor Epoxide	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.01	0.01	--	--	0.0038	Clean Water Act -- Freshwater CCC	Yes	Yes
Toxaphene	No	6/18/2010	1/7/2011	µg/L	3	0	0	0.66	0.66	--	--	0.00020	Clean Water Act -- Freshwater CCC	Yes	Yes
Semivolatile Organic Compounds															
2,4-Dinitrotoluene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.28	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
2-Acetylaminofluorene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.023	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
2-Naphthylamine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.049	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
3,3'-Dichlorobenzidine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.19	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
3,3'-Dimethylbenzidine	No	9/19/2010	1/7/2011	µg/L	2	0	0	2.6	2.6	--	--	0.0080	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
3-Methylcholanthrene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.0040	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
4-Aminobiphenyl	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.0042	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
4-Chloroaniline	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.22	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
7,12-Dimethylbenz[a]anthracene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.00035	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Aramite	No	9/19/2010	1/7/2011	µg/L	2	0	0	20	20	--	--	3.5	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Azobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.40	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Benzo(a)pyrene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.075	1	--	--	0.012	WAC 173-340-	Yes	Yes

Table 6-17. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Greater Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
													720(4)(b)(iii)(A) and (B)		
Bis(2-chloro-1-methylethyl)ether	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.63	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Bis(2-chloroethyl) ether	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.040	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Chlorobenzilate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.80	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Diallate	No	9/19/2010	1/7/2011	µg/L	2	0	0	2	2	--	--	1.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Dibenz[a,h]anthracene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.15	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Disulfoton	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.64	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Hexachlorobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.055	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Hexachlorobutadiene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.56	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Hexachlorophene	No	9/19/2010	1/7/2011	µg/L	2	0	0	10	10	--	--	4.8	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Indeno(1,2,3-cd)pyrene	No	9/19/2010	1/7/2011	µg/L	2	0	0	0.14	1	--	--	0.12	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Kepone	No	9/19/2010	1/7/2011	µg/L	2	0	0	20	20	--	--	0.0088	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Methyl Methanesulfonate	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.88	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Nitrosopyrrolidine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.021	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosodiethylamine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.00029	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosodimethylamine	No	9/19/2010	1/7/2011	µg/L	2	0	0	2	2	--	--	0.00086	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosodi-n-butylamine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.0081	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosodi-n-dipropylamine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.013	WAC 173-340-	Yes	Yes

Table 6-17. Comparison of Method Detection Limits from 200-BP-5 Groundwater OU Near River Exposure Area to Human Health and Aquatic Comparison Values (All MDLs Greater Than or Equal to Comparison Value)

Analyte Name	Filtered?	First Sample Date	Last Sample Date	Units	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Comparison Value	Comparison Value Basis	Is Min Non-Detect > Comparison Value?	Is Max Non-Detect > Comparison Value?
													720(4)(b)(iii)(A) and (B)		
n-Nitrosomethylethylamine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.0040	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosomorpholine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.013	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
n-Nitrosopiperidine	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.0093	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Parathion	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.013	Clean Water Act -- Freshwater CCC	Yes	Yes
p-Dimethylaminoazobenzene	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.019	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Pentachloroethane	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.49	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Pentachloronitrobenzene (PCNB)	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.34	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Pentachlorophenol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1.3	1.3	--	--	0.22	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Safrol	No	9/19/2010	1/7/2011	µg/L	2	0	0	1	1	--	--	0.4	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
Volatile Organic Compounds															
1,2-Dibromo-3-chloropropane	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.41	0.41	--	--	0.055	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
1,2-Dibromoethane	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.13	0.13	--	--	0.022	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
1,2,3-Trichloropropane	No	3/5/2010	1/7/2011	µg/L	14	0	0	0.15	0.15	--	--	0.0015	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes
1,4-Dioxane	No	3/5/2010	1/7/2011	µg/L	14	0	0	7.6	7.6	--	--	0.44	WAC 173-340-720(4)(b)(iii)(A) and (B)	Yes	Yes

Sources: 40 CFR 131, "Water Quality Standards."

Clean Water Act of 1977.

WAC 173-340-720, "Model Toxics Control Act—Cleanup," "Groundwater Cleanup Standards."

Note: Shading indicates that analyte was identified as a contaminant of potential concern in DOE/RL-2007-18, *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit.*

CCC = criterion continuous concentration

Carbon tetrachloride was detected in 12 out of 292 groundwater samples. Single detections of carbon tetrachloride were reported in 11 monitoring wells and was reported twice in a single well; in all cases, each detection is considered suspect because its presence is anomalous relative to additional sampling events at the same well (see Appendix B for trend charts). MDLs reported above the comparison value do not impair the use of this information because the results suggest that the presence of carbon tetrachloride is not site related, and it was not identified as a COPC in the RI/FS Work Plan (DOE/RL-2007-18, Appendix A).

The laboratory cannot attain the comparison value for trichloroethene; therefore, nondetected concentrations are reported as less than or equal to 1 µg/L; the comparison value for trichloroethene is 0.95 µg/L. Trichloroethene was detected in 2 of 292 groundwater samples. Both detections of trichloroethene were flagged with a "B" laboratory qualifier indicating that the analyte was detected in both the sample and the associated QC blank. MDLs reported above the comparison value do not impair the use of this information as the results suggest the presence of trichloroethene is the result of laboratory contamination; additionally trichloroethene was not identified as a COPC in the RI/FS Work Plan (DOE/RL-2007-18, Appendix A).

A small percentage of MDLs for iodine-129 (11 of 258 MDLs) and gross alpha (3 of 333) are greater than their respective comparison values. Detections of iodine-129 and gross alpha above comparison values are reported at the same locations; MDLs for these samples are considered usable for decision making purposes.

Five metals (antimony, arsenic, beryllium, cobalt, and nickel) report a portion of their MDLs at concentrations above the comparison values. Groundwater samples were analyzed using the following analytical methods:

- Inductively coupled plasma-atomic emission spectrometry (ICP-AES) using EPA Method 6010 in SW-846
- Inductively coupled plasma-mass spectrometry (ICP-MS) using EPA Method 200.8

As shown in Table 6-13, results for each of these metals are presented separately based on the analytical method used (e.g. Method 6010 results or Method 200.8 results). MDLs for groundwater samples analyzed by Method 200.8 are reported at concentrations less than their respective comparison value; these results are considered usable for all RI/FS decision making purposes. However, a large percentage of MDLs for groundwater samples analyzed by Method 6010 are reported at concentrations greater than their respective comparison values. The following MDLs reported by Method 6010 are not considered usable for any RI/FS decision making purpose:

- Total antimony – 1,316 of 1,385 MDLs (95 percent) are greater than comparison value of 6 µg/L.
- Dissolved antimony – 1,312 of 1,385 MDLs (95 percent) are greater than comparison value of 6 µg/L.
- Total arsenic – all 36 MDLs (100 percent) are greater than the comparison value of 7.9 µg/L.
- Dissolved arsenic – 37 of 38 MDLs (97 percent) are greater than the comparison value of 7.9 µg/L.
- Total beryllium – 1,370 of 1,461 MDLs (94 percent) are greater than the comparison value of 4 µg/L.
- Dissolved beryllium – 1,369 of 1,458 MDLs (94 percent) are greater than the comparison value of 4 µg/L.

- Total cobalt – 63 of 1,439 MDLs (4.4 percent) are greater than the comparison value of 4.6 µg/L.
- Dissolved cobalt - 61 of 1,402 MDLs (4.4 percent) are greater than the comparison value of 4.6 µg/L.

As shown in Table 6-14, 52 analytes report all MDLs greater than their respective comparison value. These analytes are not known to be associated with a release at the 200 east area of the Hanford Site; additionally these analytes were not identified as COPCs in the RI/FS Work Plan (DOE/RL-2007-18, Appendix A). These analytes were reported with multi-component method-based analytical methods. With the exception of a single detection of methyl methanesulfonate and two reported detections of n-nitrosodi-n-propylamine, the remaining analytes were not detected in any groundwater sample. Each detection is considered suspect because their presence is anomalous relative to additional sampling events at the same well (see Appendix B for trend charts).

6.4.2 MDL Results for Near-River Groundwater Samples

As shown in Table 6-15, all MDLs for 170 analytes are less than or equal to their respective comparison value. MDLs for these analytes are considered usable for all RI/FS purposes.

As shown in Table 6-16, 25 analytes are reported with a portion of the MDLs greater than their respective comparison value. With the exception of antimony and cadmium, the analytes listed on this table are not known to be associated with a release at the 200 East Area of the Hanford Site, and they were not identified as COPCs in the RI/FS Work Plan (DOE/RL-2007-18, Appendix A).

Of the 25 analytes, 15 do not report any detected concentrations. Analytes with reported concentrations are discussed below.

The laboratory cannot attain the comparison value for trichloroethene; therefore, nondetected concentrations are reported as less than or equal to 1 µg/L; the comparison value for trichloroethene is 0.95 µg/L. Trichloroethene was detected in 14 of 17 groundwater samples. Because of the large percentage of detections, MDLs reported above the comparison value do not impair the use of this information.

Four metals (antimony, cadmium, cobalt, and silver) report a portion of their MDLs at concentrations above the comparison values. Groundwater samples were analyzed using the following analytical methods:

- ICP-AES using EPA Method 6010 in SW-846
- Inductively coupled plasma-mass spectrometry (ICP-MS) using EPA Method 200.8

As shown in Table 6-16, results for each of these metals are presented separately based on the analytical method used (e.g. Method 6010 results or Method 200.8 results). MDLs for groundwater samples analyzed by Method 200.8 are reported at concentrations less than their respective comparison value; these results are considered usable for all RI/FS decision making purposes. However, a large percentage of MDLs for groundwater samples analyzed by Method 6010 are reported at concentrations greater than their respective comparison values. The following MDLs reported by Method 6010 are not considered usable for any RI/FS decision making purpose:

- Total antimony – 6 of 7 MDLs (86 percent) are greater than comparison value of 6 µg/L.
- Dissolved antimony – five of 6 MDLs (83 percent) are greater than comparison value of 6 µg/L.
- Total cadmium – all 7 MDLs are less than the human health comparison value of 5 µg/L, and all 7 MDLs (100 percent) are greater than the aquatic comparison value of 0.25 µg/L.

- Dissolved cadmium –all 7 MDLs (100 percent) are greater than the aquatic comparison value of 0.25 µg/L.
- Total cobalt – 2 of 7 MDLs (29 percent) are greater than the comparison value of 4.6 µg/L.
- Dissolved cobalt - 2 of 7 MDLs (29 percent) are greater than the comparison value of 4.6 µg/L.
- Total silver – all 7 MDLs are less than the human health comparison value of 80 µg/L and all 7 MDLs (100 percent) are greater than the aquatic comparison value of 2.6 µg/L.
- Dissolved silver –all 7 MDLs (100 percent) are greater than the aquatic comparison value of 2.6 µg/L.

As shown in Table 6-17, 50 analytes report all MDLs greater than their respective comparison value. These analytes are not known to be associated with a release at the 200 east area of the Hanford Site. Except for mercury, all remaining analytes were not identified as COPCs in the RI/FS Work Plan (DOE/RL-2007-18, Appendix A). With the exception of mercury, all analytes were reported with multi-component method-based analytical methods. Additionally all analytes were not detected in any groundwater sample.

The laboratory cannot attain the comparison value for mercury; therefore, nondetected concentrations are reported at concentrations ranging between less than 0.05 and less than 0.1 µg/L. The human health comparison value for mercury is 2.0 µg/L, and the aquatic comparison value for mercury is 0.0012 µg/L. Mercury was not detected in any of the 23 unfiltered or 23 filtered groundwater samples. All MDLs are less than the human health comparison value of 2.0 µg/L. Although the MDLs are greater than the aquatic criteria, the analytical method cannot attain a level that is equivalent to the aquatic comparison value. The MDLs reported are considered usable for determining that mercury is absent at concentrations that will not impact aquatic receptors.

6.5 Comparability – Trend Charts

A list of analytical methods used for groundwater samples collected within the 100-BP-5 Groundwater OU is provided in Table 1-2. All groundwater data were collected and analyzed in accordance with DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Documents* (HASQARD), and the testing specified and used methods based on the SW-846, *Test Methods for Evaluation Solid Waste: Physical/Chemical Methods, Third Edition; Final Update IV-B*, along with current radiochemical methods. All of these methods have been specified for Hanford Site work for greater than 10 years. Therefore, the data should be compatible and comparable over time.

Appendix B contains trend charts that were produced for a number of analytes that were reported at concentrations greater than their respective comparison value (see Table 5-4). These charts plot the concentration of the target analyte at a specific monitoring well from measurements that have been collected over the past 10 years. The purpose of these charts is to determine if the results are associated with an upward or downward trend (the results for an analyte appear to be comparable). Or if the result appears to be anomalous and is not consistent or comparable with results obtained over the 10 year time period.

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7 Hanford Groundwater Report Review

CHPRC S&GRP collects groundwater samples, as needed, to address characterization and monitoring requirements for the various compliance programs at the Hanford Site (i.e., RCRA, CERCLA, the *Atomic Energy Act of 1954*, HASQARD (DOE/RL-96-68), and CHPRC-00189, *CH2M Hill Plateau Remediation Company Environmental Quality Assurance Program Plan*). Results from these sample analyses are evaluated and compiled into an annual Hanford Site groundwater monitoring report. The report includes an appendix that provides an overview of the QA/QC information generated to support these programs. As discussed in Chapter 3 of this report, the purpose of Step 5 of the DQA process is to draw conclusions from the data. Steps 3 and 4 of the DQA process were not applicable because groundwater data for the 200-BP-5 Groundwater OU were collected using a judgmental sample design. As such, the results presented in Chapters 6, 7, and 8 are used to draw conclusions about the usability of the data.

Review of the Hanford Site annual groundwater monitoring report provides some information regarding the overall quality and performance of the groundwater sampling and analytical activities. The 200-BP-5 Groundwater OU data are a subset of the overall Hanford Site groundwater monitoring program described in the annual reports. As an evaluation of the quality of the 200-BP-5 Groundwater OU data, it is useful to compare the performance metrics of the 200-BP-5 Groundwater OU data to the overall Hanford Site groundwater data set.

Table 7-1 summarizes the QA/QC results for Hanford Site groundwater monitoring over the time period considered in this DQA report along with the QA/QC results for the 200-BP-5 Groundwater OU data set. Results are not provided for all QA/QC parameters for all years because of the variations in how the data are compiled in each annual report. Citations are provided for each annual report for readers who wish to review the details for a specific year. As shown in Table 7-1, the 200-BP-5 Groundwater OU data set was equivalent or better than the site-wide data set as summarized in the Hanford Site annual groundwater monitoring reports, in terms of field and laboratory QC performance.

7.1.1 Hanford Site Groundwater Quality Control and Quality Assurance

The Hanford Site groundwater program includes several QA elements that serve to verify the overall quality of the sampling and analysis activities and to highlight potential problems for corrective action. The following activities are included:

- **Proficiency testing program studies** involve the provision of blind known standards to all Hanford Site contract laboratories. These programs are administered by independent third party organizations, and the results are available to data users on the Hanford Site.
- **Double-blind studies** involve providing known standards to the laboratory disguised as samples. These provide a measure of both interlaboratory and intralaboratory precision and accuracy. The studies also help groundwater staff troubleshoot analytical problems identified through data reviews and QC evaluations.
- **Laboratory audits** are performed either independently from the Hanford Site or as part of a DOE Contract Analytical Program national audit team.
- **Laboratory QA/QC evaluation** is performed on the entire Hanford Site data set annually and reported as part of the annual groundwater reports.

Review of the results of these evaluations did not identify any issues that could negatively affect the 200-BP-5 Groundwater OU data that had not already been evaluated and resolved, either with qualification flags or rerun samples.

Table 7-1. Quality Assurance/Quality Control Results for Groundwater Monitoring

Reporting Year Groundwater Monitoring Report	FY 2008 DOE/RL-2008-66	FY 2009 DOE/RL-2010-11	FY 2010 DOE/RL-2011-01	FY 2011 DOE/RL-2011-118	FY 2012 DOE/RL-2013-22	2008 through 2013 DQA Results
Results of National Performance Evaluation Studies – Percent of Acceptable Results	98	--	98	--	--	--
Field Blanks – Percent of Acceptable Results	96	97	97	98	98.1	98.0
Field Duplicates – Percent of Acceptable Results	97	99	93	95	94.2	98.8
Split Samples – Percent of Acceptable Results	75	77	78	84	86.4	97.5
Holding Times Met – Percent of Nonradiological Samples with Acceptable Results	99	99	99	99.6	99.6	>99
Laboratory Duplicates – Percent of Results Within Acceptance Limits	97	99	99	99.2	97.5	99.1
Method Blanks – Percent Without Contamination	98	99.8	99.2	99.6	98.5	98.6
Laboratory Control Samples – Percent of Acceptable Results	99	99.4	99.6	99	99.2	99.1
Matrix Spike/Matrix Duplicates – Percent of Acceptable Results	96	99	99	98.5	99.2	98.5
Surrogates – Percent of Acceptable Results	99	--	97.5	97.5	98.4	98.8
Requests for Data Review – Number of Analytical Results	1,677	1,659	2,613	1,406	3	--

DOE/RL-2008-66, *Hanford Site Groundwater Monitoring for Fiscal Year 2008*.

DOE/RL-2010-11, *Hanford Site Groundwater Monitoring and Performance Report for 2009, Volumes I and II*.

7.1.1.1 Analytical Troubleshooting

If the results of any of the data QC or QA reviews indicate a potential anomaly in the results, RDRs are initiated by project scientists. During evaluations of RDR submittals, trends may be observed that warrant further investigation by the groundwater support staff.

In 2008, RDRs had been filed for 1,677 of approximately 128,000 analytical results (1.3 percent), of which 578 were suspect, 112 were rejected, and 1 was questionable. Roughly half of the issues occurred prior to receipt at the laboratories. Most issues were because of missed hold times, samples received outside of temperature specifications, chain-of-custody issues, and incorrect sample preservation. RDR resolution includes appropriate qualification flags applied to the affected data within HEIS.

In 2009, RDRs had been filed for 1,659 of approximately 206,000 analytical results (less than 1 percent), of which 675 were suspect, 80 were rejected, and 4 were questionable. The bulk of the requests for data review (72 percent) were filed on metals results. RDRs also were filed on WSCF results from wet chemistry methods (10 percent), organic methods (6 percent), and radiological methods (12 percent). RDRs to the field and other laboratories were scattered among a varied group of methods and issues. Approximately 17 percent of RDRs from the other laboratories were for iodine-129 analysis.

In 2010, RDRs had been filed for 2,613 of approximately 245,705 analytical results (approximately 1 percent), of which 1,637 were suspect and 16 were rejected. The bulk of RDRs (46 percent) were filed on metals results. RDRs also were filed on WSCF results from wet chemistry methods (6 percent), organic methods (20 percent), and radiological methods (28 percent). RDRs to the field and other laboratories were scattered among a varied group of methods and issues.

In 2011, RDRs had been filed for 1,406 of approximately 175,221 analytical results (approximately 1 percent), of which 661 were suspect, and 2 were rejected. The bulk of RDRs (57.5 percent) were filed on metals results. RDRs also were filed on WSCF results from wet chemistry methods (18.5 percent), organic methods (14.4 percent), and radiological methods (9.6 percent). RDRs to the field and other laboratories were scattered among a varied group of methods and issues.

In 2012, RDRs had been issued for 3 field blanks that had been swapped with well samples. All three field blank types (equipment blanks, full trip blanks, and field transfer blanks) contributed to the 8,193 VOC field blank results. Of the 8,193 results, 149 (1.8 percent) exceeded QC limits and included 120 methylene chloride and 23 acetone results.

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8 Field Quality Control

Groundwater results are evaluated by comparing the electronic field QC information to established field QC performance requirements. Field performance requirements are listed in Table 8-1.

Table 8-1. Field Quality Control Requirements*

Sample Type	Frequency	Purpose
Duplicate	5 percent (1 sample in 20)	To check the precision of the laboratory analyses and field sampling.
Equipment Rinsate	One per 10 well trips	To check the effectiveness of the decontamination process. Not applicable when dedicated or disposable equipment is used.
Field Transfer Blank	One per day well trips when volatile organics are samples	To check for contamination during transport.

* Source: DOE/RL-2007-18, Remedial Investigation/Feasibility Study Work Plan for the 200-BP-5 Groundwater Operable Unit.

8.1 Field Quality Sample Results

During the period of this assessment, 40,968 field QC results were generated, which is approximately 21.4 percent of the total groundwater sample results obtained for the 200-BP-5 Groundwater OU. These consisted of 9,621 field duplicate results; 609 field split results; and 30,738 field blank results, consisting of a combination of field transfer blanks, equipment rinsate blanks, full trip blanks, and trip blanks. A full trip blank is analyzed for all constituents, rather than just the volatile organics.
The following subsections provide further information on field QC results and a breakdown of those results by analyte and field QC type. The field QC elements were evaluated against the criteria listed in Table 8-1.
As discussed in Chapter 3 of this report, the purpose of Step 5 of the DQA process is to draw conclusions from the data. Steps 3 and 4 of the DQA process were not applicable because groundwater data for the 200-BP-5 Groundwater OU were collected using a judgmental sample design. As such, the results presented in Chapters 6, 7, and 8 are used to draw conclusions about the usability of the data.

8.1.1 Field Quality Control Requirements

Field QC procedures must be followed in the field to ensure that reliable data are obtained. Field QC samples are collected to evaluate the potential for cross-contamination and provide information pertinent to field variability. Field QC for sampling generally requires the collection of field replicates (duplicates), trip or field blanks, and equipment blanks.

8.1.1.1 Field Duplicate Samples

Field duplicate samples are two separate samples collected from the same source, placed in separate sample containers, and analyzed independently to estimate precision, including sampling and analytical variability. The measure of precision for field duplicate samples is the RPD between duplicate pairs. The RPD is calculated for a field duplicate sample only when one result or the other is at least five times the detection limit.

Table 8-2 lists the total number of field duplicates reported in the 200-BP-5 Groundwater OU data set. Table 8-3 shows a summary of the field duplicate results by analyte that exceeded the QC criteria listed in Table 8-1.

Table 8-2. Total Field Duplicate Results by Analyte Class

Analyte Class	Results
Anions	703
General Chemistry	212
Metals	4,681
Radiochemistry	1,189
SVOCs	1,825
VOCs	1,011
Total	**9,621**

There were 9,621 pairs of field duplicate samples reported in the 200-BP-5 Groundwater OU data set. Of these 9,621 pairs, 33 individual analytes had results that exceeded QC acceptance criteria. There were 1,008 collected field duplicate pairs associated with these 33 analytes. Of these 1,008 field duplicates, 519 pairs did not meet the evaluation criteria. Of these 519, 105 results exceeded QC criteria (1.1 percent of the total number of field duplicates). RPDs of these exceedances range from 1.1 to 199.5. Analytes and properties with RPDs >50 percent include alkalinity, americium-241, calcium, chloride, chromium, copper, cyanide, fluoride, gross alpha, gross beta, iodine-129, iron, methyl methanesulfonate, nitrate, nickel, potassium-40, strontium-90, sulfate, sulfide, tin, and zinc.

8.1.2 Field Split Samples

Field split samples are collected from a sampling location on the same day and time and submitted to two different laboratories for analysis. The purpose of such samples is to monitor the comparability of the data generated by different laboratories. The acceptance criterion is an RPD ≤20 for the two laboratorys' results.

There were 609 pairs of split samples reported in the 200-BP-5 Groundwater OU data set. Of these 609 pairs, 7 individual analytes had results that exceeded the QC acceptance criteria listed in Table 8-1. There were 69 collected pairs of split samples associated with these 7 analytes. Of these 69 pairs, 50 pairs were evaluated. Of the 50 evaluated pairs, 15 pairs were out of limits (representing 2.5 percent of the total number of splits). RPDs of these exceedances range from 22.8 to 171.4. Table 8-4 lists the total number of field split results reported in the 200-BP-5 Groundwater OU data set by analyte class. Table 8-5 lists the field split results that exceeded the QC criteria by analyte. Analytes with high RPDs (>50 percent) include cyanide, gross beta, technetium-99, and tin.

Table 8-3. Summary of Field Duplicate Results Exceeding Quality Control Criteria by Analyte

Analyte	Analyte Class	Total Number Collected	Number Evaluated[a]	Number Out of Limits[b]	Percent Out of Limits[c]	Out-of-Limit RPD
Chloride	Anions	15	15	1	6.7	93.0
Cyanide	Anions	56	25	8	32	20.9-50.7
Fluoride	Anions	61	26	6	23.1	1.1-153.7
Nitrate	Anions	28	28	3	10.7	80.2-103.7
Sulfate	Anions	15	15	1	6.7	71.3
Sulfide	Anions	4	1	1	100	162.4
Alkalinity	General Chemistry	1	1	1	100	70.9
Arsenic	Metals	24	24	7	29.2	21.6-24.4
Calcium	Metals	37	37	1	2.7	162.8
Chromium	Metals	83	18	3	16.7	29.8-143.7
Copper	Metals	10	1	1	100	138.5
Hexavalent Chromium	Metals	12	8	1	12.5	33.1
Iron	Metals	161	51	14	27.5	20.3-111
Mercury	Metals	16	4	1	25	20.4
Molybdenum	Metals	12	6	1	16.7	26.9
Nickel	Metals	35	4	2	50	29.3-130.5
Potassium	Metals	33	30	3	10	20.1-29.0
Sodium	Metals	23	23	1	4.3	29.0
Tin	Metals	10	3	3	100	35.7-143.6

Table 8-3. Summary of Field Duplicate Results Exceeding Quality Control Criteria by Analyte

Analyte	Analyte Class	Total Number Collected	Number Evaluated[a]	Number Out of Limits[b]	Percent Out of Limits[c]	Out-of-Limit RPD
Uranium	Metals	40	40	5	12.5	22.1-41.8
Vanadium	Metals	33	2	1	50	20.5
Zinc	Metals	43	3	1	33.3	96.8
Americium-241	Radiochemistry	7	1	1	100	51.3
Carbon-14	Radiochemistry	4	1	1	100	32.2
Gross alpha	Radiochemistry	53	18	6	33.3	22.4-77.6
Gross Beta	Radiochemistry	72	60	14	23.3	20.2-199.5
Iodine-129	Radiochemistry	50	37	9	24.3	22.2-73.1
Potassium-40	Radiochemistry	8	1	1	100	116
Strontium-90	Radiochemistry	6	1	1	100	195.6
Technetium-99	Radiochemistry	8	6	1	16.7	30.2
Tritium	Radiochemistry	36	27	3	11.1	25.4-34.1
Bis(2-ethylhexyl)phthalate	SVOC	7	1	1	100	29.1
Methyl Methanesulfonate00	SVOC	5	1	1	100	198.9
Totals		**1,008**	**519**	**105**		

a. Duplicates with at least one result five times greater than the method detection limit or minimum detectable activity were evaluated.

b. Field duplicates with a result greater than 5 times the MDL or MDA must have RPD <20 percent to be considered acceptable (within QC limits).

c. The percent out of limits is based on the number of duplicates evaluated, not the total number of duplicates.

RPD = Relative Percent Difference

Table 8-4. Total Field Split Results by Analyte Class

Analyte Class	Results
Anions	21
General Chemistry	35
Metals	176
Radiochemistry	273
SVOCs	28
VOCs	76
Total	**609**

8.1.3 Field Blank Samples

Three types of field blanks were gathered during collection of 200-BP-5 Groundwater OU groundwater samples: equipment rinsate blanks, field transfer blanks, and trip blanks. Equipment rinsate blanks are high purity water samples used in the final rinse of sampling equipment before the equipment is reused to collect another sample. These blanks are not required for sampling events using disposable or dedicated sampling equipment.

Field transfer blanks are generated by pouring laboratory water into sample containers in the field during a sampling event to detect any contaminants that may be introduced into groundwater during the bottle filling activities. Trip blanks are clean water samples that are prepared in the lab and taken into the field with the sampling crew. Trip blanks are a measure of potential contamination associated with sample collection and transportation to the laboratory.

For the purpose of the DQA, all blank results were pooled. Table 8-6 lists the total field blank results reported in the 200-BP-5 Groundwater OU data set by analyte class. Table 8-7 summarizes field blank results that exceeded QC criteria by analyte. There were 30,738 individual blank results reported with the 200-BP-5 Groundwater OU data set. Of the 30,738 results, 53 individual analytes exceeded the acceptance criteria in Table 8-1. In total, 5,976 field blank results were associated with these 53 analytes. As a result, 605 of the 30,738 results exceeded the QC acceptance criteria (a total of 2 percent). Analytes and properties with high (>10 percent) overall percentages of positive blanks include sulfide, total organic halides, calcium, hexavalent chromium, lead, magnesium, sodium, tin, uranium, americium-241, gross beta, potassium-40, strontium-90, thorium-228, thorium-230, iodomethane, and methylene chloride.

Table 8-5. Summary of Field Split Results Exceeding Quality Control Criteria by Analyte

Analyte	Class	Total Number of Splits Collected	Number of Splits Evaluated[a]	NumberOut of Limits[b]	Percent Out of Limits[c]	Range of Out-of-Limit Relative Percent Difference
Cyanide	Anions	1	1	1	100	66.2
Fluoride	Anions	2	1	1	100	39.2
Alkalinity	General Chemistry	1	1	1	100	32.8
Tin	Metals	4	2	2	100	166.7-171.4
Gross Beta	Radiochemistry	3	2	2	100	85.2-103.6
Technetium-99	Radiochemistry	55	42	7	16.7	22.8-137.7
Tritium	Radiochemistry	3	1	1	100	29.9
Totals		**69**	**50**	**15**		

a. Splits sample results were evaluated when both results were at least five times greater than the method detection limit or minimum detectable activity of the respective laboratories or when at least one result was greater than five times the method detection limit or minimum detectable activity of both laboratories. In cases where a non-detected result was compared with a measured value, the method detection limit or minimum detectable activity was used for the non-detected result.
b. Split control limit is a relative percent difference less than or equal to 20%.
c. The percent out of limits is based on the number of duplicated evaluated, not the total number of duplicates.

Table 8-6. Total Field Blank Results by Analyte Class

Analyte Class	Results
Anions	857
General Chemistry	472
Metals	5,823
Radiochemistry	1,544
SVOCs	1,636
VOCs	20,406
Total	**30,738**

1

Table 8-7. Summary of Field Blank Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total Collected	Total Results Out of Limits[a]	Percent Out of Limits
Chloride	Anions	22	2	9.1
Cyanide	Anions	36	3	8.3
Nitrogen in Ammonia (Ammonium ion)	Anions	1	--	--
Sulfate	Anions	18	1	5.6
Sulfide	Anions	1	1	100
Alkalinity	General Chemistry	32	2	6.3
Total Organic Halides	General Chemistry	24	3	25
Aluminum	Metals	24	2	8.3
Arsenic	Metals	48	2	4.2
Barium	Metals	66	2	3.0
Calcium	Metals	231	59	25.5
Chromium	Metals	116	3	2.6
Copper	Metals	74	2	2.7
Hexavalent Chromium	Metals	21	3	14.3
Iron	Metals	158	3	1.9
Lead	Metals	2	2	100

Table 8-7. Summary of Field Blank Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total Collected	Total Results Out of Limits[a]	Percent Out of Limits
Lithium	Metals	12	1	8.3
Magnesium	Metals	234	45	19.2
Phosphorus	Metals	12	1	8.3
Potassium	Metals	54	2	3.7
Silicon	Metals	12	1	8.3
Silver	Metals	104	2	1.9
Sodium	Metals	265	56	21
Strontium	Metals	54	2	3.7
Tin	Metals	28	3	10.7
Uranium	Metals	56	6	10.7
Vanadium	Metals	54	1	1.9
Zinc	Metals	104	2	1.9
Americium-241	Radiochemistry	13	3	23.1
Gross alpha	Radiochemistry	20	1	5.0
Gross beta	Radiochemistry	19	3	15.8
Iodine-129	Radiochemistry	20	1	5.0
Potassium-40	Radiochemistry	7	1	14
Strontium-90	Radiochemistry	8	2	25
Thorium-228	Radiochemistry	2	1	50
Thorium-230	Radiochemistry	2	1	50
Technetium-99	Radiochemistry	63	6	9.5
Tritium	Radiochemistry	89	6	6.7
1,1-Dichloroethene	VOC	284	1	0.35
1,2-Dichloroethane	VOC	113	1	0.88
1,4-Dichlorobenzene	VOC	125	1	0.80
2-Butanone	VOC	82	1	1.2
Acetone	VOC	556	14	2.5
Bromomethane	VOC	162	3	1.9

Table 8-7. Summary of Field Blank Results Exceeding Quality Control Criteria

Analyte Name	Analyte Class	Total Collected	Total Results Out of Limits[a]	Percent Out of Limits
Carbon Disulfide	VOC	296	7	2.4
Carbon Tetrachloride	VOC	543	28	5.2
Chloroform	VOC	215	6	2.8
Chloromethane	VOC	165	8	4.8
Iodomethane	VOC	15	2	13
Methylene Chloride	VOC	670	289	43
Tetrachloroethene	VOC	472	5	1.1
Toluene	VOC	90	1	1.1
Trichloroethene	VOC	82	1	1.2
Totals		**5,976**	**605**	

a. Because method detection limits are specific to the laboratory and may change during the reporting period, the limits are presented as a range. However, each result was evaluated according to the method detection limit in effect at the time the sample was analyzed.

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Appendix A

200-BP-5 Groundwater Operable Unit

Data Quality Evaluation Results

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Terms

DQA	data quality assessment
HEIS	Hanford Environmental Information System
ICP	inductively coupled plasma
LCS	laboratory control sample
MDL	method detection limit
MS	matrix spike **or** mass spectroscopy
MSD	matrix spike duplicate
OU	operable unit
PQL	practical quantitation limit
QC	quality control
RPD	relative percent difference
SVOC	semivolatile organic compound
VOC	volatile organic compound

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A1 Introduction

The data quality evaluation process is an analyte-specific and sample-specific process that extends the evaluation of data quality assessment (DQA) described in Section 4. The main focus of data quality review is to determine is the data quality in terms of accomplishment of measurement quality objectives. Data quality review is generally performed by person(s) independent of the activity which is being evaluated.

A formal data validation effort was not performed for the analytical data included in this DQA report. However, a formal validation report was submitted with the original DQA report (SGW-44071, *Data Quality Assessment Report for the 200-BP-5 Groundwater Operable Unit*, *November 2004 through November 2009 Groundwater Data*) submitted for the 200-BP-5 Groundwater Operable Unit (OU). Hard copy data validation reports were not requested from the contracted laboratories. Instead, a low-level data quality review process was performed to evaluate the quality of the data set. This process is similar to the Stage 2A verification and validation described in EPA 540-R-08-005, *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*. Each laboratory electronically submits the following sample-related quality control (QC) information for each sample delivery group:

- Dates and times of analysis
- Method blank or preparation blank results
- Surrogate recoveries
- Deuterated monitoring compound recoveries
- Laboratory control sample (LCS) recoveries
- Duplicate analyses relative percent difference (RPD) results
- Matrix spike (MS) and matrix spike duplicate (MSD) recoveries and RPD results

A1.1 Guidance Documents

The following guidance documents were used for the data quality evaluation process:

- EPA/240/R-02/004, *Guidance on Environmental Data Verification and Data Validation* (EPA QA/G-8)
- EPA 540-R-08-005, *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (OSWER 9240.1-58)
- USEPA-EPA-540-R-08-01, *National Functional Guidelines for Superfund Organic Methods Data Review*
- USEPA-540-R-10-011, *National Functional Guidelines for Inorganic Superfund Data Review* (OSWER 9240.1-51)
- EPA-540-R-11-016, *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (OSWER 9240.1-53)

The following sections summarize the data quality evaluation actions that were taken on the groundwater data set included in the 200-BP-5 Groundwater OU DQA.

A2 Holding Times

Holding times are defined as the period of time from sample collection to sample analysis or extraction, and the period of time from sample extraction to sample analysis. Holding times are calculated from the date of sample collection as recorded on the chain-of-custody form to determine the validity of the results. The following describes the holding time requirements for the analytical methods evaluated for the 200-BP-5 Groundwater OU DQA Report.

Sample results requiring qualification because holding time requirements were not achieved are summarized in Table A-1. Table A-1 shows the analyte name, the sample identification, the value reported, units, laboratory qualifier, validation qualifier, method name, and the reason why the sample result was qualified.

A2.1 Inorganics

The holding time requirements for metals are as follows:

- The holding time requirements for inductively coupled plasma (ICP) and ICP/mass spectroscopy (MS) metals are analysis within 180 days of sample collection for both soil and water samples.
- Mercury requires analysis within 28 days of sample collection for both soil and water samples. Preservation of soil samples for mercury analysis requires chilling to 4±2°C. Preservation of water samples for metals analysis, including mercury, is acidification with nitric acid to pH<2 and chilling to 4±2°C.

All groundwater samples were properly preserved.

A2.2 General Chemistry

The holding time requirements for general chemistry parameters are as follows:

- All anions except nitrate, nitrite, and phosphate – analysis within 28 days of sample collection
- Nitrate, nitrite, and phosphate – analysis within 48 hours of collection for water samples
- Alkalinity – analysis within 14 days of sample collection
- Cyanide – analysis within 14 days of sample collection for water samples
- Total carbon and total inorganic carbon – 28 days for water samples

Sample preservation for anions and alkalinity requires chilling the groundwater to 4±2°C. Cyanide requires preservation of water samples with sodium hydroxide to pH >12 and chilling to 4±2°C. Total carbon and total inorganic carbon requires preservation with sulfuric acid to pH <2 (water matrix only) and chilling to 4±2°C (water). All samples were properly preserved and analyzed within the prescribed holding times.

A2.3 Radionuclides

The maximum holding time for radiochemical analysis is 180 days for both soil and water samples. Sample preservation for water samples requires acid preservation with nitric acid to pH less than 2. There are no specific preservation requirements for radiochemical soil analysis.

All samples were properly preserved and analyzed within the prescribed holding times.

A2.4 Organics

The holding times and preservation requirements for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) are as follows:

- VOCs (Water) – acidify with hydrochloric acid or sulfuric acid to pH<2, cool to 4±2°C, and analyze within 14 days of collection; if samples are not acidified, but cooled to 4±2°C, analyze within 7 days of collection.
- SVOCs, Pesticides, Polychlorinated Biphenyls, and Herbicides (Water) – cool to 4±2°C, and extract within 7 days of collection; analyze within 40 days from extraction.
- Dioxins and Furans (Water) – cool to 4±2°C; no holding time for extraction or analysis.

All groundwater samples were properly preserved.

A3 Blank Contamination

Section 6.1 in the main text of this document provided a discussion of analytical performance requirements for laboratory blanks. Actions taken on sample results that report laboratory or field blank contamination are provided in Table A-2.

Sample results requiring qualification because of laboratory contamination are summarized in Table A-3 through Table A-8 for samples collected between 2008 and 2013. These tables show the analyte name, the sample identification, the value reported, units, laboratory qualifier, validation qualifier, method name, and the reason why the sample result was qualified.

During 2008, 156 metals results were rejected because of the presence of laboratory contamination (sample results were flagged with a “C” laboratory qualifier). In this case, the reported sample results were less than 10 times the preparation blank concentration. However, the laboratory did not assign these results with a “B” laboratory flag, which indicates that the reported concentration is greater than the method detection limit (MDL) but less than the practical quantitation limit (PQL). Additionally, the electronic deliverable did not report a PQL. These results are considered unusable because the “B” flag was not appropriately assigned, and the PQL was not reported; therefore, the results could not be qualified using the blank actions summarized in Table A-2.

The PQL was not included in the electronic deliverable for a number of sample results reported between 2008 and 2013. When this occurred, the sample results could not be flagged using the blank actions listed in Table A-2 (e.g., report PQL with a “U”). Instead, the reason listed in Table A-3 through Table A-8 indicates that the PQL was not provided by the laboratory, and the result was flagged with a “U” at the reported concentration (instead of the PQL).

Table A-2. Summary of Blank Actions for Metals, General Chemistry, and Low/Medium Organic Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Low/Medium Organic Analyses			
Laboratory, Storage, Field, Trip	Detects	Not Detected	No Qualification
	<PQL	<PQL	Report PQL with a "U"
		≥PQL	Use professional judgment
	>PQL	<PQL	Report PQL with a "U"
		≥PQL and < blank concentration	Report the blank concentration for the sample with a "U" or qualify the data as unusable with an "R"
	=PQL	<PQL	Report PQL with a "U"
		≥PQL	Use professional judgment
	Gross Contamination	Detects	Qualify results as unusable with an "R"
Metals and General Chemistry			
Preparation Blank	>PQL	≥MDL but ≤PQL	Report PQL with a "U"
		≥PQL and <10 times the blank concentration	Use professional judgment to qualify results as unusable with an "R" or estimated high with a "J+"
		>10 times the blank result	No Qualification
	>MDL but ≤ PQL	Not Detected	No Qualification
		≥MDL but ≤PQL	Report PQL with a "U"
		>PQL	Use professional judgment

Note: The practical quantitation limit (PQL) is designated as the required detection limit in the HEIS database. Additionally, the method detection limit (MDL) is designated as the reporting limit in the HEIS database.

A4 Laboratory Precision and Accuracy

Section 6.2 and Section 6.3 in the main text of this document provided a discussion of laboratory precision and accuracy analytical performance requirements. Laboratory precision and accuracy are evaluated by the performance of LCSs, MS/MSDs, and surrogate spike compounds.

Precision is the degree of agreement among repeated measurements of the same characteristic. It may be determined by calculating the standard deviation, or RPD, among samples taken from the same place at the same time. Accuracy measures how close results are to a *true* or expected value and can be determined by comparing the analysis of a standard or reference sample to its actual value. Three types of QC are used to assess accuracy.

A4.1 Laboratory Control Samples

The LCS serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Actions taken on sample results that report LCS recoveries outside QC limits are provided in Table A-9. LCSs are not reported for organic analyses.

Table A-9. Summary of Laboratory Control Sample Actions for Metals

LCS Criteria	Action
Metals ICP-AES Analysis	
Aqueous/Water – All metals except antimony and silver – %R 40-69 Silver and Antimony – %R 20-49	Qualify results that are ≥MDL as estimated low (J-) or qualify non-detects as estimated (UJ)
Aqueous/Water – All metals except antimony and silver – %R > 130% Silver and Antimony – %R >150	Qualify results that are ≥MDL as estimated high (J+)
Aqueous/Water – All metals except antimony and silver – %R< 40% Silver and Antimony – %R <20	Qualify results that are ≥MDL as estimated low (J-) or qualify non-detects as unusable (R)
Aqueous/Water – All metals except antimony and silver – %R > 150 Silver and Antimony – %R >170	Qualify all results as unusable (R)
Metals ICP-MS Analysis	
Aqueous/Water – %R 40-69	Qualify results that are ≥MDL as estimated low (J-) or qualify non-detects as estimated (UJ)
Aqueous/Water – %R >130%	Qualify results that are ≥MDL as estimated high (J+)
Aqueous/Water – %R <40%	Qualify results that are ≥MDL as estimated low (J-) or qualify non-detects as unusable (R)
Aqueous/Water – %R >150	Qualify all results as unusable (R)

ICP/MS = inductively coupled plasma/mass spectroscopy
MDL = method detection limit

Sample results requiring qualification because of LCS results are summarized in Table A-10 through Table A-15 for samples collected between 2008 and 2013. These tables show the analyte name, the sample identification, the value reported, units, laboratory qualifier, validation qualifier, method name, and the reason why the sample result was qualified. Although guidance is not published for the qualification of radiological analyses, the actions listed for ICP-MS results were applied to radiological results.

A4.2 Matrix Spike/Matrix Spike Duplicate Samples

Laboratory spike recovery is also used as a measure of laboratory accuracy and precision. Actions taken on sample results that report MS/MSD recoveries or RPD results outside QC limits are provided in Table A-16.

Table A-16. Summary of MS/MSD Actions for Metals and Cyanide

MS/MSD Criteria	Action
Metals ICP-AES, ICP-MS, Mercury, and Cyanide Analysis	
Matrix Spike %R <30% No post-digestion spike performed (e.g., not required for Ag)	Qualify results that are ≥MDL as estimated low (J-) and affected non-detects as unusable (R)
Matrix Spike %R 30-74% No post-digestion spike performed (e.g., not required for Ag)	Qualify results that are ≥MDL as estimated low (J-) and non-detects as estimated (UJ)
Matrix Spike %R > 125% No post-digestion spike performed (e.g., not required for Ag)	Qualify results that are ≥MDL as estimated high (J+) and non-detects are not qualified
Both parent and duplicate sample > 5x the PQL and the RPD > 20%	Qualify results ≥ MDL that professional judgment determines to be affected as estimated (J) and non-detects as estimated (UJ)
Parent or duplicate sample ≤ 5x the PQL (including non-detects) and the absolute difference between parent and duplicate > PQL	Qualify results ≥ MDL that professional judgment determines to be affected as estimated (J) and non-detects as estimated (UJ)

Sample results requiring qualification because MS/MSD results are outside QC limits are summarized in Table A-17 through Table A-22 for samples collected between 2008 and 2013. These tables show the analyte name, the sample identification, the value reported, units, laboratory qualifier, validation qualifier, method name, and the reason why the sample result was qualified. Although guidance is not published for the qualification of radiological analyses, the actions listed for metals results were applied to radiological results.

Organic sample results were not qualified based on MS and MSD data alone. The data reviewer may use MS and MSD results in conjunction with other QC criteria to determine the need for some qualification of the data. However, no additional qualification was performed.

A4.3 Surrogate Spike Recovery

Laboratory spike recovery is also used as a measure of laboratory accuracy and precision. Actions taken on sample results that report surrogate spike recoveries outside QC limits are provided in Table A-23. LCSs are not reported for organic analyses. Surrogate spike recoveries are not reported with radiological, metal, or general chemistry analyses.

Table A-23. Summary of Surrogate Spike Recovery Actions for Organic Analyses

MS/MSD Criteria	Action
Low/Medium Volatiles Analyses	
%R ≥ Upper Laboratory-Specific Acceptance Limit	Qualify results that are ≥MDL as estimated (J) and non-detects are not qualified
%R< Lower Laboratory-Specific Acceptance Limit	Qualify results that are ≥MDL as estimated (J) and non-detects as estimated (UJ)
%R < 20	Qualify results that are ≥MDL as estimated (J) and affected non-detects as unusable (R)
Semivolatile Analyses	
%R ≥ Upper Laboratory-Specific Acceptance Limit	Qualify results that are ≥MDL as estimated (J) and non-detects are not qualified
%R< Lower Laboratory-Specific Acceptance Limit	Qualify results that are ≥MDL as estimated (J) and non-detects as estimated (UJ) or as unusable (R)
Pesticide and Aroclor Analyses	
%R - > 200	Qualify results that are ≥MDL as estimated (J) and non-detects use professional judgment
%R- 150 - 200	Qualify results that are ≥MDL as estimated (J) and non-detects are not qualified
%R- 30 to 150	No qualification required
%R- 10 - 30	Qualify results that are ≥MDL as estimated (J) and affected non-detects as unusable (R)

Sample results requiring qualification because surrogate spike recoveries are outside QC limits are summarized in Table A-24 through Table A-28 for samples collected between 2008 and 2013. These tables show the analyte name, the sample identification, the value reported, units, laboratory qualifier, validation qualifier, method name, and the reason why the sample result was qualified. No samples collected during 2013 required qualification as a result of surrogate spike recoveries.

A5 References

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Table A-1. Summary of Sample Results Qualified Because of Holding Times Exceedances

Well Name	Sample ID	Collection Date	Analysis Date	# of Days to Analysis	Holding Time Requirement (days)	# Days Beyond Holding time Requirement	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	Reason
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	1,1,1-Trichloroethane	1	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	1,1,2-Trichloroethane	1	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	1,1-Dichloroethane	1	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	1,1-Dichloroethene	1	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	1,2,4-Trichlorobenzene	0.7	ug/L	UT	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	1,2,4-Trichlorobenzene	0.9	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	1,2-Dichloroethane	1	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	1,4-Dichlorobenzene	1	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	1-Butanol	100	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2,4,5-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2,4,5-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2,4,5-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2,4,5-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2,4,5-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2,4,6-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2,4,6-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2,4,6-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2,4,6-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2,4,6-Trichlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	2,4-Dichlorophenol	0.5	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2,4-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2,4-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2,4-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2,4-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2,4-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	2,4-Dichlorophenol	0.9	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2,4-Dimethylphenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2,4-Dimethylphenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2,4-Dimethylphenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2,4-Dimethylphenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2,4-Dimethylphenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2,4-Dinitrophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2,4-Dinitrophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2,4-Dinitrophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2,4-Dinitrophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2,4-Dinitrophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	2,4-Dinitrotoluene	0.5	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	2,4-Dinitrotoluene	0.9	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2,6-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2,6-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2,6-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2,6-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2,6-Dichlorophenol	2.1	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	2-Butanone	1	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	2-Chlorophenol	0.5	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2-Chlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2-Chlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2-Chlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2-Chlorophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2-Chlorophenol	2.2	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	2-Chlorophenol	0.9	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	2-Methylphenol (cresol, o-)	0.8	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	2-Methylphenol (cresol, o-)	0.9	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	2-Nitrophenol	0.5	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	2-Nitrophenol	2.3	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	2-Nitrophenol	2.3	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	2-Nitrophenol	2.3	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	2-Nitrophenol	2.3	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	2-Nitrophenol	2.3	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	2-Nitrophenol	0.9	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	2-Picoline	1	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	2-Picoline	1	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	3+4 Methylphenol (cresol, m+p)	0.6	ug/L	U	J	<2X holding time requirement

Table A-1. Summary of Sample Results Qualified Because of Holding Times Exceedances

Well Name	Sample ID	Collection Date	Analysis Date	# of Days to Analysis	Holding Time Requirement (days)	# Days Beyond Holding time Requirement	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	Reason
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	3+4 Methylphenol (cresol, m+p)	0.9	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	4-Chloro-3-methylphenol	0.5	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	4-Chloro-3-methylphenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	4-Chloro-3-methylphenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	4-Chloro-3-methylphenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	4-Chloro-3-methylphenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	4-Chloro-3-methylphenol	2.4	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	4-Chloro-3-methylphenol	0.9	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	4-Methyl-2-pentanone	1	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	4-Nitrophenol	0.6	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	4-Nitrophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	4-Nitrophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	4-Nitrophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	4-Nitrophenol	2.2	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	4-Nitrophenol	2.2	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	4-Nitrophenol	0.9	ug/L	UT	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Acenaphthene	0.5	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Acenaphthene	0.9	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Acetone	1	ug/L	U	J	<2X holding time requirement
299-E33-31	B2MN36	12/6/2012	12/20/2012	14	7	7	Aldrin	0.0095	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Benzene	1	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Benzothiazole	0.5	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Benzothiazole	0.9	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Bis(2-ethylhexyl) phthalate	0.7	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Bis(2-ethylhexyl) phthalate	0.9	ug/L	U	J	<2X holding time requirement
299-E27-12	B1X3L0	9/3/2008	10/28/2008	55	28	27	Bromide	250	ug/L	U	J	< 2X holding time requirement
299-E27-13	B1X3L1	9/3/2008	10/28/2008	55	28	27	Bromide	250	ug/L	U	J	< 2X holding time requirement
299-E27-14	B1X3L2	9/3/2008	10/28/2008	55	28	27	Bromide	250	ug/L	U	J	< 2X holding time requirement
299-E27-15	B1X3L3	9/4/2008	10/29/2008	55	28	27	Bromide	250	ug/L	U	J	< 2X holding time requirement
299-E27-22	B1X3L5	9/3/2008	10/28/2008	55	28	27	Bromide	250	ug/L	U	J	< 2X holding time requirement
299-E27-23	B1X3L6	9/3/2008	10/28/2008	55	28	27	Bromide	250	ug/L	U	J	< 2X holding time requirement
299-E27-4	B1X3L7	9/3/2008	10/28/2008	55	28	27	Bromide	250	ug/L	U	J	< 2X holding time requirement
299-E27-7	B1X3L9	9/3/2008	10/28/2008	55	28	27	Bromide	250	ug/L	U	J	< 2X holding time requirement
299-E33-13	B1X3T9	9/15/2008	10/28/2008	43	28	15	Bromide	500	ug/L	UD	J	< 2X holding time requirement
299-E33-31	B1X3V0	9/15/2008	10/28/2008	43	28	15	Bromide	1440	ug/L	D	J	< 2X holding time requirement
299-E33-42	B1X3V2	9/15/2008	10/28/2008	43	28	15	Bromide	500	ug/L	UD	J	< 2X holding time requirement
299-E33-47	B23X46	2/25/2010	4/5/2010	39	28	11	Bromide	178	ug/L	B	J	< 2X holding time requirement
299-E27-21	B248F0	2/25/2010	4/5/2010	39	28	11	Bromide	186	ug/L	B	J	< 2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Carbon disulfide	4460	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Carbon tetrachloride	71800	ug/L	U	J	<2X holding time requirement
299-E33-50	B1RCF9	2/14/2008	4/30/2008	76	28	48	Chloride	12700	ug/L	D	J	< 2X holding time requirement
299-E27-12	B1X3L0	9/3/2008	10/27/2008	54	28	26	Chloride	41000	ug/L	D	J	< 2X holding time requirement
299-E27-13	B1X3L1	9/3/2008	10/27/2008	54	28	26	Chloride	17600	ug/L	D	J	< 2X holding time requirement
299-E27-14	B1X3L2	9/3/2008	10/27/2008	54	28	26	Chloride	34600	ug/L	D	J	< 2X holding time requirement
299-E27-15	B1X3L3	9/4/2008	10/28/2008	54	28	26	Chloride	16900	ug/L	D	J	< 2X holding time requirement
299-E27-22	B1X3L5	9/3/2008	10/27/2008	54	28	26	Chloride	19500	ug/L	D	J	< 2X holding time requirement
299-E27-23	B1X3L6	9/3/2008	10/27/2008	54	28	26	Chloride	37700	ug/L	D	J	< 2X holding time requirement
299-E27-4	B1X3L7	9/3/2008	10/27/2008	54	28	26	Chloride	500	ug/L	D	J	< 2X holding time requirement
299-E27-7	B1X3L9	9/3/2008	10/27/2008	54	28	26	Chloride	1100	ug/L	D	J	< 2X holding time requirement
299-E27-10	B1X8F2	10/14/2008	12/18/2008	65	28	37	Chloride	15400	ug/L	D	J	< 2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Chlorobenzene	310	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Chloroform	500	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	cis-1,2-Dichloroethylene	250	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	Dinoseb(2-secButyl-4,6-dinitrophenol)	250	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	Dinoseb(2-secButyl-4,6-dinitrophenol)	250	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	Dinoseb(2-secButyl-4,6-dinitrophenol)	250	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	Dinoseb(2-secButyl-4,6-dinitrophenol)	250	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	Dinoseb(2-secButyl-4,6-dinitrophenol)	250	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Ethyl cyanide	250	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Ethylbenzene	250	ug/L	U	J	<2X holding time requirement
299-E27-12	B1X3L0	9/3/2008	10/28/2008	55	28	27	Fluoride	250	ug/L	U	J	< 2X holding time requirement
299-E27-13	B1X3L1	9/3/2008	10/28/2008	55	28	27	Fluoride	250	ug/L	U	J	< 2X holding time requirement
299-E27-14	B1X3L2	9/3/2008	10/28/2008	55	28	27	Fluoride	250	ug/L	U	J	< 2X holding time requirement

Table A-1. Summary of Sample Results Qualified Because of Holding Times Exceedances

Well Name	Sample ID	Collection Date	Analysis Date	# of Days to Analysis	Holding Time Requirement (days)	# Days Beyond Holding time Requirement	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	Reason
299-E27-15	B1X3L3	9/4/2008	10/29/2008	55	28	27	Fluoride	250	ug/L	U	J	< 2X holding time requirement
299-E27-22	B1X3L5	9/3/2008	10/28/2008	55	28	27	Fluoride	250	ug/L	U	J	< 2X holding time requirement
299-E27-23	B1X3L6	9/3/2008	10/28/2008	55	28	27	Fluoride	250	ug/L	U	J	< 2X holding time requirement
299-E27-4	B1X3L7	9/3/2008	10/28/2008	55	28	27	Fluoride	250	ug/L	U	J	< 2X holding time requirement
299-E27-7	B1X3L9	9/3/2008	10/28/2008	55	28	27	Fluoride	29400	ug/L	U	J	< 2X holding time requirement
299-E33-13	B1X3T9	9/15/2008	10/28/2008	43	28	15	Fluoride	500	ug/L	UD	J	< 2X holding time requirement
299-E33-31	B1X3V0	9/15/2008	10/28/2008	43	28	15	Fluoride	660	ug/L	D	J	< 2X holding time requirement
299-E33-42	B1X3V2	9/15/2008	10/28/2008	43	28	15	Fluoride	250	ug/L	UD	J	< 2X holding time requirement
299-E33-335	B20VC4	5/19/2009	10/8/2009	142	28	114	Fluoride	500	ug/L		J-	>2X holding time requirement
299-E33-32	B2N919	2/12/2013	3/18/2013	34	28	6	Mercury	268000	ug/L	UD	J	< 2X holding time requirement
299-E33-32	B2N921	2/12/2013	3/18/2013	34	28	6	Mercury	57800	ug/L	UD	J	< 2X holding time requirement
299-E33-42	B2N950	2/12/2013	3/18/2013	34	28	6	Mercury	107000	ug/L	UD	J	< 2X holding time requirement
299-E33-42	B2N951	2/12/2013	3/18/2013	34	28	6	Mercury	296000	ug/L	UD	J	< 2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Methylene chloride	115000	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Naphthalene	181000	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Naphthalene	123000	ug/L	U	J	<2X holding time requirement
299-E34-2	B1TWJ0	5/9/2008	5/14/2008	5	2	3	Nitrate	18100	ug/L	D	J-	> 2X holding time requirement
699-53-55B	B1VC45	5/6/2008	5/9/2008	3	2	1	Nitrate	153000	ug/L	D	J	<2X holding time requirement
299-E27-12	B1X3L0	9/3/2008	10/28/2008	55	2	53	Nitrate	10900	ug/L		J-	> 2X holding time requirement
299-E27-13	B1X3L1	9/3/2008	10/27/2008	54	2	52	Nitrate	22700	ug/L	D	J-	> 2X holding time requirement
299-E27-14	B1X3L2	9/3/2008	10/27/2008	54	2	52	Nitrate	90400	ug/L	D	J-	> 2X holding time requirement
299-E27-15	B1X3L3	9/4/2008	10/28/2008	54	2	52	Nitrate	19700	ug/L	D	J-	> 2X holding time requirement
299-E27-22	B1X3L5	9/3/2008	10/27/2008	54	2	52	Nitrate	33500	ug/L	D	J-	> 2X holding time requirement
299-E27-23	B1X3L6	9/3/2008	10/27/2008	54	2	52	Nitrate	30200	ug/L	D	J-	> 2X holding time requirement
299-E27-4	B1X3L7	9/3/2008	10/27/2008	54	2	52	Nitrate	33900	ug/L	D	J-	> 2X holding time requirement
299-E27-7	B1X3L9	9/3/2008	10/27/2008	54	2	52	Nitrate	33000	ug/L	D	J-	> 2X holding time requirement
299-E33-40	B1X3T7	9/16/2008	10/13/2008	27	2	25	Nitrate	250	ug/L	U	R	> 2X holding time requirement
299-E33-13	B1X3T9	9/15/2008	10/14/2008	29	2	27	Nitrate	208000	ug/L	D	J-	> 2X holding time requirement
299-E33-31	B1X3V0	9/15/2008	10/14/2008	29	2	27	Nitrate	300	ug/L	D	J-	> 2X holding time requirement
299-E33-42	B1X3V2	9/15/2008	10/14/2008	29	2	27	Nitrate	516000	ug/L	D	J-	> 2X holding time requirement
299-E33-39	B23V67	3/11/2010	4/1/2010	21	2	19	Nitrate	193000	ug/L		J-	> 2X holding time requirement
299-E33-339	B23X40	3/11/2010	4/2/2010	22	2	20	Nitrate	145000	ug/L		J-	> 2X holding time requirement
299-E33-342	B23X42	3/11/2010	4/1/2010	21	2	19	Nitrate	883000	ug/L		J-	> 2X holding time requirement
299-E33-345	B23X44	3/11/2010	4/1/2010	21	2	19	Nitrate	231000	ug/L		J-	> 2X holding time requirement
299-E33-31	B23X93	3/11/2010	4/1/2010	21	2	19	Nitrate	300	ug/L		J-	> 2X holding time requirement
299-E33-15	B24CF6	3/11/2010	4/1/2010	21	2	19	Nitrate	300	ug/L		J-	> 2X holding time requirement
299-E34-2	B1TWJ0	5/9/2008	5/14/2008	5	2	3	Nitrite	250	ug/L	U	J	<2X holding time requirement
299-E27-12	B1X3L0	9/3/2008	10/28/2008	55	2	53	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E27-13	B1X3L1	9/3/2008	10/28/2008	55	2	53	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E27-14	B1X3L2	9/3/2008	10/28/2008	55	2	53	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E27-15	B1X3L3	9/4/2008	10/29/2008	55	2	53	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E27-22	B1X3L5	9/3/2008	10/28/2008	55	2	53	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E27-23	B1X3L6	9/3/2008	10/28/2008	55	2	53	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E27-4	B1X3L7	9/3/2008	10/28/2008	55	2	53	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E27-7	B1X3L9	9/3/2008	10/28/2008	55	2	53	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E33-40	B1X3T7	9/16/2008	10/13/2008	27	2	25	Nitrite	250	ug/L	U	R	> 2X holding time requirement
299-E33-13	B1X3T9	9/15/2008	10/28/2008	43	2	41	Nitrite	500	ug/L	UD	J-	> 2X holding time requirement
299-E33-31	B1X3V0	9/15/2008	10/28/2008	43	2	41	Nitrite	1180	ug/L	D	J-	> 2X holding time requirement
299-E33-42	B1X3V2	9/15/2008	10/28/2008	43	2	41	Nitrite	500	ug/L	UD	J-	> 2X holding time requirement
299-E33-39	B23V67	3/11/2010	4/2/2010	22	2	20	Nitrite	240	ug/L	U	R	> 2X holding time requirement
299-E33-339	B23X40	3/11/2010	4/2/2010	22	2	20	Nitrite	240	ug/L	U	R	> 2X holding time requirement
299-E33-342	B23X42	3/11/2010	4/2/2010	22	2	20	Nitrite	240	ug/L	U	R	> 2X holding time requirement
299-E33-345	B23X44	3/11/2010	4/2/2010	22	2	20	Nitrite	2650	ug/L		J-	> 2X holding time requirement
299-E33-47	B23X46	2/25/2010	4/5/2010	39	2	37	Nitrite	40	ug/L	U	R	> 2X holding time requirement
299-E33-31	B23X93	3/11/2010	4/2/2010	22	2	20	Nitrite	240	ug/L	U	R	> 2X holding time requirement
299-E27-21	B248F0	2/25/2010	4/5/2010	39	2	37	Nitrite	40	ug/L	U	R	> 2X holding time requirement
299-E33-15	B24CF6	3/11/2010	4/2/2010	22	2	20	Nitrite	240	ug/L	U	R	> 2X holding time requirement
299-E33-50	B1RCF9	2/14/2008	4/30/2008	76	2	74	Nitrogen in Nitrate	289	ug/L	D	J-	> 2X holding time requirement
699-49-57B	B1TKJ5	3/30/2008	4/3/2008	4	2	2	Nitrogen in Nitrate	316	ug/L	D	J	<2X holding time requirement
299-E33-4	B1W2X7	7/16/2008	7/21/2008	5	2	3	Nitrogen in Nitrate	4030000	ug/L	DN	J	<2X holding time requirement
299-E33-343	B1WH00	8/11/2008	9/10/2008	30	2	28	Nitrogen in Nitrate	47200	ug/L	D	J-	> 2X holding time requirement
299-E33-3	B1WJJ7	8/6/2008	9/10/2008	35	2	33	Nitrogen in Nitrate	300	ug/L	D	J-	> 2X holding time requirement
299-E33-1A	B1XM68	11/16/2008	11/19/2008	3	2	1	Nitrogen in Nitrate	300	ug/L	D	J	<2X holding time requirement
299-E33-20	B1XM76	11/14/2008	11/17/2008	3	2	1	Nitrogen in Nitrate	617	ug/L	D	J	<2X holding time requirement
299-E27-12	B1YVW1	3/3/2009	3/9/2009	6	2	4	Nitrogen in Nitrate	2190	ug/L	D	J	<2X holding time requirement
699-55-60A	B203D3	4/29/2009	5/4/2009	5	2	3	Nitrogen in Nitrate	4940	ug/L	D	J	<2X holding time requirement
299-E33-335	B219X2	8/14/2009	8/17/2009	3	2	1	Nitrogen in Nitrate	689	ug/L	DX	J	<2X holding time requirement
299-E33-341	B21JY7	9/16/2009	9/21/2009	5	2	3	Nitrogen in Nitrate	311000	ug/L	DX	J	<2X holding time requirement
699-52-19	B23JB1	3/21/2010	3/24/2010	3	2	1	Nitrogen in Nitrate	1310	ug/L	DX	J	<2X holding time requirement
699-49-55B	B24F48	3/21/2010	3/24/2010	3	2	1	Nitrogen in Nitrate	63.1	ug/L	BDX	J	<2X holding time requirement
699-49-57A	B24FR8	3/21/2010	3/24/2010	3	2	1	Nitrogen in Nitrate	60700	ug/L	DX	J	<2X holding time requirement
699-49-57B	B24FR9	3/21/2010	3/24/2010	3	2	1	Nitrogen in Nitrate	250	ug/L	DX	J	<2X holding time requirement
299-E33-16	B25750	5/24/2010	5/27/2010	3	2	1	Nitrogen in Nitrate	300	ug/L	D	J	<2X holding time requirement

Table A-1. Summary of Sample Results Qualified Because of Holding Times Exceedances

Well Name	Sample ID	Collection Date	Analysis Date	# of Days to Analysis	Holding Time Requirement (days)	# Days Beyond Holding time Requirement	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	Reason
299-E33-38	B25763	5/26/2010	6/1/2010	6	2	4	Nitrogen in Nitrate	266000	ug/L	D	J	<2X holding time requirement
199-K-31	B25TL8	6/11/2010	6/15/2010	4	2	2	Nitrogen in Nitrate	5290	ug/L	D	J	<2X holding time requirement
699-72-73	B25TM0	6/11/2010	6/15/2010	4	2	2	Nitrogen in Nitrate	5460	ug/L	D	J	<2X holding time requirement
299-E33-38	B26PD7	8/5/2010	8/17/2010	12	2	10	Nitrogen in Nitrate	252000	ug/L	D	J-	> 2X holding time requirement
699-62-43F	B28JX0	12/17/2010	12/20/2010	3	2	1	Nitrogen in Nitrate	3490	ug/L	D	J	<2X holding time requirement
699-50-59	B2CXL3	5/13/2011	5/16/2011	3	2	1	Nitrogen in Nitrate	29300	ug/L	D	J	<2X holding time requirement
699-65-72	B2CXM0	5/13/2011	5/16/2011	3	2	1	Nitrogen in Nitrate	463	ug/L	D	J	<2X holding time requirement
299-E33-26	B2FL13	11/9/2011	11/13/2011	4	2	2	Nitrogen in Nitrate	409	ug/L	D	J	<2X holding time requirement
299-E33-340	B2FVD9	9/2/2011	9/6/2011	4	2	2	Nitrogen in Nitrate	279	ug/L	D	J	<2X holding time requirement
199-K-31	B2HDV7	11/11/2011	11/14/2011	3	2	1	Nitrogen in Nitrate	5200	ug/L	D	J	<2X holding time requirement
699-70-68	B2HF37	11/17/2011	11/20/2011	3	2	1	Nitrogen in Nitrate	4900	ug/L	D	J	<2X holding time requirement
699-72-73	B2HF43	12/2/2011	12/5/2011	3	2	1	Nitrogen in Nitrate	4700	ug/L	D	J	<2X holding time requirement
299-E27-9	B2HFH5	11/17/2011	11/20/2011	3	2	1	Nitrogen in Nitrate	12300	ug/L	D	J	<2X holding time requirement
699-50-56	B2HH82	11/9/2011	11/13/2011	4	2	2	Nitrogen in Nitrate	14200	ug/L	D	J	<2X holding time requirement
699-56-53	B2HJM5	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrate	150	ug/L		J	<2X holding time requirement
699-45-42	B2HLL6	11/17/2011	11/20/2011	3	2	1	Nitrogen in Nitrate	1000	ug/L	D	J	<2X holding time requirement
699-62-43F	B2HLN2	11/10/2011	11/14/2011	4	2	2	Nitrogen in Nitrate	3300	ug/L	D	J	<2X holding time requirement
699-73-61	B2HLP7	11/10/2011	11/14/2011	4	2	2	Nitrogen in Nitrate	1800	ug/L	D	J	<2X holding time requirement
299-E28-8	B2J8H1	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrate	143000	ug/L	D	J	<2X holding time requirement
299-E33-15	B2J8H7	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrate	300	ug/L	D	J	<2X holding time requirement
299-E33-16	B2J8J2	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrate	589	ug/L	D	J	<2X holding time requirement
299-E33-18	B2J8J6	12/1/2011	12/4/2011	3	2	1	Nitrogen in Nitrate	300	ug/L	D	J	<2X holding time requirement
299-E33-31	B2J8K8	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrate	309	ug/L	D	J	<2X holding time requirement
299-E33-335	B2J8M0	11/18/2011	11/22/2011	4	2	2	Nitrogen in Nitrate	300	ug/L	D	J	<2X holding time requirement
299-E33-337	B2J8M6	11/18/2011	11/22/2011	4	2	2	Nitrogen in Nitrate	467	ug/L	D	J	<2X holding time requirement
299-E33-338	B2J8N1	11/18/2011	11/22/2011	4	2	2	Nitrogen in Nitrate	20300	ug/L	D	J	<2X holding time requirement
299-E33-339	B2J8N5	11/18/2011	11/22/2011	4	2	2	Nitrogen in Nitrate	41300	ug/L	D	J	<2X holding time requirement
299-E33-340	B2J8N9	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrate	230	ug/L		J	<2X holding time requirement
299-E33-341	B2J8P3	11/29/2011	12/2/2011	3	2	1	Nitrogen in Nitrate	237000	ug/L	D	J	<2X holding time requirement
299-E33-343	B2J8R2	11/29/2011	12/2/2011	3	2	1	Nitrogen in Nitrate	125000	ug/L	D	J	<2X holding time requirement
299-E33-345	B2J8T2	12/1/2011	12/4/2011	3	2	1	Nitrogen in Nitrate	86400	ug/L	D	J	<2X holding time requirement
299-E33-38	B2J8T8	11/29/2011	12/2/2011	3	2	1	Nitrogen in Nitrate	329000	ug/L	D	J	<2X holding time requirement
299-E33-42	B2J8W1	11/29/2011	12/2/2011	3	2	1	Nitrogen in Nitrate	125000	ug/L	D	J	<2X holding time requirement
299-E33-48	B2J8X7	11/29/2011	12/2/2011	3	2	1	Nitrogen in Nitrate	31300	ug/L	D	J	<2X holding time requirement
299-E33-7	B2J8Y4	11/29/2011	12/2/2011	3	2	1	Nitrogen in Nitrate	267000	ug/L	D	J	<2X holding time requirement
299-E33-13	B2JBP1	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrate	1240000	ug/L	D	J	<2X holding time requirement
299-E33-20	B2MN33	11/2/2012	11/5/2012	3	2	1	Nitrogen in Nitrate	300	ug/L	D	J	<2X holding time requirement
299-E33-48	B2MNB6	11/2/2012	11/5/2012	3	2	1	Nitrogen in Nitrate	37200	ug/L	D	J	<2X holding time requirement
299-E27-22	B2P8T8	6/10/2013	6/13/2013	3	2	1	Nitrogen in Nitrate	6220	ug/L	D	J	<2X holding time requirement
299-E27-25	B2P8W3	6/10/2013	7/22/2013	42	2	40	Nitrogen in Nitrate	10300	ug/L	DX	J-	> 2X holding time requirement
699-49-57B	B1TKJ5	3/30/2008	4/3/2008	4	2	2	Nitrogen in Nitrite	20	ug/L	DU	J	<2X holding time requirement
299-E33-20	B1XM76	11/14/2008	11/17/2008	3	2	1	Nitrogen in Nitrite	25.6	ug/L	DU	J	<2X holding time requirement
299-E27-12	B1YVW1	3/3/2009	3/9/2009	6	2	4	Nitrogen in Nitrite	26	ug/L	UD	J	<2X holding time requirement
699-55-60A	B203D3	4/29/2009	5/4/2009	5	2	3	Nitrogen in Nitrite	36	ug/L	UD	J	<2X holding time requirement
299-E33-335	B219X4	8/14/2009	8/17/2009	3	2	1	Nitrogen in Nitrite	36	ug/L	UDX	J	<2X holding time requirement
699-52-19	B23JB1	3/21/2010	3/24/2010	3	2	1	Nitrogen in Nitrite	36	ug/L	UDX	J	<2X holding time requirement
699-49-55B	B24F48	3/21/2010	3/24/2010	3	2	1	Nitrogen in Nitrite	36	ug/L	UDX	J	<2X holding time requirement
699-49-57A	B24FR8	3/21/2010	3/24/2010	3	2	1	Nitrogen in Nitrite	36	ug/L	UDX	J	<2X holding time requirement
699-49-57B	B24FR9	3/21/2010	3/24/2010	3	2	1	Nitrogen in Nitrite	36	ug/L	UDX	J	<2X holding time requirement
199-K-31	B25TL8	6/11/2010	6/15/2010	4	2	2	Nitrogen in Nitrite	36	ug/L	UD	J	<2X holding time requirement
699-72-73	B25TM0	6/11/2010	6/15/2010	4	2	2	Nitrogen in Nitrite	36	ug/L	UD	J	<2X holding time requirement
699-62-43F	B28JX0	12/17/2010	12/20/2010	3	2	1	Nitrogen in Nitrite	36	ug/L	UD	J	<2X holding time requirement
699-50-59	B2CXL3	5/13/2011	5/16/2011	3	2	1	Nitrogen in Nitrite	40	ug/L	UD	J	<2X holding time requirement
699-65-72	B2CXM0	5/13/2011	5/16/2011	3	2	1	Nitrogen in Nitrite	40	ug/L	UD	J	<2X holding time requirement
299-E33-340	B2FVD9	9/2/2011	9/6/2011	4	2	2	Nitrogen in Nitrite	70.7	ug/L	BD	J	<2X holding time requirement
699-56-53	B2HJM5	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrite	3	ug/L	U	J	<2X holding time requirement
699-45-42	B2HLL6	11/17/2011	11/20/2011	3	2	1	Nitrogen in Nitrite	3	ug/L	U	J	<2X holding time requirement
699-62-43F	B2HLN2	11/10/2011	11/13/2011	3	2	1	Nitrogen in Nitrite	3	ug/L	UN	J	<2X holding time requirement
699-73-61	B2HLP7	11/10/2011	11/13/2011	3	2	1	Nitrogen in Nitrite	9.2	ug/L	BN	J	<2X holding time requirement
299-E28-8	B2J8H1	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrite	3	ug/L	U	J	<2X holding time requirement
299-E33-16	B2J8J2	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrite	17	ug/L	B	J	<2X holding time requirement
299-E33-335	B2J8M0	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrite	3	ug/L	U	J	<2X holding time requirement
299-E33-339	B2J8N5	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrite	3	ug/L	U	J	<2X holding time requirement
299-E33-340	B2J8N9	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrite	3	ug/L	U	J	<2X holding time requirement
299-E33-13	B2JBP1	11/18/2011	11/21/2011	3	2	1	Nitrogen in Nitrite	26	ug/L		J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	n-Nitrosodi-n-dipropylamine	0.5	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	n-Nitrosodi-n-dipropylamine	0.9	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Pentachlorophenol	0.5	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	Pentachlorophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	Pentachlorophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	Pentachlorophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	Pentachlorophenol	2.4	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	Pentachlorophenol	2.4	ug/L	U	J	<2X holding time requirement

Table A-1. Summary of Sample Results Qualified Because of Holding Times Exceedances

Well Name	Sample ID	Collection Date	Analysis Date	# of Days to Analysis	Holding Time Requirement (days)	# Days Beyond Holding time Requirement	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	Reason
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Pentachlorophenol	0.9	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Phenol	0.9	ug/L	U	J	<2X holding time requirement
299-E32-2	B231P3	1/7/2010	1/23/2010	16	7	9	Phenol	2.3	ug/L	U	J	<2X holding time requirement
299-E32-3	B231R4	1/7/2010	1/23/2010	16	7	9	Phenol	2.3	ug/L	U	J	<2X holding time requirement
299-E32-6	B231W1	1/7/2010	1/23/2010	16	7	9	Phenol	2.3	ug/L	U	J	<2X holding time requirement
299-E32-7	B231X2	1/7/2010	1/23/2010	16	7	9	Phenol	2.3	ug/L	U	J	<2X holding time requirement
299-E32-8	B231Y3	1/7/2010	1/23/2010	16	7	9	Phenol	2.3	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Phenol	0.9	ug/L	UT	J	<2X holding time requirement
299-E27-12	B1X3L0	9/3/2008	10/28/2008	55	28	27	Phosphate	250	ug/L	U	J	< 2X holding time requirement
299-E27-13	B1X3L1	9/3/2008	10/28/2008	55	28	27	Phosphate	250	ug/L	U	J	< 2X holding time requirement
299-E27-14	B1X3L2	9/3/2008	10/28/2008	55	28	27	Phosphate	250	ug/L	U	J	< 2X holding time requirement
299-E27-15	B1X3L3	9/4/2008	10/29/2008	55	28	27	Phosphate	250	ug/L	U	J	< 2X holding time requirement
299-E27-22	B1X3L5	9/3/2008	10/28/2008	55	28	27	Phosphate	250	ug/L	U	J	< 2X holding time requirement
299-E27-23	B1X3L6	9/3/2008	10/28/2008	55	28	27	Phosphate	250	ug/L	U	J	< 2X holding time requirement
299-E27-4	B1X3L7	9/3/2008	10/28/2008	55	28	27	Phosphate	250	ug/L	U	J	< 2X holding time requirement
299-E27-7	B1X3L9	9/3/2008	10/28/2008	55	28	27	Phosphate	250	ug/L	U	J	< 2X holding time requirement
299-E33-13	B1X3T9	9/15/2008	10/28/2008	43	28	15	Phosphate	500	ug/L	UD	J	< 2X holding time requirement
299-E33-31	B1X3V0	9/15/2008	10/28/2008	43	28	15	Phosphate	660	ug/L	D	J	< 2X holding time requirement
299-E33-42	B1X3V2	9/15/2008	10/28/2008	43	28	15	Phosphate	500	ug/L	UD	J	< 2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Pyrene	0.5	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Pyrene	0.9	ug/L	U	J	<2X holding time requirement
299-E33-50	B1RCF9	2/14/2008	4/30/2008	76	28	48	Sulfate	29400	ug/L	D	J	< 2X holding time requirement
299-E27-12	B1X3L0	9/3/2008	10/27/2008	54	28	26	Sulfate	57800	ug/L	D	J	< 2X holding time requirement
299-E27-13	B1X3L1	9/3/2008	10/28/2008	55	28	27	Sulfate	107000	ug/L	D	J	< 2X holding time requirement
299-E27-14	B1X3L2	9/3/2008	10/28/2008	55	28	27	Sulfate	296000	ug/L	D	J	< 2X holding time requirement
299-E27-15	B1X3L3	9/4/2008	10/29/2008	55	28	27	Sulfate	115000	ug/L	D	J	< 2X holding time requirement
299-E27-22	B1X3L5	9/3/2008	10/28/2008	55	28	27	Sulfate	181000	ug/L	D	J	< 2X holding time requirement
299-E27-23	B1X3L6	9/3/2008	10/28/2008	55	28	27	Sulfate	123000	ug/L	D	J	< 2X holding time requirement
299-E27-4	B1X3L7	9/3/2008	10/28/2008	55	28	27	Sulfate	143000	ug/L	D	J	< 2X holding time requirement
299-E27-7	B1X3L8	9/3/2008	10/28/2008	55	28	27	Sulfate	208000	ug/L	D	J	< 2X holding time requirement
299-E27-10	B1X8D8	10/14/2008	12/18/2008	65	28	37	Sulfate	268000	ug/L	D	J	< 2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Tetrachloroethene	1	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Tetrahydrofuran	2	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Toluene	1	ug/L	U	J	<2X holding time requirement
299-E33-343	B2JBT7	11/29/2011	12/8/2011	9	2	7	Total dissolved solids	1240000	ug/L		J-	>2X holding time requirement
299-E27-14	B1RJ30	2/22/2008	4/16/2008	54	28	26	Total organic carbon	467	ug/L		J	<2X holding time requirement
699-59-58	B24N96	4/26/2010	5/26/2010	30	28	2	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
699-60-60	B24NB0	4/28/2010	6/3/2010	36	28	8	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
699-64-62	B24NC4	4/28/2010	6/3/2010	36	7	29	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
299-E27-16	B24R17	4/27/2010	5/26/2010	29	28	1	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
299-E27-18	B24R39	4/27/2010	6/3/2010	37	28	9	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
299-E27-19	B24R48	4/27/2010	6/3/2010	37	28	9	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
299-E27-8	B24R59	4/27/2010	6/3/2010	37	28	9	Total organic carbon	309	ug/L	B	J	<2X holding time requirement
299-E33-36	B24R88	4/26/2010	5/26/2010	30	28	2	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
299-E32-10	B25HP2	7/6/2010	8/6/2010	31	28	3	Total organic carbon	589	ug/L	B	J	<2X holding time requirement
299-E32-6	B25HY1	7/6/2010	8/17/2010	42	28	14	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
299-E32-8	B25J09	7/6/2010	8/17/2010	42	28	14	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
299-E32-9	B25J19	7/6/2010	8/6/2010	31	28	3	Total organic carbon	300	ug/L	U	J	<2X holding time requirement
299-E33-34	B25J77	7/7/2010	8/11/2010	35	28	7	Total organic carbon	617	ug/L	B	J	<2X holding time requirement
299-E27-9	B28881	12/2/2010	1/3/2011	32	28	4	Total organic carbon	689	ug/L		J	<2X holding time requirement
299-E27-11	B288K0	12/2/2010	1/3/2011	32	28	4	Total organic carbon	409	ug/L		J	<2X holding time requirement
299-E27-22	B1Y0H3	12/11/2008	1/14/2009	34	28	6	Total organic halides	5	ug/L		J	<2X holding time requirement
299-E27-11	B2HRT4	10/5/2011	11/17/2011	43	28	15	Total organic halides	7.4	ug/L	B	J	<2X holding time requirement
299-E34-2	B2HRW0	10/10/2011	11/20/2011	41	28	13	Total organic halides	7.3	ug/L	B	J	<2X holding time requirement
299-E34-10	B2HRW6	10/6/2011	11/19/2011	44	28	16	Total organic halides	6.8	ug/L	B	J	<2X holding time requirement
299-E34-12	B2HRX2	10/6/2011	11/18/2011	43	28	15	Total organic halides	9.5	ug/L	B	J	<2X holding time requirement
699-62-43F	B27X67	12/17/2010	12/30/2010	13	7	6	Total petroleum hydrocarbons - diesel range	70	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	trans-1,2-Dichloroethylene	1	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Tributyl phosphate	0.5	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Tributyl phosphate	0.9	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Trichloroethene	1	ug/L	U	J	<2X holding time requirement
299-E33-340	B22YM6	1/15/2010	2/2/2010	18	7	11	Tris-2-chloroethyl phosphate	0.5	ug/L	U	J	<2X holding time requirement
699-50-56	B24N70	6/2/2010	6/16/2010	14	7	7	Tris-2-chloroethyl phosphate	0.9	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Vinyl chloride	1	ug/L	U	J	<2X holding time requirement
299-E26-10	B2JR28	1/9/2012	1/27/2012	18	7	11	Xylenes (total)	1	ug/L	U	J	<2X holding time requirement

Table A-3. Summary of 2008 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD NAME	Reason
B1WFY2	Acetone	37		ug/L	B	R	8260_VOA_GCMS	Rejected; Method blank has greater than 2X the PQL (2 ug/l) (15 ug/L) which is greater than acceptance criteria. Sample results are slightly greater than 2X the MB contamination.
B1WH00	Acetone	36		ug/L	B	R	8260_VOA_GCMS	Rejected; Method blank has greater than 2X the PQL (2 ug/l) (15 ug/L) which is greater than acceptance criteria. Sample results are slightly greater than 2X the MB contamination.
B1VM28	Aluminum	25.4		ug/L	C	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B1VM29	Aluminum	21		ug/L	C	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B1XMD2	Aluminum	122		ug/L	C	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B1RFR3	Antimony	71.5		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RV45	Antimony	36.5		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T509	Antimony	90.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T510	Antimony	58		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T516	Antimony	77.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T517	Antimony	70.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T527	Antimony	46.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T528	Antimony	49		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T534	Antimony	58.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T535	Antimony	54.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TWM6	Antimony	42.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8K9	Antimony	34.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8L0	Antimony	45.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M2	Antimony	39.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8V5	Antimony	49.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RCJ0	Bis(2-ethylhexyl) phthalate	9.5		ug/L		R	8270_SVOA_GCMS	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RCL0	Bis(2-ethylhexyl) phthalate	3.4		ug/L	J	U	8270_SVOA_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B1TWF9	Calcium	43700		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1TWK3	Calcium	80500		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1TWL1	Calcium	57300		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1TWL5	Calcium	58800		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1X167	Calcium	129000		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1X177	Calcium	76100		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1X181	Calcium	83700		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1X1B1	Calcium	66700		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1X1B6	Calcium	99500		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1X1C0	Calcium	99100		ug/L	CD		6010_METALS_ICP	No qualification; concentration > 10x blank result
B1RV38	Chromium	9.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RV39	Chromium	8.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T524	Chromium	74		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T538	Chromium	47.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T546	Chromium	39.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T550	Chromium	16.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T554	Chromium	7.5		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T558	Chromium	15.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T563	Chromium	9.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T586	Chromium	41.5		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TKF0	Chromium	8.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TL03	Chromium	4.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TL26	Chromium	6.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TL27	Chromium	15.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TL34	Chromium	11		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TL35	Chromium	9.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TL42	Chromium	8.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8D3	Chromium	5.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8D4	Chromium	12.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8D7	Chromium	6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8D8	Chromium	9.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8F1	Chromium	4.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8H9	Chromium	21.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8J1	Chromium	25.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8J2	Chromium	33.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8J5	Chromium	15.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8J6	Chromium	23.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8X4	Chromium	69.5		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8X5	Chromium	69.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V900	Chromium	5.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V901	Chromium	12.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V907	Chromium	33.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V908	Chromium	44.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V911	Chromium	25.5		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V912	Chromium	20		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V919	Chromium	7.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V920	Chromium	7.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFV3	Copper	4.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFX7	Copper	4.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFX8	Copper	6.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RH48	Copper	4.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TWL8	Copper	9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V0T2	Copper	6.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V0T5	Copper	7.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8V9	Copper	4.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8W0	Copper	4.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1VNY8	Cyanide	9.5		ug/L	CN	R	335.2_CYANIDE	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1VP80	Cyanide	4.3		ug/L	CN	R	335.2_CYANIDE	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1VP96	Cyanide	11.5		ug/L	CN	R	335.2_CYANIDE	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RCF8	Iron	56.6		ug/L	C	UR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RCF9	Iron	136		ug/L	C	UR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFN3	Iron	66.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFN4	Iron	89		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFR4	Iron	152		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RJ19	Iron	22.2		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RJ20	Iron	63.8		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RJ82	Iron	17.3		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required

Table A-3. Summary of 2008 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1RJ83	Iron	19.1		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RV38	Iron	26.9		ug/L	C	UR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RV39	Iron	56.7		ug/L	C	UR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T4Y1	Iron	322		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T502	Iron	130		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T506	Iron	149		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T509	Iron	14.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T517	Iron	21.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T542	Iron	194		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T562	Iron	13.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T569	Iron	10.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T570	Iron	42.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T573	Iron	18.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T574	Iron	26.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T578	Iron	16.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T588	Iron	49.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T589	Iron	89.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T5F4	Iron	26.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T5F9	Iron	31.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TKH6	Iron	47.6		ug/L	C	UR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TKH7	Iron	52.1		ug/L	C	UR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TKJ4	Iron	14.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TKJ5	Iron	66.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1TWL7	Iron	314		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V7L8	Iron	61.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8V9	Iron	29.5		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1VN39	Iron	35.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1VN40	Iron	92.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1VNJ9	Iron	39.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1X797	Iron	39		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X798	Iron	176		ug/L	C	UR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1X7B1	Iron	21.2		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X7B2	Iron	55.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X7B9	Iron	37.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X7C0	Iron	28.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X7C4	Iron	29.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X7W8	Iron	51.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X7X8	Iron	21.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X7X9	Iron	62.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X810	Iron	25.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X811	Iron	25.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X845	Iron	49.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X8F2	Iron	270		ug/L	C	UR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1XM91	Iron	47.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1XM94	Iron	54.2		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1XM95	Iron	70.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1V8H8	Manganese	4.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8Y6	Manganese	31.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8Y7	Manganese	33.5		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFV4	Nickel	7.6		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFX7	Nickel	6.2		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFX8	Nickel	12.6		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RH47	Nickel	4.3		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RH48	Nickel	4.6		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1WH07	Nickel	4.8		ug/L	BC	UJ	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1WKV7	Nickel	5		ug/L	BC	UJ	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1RFN7	Silver	8.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RFN8	Silver	9.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RJ32	Silver	6.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T5D3	Silver	5.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T5D8	Silver	5.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T5F1	Silver	5.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V7N7	Silver	22.9		ug/L	BC	UJ	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1V7N8	Silver	13.1		ug/L	BC	UJ	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1V7W8	Silver	5.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1V7W9	Silver	17		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1V8L0	Silver	6.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8L4	Silver	7.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8L8	Silver	8.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8L9	Silver	6.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M3	Silver	5.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M6	Silver	5.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8N0	Silver	10.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8N1	Silver	8.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8T8	Silver	5.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1WJD5	Silver	5.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1XM94	Silver	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1XMJ8	Silver	10.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1XMK2	Silver	9.7		ug/L	BC	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1XML1	Silver	8.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1Y2J3	Silver	5.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1Y359	Silver	11.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1Y360	Silver	11		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1Y371	Silver	12.2		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1Y372	Silver	11.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1RFN7	Vanadium	16.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RH35	Vanadium	19.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RH36	Vanadium	18.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1RJ31	Vanadium	22.7		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required

Table A-3. Summary of 2008 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD NAME	Reason
B1RJ32	Vanadium	17.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T595	Vanadium	13.6		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1T596	Vanadium	13.4		ug/L	C	UJR	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8L8	Vanadium	20.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8L9	Vanadium	27.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M2	Vanadium	19.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M3	Vanadium	19.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M6	Vanadium	14.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M7	Vanadium	14.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8N0	Vanadium	27.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8N1	Vanadium	16.1		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8T8	Vanadium	20.6		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8T9	Vanadium	24.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8V5	Vanadium	12.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8V6	Vanadium	15.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8L9	Zinc	4.9		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M6	Zinc	12.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8M7	Zinc	26.8		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8N0	Zinc	5.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8N1	Zinc	8.3		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8T8	Zinc	12.4		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8T9	Zinc	11.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1V8V6	Zinc	5.2		ug/L	C	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1WY76	Zinc	~~9.1~~	20	ug/L	BC	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B1X167	Zinc	~~5.9~~	20	ug/L	BC	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B1X177	Zinc	5.9		ug/L	B	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result; lab did not report PQL or assign B flag as required
B1X178	Zinc	10.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1X182	Zinc	~~11.7~~	20	ug/L	BC	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B1X1C0	Zinc	~~5.9~~	20	ug/L	BC	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL

Table A-4. Summary of 2009 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1Y2H4	Aluminum	~~5.48~~	100	ug/L	BC	U	200.8_METALS_ICPMS	Flagged with a U; ≥ MDL but ≤ PQL
B1Y2H9	Aluminum	~~10.6~~	100	ug/L	BC	U	200.8_METALS_ICPMS	Flagged with a U; ≥ MDL but ≤ PQL
B22L83	Arsenic	6.49		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B22L84	Arsenic	6.37		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B22L77	Bis(2-ethylhexyl) phthalate	3		ug/L	J	U	8270_SVOA_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B20PH2	Copper	~~5~~	30	ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20PH3	Copper	~~8.2~~	30	ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B22673	Copper	0.351		ug/L	BDC	UJ	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B22674	Copper	0.398		ug/L	BDC	UJ	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B22682	Copper	0.403		ug/L	BDC	UJ	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B22683	Copper	0.372		ug/L	BDC	UJ	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B22L84	Copper	~~4.6~~	30	ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B22L87	Copper	~~7.4~~	30	ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1YTX7	Iron	23.2		ug/L	BC	UJ	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B1YTX8	Iron	36.4		ug/L	BC	UJ	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20PH2	Iron	51.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20PH3	Iron	171		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B21958	Iron	334		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B21961	Iron	90.4		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B219N1	Iron	40.6		ug/L	BC		6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B219Y5	Iron	390		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B219Y6	Iron	414		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B21K47	Iron	90		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B21K48	Iron	65.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B21Y19	Iron	18.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B21Y41	Iron	25.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B22L88	Iron	155		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B22Y83	Iron	36.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B22Y84	Iron	46		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B22Y87	Iron	42.2		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B22Y88	Iron	57.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23286	Iron	20.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23287	Iron	22.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23292	Iron	79.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20P42	Potassium	9930		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B20H98	Zinc	7.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20H99	Zinc	7.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20HC9	Zinc	7.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20HD0	Zinc	7.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20HL9	Zinc	13.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20HM0	Zinc	14.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B20W26	Zinc	6.2		ug/L	BC	UJ	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc

Table A-5. Summary of 2010 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B24LY5	1,4-Dichlorobenzene	0.39	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X41	Acrolein	4.3	10	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B26763	Arsenic	3.61		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B26764	Arsenic	4.28		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B231M8	Barium	81		ug/L		J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B231M9	Barium	86.2		ug/L		J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B26604	Barium	19.4		ug/L	D	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B26605	Barium	22.6		ug/L	D	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B25R72	Boron	25		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B265W5	Boron	28		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26604	Boron	39		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26605	Boron	38		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24LY5	Bromomethane	0.24	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B25R49	Bromomethane	0.95	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B25R75	Bromomethane	0.98	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B265T0	Bromomethane	0.28	2	ug/L	JBT	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B26N03	Bromomethane	0.29	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B279Y4	Bromomethane	0.5	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B279Y8	Bromomethane	0.48	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B02	Bromomethane	0.49	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B06	Bromomethane	0.65	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B14	Bromomethane	0.33	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B18	Bromomethane	0.56	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B37	Bromomethane	0.64	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B41	Bromomethane	0.4	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27RP8	Bromomethane	0.65	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27RP9	Bromomethane	0.69	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X29	Bromomethane	0.56	2	ug/L	JBT	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X65	Bromomethane	0.49	2	ug/L	JBT	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X89	Bromomethane	0.5	2	ug/L	JBT	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X95	Bromomethane	0.56	2	ug/L	JBT	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B265T0	Carbon disulfide	0.26	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B24BY7	Chloromethane	0.36	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B24CB7	Chloromethane	0.34	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B24CD4	Chloromethane	0.37	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B24CD8	Chloromethane	0.33	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B26N03	Chloromethane	0.17	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B279Y4	Chloromethane	0.19	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B279Y8	Chloromethane	0.16	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B02	Chloromethane	0.2	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B06	Chloromethane	0.28	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B14	Chloromethane	0.18	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B18	Chloromethane	0.22	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B37	Chloromethane	0.25	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27B41	Chloromethane	0.18	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27RP8	Chloromethane	0.37	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27RP9	Chloromethane	0.4	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27TH7	Chloromethane	0.27	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27TH8	Chloromethane	0.23	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X29	Chloromethane	0.53	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X41	Chloromethane	0.25	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X65	Chloromethane	0.55	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X83	Chloromethane	0.16	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X89	Chloromethane	0.51	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL

Table A-5. Summary of 2010 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B27X95	Chloromethane	0.57	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B29KK2	Chloromethane	0.11	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B29KV9	Chloromethane	0.21	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B29KX0	Chloromethane	0.17	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B29KX4	Chloromethane	0.098	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B231M8	Chromium	13.8		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B231M9	Chromium	20.2		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26604	Chromium	2.75		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B26605	Chromium	3		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B26M23	Chromium	5.81		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B26M24	Chromium	8.06		ug/L		J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B277X1	Chromium	6.58		ug/L	BDC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B24CC8	Copper	5.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B254L7	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B254L8	Copper	7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B254M1	Copper	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B254M2	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25PK7	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25R77	Copper	3.15		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B26867	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26868	Copper	9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26KP9	Copper	68		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B26L46	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26LD2	Copper	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26M24	Copper	0.338		ug/L	B	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B277X1	Copper	0.478		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B290L9	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B290M0	Copper	10		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B290P3	Copper	7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B290P7	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B290T1	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B290V0	Copper	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B290X4	Copper	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B29KW7	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B29KW8	Copper	8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B29VT1	Copper	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B265T0	Iodomethane	0.74	2	ug/L	JBT	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27RP8	Iodomethane	0.85	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27RP9	Iodomethane	0.64	2	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27TH8	Iodomethane	0.37	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B231J3	Iron	26.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B231K4	Iron	28.2		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B231M8	Iron	92.1		ug/L		J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B231M9	Iron	118		ug/L		J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B23V06	Iron	116		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B23V25	Iron	45.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V34	Iron	27		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V84	Iron	24.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24CB8	Iron	78.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24CB9	Iron	45.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24RH7	Iron	20.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24RH8	Iron	46.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24RK0	Iron	33.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24RK1	Iron	53.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24RL8	Iron	27.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc

Table A-5. Summary of 2010 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B24RL9	Iron	58.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25HN4	Iron	26		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25HN5	Iron	37		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25HR4	Iron	37		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25HR5	Iron	69		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25HT4	Iron	57		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25HV4	Iron	64		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25HV5	Iron	266		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B25HW4	Iron	51		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25HW5	Iron	69		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25PN2	Iron	42		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25PN3	Iron	47		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25PN6	Iron	134		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B25PN7	Iron	176		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B265P3	Iron	139		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B26604	Iron	43		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26605	Iron	64		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24934	Lead	23.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B265V9	Lead	41		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B265X7	Lead	45		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B265X8	Lead	28		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26601	Lead	32		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26602	Lead	23		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26604	Lithium	15		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26605	Lithium	15		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B265W6	Manganese	7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B27X41	Methylene chloride	0.2	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B24LT8	Molybdenum	5.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25R76	Molybdenum	4.29		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B25R77	Molybdenum	1.77		ug/L	DC	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B26604	Molybdenum	6.07		ug/L	D	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B26605	Molybdenum	6.84		ug/L	D	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B269K7	Molybdenum	9.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26M23	Molybdenum	3.44		ug/L	D	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B26M24	Molybdenum	3.51		ug/L		J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B254L4	Nickel	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B256R0	Nickel	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B256X5	Nickel	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B256X6	Nickel	10		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26KX8	Nickel	7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26KX9	Nickel	7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26L72	Nickel	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26L73	Nickel	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26M24	Nickel	12		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26TM7	Nickel	7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26TM8	Nickel	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B29KJ9	Nickel	9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B29KK0	Nickel	11		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B29RL7	Nickel	8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24BY5	Selenium	5.74		ug/L	BDC	BD	200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B24CB5	Selenium	10.2		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B24CD2	Selenium	9.92		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B24LR9	Selenium	3.08		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B24LT0	Selenium	3.29		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B24LY1	Selenium	1.23		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc

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Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B24LY2	Selenium	0.976		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B25R45	Selenium	1.46		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B25R46	Selenium	1.23		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B25R71	Selenium	2.67		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B25R72	Selenium	3.98		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B26604	Selenium	2.78		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B26605	Selenium	2.65		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B27623	Selenium	0.91		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B26604	Silicon	18300		ug/L		J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B26605	Silicon	17700		ug/L		J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B26604	Strontium	176		ug/L		J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B26605	Strontium	172		ug/L		J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B24LY5	Styrene	0.21	1	ug/L	JBT	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B29KX4	Tetrachloroethene	0.19	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B29KY3	Tetrachloroethene	0.21	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B29KY5	Tetrachloroethene	0.27	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B25R45	Thallium	44		ug/L	BC		6010_METALS_ICP	Rejected result; Conc < 10x blank result
B26M23	Thallium	79		ug/L	BCN	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result
B26M24	Thallium	51		ug/L	BCN	R	6010_METALS_ICP	Rejected result; Conc < 10x blank result
B265W9	Tin	1.1		ug/L	BC	U	6020_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B269K7	Tin	1.3		ug/L	BC	U	6020_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B27622	Trichloroethene	1.3		ug/L	B		8260_VOA_GCMS	Conc > PQL; No flag assigned
B27X29	Trichloroethene	0.43	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B27X95	Trichloroethene	1.7		ug/L	B		8260_VOA_GCMS	Conc > PQL; No flag assigned
B22YN2	Uranium	2.25		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B24FJ2	Uranium	0.995		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B22L72	Vanadium	26.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B22L73	Vanadium	25.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V02	Vanadium	23.6		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V03	Vanadium	27		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V37	Vanadium	24.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V38	Vanadium	21.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V56	Vanadium	23.2		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V57	Vanadium	24.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V72	Vanadium	21.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V73	Vanadium	18.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V84	Vanadium	25.5		ug/L	BC		6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V85	Vanadium	20.5		ug/L	BC		6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V88	Vanadium	26.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23V89	Vanadium	24.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23X95	Vanadium	30.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23X96	Vanadium	16.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23XB8	Vanadium	21.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B23XB9	Vanadium	16.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B254N4	Vanadium	12		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26L09	Vanadium	32		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26L15	Vanadium	29		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B284W7	Vanadium	9.04		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B24LY5	Xylenes (total)	0.21	3	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B24FH7	Zinc	10		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24FH8	Zinc	15		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B24N70	Zinc	8		ug/L	BC	U	6010_METALS_ICP	
B254M9	Zinc	7		ug/L	BC	U	6010_METALS_ICP	
B25J50	Zinc	22		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25J51	Zinc	20		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc

Table A-5. Summary of 2010 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B25J60	Zinc	26		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25J61	Zinc	24		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25J70	Zinc	19		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25J71	Zinc	18		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25J90	Zinc	24		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25J91	Zinc	24		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25NC0	Zinc	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25NC1	Zinc	8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B25NC5	Zinc	25		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26KP5	Zinc	8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26KP8	Zinc	11		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26KY4	Zinc	4		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26KY5	Zinc	4		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B26L64	Zinc	6		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B29R60	Zinc	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc

Table A-6. Summary of 2011 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2FL22	Aluminum	26.1		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2FL87	Aluminum	13.2		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2FL89	Aluminum	5.5		ug/L	BC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2FLB1	Aluminum	13.6		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B28428	Antimony	4.4		ug/L	BC	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2BMN9	Arsenic	4.63		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2BMP0	Arsenic	4.89		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2JJ45	Arsenic	6.24		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JJ50	Arsenic	6.01		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JL12	Arsenic	5.12		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JL14	Arsenic	5.28		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B28429	Beryllium	1.6	5	ug/L	BC	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2FKW7	Beryllium	1.5	5	ug/L	BC	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2FKW8	Beryllium	1.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2FKX2	Beryllium	1.6	5	ug/L	BC	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8V8	Beryllium	0.64	5	ug/L	BC	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8J6	Chloride	39300		ug/L	CD		300.0_ANIONS_IC	No qualification; concentration > 10x blank result
B2J8T2	Chloride	31500		ug/L	CD		300.0_ANIONS_IC	No qualification; concentration > 10x blank result
B2BMV7	Chloroform	0.13	1	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2BMV7	Chloromethane	0.1	2	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2BMW2	Chloromethane	0.11	2	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2B9B2	Copper	5		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2CDH8	Copper	5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2FL22	Copper	2.09		ug/L	DC	J+	200.8_METALS_ICPMS	Estimated high "J+"; > PQL but < 10x the blank result
B2FL87	Copper	0.911		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2FL89	Copper	0.139		ug/L	BC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2FLB1	Copper	0.448		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2FLB8	Copper	0.26		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2CFN6	Cyanide	10.4		ug/L	C	J+	9012_CYANIDE	Estimated high "J+"; > PQL but < 10x the blank result
B2FL67	Cyanide	3	5	ug/L	BC	U	9012_CYANIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2FV75	Cyanide	35.4		ug/L	CB	R	9014_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2FVD3	Cyanide	37.4		ug/L	CB	R	9014_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2FVF0	Cyanide	33.8		ug/L	CB	R	9014_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2HFJ7	Cyanide	2.9	5	ug/L	BC	U	9012_CYANIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2HJK6	Cyanide	2	5	ug/L	BC	U	9012_CYANIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2J8H1	Cyanide	5.6		ug/L	C	J+	9012_CYANIDE	Estimated high "J+"; > PQL but < 10x the blank result
B2J8J6	Cyanide	6.6		ug/L	C	R	9012_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2J8L2	Cyanide	8.8		ug/L	C	J+	9012_CYANIDE	Estimated high "J+"; > PQL but < 10x the blank result
B2J8L6	Cyanide	7.3		ug/L	C	R	9012_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2J8M0	Cyanide	6		ug/L	C	J+	9012_CYANIDE	Estimated high "J+"; > PQL but < 10x the blank result
B2J8M6	Cyanide	5.6		ug/L	C	R	9012_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2J8N1	Cyanide	5.6		ug/L	C	R	9012_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2J8N5	Cyanide	5.1		ug/L	C	J+	9012_CYANIDE	Estimated high "J+"; > PQL but < 10x the blank result
B2J8N9	Cyanide	3.6	5	ug/L	BC	U	9012_CYANIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2J8R8	Cyanide	4.9	5	ug/L	BC	U	9012_CYANIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2J8T2	Cyanide	8.8		ug/L	C	R	9012_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2J8W1	Cyanide	9.9		ug/L	C	J+	9012_CYANIDE	Estimated high "J+"; > PQL but < 10x the blank result
B2J8W5	Cyanide	7.8		ug/L	C	J+	9012_CYANIDE	Estimated high "J+"; > PQL but < 10x the blank result
B2J8X3	Cyanide	14.7		ug/L	C	J+	9012_CYANIDE	Estimated high "J+"; > PQL but < 10x the blank result
B2J8X7	Cyanide	7		ug/L	C	R	9012_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2J8Y1	Cyanide	7.8		ug/L	C	R	9012_CYANIDE	Rejected result; professional judgement based on lack of trend.
B2JJ56	Iron	203		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2JJ60	Iron	186		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2FV31	Methylene chloride	0.89	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2FV39	Methylene chloride	1.7		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FV39	Methylene chloride	1.7		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FV55	Methylene chloride	1.6		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FV55	Methylene chloride	1.6		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FV63	Methylene chloride	0.35	1	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FV71	Methylene chloride	0.29	1	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FV79	Methylene chloride	1.8		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FV79	Methylene chloride	1.8		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL

Table A-6. Summary of 2011 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2FV87	Methylene chloride	1.4		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FV87	Methylene chloride	1.4		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FVC1	Methylene chloride	1.4		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2FVC1	Methylene chloride	1.4		ug/L	B	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2BT97	Nickel	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2BT98	Nickel	16		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2DRY0	Nickel	8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2DRY2	Nickel	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2DRY4	Nickel	9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2DRY6	Nickel	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2DT06	Nickel	9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2DXB5	Nickel	41		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2DXB7	Nickel	41		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B28429	Potassium	5800		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2FKW8	Potassium	6880		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2FL69	Potassium	7670		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2HFB1	Potassium	10400		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2HFL2	Potassium	6610		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B29L24	Silver	8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2CV47	Silver	29		ug/L		R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2CVB8	Silver	24		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2CVC1	Silver	14		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2CVM4	Silver	11		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2CVR7	Silver	19		ug/L	B	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2HF99	Sodium	29000		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2HFL0	Sodium	17900		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2BMV7	Tetrachloroethene	0.67	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2BMW7	Tetrachloroethene	0.46	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2BMX2	Tetrachloroethene	0.43	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2BMV7	Trichloroethene	0.4	1	ug/L	JB	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2HFH6	Vanadium	19.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2HFH8	Vanadium	19.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2HJM5	Vanadium	19.5	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8H1	Vanadium	20.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8H2	Vanadium	14.6	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8H7	Vanadium	13.5	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8H9	Vanadium	10.1	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8J2	Vanadium	28.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8J3	Vanadium	24.4	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8K8	Vanadium	15.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8K9	Vanadium	11	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8L2	Vanadium	17.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8L3	Vanadium	16.8	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8L6	Vanadium	18.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8L7	Vanadium	14.2	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8M0	Vanadium	20.3	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8M1	Vanadium	15.4	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8M6	Vanadium	19.6	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8M8	Vanadium	4.4	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8N1	Vanadium	17.8	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8N2	Vanadium	15.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8N5	Vanadium	18.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8N6	Vanadium	11.7	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8N9	Vanadium	11.9	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8P0	Vanadium	7.8	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8P7	Vanadium	16.6	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8P8	Vanadium	14	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8V3	Vanadium	16.8	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8V4	Vanadium	15.1	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8V7	Vanadium	17.9	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8V8	Vanadium	13.5	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8W5	Vanadium	20.3	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8W6	Vanadium	18.4	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL

Table A-6. Summary of 2011 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2J8W9	Vanadium	9.6	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8X0	Vanadium	8.6	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8X3	Vanadium	13	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8X4	Vanadium	12.1	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8Y1	Vanadium	21	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B2J8Y2	Vanadium	15.8	50	ug/L	B	U	6010_METALS_ICP	Flagged with a U; ≥ MDL but ≤ PQL
B283Y5	Zinc	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B29T63	Zinc	209		ug/L	CN	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B29T64	Zinc	499		ug/L	CN	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2B951	Zinc	483		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2B956	Zinc	519		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2B958	Zinc	421		ug/L	C	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2B959	Zinc	365		ug/L	C	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2B993	Zinc	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2B994	Zinc	11		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2B9B1	Zinc	10		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2B9B2	Zinc	11		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2B9B5	Zinc	303		ug/L	C	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2B9B6	Zinc	234		ug/L	C	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2B9B9	Zinc	197		ug/L	C	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2B9C0	Zinc	432		ug/L	C	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2B9N5	Zinc	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2B9N6	Zinc	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2BMV8	Zinc	236		ug/L	CN	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2BMV9	Zinc	205		ug/L	CN	R	6010_METALS_ICP	Rejected result; professional judgement based on lack of trend.
B2BMW4	Zinc	4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc

Table A-7. Summary of 2012 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2L948	Acetone	1.5	2	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2LKM9	Acetone	0.75	2	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2M123	Aluminum	20.8		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M125	Aluminum	13.2		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M129	Aluminum	10.2		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M135	Aluminum	20.2		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2JR25	Arsenic	4.51		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JR29	Arsenic	4.72		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JTT0	Arsenic	6.28		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JTT8	Arsenic	6.35		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JTV8	Arsenic	8.05		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JTW3	Arsenic	9.51		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JTW7	Arsenic	9.79		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2JTX4	Chromium	8.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KH15	Copper	0.502		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M123	Copper	0.68		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M125	Copper	0.404		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M129	Copper	0.758		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M135	Copper	0.902		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M137	Copper	0.506		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M153	Copper	0.32		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M159	Copper	0.564		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M161	Copper	0.262		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M179	Copper	0.256		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M317	Copper	0.558		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M320	Copper	0.378		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2JTX4	Iron	38.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2JTX7	Iron	19.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2K142	Iron	269		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2K186	Iron	242		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2K189	Iron	236		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2K1M0	Iron	299		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2K1M8	Iron	21.5		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2K494	Iron	293		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2K496	Iron	95.6		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2KMM1	Iron	81.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KMP9	Iron	220		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2KMR1	Iron	73.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KMT6	Iron	178		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2KMV0	Iron	62.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KMW3	Iron	132		ug/L	C	J+	6010_METALS_ICP	Estimated high "J+"; > PQL but < 10x the blank result
B2M9W6	Lead	0.216		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2L8V7	Methylene chloride	1.8		ug/L	J	U	8260_VOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2LKM9	Methylene chloride	0.66	1	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2JTX4	Nickel	5.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M153	Nickel	2.68		ug/L	DC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M155	Nickel	2.18		ug/L	DC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M159	Nickel	3.1		ug/L	DC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M161	Nickel	2.07		ug/L	DC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2L948	Octachlorodibenzo-p-dioxin	0.000002	0.000095	ug/L	BJ	U	8290_DIOXINS_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2M8F0	Octachlorodibenzo-p-dioxin	0.0000017		ug/L	QBJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M8F3	Octachlorodibenzo-p-dioxin	0.0000022		ug/L	BJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M8F6	Octachlorodibenzo-p-dioxin	0.000017		ug/L	BJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M8F9	Octachlorodibenzo-p-dioxin	0.0000037		ug/L	BJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M8H5	Octachlorodibenzo-p-dioxin	0.00000077		ug/L	QBJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M8J4	Octachlorodibenzo-p-dioxin	0.0000011		ug/L	QBJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M8L2	Octachlorodibenzo-p-dioxin	0.0000016		ug/L	QBJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M8L5	Octachlorodibenzo-p-dioxin	0.00000098		ug/L	QBJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M8L8	Octachlorodibenzo-p-dioxin	0.0000012		ug/L	QBJ	U	8290_DIOXINS_GCMS	PQL not provided by lab; result flagged with a "U" at the reported conc

Table A-7. Summary of 2012 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2L948	Sulfide	530		ug/L	BC	U	9030_SULFIDE	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M105	Sulfide	330	1	ug/L	BC	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2M111	Sulfide	530	1	ug/L	BC	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2M153	Sulfide	530	1	ug/L	BC	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2M194	Sulfide	330	1	ug/L	BC	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2M1B0	Sulfide	330	1	ug/L	BC	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2MN41	Sulfide	200	1	ug/L	BC	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2MN74	Sulfide	200	1	ug/L	BC	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2LKM9	Toluene	0.17	1	ug/L	J	U	8260_VOA_GCMS	Flagged with a U; ≥ MDL but ≤ PQL
B2KV32	Vanadium	17.2		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KV37	Vanadium	19.2		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KV41	Vanadium	18.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KV45	Vanadium	21.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KV59	Vanadium	20.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KV63	Vanadium	21.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KV69	Vanadium	18.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KV81	Vanadium	24.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KV85	Vanadium	22.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M0Y3	Vanadium	15.3		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M0Y5	Vanadium	16.6		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M0Y9	Vanadium	15.3		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M101	Vanadium	14.9		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M105	Vanadium	20.3		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M107	Vanadium	20.5		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M111	Vanadium	15.5		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M113	Vanadium	15.5		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M117	Vanadium	21.3		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M119	Vanadium	19.7		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M131	Vanadium	21.3		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M141	Vanadium	16.5		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M143	Vanadium	18.5		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M153	Vanadium	16.9		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M159	Vanadium	15.7		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M161	Vanadium	14.7		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M194	Vanadium	17.7		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M196	Vanadium	17.7		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M1B0	Vanadium	13.8		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2M1B2	Vanadium	15.1		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2KVC3	Zinc	8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KVC4	Zinc	6.9		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2KVD2	Zinc	6.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2LPK4	Zinc	7.4		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2LPK6	Zinc	6.8		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2M159	Zinc	2.1		ug/L	BDC	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc

Table A-8. Summary of 2013 Sample Results Qualified Because of Method Blank, Preparation Blank or Field Blank Contamination

Sample ID	Analyte Name	Value Reported	Value Reported (AFTER VALIDATION)	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2N908	Arsenic	5.94		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2N933	Arsenic	5.24		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2N936	Arsenic	5.53		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NC17	Arsenic	4.38		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NC18	Arsenic	5.22		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NC60	Arsenic	5.26		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NC64	Arsenic	5.14		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NC84	Arsenic	5.33		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NC86	Arsenic	5.26		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NWD7	Arsenic	4.44		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NWD7	Copper	1.57		ug/L	BDC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2N931	Di-n-octylphthalat	1.1		ug/L		U	8270_SVOA_GCMS	Flagged with a U; sample concentration > 2X PQL
B2PP49	Iron	462		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2PP51	Iron	386		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2PP59	Iron	437		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2PPC0	Iron	457		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2PPC2	Iron	396		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2PPD2	Iron	67.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPD4	Iron	67.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPH5	Iron	1000		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2PPH7	Iron	261		ug/L	C		6010_METALS_ICP	No qualification; concentration > 10x blank result
B2PY35	Iron	61.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2N931	Lead	0.514		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2N933	Lead	0.358		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2N935	Lead	0.416		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2N936	Lead	0.315		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PT87	Mercury	1.15		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2P4C4	Molybdenum	2.86		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2P4C6	Molybdenum	2.84		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result
B2NC60	Nickel	15.4		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2NC64	Nickel	11.3		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PP57	Nickel	7.6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PP59	Nickel	5.7		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PP68	Nickel	7.8		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPC0	Nickel	10.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPC2	Nickel	6		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPC4	Nickel	11.7		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPC6	Nickel	7.2		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPD2	Nickel	6.2		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPD4	Nickel	4.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPH5	Nickel	5.1		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PPH7	Nickel	4.3		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2PT74	Nickel	6		ug/L	B	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2NN33	Silver	4.98		ug/L	BC	U	6010_METALS_ICP	PQL not provided by lab; result flagged with a "U" at the reported conc
B2N903	Sulfide	800	1000	ug/L	B	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2N913	Sulfide	330	1000	ug/L	B	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2N929	Sulfide	330	1000	ug/L	B	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2N952	Sulfide	200	1000	ug/L	B	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2N964	Sulfide	600	1000	ug/L	B	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2NWD6	Sulfide	430	1000	ug/L	BC	U	9034_SULFIDE	Flagged with a U; ≥ MDL but ≤ PQL
B2N931	Tin	0.489		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2N933	Tin	0.377		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2N935	Tin	0.379		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2N936	Tin	0.492		ug/L	BD	U	200.8_METALS_ICPMS	PQL not provided by lab; result flagged with a "U" at the reported conc
B2NWD7	Vanadium	19		ug/L	DC		200.8_METALS_ICPMS	No qualification; concentration > 10x blank result

Table A-10. Summary of 2008 Sample Results Qualified Because Laboratory Control Samples Did not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1Y265	Calcium	51600	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y266	Calcium	50000	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y276	Calcium	48500	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y277	Calcium	47600	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y292	Calcium	57800	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y293	Calcium	57300	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y296	Calcium	45500	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y297	Calcium	45700	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y2B0	Calcium	57200	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y2B1	Calcium	57000	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y2B3	Calcium	57900	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y2B7	Calcium	59800	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y2C1	Calcium	57000	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y2D6	Calcium	54400	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1Y2D7	Calcium	53400	ug/L	X	R	6010_METALS_ICP	Rejected result: %R > 150%
B1XM87	Gross alpha	9.9	pCi/L	U	J	ALPHA_GPC	Estimated result: %R < 80
B1Y0T3	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y0T4	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y0X6	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y0X7	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y112	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y113	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y127	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y128	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y142	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y143	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y157	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y158	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y172	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y173	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y187	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y188	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y198	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y199	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y1D8	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y1D9	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y1H3	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y1H4	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y1J8	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y1J9	Mercury	0.05	ug/L	U	R	200.8_METALS_ICPMS	Rejected result; %R < 40%
B1Y1K9	Mercury	0.11	ug/L		J-	200.8_METALS_ICPMS	Estimated low; %R < 40%
B1Y1L0	Mercury	0.11	ug/L		J-	200.8_METALS_ICPMS	Estimated low; %R < 40%
B1WJK4	Potassium	11200	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120
B1WJK5	Potassium	11400	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120
B1WKW4	Potassium	11100	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120
B1WKW5	Potassium	10600	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120

Table A-10. Summary of 2008 Sample Results Qualified Because Laboratory Control Samples Did not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1X7B6	Sulfate	108000	ug/L	D		300.0_ANIONS_IC	Functional guidelines not available.
B1X800	Sulfate	76700	ug/L	D		300.0_ANIONS_IC	Functional guidelines not available.
B1X8M4	Sulfate	58900	ug/L	D		300.0_ANIONS_IC	Functional guidelines not available.
B1RV46	Tritium	15000	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1XWH8	Tritium	2400	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1XWJ6	Tritium	2900	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1XWJ8	Tritium	2300	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1XWK0	Tritium	8600	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1XWK4	Tritium	9500	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1XWK8	Tritium	8500	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1XWK9	Tritium	22000	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1XWL0	Tritium	7300	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R > 40 and <80
B1W5D2	Uranium-235	0.148	pCi/L	U	J	UISO_PLATE_AEA	Estimated result: %R < 80

Table A-11. Summary of 2009 Sample Results Qualified Because Laboratory Control Samples Did not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B20P28	Carbon-14	2.42	pCi/L	U	J	C14_LSC	Estimated result: %R < 70
B20P31	Carbon-14	128	pCi/L		J-	C14_LSC	Estimated low; %R < 70
B20P40	Carbon-14	43.1	pCi/L		J-	C14_LSC	Estimated low; %R < 70
B20P44	Carbon-14	37.3	pCi/L		J-	C14_LSC	Estimated low; %R < 70
B20P48	Carbon-14	16.4	pCi/L		J-	C14_LSC	Estimated low; %R < 70
B20P54	Carbon-14	-4.66	pCi/L	U	J	C14_LSC	Estimated result: %R < 70
B20PC5	Carbon-14	3.66	pCi/L	U	J	C14_LSC	Estimated result: %R < 70
B1YTP9	Cyanide	4	ug/L	UX	J	335.2_CYANIDE	Estimated result: %R < 85
B1YTR8	Cyanide	4	ug/L	UX	J	335.2_CYANIDE	Estimated result: %R < 85
B1YTT0	Cyanide	5.28	ug/L	BX	J-	335.2_CYANIDE	Estimated low; %R > 40 and <85
B1YTT8	Cyanide	4	ug/L	UX	J	335.2_CYANIDE	Estimated result: %R < 85
B1YTV1	Cyanide	4	ug/L	UX	J	335.2_CYANIDE	Estimated result: %R < 85
B1YTV4	Cyanide	4	ug/L	UX	J	335.2_CYANIDE	Estimated result: %R < 85
B221X7	Gross alpha	5.9	pCi/L		J-	ALPHA_GPC	Estimated low; %R > 40 and <80
B22Y88	Gross alpha	1.6	pCi/L	U	J	ALPHA_GPC	Estimated result: %R < 80
B23287	Gross alpha	2.3	pCi/L		J-	ALPHA_GPC	Estimated low; %R > 40 and <80
B23292	Gross alpha	2.6	pCi/L		J-	ALPHA_GPC	Estimated low; %R > 40 and <80
B232C2	Gross alpha	0.38	pCi/L	U	J	ALPHA_GPC	Estimated result: %R < 80
B232D4	Gross alpha	0.89	pCi/L	U	J	ALPHA_GPC	Estimated result: %R < 80
B20PH7	Gross beta	6.9	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22L59	Gross beta	8600	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22L77	Gross beta	14000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22L84	Gross beta	6100	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22L88	Gross beta	3900	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22L95	Gross beta	8100	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22LC8	Gross beta	16000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22M67	Gross beta	36	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22M86	Gross beta	9600	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22M95	Gross beta	16000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22M99	Gross beta	4200	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22MC1	Gross beta	130	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22MF9	Gross beta	2600	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22MH5	Gross beta	3200	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22MJ3	Gross beta	9300	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22MJ6	Gross beta	28	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B22MK4	Gross beta	260	pCi/L		J+	BETA_GPC	Estimated high; %R > 120
B1YTR9	Mercury	0.05	ug/L	U	J	200.8_METALS_ICPMS	Estimated result: %R < 85
B1YTT4	Mercury	0.05	ug/L	U	J	200.8_METALS_ICPMS	Estimated result: %R < 85
B21X40	Technetium-99	52	pCi/L		J-	TC99_3MDSK_LSC	Estimated low: %R < 70
B21Y20	Technetium-99	24	pCi/L		J-	TC99_3MDSK_LSC	Estimated low: %R < 70
B21Y42	Technetium-99	44	pCi/L		J-	TC99_3MDSK_LSC	Estimated low: %R < 70

Table A-12. Summary of 2010 Sample Results Qualified Because Laboratory Control Samples Did not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B254M0	Thorium-228	0.385	pCi/L	U	R	THISO_IE_PRECIP_AEA	Rejected result; %R < 40%
B254M8	Thorium-228	0.285	pCi/L	U	R	THISO_IE_PRECIP_AEA	Rejected result; %R < 40%
B254M4	Thorium-228	0.372	pCi/L	U	R	THISO_IE_PRECIP_AEA	Rejected result; %R < 40%
B24N67	Thorium-228	0.172	pCi/L	U	R	THISO_IE_PRECIP_AEA	Rejected result; %R < 40%
B254L2	Thorium-228	0.344	pCi/L		J-	THISO_IE_PRECIP_AEA	Estimated low; %R < 40%
B254L6	Thorium-228	0.25	pCi/L	U	R	THISO_IE_PRECIP_AEA	Rejected result; %R < 40%
B254L2	Thorium-232	0	pCi/L	U	R	THISO_IE_PRECIP_AEA	Rejected result; %R < 40%
B254L6	Thorium-232	0	pCi/L	U	R	THISO_IE_PRECIP_AEA	Rejected result; %R < 40%
B24R30	Gross alpha	0.38	pCi/L	U	J	ALPHA_GPC	Estimated result; %R < 80
B24R85	Gross alpha	1.2	pCi/L	U	J	ALPHA_GPC	Estimated result; %R < 80
B24RF0	Gross alpha	0.12	pCi/L	U	J	ALPHA_GPC	Estimated result; %R < 80
B24NC4	Gross alpha	-0.48	pCi/L	U	J	ALPHA_GPC	Estimated result; %R < 80
B24NB0	Gross alpha	-0.48	pCi/L	U	J	ALPHA_GPC	Estimated result; %R < 80
B259D4	Gross alpha	2.6	pCi/L		J-	ALPHA_GPC	Estimated low: %R < 80
B25PL5	Total beta radiostrontium	350	pCi/L		J+	SRTOT_SEP_PRECIP_GPC	Estimated high; %R > 120%
B26KX9	Tritium	16000	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80%
B26TM1	Gross beta	10000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B26KX9	Gross beta	11000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B27X90	Potassium	5490	ug/L	X	J-	6010_METALS_ICP	Estimated low: %R < 40%
B27X91	Potassium	5610	ug/L	X	J-	6010_METALS_ICP	Estimated low: %R < 40%
B27X24	Potassium	3230	ug/L	X	J-	6010_METALS_ICP	Estimated low: %R < 40%
B27X25	Potassium	3100	ug/L	X	J-	6010_METALS_ICP	Estimated low: %R < 40%
B29RL8	Gross beta	14000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B29149	Iron	38	ug/L	UX		6010_METALS_ICP	No qualification required.
B29150	Iron	38	ug/L	UX		6010_METALS_ICP	No qualification required.
B2CK74	Gross beta	350	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B265R7	Total alpha energy emitted from Radium	1	pCi/L		J-	RATOT_GPC	Estimated low: %R < 80%
B26M22	Total alpha energy emitted from Radium	-0.072	pCi/L	U	J	RATOT_GPC	Estimated result: %R < 80
B25062	Total alpha energy emitted from Radium	0.004	pCi/L	U	J	RATOT_GPC	Estimated result: %R < 80
B25064	Total alpha energy emitted from Radium	-0.004	pCi/L	U	J	RATOT_GPC	Estimated result: %R < 80
B25068	Total alpha energy emitted from Radium	-0.034	pCi/L	U	J	RATOT_GPC	Estimated result: %R < 80
B25069	Total alpha energy emitted from Radium	0.098	pCi/L	U	J	RATOT_GPC	Estimated result: %R < 80
B25067	Total alpha energy emitted from Radium	0.077	pCi/L	U	J	RATOT_GPC	Estimated result: %R < 80

Table A-13. Summary of 2011 Sample Results Qualified Because Laboratory Control Samples Did not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2B952	Gross beta	440	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B959	Gross beta	8400	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B971	Gross beta	13000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B979	Gross beta	1200	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B990	Gross beta	72	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B9C0	Gross beta	12000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B9D9	Gross beta	18000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B9F7	Gross beta	39	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B9P4	Gross beta	52	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2B9P8	Gross beta	120	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2BTC6	Gross beta	8.8	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2CV54	Gross beta	3000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2FL22	Gross beta	1500	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2FL37	Gross beta	1900	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2FL42	Gross beta	60	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2FL47	Gross beta	170	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2FL77	Gross beta	22000	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2FL94	Gross beta	3400	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2FLB1	Gross beta	590	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B2FLB6	Gross beta	9700	pCi/L		J+	BETA_GPC	Estimated high; %R > 120%
B29HH6	Potassium	5810	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120%
B29HH7	Potassium	5770	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120%
B290N8	Sodium	18200	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120%
B290N9	Sodium	18400	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120%
B2JHW8	Sodium	15400	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120%
B2JHX0	Sodium	16100	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120%
B2JJ56	Sodium	13200	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120%
B2JJ60	Sodium	13100	ug/L	X	J+	6010_METALS_ICP	Estimated high; %R > 120%
B2BTC6	Total beta radiostrontium	2.3	pCi/L		J+	SRTOT_SEP_PRECIP_GPC	Estimated high; %R > 120
B2DPD4	Total beta radiostrontium	350	pCi/L		J-	SRTOT_SEP_PRECIP_GPC	Estimate low: %R < 80
B2DT70	Total beta radiostrontium	1.1	pCi/L	U	j	SRTOT_SEP_PRECIP_GPC	Estimated result; %R < 80
B2DV47	Total beta radiostrontium	4.6	pCi/L		J-	SRTOT_SEP_PRECIP_GPC	Estimate low: %R < 80
B2F499	Total beta radiostrontium	200	pCi/L		J+	SRTOT_SEP_PRECIP_GPC	Estimated high; %R > 120
B2FL72	Total beta radiostrontium	2.3	pCi/L		J+	SRTOT_SEP_PRECIP_GPC	Estimated high; %R > 120
B2CK79	Tritium	10000	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80
B2CVB1	Tritium	3900	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80
B2F6T2	Tritium	6.3	pCi/L	U	J	TRITIUM_EIE_LSC	Estimated result; %R < 80
B2F6W0	Tritium	-39	pCi/L	U	J	TRITIUM_EIE_LSC	Estimated result; %R < 80
B2FL01	Tritium	1500	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80
B2FL17	Tritium	5200	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80
B2FL52	Tritium	12000	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80
B2FL57	Tritium	8000	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80
B2FL62	Tritium	8700	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80
B2FLD6	Tritium	23000	pCi/L		J-	TRITIUM_EIE_LSC	Estimated low; %R < 80

Table A-14. Summary of 2012 Sample Results Qualified Because Laboratory Control Samples Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2M0Y2	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M0Y8	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M104	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M110	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M116	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M122	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M128	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M134	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M140	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M146	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M152	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M158	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M176	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M182	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M193	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M199	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M9X1	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	0.16	ug/L	U	R	8151_HERBICIDE_GC	Rejected result; %R < 52
B2M0Y2	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M0Y8	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M104	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M110	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M116	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M122	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M128	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M134	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M140	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M146	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M152	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M158	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M176	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M182	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	UO	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M193	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M199	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2M9X1	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	0.14	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 44
B2MN41	4,4'-DDD (Dichlorodiphenyldichloroethane)	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 83%
B2MN46	4,4'-DDD (Dichlorodiphenyldichloroethane)	0.0099	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 83%
B2MN62	4,4'-DDD (Dichlorodiphenyldichloroethane)	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 83%
B2MN74	4,4'-DDD (Dichlorodiphenyldichloroethane)	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 83%
B2MN26	4,4'-DDE (Dichlorodiphenyldichloroethylene)	0.013	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2MN41	4,4'-DDE (Dichlorodiphenyldichloroethylene)	0.014	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN46	4,4'-DDE (Dichlorodiphenyldichloroethylene)	0.014	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN62	4,4'-DDE (Dichlorodiphenyldichloroethylene)	0.013	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN74	4,4'-DDE (Dichlorodiphenyldichloroethylene)	0.014	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN41	4,4'-DDT (Dichlorodiphenyltrichloroethane)	0.022	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 79%
B2MN46	4,4'-DDT (Dichlorodiphenyltrichloroethane)	0.023	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 79%
B2MN62	4,4'-DDT (Dichlorodiphenyltrichloroethane)	0.022	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 79%
B2MN74	4,4'-DDT (Dichlorodiphenyltrichloroethane)	0.023	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 79%
B2M0Y2	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M0Y8	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M104	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M110	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M116	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M122	Aldrin	0.0094	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M128	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M134	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M140	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76

Table A-14. Summary of 2012 Sample Results Qualified Because Laboratory Control Samples Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2M146	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M152	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M158	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M176	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M182	Aldrin	0.0094	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 76
B2M193	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M199	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M9X1	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2MN26	Aldrin	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 76
B2MN36	Aldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R <76
B2MN41	Aldrin	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 76%
B2MN46	Aldrin	0.0099	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 76%
B2MN62	Aldrin	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 76%
B2MN74	Aldrin	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 76%
B2K455	Allyl chloride	0.11	ug/L	U		8260_VOA_GCMS	No LCS/LCSD criteria
B2K4D5	Allyl chloride	0.11	ug/L	U		8260_VOA_GCMS	No LCS/LCSD criteria
B2MN41	Alpha-BHC	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 82%
B2MN46	Alpha-BHC	0.0099	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 82%
B2MN62	Alpha-BHC	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 82%
B2MN74	Alpha-BHC	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 82%
B2M105	Bromoform	1	ug/L	UXT		8260_VOA_GCMS	No LCS/LCSD criteria
B2M117	Bromoform	1	ug/L	UXT		8260_VOA_GCMS	No LCS/LCSD criteria
B2M1B0	Bromoform	1	ug/L	UXT		8260_VOA_GCMS	No LCS/LCSD criteria
B2M0Y2	Dicamba	0.28	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M0Y8	Dicamba	0.27	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M104	Dicamba	0.28	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M110	Dicamba	0.28	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M116	Dicamba	0.28	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M122	Dicamba	0.27	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M128	Dicamba	0.28	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M134	Dicamba	0.27	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M140	Dicamba	0.27	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M146	Dicamba	0.28	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M152	Dicamba	0.28	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M158	Dicamba	0.28	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M176	Dicamba	0.28	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M182	Dicamba	0.27	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M193	Dicamba	0.28	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M199	Dicamba	0.28	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M9X1	Dicamba	0.27	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 55
B2M0Y2	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M0Y8	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M104	Dichloroprop	1.6	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M110	Dichloroprop	1.7	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M116	Dichloroprop	1.6	ug/L	UO	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M122	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M128	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M134	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M140	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M146	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M152	Dichloroprop	1.6	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M158	Dichloroprop	1.6	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M176	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M182	Dichloroprop	1.6	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M193	Dichloroprop	1.6	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M199	Dichloroprop	1.6	ug/L	UON	R	8151_HERBICIDE_GC	Rejected result: %R < 45
B2M9X1	Dichloroprop	1.6	ug/L	U	R	8151_HERBICIDE_GC	Rejected result: %R < 45

Table A-14. Summary of 2012 Sample Results Qualified Because Laboratory Control Samples Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2M0Y2	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M0Y8	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M104	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M110	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M116	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M122	Dieldrin	0.0094	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M128	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M134	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M140	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M146	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M152	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M158	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M176	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M182	Dieldrin	0.0094	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 81
B2M193	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M199	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M9X1	Dieldrin	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2MN26	Dieldrin	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 81
B2MN41	Dieldrin	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 81%
B2MN46	Dieldrin	0.0099	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 81%
B2MN62	Dieldrin	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 81%
B2MN74	Dieldrin	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 81%
B2L948	Endosulfan I	0.01	ug/L	UON	R	8081_PEST_GC	Rejected result; %R < 70
B2L948	Endosulfan II	0.01	ug/L	UON	R	8081_PEST_GC	Rejected result; %R < 70
B2M0Y2	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M0Y8	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M104	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M110	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M116	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M122	Endosulfan sulfate	0.0094	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M128	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M134	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M140	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M146	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M152	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M158	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M176	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M182	Endosulfan sulfate	0.0094	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 81
B2M193	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M199	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2M9X1	Endosulfan sulfate	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 81
B2MN26	Endosulfan sulfate	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 82
B2MN41	Endosulfan sulfate	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 82%
B2MN46	Endosulfan sulfate	0.0099	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 82%
B2MN62	Endosulfan sulfate	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 82%
B2MN74	Endosulfan sulfate	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 82%
B2M0Y2	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M0Y8	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M104	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M110	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M116	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M122	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M128	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M134	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M140	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M146	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M152	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85

Table A-14. Summary of 2012 Sample Results Qualified Because Laboratory Control Samples Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2M158	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M176	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M182	Endrin	0.017	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 85
B2M193	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M199	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2M9X1	Endrin	0.017	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 85
B2MN26	Endrin	0.017	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 81
B2MN41	Endrin	0.018	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 85%
B2MN46	Endrin	0.018	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 85%
B2MN62	Endrin	0.017	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 85%
B2MN74	Endrin	0.018	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 85%
B2L948	Endrin aldehyde	0.01	ug/L	UON	R	8081_PEST_GC	Rejected result; %R < 70
B2M0Y2	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M0Y8	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M104	Endrin aldehyde	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 78
B2M110	Endrin aldehyde	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 78
B2M116	Endrin aldehyde	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 78
B2M122	Endrin aldehyde	0.0094	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M128	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M134	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M140	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M146	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M152	Endrin aldehyde	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 78
B2M158	Endrin aldehyde	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 78
B2M176	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M182	Endrin aldehyde	0.0094	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2M193	Endrin aldehyde	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 78
B2M199	Endrin aldehyde	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 78
B2M9X1	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2MN26	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 78
B2MN31	Endrin aldehyde	0.0096	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN51	Endrin aldehyde	0.0096	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN56	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN70	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN80	Endrin aldehyde	0.0096	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN88	Endrin aldehyde	0.0096	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN93	Endrin aldehyde	0.01	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MN98	Endrin aldehyde	0.0097	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MNB4	Endrin aldehyde	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2MNB9	Endrin aldehyde	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 78%
B2M0Y2	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M0Y8	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M104	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M110	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M116	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M122	Gamma-BHC (Lindane)	0.0094	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M128	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M134	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M140	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M146	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M152	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M158	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M176	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M182	Gamma-BHC (Lindane)	0.0094	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 80
B2M193	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M199	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80
B2M9X1	Gamma-BHC (Lindane)	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 80

Table A-14. Summary of 2012 Sample Results Qualified Because Laboratory Control Samples Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2MN41	Gamma-BHC (Lindane)	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 80%
B2MN46	Gamma-BHC (Lindane)	0.0099	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 80%
B2MN62	Gamma-BHC (Lindane)	0.0095	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 80%
B2MN74	Gamma-BHC (Lindane)	0.0098	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 80%
B2M4T5	Gross beta	29	pCi/L		J-	BETA_GPC	Estimated low; %R< 80
B2M4W4	Gross beta	1400	pCi/L		J-	BETA_GPC	Estimated low; %R< 80
B2M0Y2	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M0Y8	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M104	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M110	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M116	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M122	Heptachlor	0.0094	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M128	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M134	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M140	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M146	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M152	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M158	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M176	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M182	Heptachlor	0.0094	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 76
B2M193	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M199	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M9X1	Heptachlor	0.0095	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 76
B2M0Y2	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M0Y8	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M104	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M110	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M116	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M122	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M128	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M134	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M140	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M146	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M152	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M158	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M176	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M182	Heptachlor epoxide	0.016	ug/L	UO	R	8081_PEST_GC	Rejected result; %R < 79
B2M193	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M199	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2M9X1	Heptachlor epoxide	0.016	ug/L	U	R	8081_PEST_GC	Rejected result; %R < 79
B2MN41	Heptachlor epoxide	0.017	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 76%
B2MN46	Heptachlor epoxide	0.017	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 76%
B2MN62	Heptachlor epoxide	0.016	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 76%
B2MN74	Heptachlor epoxide	0.017	ug/L	UO	R	8081_PEST_GC	Rejected result; % R < 76%
B2M8J2	Mercury	0.1	ug/L	UDX	J	200.8_METALS_ICPMS	Estimated result; %R < 85
B2M8J3	Mercury	0.1	ug/L	UDX	J	200.8_METALS_ICPMS	Estimated result; %R < 85
B2M8J8	Mercury	0.1	ug/L	UDO	J	200.8_METALS_ICPMS	Estimated result; %R < 85
B2K491	Methyl methacrylate	0.26	ug/L	U		8260_VOA_GCMS	No LCS/LCSD criteria
B2L8R5	Tributyl phosphate	0.9	ug/L	UXT		8270_SVOA_GCMS	No LCS/LCSD criteria
B2L8T0	Tributyl phosphate	0.9	ug/L	UXT		8270_SVOA_GCMS	No LCS/LCSD criteria

Table A-15. Summary of 2013 Sample Results Qualified Because Laboratory Control Samples Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2PBB5	Gross alpha	12	pCi/L		J-	ALPHA_GPC	Estimated low; %R < 80
B2PBC1	Gross alpha	7.8	pCi/L		J-	ALPHA_GPC	Estimated low; %R < 80
B2PDR4	Gross alpha	2.1	pCi/L	U	J	ALPHA_GPC	Estimated result; %R < 80
B2PDT4	Gross alpha	-0.87	pCi/L	U	J	ALPHA_GPC	Estimated result; %R < 80
B2PDT8	Gross alpha	1.2	pCi/L	U	J	ALPHA_GPC	Estimated result; %R < 80
B2PJL2	Gross alpha	4.4	pCi/L		J-	ALPHA_GPC	Estimated low; %R < 80
B2PJM1	Gross alpha	4.7	pCi/L		J-	ALPHA_GPC	Estimated low; %R < 80
B2PJN0	Gross alpha	11	pCi/L		J-	ALPHA_GPC	Estimated low; %R < 80
B2PP45	Gross alpha	49	pCi/L		J-	ALPHA_GPC	Estimated low; %R < 80
B2PB93	Gross beta	24	pCi/L		J-	BETA_GPC	Estimated low; %R < 80
B2PBB5	Gross beta	54	pCi/L		J-	BETA_GPC	Estimated low; %R < 80
B2PBC1	Gross beta	340	pCi/L		J-	BETA_GPC	Estimated low; %R < 80
B2PP45	Gross beta	2000	pCi/L		J-	BETA_GPC	Estimated low; %R < 80
B2NWD7	Selenium	2	ug/L	UDO	J	200.8_METALS_ICPMS	Estimated result; %R < 85
B2PY47	Uranium	5.76	ug/L	DO	J+	200.8_METALS_ICPMS	Estimated high; %R > 115
B2RMK2	Uranium	3.33	ug/L	O	J+	200.8_METALS_ICPMS	Estimated high; %R > 115

Table A-17. Summary of 2008 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1W5C8	Calcium	21800	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1W5C9	Calcium	21600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1X5V0	Calcium	46400	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1X5V1	Calcium	45300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1X744	Calcium	29200	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1X745	Calcium	28600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1X7D8	Calcium	32600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1X7D9	Calcium	32200	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1V7V7	Chloride	23400	ug/L	DN	J	300.0_ANIONS_IC	Previously qualified
B1V7X3	Chloride	243000	ug/L	DN	J	300.0_ANIONS_IC	Previously qualified
B1V7N8	Cyanide	4	ug/L	NU	J	335.2_CYANIDE	Estimated; %R 30-74
B1V7P5	Cyanide	4	ug/L	NU	J	335.2_CYANIDE	Estimated; %R 30-74
B1V7P9	Cyanide	4	ug/L	NU	J	335.2_CYANIDE	Estimated; %R 30-74
B1V8X1	Cyanide	4	ug/L	NU	J	335.2_CYANIDE	Estimated; %R 30-74
B1VNX1	Cyanide	4	ug/L	NU	J	335.2_CYANIDE	Estimated; %R 30-74
B1VNY8	Cyanide	9.5	ug/L	CN	J	335.2_CYANIDE	Previously rejected
B1VP12	Cyanide	4	ug/L	NU	J	335.2_CYANIDE	Estimated; %R 30-74
B1VP32	Cyanide	4	ug/L	NU	J	335.2_CYANIDE	Estimated; %R 30-74
B1VP64	Cyanide	4	ug/L	NU	J	335.2_CYANIDE	Estimated; %R 30-74
B1VP80	Cyanide	4.3	ug/L	CN	J	335.2_CYANIDE	Previously rejected
B1VP96	Cyanide	11.5	ug/L	CN	J	335.2_CYANIDE	Previously rejected
B1W2X7	Cyanide	7180	ug/L	DN	J-	335.2_CYANIDE	Estimated low; %R 30-74
B1TWK6	Iron	67.5	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1TWK7	Iron	197	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1V7W7	Iron	20	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B1V7X0	Iron	368	ug/L	N	R	6010_METALS_ICP	Rejected result; %R <30
B1V8H8	Iron	38.8	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1V8Y6	Iron	49.2	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1V8Y7	Iron	209	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1V7W7	Magnesium	21300	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B1V7X0	Magnesium	21900	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B1W231	Magnesium	27200	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B1W232	Magnesium	27200	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B1X7B5	Magnesium	15000	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1X800	Magnesium	13000	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1X8M3	Magnesium	10700	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1X8M4	Magnesium	10700	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1T5F5	Nitrogen in Nitrate	314000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >125
B1X798	Nitrogen in Nitrate	12900	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%
B1X7B2	Nitrogen in Nitrate	9960	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%
B1X7C0	Nitrogen in Nitrate	18700	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%
B1X7C4	Nitrogen in Nitrate	27300	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%
B1X7W8	Nitrogen in Nitrate	11500	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%
B1X7X9	Nitrogen in Nitrate	13900	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%
B1X811	Nitrogen in Nitrate	10500	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%

Table A-17. Summary of 2008 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1X845	Nitrogen in Nitrate	19100	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%
B1X8D8	Nitrogen in Nitrate	52200	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R<80%
B1VLH3	Nitrogen in Nitrite	65	ug/L	DU		300.0_ANIONS_IC	Estimated result: %R <80
B1VMP9	Nitrogen in Nitrite	407	ug/L	BD		300.0_ANIONS_IC	Estimated result: %R <80
B1VN10	Nitrogen in Nitrite	65	ug/L	DNU		300.0_ANIONS_IC	Estimated result: %R <80
B1X745	Nitrogen in Nitrite	98.5	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result: %R <80
B1TWF9	Potassium	6780	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1TWJ9	Potassium	10200	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1TWK3	Potassium	16600	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1TWL5	Potassium	7130	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1V120	Potassium	6380	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B1XM43	Potassium	14800	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1XM44	Potassium	14900	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1XM47	Potassium	8250	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1XM48	Potassium	8010	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1XM60	Potassium	11300	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1XM61	Potassium	11200	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1V7W8	Silver	5.1	ug/L	BC	R	6010_METALS_ICP	Rejected result; %R <30
B1V7W9	Silver	17	ug/L	BC	R	6010_METALS_ICP	Rejected result; %R <30
B1VLP4	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VLP5	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VLP8	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VLP9	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VM29	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNC3	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNC4	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VND8	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VND9	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNH3	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNH4	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNL7	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNL8	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNN9	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNP0	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNR9	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1VNT0	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1WJK4	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1WJK5	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1WKW4	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1WKW5	Silver	5	ug/L	NU	R	6010_METALS_ICP	Rejected result; %R <30
B1X5V0	Sodium	14300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1X5V1	Sodium	14500	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B1X7B5	Sodium	20800	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1X800	Sodium	19900	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1X8M3	Sodium	17400	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1X8M4	Sodium	17200	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74

Table A-17. Summary of 2008 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1X8F2	Total petroleum hydrocarbons - gasoline range	50	ug/L	U	J-	WTPH_GASOLINE	Estimated low; %R<80%

Table A-18. Summary of 2009 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B20W20	Calcium	262000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W21	Calcium	237000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W23	Calcium	217000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W24	Calcium	233000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W26	Calcium	62200	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W27	Calcium	54700	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W29	Calcium	300000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W30	Calcium	268000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W37	Calcium	267000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W38	Calcium	285000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W40	Calcium	57800	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W41	Calcium	55100	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W43	Calcium	65400	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W44	Calcium	63900	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W46	Calcium	308000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W47	Calcium	276000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B22L88	Calcium	13900	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B22Y83	Calcium	89800	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B22Y84	Calcium	92700	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B23286	Calcium	49000	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B23287	Calcium	48700	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B23291	Calcium	63500	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B23292	Calcium	62500	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B1YTY2	Chloride	51600	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >125
B1YTY6	Chloride	50400	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >125
B1YV00	Chloride	21500	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >125
B204T5	Chloride	13300	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low: %R < 75
B22673	Chromium	8.59	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B22674	Chromium	6.69	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B22682	Chromium	4.59	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B22683	Chromium	5.48	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B1YTX8	Cyanide	4.4	ug/L	BDN	J-	335.2_CYANIDE	Estimated low; %R 30-74
B1YTY2	Cyanide	1290	ug/L	DN	J-	335.2_CYANIDE	Estimated low; %R 30-74
B1YTY6	Cyanide	1020	ug/L	DN	J-	335.2_CYANIDE	Estimated low; %R 30-74
B1YV00	Cyanide	2.46	ug/L	BDN	J-	335.2_CYANIDE	Estimated low; %R 30-74
B1YV04	Cyanide	2.22	ug/L	BDNX	J-	335.2_CYANIDE	Estimated low; %R 30-74
B1YV08	Cyanide	116	ug/L	DN	J-	335.2_CYANIDE	Estimated low; %R 30-74
B1YV13	Cyanide	2	ug/L	UDN	J	335.2_CYANIDE	Estimated; %R 30-74
B1YV15	Cyanide	2	ug/L	UDN	J	335.2_CYANIDE	Estimated; %R 30-74
B20J48	Cyanide	4.5	ug/L	BN	J	9012_CYANIDE	Estimated; %R both high and low
B20VF3	Cyanide	4.5	ug/L	BN	J	9012_CYANIDE	Estimated; %R both high and low

Table A-18. Summary of 2009 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B20VP8	Cyanide	14.4	ug/L	N	J	9012_CYANIDE	Estimated; %R both high and low
B20W21	Cyanide	506	ug/L	DN	J	9012_CYANIDE	Estimated; %R both high and low
B20W24	Cyanide	434	ug/L	N	J	9012_CYANIDE	Estimated; %R both high and low
B20W27	Cyanide	7	ug/L	N	J	9012_CYANIDE	Estimated; %R both high and low
B20W30	Cyanide	1050	ug/L	DN	J	9012_CYANIDE	Estimated; %R both high and low
B20W38	Cyanide	775	ug/L	DN	J	9012_CYANIDE	Estimated; %R both high and low
B20W41	Cyanide	5.4	ug/L	N	J	9012_CYANIDE	Estimated; %R both high and low
B20W47	Cyanide	967	ug/L	DN	J	9012_CYANIDE	Estimated; %R both high and low
B1YVB4	Hexavalent Chromium	5.4	ug/L		J+	7196_CR6	Estimated high; %R >125
B20HW1	Hexavalent Chromium	25	ug/L		J+	7196_CR6	Estimated high; %R >125
B20HW2	Hexavalent Chromium	66	ug/L		J+	7196_CR6	Estimated high; %R >125
B202X2	Iron	49.4	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B202X5	Iron	280	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20373	Iron	41.5	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W20	Magnesium	77000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W23	Magnesium	60100	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W26	Magnesium	19600	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W29	Magnesium	78300	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W37	Magnesium	78300	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W40	Magnesium	18000	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W43	Magnesium	20400	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W46	Magnesium	79000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B22L88	Magnesium	10500	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B22Y83	Magnesium	26200	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B22Y84	Magnesium	26100	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23286	Magnesium	13600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23287	Magnesium	13400	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23291	Magnesium	17300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23292	Magnesium	17400	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B20VD7	Nitrogen in Nitrite	9.85	ug/L	UN	J	300.0_ANIONS_IC	Estimated result; %R <75
B20W33	Nitrogen in Nitrite	2730	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low: %R < 75
B20W21	Potassium	16700	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20W24	Potassium	19000	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20W27	Potassium	5570	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20W30	Potassium	18500	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20W38	Potassium	18000	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20W41	Potassium	7700	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20W44	Potassium	7730	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20W47	Potassium	20900	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B20W32	Sodium	778000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W33	Sodium	807000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W20	Strontium	1700	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125

Table A-18. Summary of 2009 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B20W21	Strontium	1410	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W23	Strontium	1420	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W24	Strontium	1510	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W26	Strontium	353	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W27	Strontium	275	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W29	Strontium	2040	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W30	Strontium	1730	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W37	Strontium	1590	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W38	Strontium	1570	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W40	Strontium	324	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W41	Strontium	280	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W43	Strontium	365	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W44	Strontium	317	ug/L	BDN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W46	Strontium	2000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W47	Strontium	1660	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B20W32	Thallium	0.79	ug/L	BN	J-	6020_METALS_ICPMS	Estimated low; %R 30-74
B20W33	Thallium	0.63	ug/L	BN	J-	6020_METALS_ICPMS	Estimated low; %R 30-74
B20HN9	Uranium	3.83	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B20NX4	Uranium	19.8	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B20P26	Uranium	3.27	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B20P34	Uranium	71.4	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B20P38	Uranium	319	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B20P42	Uranium	5550	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B20P46	Uranium	353	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B20P52	Uranium	2.35	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B21958	Uranium	5300	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B219N1	Uranium	793	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B219Y6	Uranium	412	ug/L		J+	200.8_METALS_ICPMS	Estimated high; %R >125
B22L84	Uranium	3040	ug/L	D	J-	200.8_METALS_ICPMS	Estimated low; %R<30
B22L88	Uranium	2980	ug/L	D	J-	200.8_METALS_ICPMS	Estimated low; %R<30

Table A-19. Summary of 2010 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B23220	Calcium	56600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23221	Calcium	57700	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY0	Calcium	58400	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY1	Calcium	57400	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY4	Calcium	189000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY5	Calcium	190000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY8	Calcium	138000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY9	Calcium	138000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23V05	Calcium	152000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23V06	Calcium	150000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23V33	Calcium	60700	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23V34	Calcium	62500	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23X82	Calcium	160000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23X83	Calcium	162000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23XB3	Calcium	191000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23XB4	Calcium	195000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B24LT8	Chromium	1	ug/L	UD	R	200.8_METALS_ICPMS	Rejected result; %R <30
B24LT9	Chromium	1	ug/L	UD	R	200.8_METALS_ICPMS	Rejected result; %R <30
B25PD8	Iron	121	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B25PD9	Iron	410	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B25PP4	Iron	38	ug/L	UN	J+	6010_METALS_ICP	Estimated high; %R >125
B25PP5	Iron	205	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B279X5	Iron	38	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B279X9	Iron	57	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B27B00	Iron	354	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B290M4	Iron	38	ug/L	UN	J+	6010_METALS_ICP	Estimated high; %R >125
B290M7	Iron	38	ug/L	UN	J+	6010_METALS_ICP	Estimated high; %R >125
B290N4	Iron	38	ug/L	UN	J+	6010_METALS_ICP	Estimated high; %R >125
B290N5	Iron	38	ug/L	UN	J+	6010_METALS_ICP	Estimated high; %R >125
B290V3	Iron	108	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B290V4	Iron	120	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B290W1	Iron	38	ug/L	UN	J+	6010_METALS_ICP	Estimated high; %R >125
B290W2	Iron	38	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B23220	Magnesium	16600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23221	Magnesium	17300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY0	Magnesium	17200	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY1	Magnesium	17300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY4	Magnesium	53900	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY5	Magnesium	57500	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY8	Magnesium	41000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23TY9	Magnesium	39300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23V05	Magnesium	44700	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23V06	Magnesium	42400	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23V33	Magnesium	17200	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23V34	Magnesium	16900	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23X82	Magnesium	59600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23X83	Magnesium	55300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125

Table A-19. Summary of 2010 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B23XB3	Magnesium	56300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B23XB4	Magnesium	59200	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B24935	Magnesium	9250	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B24M77	Nitrogen in Nitrate	704	ug/L	BDN	J+	300.0_ANIONS_IC	Estimated high; %R >125
B24NP7	Nitrogen in Nitrate	1420	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >125
B24935	Potassium	4730	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B27X24	Potassium	3230	ug/L	X	J-	6010_METALS_ICP	Estimated low; %R <30
B27X25	Potassium	3100	ug/L	X	J-	6010_METALS_ICP	Estimated low; %R <30
B27X90	Potassium	5490	ug/L	X	J-	6010_METALS_ICP	Estimated low; %R <30
B27X91	Potassium	5610	ug/L	X	J-	6010_METALS_ICP	Estimated low; %R <30
B24900	Silicon	16600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B24935	Silicon	13600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B24LR9	Silicon	16400	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B24LT0	Silicon	17100	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B24LY1	Silicon	20000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B265R5	Silicon	9650	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B26M23	Silicon	17000	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B26M24	Silicon	17600	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B27623	Silicon	18800	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B27624	Silicon	18900	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B27X66	Silicon	20000	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B27X67	Silicon	18900	ug/L		J-	6010_METALS_ICP	Estimated low; %R 30-74
B27X78	Silicon	17500	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B27X79	Silicon	17400	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B24935	Strontium	222	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B24BX4	Uranium	3.24	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B254L8	Uranium	3610	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B254M2	Uranium	1660	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B254M6	Uranium	212	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B256L3	Uranium	5.68	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B256M8	Uranium	6.15	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B256N2	Uranium	349	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B256Y0	Uranium	4.67	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B256Y3	Uranium	66.6	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B256Y7	Uranium	308	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B25700	Uranium	60.5	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B25704	Uranium	349	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B25711	Uranium	6.4	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B25715	Uranium	18.2	ug/L	D	J	200.8_METALS_ICPMS	Estimated; %R both high and low
B290P7	Uranium	118	ug/L	D	J+	200.8_METALS_ICPMS	Estimated high; %R >125
B290R4	Uranium	688	ug/L	D	J+	200.8_METALS_ICPMS	Estimated high; %R >125
B290V0	Uranium	743	ug/L	D	J+	200.8_METALS_ICPMS	Estimated high; %R >125
B290X4	Uranium	4.85	ug/L	D	J+	200.8_METALS_ICPMS	Estimated high; %R >125

Table A-20. Summary of 2011 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2FL14	Calcium	152000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2FX62	Calcium	28700	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2H354	Calcium	27800	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2HFF7	Calcium	59000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2HFH8	Calcium	110000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2HFP5	Calcium	67600	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2HH90	Calcium	73900	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2HH95	Calcium	79600	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2HLN3	Calcium	35100	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8L2	Calcium	91000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8L6	Calcium	81800	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8P7	Calcium	331000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8R8	Calcium	221000	ug/L	DN	J-	6010_METALS_ICP	Estimated low; %R <30
B2J8V3	Calcium	143000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8V7	Calcium	150000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8W5	Calcium	80200	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8W9	Calcium	237000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8X3	Calcium	238000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8Y1	Calcium	85800	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2CV40	Cyanide	9.96	ug/L	BN	J-	335.2_CYANIDE	Estimated low; %R 30-74
B2CVB1	Cyanide	4	ug/L	UN	J	335.2_CYANIDE	Estimated; %R 30-74
B2CVK9	Hexavalent Chromium	25.3	ug/L	N	J-	7196_CR6	Estimated low; %R <80
B2CVL3	Hexavalent Chromium	24.2	ug/L	N	J-	7196_CR6	Estimated low; %R <80
B290L1	Iron	223	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B290L2	Iron	719	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2BMR3	Iron	55	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2BMR4	Iron	45	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2BMT4	Iron	48	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2CFL1	Iron	52	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DRY8	Iron	45	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT00	Iron	20	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT02	Iron	94	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT04	Iron	81	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT10	Iron	34	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT12	Iron	22	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT34	Iron	42	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT36	Iron	39	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DXC2	Iron	36	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DXL8	Iron	38	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DXM0	Iron	35	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2DXR3	Iron	44	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125

Table A-20. Summary of 2011 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2DXR5	Iron	26	ug/L	BN	J+	6010_METALS_ICP	Estimated high; %R >125
B2FV34	Nitrogen in Nitrate	12300	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R80
B2FV42	Nitrogen in Nitrate	27200	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R80
B2FV58	Nitrogen in Nitrate	20800	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R80
B2HFF1	Nitrogen in Nitrate	15100	ug/L	D	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2HFP5	Nitrogen in Nitrate	63700	ug/L	D	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2HH95	Nitrogen in Nitrate	82800	ug/L	D	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8L2	Nitrogen in Nitrate	73900	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8L6	Nitrogen in Nitrate	115000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8P7	Nitrogen in Nitrate	1660000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8V3	Nitrogen in Nitrate	465000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8V7	Nitrogen in Nitrate	394000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8W5	Nitrogen in Nitrate	115000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8W9	Nitrogen in Nitrate	1020000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8X3	Nitrogen in Nitrate	974000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B2J8Y1	Nitrogen in Nitrate	121000	ug/L	DN	J+	300.0_ANIONS_IC	Estimated high; %R >110
B282R6	Potassium	5690	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B282R9	Potassium	5810	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2CFP3	Potassium	7960	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2CFP6	Potassium	8560	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2CFR0	Potassium	6110	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2CFR3	Potassium	5810	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2CV66	Potassium	12400	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2CV69	Potassium	11300	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2CV94	Potassium	6900	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2CVP3	Potassium	7290	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2CVB1	Silver	5.1	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2CVB4	Silver	5.1	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2F6T3	Silver	5.1	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2F6T7	Silver	5.1	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2F6W0	Silver	5.1	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2F6W2	Silver	5.1	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2FV76	Sodium	18200	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B2H3C6	Sodium	18400	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B2H3D4	Sodium	13300	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B2H3D5	Sodium	13200	ug/L		J+	6010_METALS_ICP	Estimated high; %R >125
B2HJM5	Sodium	20800	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8H1	Sodium	28700	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8H7	Sodium	282000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8J2	Sodium	329000	ug/L	DN	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8K8	Sodium	57400	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8M0	Sodium	33300	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125

Table A-20. Summary of 2011 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2J8M6	Sodium	38600	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8N1	Sodium	23500	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8N5	Sodium	34300	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2J8N9	Sodium	11700	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2B3N7	Strontium	216	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2B3N8	Strontium	221	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2BT97	Strontium	169	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2BT98	Strontium	173	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2DRY0	Strontium	229	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2DRY2	Strontium	248	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2DRY4	Strontium	333	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2DRY6	Strontium	328	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT06	Strontium	273	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B2DT08	Strontium	266	ug/L	N	J+	6010_METALS_ICP	Estimated high; %R >125
B29T63	Zinc	209	ug/L	CN	J	6010_METALS_ICP	Estimated; %R 30-74
B29T64	Zinc	499	ug/L	CN	J	6010_METALS_ICP	Estimated; %R 30-74
B2BMV8	Zinc	236	ug/L	CN	J	6010_METALS_ICP	Estimated; %R 30-74
B2BMV9	Zinc	205	ug/L	CN	J	6010_METALS_ICP	Estimated; %R 30-74

Table A-21. Summary of 2012 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2KVJ2	Calcium	304000	ug/L	D	J-	6010_METALS_ICP	Estimated low; %R <30
B2KM37	Chromium	3.53	ug/L	DN	J+	200.8_METALS_ICPMS	Estimated high; %R >125
B2KM39	Chromium	2.58	ug/L	DN	J+	200.8_METALS_ICPMS	Estimated high; %R >125
B2JL33	Cyanide	591	ug/L	D	J	4500E_CN	Esimated; %R both low and high
B2K0T9	Cyanide	4	ug/L	U	J	4500E_CN	Esimated; %R both low and high
B2K0V7	Cyanide	290	ug/L		J	4500E_CN	Esimated; %R both low and high
B2K0W5	Cyanide	4	ug/L	U	J	4500E_CN	Esimated; %R both low and high
B2K0X3	Cyanide	4	ug/L	U	J	4500E_CN	Esimated; %R both low and high
B2K123	Cyanide	4.88	ug/L	B	J	4500E_CN	Esimated; %R both low and high
B2K131	Cyanide	4	ug/L	U	J	4500E_CN	Esimated; %R both low and high
B2K139	Cyanide	516	ug/L	D	J	4500E_CN	Esimated; %R both low and high
B2K147	Cyanide	4	ug/L	U	J	4500E_CN	Esimated; %R both low and high
B2K167	Cyanide	4.88	ug/L	B	J	4500E_CN	Esimated; %R both low and high
B2K194	Cyanide	973	ug/L	D	J	4500E_CN	Esimated; %R both low and high
B2K1C8	Cyanide	4	ug/L	U	J	4500E_CN	Esimated; %R both low and high
B2K1H1	Cyanide	299	ug/L		J	4500E_CN	Esimated; %R both low and high
B2K1J3	Cyanide	10.8	ug/L	B	J	4500E_CN	Esimated; %R both low and high
B2K1L2	Cyanide	5.11	ug/L	B	J	4500E_CN	Esimated; %R both low and high
B2KPL6	Cyanide	4	ug/L	U	R	4500E_CN	Rejected result; %R <30
B2KVF7	Cyanide	6.78	ug/L	B	J	4500E_CN	Esimated; %R both low and high
B2KVH6	Cyanide	4	ug/L	U	J	4500E_CN	Esimated; %R both low and high
B2KVJ4	Cyanide	713	ug/L	D	J	4500E_CN	Esimated; %R both low and high
B2LHD6	Cyanide	658	ug/L	D	R	4500E_CN	Rejected Result; %R <30
B2MN27	Cyanide	140	ug/L	N	J-	4500E_CN	Estimated low; %R 30-74
B2MX35	Cyanide	4	ug/L	UN	J	4500E_CN	Estimated; %R 30-74
B2JL32	Nitrogen in Nitrate	1320000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2JRK7	Nitrogen in Nitrate	166000	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2JRM8	Nitrogen in Nitrate	112000	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2JYR6	Nitrogen in Nitrate	76600	ug/L	DN	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2K165	Nitrogen in Nitrate	209000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2K185	Nitrogen in Nitrate	801000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2K1D7	Nitrogen in Nitrate	1230000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2KPM8	Nitrogen in Nitrate	735000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2KPN6	Nitrogen in Nitrate	384000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2KPP2	Nitrogen in Nitrate	567000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2KPP7	Nitrogen in Nitrate	146000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2KPR2	Nitrogen in Nitrate	1150000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2KPR7	Nitrogen in Nitrate	1010000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2KPV1	Nitrogen in Nitrate	127000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2M318	Nitrogen in Nitrate	15500	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R <80
B2MN33	Nitrogen in Nitrite	125	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2MN53	Nitrogen in Nitrite	125	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2MN58	Nitrogen in Nitrite	125	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2MN72	Nitrogen in Nitrite	125	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2MN84	Nitrogen in Nitrite	125	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2MN90	Nitrogen in Nitrite	125	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2MN95	Nitrogen in Nitrite	187	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2MNB0	Nitrogen in Nitrite	187	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80

Table A-21. Summary of 2012 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2MNB6	Nitrogen in Nitrite	125	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2MNC1	Nitrogen in Nitrite	125	ug/L	UDN	J	300.0_ANIONS_IC	Estimated result; %R <80
B2JL19	Silver	4	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2JL22	Silver	4	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2JRR0	Silver	4	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2JRR4	Silver	4	ug/L	UN	R	6010_METALS_ICP	Rejected result; %R <30
B2LHD1	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHD3	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHF1	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHF3	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHF6	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHF8	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHH1	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHH3	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHL4	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2LHL6	Silver	4	ug/L	UN	J	6010_METALS_ICP	Estimated; %R 30-74
B2KVJ2	Sodium	195000	ug/L	D	J+	6010_METALS_ICP	Estimated high; %R >125
B2LH93	Sodium	206000	ug/L	D	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2LH95	Sodium	196000	ug/L	D	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2LHH7	Sodium	199000	ug/L	D	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2LHJ2	Sodium	204000	ug/L	D	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2K4D7	Uranium	5.44	ug/L	DN	J+	200.8_METALS_ICPMS	Estimated high; %R >125
B2KP97	Uranium	99.7	ug/L	D	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2KPB3	Uranium	579	ug/L	D	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2KT55	Uranium	148	ug/L	D	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2KT56	Uranium	151	ug/L	D	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74

Table A-22. Summary of 2013 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2TJ09	Aluminum	20	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Aluminum	20	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TJ09	Boron	23.3	ug/L	DN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Boron	23.2	ug/L	DN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TJ09	Cadmium	0.1	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Cadmium	0.1	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2NT16	Calcium	66300	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT19	Calcium	66500	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT21	Calcium	58900	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT26	Calcium	102000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT29	Calcium	101000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT39	Calcium	66300	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT41	Calcium	61900	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT44	Calcium	61700	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT51	Calcium	65600	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT54	Calcium	64000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT56	Calcium	188000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NT59	Calcium	180000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P128	Calcium	88600	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P130	Calcium	88400	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P132	Calcium	90200	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P134	Calcium	95400	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P136	Calcium	176000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P138	Calcium	173000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P140	Calcium	128000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P142	Calcium	125000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P144	Calcium	130000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P146	Calcium	129000	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P4D8	Calcium	33300	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2P4F0	Calcium	32800	ug/L	N	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2TJ09	Chromium	2.43	ug/L	DN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74

Table A-22. Summary of 2013 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2TKK2	Chromium	2.36	ug/L	DN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TJ09	Cobalt	0.1	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Cobalt	0.136	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TJ09	Copper	0.618	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Copper	0.406	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2N906	Cyanide	188	ug/L	N	J+	4500E_CN	Esimated high; %R >125
B2N923	Cyanide	90.3	ug/L	N	J+	4500E_CN	Esimated high; %R >125
B2N926	Cyanide	79.4	ug/L	N	J+	4500E_CN	Esimated high; %R >125
B2N931	Cyanide	226	ug/L	N	J+	4500E_CN	Esimated high; %R >125
B2N938	Cyanide	191	ug/L	N	J+	4500E_CN	Esimated high; %R >125
B2N946	Cyanide	328	ug/L	N	J+	4500E_CN	Esimated high; %R >125
B2N953	Cyanide	473	ug/L	N	J+	4500E_CN	Esimated high; %R >125
B2N965	Cyanide	107	ug/L	N	J+	4500E_CN	Esimated high; %R >125
B2NC60	Cyanide	4	ug/L	UN	J+	4500E_CN	Esimated high; %R >125
B2PJM9	Cyanide	15.2	ug/L	BN	J-	4500E_CN	Estimated low; %R 30-74
B2PJN0	Cyanide	169	ug/L	N	J-	4500E_CN	Estimated low; %R 30-74
B2PJN2	Cyanide	214	ug/L	N	J-	4500E_CN	Estimated low; %R 30-74
B2PP45	Cyanide	484	ug/L		J-	4500E_CN	Estimated low; %R 30-74
B2PP49	Cyanide	780	ug/L	DN	J-	4500E_CN	Estimated low; %R 30-74
B2PP57	Cyanide	999	ug/L	DN	J-	4500E_CN	Estimated low; %R 30-74
B2PP68	Cyanide	148	ug/L	N	J-	4500E_CN	Estimated low; %R <30
B2PP70	Cyanide	77.5	ug/L	N	J-	4500E_CN	Estimated low; %R <30
B2PP74	Cyanide	93.7	ug/L	N	J-	4500E_CN	Estimated low; %R <30
B2PP79	Cyanide	171	ug/L	N	J-	4500E_CN	Estimated low; %R <30
B2PP83	Cyanide	128	ug/L	N	J-	4500E_CN	Estimated low; %R <30
B2PP87	Cyanide	186	ug/L	N	J-	4500E_CN	Estimated low; %R <30
B2PP96	Cyanide	4	ug/L	UN	R	4500E_CN	Rejected result; %R <30
B2PPB3	Cyanide	527	ug/L	DN	J-	4500E_CN	Estimated low; %R <30
B2PPC0	Cyanide	962	ug/L	DN	J-	4500E_CN	Estimated low; %R 30-74
B2PPC4	Cyanide	349	ug/L	N	J-	4500E_CN	Estimated low; %R <30
B2PPC8	Cyanide	213	ug/L	N	J-	4500E_CN	Estimated low; %R <30
B2PPD2	Cyanide	111	ug/L	N	J-	4500E_CN	Estimated low; %R 30-74
B2PPD6	Cyanide	854	ug/L	DN	J-	4500E_CN	Estimated low; %R <30
B2PPH5	Cyanide	481	ug/L	DN	J-	4500E_CN	Estimated low; %R 30-74
B2TJ09	Cyanide	4	ug/L	UN	J-	4500E_CN	Estimated low; %R 30-74
B2TLK0	Cyanide	4	ug/L	UN	J-	4500E_CN	Estimated low; %R 30-74
B2TLK8	Cyanide	4	ug/L	UN	J-	4500E_CN	Estimated low; %R 30-74
B2TLM2	Cyanide	4	ug/L	UN	J-	4500E_CN	Estimated low; %R 30-74
B2TLN0	Cyanide	4	ug/L	UN	J-	4500E_CN	Estimated low; %R 30-74
B2TLN4	Cyanide	4	ug/L	UN	J-	4500E_CN	Estimated low; %R 30-74
B2TJ09	Lead	0.1	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Lead	0.1	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74

Table A-22. Summary of 2013 Sample Results Qualified Because MS/MSD Recoveries/RPDs Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2TJ09	Manganese	0.2	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Manganese	0.214	ug/L	BDCN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2RVT7	Molybdenum	1.49	ug/L	DN	J+	200.8_METALS_ICPMS	Estimated high; %R > 125
B2RVV0	Molybdenum	2.06	ug/L	N	J+	200.8_METALS_ICPMS	Estimated high; %R > 125
B2TJ09	Nickel	0.228	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Nickel	0.2	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2NXC9	Nitrogen in Nitrate	139000	ug/L	D	J+	300.0_ANIONS_IC	Estimated high; %R>120
B2NXD3	Nitrogen in Nitrate	79200	ug/L	D	J+	300.0_ANIONS_IC	Estimated high; %R>120
B2NXD4	Nitrogen in Nitrate	24100	ug/L	D	J+	300.0_ANIONS_IC	Estimated high; %R>120
B2P4C5	Nitrogen in Nitrate	24800	ug/L	D	J+	300.0_ANIONS_IC	Estimated high; %R>120
B2P8T5	Nitrogen in Nitrate	48300	ug/L	D	J+	9056_ANIONS_IC	Estimated high; %R>110
B2P8V3	Nitrogen in Nitrate	42900	ug/L	D	J+	9056_ANIONS_IC	Estimated high; %R>110
B2PDT5	Nitrogen in Nitrate	51800	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R<80
B2PDV1	Nitrogen in Nitrate	47800	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R<80
B2PDV6	Nitrogen in Nitrate	49600	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R<80
B2PF33	Nitrogen in Nitrate	73900	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R<80
B2PP98	Nitrogen in Nitrate	474000	ug/L	D	J-	300.0_ANIONS_IC	Estimated low; %R<80
B2TJ09	Selenium	4.52	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Selenium	5.44	ug/L	BDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2PF40	Silver	7.21	ug/L	BN	J+	6010_METALS_ICP	Esimated high; %R >125
B2TJ29	Silver	0.1	ug/L	UDN	R	200.8_METALS_ICPMS	Rejected result; %R <30
B2TJ34	Silver	0.1	ug/L	UDN	R	200.8_METALS_ICPMS	Rejected result; %R <30
B2TK66	Silver	0.1	ug/L	UDN	R	200.8_METALS_ICPMS	Rejected result; %R <30
B2TK70	Silver	0.1	ug/L	UDN	R	200.8_METALS_ICPMS	Rejected result; %R <30
B2TLK4	Silver	5	ug/L	UN	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2TLK6	Silver	5	ug/L	UN	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2TLX8	Silver	5	ug/L	UN	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2TLY0	Silver	5	ug/L	UN	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2PP45	Sodium	342000	ug/L	D	J-	6010_METALS_ICP	Estimated low; %R 30-74
B2NC17	Uranium	3300	ug/L	D	J+	200.8_METALS_ICPMS	Esimated high; %R >125
B2NC25	Uranium	33.9	ug/L	D	J+	200.8_METALS_ICPMS	Esimated high; %R >125
B2NC45	Uranium	165	ug/L	D	J+	200.8_METALS_ICPMS	Esimated high; %R >125
B2NC49	Uranium	87.1	ug/L	D	J+	200.8_METALS_ICPMS	Esimated high; %R >125
B2NC60	Uranium	37300	ug/L	D	J+	200.8_METALS_ICPMS	Esimated high; %R >125
B2NC84	Uranium	178	ug/L	D	J+	200.8_METALS_ICPMS	Esimated high; %R >125
B2T4L2	Uranium	102000	ug/L	D	J+	6020_METALS_ICPMS	Estimated high; %R > 125
B2TJ09	Vanadium	15.4	ug/L	DN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Vanadium	16.3	ug/L	DN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TJ09	Zinc	4	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74
B2TKK2	Zinc	4	ug/L	UDN	J-	200.8_METALS_ICPMS	Estimated low; %R 30-74

Table A-24. Summary of 2008 Sample Results Qualified Because Surrogate Spike Recoveries Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1X7W9	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2,3,4,6-Tetrachlorophenol	2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X7W9	2,4,5-Trichlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2,4,5-Trichlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2,4,5-Trichlorophenol	2.2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X7W9	2,4,6-Trichlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2,4,6-Trichlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2,4,6-Trichlorophenol	2.2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X7W9	2,4-Dichlorophenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2,4-Dichlorophenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2,4-Dichlorophenol	2.1	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	2,4-Dichlorophenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	2,4-Dichlorophenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	2,4-Dimethylphenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2,4-Dimethylphenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2,4-Dimethylphenol	2.1	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X7W9	2,4-Dinitrophenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2,4-Dinitrophenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2,4-Dinitrophenol	2.4	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1WYD1	2,4-Dinitrotoluene	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	2,6-Dichlorophenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2,6-Dichlorophenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2,6-Dichlorophenol	2.1	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X7W9	2-Chlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2-Chlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2-Chlorophenol	2.2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	2-Chlorophenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	2-Chlorophenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1V7P5	2-Methylphenol (cresol, o-)	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	2-Methylphenol (cresol, o-)	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2-Methylphenol (cresol, o-)	2.2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	2-Methylphenol (cresol, o-)	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	2-Methylphenol (cresol, o-)	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1V7P5	2-Nitrophenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	2-Nitrophenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	2-Nitrophenol	2.3	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	2-Nitrophenol	2.3	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	2-Nitrophenol	2.3	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	2-Nitrophenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	2-Nitrophenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	2-Picoline	4.8	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1V7P5	3+4 Methylphenol (cresol, m+p)	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	3+4 Methylphenol (cresol, m+p)	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	3+4 Methylphenol (cresol, m+p)	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	3+4 Methylphenol (cresol, m+p)	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44

Table A-24. Summary of 2008 Sample Results Qualified Because Surrogate Spike Recoveries Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B1X8L0	4,6-Dinitro-2-methylphenol	2.2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X7W9	4-Chloro-3-methylphenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	4-Chloro-3-methylphenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	4-Chloro-3-methylphenol	2.4	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	4-Chloro-3-methylphenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	4-Chloro-3-methylphenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1V7P5	4-Nitrophenol	0.95	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	4-Nitrophenol	0.95	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	4-Nitrophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	4-Nitrophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	4-Nitrophenol	2.2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	4-Nitrophenol	0.95	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	4-Nitrophenol	0.95	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	Benzothiazole	0.57	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	Bis(2-ethylhexyl) phthalate	0.76	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	Dinoseb(2-secButyl-4,6-dinitrophenol)	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	Dinoseb(2-secButyl-4,6-dinitrophenol)	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	Dinoseb(2-secButyl-4,6-dinitrophenol)	2.4	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1WYD1	n-Nitrosodi-n-dipropylamine	0.57	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1V7P5	Pentachlorophenol	1.4	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	Pentachlorophenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	Pentachlorophenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	Pentachlorophenol	2.4	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	Pentachlorophenol	1.4	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	Pentachlorophenol	1.4	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1V7P5	Phenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	Phenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1X7W9	Phenol	2.3	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X846	Phenol	2.3	ug/L	U	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1X8L0	Phenol	2.3	ug/L	UN	J	8040_PHENOLIC_GC	Estimated result; %R < 44
B1XMD3	Phenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1Y2J3	Phenol	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	Tributyl phosphate	0.48	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit
B1WYD1	Tris-2-chloroethyl phosphate	0.62	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < lower limit

Table A-25. Summary of 2009 Sample Results Qualified Because Surrogate Spike Recoveries Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B21962	2,4-Dichlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	2,4-Dichlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B21962	2-Chlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	2-Chlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B21962	2-Methylphenol (cresol, o-)	0.8	ug/L	UT	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	2-Methylphenol (cresol, o-)	0.8	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B21962	2-Nitrophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	2-Nitrophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B21962	3+4 Methylphenol (cresol, m+p)	0.6	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	3+4 Methylphenol (cresol, m+p)	0.6	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B21962	4-Chloro-3-methylphenol	0.5	ug/L	UT	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	4-Chloro-3-methylphenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B21962	4-Nitrophenol	0.6	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	4-Nitrophenol	0.6	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B21962	Pentachlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	Pentachlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B21962	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B23292	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit
B22Y84	Total cresols	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated result; %R < control limit

Table A-26. Summary of 2010 Sample Results Qualified Because Surrogate Spike Recoveries Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B22YP0	2,4-Dichlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22YP0	2-Chlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22YP0	2-Methylphenol (cresol, o-)	0.8	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22YP0	2-Nitrophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22YP0	3+4 Methylphenol (cresol, m+p)	0.6	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22YP0	4-Chloro-3-methylphenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22YP0	4-Nitrophenol	0.6	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22YP0	Pentachlorophenol	0.5	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22L73	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B22YP0	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B24N70	Phenol	0.9	ug/L	UT	J	8270_SVOA_GCMS	Estimated; %R < control limits
B24LW9	Total petroleum hydrocarbons - diesel range	70	ug/L	U	J	WTPH_DIESEL	Estimated; %R < control limits
B24LX9	Total petroleum hydrocarbons - diesel range	70	ug/L	U	J	WTPH_DIESEL	Estimated; %R < control limits
B24LY7	Total petroleum hydrocarbons - diesel range	70	ug/L	U	J	WTPH_DIESEL	Estimated; %R < control limits
B25K89	Total petroleum hydrocarbons - diesel range	70	ug/L	U	J	WTPH_DIESEL	Estimated; %R < control limits
B27624	Total petroleum hydrocarbons - diesel range	180	ug/L		J	WTPH_DIESEL	Estimated; %R > control limits

Table A-27. Summary of 2011 Sample Results Qualified Because Surrogate Spike Recoveries Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2HFK7	2-Chlorophenol	2.2	ug/L	UN	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2F6V0	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits

Table A-28. Summary of 2012 Sample Results Qualified Because Surrogate Spike Recoveries Did Not Meet QC Acceptance Criteria

Sample ID	Analyte Name	Value Reported	Units	Lab Qualifier	Validation Qualifier	METHOD_NAME	Reason
B2JRR6	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	2,3,4,6-Tetrachlorophenol	2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2,4,5-Trichlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	2,4,5-Trichlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2,4,6-Trichlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	2,4,6-Trichlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2,4-Dichlorophenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	2,4-Dichlorophenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2,4-Dimethylphenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	2,4-Dimethylphenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2,4-Dinitrophenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	2,4-Dinitrophenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2,6-Dichlorophenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	2,6-Dichlorophenol	2.1	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2-Chlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2L8T0	2-Chlorophenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2LPK0	2-Chlorophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2L8T0	2-Methylphenol (cresol, o-)	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2LPK0	2-Methylphenol (cresol, o-)	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	2-Nitrophenol	2.3	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2L8T0	2-Nitrophenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2LPK0	2-Nitrophenol	2.3	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2L8T0	2-Picoline	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2JRR6	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	3+4 Methylphenol (cresol, m+p)	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	4,6-Dinitro-2-methylphenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	4-Chloro-3-methylphenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	4-Chloro-3-methylphenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	4-Nitrophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	4-Nitrophenol	2.2	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	Dinoseb(2-secButyl-4,6-dinitrophenol)	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	Dinoseb(2-secButyl-4,6-dinitrophenol)	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	Pentachlorophenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2LPK0	Pentachlorophenol	2.4	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2JRR6	Phenol	2.3	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2L8R5	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2L8T0	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2L8V0	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2L8V7	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2LPK0	Phenol	2.3	ug/L	U	J	8040_PHENOLIC_GC	Estimated; %R < control limits
B2M0Y3	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M0Y9	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M105	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M111	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M117	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M123	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M129	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M135	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M141	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M147	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M153	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M159	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M177	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M194	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M1B0	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits
B2M9W6	Phenol	0.9	ug/L	U	J	8270_SVOA_GCMS	Estimated; %R < control limits

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Appendix B

200-BP-5 Groundwater Operable Unit Trend/Outlier Evaluation

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Table

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Table B-1. Summary of 200-BP-1 Groundwater Operable Unit Wells with Occurrences of Organic Compounds Above Comparison Values

Well	Trend Evaluation Comment	Figure #
Benzene (Comparison Value = 0.8 µg/L)		
699-52-55B	Presence not associated with a trend. Single detection and 9 nondetects.	Figure B-1
Bis(2-ethylhexyl) phthalate (Comparison Value = 6 µg/L)		
299-E33-44	Presence not associated with a trend. Two consecutive detections and 5 nondetects. Also known as a common laboratory contaminant.	Figure B-2
699-48-50B	Presence not associated with a trend. Three nonconsecutive detections and 4 nondetects. Also known as a common laboratory contaminant.	Figure B-3
699-52-55B	Presence not associated with a trend. Two nonconsecutive detections and 8 nondetects. Also known as a common laboratory contaminant.	Figure B-4
Carbon Tetrachloride (Comparison Value = 0.63 µg/L)		
299-E26-77	Presence not associated with a trend. Single detection and 7 nondetects.	Figure B-5
299-E26-79	Presence not associated with a trend. Single detection and 7 nondetects.	Figure B-6
299-E27-155	Presence not associated with a trend. Detected in parent and duplicate sample from same sample round; 23 nondetects.	Figure B-7
299-E33-341	Presence not associated with a trend. Single detection and 8 nondetects.	Figure B-8
299-E33-342	Presence not associated with a trend. Single detection and 8 nondetects.	Figure B-9
299-E33-343	Presence not associated with a trend. Two nonconsecutive detections and 7 nondetects.	Figure B-10
699-52-55	Presence not associated with a trend. Single detection and 3 nondetects.	Figure B-11
699-52-55B	Presence not associated with a trend. Single detection and 9 nondetects.	Figure B-12
699-54-45A	Presence not associated with a trend. Single detection bracketed by a nondetect on either side.	Figure B-13

Table B-1. Summary of 200-BP-1 Groundwater Operable Unit Wells with Occurrences of Organic Compounds Above Comparison Values

Well	Trend Evaluation Comment	Figure #
Chloroform(Comparison Value = 1.4 µg/L)		
299-E33-343	Presence not associated with a trend. Single detection and 8 nondetects.	Figure B-14
Methyl Methanesulfonate (Comparison Value = 0.88 µg/L)		
299-E33-47	Presence not associated with a trend. Single detection and 6 nondetects.	Figure B-15
n-Nitrosodi-n-dipropylamine (Comparison Value = 0.013 µg/L)		
299-E33-334	Presence not associated with a trend. Single detection and 5 nondetects.	Figure B-16
299-E33-42	Presence not associated with a trend. Single detection and 4 nondetects.	Figure B-17
Trichloroethene (Comparison Value = 0.95 µg/L)		
199-K-31	Concentrations suggest an upward trend; 3 samples collected over 10 year time frame.	Figure B-18
699-65-72	Concentrations suggest a trend; 3 samples collected over 10 year time frame.	Figure B-19
699-70-68	Concentrations suggest a trend; 3 samples collected over 10 year time frame.	Figure B-20
699-72-73	Concentrations suggest a downward trend; 3 samples collected over 10 year time frame. See Figure B-21.	Figure B-21

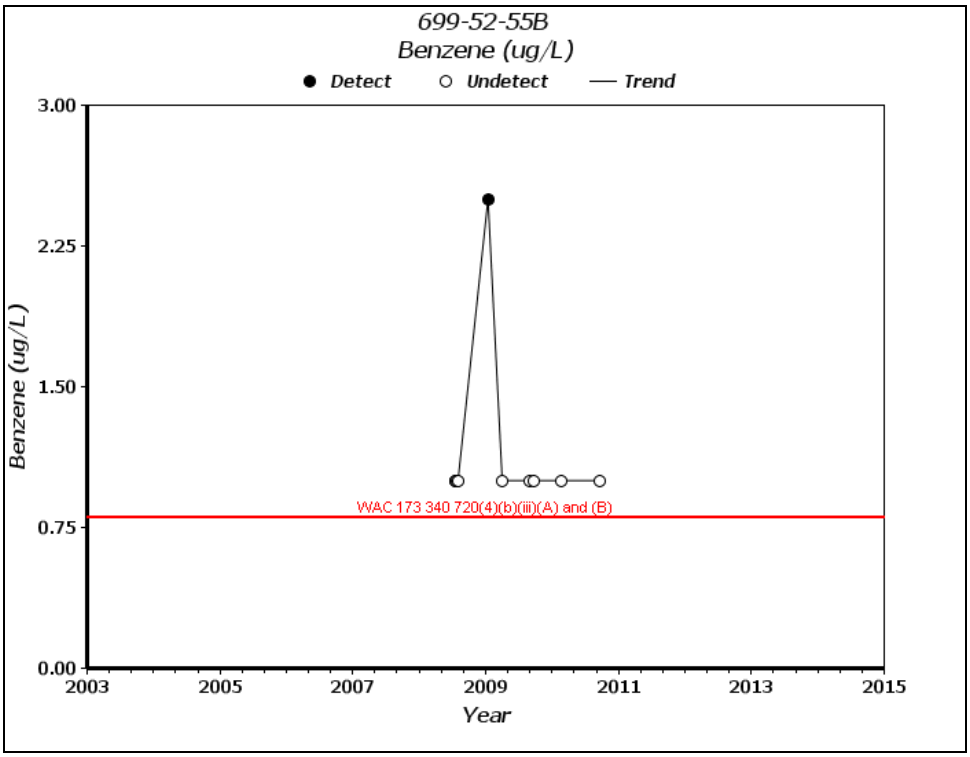

Figure B-1. Benzene Concentrations in Well 699-52-55B

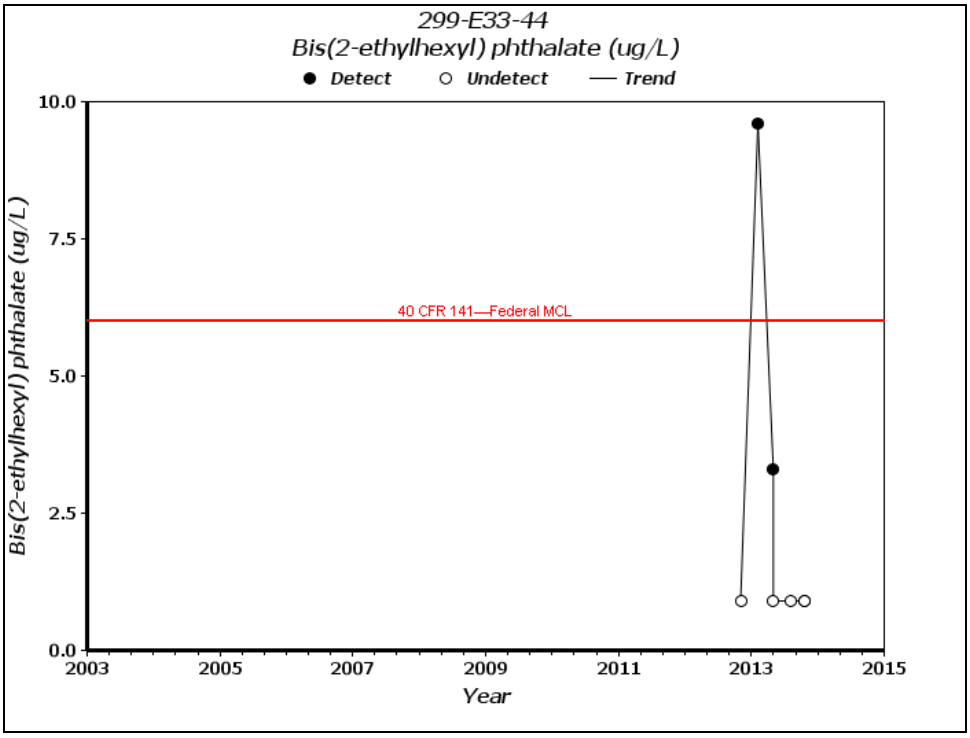

Figure B-1. Bis(2-ethylhexyl) Phthalate Concentrations in Well 299-E33-44

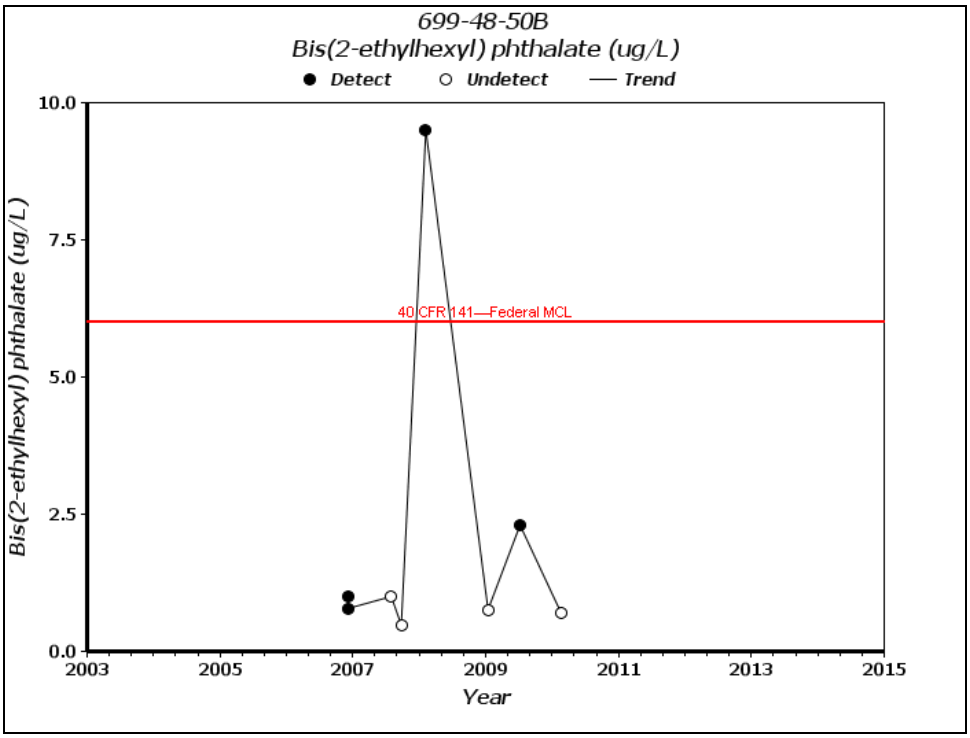

Figure B-2. Bis(2-ethylhexyl) Phthalate Concentrations in Well 699-48-50B

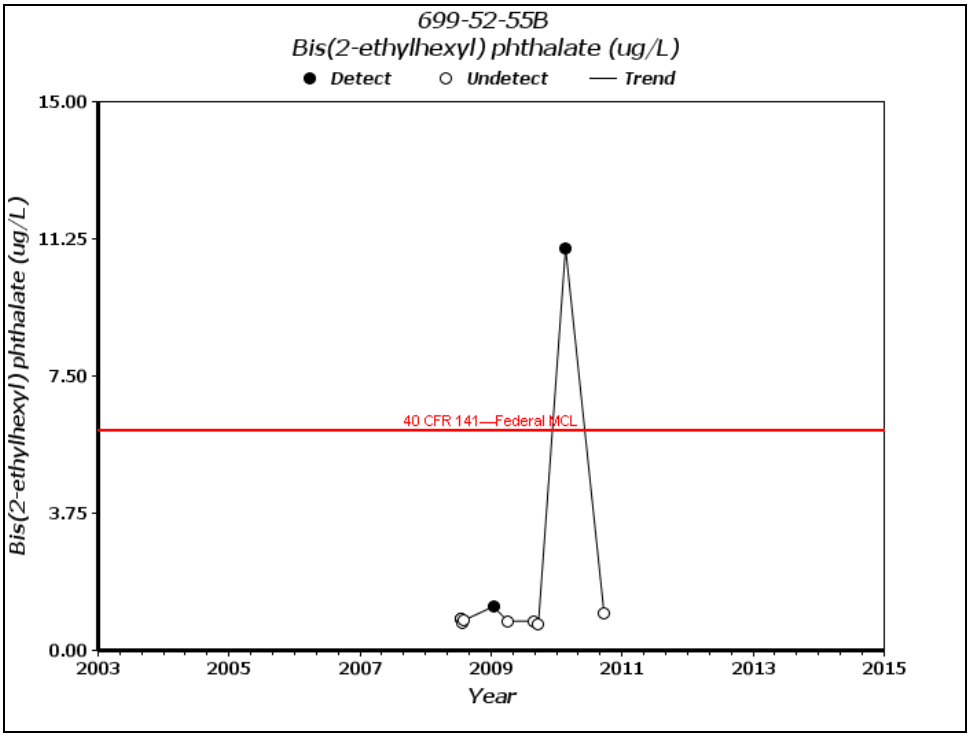

Figure B-4. Bis(2-ethylhexyl) Phthalate Concentrations in Well 699-52-55B

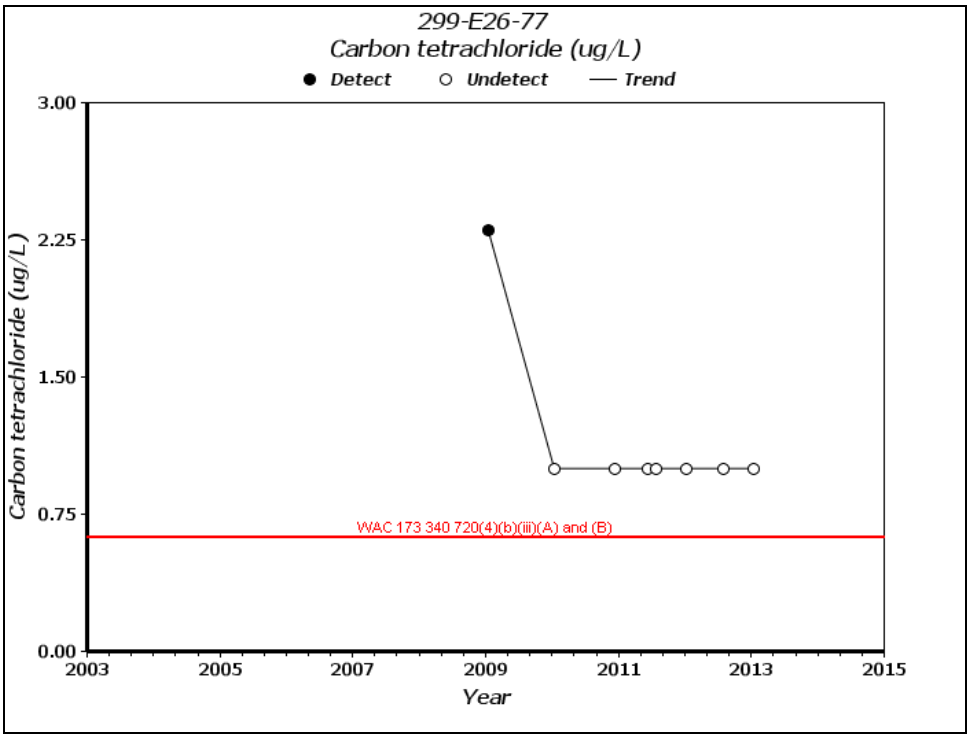

Figure B-5. Carbon Tetrachloride Concentrations in Well 299-E26-77

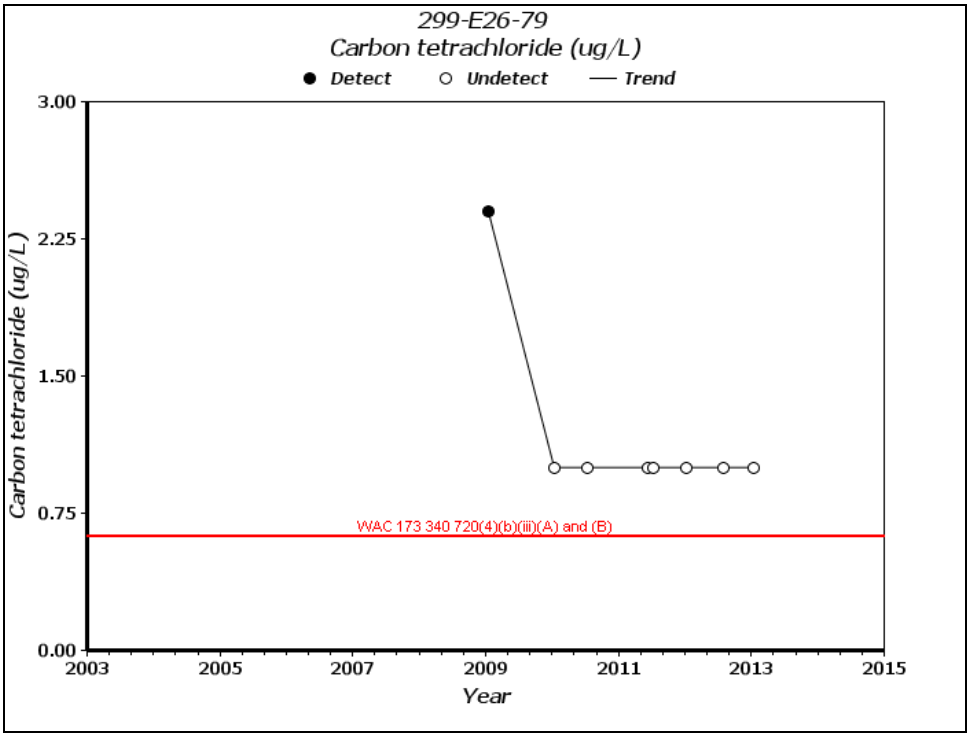

Figure B-6. Carbon Tetrachloride Concentrations in Well 299-E26-79

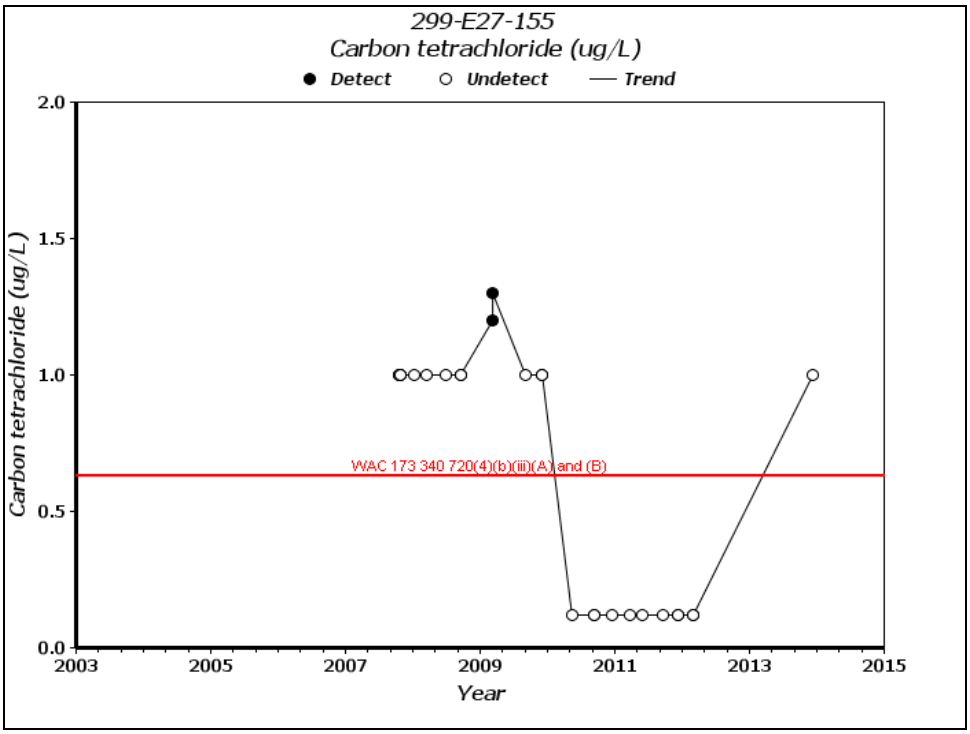

Figure B-7. Carbon Tetrachloride Concentrations in Well 299-E27-155

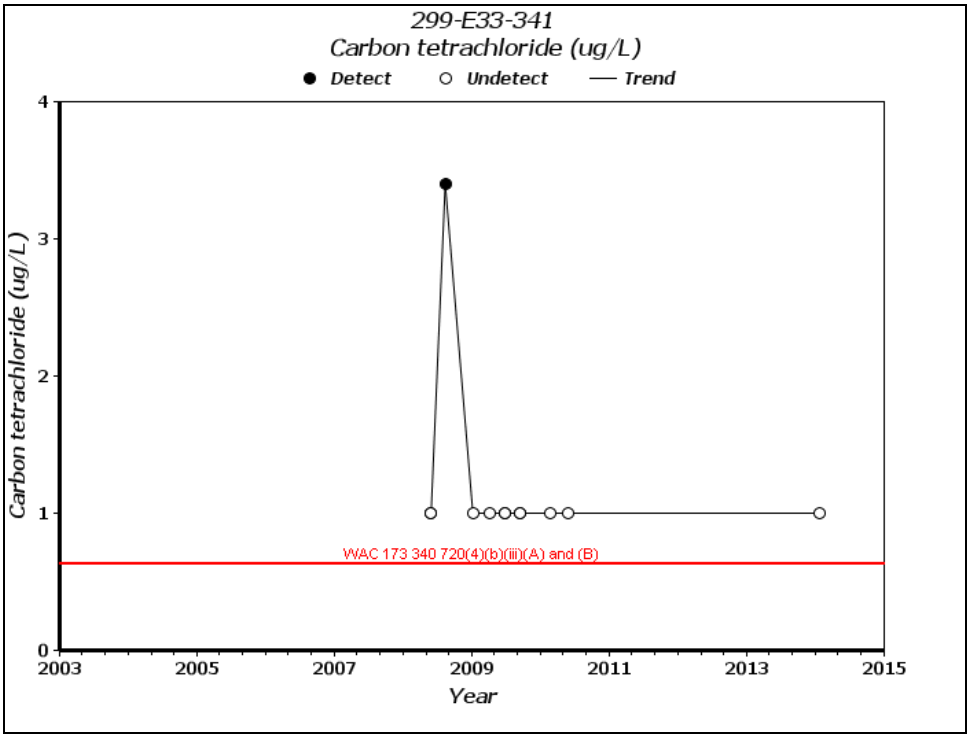

Figure B-8. Carbon Tetrachloride Concentrations in Well 299-E33-341

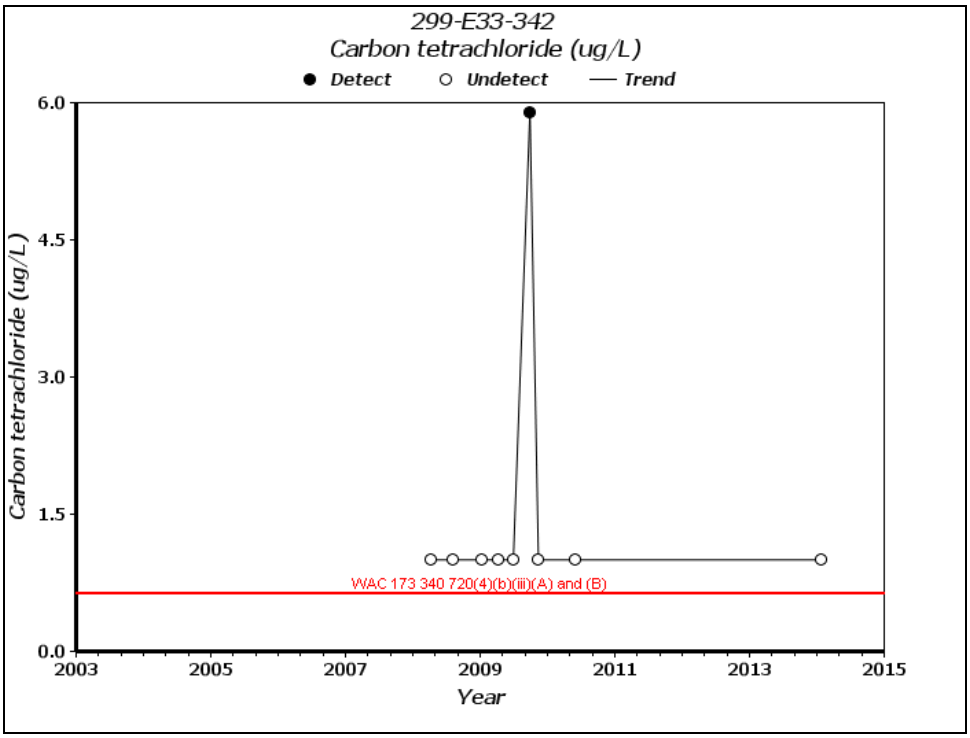

Figure B-9. Carbon Tetrachloride Concentrations in Well 299-E33-342

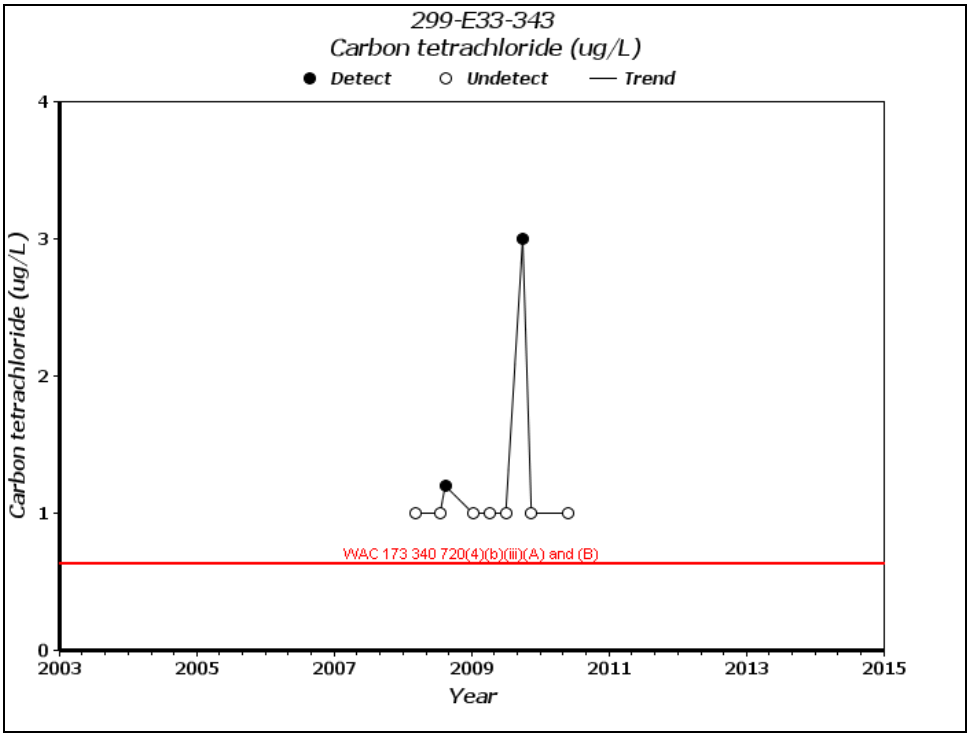

Figure B-10. Carbon Tetrachloride Concentrations in Well 299-E33-343

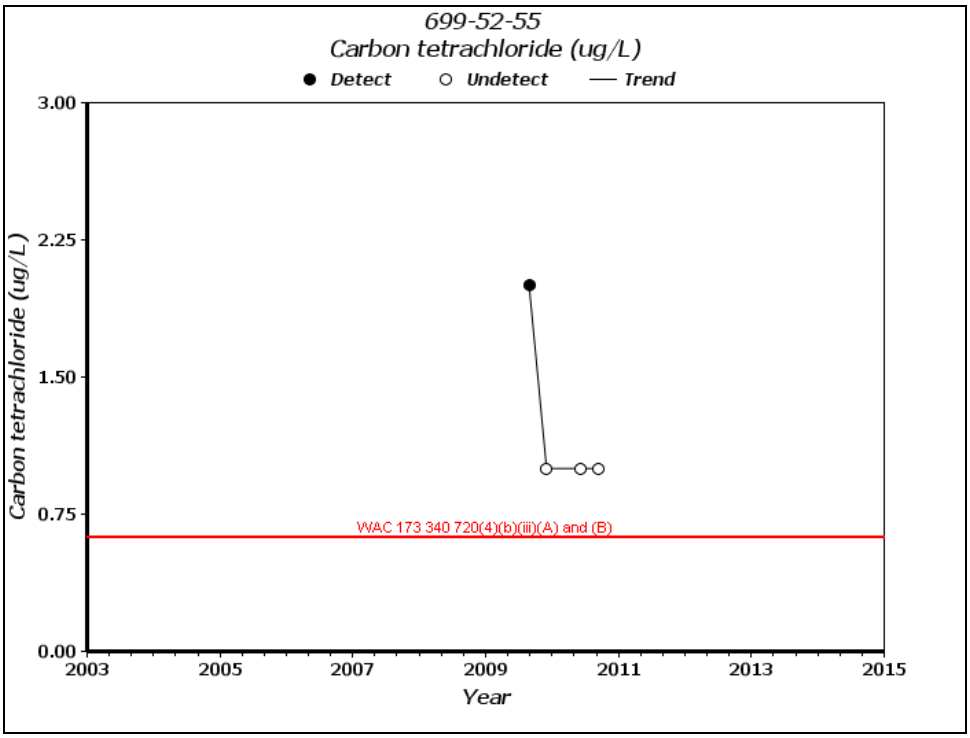

Figure B-11. Carbon Tetrachloride Concentrations in Well 699-52-55

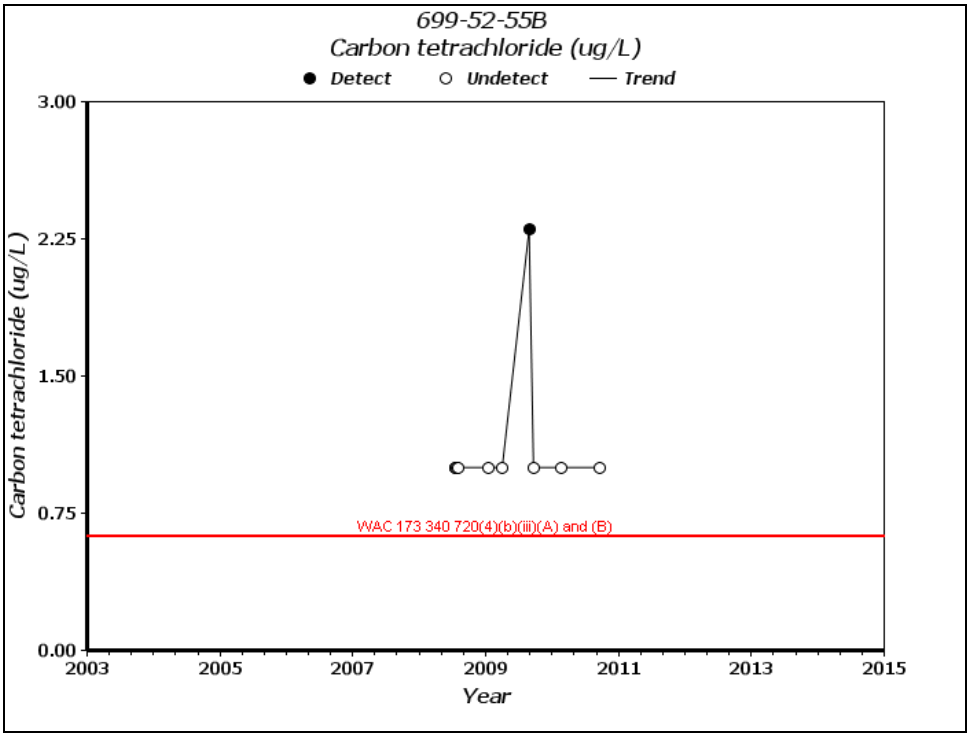

Figure B-32. Carbon Tetrachloride Concentrations in Well 699-52-55B

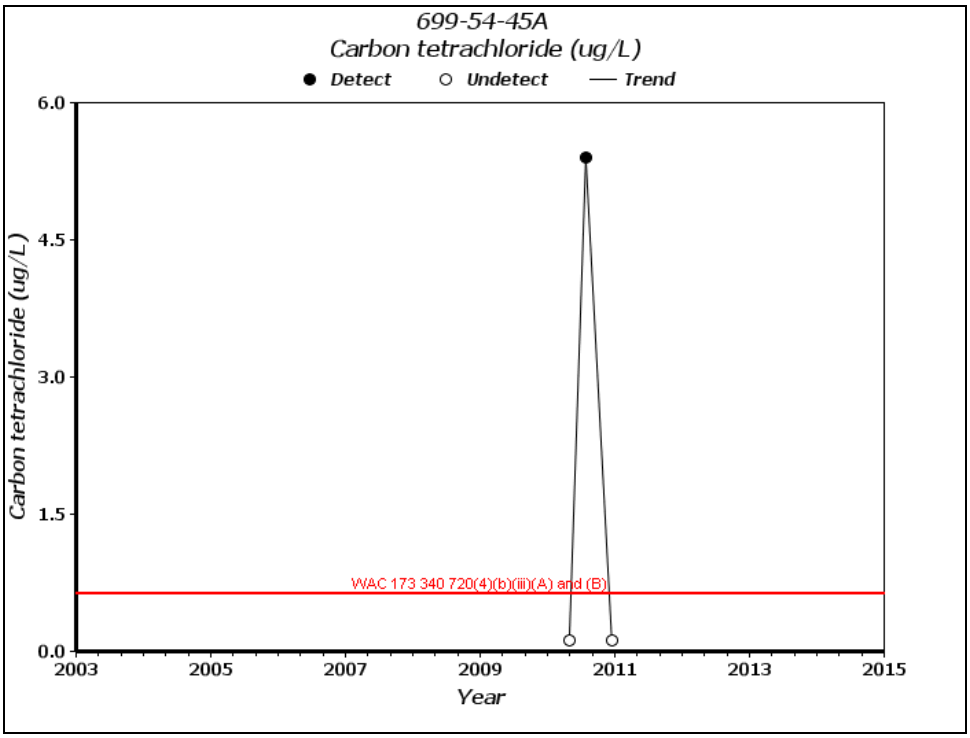

Figure B-13. Carbon Tetrachloride Concentrations in Well 699-54-45A

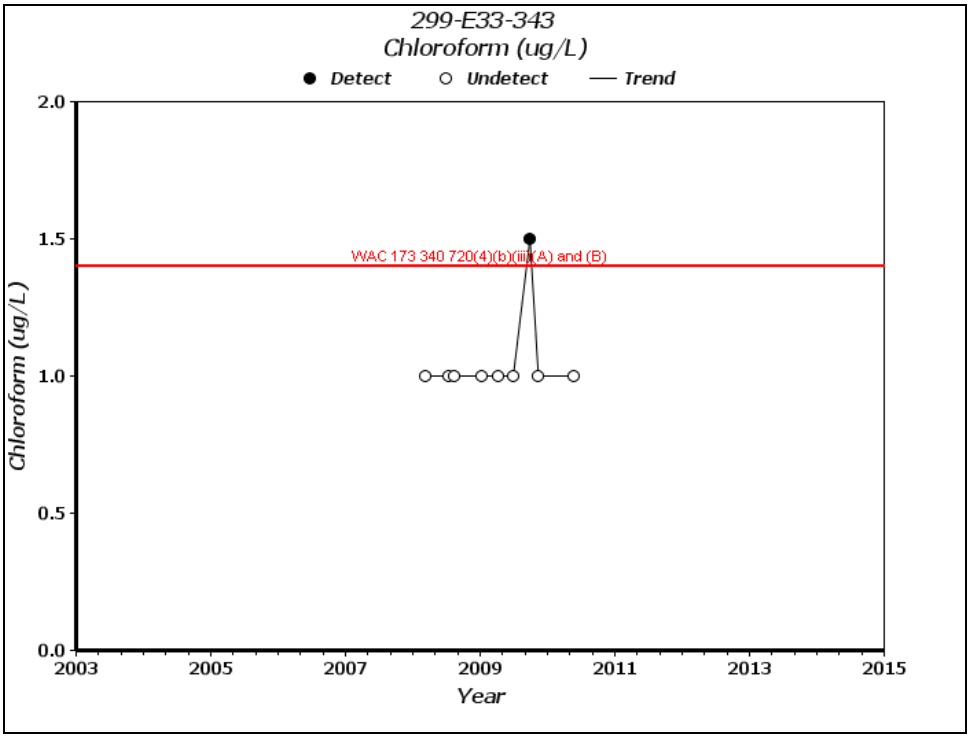

Figure B-14. Chloroform Concentrations in Well 299-E33-343

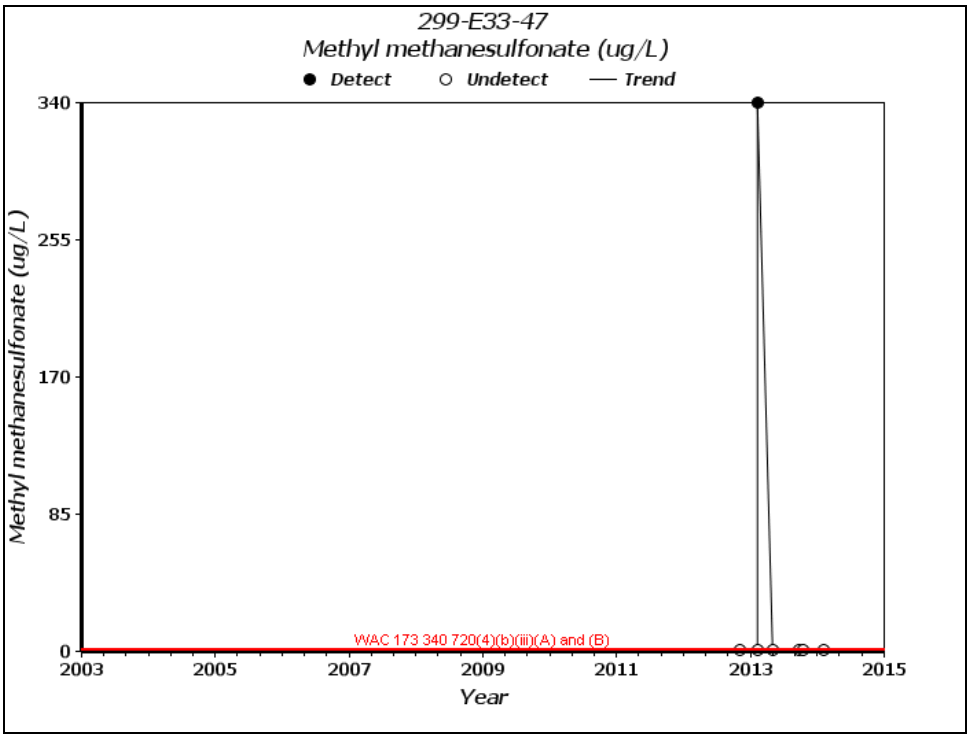

Figure B-15. Methyl Methanesulfonate Concentrations in Well 299-E33-47

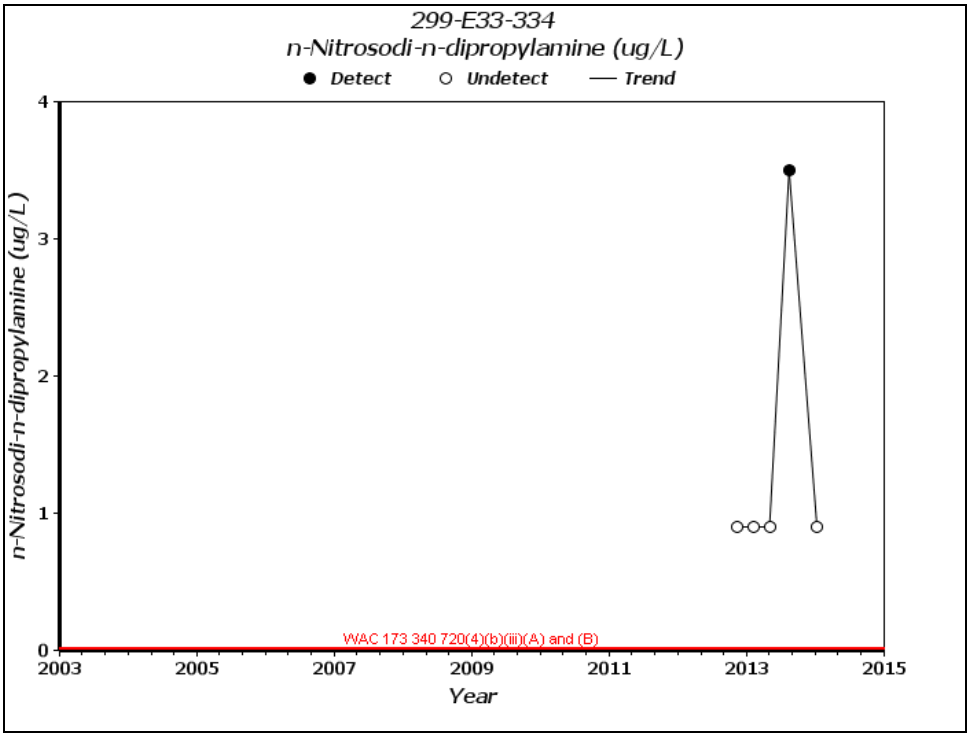

Figure B-16. n-Nitrosodi-n-Dipropylamine Concentrations in Well 299-E33-334

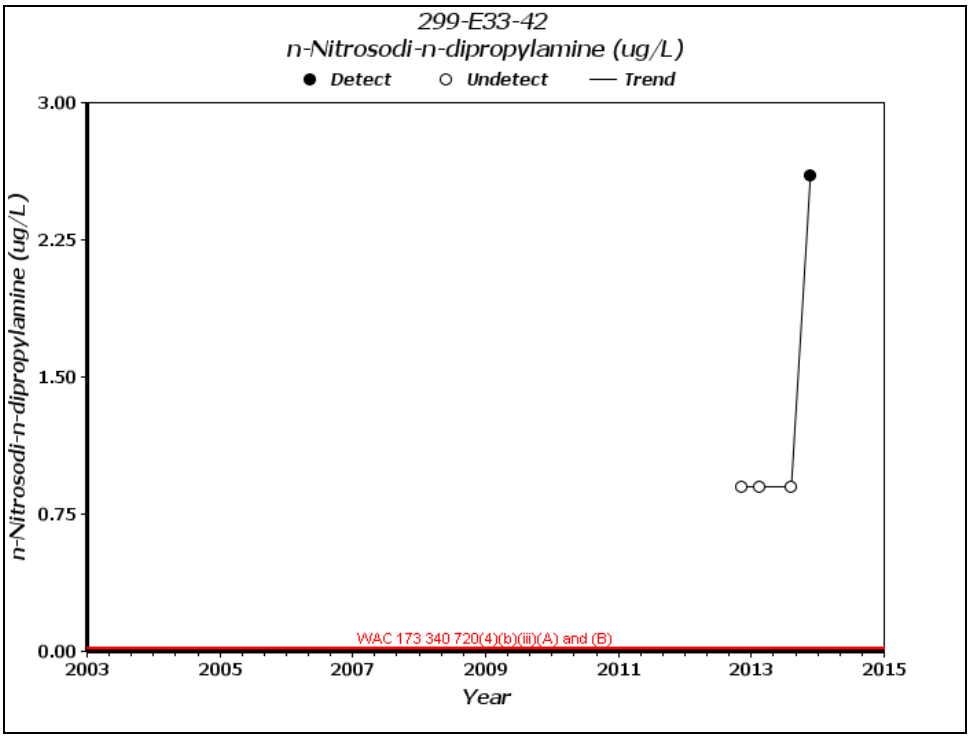

Figure B-17. n-Nitrosodi-n-dipropylamine Concentrations in Well 299-E33-42

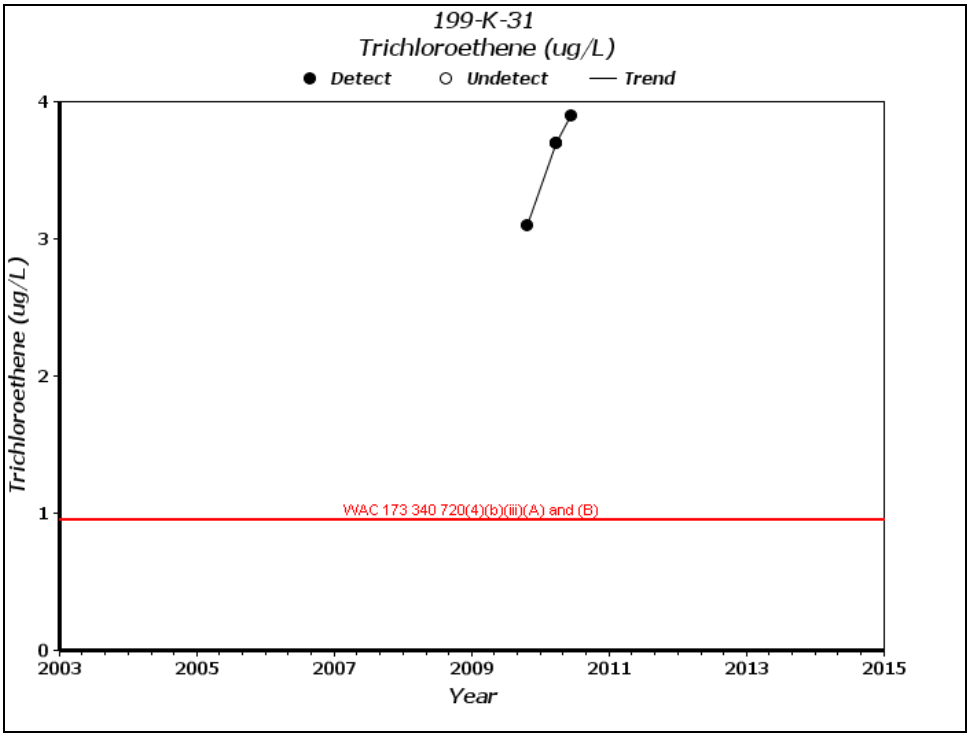

Figure B-48. Trichloroethene Concentrations in Well 199-K-31

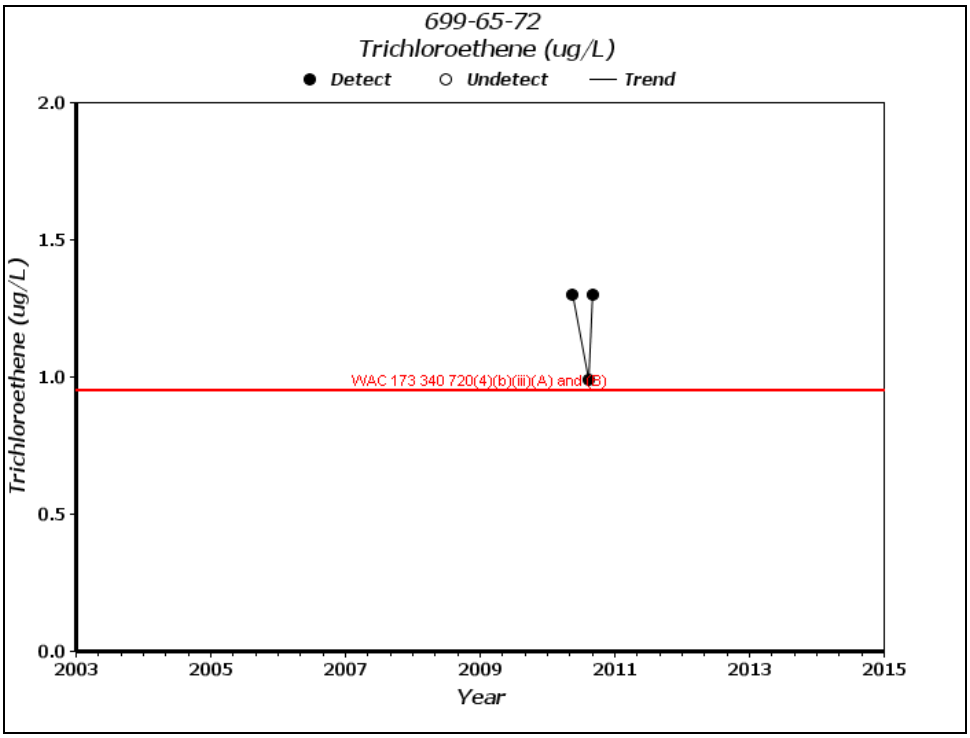

Figure B-5. Trichloroethene Concentrations in Well 699-65-72

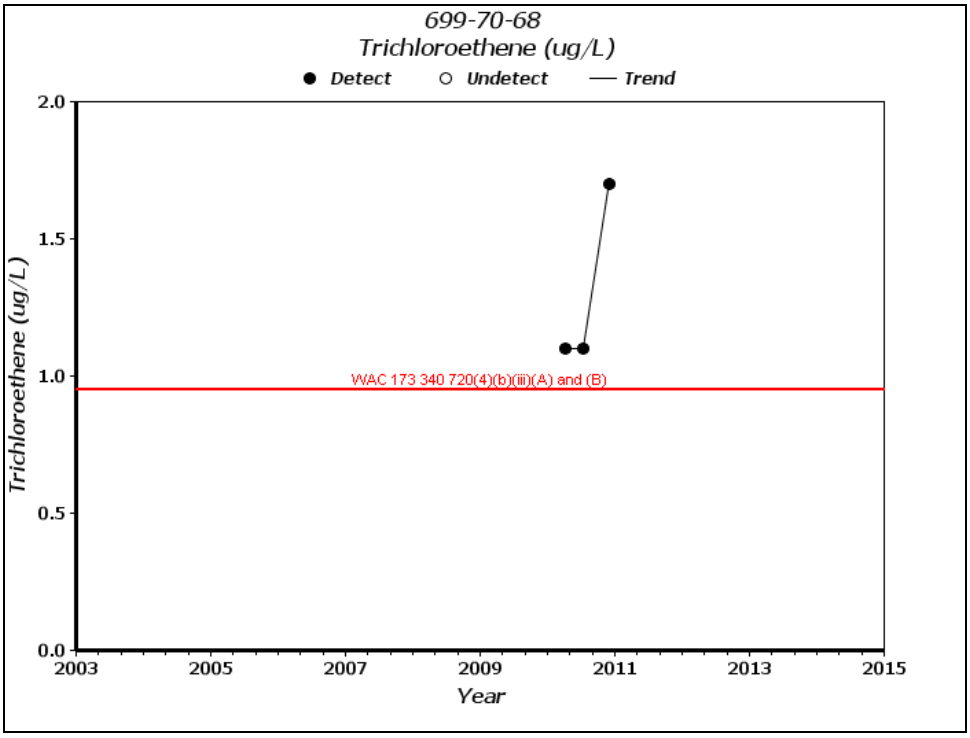

Figure B-6. Trichloroethene Concentrations in Well 699-70-68

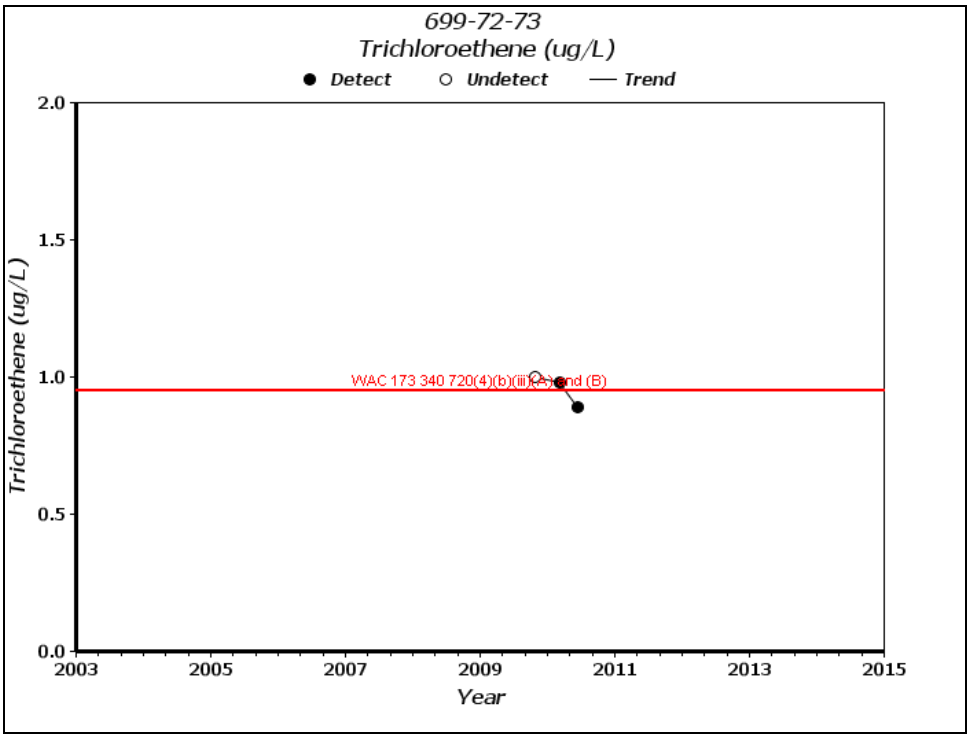

Figure B-7. Trichloroethene Concentrations in Well 699-72-73

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